



# A behavioural microfoundation of public administration : do cognitive capabilities and social capital impact on dynamic capabilities in local governments ?

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# THÈSE DE DOCTORAT

Une microfondation comportementale de  
l'administration publique :  
les capacités cognitives et le capital social ont-ils un  
impact sur les capacités dynamiques au sein des  
collectivités territoriales?

Groupe de Recherche en Management (EA 4711)

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Présentée en vue de l'obtention  
du grade de docteur en Sciences de gestion  
d'Université Côte d'Azur  
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# PhD THESIS

## A behavioural microfoundation of public administration: do cognitive capabilities and social capital impact on dynamic capabilities in local government?

Groupe de Recherche en Management (EA 4711)

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**Presented for the Doctorate  
in Management Science of  
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# **Une microfondation comportementale de l'administration publique : les capacités cognitives et le capital social ont-ils un impact sur les capacités dynamiques au sein des collectivités territoriales?**

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# **A behavioural microfoundation of public administration: do cognitive capabilities and social capital impact on dynamic capabilities in local government?**

## **ABSTRACT**

Recently public administration, strategic management and organizational behaviour have found an intersection in behavioural microfoundation of dynamic capabilities. This thesis starts by defining this field and keywords of the research question. The aspects are treated through literature reviews and empirical analyses following a positivistic vision. The attention is on public organizations. After discussing the evolution of paradigms, such as New Public Management and Network Governance, the investigation is limited to local governments. Municipalities are characterized by proximity to external stakeholders and the possibility to apply strategic concepts, such as dynamic capabilities, which have been mainly a crucial factor in the private sector. Two dynamic capabilities are relevant: innovation and ambidexterity. The thesis defines these constructs and studies their antecedents. In microfoundation, two major fields are cognitive capabilities, related to psychology, and social capital, connected to sociology. The study highlights knowledge-based relationships within and outside organizations with three elaborations: the development of a model of knowledge management, a review on internal relations, another review concerning external networking. The literature on individual cognitive capabilities is vast. The focus is on mindfulness and political skill. Both constructs are defined and links to social capital and dynamic capabilities are elaborated. Individual and multilevel hypotheses are developed for each construct. The following parts answer these hypotheses at the individual level empirically. The multilevel hypotheses are left at the theoretical side. They are useful for future research, having collected data also at the organizational level. The first step concerns a case study in a local government through social network analysis, assessing internal relationships through an ego-network data collection. This exploratory research shows links between internal social capital and perceived innovation. Secondly, a section discusses methodological choices and good practices to build a questionnaire. The debate on common method biases allows an evaluation of the limits and strengths of the survey. The questionnaire includes scales already validated with translation-back-translation. The ambidexterity scale was adapted for public organizations. For external networking, there is not a single scale used identically in academic articles.

Empirical studies are analysed and various items related to different external stakeholders are evaluated with a team of scholars in public management and public servants. The survey is administered in Italian local governments. Data collection is significant: 551 municipal employees working in 50 municipalities answered the questionnaire. In particular, 484 employees in 46 municipalities filled in the part about ties with colleagues. Exploratory and confirmatory factor analyses evaluate the structures of measurements and allow to evaluate the reliability and validity of measurements. The microfoundation hypotheses of innovative behaviour and individual ambidexterity are tested statistically with OLS linear regression presented in a hierarchical way and with the option to control for nested effects at the level of municipalities. A second methodology, Hierarchical Linear Modelling confirms results. In order to validate these results and to analyse in-depth mediation hypotheses, a third methodology based on Structural Equation Modeling is conducted. The results confirm that cognitive capabilities, mindfulness and political skills, and social capital, internal and external, may have positive effects on individual dynamic capabilities in local governments. Results are discussed on the contribution that this thesis provides in methodological, managerial and theoretical terms.

**Keywords:**

Innovation, ambidexterity, mindfulness, political skill, social capital, local governments

**Une microfondation comportementale de l'administration publique : les capacités cognitives et le capital social ont-ils un impact sur les capacités dynamiques au sein des collectivités territoriales?**

**RÉSUMÉ**

L'administration publique, la gestion stratégique et le comportement organisationnel ont trouvé une intersection dans la microfondation comportementale des capacités dynamiques. La thèse commence par définir ce champ et les mots-clés de la question de recherche. Les aspects sont traités avec revues de littérature et analyses empiriques avec une vision positiviste. L'attention est sur les organisations publiques. Après avoir élaboré l'évolution des paradigmes, tels que New Public Management et la Gouvernance en Réseau, l'enquête se limite aux communautés territoriales.

Les municipalités se caractérisent par leur proximité avec les parties prenantes externes et la possibilité d'appliquer concepts stratégiques, comme les capacités dynamiques, qui sont déjà un facteur crucial dans le secteur privé. Deux capacités dynamiques sont pertinentes: l'innovation et l'ambidextérité. La thèse définit ces constructions et étudie leurs antécédents. Deux domaines caractérisent la microfoundation : les capacités cognitives, liées à la psychologie, et le capital social, lié à la sociologie. L'étude évalue les relations fondées sur les connaissances dedans et dehors l'organisation avec trois élaborations : le développement d'un modèle de gestion des connaissances, une revue des relations internes, une autre sur les relations externes. La littérature sur les capacités cognitives individuelles est vaste. L'accent est mis sur pleine conscience et compétences politiques. Les deux concepts sont définis et liens avec capital social et capacités dynamiques sont élaborés. Hypothèses individuelles et multiniveaux sont développées pour chaque concept. Les parties suivantes répondent empiriquement à ces hypothèses au niveau individuel.

Les hypothèses multiniveaux restent théoriques. Elles sont utiles pour recherches futures, ayant recueilli des données aussi au niveau organisationnel. La première étape concerne une étude de cas dans une municipalité avec une analyse des réseaux sociaux, évaluant les relations internes avec une collecte de données individuelle. Cette recherche exploratoire montre les liens entre capital social interne et innovation perçue. Après, une section discute les choix méthodologiques et les bonnes pratiques pour construire un questionnaire. Le débat sur les biais méthodologiques permet une évaluation des limites et des points forts de l'enquête. Le questionnaire comprend des échelles déjà validées avec traduction-rétro-translation. L'échelle d'ambidextérité est adaptée au secteur public. Il n'y a pas une échelle unique pour le réseautage externe. Les études empiriques sont analysées et les items liés aux acteurs sont évalués avec une équipe de chercheurs en gestion publique et fonctionnaires. L'enquête est administrée dans les municipalités italiennes. La collecte de données est significative: 551 employés travaillant dans 50 municipalités ont répondu au questionnaire. En particulier, 484 employés dans 46 municipalités ont rempli la partie sur les liens avec collègues. Analyses factorielles exploratoires et confirmatoires évaluent les structures des mesures et permettent d'évaluer fiabilité et validité. Les hypothèses de microfoundation du comportement innovant et de l'ambidextérité individuelle sont testées avec régression linéaire présentée de façon hiérarchique avec l'option pour contrôler les effets imbriqués au niveau des municipalités. Une deuxième méthodologie, la modélisation linéaire hiérarchique confirme les résultats.

Afin de valider ces résultats et d'analyser en profondeur les hypothèses de médiation, une troisième méthodologie basée sur les équations structurelles est réalisée. Les résultats confirment que les capacités cognitives, la pleine conscience et les compétences politiques, ainsi que le capital social, interne et externe, peuvent avoir des effets positifs sur les capacités dynamiques individuelles dans les municipalités. Les apports méthodologiques, managériaux et théoriques sont discutés.

**Mots clés:**

Innovation, ambidextérité, pleine conscience, compétence politique, capital social, communautés territoriales

**Una microfondazione comportamentale della pubbliche amministrazioni: capacità cognitive e capitale sociale impattano sulle capacità dinamiche degli dei comuni?**

**RIASSUNTO**

Pubbliche amministrazioni, gestione strategica e comportamenti organizzativi hanno trovato un punto di intersezione nella micro-fondazione comportamentale delle capacità dinamiche. La tesi parte dalla definizione di questo campo e dalle parole chiave della domanda di ricerca. Gli aspetti sono trattati attraverso la revisione della letteratura e le analisi empiriche con una visione positi-vista. L'attenzione è sulle organizzazioni pubbliche. Dopo aver evidenziato il dibattito sull'evo-luzione dei paradigmi, come il New Public Management e il Network Governance, l'indagine si limita alle amministrazioni locali. Caratterizzano queste organizzazioni la vicinanza agli stake-holder esterni e la possibilità di applicare concetti strategici, come le capacità dinamiche, che fin-nora hanno rappresentato un elemento cruciale nella letteratura del settore privato. Due capacità dinamiche sono rilevanti: innovazione e comportamento ambidestro. La tesi definisce questi co-strutti e studia i loro antecedenti. Nella microfondazione, due campi principali sono le capacità cognitive, legate alla psicologia, e il capitale sociale, connesso alla sociologia. Lo studio evidenzia le relazioni basate sulla conoscenza interne e esterne alle organizzazioni con tre elaborazioni: lo sviluppo di un modello di gestione della conoscenza, una revisione sulle relazioni interne, un'al-tra revisione sul networking esterno. La letteratura sulle capacità cognitive individuali è vasta. L'attenzione è sulla consapevolezza e sulle capacità politiche. Entrambi i costrutti sono definiti e vengono elaborati i collegamenti al capitale sociale e alle capacità dinamiche.

Per ogni costrutto sono sviluppate ipotesi individuali e multilivello. Le parti seguenti rispondono empiricamente a queste ipotesi a livello individuale. Le ipotesi multilivello sono lasciate al lato teorico. Sono utili per ricerche future, avendo raccolto dati anche a livello organizzativo. Il primo passo riguarda un caso di studio in un governo locale attraverso l'analisi di reti sociali, la valutazione delle relazioni interne attraverso una raccolta dati da rete individuale. Questa ricerca esplorativa mostra i collegamenti tra capitale sociale interno e innovazione percepita. In secondo luogo, una sezione discute le scelte metodologiche e le buone pratiche per costruire un questionario. Il dibattito sui bias di metodo comune consente una valutazione dei limiti e dei punti di forza dell'indagine. Il questionario include scale già validate con translation-back-translation. La scala di comportamento ambidestro è stata adattata per le organizzazioni pubbliche. Per il fare rete esterno, non esiste un'unica scala utilizzata in modo identico negli articoli accademici. Sono analizzati studi empirici e valutati vari item relativi a diversi stakeholder esterni con un team di studiosi di gestione pubblica e dipendenti pubblici. L'indagine è somministrata nei Comuni italiani. La raccolta dati è significativa: al questionario hanno risposto 551 dipendenti che lavorano in 50 comuni. In particolare, 484 dipendenti in 46 comuni hanno compilato la parte sui legami con i colleghi. Le analisi fattoriali esplorative e confermate valutano le strutture delle misure e consentono di valutarne l'affidabilità e la validità. Le ipotesi di microfondazione di comportamento innovativo e ambidestro individuale sono testate con regressione lineare presentata in modo gerarchico con la possibilità di controllare gli effetti annidati a livello municipale. Una seconda metodologia, la modellazione lineare gerarchica, conferma i risultati. Per validare i risultati e analizzare in profondità le ipotesi di mediazione, è usata una terza metodologia con equazioni strutturali. I risultati confermano che capacità cognitive, consapevolezza e capacità politiche, così come il capitale sociale, interno ed esterno, possono avere effetti positivi sulle capacità dinamiche individuali nei Comuni. Sono discussi i contributi metodologici, gestionali e teorici.

**Parola chiave :**

Innovazione, comportamento ambidestro, consapevolezza, capacità politiche, capitale sociale, Comuni

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*"La conoscenza che gli uomini acquistano della capacità o dell'attitudine di una scienza a soddisfare un dato bisogno eccita gli uomini stessi a coltivare il pensiero da cui essa emana; e la cultura di un pensiero, perfezionando da una parte le facoltà intellettive e dall'altra rendendo più chiari i fatti reali, aggiunge nuovi stimoli alla meditazione e accresce sempre più utilità di quel pensiero medesimo" (p. 28)*

*"Comunque costituisca, sia a comuni, sia a provincie, sia a Stati, le occorre, al pari di tutti gli altri enti economici, il soccorso di una saggia amministrazione e con ciò di una buona ragioneria, se vuol prosperare e raggiungere i suoi fini" (p. 39)*

*"Altrove è una pubblica amministrazione le cui principalissime fila mettono a capo a persone che, versatissime in molte e elevate dottrine, non sono però gran fatto innanzi nelle cose amministrative e tanto meno in quelle computistiche. Costoro per difetto di tali cognizioni passano di inganno in inganno involontariamente, e il più delle volte inscientemente, chi avea risposto in loro piena fiducia. Le loro previsioni falliscono alla prova dei fatti; mancano i fondi di cassa; sorge il bisogno di ricorrere ad espedienti onerosi, forse illegali; il disordine aumenta, finché la gravità del male non susciti crisi pericolose. Fortuna che negli ordinamenti costituzionali i correttivi non mancano; ma ciò nondimeno i danni della insipienza amministrativa in talune aziende pubbliche furono e potrebbero essere immensi, incalcolabili." (p. 41)*

*"Le buone idee e i sani principi dell'amministrazione economica costituiscono una forza che da individuale, per l'accordo degli interessi e degli intenti comuni, si fa collettiva e, per conseguenza di effetto maggiore; ond'è che al miglior uso di essa devonsi educare i giovani destinati a vivere e lottare pel bene della società e della patria" (p. 49)*

Giuseppe Cerboni (1886)

La ragioneria scientifica e le sue relazioni amministrative e sociali. Vol I. I Prolegomeni.

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# *I. First part: literature review.*

## **A. INTRODUCTION: THEORETICAL FRAMEWORK.**

### **1. RESEARCH GAPS: SOME REFERENCES.**

During the Ph.D years, a considerable effort was made to research gaps in the literature and to transfer them into theoretical and empirical thesis work. Top journals often present a section dedicated to future researches. A careful reading of them always helps to understand what the trends are in empirical and theoretical academic research, even if it is evident from a large number of researches carried out over time on google scholar that the papers are written in the recent past although published in the present. Meanwhile many international scholars are working on existing gaps and will soon publish their results. Internet researches and thesis work are never up to date effectively compared to what really is global research, which sometimes is dominated by fashion, novelty or relevant and conceptually and methodologically evolving strands that have not been studied as widely as microfoundation. Despite the limit that is inevitable to be always a small step backward, the research of the doctorate has tried to give something more and different from the existing contemporary literature. A complex challenge was to decide which microfoundation variables to analyse and which to leave to future research. Especially in the construction of the questionnaire dedicated to civil servants in Italian local governments, the space was limited. Here below the table collects some ideas that have emerged in recent papers and that concern gaps that are present in the current state of scientific knowledge. This table cannot be exhaustive, but the authors and journals cited have a high level of reference and scientific influence, therefore, they can be considered a guarantee that the work done is in step with the times.

The next table is organized as follows:

- The first column is the full quote about the research gap. The citations are in temporal order from articles that are published in 2014 to 2019. Moreover, an older article published in 2009 is added for its relevance and the gap in the application in the field of public administration. Factors that are mentioned and relevant in this thesis are in bold.
- The second column briefly refers to research hypotheses on which there is a gap and which will be developed during the thesis.
- The third column reports the author(s) referred to text in the quoted and the reference page of the citation.

- The last column shows the name of the journal mentioned and in brackets the rating value (from 1 to 4\*) that was given to the journal in Academic Journal Guide 2018, which is strictly related to academic reviews concerning the various multidisciplinary fields related to business and management.

Table 1: some references about research gaps in literature in top journals.

Citations	Hypotheses	Author(s)	Journals (AJG 2018)
"Future research could explore and compare, for instance, the impact on managers' <b>ambidexterity</b> of formal <b>inter-organizational personal relationships</b> , like task forces with suppliers or clients, and more informal direct contacts with these external constituencies."	External networking (local governments) -> Ambidexterity	Mom et al. (2009, p. 825)	Organization science (4*)
"Scholars could examine whether or how workplace <b>mindfulness</b> relates to other work outcomes of interest to organizations and their members."	Mindfulness -> Other variables at work	Dane & Brummel (2014, p. 121)	Human relations (4)
"not enough research attention has been given to exploring how <b>political skill</b> is related to employees' work attitudes and behaviors. To shed more light on this relationship, future research should explore the association between <b>political skill</b> and work attitudes/behaviors."	Political skill -> Other variables at work	Meisler (2014, p. 289)	Employee relations (2)
"Future research might also explore <b>political skill</b> as a mediator in the relationship between other determinants of career success and their consequences."	Mindfulness -> Political skill -> Individual and Organizational Outcomes		
"Although this work environment (i.e. palliative care organizations) might be particularly effective for studying the <b>knowledge-innovation link</b> , future research could be extended to other services environments."	Knowledge networks -> Innovative work behaviour (local governments)	Radaelli et al. (2014, p. 410)	Creativity and innovation management (2)
"We expect that <b>networks</b> are important to <b>ambidexterity</b> for members of organizations at all levels."	Social capital->Ambidexterity (knowledge workers in local governments)	Rogan and Mors (2014, p. 1873)	Organization science (4*)
"more research is needed to explore the impact of <b>mindfulness</b> on a wide range of workplace outcomes, including creativity, <b>innovation</b> , <b>teamwork</b> , learning, reactions to change, turnover, and performance."	Mindfulness -> Other variables at work	Hyland et al. (2015, p. 593)	Industrial and Organizational Psychology (1)
"Recently, <b>mindfulness</b> has become popular in the management practice, but systematic research is missing"	Mindfulness -> Other variables at work	Eisenbeiss & van Knippenberg (2015, p. 185)	Journal of Organizational Behaviour (4)
"A straightforward extension of our study would be to expand consideration to the interpersonal ties that employees	Cognitive capabilities -> External networking -> Innovation	Carnabuci & Diószegi (2015, p. 897)	Academy of management journal (4*)

create across organizations... While many studies exist that examine the role of gatekeepers from a social network perspective, the theory developed in this paper suggests that it may be important to consider their cognitive styles, too."			
"One is the actual improvement in performance gained from leveraging <b>social capital</b> , another is the positive bias derived from impression management... Future research should engage in dimensional analysis and include appropriate mediating variables and <b>subjective/objective performance</b> measures to reveal the influence mechanism of <b>political skill</b> ."	Political skill -> Social Capital -> Individual and Organizational Outcomes	Kimura (2015, p. 323)	International Journal of Management Reviews (3)
"We speculate that <b>attention</b> control regions will be used to identify promising new options and that <b>emotion</b> might play a larger role... There are other individual-level factors that might affect <b>ambidexterity</b> . For example, personality traits might shape individual abilities and preferences... The gap between individual behavior and organizational ambidexterity also needs further investigation." (p. 334)  "More analysis is needed of how multiple cognitive systems interact to govern behavior." (p. 335)	Cognitive capabilities -> Individual and organizational ambidexterity	Laureiro-Martínez et al. (2015, pp. 334–335)	Strategic Management Journal (4*)
"... We need to know much more about the ways in which <b>networks</b> and <b>networking behavior</b> can shape performance and affect the most salient values in our governance systems... Can we embed our examinations of networks and networking in public administration within <b>multilevel models</b> , thus developing more realistic depictions of the complex realities within which public managers frequently operate?"	External networking -> Individual and Organizational Outcomes	O'Toole, 2015, p. 368	Public Administration Review (4*)
"Our findings in this paper suggest that vacillation might also be triggered through a more emergent bottomup process, where <b>frontline managers and employees</b> take the initiative to shift the exploitation–exploration balance over time ... A related avenue for future research could be to explore the influence of senior and frontline managers' <b>networks</b> and their horizontal and vertical knowledge inflows on their ability to initiate these transitions." (p. 1136)	Social capital -> Individual ambidexterity (knowledge workers in local governments)	Zimmermann et al. (2015, pp. 1136–1137)	Organization science (4*)

<p>"We hope that our study will encourage others to develop these ideas further and to give further attention to the dynamic interactions across multiple hierarchical levels and mechanisms in developing an <b>ambidextrous</b> orientation." (p. 1137)</p>			
<p>"... There are likely other individual and contextual antecedents, moderators, and mediators that could account for important variance in <b>innovation</b>."</p>	Individual and organizational antecedents -> Innovation	Wallace et al. (2016, p. 999)	Journal of Management (4*)
<p>"... Mindfulness training is popular in the business world as a component of leadership training. Anecdotally, participants in such training report benefits like <b>enhanced listening ability, ability to think strategically</b>, and increased <b>innovation</b>. Yet these anecdotes are not yet supported by empirical research" (p. 129).          "For the time being, <b>mindfulness</b> stands as a construct with both great possibilities and challenges worth investigating in further research" (p. 135).</p>	Mindfulness -> Other variables at work	Good et al. (2016, pp. 127, 129 and 135)	Journal of Management (4*)
<p>"It would be especially interesting to investigate the relation between weak-tie networking and organizational <b>innovation</b> more directly."          "In particular, it would be interesting to see studies of how the performance outcomes of networking may differ across different types. On the basis of the typology, we would expect strong-tie networking to <b>enhance efficiency</b> and weak-tie networking to <b>promote innovation</b>."</p>	External networking -> Individual and Organizational Outcomes	Hansen & Villadsen, 2017, pp. 1573–1574	Public Management Review (3)
<p>"Future researchers should examine other contextual and situational variables that may affect the relationship of <b>political skill</b> and its related outcomes."</p>	Political skill -> Social Capital -> Individual and Organizational Outcomes	Ferris et al. (2017, p. 8)	Journal of Leadership & Organizational Studies <sup>1</sup>
<p>"Future research should identify further individual and organizational antecedents of individual ambidexterity, particularly by focusing on the specific characteristics of public-sector employees and organizations."</p>	Individual and organizational antecedents -> Individual ambidexterity	Kobarg et al. (2017, p. 250)	International Public Management Journal (2)
<p>"The need to understand <b>innovation</b> in public sector environments is growing. There is also a need to build theory, test it empirically and compare across jurisdictions."</p>	Innovation in local governments	Lewis et al. (2018, p. 288)	International review of administrative sciences (3)

<sup>1</sup> This journal is not ranked in ABJ, but in Scimago is in Q1 for the field of business and international management with H index 32. Moreover, Ferris is a top scholar in the research about Political skill. The impact factor is 1597 (2018) for the Journal Citation Reports (Web of Science Group).

<p>“... future research may also want to delve deeper into the results found in this study more generally: exactly how does <b>mindfulness</b> contribute to better <b>relationships</b> at work?”</p> <p>“It may for instance be very interesting to study whether mindfulness ... is able to have effects on <b>other levels of the organization.</b>”</p>	<p>Mindfulness -&gt; Social Capital</p> <p>Mindfulness -&gt; Organizational Outcomes</p>	<p>Decuypere et al. (2018b, p. 18)</p>	<p>Frontiers in Psychology<sup>2</sup></p>
<p>“This limitation echoes a research gap in the literature concerning <b>what factors and managerial qualities might be helpful</b> to mitigate potential negative effects (e.g. the risk of conflict and difficulties to build trust and commitment) and to exploit the potential benefits (e.g., diversity in knowledge, expertise, and resources) associated with increasingly complex collaboration networks.”</p>	<p>Cognitive capabilities -&gt; External networking -&gt; Individual and Organizational Outcomes</p>	<p>Nohrstedt, 2018, p. 14</p>	<p>The American Review of Public Administration (3)</p>
<p>“It might also be useful to examine whether the <b>importance of individuals</b> in the development of <b>organizational ambidexterity</b> may <b>differ across industries</b>... future studies may investigate the mediating role of other <b>cognitive</b> and motivational factors... whereas our research focused on operational manager ambidexterity, there is an emerging literature investigating how <b>middle managers</b> may deal with tensions between exploration and exploitation.”</p>	<p>Cognitive capabilities -&gt; Individual and Organizational ambidexterity (public administration)</p>	<p>Mom et al. (2019, p. 3029)</p>	<p>Journal of Management (4*)</p>
<p>“Finally, much of <b>the variation in external networking is unexplained</b>, indicating that future studies should include other variables to increase our understanding of managerial networking. Therefore, upcoming research may focus on normative, <b>behavioural factors</b> affecting the manner and extent to which individual personnel participate in networking activities.”</p>	<p>Cognitive capabilities -&gt; External networking</p>	<p>Zyzak &amp; Jacobsen, 2019, p. 17</p>	<p>Public Management Review (3)</p>
<p>“Thus, if <b>mindfulness</b> helps people respond to situations with more flexibility, then this flexibility can be amplified through <b>social interrelating</b> to beneficially transform the organization...”</p>	<p>Mindfulness -&gt; Social Capital -&gt; Individual and Organizational outcomes</p>	<p>Kudesia (2019, p. 406)</p>	<p>Academy of management review (4*)</p>
<p>“Additionally, to date, scant research has investigated how the <b>antecedents of individual ambidexterity</b> might be interrelated, which opens up opportunities for future research.”</p>	<p>Antecedents and interactions -&gt; Individual ambidexterity</p>	<p>Mu et al. (2020, p. 25)</p>	<p>Journal of Small Business Management (3)</p>

<sup>2</sup> This journal is not included in ABJ2018. It is a very recent review and in Scimago in Q1 for the field of psychology. The impact factor is 2129 (2018) for the Journal Citation Reports (Web of Science Group).

## 2. RESEARCH QUESTION: WHY IS THIS INTERESTING?

**“A behavioral microfoundation of public administration: do cognitive capabilities and social capital impact on dynamic capabilities in local governments?”**

In this Chapter, the research question for this doctoral thesis is defined in detail starting from a brief theoretical background of each concept.

- 1) The research question
- 2) The theoretical background around each concept within the research question

### RESEARCH QUESTION (English, French and Italian version)

“Behavioral public administration: do cognitive capabilities and social capital impact on microfoundation of dynamic capabilities in local governments?”

“Une microfondation comportementale de l'administration publique: les capacités cognitives et le capital social ont-ils un impact sur les capacités dynamiques au sein des collectivités territoriales?”

“Una microfondazione comportamentale delle pubbliche amministrazioni: capacità cognitive e capitale sociale impattano sulle capacità dinamiche nei comuni?”

The first task is contextualizing each theoretical concept of this research question in a theoretical framework to delineate the interest about them, possible logical overlaps and, thus, clarify an overall internal coherence. Concepts and dimensions are introduced here, to create a *fil-rouge* between different Sections and Chapters of the Thesis that will be organized with the mood of a monographic manuscript. A specific part of this general introduction is dedicated to the term “impact” to explain the epistemological choice at the basis of the approach to the problematic of the thesis. In each section of the work, the attempt is to maintain a positivist and deductive approach. In particular, the approach is bibliometric in the sense that the almost all of the articles considered are published in journal that are ranked in Academic Journal Guide 2018 especially in the parts of the thesis which are written most recently.

This use of bibliometrics is a limit for the possible normative character of publications and because articles could be opportunistic answers to editorial policies. If they cannot be consider a proof of quality of articles, after three or four years of reading, even a young researcher as a Ph.D. student can arrive to understand differences.



**a) "Behavioral microfoundation of Public Administration" – An emphasis on the study of public sector from the perspective of individual behaviors and attitudes.**

"Behavioral public administration is the analysis of public administration from the micro-level perspective of individual behavior and attitudes" (Grimmelikhuijsen et al., 2017, p. 45) and "using psychological insights can be beneficial to our understanding of various important phenomena in public administration research and practice" (Grimmelikhuijsen et al., 2017, p. 45). Considering that studies in public administration are multidisciplinary in nature (Raadschelders, 2011) and that behavioral public administration is also interdisciplinary from the perspective of individuals (Grimmelikhuijsen et al., 2017, p. 45), deeper research connections between management theories and behaviors, attitudes and relationships of public personnel is essential to investigate and understand better logics in public sector. Grimmelikhuijsen et al. (2017, p. 46) have identified three main components of the definition of behavioral public administration:

- 1) Unit of analysis: "individuals and groups of citizens, employees and managers within the public sector";
- 2) "it emphasizes behaviors and attitudes of these people";
- (3) "it does so by integrating insights from psychology and the behavioral sciences into the study of public administration".

This framework was born in the ideas of first authors that studied public administration, as Simon (1947), Dahl (1947), Waldo (1948) and Crozier (1964). Different precursor authors with distinctive perspectives agree that it is important to understand human behavior in public administration (Grimmelikhuijsen et al., 2017). In Nineteenth century, Italian "precursors" of studies in business administration - "economia aziendale", Villa, Cerboni and Besta, had already started writing about public administration and so primordial management of public organizations, but only in Twentieth century important first scholars introduced the debates about public administration in the context of bureaucracy. Waldo and Simon are precursor of the idea that public administration studies are multidisciplinary and that the research about public organizations can't be disconnected from a deep knowledge exchange with practitioners. As analysed by Raadschelders's review (2011), Waldo (1948, pp. 10–11) wrote that public administration is "science and art, theory and practice, and study and application" and with many types of theory. A need for "continuous engagement between practice and research" (Raadschelders, 2011, p. 921), it's confirmed by Simon (albeit with his clearly positivist vision): the training of public administrators can't limit itself "in the narrow field of administrative theory" (Simon, 1947, p. 247), because a knowledge "in the broader field of social sciences" is necessary (Simon, 1947, p. 247). Although at the beginning the precursors have called for a link between psychology and public administration, paying attention

to administrative behavior of bureaucrats with cognition and awareness, only recently scholars have heard these calls been scholars and, nowadays, this approach is a growing research niche in specialized journals of public administration (Grimmelikhuijsen et al., 2017; Tummers et al., 2016)<sup>3</sup>. Vogel (2014) suggests that public administration and organization studies should be more interconnected as disciplines, collocating the focus of public organizations together within the second one. There are already strong ties in addition to understandable separation: public administration could have more results, following methodological and empirical rigor of organizational science almost in a networked society, because until nowadays public administration has focused on case studies and best practices more than statistics and positivist research (R. Vogel, 2014). Osborne (2006, p. 384) explains the need for an integration between the micro and the macro level for a meta-elaboration of the Network Governance<sup>4</sup> paradigm in public administration and management. Even neighbouring disciplines such as political psychology and economic psychology have already implemented a sub-field of micro interest founded psychologically, so much so that Kahneman (2002) and Thaler (2017) took the Nobel Prize on economics based on studies related to behavioral theories of individuals. For Raadschelders too, future public administration studies should be interdisciplinary taking from different sources of knowledge, because this is the nature of this field (Raadschelders, 2011). The main important assumption is that on the one hand, strategic management is micro-founded in attitudes and behaviors of public managers, street-level bureaucrats and elected leaders and on the other their behaviors and relations at the micro-level can influence different individual and organizational outcomes in public organizations. Paying attention to the micro-level means focusing the analysis on intra-individual and inter-individual intra-psychological processes. Focusing on social relationships, thus, in addition to the subjects listed by Raadschelders (2011), this classification could include also the themes of public leadership and complementary relations between elected officials and public servants. As regards the jurisdiction of local governments and the production of local public services, in fact, it's necessary to consider the role of elected politicians, such as mayor and councilors, in relations with non-elected public managers (like the city manager in the case of the American spoil system) (Chapman et al., 2016). Theories of organizational behavior, psychology and behavioural sciences are applied to the study of public administration and management. This

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<sup>3</sup> Grimmelikhuijsen et al. (2017, p. 52) confirm the interest and the possibilities of research in this field: "Areas of investigation that currently consider insights from psychology to a much lesser extent are, for instance, e-government, network governance, street-level bureaucracy, the relationship between elected officials and public administrators, and accountability".

<sup>4</sup> Osborne (2006, 2010) uses the terms "New Public Governance", but in this thesis the same concept is Network Governance, as explained in the part concerning this issue.

remains in field of social sciences, in which deepen the topic of microfoundation consists on identifying individual-level drivers which lead to collected social results (Stoker & Moseley, 2010).

Microfoundation is not only psychology, human capital or micro-organizational behaviour: it is a behavioural strategy and a domain of multilevel human capital research (Barney & Felin, 2013). Microfoundation has links with the disciplines of psychology and organizational behaviour and, at the same time, it is characterized by specific research questions and theoretical mechanism (Felin et al., 2015). Microfoundation tries to explain heterogeneity between organizations by examining individuals and their interrelationships (Ployhart & Hale, 2014). There is clearly a connection with the concept of microfoundation in the theories of organization. For Tasselli et al. (2015, p. 1361) "... individual attitudes, behaviours, and outcomes cannot be fully understood without considering the structuring of organizational contexts in which people are embedded, and that social network structuring and change in organizations cannot be fully understood without considering the psychology of purposive individuals". In fact, in current academic debate, the perspective of the microfoundation of dynamic capabilities, that is the role of individuals and their cognitive capabilities, social processes and structure, has increasingly taken importance (e.g. Barney & Felin, 2013; Felin et al., 2012; Foss, 2011; Helfat & Martin, 2015; Helfat & Peteraf, 2015). Although there is a lack of terminological uniformity to indicate a level of analysis (micro, meso, melio, macro, etc.) (Kozlowski & Klein, 2000), the term micro is used here to indicate individuals and meso to indicate the organizational level. Therefore, all that is intermediate (e.g. groups in the organization) and "macro" outside the organization (e.g. society), for simplicity of display, is not considered empirically. In conclusion, in short, behavioural public administration studies the behavioural microfoundations of public administration through theories developed in psychology and the behavioural sciences more broadly. In this thesis, the theoretical framework is multilevel and the empirical analyses are at the micro level. Adner & Helfat (2003) introduced the concept of dynamic managerial capabilities. This approach tries to answer to this key question: "how do individual level factors (such as traits, abilities or motivation) aggregate and interact with social mechanisms to create firm-level capabilities?" (Felin et al., 2012, p. 176). The microfoundation approach focuses on explaining "collective" meso organizational phenomena, such as organizational skills, routines, strategic change, performance, with a lens centered on lower level entities, such as individuals (knowledge workers, managers), teams, (social) processes and their interactions, returning in the paradigm of the methodological individualism of the social sciences (Felin et al., 2012, p. 2). This approach incorporates the "Behavioural theory of the firm", which was created to provide grounded explanations on the differences between organizations (Cyert & March, 1963; March & Simon, 1958; Simon, 1985). To deepen the studies of microfoudation, therefore, means to have at the same time bottom-up and a top-down level, i.e. how individuals

influence the company and how the company influences individuals, and this multilevel process must be considered simultaneously (Aguinis et al., 2011). Multilevel models allow to study the relationships that exist within levels and between levels, their relative effects, and to explain the different organizational results (Aguinis & Molina-Azorín, 2015). The objective set by this research, therefore, is to study some psychological-socio-cognitive, behavioural and relational aspects related to individuals gravitating in local governments (knowledge workers and managers) to understand how they influence strategic individual and organizational variables. In recent literature of public administration, there are some examples of empirical and theoretical papers that concern microfoundation effects of performances and so they can be included in this paradigm. For instance, employee attitudes of innovativeness (Fernandez & Moldogaziev, 2013), the effect of managerial background (Petrovsky et al., 2015), individual risk aversion (Nicholson-Crotty et al., 2017), the engagement in rent seeking of managerial bureaucrats testing public choice theory and the hypothetical behavioural microfoundation role of "burdens" (Veronesi et al., 2019) are evaluated as dimensions with relations to performance. Service satisfaction for citizens as outcome in public sector is another strand of study. For example, Dahlström et al. (2018) tested the moderation effect of bureaucratic personnel quality (measured with education and pay) in situations of service outsourcing. A large field of research is about public service motivation (For a review: Ritz et al., 2016). This variable has a statistically positive impact on both performance (Qi & Wang, 2018) and service quality (Levitats & Vigoda-Gadot, 2017). In conclusion, research in behavioural public administration can increase value also for practitioners (Grimmelikhuijsen et al., 2017), but it is necessary to consider some **limitations**. In particular, the limit of this perspective is that even though data from a micro level are important, they can't be easily generalised to macro trends and to other level of public administration (Raadschelders, 2011). According to Raadschelders (2011), in fact, taking data only at the micro level can lead to methodological errors and issues in scientific justifications. If the attempt is to describe the meso level without having data on this, in this case the risk is to fall into the "fallacy of the wrong level" (Raadschelders, 2011). An answer to this criticism of microfoundation moves through a setting whereby the individual provides answers on micro-individual data and perceptions on the meso-organizational level. Secondly, it is also necessary to remember that public administration is not a unique. Multiple public organizations and public agencies with different power, nature, autonomy, jurisdiction, level of possibility to be considered and managed or less as "aziende" – companies – business administrations, and so on constitute in theory and practice public administration (Anselmi, 2014). In the same way, different public servants work in these different public organizations, so that it is not a fair research if behavioural data from workers in local governments with a convenience sample in democratic countries are used to generalize behaviors of public workers and

managers in the whole world, taking into account that there are unmatched situations and contexts. Another limit of microfoundation in public sector, until now, it concerns the difficulties to measures dimensions of quality as individual antecedents of outcomes. As it will emerge in the literature review of external networking, generally the starting point is a spurious proxy dimension of quality management and the outcomes are performances. An open debate is about the role of exogenous-contingent effect on individuals. The macro effects with micro outcomes. This line of study analyses, vice versa, how organizational dimensions affect individuals. To understand if it is the individual who influences the processes or the organization that conditions the individual, however, difficult longitudinal causality studies would be necessary. Most of research in this field has been done in the private sector and in innovative and hyper competitive sectors, while in public management the interest in behavioural microfoundation of strategic-organizational variables is only more recent, thanks to the evolution from classic bureaucratic model to novel perspectives also in the public. Conducting "behaviorally informed public administration research" (Grimmelikhuijsen et al., 2017, p. 51) means to deal with a wider methodological toolbox, that can improve exploration (qualitative interviews) and explication (social network analysis and psychometrics) processes of research in public administration and management. In this thesis, the approach is quantitative with a survey administered to public servants in municipalities, although a quantitative case analysis is reported to support the study of relational approach to innovation, as an individual dynamic capability within a local government. Even if behavioural public administration has strengths and limits, it is a contemporary way to investigate public organizations and public servants with the same emphasis and multidisciplinary openness of authors in early 1900.

Table 2: definitions of resources by Barney (1991, p. 101).

HUMAN CAPITAL RESOURCES	"include training, experience, judgement, intelligence, relationships, and insights of individual managers and workers in a firm"
ORGANIZATIONAL CAPITAL RESOURCES	"include firm's formal reporting structure, its formal and informal planning, controlling and coordinating systems, as well as informal relations among groups within a firm and between a firm and those in its environment"
PHYSICAL CAPITAL RESOURCES	"include the physical technology uses in the firm, a firm's plant and equipment, it's geographic location, and its access to raw materials"

**b) “Cognitive capabilities” - An Academic debate from the definition of human capital resources to personal insights.**

Human capital is an individual stock of knowledge, skills, abilities and others characteristics (KSAOs), as experiences, cognition, abilities that “can be leveraged for organizational and/or personal benefit.” (Ployhart & Moliterno, 2011, p. 127). The tradition of human capital research has a long duration (Ployhart & Moliterno, 2011). Adam Smith was the first to talk about it, writing that “the acquired and useful abilities” of individuals are a source of “revenue or profit” (A. Smith, 1963, pp. 263–264). In Classical definition, Human capital resources (G. S. Becker, 1964) “include the training, experience, judgement, intelligence, relationships, and insights of individual managers and workers in a firm” (Barney, 1991, p. 101). Physical capital resources and organizational capital resources (Barney, 1991) with human capital ones (Table 2) are the basis of Resource-Based-View paradigm (Wernerfelt, 1984), that see those resources as heterogeneously distributed among firms at present and over time (Barney, 1991; Piening, 2013). This is a “mesolevel” perspective, in which employee and manager’s education, experience and skills are aggregated at organizational level as firm-level phenomena (Ployhart & Moliterno, 2011). Resource-based theories come from researches in private sector, but they are more and more adapted in public administration to improve the understandings of heterogeneity in management and performance of public organizations (Bryson et al., 2007; Piening, 2013; R. M. Walker & Andrews, 2015). **About this meso-level perspective** in public administration, it is noteworthy that “resource-based theories for the management of local governments have not yet been fully explored in the public administration literature” and “a resource-based perspective may offer a better approach to understanding performance in local governments than economic or contingency theories” (R. M. Walker & Andrews, 2015, p. 124). Indeed, theoretically, the choice of interesting resources to be analyzed is infinitive, so that, for the purpose of this thesis, it is necessary to make some choices, evaluating which are the trends in literature and which personnel resources could be more useful to close some gaps in literature. A relevant aspect is not to underestimate the theoretical interconnections between a meso and a micro analysis perspective, in which a concept to consider is that the most salient resources should be (Barney, 1991; Wernerfelt, 1984).

These micro-founded intangible resources and capabilities that can be considered are theoretically simultaneously VRIN: valuable (by surveys that can evaluate and measure attitudes of organizational behaviours and structural processes of social capital), rare, imperfectly imitable, non-substitutable (Barney, 1991; Wernerfelt, 1984). Following this perspective, Barney (1991) suggests that these resources are socially complex and hence the need to study them in a working context in which the individual is inserted, that is, the individual capacity as a resource becomes the collective heritage for the organization. Moreover, since we are looking at human capital as a



whole, it is necessary to clarify the structural dimensions that make up this concept, as there are different points of view in literature. First, to avoid some terminological confusion, the relational aspect (Barney, 1991; G. S. Becker, 1964) shall be separated and becomes the central element of social capital and, as defined below, a specific part of individual "insights" constitutes cognitive capabilities. In fact, after Becker's vision (1964), however, the concept has recently expanded further, including cognitive skills (Ployhart & Moliterno, 2011).

This modern definition is more coherent with "**microlevel**" **perspective**, whose scholars are concentrated on the dimensions of human resources, organizational behavior and organizational psychology and individual outcomes (Ployhart & Moliterno, 2011). For Helfat & Martin (2015), it is necessary to split the concept in his heart: "classical" definition based on knowledge, education and prior experience and cognitive managerial resources. For Ployhart & Moliterno (2011), instead, it is better to amplify the concept of human capital to include cognitive abilities and intelligence ("KSAOs", that means knowledge, skills, [cognitive] ability, and other abilities). Here an intermediate way is adopted: the concept of human capital expressed in the research question includes the definition and the classical dimension and so remains specified for the rest of the thesis, as already implemented in many empirical researches, in which the "classical" dimensions of human capital often have a role of control in the model, as demographic dimensions. For instance, studying for the first time individual ambidexterity at managerial level, Mom et al. (2009, pp. 820–821) used dimensions of "classical" human capital as control variables in the model: age, experience, tenure in current function, education, hierarchical level<sup>5</sup>. Similar dimensions (age, educational level, years before partner, tenure) are used by Rogan and Mors (2014, p. 1867) At the same time, the "insights" (Barney, 1991) and the cognitive dimension (and of socio-cognitive and attentive capabilities) (Ployhart & Moliterno, 2011) will be analyzed and defined separately, in terms of political skills and mindfulness. The latter is intended as an attentional cognitive capability and the former as a social cognitive capability.

At the level of definition, it is necessary to distinguish a more psychological vision that includes in the "cognitive abilities" also the intelligence from a strategic management point of view. In the second one, "cognitive capabilities" include only the mental processes: perception, attention, problem-solving, reasoning, language, communication and social cognition (Helfat & Martin, 2015). Helfat and Peteraf define (managerial) cognitive capabilities as "the capacity of an individual (manager) to perform one or more of the mental activities that comprise cognition" (Helfat & Peteraf, 2015, p. 835). In particular, social cognition concern "the mental processes involved in perceiving, attending to, remembering, thinking about, and making sense of the people in our

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<sup>5</sup> Mom et al. (2009, p. 825) find that age, tenure in the firm, tenure in the current function significantly relate to individual ambidexterity.

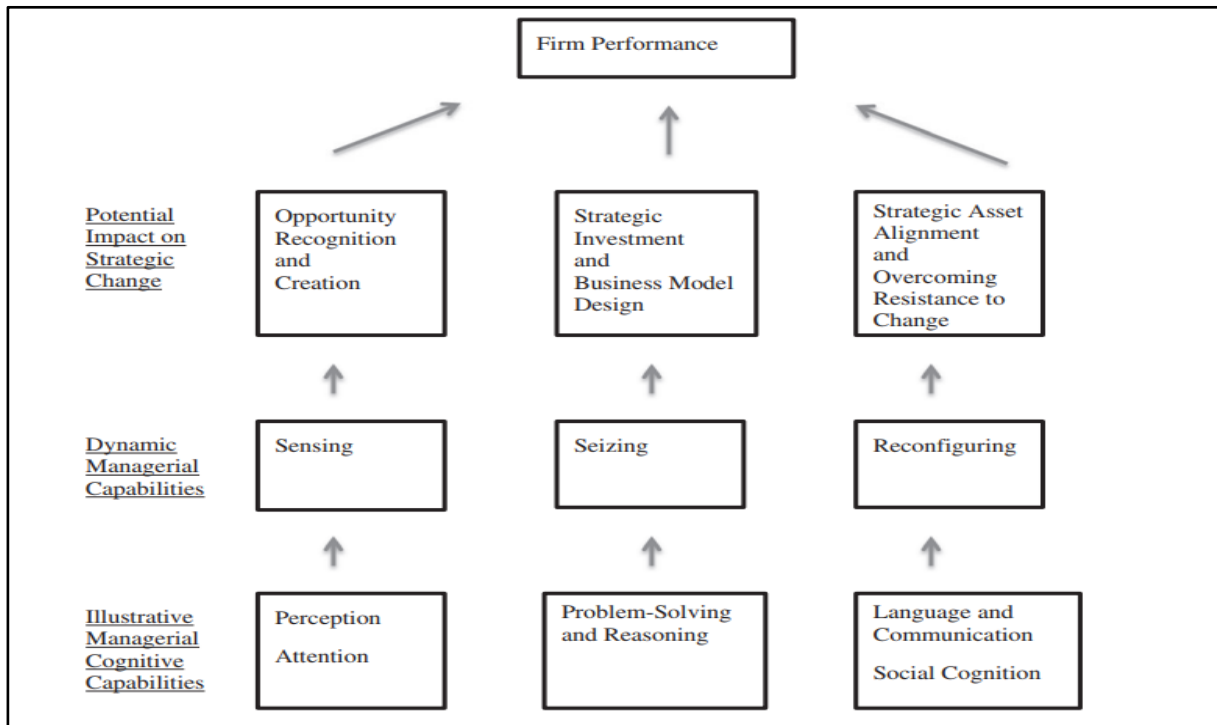
social world” (Moskowitz, 2005, p. 3). Social cognitive capabilities are brain-based activities, as, among other things, detecting the presence of other people, focusing attention on them, remembering them, making inferences about their attitudes and behaviors and understanding the point of view of others (Helfat & Peteraf, 2015; Moskowitz, 2005). These are, therefore, the individual capabilities to perceive and understand other people in social situations through personalized lenses. In a sense, individuals have a psychological “commerce”, an exchange, with the surrounding environment, where resources that meet the needs can be found (e.g. information, advice, help), as food for those who are hungry (Moskovitz (2005, p. 5) takes up the example concerning the system balance of Asch (1952)). In essence, heterogeneity in social cognitive capabilities can be a personal advantage and a microfounded advantage for the organization. On the basis of different experiments, for example, Shiffrin and Schneider (1977) distinguish between two models of attention process: automatic and controlled. Automatic process has four features Moskowitz (2005, p. 68): “(1) unintended (it is initiated without conscious intent); (2) impossible to control (the decision not to engage in the process does not stop the process from occurring); (3) extremely efficient (it occurs despite our working on other activities at the same time); and (4) able to proceed without our awareness”. Autonomous process “is capable of running to completion without the intervention of conscious monitoring” (Moskowitz, 2005, p. 85). For Moskowitz (2005, p. 66), instead, the controlled process is an “exercise of our volition for the purpose of understanding a person” and “We have the goal of forming an impression, and we regulate our thoughts and behavior to allow us to pursue that end”. In the first case, the active control of individuals is lacking and the process derives from long-term learning, as for an expert car driver who drives without thinking and in the journey between two places there is no memory of the road made or what in the second case, as for the maneuvers of a new driver, there was a strong demand for attentional capacity and a connection with the load of activity (Moskowitz, 2005; Schneider & Shiffrin, 1977). The automated process may have adaptive benefits because individuals process information with less effort although cognitive ability is limited (Bargh & Chartrand, 1999) and previous habits and conditions are conditioning (Good et al., 2016). In literature, there is also a dispute over the effects of automatic and controlled processes in decision-making, in particular, some authors focus on decision bias (e.g. see: Kahneman (2011)), for others, however, the use of heuristics is advantageous in terms of efficiency and brings accurate results in a situation of uncertainty and complexity (e.g. see: Gigerenzer (2008)). There are individual differences with respect to the use of automatic versus controlled processing, and such differences in mental processing depend on previous experience in a given domain of knowledge, but also on how effectively they rely on the automated or controlled process (Helfat & Peteraf, 2015).

The focus is on the many mental activities that are performed by the brain and that can be improved with practice and training, becoming a resource for the path dependence of renewal and reconfiguration of resources and routines both at the individual outcome level (e.g. behavior innovative and individual performance) and at an organizational level (e.g. adopt of innovations) (Helfat & Peteraf, 2015). In conclusion, in Table 3, it is possible to recognize the constituent elements of classical human capital with respect to cognition and social capital (examined later), as they are expressed in the literature. The slide in the Figure 2 picks up the definitions through a conceptual map at the end of this part.

Table 3: human capital, social capital and individual cognition. Re-elaboration for the thesis from: Adler & Kwon (2000), Adner & Helfat (2003), Helfat & Martin (2015), Helfat & Peteraf (2015).

HUMAN CAPITAL	SOCIAL CAPITAL	COGNITION
Skills	Social ties (e.g., friendships, social club Memberships, colleagues)	Beliefs and value systems
Education	Extensiveness of the information network (Internal ties and Exter- nal ties)	Mental models (knowledge structures)
Training	Relationships with community leaders and principal stakehold- ers, managers in private firms and in other public organizations	Cognitive resources
Knowledge (management behav- iors)	Network position and character- istics	Mental processes
Age	Strength of ties	Cognitive capabilities (at- tention, social skills)
Tenure		Emotion regulation
Work Experience (industry, posi- tion, functional area, manage- ment/entrepreneurial)		
Background		

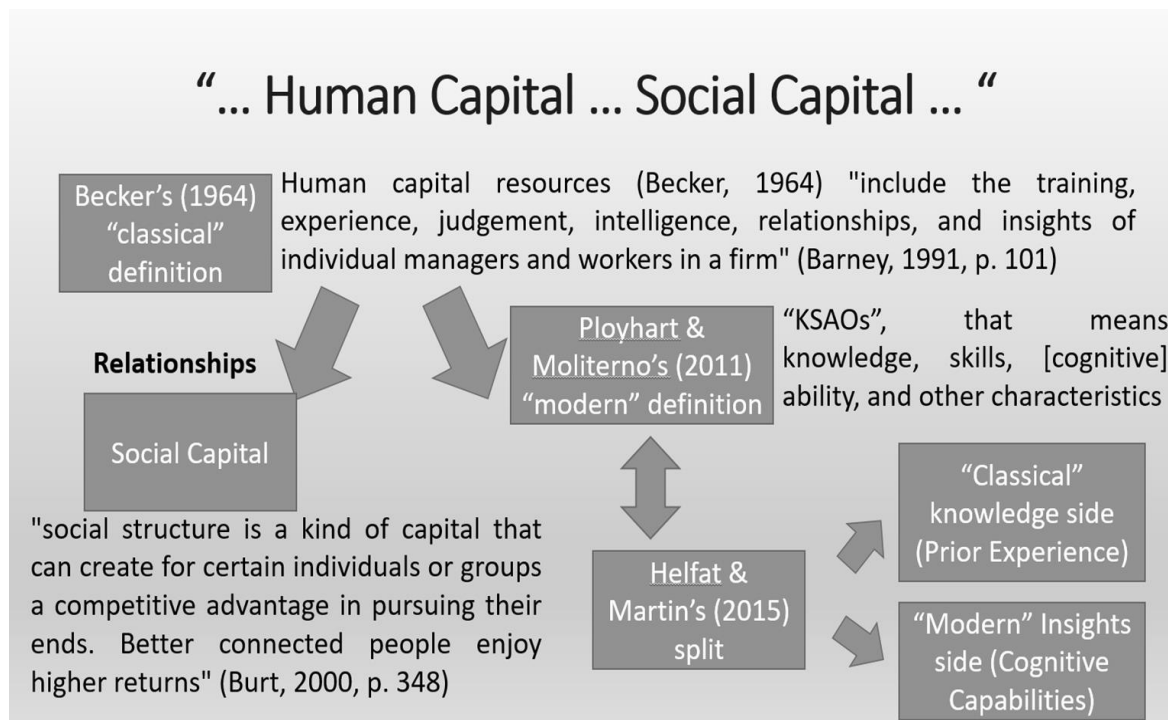
Figure 1: model of microfoundation from the article of Helfat and Peteraf (2015, p. 837).



The term cognitive capabilities in the research question of this thesis, therefore, is inclusive only of characteristics within “insight” side of “human capital”. In the continuation of this work, the term human capital will be to indicate the “classical” knowledge side separately. It is used only as a control variable and not as a direct parameter for assessing organisational behaviour. In this thesis, knowledge is seen more as a means of interpersonal connection, therefore a link between cognitive capabilities and dynamic capabilities. In Figure 1 taken from Helfat and Peteraf (2015) in *Journal of Management*, it is possible to observe *si nota* as already from the theoretical point of view cognitive capabilities are the basic element of microfoundation. Moreover, it is assumed that these capabilities are not static, but can be strengthened through training and practice, therefore, the link with the classical human capital remains evident (Helfat & Martin, 2015). Reassessing, about the cognitive side of human capital, building a “tri-factorial” model, Helfat & Martin (2015, p. 1286) include three elements in managerial cognition: models and beliefs (“knowledge structures”), mental process and managerial cognitive capabilities (Helfat & Peteraf, 2015), emotions and emotional regulation (Hodgkinson & Healey, 2011). The three elements concerning managerial cognition have an effect on strategic change and corporate long-term performances (Helfat & Martin, 2015). In fact, even if there are a lot of sophisticated studies within microlevel and mesolevel fields, multilevel researches about the effects of cognitive capabilities “across” different organizational level is limited (Ployhart & Moliterno, 2011). Considering the focus on dynamic capabilities as organizational outcome, the theoretical idea is that “individuals matter and ... it is

inappropriate to investigate firm adaptation and innovation without the consideration of its intellectual human capital" (Rothaermel & Hess, 2007, p. 916). In the "insight" cognitive side, in this research the focus is on cognitive managerial capabilities, as perception, attention, problem-solving and reasoning, language and communication, social cognition (Helfat & Peteraf, 2015). Indeed, in literature, empirical studies take in consideration principally cognitive capabilities, social capital and "classical" human capital as "positive" human factors in organizations: behavioural ones (e.g. motivation, psychological capital), relational ones within organizations (structural social capital, knowledge sharing and manipulating, level of independence and job autonomy), knowledge side of human capital as measure of diversity (i.e., tenure, gender and experience that are dimension of control), "real" (perceived alters' competence, that are peer reviewed, in comparison with skills that can be found in a curricula). The "positive" side is functional to understand relative individual outcomes useful for organizational purposes and even negative sides may be considered (knowledge hiding, machiavellianism, etc), but here are not taken into account in the conceptual and empirical development of the thesis. In this work, the focus is on attention and social cognition: for the latter, the dimension of mindfulness is taken in consideration, for the former, the dimension of political skills. These cognitive capabilities are defined through literature and hypotheses are made about their role in microfoundation of individual and organizational dynamic capabilities. In the empirical part of the thesis, the focus will be about "insights" in dynamic behavior of public servants. As seen above in Table 2, Barney's initial definition (1991) also included "relationships" in the term human capital resources, while in his thesis this element is related to social capital. At the same time, however, it should be considered that knowledge is not only a "static" element of classical human capital, but represents a fundamental aspect of interpersonal relationships at work inside and outside the organization. In this work, the theoretical and empirical analysis specifically concerns two dimensions of cognitive capabilities. In Helfat and Peteraf's model in Figure 1, the focus is about two cognitive capabilities underpinning individual dynamic capabilities: attention and social cognition. Attention is a cognitive capabilities that influences the way an individual and then the organization recognize opportunities (Helfat & Peteraf, 2015). Social skills, as language, communication and social cognition impact on dynamic capabilities through strategic alignment and overcoming the resistance to change (Helfat & Peteraf, 2015). This thesis considers two relevant construct in the organization behaviour and managerial literature. The first dimension of attention can be represented by **mindfulness**, which is one of the cognitive capabilities related to attention and awareness (Dane, 2011; Good et al., 2016). It is included in the perspective of attention-based view of the firm (Ocasio, 1997). The second one is **political skill**, which is a relevant social cognitive capability (Ferris et al., 2005, 2007) and it derives from a political viewpoint of the organization (Mintzberg, 1983, 1985).

Figure 2: Human capital and social capital. Definitions from classical to contemporary authors (Sources: Barney, 1991, p. 101; G. S. Becker, 1964; Burt, 2000, p. 348; Helfat & Martin, 2015; Ployhart & Moliterno, 2011).



Both are among the most important dimensions in the contemporary literature of organizational studies and they are not yet sufficiently studied especially in the field of behavioural public administration. The two may represent relevant variables as antecedents of individual and organizational outcomes in the perspective of microfoundation (Ferris et al., 2017; Good et al., 2016). Thus, mindfulness and political skill are considered dimensions that can have direct and indirect relationships on social capital and individual and organizational dynamic capabilities. In each dedicated chapters, these constructs are defined and the most recent literature is analyzed with the aim of justifying what are the research hypotheses of this thesis (it goes beyond the objective of this thesis to make complex reviews of the current debate in literature on these topics, as there are already published recently (e.g. Good et al., 2016; Kimura, 2015)). In the dedicated chapters, there are justifications for which the model considers both these variables rather than others, in particular, for political skill is strong the competition with other constructs of social effectiveness.

**c) “Social capital” – A focus on the structure of relationships at work and knowledge networks.**

"Social capital is the contextual complement to human capital. The social capital metaphor is that the people who do better are somehow better connected" (Burt, 2000, p. 347). "Social structure is a kind of capital that can create for certain individuals or groups a competitive advantage in pursuing their ends. Better connected people enjoy higher returns" (Burt, 2000, p. 348) and (about knowledge networks) "organizations store knowledge in their procedures, norms, rules, and forms. They accumulate such knowledge over time, learning from their members. At the same time individuals in organization are socialized to organizational beliefs" (March, 1991, p. 73).

Similarly to Burt's structuralist perspective, for Nahapiet and Ghoshal (1998) social capital is "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilized through that network" (1998, p. 243). For Adler and Kwon (2002), social capital can be correlated to internal (ties within the organization) and external (ties outside) social relations, that can provide information (e.g. best practices), knowledge or operative resources (e.g. financing) to nodes (Adner & Helfat, 2003). The word "network" is externalised from human resource capital in the research question, because there is an overlap between relational dimension of human capital resources and relational dimension of organizational capital resource. In fact, Barney (1991, p. 101) include in the last ones "informal relations among groups within a firm and between a firm and those in its environment". Networks within organizations are a part of human capital; networks among organizations, even if among individual members of different organizations, or among group within an organization, are the relational part of organizational capital resources. Indeed, social capital resources embedded in networks structure of individuals and groups within and between organizations. The focus of this thesis is about knowledge networks. Even if in organizations other typologies of connections are frequent (friendship, love, trust, distrust, leadership, avoidance and so on) and they are peculiar forms of social capital, this research limited his analysis to knowledge connections. For a meso-organizational point of view, before the microfoundation movement, social capital embedded in internal and external knowledge networks was already considered the most influential factor for the development of dynamic capabilities in general, ambidexterity and innovation adoption in particular (Subramaniam & Youndt, 2005). Behavioural public administration can also apply to research questions at participant level of analysis in network studies (Grimmelikhuijsen et al., 2017), thus in the case of intra-organizational networks and inter-organizational ones with multiple external stakeholders. The crucial hypothesis is that dynamic capabilities

come from an active combination and re-combination of people, knowledge and other resources (Kogut & Zander, 1992). In this sense, social connection between people can produce novel combinations, thanks to the access to other's ideas and resources (Obstfeld, 2005). Remaining in the classical definition of human capital and in connection with social capital, in modern economies, a key resource is knowledge (Grant, 1996; Nonaka, 1991), also in public administration, because "government is composed of numerous groups of knowledge organizations" (Raadschelders, 2011, p. 920). Knowledge resides within individuals (Grant, 1996; Nonaka, 1991), so that individual employees are "owner" of the fundamental resource for the organization (Grant, 1996). Focusing on this kind of social capital means to elaborate the theoretical basis of organizational knowledge and knowledge management, for which definitions are given both in the construction of a specific qualitative theoretical model for the public sector in terms of microfoundation and as conceptual bases for a series of hypotheses to be tested empirically. Based on these premises, it is clear how important the individual role is in the development and maintenance of social capital and how social capital can in turn be decisive for the outcome of individual and collective performances. In the first perspective, starting from cognitive capabilities, social cognition is closely connected with social capital dimensions. In particular, Tasselli and Kilduff (2017) found that the combination of two personality traits, high self-monitoring (i.e., flexibility of self-presentation to different groups (Snyder, 1974)) and low blirtatiousness (i.e., disinhibition of verbal expressiveness, the speed of self-revelation thoughts, feelings and attitudes to other people (Swann Jr. & Rentfrow, 2001)), underpin brokers' capabilities to manage interactions between disjointed groups in organizations diplomatically. This is the case of management impression and, in fact, self-monitoring is crucial to predict leading roles that have structural advantage in social networks (Fang et al., 2015). In fact, social cognition "prepares us for social interaction and instructs us as to what is appropriate behavior" (Moskowitz, 2005, p. 514) and, thus, though a better understand of social environments, it is an antecedent and a reinforcement of social capital and it is theoretically connected with social experience included in human capital. In fact, it is precisely definitely social cognitive capabilities that contribute to strengthening collaboration, but, moreover, they influence the behavior of others in the direction of change or, at least, to reduce their resistance to dynamic renewal of resources and assets within and across organizations (Helfat & Peteraf, 2015), in which networks individuals play a key role. Two relevant constructs of cognitive capabilities are considered in this work for their relevance in organization and management research: **mindfulness**, connected with the attentional dimension (Dane, 2011; Good et al., 2016), and **political skills**, connected to the social cognitive dimension of cognitive capabilities (Ferris et al., 2005, 2007) and politics at work (Mintzberg, 1983, 1985). The thesis focus on these two example of cognitive capabilities, otherwise cognitive capabilities and, in particular, social cognition



also include constructs as self-monitoring and perceived accountability. Another social cognitive dimension that can be considered is the personality trait of Machiavellianism and future research could focus on it in the relationships between public servants and politicians in local governments. From cognitive capabilities, it is distinguished the emotional intelligence that is a cognitive ability linked to the regulation of emotions. It is also necessary to stress the fact that at the psychological level there are two different mental processes, as seen automatic and controlled, that influence and are involved in all individual cognitive abilities (Helfat & Martin, 2015).

In the second perspective, social capital may be seen as a mediator between cognitive capabilities and outcomes. For example, participatory leadership, the ability of an organization's employees to develop relationships based on trust, relational management of tensions between individual perspective and organizational control, are seen as crucial subsequent elements of capital underpinning the dynamic capabilities in the public sector (Pablo et al., 2007a). Specify that resource based view, relational view and dynamic capabilities actually arise as different theoretical approaches but come together when in fact the public sector has lost the prerogatives of governance and the levers are in widespread network governance. In fact, knowledge resides in people (classic view of human capital), so that individual employees are "owner" of the fundamental resource for the organization (Grant, 1996) , but, in the organisational context, the exchange of knowledge may become prevalent over the knowledge heritage itself. Furthermore, for the purpose of this work, "Knowledge management (KM) is the process of continually managing knowledge of all kinds to meet existing needs, to identify and exploiting existing and acquired knowledge assets and to develop new opportunities" (Quintas et al., 1997, p. 387). Knowledge management can be divided into two areas: the management of technology and human processes (Easterby-Smith & Prieto, 2008). The first deals with information systems for information technology processes, such as infrastructures and technological portals where data and information are collected (Easterby-Smith & Prieto, 2008); technology tends to be linked to the management of an explicit and codified knowledge, as well as to its possibility of storage and distribution (Easterby-Smith & Prieto, 2008). The management of human processes, instead, is related to individual behaviors that give meaning to knowledge, social relationships and cultural factors of the organization (Easterby-Smith & Prieto, 2008). In the continuation of the thesis knowledge management concern human and social behaviors concerning individual management of knowledge in the sense in which individuals behave with respect to strategic information useful for making decisions in the workplace in local governments. Even if there is a distinction between technological side and human one of knowledge management (Easterby-Smith & Prieto, 2008), here the focus is on people and their knowledge relations: knowledge behaviors are considered a resource that mediate between cog-

nitive capabilities (non-knowledge human capital resources) and individual dynamic capabilities. Thus, in general, knowledge management behaviors (Y. W. Rhee & Choi, 2017) are considered a positive resource (knowledge sharing, knowledge manipulating), a negative one (knowledge hiding) or a networked one (communication network and advice network) that mediate between non-knowledge human capital resources and individual dynamic capabilities through an information flow useful to individual decisions about ambidextrous and innovative behaviors. It must also be emphasized that recent literature review (Massaro et al., 2015) indicates that the trend of research interest about knowledge management within public sector is rising, but there is a lack of contribution about the level of local governments, that is an under-investigated topic. Moreover, as outlined by Massaro et al. (2015, p. 531) public administration is a "unique context" and a "separate" specific research agenda is desirable.

In fact, because "the public sector is organizationally specific, has different effectiveness concerns and has different levels of representativeness, accountability, and responsiveness" (Massaro et al., 2015, p. 530); goals are more ambiguous and complex, because there are strict interactions with multiple stakeholders (Rainey, 2009) and so the individual process of decision-making is "more open and political" (J. R. Hansen & Ferlie, 2016). Therefore, public servants' knowledge management behaviors must be contextualised in public administration that presents "specific labour divisions that are a disincentive for knowledge sharing" (Massaro et al., 2015, p. 530). In the field of knowledge management within the paradigm of social capital, social knowledge networks hold a key role within and outside public organizations. Knowledge networks are in connection with the classical definition of human capital. Social capital permits the flow of human capital among people inside and outside the organization. Although knowledge management behaviors in networks are theoretically crucial for the building of dynamic capabilities, knowledge network is not the only one of interest with respect to social capital, even if its relevance and development shall be considered<sup>6</sup>. This thesis considers the development of social capital based on knowledge networks in three ways: a model of knowledge management within the paradigm of network governance, internal knowledge networks and external networking with stakeholders. In research about social capital, not only knowledge is evaluated, but other types of networks are also considered: informal networks concerning trust, friendship and above all the recognition of the leadership of others. Positive, negative, formal, informal, multilevel ties between workers inside local governments and between organizations through their key actors in public-private relations. In this study the focus will be on collaborative network based on

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<sup>6</sup> "Reducing hierarchical constraints and increasing interunit social interaction are the directions that managers may pursue to encourage internal knowledge flows and enhance the capabilities of their organizations" (Tsai, 2002, p. 189).

communication of knowledge, mixing "relationships and insights of individual managers and workers" (Barney, 1991, p. 101). Social capital can be studied among all public employees in local governments and relations between politicians and public managers too. Here, the main focus is about the former network within local governments, but there is a theoretical analysis of the latter, for the important specificity in local governments and a hypothesis will be evaluated too. The aim become to understand how this social capital affects individual and organizational outcomes in terms of dynamic capabilities. In fact, in the empirical study, only those communication-knowledge internal and external networks (social capital dimensions) will be included which, by hypothesis, can have greater impact on the dynamic capabilities of the organization and individuals and on which there is a gap in research in the public sector. In fact, an empirical limit is that a study that includes all network dimensions is not feasible. This research will focus on those dimensions that have also been of major interest in the literature on social capital and public administration and on a limited number of organizations that will be willing to respond to the questionnaire, respecting the requirements already present in literature and the limits of generalization of the observed phenomenon. Here, the focus is on internal and external knowledge networks. Social capital provides some individual variables, when the researcher observes the position of the subject within the network (e.g. centrality, number and quality of ties) or organizational variables when observing the overall structure of the network (e.g. network cohesion). The main idea is that "reducing hierarchical constraints and increasing interunit social interaction are the directions that managers may pursue to encourage internal knowledge flows and enhance the capabilities of their organizations." (Tsai, 2002, p. 189). The two side of human capital (knowledge and cognition) can be relevant in interconnection with both side of social capital. Paying attention to the positive side of relations, "cooperation refers to the act of working jointly with others, usually to resolve a problem or find a corner of activity. It can be occasional or regular, and it can occur within, between, or outside formal organizations" (Agranoff, 2006). By and large, at the level of the literature streams there is a debate on the benefits, opportunities and challenges that intra-organizational and inter-organizational collaborative networks could have on the potential actors involved in the process. In public administration theory and practice, as outlined by Osborne (2006, 2010), social capital within organizational strategy (Tsai, 2001) is connected with the evolution of Network Governance. This paradigm has its roots in organizational sociology and network theory (Haveri, 2006; S. P. Osborne, 2006; Torfing & Triantafillou, 2013). Network Governance is, thus, a relational view of the public organization, including process in internal and external relations (S. P. Osborne, 2006) and based on influential works of Ouchi (1980) and Powell (1991). Individual public servants cover a position within the public organization where they work and they are actors of "multiorganizational webs" (O'Toole, 2015, p. 362).

In public management literature, there are two kinds of networks studied: managerial networks, that concern the internal and external networking of individual actors, and collaborative networks, based on characteristics of whole networks and their performance (Zandberg & Morales, 2017). The literature mentions this process as “collaborative advantage” (Huxham, 1996; Vangen & Huxham, 2003) and underlines the importance of discussing the implications of collaborative networks in public administration. If relational resources that have been recognised by Barney (1991) are not considered, strategic collaborative approach could be theoretically thought in contrast with resource-based view idea of defence resources from competitor to maintain competitive advantage. In public sector, relational resources inside and outside organizations are essential for the provision of services, even if there isn't a competition for consumers as in private sector (Pie-ning, 2013), but there is a competition between territories (Fratesi & Senn, 2007; Senn, 2015). The focus here is about individual networks extended to knowledge employees (not only managers, elected politicians are excluded in the intra-organizational network and they are included like external stakeholders, as done in empirical researches about this field. The review is in the table about empirical researches on external networking at page 174). The scope of this research, for example, to analyze the individual networks within the organization and inserted in inter-organizational networks, consisting of as many individuals representing the external stakeholder institutions of the local government. The network structure of organizations with their formal and informal connections cohabit with the formal and informal networks of individuals inside (public servants, public managers, political officers) and outside (citizens, private managers, stakeholders, politics and public workers from other public service organizations) the single public organization. O'Toole (1997b) underline the imperative to “treat network seriously” and this concept is renewed for more recent research in public administration (O'Toole, 2015). This concept is connected to the Easterby-Smith and Prieto's idea (2008, p. 241) about the "importance of social processes, and thus the management of people, social networks and communities within organizations in order to handle the problem of sharing tacit knowledge." In this research, in fact, starting from the idea of the importance of knowledge sharing (Amayah, 2013) and knowledge management (Pee & Kankanhalli, 2016) to improve the effectiveness in public administration, two collaborative combined social knowledge networks (Phelps et al., 2012) can be considered, advice and communication networks (Zappa & Lomi, 2016). This thesis focuses on individual communication network inside and outside the organization. Zandberg and Morales (2017) suggest that resources for individuals in public organizations derive from internal and external social networks, with actors in the external organizational environment. It would be necessary to consider both of them, as complementary dimensions of social capital, to have a better representation of the ways with which individuals mobilize knowledge to improve innovation (Zandberg & Morales, 2017).

This thesis focus also on paying attention with a strong methodological control to the possibility that a network-based resource couldn't have only a linear effect. Relational resources could have positive or negative effects, but also a U-shape effects, that is too much relational resources could take a negative effect or a positive one, opposite to a linear interpretation (knowledge sharing has been recognised to have positive effects, but, knowledge hoarding, represented by a node with numerous, or better too much knowledge ties, and knowledge hiding, represented by a node without outward connections, might be depressing for the general structural effect on individuals and organizations). Cognitive capabilities may be the microfoundation factors of social capital. They could have positive impact on social capital and in relations between social capital and dynamic capabilities, moderating them. The objective is to represent a network theory (and practice) of (strategic) dynamic (innovative) individual behaviours in public contexts.

**d) “Impact” - The philosophy of scientific research and the scientific choice toward a positivist perspective.**

In order to explain the demand for research, i.e. "do cognitive capabilities and social capital impact on dynamic capabilities in local governments?", it is essential to dwell on the theoretical and philosophical bases of scientific research, since they can give a different meaning to "do" and "impact". Therefore, based on the meaning to give to impact are the perspectives of philosophy of research in this thesis. In order to make a creative contribution to a given field of social science research, every researcher should have understanding and clarity about the philosophical debate and choices that guide the design of research and the methods used (Easterby-Smith et al., 2015). A reflection on ontology and epistemology means to give more meaning to research also in public administrations, rather than dwelling only on research methods (Raadschelders, 2011). Actually, in recent years, theoretical reasoning has dwelt only on the method to go back incorrectly to epistemology, while for Raadschelders (2011), it would be appropriate to start from the ontological perspective that dialogues with epistemology to cascade on methodology (Figure 3).

Figure 3: The Position of Epistemology and Ontology in Public Administration studies (Raadschelders, 2011, p. 920).

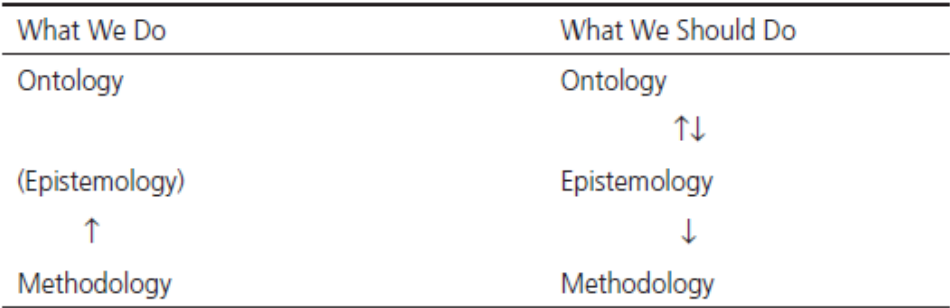


Table 4: philosophical concepts (Source: Easterby-Smith et al., 2015, p. 47).

Ontology	Philosophical assumptions about the nature of reality.
Epistemology	A general set of assumptions about ways of inquiring into the nature of the world.
Methodology	A combination of techniques used to inquire into a specific situation.
Methods and techniques	Individual techniques, for data collection, analysis, etc.

Stout (2012) suggests to strengthen self-reflection about ontology, in particular for studies of public administration. This passage is analyzed, albeit briefly, in this paragraph of the thesis, to explain the term "impact" in the research question. The development of knowledge in public administration pass through reflexion on theoretical goals before the use of "methodological artifacts" (Pandey, 2017). Easterby-Smith et al. (2015, p. 46) indicate that pausing to reflect on the philosophical aspects of research increases the researcher's understanding of: the role of himself within the research method, the elements that can be a source of creativity, the interpretation and which research question is answered, the design to use and what are its merits and defects, adapt and innovate research design. Reflecting on the philosophy of research means thinking about the concepts of ontology, epistemology, methodology, methods, which are defined in Table 4. Ontology is a general theory about reality, nature of (human) being, existence that is normally created in philosophy, religion or physics (Stout, 2012). Ontology is about the nature of reality, while, epistemology is rather a philosophy of knowledge and what we can know, while methodology is the practical perspective of how we can arrive at the same knowledge (Raadschelders, 2011, p. 918). Starting from ontology, the philosophical debate has been present since ancient Greece and is longstanding in the modern natural and social sciences (Easterby-Smith et al., 2015). The preferences of the researcher, therefore, are crucial, since even within the same vision there are disagreements between the various schools of philosophical thought (Easterby-Smith et al., 2015). The most relevant approaches are realism, relativism and nominalism (Easterby-Smith et al., 2015). In recent years, the debate about ontology in public administration has become increasingly important for the relevance that it can have on theory and practice (Stout, 2012). Stout's article in *Public Administration Review* (2012) identifies competing ontologies specific in public administration in modern glocalizing society, starting from Western traditions. Stout (2012) lists the duality of interpretation and choice of a reference ontology for scholars. In particular, first, reality can be static or dynamic (Stout, 2012), so that, in a sense, in the second, as in ontological relativism, there are many truths, comprehensibility is difficult and limited to a certain time and the

general underlying principle that guides existence is constant change. The source of human being can be transcend, in the sense that it is a copy of a metaphysical source, or immanent, when the source of existence is in itself (Stout, 2012). The existence can be seen as a whole, when there is a unique source of reality, and plural, when there are many sources (Stout, 2012). Finally, for Stout's perspective, a dualism is between individualistic being and relational one: the latter means that beings are connected in some sense, the former implies, otherwise, that the plurality is the sum of singular units, existing in themselves (Stout, 2012, p. 389). From these theoretical assumptions derive the research choices of this thesis, in which the ontological foundation becomes again the basis for the epistemology and methodology used. The ontological realist vision is, therefore, the point of reference of this thesis and is characterized by a vision for which the world is concrete and external and the phenomena exist independently from the researcher so that the observations have a correspondence with the phenomena of interest (Easterby-Smith et al., 2015). Realism, in turn, is divided into realism proper and internal realism: the difference is that for the former, facts can be directly observed, while for the latter, access can only be indirect. The first is in turn linked to an epistemology based on strong positivism and experimental research designs, while the second on more "moderate" positivism and large surveys (Easterby-Smith et al., 2015). Within the duality identified by Stout in the specific field of research philosophy of public organizations, this thesis lays its philosophical foundations on a concept of existence in which individuals are differentiated. The author's definition is explicit: "the human being is an independent psychophysical source that is whole and complete-universe of one" (Stout, 2012, p. 389). The microfoundation paradigm is based on this ontological assumption. The social capital can be seen as a sum of relations and these structures of interconnections maintain the individual key role of participants in networks. Unlike the idea of Stout (2012), for which staticity is a constituent element of this ontological paradigm, the microfoundation can see the individual as a subject that influences staticity by bringing it into dynamism and relationships are sources of resources useful for this mechanism, avoiding, however, that in relationships one loses one's universality, indeed, it is the individual who exploits relationships and influences them and not vice versa. The individuals are not only differentiated but they cannot be also considered immutable, as demonstrated in psychology by the fact that fixed traits coexist in the individual up to states and in genetics the same expression of the DNA can be modified by epigenetic factors (what we eat, drink, etc.). Differentiated individual ontology, in which individuals can be themselves as independent, can be seen by the Hobbesian or Lockean glasses (two English philosophers of the 17th century): for the former human nature tends to be negative, for the latter positive. Lockean ontology leads to a human nature based on self-interest and in practice it is connected to the idea of modern liber-

alism, in which the main features are the independence of the individual, the competition between them and tension to maximize trade-offs between costs and benefits in each human situation (Stout, 2012). Indirectly, it is possible to suggest that this ontology indicates the way for better functioning of the public administration paradigm that is defined as New Public Management. Network Governance starts from Lockean ontology, but the individual research of efficiency is also relational, because influences can be reciprocal, and there is not only competition but also cooperation. Network Governance is a paradigm that remains in the area of a differentiated individual: its board is more relational and dynamic in modern economies, but the individualism persists and there is not a passage in what Stout calls "a-whole-becoming-through-many", referring to differentiated relational ontology (Stout, 2012). The perspective adopted here contrasts, therefore, with transcendent ontologies in which individuals are tendentially homogeneous and in which they cannot bring anything different, but are subject to the transcendent hierarchy from which they derive, both individualistic and relational (Stout, 2012). Such ontologies are recognized in a state superior to individuals and this over time has led to failures such as communism and fascism and the welfare state in democracy. New Public Management and Network Governance can be seen as moderators of the hierarchical State, through liberal lenses (Stout, 2012). Moving on to the vision of the epistemology of research, positivism is based on the nineteenth-century philosophy of August Comte. This quote from him could be the beginning of the thesis: "The object of all true Philosophy is to frame a system which shall comprehend human life under every aspect, social as well as individual. It embraces, therefore, the three kinds of phenomena of which our life consists, Thoughts, Feelings, and Actions." (Comte, 1865, p. 9). Objective methods are considered as efficient in measuring the external world and its properties and this is the substantial difference compared to ontological approaches that deny the possibility of studying concrete facts, rather, they indicate that there are many "truths" and the viewpoint of the observer that can highlight them (relativism) or there are no "truths" and it is man who creates each time the constituent elements of reality (Easterby-Smith et al., 2015). In positivism, empirical verification is the knowledge that gives meaning and this is the epistemological approach connected to realism. This epistemology is opposed to the idea of social constructivism, for which, instead of giving a key role to the correlation and causation between variables, after having placed deductive hypotheses as in positivism, we try to increase the explanation of a situation and to have qualitative data from an inductive point of view (Easterby-Smith et al., 2015). In positivism the researcher is an independent external subject without a value preconception and who intends to advance knowledge in the social sciences by defining concepts in measurable constructs through a generalization derived from statistical probability and the widest possible sampling (Easterby-Smith et al., 2015). Positivism data are mainly numbers to be analyzed by regression methods, so that



the theories can be tested and generated through the identification of regular behavioral patterns that confirm or not the starting point that is to pose propositions of relationship between variables<sup>7</sup> and the main aim is exposure (Easterby-Smith et al., 2015, p. 54). Positivist research starts with a background based on issues from previous studies to list propositions of relations between independent and dependent variables (Easterby-Smith et al., 2015, p. 104). The ontological, epistemological and methodological positioning on what can be considered a mainstream with respect to alternative perspectives that over time have set themselves the goal of correcting the limits of social outcome (Stout, 2012) does not mean idolize a specific ontology or positivism, as has sometimes been done in the literature, moreover, by placing the method before reflection on the philosophy behind it (Raadschelders, 2011). The application of the scientific method to the study of public administration has developed with Herbert Simon since the period after the Second World War and still today can be a significant added value to the understanding of public organizations. A different perspective is social constructivism. For constructivist epistemological vision and a consequent qualitative and interpretativist methodology could be possibility to provide more explanations on how a process develops (Raadschelders, 2011). Otherwise, when it comes down to it, this methodology is based only on the purely subjective understanding of reality that the researcher mediates according to his own values glasses. Mixed methods can give a key to understanding knowledge, when qualitative analysis on a sample limited to multiple case studies, while qualitative interpretativist research limited to words and not to numbers of a few subjects is hardly considered science. Italian literature on public management is severely stationary on a discursive, narrative, interpretativist vision and in reality this trend has for years brought nothing new in theory and practically zero in practice, so much so that the various reform processes of the Italian public sector are developed in words and stranded in deeds. The knowledge of the public organization, on the other hand, should have a significant impact thanks to elements of research quality and use of the results of the analysis of the data collected. Such knowledge is fundamental for the change and innovation of the form of government that today distinguishes the public sector both in the training of current and future civil servants and public managers (Raadschelders, 2011). The limits of the "chosen" perspective in this thesis, however, are present. In particular, the empirical study is not longitudinal, although, as written above, it is assumed that nature can be dynamic, in the sense that individuals are able to modify it (starting from their own DNA or by socio-psychological elements according to experience) and therefore this process

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<sup>7</sup> Easterby-Smith et al. (2015) use the term "propositions" as starting point for positive research design and "hypotheses" for strong positivism. In this thesis, the term "hypotheses" is used as synonymous of propositions even, following Easterby-Smith et al. (2015) classification if the paradigm here the ontology is internal realism and the epistemology is positivism. The term hypotheses is often used in research designed based on surveys.

is hardly accessible in the logic of internal realism. In fact, a critique of this paradigm is that the positivist researcher studies reality as it "is" rather than the "becoming" (Raadschelders, 2011). For the point of view of Raadschelder (2011), the answer to the study of "becoming" is qualitative research, while mixed methods or above all longitudinal empirical analysis may reduce this limit, without incurring subjective interpretative studies, not replicable and not generalizable. For Raadschelder (2011) the answer to the study of "becoming" is qualitative-active research, while mixed methods or above all longitudinal empirical analysis may reduce this limit, without incurring subjective interpretative studies that cannot be replicated and cannot be generalized. A second specific limit for the study of public administration is that a certain reality cannot easily be compared with a scientific method in cross-section terms, since the organization of the State and the role of the public sector in the economy and society is based on a different ontology and has evolved differently in different parts of the world and in different periods of history (Raadschelders, 2011). At this point, it is necessary to enlight **strengths and weakness of positivist epistemology** that is the philosophical science basis for this thesis. Quantitative methods based on scientific method can provide wide coverage from large samples enough fastly and efficiently and their outcomes can be really relevant for decision-making (Easterby-Smith et al., 2015, p. 56). Otherwise, looking a potential dark side, quantitative positive researches are weaker in the practical use of data for decisions, even if they can support them, the suggestions to organizational action are not always obvious, and they tend to be inflexible, artificial and they are often far from really understanding processes and creating theories (Easterby-Smith et al., 2015, p. 56). Despite the trade-off in the choice, the scientific method is the only one that with rationality and formality tries to objectively explain complex phenomena. Epistemologies based on constructivism are not science, as they are not based on the scientific method and are often guided by a subjective political vision of research rather than objective. This vision is often shared in Anglo-American literature and in top journals (Easterby-Smith et al., 2015), although there is sometimes a call for more qualitative studies (Raadschelders, 2011). The value of qualitative research and theory generation, as in the case of microfoundation, has value in the understanding of social phenomena only after a validation through scientific methods, because only in this way the credibility for decision-makers is higher. In conclusion, the approach of this thesis is, firstly, deductive, positivistic and conducted with "classical" statistics and social network analysis to find possible correlations. Starting from the theoretical background and finding gaps or need for confirmations in public sector in recent literature, for each dimension considered in the thesis ("classical" human capital, cognitive capabilities, social capital), some theoretical hypotheses will be defined and then they will be tested empirically with data from Italian local governments. Before empirical analysis, the concepts are measurably defined expected findings are analyzed in the path of the thesis, through

reviews of the studies done so far. This process is widely used in the research of strategy, human resources and organizational behaviour in top journals worldwide and especially in the United States. The thesis is also composed of two more theoretical chapters concerning the current contemporary perspective on public administration practice and theory and the development of a knowledge management model. In particular, the latter part of the thesis is based on the construction of a knowledge management model based on a set of theoretical and conceptual assumptions not empirically tested. The formal development of the knowledge management model in the public sector keeps the research in a positivist perspective. At the same time the "pure" positivism is less evident in this part, due to the lack of empirical development. Actually, according to a mapping of the schools of thought within the positivism quadrant, the construction of the knowledge management model can be theoretically interpreted according to a research based on "critical realism" or "systems theory", depending on what is the level of perception of detachment in research (Easterby-Smith et al., 2015, p. 63) . The thesis is also composed of two more theoretical chapters concerning the current contemporary perspective on public administration practice and theory and the development of a knowledge management model. In particular, the latter part of the thesis is based on the construction of a knowledge management model based on a set of theoretical and conceptual assumptions not empirically tested. The formal development of the knowledge management model in the public sector keeps the research in a positivist perspective. At the same time the "pure" positivism is less evident in this part, due to the lack of empirical development. Actually, according to a mapping of schools of thought within the positivism quadrant, the construction of the knowledge management model can be theoretically interpreted according to a research based on "critical realism" or "systems theory", depending on what is the level of perception of detachment in research. Conceptually the systems theory perspective concerns the application of systems theory from natural to social sciences and focuses on the study of systems as a whole rather than in separate parts, emphasizes the role of individuals in the exchange of information in systemic dynamics and shares the idea of method-logical sharing between different sciences. (Easterby-Smith et al., 2015). Here, philosophical foundation of scientific development of the thesis is expressed. The next step concerns the definition of the outcome dimension of the research question on which this work tries to add something to the existing theory: dynamic capabilities.

**e) “Dynamic capabilities” – The introduction of strategic concepts in the field of public administration.**

"... in spite of the explanatory potential of the dynamic capability approach this theoretical perspective has received comparably little attention in the public management literature" (Piening, 2013). Dynamic capabilities approach is an evolution of Resource-Based View and it highlights the need to understand and manage turbulent environments and renew resources and capabilities in a non-static way to maintain and improve sustainable performance over time (Easterby-Smith & Prieto, 2008). There is a crucial distinction between resources and capabilities. Resources can be seen as inputs of production controlled by firms, otherwise, capabilities concern the capacity to deploy resources (Piening, 2013). In a seminal study, Teece, Pisano and Shuen (1997, p. 516) described dynamic capabilities as "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments". Thus, "dynamic capabilities resides in the potential to change resources, routines and competencies" (Easterby-Smith & Prieto, 2008, p. 327). In fact, these "specific organizational and strategic processes" (Eisenhardt & Martin, 2000, p. 1111) are used by managers and even by individual knowledge workers to alter and reshape their resource base. In the same direction, innovation involves people and ideas (Obstfeld, 2005). From a behavioural point of view, in fact, these processes are connected with organizational attitudes, cognitions, behaviours and individual or managerial choices based on specific decision making. Indeed, these processes are the basis for implementation of change and innovation from micro to a more collective level (Rothaermel & Hess, 2007). Dynamic capabilities is a prevalent approach and theoretical framework to study change in firms (Piening, 2013), but "there is little insight into how public sector organizations develop and deploy dynamic capabilities" (Piening, 2013, p. 211)<sup>8</sup>; "the dynamic capability view fits well with the current volatile environment which many reformed public organizations experience" (J. R. Hansen & Ferlie, 2016, p. 12); "the concept of dynamic capabilities is insufficiently underpinned by empirical data" (Easterby-Smith & Prieto, 2008, p. 237). In particular, "relatively few studies have provided empirical insights into the mutually reinforcing interaction between knowledge management and dynamic capabilities" (Easterby-Smith & Prieto, 2008, p. 246). In challenging contexts and "dynamic" environments, where technologies, regulations and policies in public sector or competitive conditions in private sector change rapidly (Piening, 2013, p. 212), dynamic capabilities concern the organizational capacity to renew these resources (Piening, 2013; Teece et al., 1997). They are a "bundle of different routines" (Piening, 2013, p. 232) that can improve performance and

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<sup>8</sup> "Given the struggles of many public service organizations to adapt to changing conditions, one might even doubt whether there actually are such capabilities in the public sector." (Piening, 2013, p. 211)

effective implementation of innovation (Piening, 2013), even if non automatically (Ambrosini & Bowman, 2009). Unlike Piening (2013, p. 211) who thinks that the "dynamic capability approach explicitly focuses on the organizational processes through which firms manage innovation-related activities", it's assumed as necessary to go back to seeing the process of change from an individual point of view (e.g. Fernandez & Rainey, 2006), focusing on an individual level of analysis of dynamic capabilities and so assuming that organizational dynamic capabilities and innovation can't be explained without a strong consideration of individual dynamic and innovative behaviors at work. In public sector, even if there are some limitations, objectives are "more multiple, conflicting, vague, intangible and hard-to-measure" (Piening, 2013, p. 217), like public value, and public managers and employees have "less control over strategy formulation and implementation" (Piening, 2013, p. 217) and "less degree of choice available" (Bryson et al., 2010; Piening, 2013, p. 217), strategic management concepts are applicable to public organizations (J. R. Hansen & Ferlie, 2016; Piening, 2013). The strategic formation and development is the theoretical meeting point between strategic and organizational theories and sciences (Ferlie & Ongaro, 2015). Focusing on the specific case of public sector, public organizations and networked public governances can be more changing than private ones, because of frequent policy changes, high turnover rates among elected and ad hoc problem solving procedures (Piening, 2013, p. 211). Dynamic capabilities are critical factors of success for public organizations too (Cannaerts et al., 2016; Pablo et al., 2007a; Piening, 2013), but there is a "black box" in studies of innovation processes in public management (Piening, 2013). If public organizations are not able to renew resources and capabilities (Bryson et al., 2007) though dynamic capabilities, they fester, so that they are inevitably in difficult to respond promptly and effectively to divergent challenges in changing environments of public governance (Piening, 2013). In the perspective of microfoundation, the "building blocks" of dynamic capabilities are "interconnected" several organizational routines and "the use of different resources such as knowledge" (Piening, 2013, p. 213). These routines are path-dependent, but the historical trajectory of the organization (Teece et al., 1997) that leads theoretically to more narrow strategic possibilities of choice for workers and managers (Piening, 2013). Different factor undermine the degrees of freedom of renewal of resources and dynamic capabilities and, thus, the path-dependency of change of routines. Piening (2013) recognizes the presence of three factors that affect the actual repertoire of routines: the historical development based on resources and accumulated experience over time, learning that has costs and can create barriers, micropolitics. This last conceptualization cannot be separated from the ideas of social cognitive capabilities (e.g. political skill) and social capital, especially in the relational paradigm and public leadership that is relevant in the relations between elected politicians and civil servants, because organizations can be seen as "political entities where individuals and groups with different interests and

unequal power compete for limited resources." (Piening, 2013, p. 215). This organizational level of analysis, otherwise shall be put in connection with research about microfoundation of dynamic capabilities. The focus is on the antecedents and outcomes of organizational behaviour as continuous process for reach strategic dynamic organizational objectives, as innovation, renew of resources, strategic change, from the point of views of strategic choice of individuals and strategic behaviour of them in single organizations and in network governance too. Here in this thesis the focus is about dynamic capabilities of knowledge workers and about single organizations, even considering external relations with stakeholders in the network governance and developing a model of knowledge management where other organizations are considered in the building of systemic dynamic capabilities. In this research, in the perspective of microfoundation, it is assumed that dynamic capabilities are not only an organizational dimension, but also in close connection with individual dynamic capabilities. The assumption is therefore, that individuals also have a role in the modification of routines and that routines themselves are not just an organization concept, but also the individual worker has his own routines and dynamic capabilities that can influence organizational dynamic capabilities (e.g. Mom et al., 2019). In particular, in this research, two organizational dimensions are considered, that are "dynamic capabilities": **organizational ambidexterity**, that derives from the conceptual balancing between exploitation and exploration (March, 1991), and **innovation adoption** (the theorized direct final facade of dynamic capabilities), and two dimensions at individual level, that are **innovative work behavior** and **individual ambidexterity**. The theoretical assumption is that individual dynamic capabilities (ambidexterity and innovative work behaviors) are a direct microfoundation of organizational dynamic capabilities. Starting from this theoretical perspective, in the thesis these path-dependent antecedents of dynamic capabilities are re-organised in the building of conceptual models that shall be tested empirically. In fact, as it has be seen, in current academic debate, the interest of the microfoundation of dynamic capabilities is increasing. According to Helfat & Martin (2015, p. 1282), **dynamic managerial capabilities** is a focus on managers about strategic change and, in practical, extend the dynamic capabilities perspective from an organizational level of analysis to an individual one, in which the heterogeneity in the resources of knowledge workers, middle and top managers is a principal component of heterogeneity in change and outcome of organizations. In a commentary, Teece suggests that "unlike ordinary capabilities, certain dynamic capabilities may be based on the skills and knowledge of one or a few executives rather than on organizational routines" (2012, p. 1395). Even if theoretical framework started same years ago (e.g. Adner & Helfat, 2003; Jenkins & Johnson, 1997), for different scholars, as Helfat and Peteraf (2015) and Mom et al. (2019), the theoretical and empirical links between individual/managerial and organ-

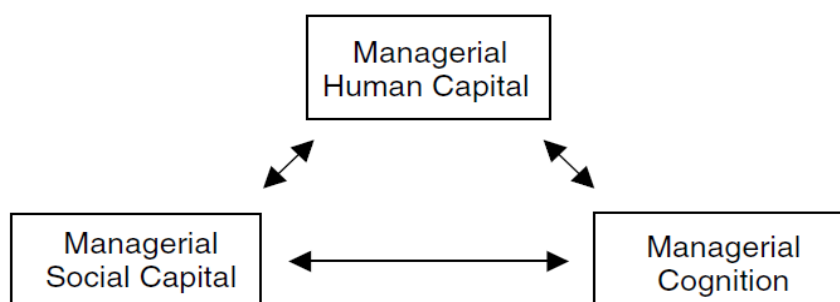
izational (dynamic) capabilities are largely unexplored. This gap is larger in public administration. Furthermore, Helfat & Peteraf (2015, p. 846) suggest that top managers do not only influence strategic change, innovation and resource renewal, but also middle managers can have an impact and “could yield additional insights regarding the process”. For instance, Taylor and Helfat (2009) suggest the importance of middle management in creating and maintaining organizational linkages that are crucial for dynamic capabilities through a renewal of technologies. Before the conceptual development of microfoundation movement, research focused on a meso-organizational level of human capital, social capital and organisational capital in explaining for example incremental or radical organisational innovation capabilities (Subramaniam & Youndt, 2005)<sup>9</sup>. In the view of this work, thus, it’s desirable to go further the managerial dimension, often linked only to top management or company leaders, focusing on the role of **individuals as knowledge workers** even at the lower level of the hierarchical ladder, such as middle-managers, but also employees, street-level public servants, that have relational, knowledge and decision-making tasks in local governments. In essence, the concept expands from dynamic managerial capabilities to **individual dynamic capabilities** for knowledge workers, even if the behavior is related to smaller number of available organizational resources. The assumption is that at all organizational levels individuals (non-only-managers) must also bring into play personal resources (“classical” human capital, cognitive capabilities social capital and cognition) and dynamic capabilities (individual ambidexterity, innovative work behavior) able to aggregate in the creation of routines, practices, innovations and, in essence, meso-organizational collective dynamics. The assumption is that at the meso-organizational level dynamic capabilities are closely connected with dynamic capabilities at the individual micro level. In fact, dynamic organizational skills do not exist without fully understanding the dynamic individual capabilities, because they are the people (employees and managers) who not only renew (collectively) the routines, but also transform the company with strategic actions and the surrounding environment (Teece, 2012). Individuals give to the company the ability to “absorb” from the outside, take “ambidextrous” decisions, exploitation or exploration, with a sense of vitality and learning, create and implement innovations. Actually, employees “play a vital role” for the change of processes and procedures, as they have a direct relationship with customers and see the opportunities firsthand, often more than managers or those who have a only formal responsibility for innovation in the organizations (Wallace et al., 2016, p. 4). The idea is to combine different types of “dynamic” and innovative individual organ-

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<sup>9</sup> For instance, social capital is measured as organizational capability: “an organization’s overall ability to share and leverage knowledge among and between networks of employees, customers, suppliers, and alliance partners” (Subramaniam & Youndt, 2005, p. 455).

izational behaviors, which are interrelated, potentially in a dynamic "sense". Organizational resources and capabilities are heterogeneous affect managerial decisions and these one impact in turn on the organizational level (Adner & Helfat, 2003), but, in short, it is possible to extend this circle to individual knowledge workers that take some decisions within the organization. After specifying what is meant by dynamic individual capabilities, a recursive backward connection is needed with their drivers. In their seminal paper, Adner & Helfat (2003, p. 1020) recognize three crucial factors: "managerial human capital, managerial social capital, and managerial cognition". These attributes inevitably underpin dynamic capabilities and involve inter-individual heterogeneity and differences in decision-making processes, choices and outcomes at work (Adner & Helfat, 2003). They are personal resources that may participate at the agglomeration of organizational resources. Thus, in a dynamic capabilities perspective, they have an impact on renewing of organizational resources through individual attitudes and behaviors concerning decision-making at work, ambidexterity and, above all, innovation. Given the ontological assumptions of differentiated individualism, organizational resources are a sum of individual ones. So, the renewal of resources and routines start with individual dynamic capabilities, which include individual ambidexterity and innovative behaviors and other dynamic traits, attitudes, behaviors and cognitive capabilities. In particular, for Adner and Helfat (2003), in human capital field the differences derive from the different skills level, from their mix and from the accumulated experience and the basis depends on how these skills are learned, that is from the investment in education and training. In this seminal work, authors (Adner & Helfat, 2003) suggest that for age and education are human capital resources to be considered in research. Moreover, taking up Adler & Kwon (2000) and Burt (1992), Adner & Helfat (2003) consider that social capital is associated with relationships, in which ties could confer resources to "Ego", peculiarly, in knowledge management, information flow, e.g. about practices and routines, from distinct settings, outside (in different organizations) or within organization and its formal and informal work relations (e.g. colleagues in his own and different units). Different information and various knowledge sources may take to different perspective in decision-making and new opportunity to learn, change, create ideas, balance efficiency in the short run and in the long run and, in general, innovate.

Figure 4: individual factors that support dynamic capabilities (Adner & Helfat, 2003, p. 1022).





In summary, networks and their specific dynamics can be seen as a structural microfoundation source of dynamic capabilities, ambidexterity and performance (e.g. Kleinbaum & Stuart, 2014; Mom et al., 2009; Rogan & Mors, 2014). Finally, “managerial cognition” (Huff, 1990) “refers to managerial beliefs and mental models that serve as a basis for decision making” (Adner & Helfat, 2003, p. 1021). In particular, bounded rationality and individual value system are relevant in work situations. It should also be considered that the three factors can be put in complementary combinations so that interactive changes occur in individual and organizational resources and can lead to different outcomes (Adner & Helfat, 2003, p. 1022). These individual attributes, however, can also interact as substitutes and for authors it was necessary to understand when their interaction brought results in terms of “facilitating or preventing strategic change” (Adner & Helfat, 2003, p. 1023). Heterogeneous cognition at individual level, like mental models and decisions rules, could lead to heterogeneous outcomes at organizational level (Gary & Wood, 2011). Recently, Helfat & Martin (2015) extended the discussion in Adner and Helfat (2003): dynamic managerial capabilities depend again on the tri-factorial dimensions of social capital, cognition and human capital that are managerial personal resources. After the seminal research of Adner & Helfat (2003), the majority of empirical studies on the subject of dynamic managerial capabilities and management intervention have been carried out up to now in industrial sectors of technology, semiconductors, product development and introduction of hyper-innovative products. These organizations are by necessity innovative to remain competitive in markets (for a review see: Helfat & Martin (2015)). Even more recent research in microfoundation is mostly based on private innovative and competitive sector. For instance, Rogan and Mors (2014) applicate social capital as source of microfoundation of individual ambidexterity studying partners’ network in a consulting international firm. Mom et al. (2019) study financial service organizations in their study about microdounfation of ambidexterity). So that studies in public sector are really limited. In conclusion and resuming this theoretical framework, the general hypothesis of this thesis is:

*“The heterogeneity of personal resources (“classical” human capital, cognitive capabilities, social capital) and organizational resources connected with personal one (organizational human capital, organizational social capital) and individual Dynamic Capabilities (individual ambidexterity, innovative work behavior) impact on the heterogeneity of organizational Dynamic Capabilities from the point of strategic choice (ambidexterity) to the implementation phase (innovation adoption) in local governments.”*

Dynamic capabilities can be connected to “classical” human capital, cognitive capabilities and social capital. The underlying assumption is that these three individual cognitive elements are associated with inter-individual differences and this heterogeneity can generate path-dependency and heterogeneity with respect to the differential of dynamic abilities, strategic change, innovation and performance of individual knowledge workers and the entire organization (Helfat

& Martin, 2015). The presence or not of the three underpinning of dynamic managerial capabilities “help to explain” differences in effectiveness and outcomes, due to “systematic managerial impact” on “Asset orchestration through new investment, resource reconfiguration, and resource retrenchment plays an important role” (Helfat & Martin, 2015, p. 1291). Evidence shows that “differences between executives in their cognition were related to differences in strategic change and firm performance and that not all managers have “the requisite cognition to effectively pursue strategic change” (Helfat & Martin, 2015, p. 1293). At the same time, studies about “social ties, characteristics of social networks, and managerial relationships” highlighted the beneficial of social capital for resource acquisition, diversification, strategic change and organizational performance and outcomes (Helfat & Martin, 2015, p. 1293) and also controlled for human capital, **social capital** (especially external, as confirmed empirically (Rogan & Mors, 2014)) has a positive effect (Helfat & Martin, 2015, p. 1303). Only few researches show a positive statistical significance of classical measures of “classical” human capital, but, at the same time “prior managerial work experience” has not a negative effect (Helfat & Martin, 2015, p. 1302). About research gap, for the purpose of this thesis, Helfat & Martin (2015) recognize that researches about social capital as driver are sparser than other ones, moreover, no studies included all three underpinnings together” and their interconnections and joint effects at group and organizational level (Helfat & Martin, 2015, p. 1304) and, finally, cross-level and multilevel factors have not studied enough yet (for a similar idea see: Felin et al. (2012)). This thesis include an empirical research where the three factor are in the questionnaire that is administered to the public servants in local governments, otherwise, the focus is on cognitive capabilities and social capital for research gaps that they show. “Classical” human capital is the basis for control variables in the statistical models, as demographic variable, rather than a core point of the conceptual development of the study.

In summary, in this thesis the perspective is at individual level for empirical analysis, but at the same time, there are multilevel hypotheses for future researches. The future methodological and theoretical approaches is to “think multilevel”, instead of “think micro” or “think macro”, making linkages between organizational levels (Kozlowski & Klein, 2000), trying to understand how theoretical process can explain the microfoundation of dynamic capabilities (Ployhart & Moliterno, 2011). This multilevel perspective of this thesis is based on the idea that organizational dynamic capabilities “manifests as a higher-level, collective phenomenon” and “originates in the cognition, affect, behaviors, or other characteristics of individuals” and “is amplified by their interactions” (Kozlowski & Klein, 2000, p. 55). With respect to this approach, dynamic abilities are also considered to be individual and the latter are the basis for the construction of organizational ones. However, this thesis also has the objective of placing multilevel hypotheses on dynamic capabilities at an organizational level, according to a logic of micro-foundation rather than contingency.

**f) “Local governments” - Stimuli to focus scientific attention at the municipal level.**

“Local governments are responsible for the management and delivery of key public services in countries worldwide” and “scholars have yet to explore all of the approaches to local government management with the same vigor.” (R. M. Walker & Andrews, 2015, p. 102). In fact, local governments are the forefront of public services, they are a public face of the State in front of citizens and, thus, they are the first that have concrete needs to answer to pressing social problems with innovative solutions (R. M. Walker & Andrews, 2015). In recent years, the production models of public services have evolved and, at the same time, studies have spread to try to explain the phenomena in place starting from the resource-based view, as in the private sector (R. M. Walker & Andrews, 2015). In the review of the literature on performance in local governance, Walker and Andrews (2015) find that in three quarters of the studies examined from the 1970s to 2012, the quality of civil servants significantly influences local governments performances and relationships (represented mainly by external stakeholders) have a substantially (moderately) positive effect in 60% of cases. This analysis reflects the relevance of behavioural microfoundation in the specificity of local governments and the need for further empirical research hypotheses in this sense. Economic, contingency (more developed in Great Britain) and resource-based (more used in United States) approaches have not yet been fully studied and the latter theory offers a more in-depth explanatory capacity if, especially, it also takes into account other perspectives (R. M. Walker & Andrews, 2015). In public administration, dynamic behavior is linked more closely to changes in practices and routines related to activities that evolve from day to day (Piening, 2013, p.235). As mentioned above, in public organizations, innovation is sometimes seen as a “black-box” in which it is at least difficult to access; some authors focus more on the role of the organization as a whole (Piening, 2013), while others consider the dynamic and innovative behaviors of individuals (politicians, managers of the lower and middle level) (Fernandez & Rainey, 2006) as crucial. Change operations are less structured than private companies where there are specific institutionalized learning mechanisms such as research and development (Eisenhardt & Martin, 2000, Teece, 2007) and human resources dedicated to organizational change, being specialized in research and development (Piening, 2013). The innovative behavior of these subjects is difficult to compare with groups for projects that are often formed only temporarily in public administration, driven by external or internal pressures due to the dissatisfaction of current operational capabilities (Piening, 2013). Public organizations and, above all, local authorities that are in close contact with the needs of citizens, are confronted with dangerous and complex problems (“wicked and complex problems”) (Rittel & Webber, 1973; Raadschelders, 2011), which start from the reduction of available resources to unpredictable difficulties such as earthquakes. In these conditions, at the micro level, public employees, managers and elected politicians can engage in

dynamic behaviors responding to challenges in everyday life and remedying crises thanks to individual dynamic capabilities. So that environments are less simple and, unavoidably, more "dynamic and discontinuous" (Easterby-Smith & Prieto, 2008, p. 935). Moreover, in local governments, involved actors in change process and networks are faced with complex situations, paradoxes, uncertainties, situations and problems that change continuously and in an interdependent way (Haveri, 2006). These phenomena are so relevant that "Many local actors feel that they are on the brink of chaos" (Haveri, 2006, p. 43). In fact, local governments follow trends that nowadays characterize public administration (Piening (2013)) where change tasks are challenging: rising demand for an effective and efficient provision of public services in condition of reduced resources due to the financial crisis and cut-backs, relations with numerous stakeholders and their conflicting goals, thrusts to emulate private practices and innovations to improve performances, lack of real implementation and results of reforms and innovations, the lack of competitive pressure and incentives for renewal. Local governments have a greater proximity with citizens in the production of public services directly or through owned companies (local government as "holding") with "make" solutions or in collaborations with other public or private entities in various "buy" or "network" forms; they are also characterized by the dichotomy between public servants (included public managers) and political representatives and, thus, in democratic systems, electoral deadlines are decisive in the time horizon, considering the role of direction and directive deriving from the political side. They have the risk of suffering changes in higher level of governments (i.e., regions, central State and ministries) that can modify rapidly legal or budgetary constraints according to the level of autonomy granted (Piening, 2013). Before starting in theoretical and empirical analysis and developing an empirical research model that is on the basis of the thesis, it is necessary to define the specific field of research on organizational issues, which in this case is based on public organizations. The organizational, behavioural and strategic concepts adopted in this work are implemented in the specific reality of local governments, which are crucial organizations in the complex system of the public sector, which has evolved in theory and practice over time. It is outside the scope of this thesis to make a comparison between the public and private sectors and even in the former the specificity of the organization of local governments is profoundly distant from what it can be for other public service organizations. The specific element of this thesis concerning local governments is the dimension of social capital based on relationships outside of intra-organizational relations between colleagues. To arrive at the definition and hypothesis of this variable, however, it was necessary to see in the literature how the concept of public administration has evolved and how the dimensions on which this thesis focuses may have evolved, or at least had a different interpretation.

### 3. PUBLIC ADMINISTRATION IN THEORY AND PRACTICE: WHERE WE COME FROM AND WHERE WE ARE?

#### a) Weberian bureaucracy. The beginnings of the theoretical and practical evolution of public administration.

The term bureaucracy come from the French bureau and from the XVIII indicates the ensemble of public servants that work in public administration (Borgonovi et al., 2009, p. 344). The traditional model of public administration was typical instrument for the implementation of welfare state, that was based on the idea that State could answer to economic and social need after Second World War (S. P. Osborne, 2006). Stoker (2006) and Osborne (2006) enumerate the features of classical Weberian public administration, starting with the work of Beetham (1987). In particular, Stoker focuses on the perspectives that bureaucracy is founded on hierarchical division of labor, full-time career structure, prescribed rules and training in a specific area of responsibility (Stoker, 2006, p. 45). For Osborne (2006), rules and guideless define the key traditional elements of bureaucracy that built the perspective of “rule of law”. There was a strict separation between politics and administration and welfare state lead to an incremental budgeting, with a key role of professionals and administration for the delivery of public services (S. P. Osborne, 2006, p. 378). Some more typical features can be found in Borgonovi et al. (2009, p. 78)<sup>10</sup>, who emphasizes that some of them can be found still nowadays in public and private (big) organizations: the division of labor by norms, specialistic competencies, hierarchic system, a professional career based on tenure at work, bureaucratic knowledge (administrative law). Individual cognitive abilities have theoretically no significant value in the bureaucratic paradigm: discretion is very limited and processes are standardized (Borgonovi et al., 2009) and the space for microfoundation can be interpreted as absent. This is a limit that can also be reflected today in the hiring phase that hasn't changed especially in a reality like Italy where the public courses to be hired are based exclusively on the knowledge of the norm and not on different kinds of skills or knowledge. Social capital is equally irrelevant: relationships are hierarchical responsibility, communication flows are strictly linked to a system of subordination, where the exchange of knowledge does not add anything but is only verification and control of procedures, so the relationships are objective, rational, impersonal and based on a loyalty regardless of superiors and an idea of Taylorism scientific management applied to the public sector (Borgonovi et al., 2009). Dynamic capabilities cannot tend

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<sup>10</sup> The chapter about the features of bureaucracy is written by Valentina Mele.

differently than towards zero. The innovative aspects of change and exploration tend to be cancelled in the theoretical model. The univocal anchorage towards exploitation is hypothetically due to what are the rational elements of bureaucracy: rigid and defined rights and duties within the hierarchy, written and rigid rules that guarantee the uniformity of processes and a division of labour focused on the economy of specialization (Borgonovi et al., 2009, p. 80). Thus, the classical bureaucracy is an exploitative model of public administration and its future could not be different than limited. In fact, the instrumental use of bureaucracy for the unrealistic scopes of welfare state lead the traditional Weberian model to a failure (S. P. Osborne, 2006) and other theories developed through the years. New Public Management and Network Governance have the main impact as it will be shown in the rest of the chapter. However, other theories are not to be underestimated and sometimes the interpretation depends on the role that is attributed to the public sector in the modern economy of a country. Finally, even if the current debate is in the search to find a flexible be-tween bureaucracy, markets, and networks, for some authors the role of bureaucracy interconnected with technocracy remains important (Esmark, 2017).

## **b) From Weberian bureaucracy to New Public Management.**

The development of public administration is a global phenomenon, because governments and public organizations face changes that are driven by technology, economics, society within the context of globalization (Kapucu, 2009, p. 1187). From the end of the 70s, in the 80s and early 90s, in the Anglo-Saxon countries of New Zealand, Australia, UK and other OECD countries, a "new global paradigm" developed (Hood, 1995, p. 93) based on the "managerialism" of the public sector called New Public Management (Hood, 1991). The rise of NPM takes strength during the 90s and is linked to other contemporary phenomena such as the reduction of the State after the welfare state crisis, privatization, technological development, greater international intergovernmental co-operation (Hood, 1991). It was in those years, between the 80s and the 90s, that an extensive literature on the subject was developed that intersected theory and reform practice with storytelling. For Lynn (1998), NPM was an innovative "legacy" for public management: for the first time strong attention to performance, international dialogue and an interdisciplinary economic, sociological and social-psychological study (Lynn, 1998, p. 231). In fact, the NPM started from a criticism of the bureaucratic model for its total inefficiency, self-referentiality from an economic point of view and the real needs of citizen-users for the lack of real external pressures, excessive attention to procedures (Peters & Pierre, 1998). The NPM was created to drastically reform the public sector, which is seen as pathologically ineffective and too extensive (Alonso et al., 2015). This managerial paradigm applied to public organizations has been much debated over time precisely

for the expansion that its implementation had in most of the Western States (Pollitt, 1995). So much so that in the 1980s and 1990s it became a dominant model in academic and practical reasoning on public administration (Lapsley, 1999) and had an impact of "marketization" also in the nonprofit sector (Eikenberry & Kluver, 2004) with which public organizations have relations. In the perspective of Hood (1991), the priority is to be able to reduce costs and simultaneously improve results and quality through consciously managerial rather than professional or administrative management and efficient organizational structures<sup>11</sup>. The founding idea of NPM is that a public administration guided by market principles can increase the efficiency of public service (R. M. Walker et al., 2011). This managerial perspective applied to public administration has as its basic theoretical and practical objective to replace the old bureaucratic model with a new paradigm, in which the application of an "enterprise culture" in the public sector is fundamental (Mascarenhas, 1993). For the **promoters of the NPM** (e.g. Dunleavy & Hood, 1994; Hood, 1991; Kettl, 1997; Lapsley, 1999) the bureaucratic model is replaced by a radical reform process based on quantitative approaches to measuring performance indicators and concerns goals-oriented incentives, disaggregating the classic bureaucratic organizational functions into contracts or quasi-contracts between public organizations creating a more possible market or quasi-market conditions, i.e. forms of competition also between public providers, reducing the size of organizations and strengthening contractual forms to informal relationships and influence, a strong recognition of the role of the manager as a professional. The bureaucratic model, instead, is a protective system, also of inefficiency, as sometimes happens in the private sector where large companies try to defend certain characteristics of their own, and, so, public organizations, like private ones, should look to the market when this passage can lead to greater efficiency (Dunleavy & Hood, 1994). For Gray and Jenkins (1995), instead, the NPM is a model that competes with the classic Weberian bureaucracy paradigm but does not replace it. The NPM can be considered a "philosophy of generic management" because it intends to apply the same concepts and the same logic of action to public and private organizations (Peters & Pierre, 1998, p. 229). The public manager becomes an "entrepreneur", which, as in the private sector, is de-finished by three dimensions of entrepreneurship: product-based (attention to customer satisfaction), process-based (cut of the Red Tape), behaviour-based (disposition for risk-taking) (Moon, 1999, p. 31). It is the logic of the manager who faces competitive markets applied to public administration (Lynn, 1998) and the ideal guide is the merit (Ingraham, 2006) connected to managing for results and, therefore, to

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<sup>11</sup> In particular, Hood (1991) identifies 7 guidelines that underlie New Public Management: professional managers, measurement of performance, output controls, disaggregations of public organizations, competition within the public sector, the use of managerial and organizational practices from the private sector, discipline and parsimony in the use of public resources (Hood, 1991, p. 5).

accountability. In the literature, we begin to talk about "public management" rather than "public administration" (Gray & Jenkins, 1995). Such concepts have led to various criticisms over time, in particular, because the NPM is seen as a dogmatic and ideological study of public administration (Rhodes, 1996a). Market-driven "managerialism" implies that public leaders must behave as "entrepreneurs" and this may be a risk to the democratic model (Terry, 1998). Anglo-Saxon "marketization" is not necessarily a form of modernity for the public sector and, above all, it is not an obligatory point of convergence between the specificities of different geographical areas with different and historically rational traditions, organizational configurations and administrative experiences; on the contrary, the elements of territorial distinctiveness and heritage lead to different or even unique reform paths (Ongaro, 2008; Pollitt et al., 2004). For Diefenbach (2009), the NPM is, in fact, oriented to follow concepts of the private sector, such as competition, efficiency, market-orientation, productivity, when, instead, it would be assumed that in public administration the guiding principles are public norms, such as equality and needs-orientation. The author indicates, therefore, the reasons why this managerial philosophy does not work: limited attention to the traditional heats of public administration, excessive attention to the processes that often leads to a new bureaucratization, performance measurement are not very functional and a simplification of reality in the public sector and create negative consequences on the people who work in these organizations, excessively increases managerial power as much as the organizational culture can deteriorate and the stress of many public servants at a lower level of the hierarchy is multiplied (Diefenbach, 2009). For Gregory (1999), moreover, the application of the NPM linked to the economic theories of public choice has reduced the commitment to maintain a high ethical standard in public administration. According to a skeptical view, moreover, the NMP is the evolution (and reproduction) of the classical perspective of public administration with reforms only incremental compared to those of the past (Page, 2005). With NPM human resources management tools such as pay for performance have been tested, but those tools have hidden costs and motivation is an influencer between them and obtained performances so that pay for performance resulted more expensive than expectations (Weibel et al., 2010). Walker et al. (2011) identify some criticisms that have been made over time: accountability systems are insufficient, management issues outweigh political issues, public interest values, such as equity and fairness, have been excessively weakened (R. M. Walker et al., 2011, p. 707). In addition to long-standing theoretical speculation, attention has focused on the **practical application** of this philosophy to public organizations. The new "mantra" (Beckett, 2000) of "run a government like a business" (Box, 1999, p. 19) is applied extensively for the first time in New Zealand (Boston & Pallot, 1997), but, soon, in the scientific academy, there is talk of "global revolution" for public management (Kettl, 1997). The British public administration had already seen "antistat" reforms since 1979 (Pollitt, 1996)



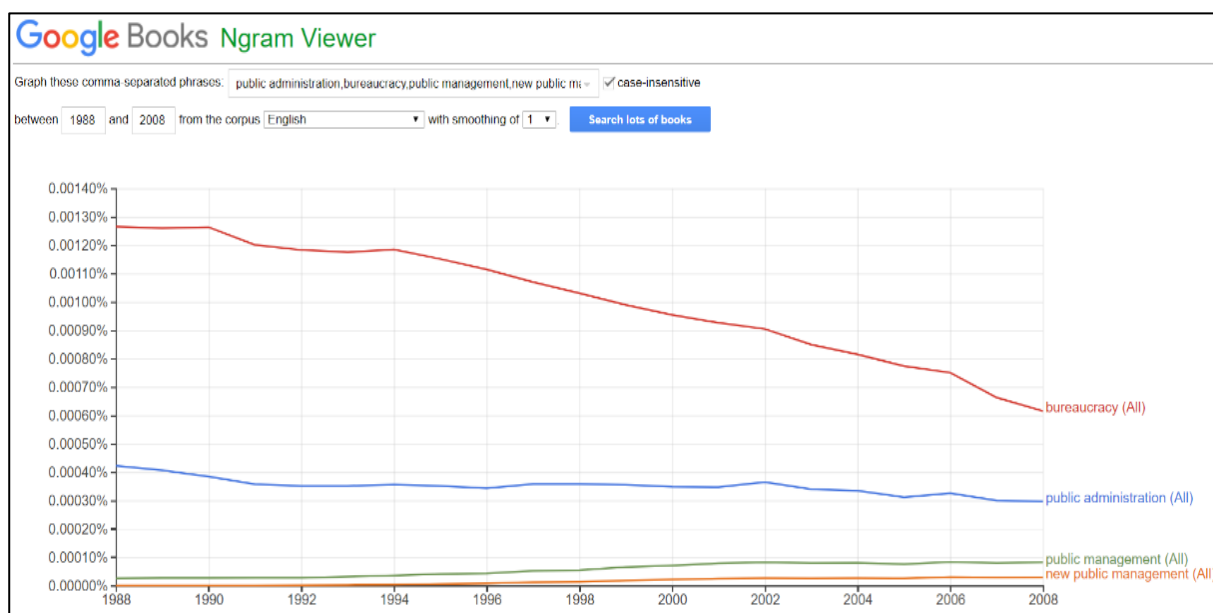
driven by Margaret Thatcher's governments. Immediately after the first states, the reform process moved to the United States, where, however, the NPM was partially applied, i.e. some ideas of this philosophy were adopted, while others were ignored or partially adopted (Moynihan, 2006). Over time, the reform phenomenon has also spread to systems historically linked to centralism and administrative conservatism. For example, since 1996 Regional Hospital Agencies have been established in France in a form of NPM "à la française" (Minvielle, 2006). In Portugal, an "agencification" process was developed with the objectives of counteracting the Red Tape and resistance to change, but the implementation had limited results because the agencies ("Citizen Shops") had a hierarchical and centralized nature, typical of the Portuguese institutional context, which was found to be a contrasting factor for NPM-driven reforms (Araújo, 2001). Ongaro (2008) compared studies concerning the reform process specifically in countries other than the context of the birth of the NPM and which have a Napoleonic administrative tradition<sup>12</sup>, a Latin culture and are located in the Mediterranean (Italy, Greece, Portugal, Spain). When studying different countries it is relevant to understand how much a paradigm developed elsewhere can penetrate a different context in a complementary or alternative way, whether the implementation of the NPM works or fails, as when vital organs are transplanted in medicine, and, finally, what are the dynamics that influence the reform processes (Ongaro, 2008). With regard to NPM-driven reforms at the level of individual organizations, Ongaro (2008) identifies two elements of microfoundation of managerial capacity behavioural, such as the commitment to innovation of the organization's leader, and of social capital, such as the push by stakeholders towards a reform process that derives from inter-organizational relationships built over time (Ongaro, 2008, p. 110). As far as Italy is concerned, local governments have sometimes been more innovative and, therefore, individual organizations at the meso-level have anticipated reforms at the macro-system level, which makes some implementation problems due to the differences between North and South Italy, to a decentralized system of government. In Italy, the dichotomy between administration and politics has changed since the beginning of the 90s, when the majority system and a certain level of spoils system were applied in local governments and facilitated reforms but also created sudden (and abrupt) interruptions of the same and activation of proposals against them (Ongaro & Valotti, 2008), if the election result had democratically changed a majority. Even if there have been pushes to reforms deriving both from the international context and from proposals deriving from uni-

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<sup>12</sup> For Peters (2008) an administrative tradition in "an historically based set of values, structures and relationships with other institutions that defines the nature of appropriate public administration within society, a definition representing more than a little influence of the normative institutionalism" (Peters, 2008, p. 118).

versities, the characteristic of the Italian system is that not only is it part of the Napoleonic tradition of French origins, but the underlying culture is mainly legal and administrative law paradigm is still dominant, it has had a strong survival capacity over time and is useful to explain the difficulty of implementing change in the Italian system (Ongaro & Valotti, 2008, pp. 199–200). Between 1992 and 2007, before the beginning of the economic crisis, Italy did not take full advantage of the opportunities for public administration reform and innovation in the public sector as a whole, due to the presence of a constant political instability that reinforced political and managerial behaviour focused on return only in the short term (Mele & Ongaro, 2014) rather than on development paths that balanced reforms with an impact in the short and long term as if the entire macro system had a lack of ambidexterity. Even if the theorization and the first applications date back to the 1980s, recently some scholars have analyzed the implementation of the NPM during and after the recent great global economic crisis. In recent years, some geolocalized comparative studies have been made driven by the fact that during the economic crisis, European countries have moved in the direction of NPM-driven reforms, to overcome debt and financial problems. Hyndman and Lapsley (2016) found that also in the UK in the period 2010-2015 NPM-driven policies have been intensified and there is a lack of empirical evidence that NPM is past and gone in the 21st century compared to the 80s and 90s reforms. In addition to Anglo-Saxon countries, there have also been attempts at NPM-driven reform in continental Europe, especially at the height of austerity policies (Alonso et al., 2015). For example, Alonso et al. (2015) studied the effect of NPM-style reforms within the EU during the last thirty years and found a return to outsourcing practices during the global economic crisis with the aim of reducing costs. According to the empirical research of Alonso et al. (2015), the practice of outsourcing does not reduce costs, while administrative decentralization seems to have an impact on the overall reduction of expenses, however, both practices have not led to a reduction in public employment. Kuhlman (2010, p. 1128) finds that adaptation has been incremental, rather than strategic in Italy, Germany and France, where, in reality, there has not been a generalized "paradigm shift" from bureaucratic model to NPM, but a mix (i.e. "neo-Weberian amalgamation") between modern "managerialism" with new values and classic Weberian legalist practices and rules. Indeed, the tools of the NPM have brought back to the surface many elements of bureaucratic Weberian bureaucracy in an unplanned way (Kuhlmann et al., 2008). Pérez-Lopez et al. (2015) studied the application of NPM practices in Spanish municipalities and found that contracting out, creation of public agencies and cooperation with other private and public entities have been done. The empirical results show a disconnection from the theoretical expectation: contracting out and inter-municipal cooperation practices reduce efficiency and productivity when the economy "works".

Figure 5: terms evolution about public sector in books written in English (Source: **Google Books** – **Ngram Viewer**<sup>13</sup>).



While it increases efficiency in times of crisis and, in this sense, NPM-driven measures may have become more efficient during the last global economic crisis (Pérez-López et al., 2015). In addition to the Western countries, in a US-Chine comparative analysis, Zhang (2009) finds that also in the Asian country performance management has developed in the local governments and convergence in the processes of public administration reform is expected, while each maintaining its peculiarities (M. Zhang, 2009, p. S87). In ex-Soviet countries in Central and Eastern Europe, where a communist regime was present, the NPM had little implementation, especially as a perspective based on managerial freedom and founded on business and market principles was not practicable effectively (Goetz, 2001), while the depoliticization and professionalization reforms were guided within the boundaries of Weberian rational-legal model (Neshkova & Kostadinova, 2012, p. 325). To conclude this brief international review, research on public administration has been rather fragmented in developing countries, but there is no real dichotomy between North and South, so much so that we can speak of "global social science" (Gulrajani & Moloney, 2012, p. 78). Compared

<sup>13</sup> Google Ngram Viewer is an application that allows you to observe the level of use of certain terms or phrases in books published in a language or country between 1500 and 2008. For example, you can search in texts published in English or more specifically in texts published in the United States for American English or in Great Britain for British English. The graphs show how much terms are used in a corpus of books over a period of time and are only expressed if the search engine finds at least 40 books using the exact term or phrase. The application allows for both sensory counting against uppercase letters and "insensitive" counting, i.e. counting terms without considering whether the letters are in uppercase or lowercase letters. Some scientific research has contributed and used Ngram Viewer (e.g. Michel et al., 2011).

to the reform process, the "development management"<sup>14</sup>, which derives from a terminological change in theoretical and practical jargon, was on the one hand well received, as the public sector reform process is seen as a way to improve the quality of life, while on the other he has been criticized and opposed for a refusal of neocolonialism and neoliberalism (Gulrajani & Moloney, 2012, p. 78). The terminological change of "managerialism" is a relevant element in the process of reform and evolution of study and practice in public administration. It is beyond the objectives of thesis, to study the linguistic evolution of terms in the field of international public administration studies, however, Google Ngram Viewer (<http://books.google.com/ngrams>), albeit with limitations of lack of bias control, allows you to take a "quantitative" look at the use of the new terms adopted in the books published until 2008. It is possible to observe in Figure 5 that the term "bureaucracy" is less and less used in the last thirty years and meantime "managerialism" increased its relevance at the expense of "administration" that presents a slightly decreasing slope.

Focusing on British English in an extended period in Figure 6, "public management" developed starting from the eighties and had a strong impact from the second part of the nineties, when the term tends to reach "public administration" in common use in British books. "New public management" began to be used in books from the early 90s after the publication of Hood's article in 1991. "New public management" is a three-word "sentence" and so it is impressive that it has a robust application in the literature compared to generic terms such as "public administration" and "public management". The last passage in this brief examination of the use of words is an international comparison with French and Italian cases that are two countries where the old bureaucratic system was born and the public sector was based on that perspective from the time of the European rise of Napoleonic model. While maintaining the English "management", on Ngram Viewer see application of term in different contexts. In Figure 7, it is possible to see how the term management has entered the French and Italian vocabulary and "public management" is used both in French and Italian literature using the two English words since the 90s. Leaving "management" and adding the French term "public", you can see that "managerialism" in the public sector has many references, especially in the early 2000s, when it exceeds the term published in books published in Great Britain. In France and Italy the terms management "public" (French) and "public" (Italian) have been used mainly since the late 70s and early 80s, while the terms both in English (public management) have had greater use since the mid-90s.

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<sup>14</sup> For the authors, the terminology used has gone from "development administration" to "international development management", in which the public is seen in a wider context of relations with the private profit and non-profit sector (Gulrajani & Moloney, 2012, p. 80).

Figure 6: terms evolution about public sector in books published in Great Britain (Source: Google Books - Ngram Viewer).

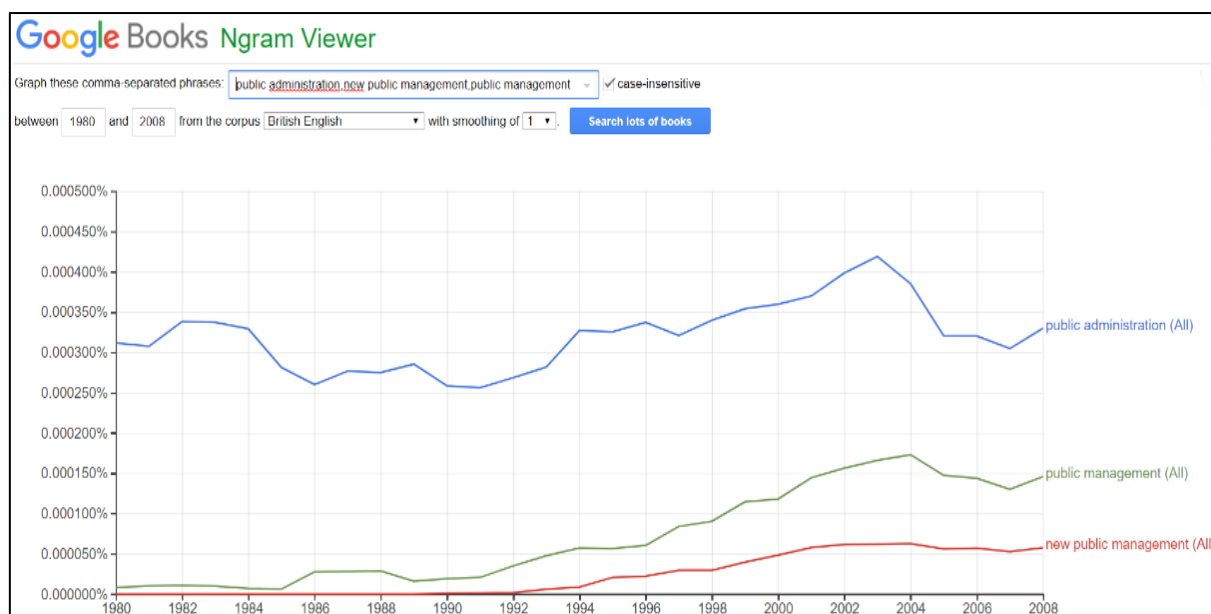
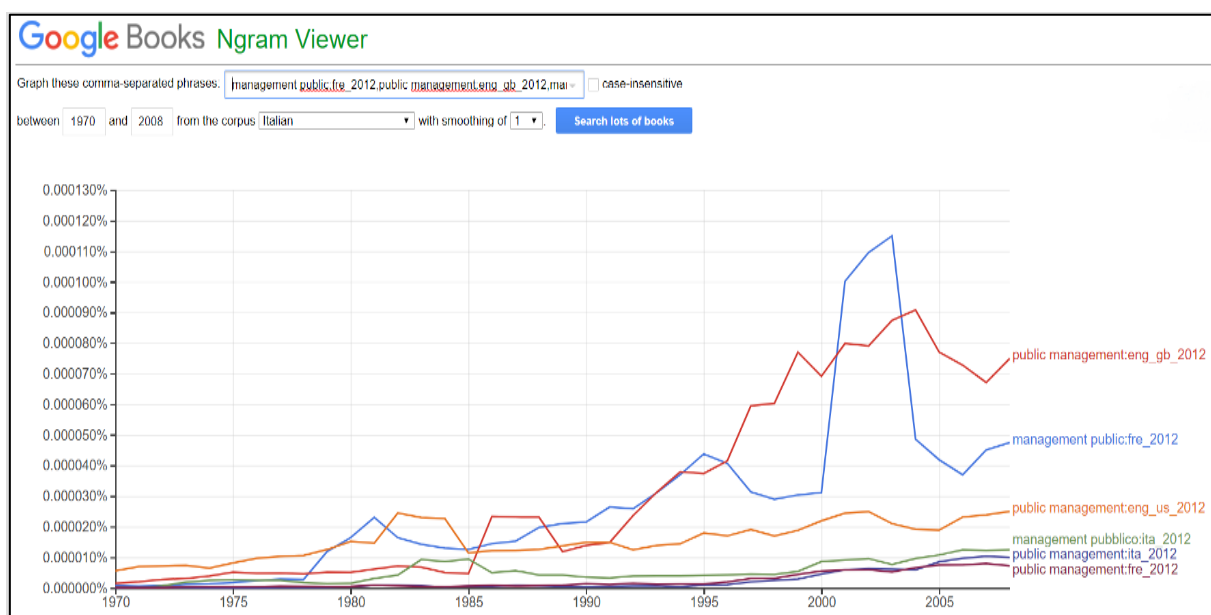


Figure 7: terms evolution in books written in English, French and Italian (Source: Google Books - Ngram Viewer)



Public Administration was taught at universities of political science, while "public management" was taught at universities of (private) management and business (S. P. Osborne, 2006). To conclude this brief examination of the linguistic use of New Public Management, the introduction of new theories and their implementation in practice can change the jargon written in books and, in the background, common with the inclusion of organizations and public officials working there is a new "managerial" paradigm, which was previously absent in the organizational culture especially in certain countries where the Weberian bureaucracy model

was born. The other more recent theories and terminologies that we are going to see below, do not have the same performance in terms of the use of terms in published books, indeed there is no trace of it on Ngram Viewer, compared to New Public Management which has left its mark, at least in terms of vocabulary.

### **c) Individuals' role in New Public Management – quality management.**

As outlined above, the NPM talks about merit, empowerment, professionalization, managerialization, performance incentives in the public sector. In this context of paradigm shift concerning the Weberian bureaucracy, it is in the seminal paper of Kettl (1997), that some elements of micro-foundation are found. In his article, the author highlights the fact that public managers are pressed for the first time to do more with less and faster because they have to know how to respond to new problems with a new system, which can be implemented in the organization only thanks to people and the support of technology (Kettl, 1997, pp. 455–455). Building a "new administrative capacity" means having public servants who have the skills and capabilities to deal with greater responsibility, performance and results orientation, the need to manage scarce resources, such as the reduction of staff in many countries during the reform process, despite the increase in demand (Kettl, 1997).

**Relationships in NPM** are limited to contracts that the organization signs with other public and private organizations; the peculiarity of NPM is to try to replace the old legalistic system with a market-driven paradigm so that relationships from the top manager down are seen as identical to the relationships that employees and managers have in the competitive private sector. In NPM, networks consist of relations with external stakeholders driven by market practices based on formal contracts and partnerships: privatization, contracting out, outsourcing, externalizations, decentralization, competition for purchase from suppliers and so on. In NPM, the strong push for "downsizing" has led public organizations to apply certain contract systems taken from practices in the private sector. This external market-driven relational capacity theoretically allows increasing organizational capabilities as "smart buyers" (Kettl, 1997, p. 458), which means knowing how to buy when necessary or choosing the right suppliers for the quality-price ratio. From large bureaucratic organizations, there is a movement on to decentralized and theoretically reduced organizations that turn to other public and private entities for supply and compete with other public and private entities with their supply to meet market demand for their services. There are new agencies with which market-driven relationships are always developed. Moreover, in the more precise form of NPM the term "market orientation" as a workaday process is used, so the results of public organizations are better when their behaviours get close to market-driven one, where

organizations face a market competition to answer to demand (R. M. Walker et al., 2011). For Walker (2011), three elements compose market orientation: customer orientation (i.e. knowledge of customers' needs with the aim of build noteworthy value for them), competitor orientation (i.e. knowledge of competitor's actual and likely features, strategies and capabilities now and in future), inter-functional orientation (i.e. efficient integration of organizational resources to improve the value level for customers) (R. M. Walker et al., 2011, p. 708). Relations with external stakeholders include the idea that an improvement in outcomes has not only an internal meaning for the organization as a whole but also a value in front of other public superintendents, service users, citizens and also internal workforce (R. M. Walker et al., 2011). In this sense, NPM philosophy takes a new trend for the adoption typical private practices in business marketing to improve customer satisfaction: focus group with service user representatives, benchmarking with other public organizations in the "marketplace", information collection on best practices, surveys of customer satisfaction, knowledge about the supply-side of suppliers (R. M. Walker et al., 2011, p. 709). Knowledge from external actors and their influence is a resource for an individual (within the context of performance evaluation of the personnel) and organizational outcomes to enhance the quality of public services within the public sector where the marketization encompasses traditional aims and objectives. Relations with higher-level governing bodies also have a competitive logic, in which the decision-maker belonging to a central office evaluates which projects and programs to finance rather than analyses in this sense the performances and the underlying public organizations compete for scarce resources which are primarily budgetary and financial (Kettl, 1997). Also in this direction, in NPM, relations are formal and contractual, rather than emerging and informal or of support and co-production of the public service. The relational structure of the organizational and individual social capital is substantially linked to contractual forms. Therefore, the internal knowledge network, as internal (other business units), is theoretically limited to the business paradigm (e.g. customer satisfaction analysis on own products or services), unlike the model of Network Governance below, in which external relationships are at the centre of the philosophical paradigm, as the knowledge acquired in the network itself is a crucial element in the maintenance of public interest.

#### d) From New Public Management (NPM) to Network Governance (NG).

Over time, society becomes less governable, fragmented, networked, due to the multiple values that change and the impossibility that at least some of these values are shared univocally to assess policy choices and outcomes (Klijn, 2008). The third phase of theoretical and practical development of public administration starts in Europe and is linked to the use of the networked mode in the production of public services, which has taken shape in Western Europe since the 1990s (Peters & Pierre, 1998), while in Anglo-Saxon countries and America, the most relevant model was "managerialism" inherent in NPM (Kickert, 1997). This model has a different vision than the bureaucracy and the NPM which are hierarchical models. It concerns a growing attention to governance, managerial and inter-organizational networks (M. B. Hansen & Villadsen, 2017).

Over time different authors have given a different "name" to this paradigm, some examples: "Mixed Economy" (Austin & Hasenfeld, 1985; Boyne, 2003), "Networked Bureaucratic World" (O'Toole, 1997b), "Public Governance" (Kickert, 1997), "New Governance" (Bingham et al., 2005; Rhodes, 1996b), "Governance without Government" (Peters & Pierre, 1998; Rhodes, 1996b; Rose-nau et al., 1992), "Governance", (Lynn et al., 2000) "Hollow State" (Milward & Provan, 2000), "Digital-Era Governance" (Dunleavy et al., 2006), "New Public Governance" (S. P. Osborne, 2006), "System Governance" (Bevir, 2006), "Collaborative Governance" (Ansell & Gash, 2008; Emerson et al., 2012; Huxham et al., 2000; T. A. Scott & Thomas, 2017), "Governance Network" (Klijn et al., 2010) "**Network Governance**" (Ansell, 2008; Bekkers & Tummers, 2018; Provan & Kenis, 2008; Robins et al., 2011)<sup>15</sup>, "Networked governance" (Stoker, 2006), "Metagovernance" (Sørensen, 2006), "Street-level governance" (Considine & Lewis, 2012), "Governance Era" or "post-NPM reforms" (Esmark, 2017). Although none of these terms has had the same impact on the use in books according to Google Ngram Viewer, in firms governance has been studied over time and is represented by the board of directors and in the nonprofit sector governance is represented by the board of trustee (Provan & Kenis, 2008). However, these are two different concepts with respect to governance in the public, where rather we look at the public's external relationship with other public or private entities, where formal and sometimes informal decision-making is directed towards a search for con-sense among numerous actors (Ansell & Gash, 2008) The definitions on this topic substantially overlap: some of the main ones are included in Table 5. For the purpose of this thesis, the term "network" is used to refer to the set of relationships that organizations and individuals in organizations have with other stakeholders, thus summarizing the theory of social networking and individual and organizational social capital. In 1997, O'Toole

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<sup>15</sup> Ansell (2008) edited four books that had written about "Governance" and "Network Governance", so, for more details, see this article (Ansell, 2008).



(1997b, p. 45) defined network as “a pattern of two or more units, in which not all major components are encompassed within a single hierarchical array.” The perspective is that in networks, social actors are interconnected and at least a part of relations are not hierarchical (in the sense of superior-subordinate connections) (R. M. Walker et al., 2007). In this thesis, focusing on individual level of interconnection, networking concerns relations between public servants and actors outside the organization (M. B. Hansen & Villadsen, 2017, p. 1557) in a world where networks are the more frequent setting to provide public services in many countries (R. M. Walker et al., 2007, 2010). In recent decades, hierarchies as the pre-eminent model of public administrations have been gradually replaced by networks because of their greater structural capacity to deal with “wicked problems” (Ferlie et al., 2011; van Bueren et al., 2003; E. P. Weber & Khademian, 2008). In the paradigm of Network Governance, the structure of the network itself is, in fact, a structural precondition that can facilitate coordination and agreement between the actors with respect to objectives and modes of action (Robins et al., 2011). The term “governance” is used to summarize (in the public sector) the set of definitions and terminologies that scholars have used in recent decades (i.e. public governance, collaborative governance). Governance refers to the “act of governing” and this word can be used for the private sector as well as for the public one (Emerson et al., 2012, p. 2). In this thesis, the theoretical preference is to do not use to use the term “public” in front of the word “governance”. Public organizations could have a prominent role or a secondary one within the network with business and third sector. Using the term “public”, on the other hand, would mean giving a greater implicit value to the public sector than to other private stakeholders, although the idea remains that, basically, these networks have a public interest objective. If the network is composed only of public organizations and the participating members are only public employees, then including the term public to governance may have a meaning of better comprehensibility. This fact depends on the specific nature of the network, even if nowadays in modern economies public-private relations are daily and inevitable, although often they are not formalized. Focusing on local governments, they have a greater proximity with citizens in the production of public services directly or through owned companies (local government as “holding”). This delivery of public services can have “make” solutions or “collaborative” ones with other public or private entities in various “buy” or “network” forms. In fact, networks are various structures of delivery that come between “formal hierarchies and perfect markets” (O’Toole, 1997a, p. 45) and they complement them with structures of coordination, allocation of resources and control (Rhodes, 1996b). Then in this work, the networks analyzed are the individual networks, i.e. public servants in municipalities, and refer to relations outside the individual organization to which they belong. As can be seen below in the review of the literature on external networking, if at the beginning the focus was on inter-organisational “meso” relations

in governance, over time the focus shifted to the "micro" level also on the relational behaviour of public servants with other individual public or private subjects in the reference environment. The institutional theory of inter-organizational relationships intersects with the microfoundation paradigm in which the "spokespersons" of the organization are the individuals who actually interact as stakeholders in the public interest network. In particular, this process occurs when the exchange concerns immaterial elements in which the human side is decisive, such as knowledge, rather than material goods or services, in which the meso-organizational dimension in relations remains predominant. In this thesis, the term used hereinafter is **Network Governance (NG)**. A single public administration has lost the full capacity to provide public services, which today are organized in a network with other different subjects, such as other public organizations, public companies (public groups), private and non-profit organizations or even in co-productions, with a specific role for citizens. Indeed, "Administrators are located in complex structures of interdependence in the network" (O'Toole, 1997a, p. 47) and several actors collaborate and compete in a "mixed economy" (Austin & Hasenfeld, 1985). For Jones et al. (1997), network governance is a social mechanism for coordinating and adapting the change deriving from economic and organizational theories concerning the complexity of the increasingly variable and uncertain conditions that private companies face today. Powell introduces networks as a form of coordination of distinctive economic activity with respect to classic market models, led by contracts, and hierarchy (Powell, 1991). In the private sector, Network governance hypothesizes forms of competitive advantage over the hierarchy and market solutions (C. Jones et al., 1997). Their environment is not purely "non-market", because citizens' control leads to a greater need to improve performance and results and the choice to "do" or "buy" (market or quasi-market) or to "do network" in the provision of public services over time have led to more turbulent conditions and environments in which competition and cooperation can coexist. When national States are faced with the complexity of globalization, the phenomenon of isomorphism prevails at the local level, so that the partial complexity of the system corresponds to the complexity existing at the widest and highest level (Haveri, 2006). In this context, the research will be at two levels of analysis: the micro one, that's about public servants, and the "meso" one, that's about the single organization inserted in an environment of network governance (Ferlie et al., 2011; S. P. Osborne, 2006). Public servants have internal and external relations in a social-political environment (Kickert, 1997, p. 732), and, depending on their level of responsibility, they have a relational role in complex networks with administrative legalistic formal but also emergent and informal answering to increased stakeholder's expectations. For Osborne (2006) the NPM focuses more on intra-organizational relations, while the NG focuses more on external relations. For many authors, moreover, the idea of Network Governance links the meso-organizational level with an evolution of society at the

macro level in an interdependent and relational sense (Klijn, 2008) and processes should be studied in synergy with the micro-level (S. P. Osborne, 2006). In the Network Governance, the relationship is with many actors that have often divergent interests and it is no longer the government that alone dominates and imposes a line, rather in the network the social process induces co-direction and mutual influence (Kickert, 1997, p. 735). In the NG the participation of citizens, as well as other external stakeholders, has been a founding challenge of the philosophy especially at the level of local governments (Kathi & Cooper, 2005), despite the classic administrative barriers guided by hierarchy, due to the proximity between municipalities and citizens that live in the administered territory. Some authors have left their mark on the theoretical and practical structure of public administration on the subject of NG.

Table 5: definitions of Network (Public) Governance in literature (Sources in the first column).

SCHOLAR(S)	DEFINITIONS
Rhodes (1996b, p. 652)	"NEW GOVERNANCE" = "self-organizing interorganizational networks" and "these networks complement markets and hierarchies as governing structures for authoritatively allocating resources and exercising control and coordination."
Kickert (1997, p. 735)	"PUBLIC GOVERNANCE" = "is the 'management' of complex networks, consisting of many different actors from the national, provincial, and local government, political and societal groups, pressure, action and interest groups, societal institutions, private and business organizations. The management of such public networks is a form of external government 'steering'." ... "is the directed influencing of societal processes in a public policy network of many other co-directing actors."
Stoker (2006, p. 41)	"NETWORKED GOVERNANCE" = "A particular framing of collective decision making that is characterized by a trend for a wider range of participants to be seen as legitimate members of the decision-making process in the context of considerable uncertainty and complexity."
Osborne (2006, p. 384)	"NEW PUBLIC GOVERNANCE" = "it has the potential to tap into a more contemporary stream of management theory, concerned with the 'relational organization', than does the output and intra-organizational focus of the NPM. It posits both a plural state, where multiple inter-dependent actors contribute to the delivery of public services and a pluralist state, where multiple processes inform the policy making system."
Ansell and Gash (2008, p. 544)	"COLLABORATIVE GOVERNANCE" = "A governing arrangement where one or more public agencies directly engage nonstate stakeholders in a col-

	lective decision-making process that is formal, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets."
Provan and Kenis (2008, pp. 230–231)	"NETWORK GOVERNANCE" = "In public management, governance refers not to the activities of boards, but mainly, to the funding and oversight roles of government agencies, especially regarding the activities of private organizations that have been contracted to provide public services" (p. 230) ... "We define the term "network" narrowly. Our focus is on groups of three or more legally autonomous organizations that work together to achieve not only their own goals but also a collective goal. Such networks may be self-initiated, by network members themselves, or may be mandated or contracted, as is often the case in the public sector." (p. 231)
Klijn (2008, p. 511)	"GOVERNANCE NETWORK" = "public policy making and implementation through a web of relationships between government, business and civil society actors. One can then consider phenomena like public–private partnerships or interactive policy making as specific forms of governance networks. Governance networks are based on interdependencies, which are not necessarily equitable, between public, private and civil society actors."
Emerson et al. (2012, p. 2)	"COLLABORATIVE GOVERNANCE" = "the processes and structures of public policy decision making and management that engage people constructively across the boundaries of public agencies, levels of government, and/or the public, private and civic spheres in order to carry out a public purpose that could not otherwise be accomplished."

In his classic paper, Rhodes (1996b) defines governance as "self-organizing, inter-organizational networks". Rhodes's article has 5946 citations on Google Scholar to date (July 2019). In 1997 O'Toole wrote a seminal paper appealing to scholars and practitioners that it was time to "treating network seriously" with 1600 citations on Google Scholar to date (July 2019). In 1998, there is a third seminal paper: Peters and Pierre (1998) make a comparison between NPM and Network Governance. For Peter and Peter (1998), NPM and NG have some points in common: they consider as obsolete the dichotomy between public and private, both have a strong focus on objectives and results. These similarities, however, can be an operational appearance, because theoretically NPM and NG are two different and separate philosophies (Peters & Pierre, 1998). Peter and Pierre (1998), however, also consider that network governance has a less negative view of public service than NPM because for the latter the main necessity is to apply the business-private ideas to public sector and increase the level of competition within the public sector, instead, for the

former, public organizations retain a crucial role in safeguarding the public interest<sup>16</sup> within networks where resources are catalysed cross-sectioned with other private or private institutions and, in this sense, in the NG the competition is also contemplated between public and private<sup>17</sup>. Moreover, it should be considered that NPM and NG focus more on governmental steering rather than on rowing (D. Osborne & Gaebler, 1992), but for the former the main idea is to economize even if public organizations deal with a multiplication of users' expectations, instead, for the latter external networking is a strategic way to improve government's capabilities (Peters & Pierre, 1998). NPM focuses on the intra-organizational level and is substantially an organizational theory, otherwise, NPG have an inter-organizational perspective and it is a political theory (Peters & Pierre, 1998; Rhodes, 1996b). NPM and NG are two alternative models with few points of interdependence, so much so that in practice the reforms of public administrations in de-terminated geographical areas have seen the application of only one philosophy between the two (Peters & Pierre, 1998). In Academia, as in individual organizations, path-dependency counts (Peters & Pierre, 1998) and this can be considered at systemic level in the reforms of public administration in individual states. The application of the NPM philosophy has been stronger in "individualist" countries with majority electoral systems such as the U.K., rather than in collectivist countries where the search for consensus is more negotiated as in the Netherlands (Pollitt, 2006). It is reasonable, in fact, that the latter make greater resistance to NPM reforms and, vice versa, the former are more "at ease" in the application of this philosophy, rather than implementing the NG paradigm (Pollitt, 2006). Not all authors share the line of alternativity. For Osborne et al. (2013), in fact, like the classic bureaucratic model, the NPM focused on processes and intra-organizational management and NG does not replace this level of analysis, but rather integrates it in a different context that has changed (S. P. Osborne et al., 2013). One aspect of change in the paradigm, however, is the fact that it is necessary to strengthen the peculiarity that the topic of interest are public

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<sup>16</sup> It should be noted that the principle of defending the public interest is not entirely absent from the philosophy of New Public Management. For Kettl (1997), an advocate of NPM, for example, it is relevant that new public employees coming from work experience in the private sector have the skills to deal with the complexities of the public sector and at the same time "there is the additional need for inculcating the sense of public interest into workers used to serve the more narrow profit motive" (Kettl, 1997, p. 454). For the author, in fact, market-style management has difficulty in going beyond efficiency, therefore, in order to achieve broader objectives it is necessary to consider that a fundamental boundary for public organizations is that they do not operate in business and, therefore, this concept must be incorporated into the reform of the public sector, without having a negative vision of the same (Kettl, 1997, p. 459). It is clearly a perspective of NPM correction, while remaining within this public administration philosophy: a balance is needed between the pursuit of efficiency and the protection of the public interest in a "genuine" process of reform (Kettl, 1997, p. 454).

<sup>17</sup> On the relevance of monitoring the achieving of public value during privatization for public servants see Hefetz and Warner (2004).

services and not public "products" and, therefore, the managerial role is in the service sector and not in the production of material goods and this implies different distinctive capabilities compared to a philophobia that has compared the production of products in the business with the provision of services in the public (S. P. Osborne et al., 2013, p. 136). Civil servants no longer live in a perspective of hierarchical control alone, but decentralization and globalization have founded a fragmented organizational model in which work activity is outward-looking (Bogason & Toonen, 1998). During the 2000s, some articles have deepened the theme of the NG, and for their impact on the subsequent literature, they are now classic insights into the seminal articles of previous years. In particular, the article by Meier and O'Toole, who were the first to deal with external networking in a cross-section study in dog-loving schools, with 537 citations (July 2019) (Meier & O'Toole, 2001), Provan and Kenis's "modes of network governance", with 2994 citations (July 2019) (Provan & Kenis, 2008), Osborne's "The New Public Governance" with 1454 citations (July 2019) (S. P. Osborne, 2006). Over time, several authors have focused on the durability of theoretical-practical paradigms. Already in 2001 Gruening hypothesized that the NPM was a system of values that seemed to be able to solve the current problems of public administration, but that it could not last forever (Gruening, 2001). Other authors have spoken of the crisis of the hierarchical model (Hill & Lynn, 2005), of the Middle Age for academic literature on New Public Management (Anechiarico, 2007; Hood, 2004), "New Public Management Is Dead" (Dunleavy et al., 2006) and its fall is assumed after years of domination due to the global economic crisis in which this paradigm would be involved, being tied to the idea of predominance of the market system (Levy, 2010). In recent decades, however, attention has grown towards public interest networks in the theory and daily practice of public administration, so much so that over a decade ago, Ansell and Gash (2008, p. 543) stated that "a new form of governance has emerged to replace adversarial and managerial modes of policymaking and implementation ", however at the bibliometric level it is still to be understood whether there has been a passage in this sense in the interest of scientific literature. Even for the NG philosophy, the authors wonder about the durability in practice, that is, whether it is a "passing fancy" (Ansell & Gash, 2008, p. 563) or whether the need remains to deepen the relational theme among public organizations and external stakeholders. Even for NG, however, there are possible criticisms and food for thought on the durability of the paradigm. However, not all authors agree in the inevitability of moving from a hierarchical system to a form of market or network. For example, per Olsen (2006), bureaucratic organization is not a solution for modern complex "wicked" problems, but it is an institution that is contextualized in time and space, it is not an instrument and it exists with market-organization and network-organization inside the multiple configurations of present-day societies. Considine and Lewis (2012) found that regulation and policies moderates interactivity and discordant to

expectations in UK, Australia and The Netherlands the activity of external networking of public servants diminished after the introduction of post-NPM reforms. For O'Toole (2015), network mode of governance does not take the place of bureaucracy, but it adds levels of complexity in the structure of relations between public administration and stakeholders for public services. Otherwise, at the same time, public servants should take into account that in some ways, they need to deal with external stakeholders and this process takes to spend time with them and take responsibility (O'Toole, 2015). In the literature there are some terminological nuances with concepts that in some aspects overlap for others, however, it is an application in the public sector of terminology applied to business, as already happened with the NPM. In particular, with respect to the "democratic" participation of citizens in the choices, however, a clearer perspective is needed with respect to the theoretical perspective of the NG. According to Bevir (2006) the philosophy of the NG is inspired by some ideas of radical democracy, such as participation, networks, consultation-driven consensus, but this model is far from a pluralistic model in which there is the self-government of citizens and the dialogue inside the society is different than relationships between established actors in networks. For Bovaird (2007), co-production is the keystone of the system because it highlights the role of users and multiple stakeholders through a bottom-up mechanism within the political system of a community. Therefore, the paradigm of local Network Governance is outlined so that this systematic complexity involves a transition from direct, hierarchical and traditional bureaucratic models to the crucial role of context and "actors' cooperation- seeking behavior" (Haveri, 2006, p. 33). At the international level, the management modalities of public services have different transformation movements (Longo, 2005). Having the public lost the prerogative of many levers of government (Longo, 2005), people are included in public governance networks (Ferlie et al., 2011; Kickert et al., 1997; S. P. Osborne, 2006), in which public and private subjects (citizens, organized lobbies, profit and non-profit companies) interact in a formal and informal way for the production of complex public services and in the "making system" (R. M. Walker, 2006). In this reticular system, people are carriers and diffusers of resources, as knowledge, intersecting the network among individuals with the network among organizations. The world of public administrations, in fact, is more and more complex and the number of actors interacting in the network of public interest in the co-production of public services has grown (R. M. Walker et al., 2007). From strategic operations to operational tasks, in the delivery of public services.

**e) New public service. Another paradigm of public administration beyond New Public Management and Network Governance.**

For the point of view of Stoker (2006), Network Governance is a system in which decisions are taken bottom-up and which implies a new way of working for politicians and public servants, but the managerial paradigm of public value is necessary (Bryson et al., 2014; M. H. Moore, 1995) to guide them in their behaviour in networks with normative implications, as the pre-eminence of public interest, public service ethos, democratic process rather than market-driven sum of preferences (Stoker, 2006, p. 42). In this sense, for the author, public value management is a perspective that is part of the wider context of network governance, i.e. it is the managerial response, and it is precisely in relations with other stakeholders and openness to the outside that there can be a process of individual learning in which the manager should be part of a continuous process and shared learning within the network (Stoker, 2006). For the perspective of public value management, in fact, the network is not only a greater opportunity to reach resources in addition to knowledge, but also the possibility to share ethical values and the spread of public interest (Stoker, 2006). In this perspective, public value is a philosophy based on adaptation and reflection, when traditional bureaucracy was based on discipline and New Public Management on the system of allocation of resources through contracts (Stoker, 2006). It is not opposed to the network governance system, but the public value perspective adds an ethical-moral-democratic value to the process of learning, knowledge exchange and decision-making between the organization and external actors. Although the paradigmatic models seen try to lead to a generalization, implementation difficulties are inevitable. Comparing reforms a factor to consider is the political-institutional setting where a model is applied, as the intersection between performance, stakeholder participation and institutional forms can depend on the context (Svensson et al., 2008).

**f) From bureaucracy to the paradigm of Neo-Weberian State. A modern answer to the problems of public organizations or a return to the past?**

In addition to the classic bureaucratic model, the NPM and the NG, that will be analysed in next paragraphs, there are other theories of explanation available in the literature relating to public administration. In the countries where the Napoleonic model of bureaucracy in Europe originated, a "Neo-Weberian State (NWS)" has developed, i.e. a reform process that differs from NPM and NG, as it takes up concepts elaborated by Max Weber and the scholars who have revolved around this paradigm and introduces innovations (Ongaro, 2008; Pollitt et al., 2004). In particular, Pollitt (2004, pp. 99–100) and Ongaro (2008, p. 113) indicate that some Weberian classical aspects will be maintained, such as the premature role of State facilitator in the responses to modern



problems. The presence of democratically elected boards together with the bureaucratic machinery, the administrative law that guarantees relations between the public organization and external stakeholders starting from citizens and service users, the status of public service concerning the business. There are also some "neo" ingredients in the 2000s reforms of public administration in States with a Napoleonic tradition. Pollitt (2004, pp. 99–100) and Ongaro (2008, p. 113) identify three "neo" features: external orientation toward multiple stakeholders matter more than classical internal need to follow rules, orientation to performance more than to the respect of legalistic procedures, professionalization of the public service with the necessity to have a broader knowledge and more skills than only knowledge in administrative law, as it is typical in classical public "examination" to be hired in public organizations. This paradigm of inclusion or "amalgamation" (in the terminology of Kuhlman (2010)) in the Weberian tradition of current concepts follows the perspective of microfoundation of public administration, in fact, the elements of novelty listed by Ongaro (2008) and Pollit (2004) highlight elements of social capital, i.e. external relations to respond to the needs of stakeholders starting from citizens, and human capital, as new skills that are necessary for the public official to respond to modern issues of which public administration is seen to have a facilitating role. In a context such as the Italian one, in which the empirical part of this work is developed, in the NWS perspective, it is possible to make hypotheses of microfoundation, while applying theoretical concepts that can be more related to the NPM, such as innovation and organizational ambidexterity, i.e. concepts applied to the public sector, while being studied in the private sector, or to the NG, such as external relations and their effect on the organizational outcome.

#### **g) The paradigms development of public administration in scientific research. An in-depth analysis thanks to a bibliometric analysis with Google Scholar.**

In recent years, the concepts of Neo-Weberian State and New public service, otherwise, at the global level, the academic debate is more focused on macro-paradigms of New Public Management and Network Governance have developed. This paragraph analyses with a web terminology research how these two public administration philosophies have evolved in terms of relevance in scientific research. Over twenty years ago, scholars say that the debate on governance is a significant way for the academic scientific community to get closer to the reality of public organizations. Peters and Pierre (1998) affirm that there is a path dependency in Academia, therefore, I am going to see if this path has confirmed a passage from New Public Management to Network (Public) Governance, that is, if at the level of scientific research it has been truly cultured with "seriousness" (O'Toole, 1997b) greater attention to the net or if the "previous" paradigm is

still pre-eminent. It is relevant to understand if the orientation of the research is at a turning point between the hierarchical paradigm and a network one (Hill & Lynn, 2005), that is, a new governance model characterized by the relationships between the public organization and the subjects that are managers and all external stakeholders, especially at the local level. To find these articles after 2000, two procedures were followed: see the most cited articles compared to the three articles identified as seminars of the nineties use the keywords indicated above, taking at least 500 citations as reference (July 2019); only articles are considered, not books. It is beyond the objective of this thesis to understand which NPM and NG is the currently dominant paradigm or how to position yourself in the mainstream. NG is taught in universities as a model that has exceeded NPM, but in Academic, this step is to be evaluated and for the reality of public administration, there are no comparative empirical models sophisticated enough to make a cross-section and longitudinal comparison on the practical implementation of proposals reform, apart from the recent application and evaluation studies of NPM-driven reforms in last years seen above. Moreover, the comparison between philosophies is not so much in terms of which perform best from a technical point of view and their practical power, because behind there are different visions of human nature and values that compete according to the final purpose of each model, such as efficiency, accountability and equity (Stoker, 2006, p. 43). However, given that the theoretical positioning outlined here is the micro-foundation of organizational and individual dynamic and innovative capabilities and, therefore, a pre-eminent interest in relationships, however, it is necessary to understand in advance whether NG is a current paradigm and recognized by the Academy and, theoretically, relevant in the practice of today's reality. To answer this question, I acted in three ways: a) I compared the number of citations of the most cited articles within the paradigms of NPM and NG; b) I compared the number of articles with over 500 citations (updated in July 2019) that refer to the theory of the two paradigms; c) I counted the number of articles published from 1991 to 1998 which refer to the two paradigms. The passage (a) is a preliminary comparison: the classic article on Hood's New Public Management (1991) has 11948 citations (data updated to July 2019) has bibliometric numbers clearly higher than two seminal articles of the Network Governance of the 1990s ("The new governance: governing without government" (Rhodes, 1996b) has 5948 citations and has Governance without government? Rethinking public administration (Peters & Pierre, 1998) with 1730 citations) and the two most cited articles in the early 2000s (Big questions in public network management research (Agranoff & McGuire, 2001) with 1423 citations and "Do Networks Really Work? A Framework for Evaluating Public - Sector Organizational Networks" (Provan & Milward, 2001 with 1830 ones). From this first glance, it might seem that NG may be a niche. It should be noted that the path dependency tends in favour of the NPM model, which, in the Academy, over time has not lost interest in favour of the NG

paradigm until recent years. According to data collected in July 2019, only in 2012, NG had more citations than NPM on Google Scholar. It is the advent of the economic crisis in Europe and the moment of urgent need to review the political strategy starting from the economic and financial management of the States. The public administration is facing a new challenge and only then does NG become pre-eminent compared to NPM<sup>18</sup>. Therefore, the need to deepen the issue of networks in public administration emerges to get even closer to the practical reality of complex phenomena, in line with O'Toole's words: "Despite contrary sentiments and certain efforts to unwind the network spring, the emergence of networks in public management is not a passing fad" (O'Toole, 1997b, p. 47). The articles analyzed are from 1991 to 2018 and their citations are considered. The data were found by accessing Google Scholar in July 2019. Only articles with at least 500 citations are considered<sup>19</sup>.

In order to insert between NPM and NPG as a theoretical framework, a process of choosing keywords on google scholar based on the literature on the topic was done first. Regarding Network Governance the words that have been used in bibliographic research are: "public governance" OR "network governance" OR "network governance" OR "collaborative governance" OR "governing with-out government" OR "governance without government" (21200 results in December 2019). For New Public Management the choice was "easier", as the discussion on the terminology is less strong and certainly more unique: "new public management" or "public management for all seasons". The name of the philosophy and the seminal article most cited that introduced the emergence of the paradigm are sufficient to find the articles that have reference to the topic and the reading of the abstract is then crucial in the understanding of the conceptual paradigm in which the author has placed himself. If they have both NPM and NG there has been a more in-depth search for keywords in the abstract and text to identify which strand(s) they were part of; sometimes scholars start from one concept to criticize it to position themselves on another philosophy. For journal quotations year by year with respect to keywords: purified from quotes that duplicate articles and have no links to articles/books; reviews of books in the publication are maintained. Another observation: the date is the date of publication in a paper magazine, while Google scholar counts (sometimes) according to the first date of publication (it was checked how the articles were actually cited in the following years). Some articles are counted on scholar both in the one and in

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<sup>18</sup> It is necessary to consider that data on Google has changed during times. In particular, the same analysis was done in December 2019 too and results are in part different, but a point of change between NPM and NG it is still found.

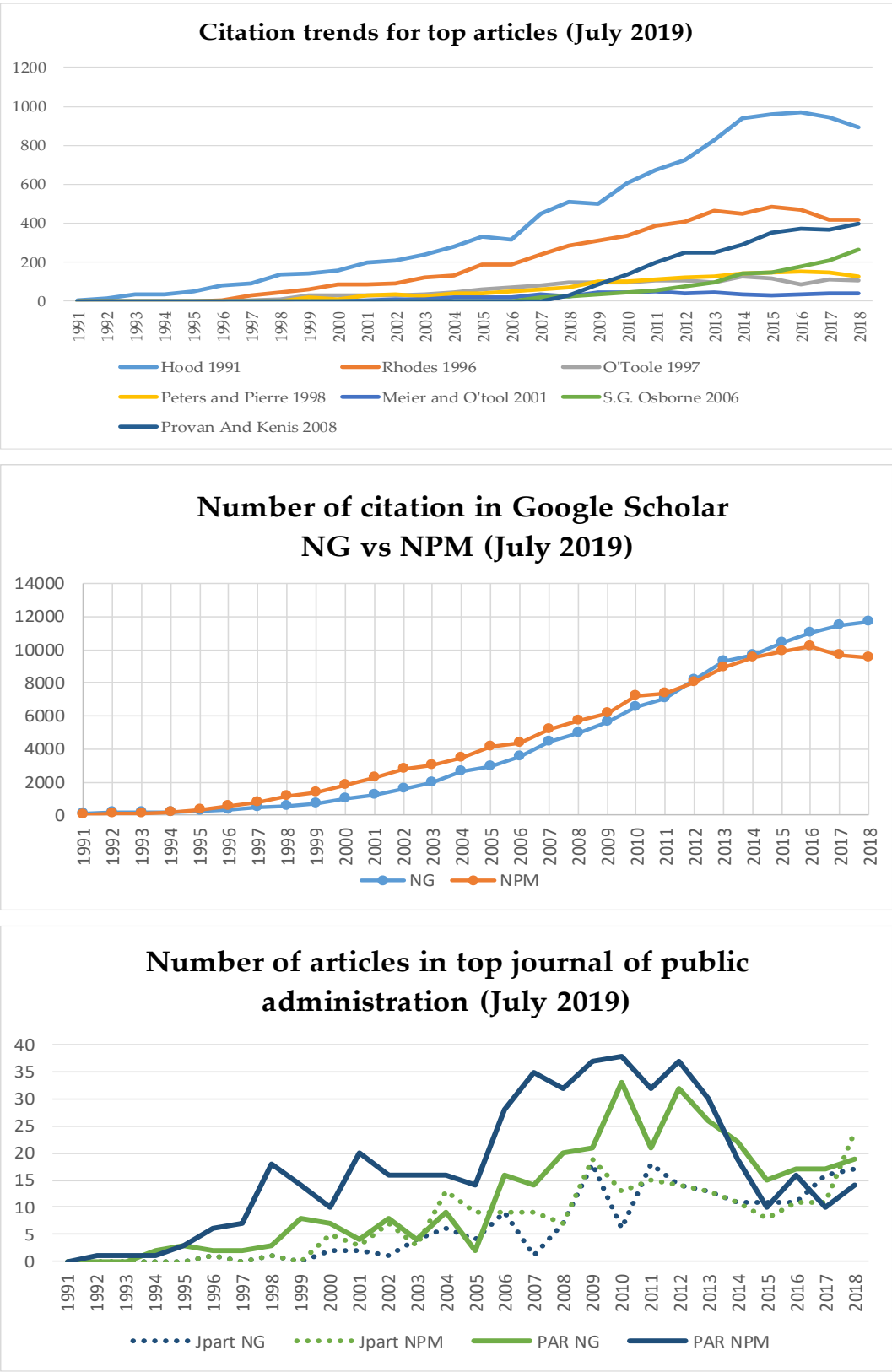
<sup>19</sup> The table-list at page 380 in the Annexes excludes those papers for which reading the abstract they do not fall as paper influential neither in NPM nor in NPG, being specific on other single themes: Public Service Motivation (Crewson, 1997; Houston, 2006; Perry, 1997, 2000; Perry et al., 2010), Public-Agent Model (Waterman & Meier, 1998), comparaison public-private (Frumkin & Galaskiewicz, 2004; Rainey & Bozeman, 2000), public leadership (Boin & Hart, 2003).

the other count: here the question is to go and see the degree of influence (also in the evolution of thought) rather than the application of the single theory (as it was done for the most cited papers). Besides New Public Management and Network Governance, there are some very published articles in which the author prefers a different theoretical paradigm, such as a return of bureaucracy as a model (BU), New Public Service (NPS), Public Value (PV). These theories are included in brackets. When it has not been possible to indicate which is the philosophical positioning, sometimes two paradigms are inserted as a description of the article. Besides searching for keywords on Google scholar in general, they have been used in the search within the publication of 2 top journals concerning the theme of public administrations (top 2 in Academic Journal Guide 2018 about "): Public Administration Review (4\*) and Journal of Public Administration: Research and Theory (4)<sup>20</sup>. The results obtained from this literature review are summarized in the figures below and in a table in Annexes at page 477. Finally, seven top articles about NG and NPM are selected and their trends are organized in Figure 8. Hood's article (1991) has not competitors for a lot of years, but recently Osborne (2006) and Provan and Kenis (2008) have increased their influence as more important article for NG paradigm. In this comparison, top articles about other theories that it is possible to find in the list above are excluded.

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<sup>20</sup> Through further counting, The American Review of Public Administration (NG = 133 and NPG = 165) and Review of Public Personnel Administration (NG = 20 and NPM = 110) show a tendency towards the New Public Management paradigm. As far as the re-view Public Administration (an international quarterly) is concerned, it is results very hard to find and use it on Google scholar, because with the same search there are univocal results and many more journals. As far as quotes are concerned, the one identified is a trend, because the numbers are constantly changing especially in recent years and are not fixed on Google Scholar.

Figure 8: trends of citation year by year for seven top articles about NPM and NG, for the entire semantic of NPM and NG and for both the paradigms in two top journals of public administration (elaboration from data collected in July 2019 on Google Scholar).



## **B. MICROFOUNDATION MODEL: LITERATURE REVIEW OF INDIVIDUAL DYNAMIC CAPABILITIES.**

### **1. INNOVATIVE WORK BEHAVIOUR**

#### **a) The contemporary imperative of innovation in the public sector.**

This thesis focuses attention on the perception of individual innovative behavior. However, in a meso-organizational perspective, innovation is an increasingly debated topic in recent years by scholars, practitioners and politicians (De Vries et al., 2016; Torfing, 2019; R. M. Walker, 2014). Nowadays, innovation in the public sector can be seen as an “imperative” (Jordan, 2014). Novel challenges put under pressure public organizations as ageing populations and growing debt and stimulate innovation daily (Clausen et al., 2020). In a systematic literature review, De Vries et al. (2016, p. 153) find different type of innovation in the public sector: process innovation, administrative process innovation, technological process innovation, product or service innovation, governance innovation, conceptual innovation. Even if hierarchy, red tape, the relative absence of competition and economic incentives are widely recognized as barriers to innovation, public organization are more dynamic and innovative than their general reputation (Torfing, 2019). The specialized literature has focused on the macro background of society such as innovation and more recently on meso-organizational phenomena, such as organizational size, slack resources, administrative capacity and organizational learning (R. M. Walker, 2014). This perspective shows a bias of focus on the meso-organizational and the micro-foundation phenomena are considered marginally. The theoretical and practical perspective is that learning, resources, administrative capacity are phenomena of the organization, comparable with organizational size, and, therefore, contingent on it rather than micro-founded on individuals working in the organization. Therefore, there is a gap in the theoretical framework on innovation in the public sector that assumes the micro-foundation of the phenomenon, even if the academic articles that deal with individual innovative behavior also in the public organizations are manifold. Two decades ago, Borins (2000) was among the first to recognize the individual role of public managers as entrepreneurs of innovation starting from the paradigm of New Public Management. Leaders with a vision and empowered employees are one of the most important drivers of innovation in public organizations (Clausen et al., 2020; De Vries et al., 2016). A certain tendency to approach the micro-foundation perspective is present in the analysis that scholars write about the role of external relations in promoting innovation in local governments. For Walker (2014) external groups of stakeholders

motivate public organizations to reach adequate levels of innovation in the provision of public services and facilitate their adoption thanks to greater resources and the reduction of obstacles thanks to environmental support. This microfoundation hypothesis that develops in the chapter dedicated to external networking can be seen according to two interpretative visions of the public sector. In a private-oriented innovation perspective "results from the heroic efforts of great individuals who operate in a stimulating environment and receive support from sponsors and champions" (Torfing, 2019, p. 2), while, in a perspective of defense of public value (Crosby et al., 2017), collaborative innovation allows mutual learning to solve problems within Network Governance (N. Roberts, 2000; Torfing, 2019). In this perspective, empirically, Meijer (2014) finds that distributed heroism is more likely than individual hero-innovators. The methods of change are becoming increasingly complex (Torugsa & Arundel, 2016) and external relations can be a push factor for the microfoundation of dynamic innovation (Clausen et al., 2020). De Vries et al. (2016) insert the individual antecedents for innovation in competition with other drivers related to the environmental level, the organizational level and the innovation characteristics. As emerges in the next section, recently the microfoundation studies of innovative behavior at work in the public sector have multiplied (e.g. Günzel-Jensen et al., 2018; Miao et al., 2018) and also those that compare public and private employees (e.g. Audenaert et al., 2019; Bysted & Hansen, 2015). The focus on the antecedents is still limited to some macro issues such as public service motivation and leadership, while this research seeks to broaden the knowledge of individual drivers. For example, only two articles analyse the role of internal (Nisula, 2015)<sup>21</sup> and external (Zandberg & Morales, 2017) social capital in public organizations. In summary, another strong push that emerges from recent literature reviews of Walker (2014) and De Vries et al. (2016) it concerns the need to move from qualitative studies to quantitative studies, such as surveys, experiments and multi-method approaches in different locations than the Anglo-Saxon ones which are widely analyzed. After introducing the debate on innovation in the public sector, the review focuses on the individual level within the perspective of microfoundation. This thesis manages to simultaneously contemplate elements of individual characteristics with the theoretical and practical development of the paradigms of New Public Management, which focuses on the individual heroic role and, therefore, cognitive capabilities, and of Network Governance, in which innovation is seen more as a phenomenon based on social capital.

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<sup>21</sup> Moreover, this article is about improvisation. This construct is included in the list of articles of the proximity with the concept of innovative behaviour.

## **b) Creativity and innovative work behaviour. An open academic debate.**

Innovative behaviour is a process that starts from the action of the individual and leads to organizational change; it involves commitment to create, introduce and apply new ideas (C.-H. Wu et al., 2014) and focuses on the process, but not on the outcome of the definitively innovated product or service (S. J. Shin et al., 2017). Many authors use the terms creativity and innovation interchangeably (S. G. Scott & Bruce, 1994), others, on the other hand, distinguish them. In particular, creativity focuses on the creation of new and useful ideas (Shalley et al., 2004). Creativity is considered from the individual psychological point of view of a person's character (Findlay & Lumsden, 1988)<sup>22</sup>, of the process<sup>23</sup> or, finally, of the product, as the production of new and useful ideas (Amabile, 1983, 1988; Mumford & Gustafson, 1988). The product can be individual or small groups working together (Amabile, 1988). Innovation, on the other hand, is seen as the single process of implementing these creative ideas (Amabile, 1988) or as a broader multi-stage process (S. G. Scott & Bruce, 1994). Innovative behaviour, in fact, can only include the adoption, production, support and organizational implementation of all those useful new ideas that have been created (S. G. Scott & Bruce, 1994). The academic debate is clear, but difficult to resolve.

Anderson et al. (2014) in *Journal of Management* separate the two processes of creativity and innovation of the given definition<sup>24</sup>. Even in public administration, De Vries et al. (2016) indicate that individual creativity may be an antecedent for innovation. Following the logic of Scott & Bruce (1994) and Janssen (2000, 2001), in this research, however, innovative behavior is seen from the perspective of including creativity as the dimension of a multi-stage process that starts from reconnaissance and generation of ideas and solutions (new or adopted) to implementation within the organization (S. G. Scott & Bruce, 1994). Creativity, therefore, is not the only element that constitutes innovative behaviour, but is the first step (Carmeli & Spreitzer, 2009). The process starts from the reconnaissance of the problem, passes through the generation of ideas or solutions and the search for sponsors and support "alliances" until the implementation of ideas (Janssen, 2000; Kanter, 2009; S. G. Scott & Bruce, 1994). The other two relevant steps, therefore, are the

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<sup>22</sup> "We will use the term creativity to refer to the constellation of personality and intellectual traits shown by individuals who, when given a measure of free rein, spend significant amounts of time engaged in the creative process" (Findlay & Lumsden, 1988, p. 9).

<sup>23</sup> "(We) define the creative process either as the formulation of a specific problem in an initially ill-defined problem domain, or as advancing a novel and appropriate solution to an extant problem, or both" (Findlay & Lumsden, 1988, p. 9).

<sup>24</sup> "Creativity and innovation at work are the process, outcomes, and products of attempts to develop and introduce new and improved ways of doing things. The creativity stage of this process refers to idea generation, and innovation refers to the subsequent stage of implementing ideas toward better procedures, practices, or products. Creativity and innovation can occur at the level of the individual, work team, organization, or at more than one of these levels combined but will invariably result in identifiable benefits at one or more of these levels of analysis" (Anderson et al., 2014, p. 1298).



promotion of the idea and its implementation. To limit the innovative behavior only to the implementation means to invalidate theoretically and empirically already validated, but above all, to reduce it to a single step, losing an integrated vision of the process. From this point of view, the meta-analysis of Sarooghi et al. (2015) that highlighted a correlation between creativity and innovative behaviour has theoretically and in practice could have a smaller impact than what the authors assumed, since, in the scales related to this second aspect, the generation of ideas is almost always included, so the correlation could tend to be implicit in the psychometric construction of the items. The dynamic component model of innovation and creativity (Amabile, 1988; Amabile & Pratt, 2016) maintains a distinct definition of creativity (the creation of new and useful ideas) and innovation (the successful implementation of new ideas in the organization), but in a sense recognizes that creativity is the fuzzy front end ("fuzzy front-end"; (Koen et al., 2002)) of innovation and is built in an iterative and multi-stage sense. In particular, the innovation process at the organization level is composed of 5 stages (Amabile & Pratt, 2016, p. 163): 1 - agenda-setting (strategic planning, crisis or fortuitous situation), 2 - stage setting (broad objectives and obtaining resources), 3 - producing ideas (consists only of the already completed results of the individual project or carried out in small creation groups on projects), 4 - testing and implementing (involving all areas of the organization for a definitive development of ideas), 5 - outcome assessment (feedback process in the loop concerning the previous stages and the individual creativity process). The individual creativity process is composed of several stages (Amabile & Pratt, 2016): task presentation (identify objectives or problems), preparation (put together the necessary information, skills and knowledge), idea generation (more possibilities to solve the problem or achieve the objective), idea validation (check ideas for their usefulness and appropriateness), outcome assessment (feedback process in the loop at an individual level similar to the fifth stage of organizational innovation). In fact, in this dynamic model, the micro-individual role (and of the small group) is reduced only to creativity, while for innovation in the sense of implementation the role is left to the meso-organizational level; in this sense one could not speak, in fact, of innovative work behaviour, because it is only creativity understood as individual behaviour, assuming that it is the organization that implements it. The model also includes the dimension of evaluation of the outcome (both for individual creativity and organizational innovation), instead, the innovative behaviour is something previous to the product or service actually implemented and, therefore, to be evaluated (S. J. Shin et al., 2017). The debate, therefore, remains open and challenging both in a philological sense and in the importance given by microfoundation; it should be noted that, however, those who recognize that creativity and innovation are two separate dimensions recognize that they are part of the same process when considering innovation that derives from

internal processes and activities and not that purchased from outside ("Conceiving of both creativity and innovation as being integral parts of essentially the same process, "Anderson et al. (2014, p. 1297); "We view creativity and innovation as different parts of essentially the same process when innovation is understood as organic", Amabile & Pratt, (2016, p. 158)). The debate is also open on the front of the "innovation paradox" (Miron-spektor et al., 2011), whereby some conditions favor the creation of ideas and others favour implementation and these conditions may be in contrast (Carnabuci & Diószegi, 2015).

To sum up, in this thesis, the **definition** used of **innovative behaviour at work** is:

"the intentional creation, introduction and application of new ideas within a role, group or organisation, with a view to benefiting from the performance of the role, group and organisation" (Janssen, 2000, p. 288).

This perspective includes, for example, the studies of Yuan & Woodman (2010), Wu et al. (2014), Wang et al., (2015), Carnabuci & Dioszegi (2015), Shin et al. (2017). Innovative behaviour is in this perspective a dynamic managerial and even individual capability, considering that it can be the individual employee or even the individual small group to create new ideas, processes, techniques, technologies, seek support and finally implement and it is a dynamic capacity precisely because the (even) individual resources and skills are reviewed, built and reconfigured and, in this way, it micro-fuses the competitive advantage in private organizations (for example, a door-to-door salesman who knows the needs of customers and invents a new way of persuasive communication) and creates public value in public organizations (for example, a public employee who independently promotes digitization in his office, simplifying practices and bureaucracy for citizens). Finally, a dimension related to innovative behaviour is the intrinsic interest in innovative activities (Tierney et al., 1999)<sup>25</sup>; this factor is used as a control (Yuan & Woodman, 2010) or as a moderator (S. J. Shin et al., 2017); this type of trait is crucial because those with high intrinsic interest (motivation based on personal satisfaction and challenge) voluntarily engage in innovation activity and are involved in these activities, without extrinsic reinforcement (deadlines, external incentives); conversely, those with a low level of intrinsic interest in motivation may need external and organizational reinforcement to address their behavior (S. J. Shin et al., 2017). In this report, the intrinsic interest dimension is not considered in the model, but for future empirical research it is absolutely necessary to take it into account, because individual differences affect business innovation processes. The same is true for a crucial issue such as gender differences, for

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<sup>25</sup> The likert scale used for the construct of "intrinsic interest" to the activity of innovation is (Tierney et al., 1999): 1. I enjoy finding solutions to complex problems. 2. I enjoy coming up with new ideas for products. 3. I enjoy engaging in analytical thinking. 4. I enjoy creating new procedures for work tasks. 5. I enjoy improving existing processes or products. (1 strongly disagree; 6 strongly agree).

which research has found an error in performance evaluations when associated with innovative behaviour, a gender stereotype: men have a higher evaluation than innovative behaviour ("think innovation-think bad") and this gender bias can be a problem and a challenge to implement innovation in an organization (Luksyte et al., 2018, p. 1).

### **c) Innovative work behaviour – A schematic review of antecedents.**

In this section of the thesis, the theme of innovation, which is crucial for the long-term success and survival of organizations, is examined (Anderson et al., 2014). Within the conceptual framework of organizational dynamic capabilities, the meso-organizational paradigms that can be influenced by individual innovative behavior at the micro-level and, later, individual dynamic capabilities, which include innovative behavior, are examined. Seeing concepts in a transversal interlevel way allows to focus on the role of individual innovativeness in the context of business dynamism, without falling into reductionist logics (e.g. Kimberly & Evanisko, 1981; Lundstedt, 1972). In essence, the assumption is that individual innovative behaviour is decisive for the innovativeness of the company, but that, at the same time, people are guided in pro-dynamic attitudes and in the (consequent) innovative behaviours thanks to a knowledge of the organizational environment of reference, including the interpersonal and group relational structure inside and outside the company in which they are inserted. This recruitment is part of a classic management approach that sees, in the human resources model, people willing to contribute to the achievement of significant business objectives that they themselves have helped to establish and to be more creative than is required by the current job application (Miles et al., 1978, p. 559). Kimberly & Evanisko (1981) were already aware that the adoption of innovation in the company was determined by the intersection of individual (particularly the organization's leader), organizational and contextual variables. As far as the time of analysis is concerned, finally, it is necessary to dwell on how innovative behaviour cognitively depends on short or medium-long term choices and tends to be based on the contextual "history", i.e. the "path-dependency" of previous individual choices within the processes of change of the organization as a whole. The difference between static logic and dynamic consequentiality is specifically observed by the methodological aspect. It is often expected that some variables are measured at a certain time 1 and the others (especially related to innovative behaviour or outcome in general) at a later time 2 (e.g. for a study on innovative behaviour: Carmeli & Spreitzer (2009)) and up to a time 3 (e.g. for a study on knowledge sharing: Tuan (2017)). In this modality and even more so with the "cross-lagged" models, the bias is reduced and, above all, the sense of correlation studies is further extended, bringing them closer to the possibility of making more precise inferences, typical of laboratory studies, which allow

establishing causal relationships. The Table 6 lists 35 journal articles relevant to this dissertation, classifying them according to some of the dimensions seen in this paragraph. Another article that studies external social capital with innovation is analysed in following section (Lewis et al., 2018). In particular, it shows the two crucial aspects from a methodological point of view: the multilevel (in terms of units of analysis, in an ad-hoc column, relative to the final sample and to the subject interviewed if different from "self-reported", i.e. the individual as the object of analysis units), and the time of analysis "T" (in brackets next to the relative dimension, if one identifies temporal discrepancy in the data collection methodology of the different dimensions analyzed). In the table the dimensions are in English and limited to purely quantitative studies. The references are not exhaustive and refer specifically to some researches in which innovative behaviours are outcome variables (in high level journals classified in the ABS Journal 2018 list), conversely behaviours related to knowledge management are considered among the explanatory variables, since, as we will see, there are already recent precise reviews on this topic (e.g. Amayah, 2013). The selected studies will be taken up again later to describe the meaning of the dimension of innovative behavior to complementary-situational (improvisation) or integral parts of the construct (creativity), as well as work and other dimensions that partly overlap or are considered by the authors as defining a potential conceptual model of link with knowledge sharing activity. From what emerges in Table 6 below, which summarizes the literature review on innovative work behaviour (and three articles about creativity and improvisation), there are gaps in the literature. This thesis tries to answer with research hypotheses to fill these gaps, with respect to the independent variables that can explain innovative work behaviour. In addition to the unit of analysis, the multidimensionality of research concerning innovative behaviors as an outcome dimension is subject to bias in the case of questionnaires in which the relevant scale is inserted to the respondent. To overcome these problems of a too positive self-evaluation of innovativeness, many researches tend to have multidimensionality of the respondent, in particular, by supplying the questionnaire for assessing individual innovativeness (intended as performance of the innovative behavior) to a superior in the hierarchical structure or the leader company or even to colleagues<sup>26</sup>. In public administration, innovative behaviour is more closely linked to changing practices and routines related to activities that evolve from day to day (Piening, 2013, p. 235). In these organizations,

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<sup>26</sup>In empirical research where this approach is not used, the limit of self-reported questionnaires is justified by the fact that individuals know their attitudes and behaviors better, while superiors and colleagues may have limited knowledge; however, it is plausible that various systematic psychological tendencies for the attribution of behavior may arise (for example, attributing one's own behavior or that of others to internal dispositional factors or external situational factors; seeing oneself as a heuristic anchor point against which to compare others), which lead inevitably to positive or negative bias with respect to the outcome dimension.

innovation is sometimes seen as a "black-box", a black box in which it is at least difficult to access; some authors focus more on the role of the organization as a whole (Piening, 2013), others, on the other hand, consider the dynamic and innovative behaviour of individuals (politicians, low and medium level managers) as crucial (Fernandez & Rainey, 2006). Change operations are less structured than in private companies where there are specific institutionalized learning mechanisms such as research and development (Eisenhardt & Martin, 2000; Teece, 2007) and human resources dedicated to organizational change, specialized in research and development (Piening, 2013). The innovative behaviour of these subjects is difficult to compare with groups for projects that are often formed only temporarily in public administrations, driven by external drives for change or internal drives for dissatisfaction with current operational capabilities (Piening, 2013). Public organizations and, above all, local authorities that are in close contact with citizens' demands, are confronted with dangerous and complex problems ("wicked and complex problems") (Raadschelders, 2011; Rittel & Webber, 1973), which start from the reduction of resources at disposal up to unpredictable difficulties such as earthquakes. Under these conditions, at the micro-level, public employees and managers can engage in innovative behaviours by responding to challenges and remedying crises through individual dynamic capabilities. In public organizations, unlike private organizations, employees perceive innovative behaviour as an extra-employee activity for which it is necessary to be at least rewarded, as the innovation activity is considered by public employees as initiated and guided by the system (Bysted & Jespersen, 2014). Private employees activate innovative behaviour mainly in reaction to expectations of career progress, conversely, public employees are more oriented by clear expectations of objectives (Bysted & Jespersen, 2014). This difference between public and private can emerge although the commitment of public employees to face the challenges facing public organizations is very important (Sørensen & Torfing, 2011). In particular, local governments have a fundamental role in the provision of public services (R. M. Walker & Andrews, 2015, p. 102) and fully experience all the trends and challenges of modern public administrations (Piening, 2013): the growth of demand for efficient and effective public services, cuts due to the financial crisis, relations with many stakeholders and their conflicting objectives, the lack of competitive pressure and incentives for renewal, strong proximity to citizens-customers/consumers of public services; in local public administrations the dichotomy between public administrators and political representatives is strong, in a democratic system in which the time horizon of politics clashes with that of permanent employment. Local authorities inevitably suffer from political and institutional changes at a higher level of government (regions, ministries, EU), which can quickly change monetary and legal constraints (Fernandez & Moldogaziev, 2013, p. 161). Employees need to have access to knowledge and skills. Thanks to greater knowledge employees feel more inspired and encouraged to innovate.

Table 6: Thirtyfive<sup>27</sup> recent empirical researches that have studied about determinants of innovative work behaviour and innovation-related ones (creativity, improvisation\*), in particular related to cognitive capabilities and social capital based on knowledge.<sup>28</sup>

Reference	Independent variables	Moderation variables	Mediation variables	Outcome variables	Unit of analysis (final sample)	Statistical methods	Sector (Public/Private)	Place
<b>Carmeli &amp; Spreitzer (2009)</b>	Trust (T1)	-	Connectivity, Thriving (T1)	Innovative Work Behavior (Scott & Bruce, 1994) 6 items Self-reported (T2)	172 employees (Time-lagged)	Maximum likelihood SEM	Different sectors	Israel
<b>Pieterse et al. (2009)</b>	Transformational leadership, transactional leadership	Psychological empowerment	-	Follower Innovative Behaviour (rated by supervisors)	2198 employees (Cross section)	Hierarchical linear regression	Government agency	Holland
<b>Yaun &amp; Woodman (2010)</b>	Perceived Innovation Support For Innovation, Supervisor Relationship Quality, Innovativeness As A Job Requirement, Reputation As Innovative, Dissatisfaction With The Status Quo, Intrinsic Interest (control)	-	Expected Image Risk (-), Expected Image Gains, Expected Positive Performance Outcomes	Innovative Work Behavior (Scott & Bruce, 1994) 6 items (Supervisor of each participant) <sup>29</sup>	216 employees 73 and direct supervisor in 4 organizations (Cross section)	Structural Equation Modeling (single-indicator approach)	Different sectors (information technology services, computer systems development, chemical instrument development and manufacture, computer systems development)	USA
<b>Vinarski-Peretz et al (2011)</b>	Positive Relational experience (positive regard, mutuality, vitality) (T1)	Psychological availability, self-efficacy (T2)	Affective commitment (T2)	Engagement in innovative behavior - 6 items (Scott & Bruce, 1994) Self-reported (T2)	201 employees in profit companies + 218 service employees (of which 80% public) (Time-lagged)	SEM analyses	Four organizations (public and private)	ND

<sup>27</sup> 32 articles have innovative work behaviour as whole construct and individual outcome, while the other 3 articles are about creativity or improvisation.

<sup>28</sup> The article written by Lewis et al. (2018) about innovation in public administration is included in the Table 10: external networking in local governments - Findings in empirical research.

<sup>29</sup> When administered to the supervisor, the items of the Scott and Bruce (1994) scale are the following (for an administration in Italian a translation-back-translation procedure is required) (Brislin, 1970): 1. Searches out new technologies, processes, techniques, and/or product ideas. 2. Generates creative ideas. 3. Promotes and champions ideas to others. 4. Investigates and secures funds needed to implement new ideas. 5. Develops adequate plans and schedules for the implementation of new ideas. 6. Is innovative."

Reference	Independent variables	Moderation variables	Mediation variables	Outcome variables	Unit of analysis (final sample)	Statistical methods	Sector (Public/Private)	Place
<b>Fernandez &amp; Moldogaziev (2013)</b>	Employee empowerment, The practice of providing employees with information about goals and Performance. The practice of offering employees rewards based on performance, The practice of providing employees with access to job related knowledge and skills, The practice of granting employees discretion to change work processes.	-	-	Encouragement To Innovate - 1 Item <sup>30</sup> (Self-reported)	221479 (Cross-Section)	Multinomial logit model	Public servants	USA
<b>Bysted (2013)</b>	Innovation trust, Job autonomy	Mental involvement, Job satisfaction	-	Innovative work behaviour (Danish adaptation from: Scott & Bruce (1994) and Janssen (2000)) – Self-reported	294 employees (Cross Section)	Hierarchical regression analysis including moderating effects	Financial company	Denmark
<b>Radealli et al. (2014)</b>	Ability to share, Motivation to Share, Opportunity, Knowledge reciprocity	-	<b>Knowledge Sharing</b> , (+ Knowledge reciprocity)	Innovative Work Behavior 4 items – self-reported (adapted from Janssen, 2000)	150 Professionals (Psychologists, Nurses) (Cross Section)	Partial least squares (PLS)	4 palliative care organisations for terminally ill cancer patients	Italy
<b>Wu, Parker, De Jong (2014)</b>	Need For Cognition, Openness to experience, proactive personality	Job Autonomy, Time Pressure	-	Peer-rated innovation behavior (Scott & Bruce, 1994) only 3 items chosen (peer-rated - at least 1 peer-colleague for employee)	179 employees and 144 colleagues chosen by the employees (Cross Section)	Cross-classified multilevel analyses	Public policy consulting and research organization	Holland

<sup>30</sup> In this case the dependent variable can be defined as an emotional state or sensation experienced by the employee, which makes him or her inclined to innovate (Fernandez & Moldogaziev, 2013, p. 161). It is represented by a single emotional component, so it should not be confused with the motivation to innovate to the actual innovative behaviour in a general sense: “I feel encouraged to come up with new and better ways of doing things.”

Reference	Independent variables	Moderation variables	Mediation variables	Outcome variables	Unit of analysis (final sample)	Statistical methods	Sector (Public/Private)	Place
Prieto & Pérez-Santana (2014)	Ability-enhancing human resources practices, Motivation-enhancing human resources practices, Opportunity-enhancing human resources practices	-	Management Support, Coworker support	Innovative Work Behavior - 5 items (adapted from: Scott & Bruce (1994) and Janssen (2000)). <sup>31</sup>	198 (directly companies) (Cross-Section)	Ordinary least squares regression analysis	Companies in industry and services	Spain
Černe et al. (2014)*	<b>Knowledge Hiding</b>	Mastery climate, Performance climate (dimensions aggregated at the group level)	Distrust, Prevention focus	<b>Creativity</b> (Supervisor) - 13 Items (Zhou & George, 2001) <sup>32</sup>	240 employees and 34 teams (Cross-Section)	Hierarchical linear Modeling- Participants nested in teams	2 medium-sized enterprises	Slovenia
Bysted & Jespersen (2015)	Financial mechanism, Decentralization mechanism, Participative mechanism	<b>Public</b> versus Private	-	Innovative Work Behavior - 7 Items (adapted from Scott and Bruce, 1994; Janssen, 2000)	8310 respondents (actually employed) (Cross-Section)	Hierarchical regression analysis	Different public and private sectors	Denmark, Norway, Sweden
Nisula (2015)*	Utilisation of documented knowledge, Utilisation of experiential knowledge, <b>Knowledge Sharing</b> , knowledge creation	-	-	<b>Employee Improvisation</b> - 4 Items <sup>33</sup>	591 employees (among different groups) (Cross-section)	PLS-SEM analysis	Organization of a large city ( <b>public</b> )	Finland
Carnabuci & Diószegi (2015)	Cognitive Style, Network Brokerage (Advice Network)	Innovator-Brokerage Interaction	-	Innovative Performance (Welbourne et al. (1998))	67 employees (Supervisors + CEO) (Cross-section)	Social Network Analysis + Linear Regression	1 Private company	Italy

<sup>31</sup> The scale administered to organizations is: 1. Employees try to solve problems in different ways. 2. Employees are able to search for new working methods, techniques or instruments. 3. Employees show innovative and creative behaviors. 4. Employees are able to take the risk of being innovative and creative. 5. Employees are able to anticipate problems and opportunities.

<sup>32</sup> The creativity scale used by Zhou and George (2001) is the following (3 items are adapted from Scott & Bruce, 1994): 1. Creativity Suggests new ways to achieve goals or objectives. 2. Comes up with new and practical ideas to improve performance. 3. Searches out new technologies, processes, techniques, and/or product ideas. 4. Suggests new ways to increase quality. 5. Is a good source of creative ideas. 6. Is not afraid to take risks. 7. Promotes and champions ideas to others. 8. Exhibits creativity on the job when given the opportunity to. 9. Develops adequate plans and schedules for the implementation of new ideas. 10. Often has new and innovative ideas. 11. Comes up with creative solutions to problems. 12. Often has a fresh approach to problems. 13. Suggests new ways of performing work tasks.

<sup>33</sup> The scale of improvisation at work used consists of 4 items that the author takes from the works of Crossan and Vera (2005) and Magni et al. (2009) using a Likert scale from 1 to 7: 1. I respond in a moment to unexpected problems. 2. I think on my feet when carrying out actions. 3. I try new approaches to problems. 4. I identify opportunities for new work processes.



Reference	Independent variables	Moderation variables	Mediation variables	Outcome variables	Unit of analysis (final sample)	Statistical methods	Sector (Public/Private)	Place
Wang et al. (2015)	Out Group Weak ties ("Social Interaction" Network)	Within-Group Strong ties ("Social Interaction" Network)	Leader Member Exchange	Innovative Behavior (Supervisors) 9 Items (Janssen, 2000) <sup>34</sup>	135 Impiegati (Cross-Section)	Social Network Analysis + Single-level and multi-level covariance-based SEM	1 Private company - Smart Card	China
NG and Lucianetti (2016)	Organizational trust, perceived respect	Psychological collectivism	Self-efficacy	Innovative work behaviour (Italian version adapted from Janssen (2000))	267 employees (time-lagged)	Latent growth modeling (LGM) analyses (longitudinal)	60 organizations (different sectors)	Italy
Wallace et al. (2016)	Promotion focus, Prevention focus (T1)	Employee Involvement Climate (group level- Supervisor) (T1)	Thriving (T2)	Innovation performance (Welbourne et al. (1998)) 4 items (a supervisor for each participant) <sup>35</sup> (T3)	346 employees and 75 groups/supervisors (Time-Lagged)	Multilevel path analysis and robust full maximum likelihood estimation	2 service companies	USA
Lee & Hyun (2016)	Cooperative conflict management, Competitive conflict management, avoidance conflict management	-	Subjective relational experience, perceived insider status, organization-based self-esteem	Employees' service innovation behavior - 5 Items (adapted from: Hu et al., 2009) <sup>36</sup>	304 employees (Cross-Section)	SEM analysis	10 air service companies	South Korea
Černe et al. (2017)	Knowledge Hiding	Decision autonomy, Task Interdependence, Team Level Climate (Self-Reported, but group-weighted and aggregated data)	-	Innovative Work Behavior (Supervisor)- 10 Items (de Jong and den Hartog (2010)) <sup>37</sup>	240 employees and 34 teams (Cross-Section)	Maximum likelihood SEM	2 medium-sized companies	Slovenia

<sup>34</sup> Janssen (2000) administer the following scale of items to employees and supervisors: (1) Creating new ideas for difficult issues (idea generation); (2) Searching out new working methods, techniques, or instruments (idea generation); (3) Generating original solutions for problems (idea generation); (4) Mobilizing support for innovative ideas (idea promotion); (5) Acquiring approval for innovative ideas (idea promotion); (6) Making important organizational members enthusiastic for innovative ideas (idea promotion); (7) Transforming innovative ideas into useful applications (idea realization); (8) Introducing innovative ideas into the work environment in a systematic way (idea realization); (9) Evaluating the utility of innovative ideas (idea realization). It is indicated how often employees perform these innovative behaviors at work on a scale from 1 ("Never") to 7 ("Always").

<sup>35</sup> When administered to the supervisor, items on the Welbourne et al scale (1998) are the following: 1. Coming up with new ideas. 2. Working to implement new ideas. 3. Finding improved ways to do things. 4. Creating better processes and routines.

<sup>36</sup> The scale for "Employee service innovation behavior" is adapted from Hu et al. (2009): 1. I come up with innovative and creative ideas. 2. I try to propose my own creative ideas and convince others/customers. 3. I seek new service techniques, methods, or skills. 4. I provide suitable plans for developing new ideas. 5. Overall, I consider myself to be a creative member of this airline firm.

<sup>37</sup> The frequency scale of Jong and den Hartog (2010) is as follows: How often does this employee: pay attention to issues that are not part of his daily work? Wonder how things can be improved? Search out

Reference	Independent variables	Moderation variables	Mediation variables	Outcome variables	Unit of analysis (final sample)	Statistical methods	Sector (Public/Private)	Place
Shin et al. (2017)	Perceived innovation job requirement	<b>Intrinsic interest in innovation</b> , Perceived performance-reward, Perceived value for the organization	-	Innovative Work Behavior (Scott & Bruce, 1994) - 6 items (Supervisor)	311 employees and 66 Supervisors (Cross-Section)	Two-level Hierarchical Linear Modeling (HLM) - Participants nested in teams	3 companies in 3 sectors (transport, hardware production, electronics) - 2 true respondents in the sample	China
Rhee & Choi (2017)*	Goal orientation (Learning, Avoiding, Providing)	Social Status	<b>Knowledge Management Behaviors (Sharing, Manipulating, Hiding)</b>	<b>Creative Performance</b> - 3 Items da Madjar, Greenberg & Chen (2011) <sup>38</sup>	45 managers and 231 employees (Cross-Section)	Hierarchical linear modeling (HLM) - Participants nested in teams	Various sectors (starting from Managers participating in MBA course)	South Korea
Zandberg & Morales (2017)	Intra-Organizational Networking, Salience of collective goals, Salience of career goals	-	-	Innovative Work Behavior Roles - 4 Items (Self-reported) da Floyd & Wooldridge (1996) <sup>39</sup>	64 public Middle Managers (Cross-section)	Linear Regression	Municipality - Milpa Alta	Mexico
Grosser et al. (2018)	Average alter's Creative Self-Efficacy	Average Alter Network Density	Average Alter Innovation Behavior	Innovative work behaviour - 1 item (peer-rated - roster method - from co-workers)	144 professional corporate employees (Cross section)	Hierarchical multiple regression analyses and bootstrapping	Consumer product development firm.	Usa
Miao et al (2018)	Entrepreneurial leadership, Public Service Motivation	-	Psychological empowerment	Innovative Work Behavior (Supervisor) - 5 items from Scott and Bruce (1994)	281 employees (Time-lagged)	Hierarchical linear modeling (HLM)	59 government agencies in six cities	China
Günzel-Jensen et al. (2018)	Transformational leadership, Transactional leadership	Empowering Leadership	-	Innovative Behavior (Self-Reported) 9 Items (Janssen, 2000)	2217 employees (Cross-Section)	Multivariate regression model	1 Hospital (public sector)	Denmark
Montani et al. (2018)	Negative affects	<b>Mindfulness</b>	-	Innovative work behaviour (Self-reported) 9 items (Janssen, 2000)	163 French Canadian and 101 Italian employees (2 samples) (Cross-section)	Hierarchical multiple regression analyses	6 private organizations	Canada and Italy

new working methods, techniques or instruments? Generate original solutions for problems? Find new approaches to execute tasks? Make important organizational members enthusiastic for innovative ideas? Attempt to convince people to support an innovative idea?

<sup>38</sup> The questions of the scale on the creative behavior of Madjar, Greenberg & Chen (2011) are: 1. "This employee is a good source of highly creative ideas". 2. This employee demonstrates originality in his/her work". 3. "This employee suggests radically new ways of doing things."

<sup>39</sup> The questionnaire includes questions on 4 dimensions of innovative behavior: "championing new alternatives, synthesizing information, implementing strategies, e facilitating adaptability" (Floyd & Wooldridge, 1996)

Reference	Independent variables	Moderation variables	Mediation variables	Outcome variables	Unit of analysis (final sample)	Statistical methods	Sector (Public/Private)	Place
<b>Dediu et al. (2018)</b>	Job demands, Autonomy, Social support, Complex tasks, Unforeseen problems, Monotonous tasks	Job demands	-	Innovative work behaviour (2 items about idea generation and idea implementation)	12924 salaried individuals (Cross-section)	Multilevel logistic SEM with odds-ratios	27 EU member states	Europe
<b>Messmann et al. (2018)</b>	Social capital (network density, betweenness, brokerage, size)	Age, Experience, Professionalism	-	Innovative work behaviour – 5 items developed by authors for teachers (Self-reported)	40 teachers (Cross-section)	Cluster analyses	A vocational college	Germany
<b>Woods et al. (2018)</b>	Conscientiousness, Openness.	Tenure in organization	-	Innovative work behaviour (Supervisor) 9 items (Janssen, 2001)	146 graduate management trainees (Time-lagged)	Hierarchical regression analyses	Graduate management trainee program of a large financial services organization	United Kingdom
<b>Maqbool et al. (2019)</b>	Employee silence, Flow at work	Perceived time pressure	-	Innovative Work Behavior (Self-reported)- 10 Items (de Jong and den Hartog (2010) and Zhou and George (2003))	608 employees (Cross-section)	Regression analyses	5 private medium-to-large organizations	Italy
<b>Van Hooetegem et al. (2019)</b>	Job insecurity	-	Irritation, Concentration	Innovative work behaviour (Self-reported) - 10 Items (de Jong and den Hartog (2010))	394 employees (Cross-section)	SEM analysis (with bootstrapping)	Various organizations	Belgium
<b>Caniëls &amp; Veld (2019)<sup>40</sup></b>	<b>Ambidexterity</b> (Exploitation & Exploration)	High-performance work systems (HPWS)	-	Innovative Behavior (Self-reported) 9 Items (Janssen, 2000)	160 employees (Cross-section)	Moderated Polynomial Regression analyses	Organizzazione pubblica - Unità Difesa	Holland
<b>Audenaert et al. (2019)</b>	Employee performance management	Leader-Member-Exchange	-	Innovative Behaviour (Self-reported) – 3 items (Scott & Bruce, 1994)	1095 caregivers in 68 (Cross-section)	Hierarchical Linear Modeling (multilevel)	Public and non-profit residential homes	Belgium
<b>Rehman et al. (2019)</b>	High involvement HR practices	Management support, Coworker support	Psychological empowerment	Innovative work behaviour (supervisors) – 9 items (Janssen, 2000)	538 employees and 81 supervisors (Cross-section)	Hierarchical Linear Modelling (multilevel)	51 private software companies	Pakistan
<b>Chen et al. (2019)</b>	Cognitive diversity	Perceived support for innovation	Task reflexivity, Relationship conflict	Innovative work behaviour – team level (supervisors) – 9 items (Janssen, 2000)	101 teams and 447 team members (Time-lagged)	Hierarchical regression and bootstrapping	10 manufacturing enterprises	China
<b>Clarke and Higgs (2019)</b>	<b>Political Skill</b> , Role overload	-	Role-breadth self-efficacy, Perceived organizational support	Innovative work behaviour (Self-reported) 9 Items (Janssen, 2000)	249 junior doctors (Cross-section)	SEM analysis (with bootstrapping)	Public health care	United Kingdom

<sup>40</sup> This article was published on line for the first time in 2016.

## 2. AMBIDEXTERITY

### a) Exploitation, exploration and ambidextrous “appropriate balance”.

A specific focus of this thesis is about ambidexterity. The study of strategic concepts has expanded in the field of public administration (Modell, 2012), but ambidexterity is still a rarely examined topic (Umans et al., 2018) while being perceived as behavior that optimizes performance also in the public sector (Gieske, George, et al., 2020). In public organizations it is crucial to be able to manage both the optimization and innovation of policies, processes and services (Gieske, Duijn, et al., 2020). The first to use the term organizational ambidexterity was Duncan (1976), although more specific research in the field of organization started with the March's paper (1991), which first identified the balance between exploitation and exploration as the roots for adaptation and development of an organization. During last years, the interest passed from the general concept of dynamic capabilities to "second-order" dimensions, as learning (Zollo & Winter, 2002) and exploitation-exploration (Levinthal & March, 1993; March, 1991). Those dynamic capabilities based on the use of existing knowledge and the research of new knowledge "can originate from the outside the organization ... or from inside the organization through various mechanisms of intra-organizational knowledge sharing" (Easterby-Smith & Prieto, 2008, p. 239). In March's original idea exploitation has a short-run perspective, otherwise exploration has a long-run one and they compete for scarce resources (1991):

*"Exploration includes things captured by terms such as search, variation, risk taking, experimentation, play, flexibility, discovery, innovation ... Exploitation includes such things as refinement, choice, production, efficiency, selection, implementation, execution."* (March, 1991, p. 71).

At organizational level, exploitation and exploration are based on different structures, strategies and contexts (Raisch & Birkinshaw, 2008). In this research, unlike the original Easterby-Smith and Prieto's model (2008) that sees the learning process connected to exploitation and exploration as mediator between knowledge management and dynamic capabilities, here the exploitation-exploration-ambidextrous process as preeminent dimension. It may be considered not only as a "second-order" dynamic capabilities (Zollo & Winter, 2002), but also a real dynamic capability (O'Reilly & Tushman, 2008) and an objective of knowledge management is to enhance it (Swan et al., 1999) in a microfoundation fashion. Exploitation is connected with a better replication of existing methods and efficiency, while exploration is connected with new ideas and leads to innovation (Easterby-Smith & Prieto, 2008). Similar consideration can be done also for public administration even if the studies on this issue are extremely rare to date. Organizational ambidex-

terity is a relevant factor as an outcome of public organizations, considering that their performance often concerns a “good” allocation of resources and the creation of value for stakeholders rather than financial results (E. Smith & Umans, 2015; Umans et al., 2018). To date, researches about organizational ambidexterity in public administration are limited, even if the development of new paradigms (Umans et al., 2018) and the application of strategic concepts (e.g. J. R. Hansen & Ferlie, 2016) recall the attention to delve into the antecedents of this construct. This thesis focuses on the factors influencing organizational behaviour, but there is another field of research about the organizational (e.g. Lubatkin et al., 2006) and individual effect of ambidexterity (e.g. Caniels & Veld, 2019; Torres et al., 2015). In a qualitative study, Canneart et al. (2016) find the relevance of cognitive capabilities in term as “T-shaped skills”<sup>41</sup>, as antecedents of team ambidexterity, but, until now, the deepening has stopped at conceptual hypotheses. About social capital, focusing on contingency perspective, Umans et al. (2018) confirm the positive role of shared leadership at level of top management in municipal housing corporations, that are organizations controlled by local governments. There is a gap about the roles of knowledge-based social capital and cognitive capabilities in local governments in a behavioural perspective.

Table 7: Four examples of empirical studies on organizational ambidexterity in public sector.

Reference	Independent variables	Moderation variables	Mediation variables	Outcome variables	Unit of analysis (final sample)	Statistical methods	Sector (Public/Private)	Place
<b>Smith and Umans (2015)</b>	<i>Managerial focus: entrepreneurial<sup>41</sup>, leadership<sup>41</sup>, stakeholder</i>	-	-	Organizational ambidexterity	290 municipal organization (water and waste)	OLS regression	Public	Sweden
<b>Plimmer et al. (2017)</b>	<i>High involvement work system</i>	-	Organizational ambidexterity, Organizational system	Organizational performance		SEM	56 public organizations	New Zealand
<b>Umans et al. (2018)</b>	<i>Top Management Teams' Shared leadership<sup>42</sup></i>	Management control systems (TPMCS, NPMCS) <sup>42</sup>	-	Organizational ambidexterity	85 municipal housing corporations	Multiple hierarchical linear regression analyses	Public	Sweden
<b>Barrutia and Echeberria (2019)</b>	<i>Upward collaboration, Inward collaboration, Outward collaboration</i>	-	-	Explorative Innovation, Exploitative Innovation	18 networks and 2,706 municipalities	SEM	Local governments	Spain

<sup>41</sup> This dimensions refers to different cognitive capabilities used especially in research about innovation (e.g. Demirkan & Spohrer, 2015).

<sup>42</sup> TPMCS means “traditional public management control system”, NPMCS means “new public management control system”. Both the mechanisms have a positive direct impact on organizational ambidexterity, but only NPMCS moderates the relationship between TMT shared leadership and ambidexterity (Umans et al., 2018).

## **b) Exploitation - exploration: complementary or alternative? Ambidexterity.**

In literature there is a long-term unsolved debate about the need to strategic balance, inherent to the trade-off or the complementarity of exploitative and explorative behaviours for the success of organizations. It is open to debate that ambidexterity will complement or alternate the exploration and exploitation of resources. The two activities can be seen as separate and antecedent, as they are based on the idea of scarce resources, e.g. in terms of time or ability to follow the two lines of action simultaneously. If the system is not balanced there are some possible problems recognized in literature from early studies. An **"appropriate balance"** between the two activities, however, was seen since March (1991) as crucial for organisational sustainability and prosperity, as too much short-term thinking could undermine and eliminate activities that look to the long term, while exploration and taking too many risks could reduce current efficiency (March, 1991, p. 92). The search of this "appropriate balance" in exploitative-explorative-ambidextrous behaviours is connected to the need to study their microfoundations, because "they occur at level of a nested system - at the individual level, the organizational level, and the social system level" (March, 1991, p. 72). March (1991) suggests that there is a trade-off and an equilibrium of them is fundamental. In fact, only exploitative systems lead to a too adaptive model with few new ideas and distinctive competencies, only explorative systems could lead to a trap with suboptimal stable equilibria, because a positive factor in the long run could not be the same in the short run (March, 1991). The possible balance between the two activities is introduced under the term "ambidexterity" by Gibson and Birkinshaw (2004), i.e. acting ambidextrously, balancing exploration and exploitation. Also for Raisch et al. (2009), the balance of the two types of activities allows the sustainability of performance. In this academic debate, the theoretical view of ambidexterity has changed over time. At first the focus was on the elements of distinction and separation and on contingent, temporal and spatial aspects in the dilemma between exploration and exploitation and only recently the "paradoxical" nature of ambidexterity has been adopted. (W. K. Smith & Lewis, 2011; W. K. Smith & Tushman, 2005; Zimmermann et al., 2015), so the organizational success on the whole depends on being able to implement simultaneous exploration and exploitation (Gibson & Birkinshaw, 2004; O'Reilly & Tushman, 2008; Raisch & Birkinshaw, 2008). Since the first studies on ambidexterity that have taken place since 2004 (Gibson & Birkinshaw, 2004; He & Wong, 2004), this construct assumes that in organizations it is necessary to take strategic decisions about different mutually exclusive alternatives and this feature is also at individual level (Torres et al., 2015). At the beginning of the studies on the topic, the authors did not consider solutions to the overcoming of the trade-off between exploration and exploitation and only in the last decade have been presented organizational strategies that could reconcile the two dimensions with

positive results (Raisch & Birkinshaw, 2008). The two dimensions have not more been seen completely incompatible, but as orthogonal variables that could be managed together (Raisch & Birkinshaw, 2008). In fact, an orientation that is only exploitative leads to monotony, while the only exploration does not allow to enhance the resources already present in the organization (Carmeli & Halevi, 2009). In the long run, having exploration and exploitation strategies at the same time allows for a mutually reinforcing and successful organizational outcome even though these strategies compete for scarce resources (Andriopoulos & Lewis, 2009; He & Wong, 2004; W. K. Smith & Tushman, 2005). Actually, an appropriate balance between the two activities was already seen by March (1991) as crucial for organizational sustainability and prosperity, as too much short-term thinking could invalidate and eliminate activities that look to the long term, while exploration and taking too many risks could reduce current efficiency (March, 1991). From the conceptual perspective of organizational learning, Levinthal and March (1993) believe that exploration means searching for new knowledge, but not exploiting it means that that knowledge will never have tangible returns, at the same time exploiting it means using and developing knowledge already possessed, but without exploration that same knowledge soon becomes obsolete. Although still in the absence of the concept of ambidexterity, for the authors, the challenge for the organization, therefore, is "to engage in sufficient exploitation to ensure its current viability and, at the same time, to devote enough energy to exploration to ensure its future viability. Survival requires a balance, and the precise mix of exploitation and exploration that is optimal is hard to specify" (Levinthal & March, 1993, p. 105). In lack of balance, if too much exploration overcomes and tends to cancel exploration, the result is "inertia and dynamic conservatism" (W. K. Smith & Tushman, 2005, p. 522), because it lacks the necessary knowledge to activate an exploiting strategy (W. K. Smith & Lewis, 2011), conversely, too much exploration has as effects the inefficiency and the inability to generate economies of scale (He & Wong, 2004; W. K. Smith & Tushman, 2005) and, therefore, without exploitation, the organization does not have sufficient minimum knowledge to contribute to experimentation and absorptive capacity (W. K. Smith & Lewis, 2011, p. 388). With respect to these considerations, in both cases of complete lack of exploration or exploitation, we enter a vicious circle that tends to be detrimental to the company's long-term performance capabilities. For Raisch and Birkinshaw (2008), instead, the balance must be sought (by organizations, but also in empirical research) in the short and long term, so that this ability to be ambidextrous is linked to the dynamic capabilities of the organization (Eisenhardt & Martin, 2000; Teece et al., 1997). Organizations that manage to maintain a lasting balance between exploitative and explorative orientations are the only ones that can be defined ambidextrous (Günsel et al., 2018).



In summary, considering these theoretical debates, in this thesis, **organizational ambidexterity** is defined as:

*“the behavioral capacity to simultaneously demonstrate exploitation and exploitation across an organization.”* (adapted from: Gibson & Birkinshaw, 2004).

This thesis will consider this dual possibility in the construction of the empirical analysis of the model. In particular, this thesis will evaluate the possible (statistical, but also theoretical) combination of those two dimensions, that is called ambidexterity, introduced in contemporary organization and strategic research by Gibson and Birkinshaw (2004). Ambidexterity at the meso-organisational level is that ability to be simultaneously efficient in business today as being adaptive to environmental change processes (Raisch & Birkinshaw, 2008). Indeed, considering the need to make a choice about and among dynamic capabilities and about the possibility to "measure" and analyse it, the ambidextrous behaviour will be an independent dimension of the thesis with innovation in the specific case of local governments. In academic research, there are two kinds of organizational ambidexterity: "structural" ambidexterity concerns the exploitation and exploration at level of units and then integrated at organizational level, while "contextual" ambidexterity refers to organizational conditions that lead individuals to manage exploitative and explorative tasks at work (Cannaerts et al., 2016; Gibson & Birkinshaw, 2004; O'Reilly & Tushman, 2013a). In conclusion, theoretically, thus, the interpretation of behaviours as key intangible VRIN organizational resources and capabilities with the need to insert individuals and organizations in the social structural network are strictly connected with the theoretical framework outlined by Easterby-Smith & Prieto (2008). The focus of this thesis is clear: cognitive and social processes and their microfoundation impact on exploitation-exploration-ambidexterity and innovation, as key elements of dynamic capabilities in public administration. A wider focus is on the individual level of ambidexterity, as individual dynamic capabilities that microfound organizational dynamic capabilities. The literature has developed mainly on a macro level focusing on the ambidextrous behaviours of organizations and the attention on balancing the different activities of exploring and exploiting resources, so the focus has been mainly on the generation of products or the opening of new markets ("exploration") compared to the improvement and better efficiency of existing ones ("exploitation") (Bonesso et al., 2014). For instance, Tushman et al. (2010) find that ambidexterity and managerial integration (a form of social capital) were positive dimension to increase organizational innovation in 13 companies. This thesis poses theoretical research hypotheses with respect to the microfounding of organizational ambidexterity in public administration, focusing on individual determinants, microfounded on individual cognitive capabilities and social capital. A further step has been developed with respect to individual ambidexterity of public servants with the perspective that this dimension is an antecedent of organizational ambidexterity in a



similar way than within the private sector (Mom et al., 2019). In conclusion, ambidexterity in the public sector is an extremely specific behaviour, because the organizations are characterized by politics and the lack of pressure and competition (Choi & Chandler, 2015). The balancing strategies between exploitation and exploration are necessary, otherwise, the latter take to a success trap and the former to a failure trap (Choi & Chandler, 2015).

### c) **Ambidexterity at individual level.**

#### **Individual ambidexterity and the metaphor of Yucca.**

Another important key question, however, is to understand if the ambidextrous activity can only be of the organization or even of the individual. If the first studies focused on the organizational level, it became clear that individuals and managers could also act ambidextrously. Microfoundation assumes that the individual role is the primary protagonist in the formation of organizational results. Individuals are considered “as agents of ambidexterity at the individual level (Mu et al., 2020, p. 25). In this perspective, with a **metaphor**, the organization can be seen as a terrace or apartment floor plan. To cure it, decisions are multiple and complex: not only the amount of water but what soil to give, to keep in the house or on the terrace, in direct or indirect sunlight, spray to clean the leaves or not, when to change the pot and how, short and long periodical choices, often risky. For instance, a Yucca. If it takes too much water, the roots rot, if it takes little water, it dries. The Yucca has a life of its own, its systems and its natural organization, but to decide its life or death is the owner of the house, the entrepreneur, the cleaner, the individual who manages it and makes choices that go beyond the natural automatisms of the Yucca organization. The choices are more complex than the research of beauty and green for the apartment. They determine the life of a system and often these choices are complex and contradictory. The plant is ambidextrous if the individual who cares for it is ambidextrous and has the cognitive capabilities and knowledge to balance the right dryness (exploitation) and an adequate level of humidity (exploration). Cognitive capabilities allow being flexible multitaskers to have a greater capacity for awareness, attention, get the knowledge needed for the cure and so on. Social capital is the structure of friendly, parental, work or technological relationships that can be accessed to have the necessary knowledge to balance the orientation of decisions concerning the daily and long-term care of the plant. Yucca prospers today and in the future thanks to ambidextrous home gardeners. The same path is for a private or a public administration and their ambidextrous knowledge workers. As seen in the previous chapter, in a microfoundation perspective of dynamic capabilities, the same pathway is for individual innovative behaviour and organizational innovation. Metaphorically, the gardener finds that the remains of the tea bags used can be a

good natural fertilizer that substitutes chemical ones. Therefore, he tries to implement this creative innovation and to spread the practice to family, neighbors and friends who have Yucca. Over the metaphor, if the first studies about ambidexterity focused on the organizational level, it became clear that individuals and managers can also act ambidextrously and individual ambidexterity is the behavioural microfoundation of organizational one. Starting from the empirical works about the explorative and exploitative ability at managerial level (Mom et al., 2007, 2009), Caniëls and Veld (2019, p. 567) define ambidexterity at the individual level:

*“Employee ambidexterity is defined as the behavioural orientation of employees towards combining exploitation- and exploration- related activities within a certain period of time”*

The role of individuals, in a complementary sense, can be vital for the usefulness of organizational mechanisms and this is why the mechanism is effective when seen between several levels of analysis (Mom et al., 2019; Raisch et al., 2009). Ambidextrous being is a dynamic capability of the organization (O'Reilly & Tushman, 2008) and, therefore, in the perspective of microfoundation, ambidextrous being on a personal level (Bonesso et al., 2014) can be seen at the same time as an individual's dynamic capacity of self-control with respect to innovative behaviour. Individual ambidexterity may be considered also a cognitive abilities to manage exploitation and exploration. Researchers in organization (Mom et al., 2007) and psychology (Good & Michel, 2013) recognize how individual ambidexterity is related to cognitive flexibility. Personal ambidexterity is complete when the individual has a balanced behaviour between social skills (such as networking or gathering knowledge and information) and cognitive emotional skills (such as adaptability, initiative and planning ability) and a balanced perception resulting from multiple experiences between functions, between companies or even between sectors (Bonesso et al., 2014). This characterization of ambidextrous individuals is evidently interactable with the logical tripartition of microfoundation of the dynamic capabilities of Helfat & Martin (2015) so that social skills are part of the individual social capital, previous experience is identifiable in classical definitions of human capital resources and emotional skills are part of cognitive capabilities which are an extension of them. Multiple connectivity and relationships, which evidently can be linked to knowledge networks, positively influence individual ambidextrous ability (Mom et al., 2007). The ability to networking must be balanced with individual cognitive abilities that are prerequisites of dynamic abilities. A key point in the next chapters concerns connections between social capital and ambidexterity. Human Resources Management favours employee balancing practices to strengthen alignment and adaptability, exploitation and exploration. Research on skills and behaviours antecedent to individual ambidexterity is still lacking (Kapoutsis et al., 2019).

### **Is there an Academic need to study ambidexterity at individual level?**

At the end of the last decade, several scholars suggested studying ambidexterity at the individual level because the field is poorly analyzed (e.g. Raisch & Birkinshaw, 2008) despite being very promising (e.g. Gupta et al., 2006). The first work that studies exploitation and exploration on an individual level is by Mom et al. (2007). However, until the seminal article of Mom et al. (2009), ambidexterity was studied only at the organizational or team level. The review of the literature on empirical studies begins with these Mom et al.'s researches, whose results are shown in the Table 8. Including the Mom et al.'s article in 2007, only 16 journal papers treated the issue of ambidexterity at individual level. To date, only in 6 articles the variable is considered the outcome and scholars try to test the relevance of antecedents. In general, after some years of research, literature recommends that people can act ambidextrously, leading effects at individual and organizational level (e.g. Kobarg et al., 2017; Mom et al., 2019). The benefits of balancing exploitative and explorative behaviors in individual activities at work are recognized in managerial literature but the attention of scholars on determinants is still limited (Kauppila & Tempelaar, 2016). There is also an open debate in the literature on the opportunity to study ambidexterity on an individual level with a multilevel approach, so much so that for some authors this may not be possible (e.g. Gupta et al., 2006). The role of multilevel actors in organizational ambidexterity means apply the concepts of microfoundation. In the process of formation of ambidextrous organization, managerial cognitive abilities and cognition of paradoxes are a prerequisite for ambidexterity (W. K. Smith & Lewis, 2011; W. K. Smith & Tushman, 2005). Although the perspective in researches in organizational ambidexterity has usually been top-down in private sector (e.g. Mom et al., 2009; Raisch & Tushman, 2016; Zimmermann et al., 2015) and in public one (e.g. E. Smith & Umans, 2015; Umans et al., 2018), also in public administration literature, there are different theoretical proposals to understand the multilevel nature of ambidexterity (Birkinshaw & Gupta, 2013; Lavie et al., 2010; Raisch & Tushman, 2016) because all the levels are "equally valid" (Raisch & Birkinshaw, 2008, p. 396). For Raisch and Birkinshaw (2008), to improve the research about ambidexterity, it is necessary to implement empirical studies that traverse different and multiple level of analysis, but paying attention to explicit the level that is considered to prevent confusion. Huy already theorizes that middle managers contribute to organizational continuity as well as to the development of radical changes (Huy, 2002). Moreover, the role of manager is relevant in obtaining knowledge outside the organization and integrate it in exploitation and exploration activities (Heavey et al., 2015). Zimmermann, Raisch, & Birkinshaw (2015) find that the top-down process of definition of a strategic organizational charter at top-managerial level in alliances is complementary to an emergent bottom-up process, in which frontline managers' initiative is crucial to-

ward ambidextrous orientation. In fact, lower-level organizational actors can experience relational tensions (mutual trust) and contradictory logics of actions (organizational dissonance), so that new horizontal relational initiatives and form of socialization activities, as knowledge processes, and sharing of norms can promote emergent ambidextrous actions (Zimmermann et al., 2015). In this perspective, senior executives but also lower level organizational actors should have cognitive abilities to deal with paradoxes and to become decisive complementary drivers in the creation of ambidextrous organizations (Zimmermann et al., 2015). In the evolution of studies about ambidexterity, therefore, the role of microfoundation has been updated, moving from the role of top management and its cognition about paradoxes and strategical choices that are contradictory to arrive at an indispensable multilevel perspective to managing contradictions and promote ambidexterity (e.g. Raisch & Tushman, 2016; W. K. Smith & Lewis, 2011; W. K. Smith & Tushman, 2005; Zimmermann et al., 2015). Scholars focused on cognitive frame, paradoxical frame and cognitive process of executive top managers and groups that represent the main board of the organization (W. K. Smith & Tushman, 2005) up to recent emerging role of lower organizational levels in strategy implementation and resolution in practice the cognitive conflicts and relative management of scarce resources through relational strategies (Zimmermann et al., 2015). Bottom-up relational initiative can be considered a trigger to build consensus against paradoxical conflicts and the inertia of change towards ambidexterity (Zimmermann et al., 2015), implementing (shared) leadership about roles and tasks also for frontline and middle managers and their relationships (Raisch & Tushman, 2016). In groups, the opinion of the minority that is more innovation-oriented can foster organisational innovation itself if the possibility of exchanging views is shared and a distinct individual role is assigned in the interaction (W. K. Smith & Tushman, 2005). In particular, in the conceptual model of Smith and Tushman (2005), cognitive frames and process at individual level are similar at the group level and the structure of the team and the role of the leader (e.g. the senior executive) are connected with the capability of the team itself and the organization to balance exploration and exploitation. In antecedent dimensions of ambidexterity, the model build a trade-off between team with a recognized unique strong leader (“leadercentric team”) which acts as a connector between the various individual actors and a second typology of team in which decision-making and cognitions are more shared and diffused among members of the team (“teamcentric team”) (W. K. Smith & Tushman, 2005). **Nowadays** there are various searches for organizational behavior that concern individual ambidexterity. Empirical neuroscience studies also confirm that the human brain can have exploitation or exploration orientations in decisions (e.g. J. D. Cohen et al., 2007; Daw et al., 2006; Laureiro-Martínez et al., 2015). Studies at the micro-level assume individual heterogeneity, while studies on organizational ambidexter-

ity assume homogeneity at the individual level (Torres et al., 2015). In organizations, when activities are carried out, individuals shift from exploitation and exploration even in daily single tasks, so that their orientation added at the working group level and then at the organizational level can lead to an adaptive system that manages to solve the dilemma by improving the ability to move quickly between the two orientations (Laureiro-Martínez et al., 2010). In this direction, ambidextrous behaviour can be conducted also by employee and their actions are relevant in organizations (e.g. Ajayi et al., 2017; Kao & Chen, 2016; Kobarg et al., 2017; Mu et al., 2020). Agreeing to this behavioural perspective, several authors recognize as individual ambidexterity may influence and shape organizational one, starting from individual skills, knowledge and behaviours (Kapoutsis et al., 2019; Mom et al., 2009, 2019). In a multilevel perspective, both directions, top-down and bottom-up, may be beneficial for the development of ambidexterity individual ambidexterity and these passages can be helped by social phenomena through the knowledge sharing of behaviours (Birkinshaw & Gupta, 2013; Mom et al., 2019; O'Reilly & Tushman, 2013a; Zimmermann et al., 2015). To date, the research about ambidexterity is scarce in public administration. Shared leadership is an antecedent of organizational ambidexterity (Umans et al., 2018), but the level of analysis remains top-down and based on contingency features rather than behavioural ones. The role of individuals, in a complementary sense, can be vital for the usefulness of organizational mechanisms and this is why the mechanism is effective when seen between several levels of analysis (Mom et al., 2019; Raisch et al., 2009). Ambidextrous behaviour is a dynamic capability of the organization (O'Reilly & Tushman, 2008) and, therefore, in the perspective of microfoundation, ambidextrous behaviour is also on a personal level (Bonesso et al., 2014) and it can be seen at the same time as an individual's dynamic capability of self-control with respect to efficiency and innovative behaviour. A first perspective of empirical research remains on the managerial level and is a precursor of microfoundation, so managerial decision-making is seen as a process of formation of organizational ambidexterity (Rivkin & Siggelkow, 2003). On the other hands, even Mom et al. (2009), Rogan and Mors (2014) and Cannaerts et al. (2016) come to suggest studying ambidexterity at different levels of the hierarchy within organizations. Individual ambidexterity is crucial also about the contribution to economic and social value and a balancing of exploitation and exploration could safeguard contribution toward both forms of public value (Barrutia & Echebarria, 2020). This thesis focuses on the individual level of **knowledge workers** in local governments and, furthermore, expands the range of subjects that are assumed to be treated in the field of organizational behavior and behavioural public administration linked to ambidexterity. Studying individual ambidexterity in local governments is significant for the link that this variable can have with individual performance also in the public sector in the application of contemporary paradigms of public administration (Kobarg et al., 2017). The strong need at the

organizational and public servants level to seek efficiency of actual public services as well as the introduction of new services, to answer to actual and novel stakeholders' needs, to be effective in the short and long term are complex challenges that characterize the individual work-life in modern public sector (Kobarg et al., 2017). Studying individual ambidexterity in local governments is significant for the link that this variable can have with individual performance also in the public sector. The strong need at the organizational and public servants level to seek the efficiency of public services as well as the introduction new services, being effective in the short and long term, are crucial behaviours in a context of complex challenges that characterize the modern public sector. Moreover, the role of employee and in general knowledge worker in municipalities that are small-medium organizations in the sample, is a similar to the job in small-medium enterprises for the proximity with colleagues, different hierarchical level and external stakeholders. Recent studies focus on employees' ambidexterity in small-medium enterprises (e.g. Ajayi et al., 2017; Kao & Chen, 2016; Mu et al., 2020). Therefore it may be relevant to shift the perspective to local governments which theoretically share some organizational-relational-contextual aspects with this kind of private organizations, less formalization, more connectedness, and more flexibility (Mu et al., 2020) to broaden the understanding of individual enablers.

#### **d) Microfoundation of individual ambidexterity. A schematic review.**

Individuals tend to prefer exploitation orientation rather than exploration (March, 1991) and this is confirmed in neurosciences (Laureiro-Martínez et al., 2015), thus it is relevant to know which levers are crucial factor to implement ambidextrous orientation. The focus is in term of behavioural microfoundation, even if literature enlighten the relevance of contingent factors in local governments (e.g. Umans et al., 2018). A knowledge of meta- and socio- cognitive capabilities and social capital influencing individual and organizational behaviour could be relevant for the individual and organizational success in private and in public sector. Researchers in organization (Mom et al., 2007) and psychology (Good & Michel, 2013) recognize how individual ambidexterity is related to cognitive flexibility. Personal ambidexterity is complete when the individual has a balanced behaviour between social skills (networking or gathering knowledge and information) and cognitive emotional skills (adaptability, initiative and planning ability) and a balanced perception resulting from multiple experiences between functions, between companies or even between sectors (Bonesso et al., 2014). This characterization of ambidextrous individuals is evidently interactable with the logical tri-partition of microfoundation of the dynamic capabilities of Helfat & Martin (2015) so that social skills are part of the individual social capital, previous experience is identifiable in the classical definition of human capital resources and emotional skills are

part of cognitive capabilities which are an extension of human capital resources. For the purpose of this thesis, it is emphasized that multiple connectivity and relationships, which evidently can be linked to **knowledge networks** and sharing, positively influence individual ambidextrous ability. The focus on social capital based on knowledge network concern the idea that knowledge is crucial in decision-making (Torres et al., 2015). The different nature of knowledge network could influence exploitative and explorative behaviours at work (Mom et al., 2007). The relation between knowledge networks and sharing and individual ambidexterity has been already studied in literature as it emerges in literature review in Table 8 (e.g. Caniëls et al., 2017; Mom et al., 2007; Rogan & Mors, 2014; Torres et al., 2015). Collaborations outside the public organization also have an impact on ambidextrous behavior and this effect can also emerge on an individual level where the protagonist of the network is actually the individual rather than the institution as a whole. This thesis gives a unique contribution, adding some elements compared to the literature that connects social capital based on knowledge networks and ambidexterity to explain this phenomenon in local governments. Firstly, internal knowledge ties are among public servants even if they are not top or middle managers, so the microfoundation perspective is enlarged to knowledge workers in the specific case of local governments, when the literature concentrate on top-down knowledge networking in private companies. Secondly, external knowledge ties concern the relationships with multiple stakeholders in the Network Governance and street-level public servants can have these relationships for work. These knowledge ties are different from external relationships in the private sector with suppliers, customers, financiers and so on and a comparison is possible only at conceptual level, but, empirically and in substance, these forms of social capital are different in public administration rather than in private sector. Thirdly, next chapters enlighten the opportunity to study interactions between external and internal social capital, as well the moderation role of meta- and socio- cognitive capabilities in interaction with the actual social capital. Moreover, it is clear that the ability to networking must be considered with individual cognitive abilities that are prerequisites for dynamic capabilities. A key point in the next chapters concerns the connection between social capital and ambidexterity in the specific organizational contextual case of public administration. The other interconnected field is about **cognitive** microfoundation of individual ambidexterity. Human Resources Management favours employee balancing practices to strengthen alignment and adaptability, exploitation and exploration. Empirical research on skills and behaviours antecedent to individual ambidexterity is still lacking (Kapoutsis et al., 2019). This thesis posit that cognitive capabilities, in particular political skill and mindfulness, and social capital, in particular internal knowledge networks and external networking, are antecedents of individual ambidexterity in local governments. Moreover, meta- and socio- cognitive capabilities may benefit from social capital to improve the the capability to

balance the orientation of decision-making at work. These assumptions are coherent with the features that characterize the individual ambidexterity construct. Ambidextrous individuals: a) host contradictions, so they have to live with the conflict and with paradoxical decisions at work; b) are multitasker, need generalist skills, they cover different roles and carry out different tasks in a determinate period of time; c) refine and renew their knowledge, skills and expertise (Mom et al., 2009, p. 813). Behavioural perspective of individual ambidexterity (Ahammad et al., 2015) has been particularly studied in the field of human resources management for example (Kapoutsis et al., 2019; Mom et al., 2019). According to a contingent perspective, formal structure, coordination and ambidextrous organizational culture facilitate certain behaviours (Raisch et al., 2009, p. 686). Agreeing to a behavioural perspective, several authors recognize as individual ambidexterity may influence and shape organizational one, starting from individual skills, knowledge and behaviours (Kapoutsis et al., 2019; Mom et al., 2019). In a multilevel perspective, both directions, top-down and bottom-up, may be beneficial for the development of ambidexterity individual ambidexterity and these passages can be helped by social phenomena through the knowledge sharing of behaviours (Birkinshaw & Gupta, 2013; Mom et al., 2019; O'Reilly & Tushman, 2013a). Studies have focused on the effect of ambidexterity on innovation (Caniëls & Veld, 2019) and knowledge sharing as an antecedent to ambidexterity (Caniëls et al., 2017). They found that the two components of ambidexterity influence innovation, but that above all a balance between the two activities favours the Caniëls and Veld's outcome (2019). The objective is not confirm the correlation between individual ambidexterity and innovative work behavior. Both dimensions are considered individual dynamic capabilities at the individual level and independent variables try to explain microfoundation of them separately. Future research could see ambidexterity as a mediator between microfounded antecedents and innovative work behavior. The focus is on both social capital and personal characteristics that may explain together individual ambidexterity (Kao & Chen, 2016)<sup>43</sup>. The empirical attention to the antecedents of personal ambidexterity for employees at different hierarchical level is limited and the gap is vaster in the public sector.

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<sup>43</sup> Authors write about the organizational factor and social capital can be considered both an organizational and an individual concept build within the organization, considering relations with colleagues and external stakeholders created during the activities at work.



Table 8: literature review about empirical studies on individual ambidexterity<sup>44</sup>.

Reference	Independent variables	Moderation variables	Mediation variables	Outcome variables	Unit of analysis (final sample)	Statistical methods	Sector (Public/Private)	Place
Mom et al. (2007) <sup>45</sup>	Top-down, Bottom-up, Horizontal knowledge inflow	-	-	Exploitation, Exploration (Self-reported)	104 managers (Cross-section)	Hierarchical (linear) regression analyses	An international electronics firm	-
Mom et al. (2009)	<i>Manager's decision-making authority</i> ; <i>participation in cross-functional interfaces</i> ; <i>formalization of a manager's tasks</i> ; <i>connectedness</i> *	<i>Manager's decision-making authority</i> ; <i>formalization of a manager's tasks</i> ; <i>connectedness</i> *	-	Manager's ambidexterity (multiplicative) (Self-reported)	716 business unit level and operational level managers (Cross-section)	Hierarchical (linear) regression analyses	Five large <b>private</b> firms	-
Jasmand et al. (2012)	Team identification, Bounded discretion, Locomotion Orientation, Assessment orientation	-	Ambidextrous behaviour (Self-reported)	Customer satisfaction, Sales performance, Efficiency	119 Customer Service Representatives (Cross-section)	Structural Equation Modeling	Two call centers	-
Rogan and Mors (2014)	<i>External network density</i> ; <i>Internal network density</i> ; <i>External contact heterogeneity</i> ; <i>Internal contact heterogeneity</i> ; <i>External informal ties</i> ; <i>Internal informal ties</i> *	<sup>46</sup>	-	Manager's ambidexterity (continuum) (supervisors)	79 senior managers - partners (Time-lagged)	Multinomial logistic regression	<b>Private</b> management consulting firm	<sup>47</sup>
Torres et al. (2015)	<i>Industry knowledge</i> *	-	Individual ambidexterity (Self-reported)	Short-term and Long-term performance	67 MBA students (Time-lagged)	OLS regression	Experiment design (participant are <b>private</b> middle-managers)	Latin America
Kaupila and Tempelaar (2016)	<i>General self-efficacy</i> *, <i>Group manager's paradoxical leadership</i> *	<i>Group manager's paradoxical leadership</i>	Learning orientation	Individual ambidexterity (multiplicative) (Self-reported)	638 employees across 34 participating firms (Time-lagged)	Hierarchical linear modeling (HLM)	<b>Private</b> (different sectors)	Finland
Kao and Chen (2016)	<i>Intrinsic motivation</i> *	Extrinsic reward, Emotional intelligence, Proactive personality	Individual ambidexterity (Self-reported)	Service performance	205 flight attendants (Cross section)	Hierarchical (linear) regression analyses	<b>Private</b> airline company	Taiwan
Kobarg et al. (2017)	<i>Individual ambidexterity</i> * (Self-reported)	Supervisory ratio (organizational level)	-	Performance (Archival – publications)	2225 doctoral and post-doctoral students (Cross section)	Hierarchical linear modeling (HLM)	<b>Public</b> universities	Germany

<sup>44</sup> This table does not include two other researches that are included in the review of innovative work behaviour (Caniëls & Veld, 2019) in Table 6 and political skill (Kapoutsis et al., 2019) in Table 12.

<sup>45</sup> This research is about exploitation and exploration and it doesn't consider general ambidexterity.

<sup>46</sup> Authors analyse interaction between internal and external social capital.

<sup>47</sup> Authors consider different offices of the consulting firm.

Reference	Independent variables	Moderation variables	Mediation variables	Outcome variables	Unit of analysis (final sample)	Statistical methods	Sector (Public/Private)	Place
<b>Ajayi et al. (2017)</b>	<i>Organic structure<sup>+</sup>, knowledge sharing culture<sup>+</sup>, clan culture<sup>+</sup>, Advocacy culture<sup>+</sup></i>	-	<i>Employee engagement<sup>+</sup></i>	Individual ambidexterity (Self-reported)	398 shop-floor employees (Cross-section)	Structural Equation Modelling	Small-Medium Enterprises	Nigeria
<b>Tuan (2017)</b>	<i>Ambidextrous leadership<sup>+</sup></i> (Employees assess their supervisor)	<i>Role breadth efficacy<sup>+</sup>, public service motivation<sup>+</sup></i>	-	Organizational reform	627 employees and 217 department managers (Time-lagged)	Hierarchical (linear) regression analyses	Governmental agencies	Vietnam
<b>Caniëls et al. (2017)</b>	<i>Culture of empowerment, knowledge sharing culture</i>	<i>Extrinsic motivation</i>	<i>Intrinsic motivation<sup>+</sup></i>	Employee ambidexterity (Self-reported)	220 professional level Employees (Cross-section)	Hierarchical (linear) regression analyses	5 sectors (1 respondent per organization)	Belgium
<b>Gieske et al. (2019)</b>	<i>Connective capacity, Ambidextrous capacity, Learning capacity</i> (Self-reported)	-	<i>Innovating<sup>+</sup>, Optimising<sup>+</sup></i>	Performance	667 employees (Cross-section)	Structural Equation Modeling	22 Dutch Water Authorities	Holland
<b>Mom et al. (2019)</b>	<i>Ability enhancing (HR practices)<sup>+</sup>, Motivation Enhancing (HR practices)<sup>+</sup></i>	<i>Opportunity enhancing (HR practices)<sup>+</sup></i>	<i>Role breadth efficacy<sup>+</sup>, intrinsic motivational orientation<sup>+</sup></i>	Organizational ambidexterity, Individual ambidexterity <sup>48</sup> (Self-reported)	467 operational managers in 52 firms (Time-lagged)	Multilevel SEM	Financial services firms	Taiwan
<b>Barrutia and Echeberria (2020)<sup>49</sup></b>	<i>Exploitative innovation<sup>+</sup>, Explorative innovation<sup>+</sup></i> (Self-reported)	-	-	Economic value, Social facet of value	656 municipal managers (273 administrators and 383 politicians) (Cross-section)	Structural Equation Modeling	Municipalities	Spain

<sup>48</sup> Individual ambidexterity shows a positive impact on organizational ambidexterity.

<sup>49</sup> This paper is included in the review of individual ambidexterity even if the data is at the organizational level for the connection with the individual perception of economic and social value.

## **C. SOCIAL CAPITAL FROM KNOWLEDGE NETWORKS AS ANTECEDENTS OF INDIVIDUAL AND ORGANIZATIONAL DYNAMIC CAPABILITIES.**

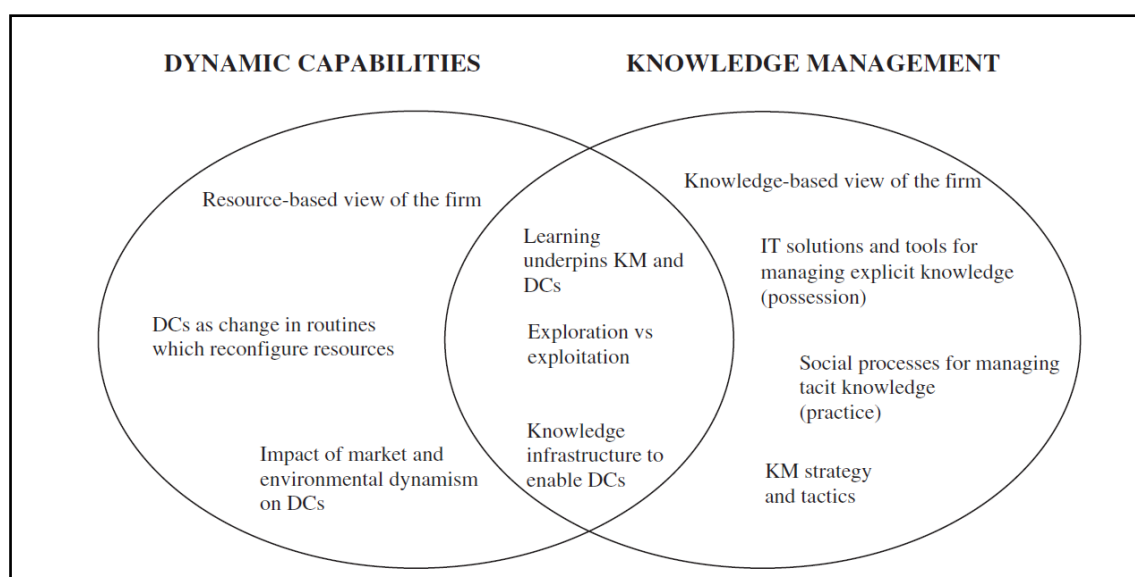
### **a) Preliminary aspects: Knowledge Management and Dynamic Capabilities.**

In the field of knowledge relations, in this thesis, the conceptual framework (Figure 9 at the end of this paragraph) is in the intersections between dynamic capabilities based on a "dynamic" evolution of RBV (Resource-based view) and knowledge management based on knowledge-based view of the firm (Grant, 1996), a knowledge-based conceptual evolution of RBV, as explained by Easterby-Smith & Prieto (2008). The approach of the thesis is focused on individual relational side of knowledge management (KM), that "focuses on the sense-making behaviours of individuals, on social relations and cultural factors when handling organizational knowledge" (Easterby-Smith & Prieto, 2008, p. 239). The central point of this part of the thesis is to understand how the theme of social capital connected to knowledge management can be linked to dynamic capabilities (DCs), and to put forward research hypotheses on the microfoundation of individual ambidexterity and innovative work behaviour and organizational ambidexterity and innovation.

As specified in the article by Easterby & Smith (2008), while the theories and applications of knowledge management mainly concern how managers should also in practice create, retain, transfer and use knowledge, whether explicit or tacit, dynamic skills are the "ability of a company to integrate, build, and reconfigure internal and external skills to deal with rapidly changing environments" (Teece et al., 1997, p. 516). Both concepts are linked to the resource-based view, but dynamic capabilities ("DCs") are not fundamentally an (Easterby-Smith & Prieto, 2008): in DC theories the focus is precisely on the renewal of resources and their reconfiguration over time and in changing environmental conditions or at least in moderately dynamic ones (Eisenhardt & Martin, 2000). In Teece's theoretical elaboration (1997) the organizational processes, routine but also learning, are linked to the current position of the company in terms of strategic assets and routines. A relevant variable of the DCs is the path dependency, that is the historical path undertaken by the company that leads to having unique and intrinsically inimitable DCs, therefore, bearers of competitive advantage or, in fact, of public value in the public sector. According to the analysis of Easterby-Smith & Prieto (2008), there are three theoretical elements of contact that link the discipline of knowledge management (KM) with the conceptuality of the DCs: first, the ability to learn is the source of the DCs and at the same time the KM can be defined "managed learning"

(Easterby-Smith & Prieto, 2008, p. 242), in terms of the process of creation, retention and application of knowledge, then, organizational learning. If dynamic capabilities are understood as the result of learning to reform operational skills, learning can itself be defined as a second-order dynamic ability (Easterby-Smith & Prieto, 2008; Zollo & Winter, 2002). Besides learning, a second meeting point is the link between "exploration" and "exploitation" (Levinthal & March, 1993; March, 1991), i.e. introducing new ideas and selecting the most useful ones among them (exploration->innovation) compared to using already existing methods also with a wider diffusion (exploitation->major efficiency), considering that in the literature it has been found that the two concepts are linked and interact to favour DCs, among other things, the term "ambidexterity" introduced by Gibson & Birkinshaw (2004); thirdly, the fields of research on KM and DCs are linked to the converging theme of infrastructural success factors, which can be essentially internal, such as culture and norms, human and personal skills, structural (and managerial systems) or tend to be external, such as technological conditions deriving from the technical context of the enterprise. The connections between KM and DCs are seen here in the sense of the role of individuals and managers in organizations, following the theoretical approach of microfoundation. In Figure 10 Easterby-Smith and Prieto (2008) resume the theoretical relations between knowledge management and dynamic capabilities in organization studies. This section of the thesis is composed of three chapters. The first chapter deals theoretically with knowledge as a resource to be managed within organizations in the network resource perspective and develops a conceptual model of knowledge management in public administration. This chapter partly takes up the paper "Lenses for public knowledge management: a dynamic conceptual model", which was presented at two academic conferences in 2017 in Nice organized by Airmap ("Un management public universel") and in Ancona organized by Eiasm ("13th interdisciplinary workshop on intangibles and intellectual capital"). The second chapter deals with knowledge relations within the organization and the hypothesis that this form of social capital influences individual dynamic capabilities. Finally, in the third chapter of this section, the focus is on the social capital that individuals have outside the organization. The focus is on the external networking of public employees, i.e. social capital based on the exchange of knowledge with individuals outside the organization. In addition, in this case, the hypotheses of microfoundation are proposed.

Figure 9: Conceptual intersections between Dynamic Capabilities and Knowledge Management in theory and practice (Easterby-Smith & Prieto, 2008, p. 240).



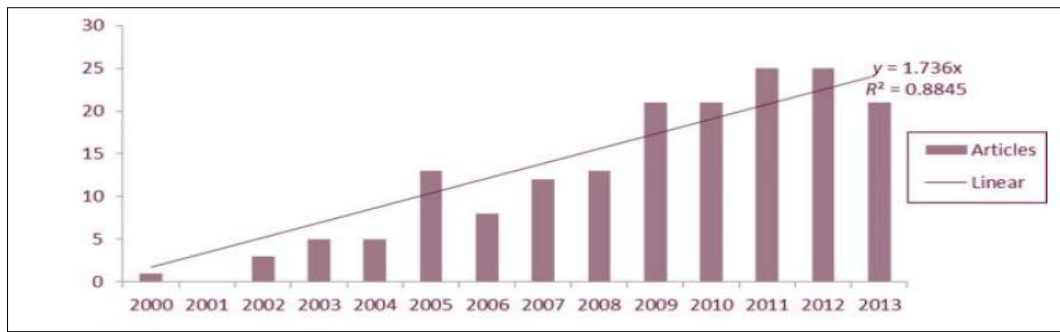
## 1. KNOWLEDGE AS A KEY RESOURCE TO MANAGE: A THEORETICAL AND PRACTICAL MODEL OF KNOWLEDGE MANAGEMENT IN PUBLIC ADMINISTRATION.

### a) Reasons for a model of Knowledge Management in Public Administration.

The aim of this article<sup>50</sup> is to propose a conceptual scheme to help strategic management in Public Administration to understand complexity in planning Knowledge Management (KM). Modelling process starts from making qualitative assumptions that result from a non-systematic analysis of the literature (through Ebsco and Google Scholar) and are essential to outline intellectual framework, key concepts and their relationships. Traditional literature reviews summarize a body of literature with the possibility to justify innovative approaches (Easterby-Smith et al., 2015). They provide "insights that can be neglected or passed over in the steps towards inclusion and quality control that are required in the systematic review model" (Jesson et al., 2011, p. 15). Previous literature reviews (Massaro et al., 2015) indicate that the trend of research interest about KM within public administration is rising (Figure 10).

<sup>50</sup> This section is an articles which was presented in two international conferences in Nice and in Ancona and it is written in 2017. This article is included in the monography as a chapter because it is congruent with the research question about links between knowledge-based social capital and dynamic capabilities. This part is a qualitative approach to the behavioural microfoundation movement in public administration.

Figure 10: publications and trend about public administration and knowledge management (Massaro et al., 2015, p. 537).



KM theories and practices exploded in last 20 years in business administrations, but, public sector is a "unique context" and "blindly applying private sector KM tools and models may be counter-productive" (Massaro et al., 2015, p. 531). As said in the explanation of the thesis research question, the public administration must be studied separately with respect to the private sector, as regards knowledge management (Massaro et al., 2015). In modern knowledge economies, a challenge for public organisations is planning in a long term, paying attention in short term or dynamics cycles and emergences (Bolisani & Bratianu, 2017). In answer to the stringent need for continuous performance improvement in conditions of measurement of standards, reduced financial resources, competitions between territories and organizations, high clients-users-citizen's social expectations on results, monitoring (Boyne et al., 2005; De Angelis, 2013), even public administrations need "new vocabularies, new management techniques, new technologies, and new strategies" (Stewart, 2007, p. 5) to exploit knowledge assets. Even if strategic management is a growing field of research in public organizations in particular for "networked-forms of strategy" (J. R. Hansen & Ferlie, 2016, p. 5), not enough attention is dedicated to knowledge strategy planning (Bolisani & Bratianu, 2017) and effects on organizational effectiveness (Pee & Kankanhalli, 2016). There is too little discussion and agreement in literature: a first lack about connectivity among strategy, organisation, planning and implementation (Al-Khouri, 2014; Cong & Pandya, 2003; Riege & Lindsay, 2006; Syed-Ikhsan & Rowland, 2004) and a second one about contributions in research areas as within super-national organizations, state-regional institutions and local governments (Massaro et al., 2015, p. 539). After the focus on the conceptual framework of organizational knowledge, the model is "exploded" and discussed in following parts. The purpose is connecting individual level of analysis with organisational and network ones in a cyclical scalable system of conducting KM strategies and control, emerging that there is not an universal unique pattern. In particular, knowledge transfer, integrating, acquiring, developing, creating, learning

and also applying and using are considered here strategic policies connected with building dynamic capabilities (Easterby-Smith & Prieto, 2008; Piening, 2013; Teece, 1998). The knowledge process can affect outcome and renewal of the entire sector and improve interrelated connections with networks of public organizations, business and academies in a dynamic way, influencing the production of strong public value for stakeholders in network governance (Bryson et al., 2007). In the last part, there are final reflections and conclusions about future researches. In fact, empirical qualitative or quantitative researches are a defy to test the limits of generalization of the conceptual model.

## **b) Organizational knowledge - Theoretical framework and assumptions.**

The building of the model develops in the deep comprehensions of concepts and theories within KM literature and Public Management one. In this part, it has been outlined critically the conceptual elements of contact inside the relative frameworks. This theoretical process allow to define some deductive logical assumptions that are closely related to the managerial model. The starting point is an overview of some crucial concepts. The first one is knowledge, which has been heard since ancient Greek times (Grant, 1996) and, nowadays, has been recognised as a strategic resource for competitiveness of individuals, firms and countries, "the most important factor of production" (Stewart, 2007, p. 5). For public organizations, at meso level, knowledge-based economy is a challenger opportunity (Room et al., 2005), but it is a vague concept: it has not a unique easy definition (K. H. Smith, 2002) and the quantified measurable outcomes haven't be tested empirically enough (Brinkley, 2006). At macro level, a useful definition of knowledge economy is done by Powell and Snellman (Powell & Snellman, 2004, p. 199): "Production and services based on knowledge-intensive activities that contribute to an accelerated pace of technical and scientific advance, as well as rapid obsolescence". Knowledge worker (Drucker, 1969), knowledge-based theory of the firm (Grant, 1996), learning society (OECD, 2000), knowledge society (Bindé & UNESCO, 2005) and "economics of ideas" (C. I. Jones, 2011) are keywords of a so challenging kind of economy, that leads to the argument about needs for improvement of managerial skills, strategies and organisation from macro to micro level of people. Since the time of ancient Greeks, philosophers such as Plato and Aristotle attempted to give an explanation to the concept of knowledge (Grant, 1996). If the answer on what is knowledge is, without entering into an ontological and epistemological debate, an effective definition would be: "information combined with experience, context, interpretation and reflection. It is a high-value form of information that is ready to apply to decisions and actions (Davenport & Prusak, 1998, p. 43). Therefore, knowledge is distinct from "simple" information, which can be understood as a set of organized data inserted

into meaningful models: it is only when this information becomes useful starting point for the action, which turns into knowledge. In this sense, knowledge must not be confused with information: the two concepts are profoundly different because only individuals have a preeminent role as vectors, creators and users, while for information, the human role could only be indirect. For Nonaka (Nonaka, 1994, p. 15) information is a flow of messages, while knowledge is created and organized by the same flow of information, anchoring itself to the commitment and convictions of its owner; thus, the author emphasizes the essential role of human action. Indeed knowledge is a key resource that resides within individual (Grant, 1996; Nonaka, 1991). Knowledge is also a mediator of intellectual capital, a stock for individual and organizational performance (Serenko & Bontis, 2009). For other authors, on the other hand, the study of knowledge and information tends to overlap, when the latter is treated by individuals, as for ideas, competence or judgements (e.g. Alavi & Leidner, 2001; S. Wang & Noe, 2010). In the organizational field, the first relevant definition is that which distinguishes between tacit and explicit knowledge (Polanyi, 1967); the first refers to codified and written knowledge, which can be articulated, captured and distributed, while the second is linked to personal knowledge and skills, which are much more difficult to distribute (Easterby-Smith & Prieto, 2008, p. 238); explicit knowledge is revealed by communication, while tacit knowledge is revealed by its application (Grant, 1996). Starting from the paradigm of organizational learning (Levitt & March, 1988), Nonaka (1994) uses this distinction precisely to create a model in which the creation of organizational knowledge (and the consequent innovativeness of the company) is determined by the interaction between tacit and explicit forms of knowledge. Nonaka (1994) emphasizes at the same time the role of individuals, who are the only possible subjects in creating knowledge for which the organization cannot create it without individuals, and the supporting role of the organization that creates an adequate context for knowledge creation. At the level of ontological dimension, the creation of organizational knowledge is, therefore, a process that is broadened from the organization's point of view, as it crystallizes in the knowledge networks between individuals within the organization (Nonaka, 1994). This author is partially detached from this vision of organizational knowledge (Grant, 1996), as he believes that this version of knowledge management is mainly connected to a meso level of the whole learning organization, emphasizing even more the role of the people who hold knowledge and are the only ones, therefore, who have a crucial role in storing and learning it. For Grant (1996, p. 112), the role of the organization is only to apply existing knowledge to create products and services, following the logic of Simon (1991), whereby learning is in people's heads and the organization learns through the learning of its members or by hiring new members who possess knowledge other than the knowledge already present



within<sup>51</sup>. This point of view is maintained in this thesis, although there are authors who quite evidently deviate from it, as they point out that knowledge is in the procedures, rules and forms of an organization (March, 1991, p. 37) or distinguish between individual knowledge (possessed by the person) and collective knowledge (inserted in the relations between groups of people) (A. Cabrera & Cabrera, 2002; E. F. Cabrera & Cabrera, 2005); the division between individual and collective knowledge takes up a distinction between individualistic-cognitive and collectivist theories also typical of social psychology<sup>52</sup>, as well as the differentiation between cultures that tend to be individualistic, such as European and North American ones, compared to cultures that tend to be collectivist, such as Asian ones. However, the "dispute" on which level to study organizational knowledge remains unresolved (Empson, 2001). Finally, it should be borne in mind that learning (also individual learning) is a second-order dynamic capability (Zollo & Winter, 2002) and, therefore, it can be seen as an innovative behaviour or, more precautionarily, its precursor and it is for this reason that the Nonaka's model (1994) is a potential conceptual explanation of the link between knowledge sharing, understood as a dimension of social capital, and individual ambidexterity and innovative work behaviour. The process of Knowledge Management (KM) leveraging relevant knowledge assets can improve efficiency, effectiveness and innovation and help develop knowledge-intensive economies (Serenko et al., 2010). In public organizations, KM can be a driver to increase efficiency and quality of public services (McAdam & Reid, 2000; Riege & Lindsay, 2006; Wiig, 2002) and effectiveness of citizen-driven policies. Knowledge embodiment, dissemination and use improve the productivity of public servants and organisations (McAdam & Reid, 2000). Since knowledge is recognized as a key, rare, unique, "path-dependent" intangible asset (in a sense the history of internal and external knowledge relationships and the adoption of knowledge in the organization indicate that there cannot be two companies that "learned" in the same way), hardly "appropriable" by third parties thanks to a form of suprapersonal collective knowledge that is created in the relationships between individuals in groups, causally ambiguous (because it is inserted in complex interpersonal relationships) and, therefore, very difficult to imitate and replace (A. Cabrera & Cabrera, 2002, pp. 668 and 690), for more than two decades the area of study related to knowledge management has developed<sup>53</sup>.

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<sup>51</sup> Original version: "All learning takes place inside individual human heads; an organization learns in only two ways: (a) by the learning of its members, or (b) by ingesting new members who have knowledge the organization didn't previously have" (Simon, 1991, p. 125).

<sup>52</sup> It is possible, for example, to make a conceptual link between collective knowledge and "Group Mind", according to which people adopt a different way of thinking when they are in a group (McDougall, 1920).

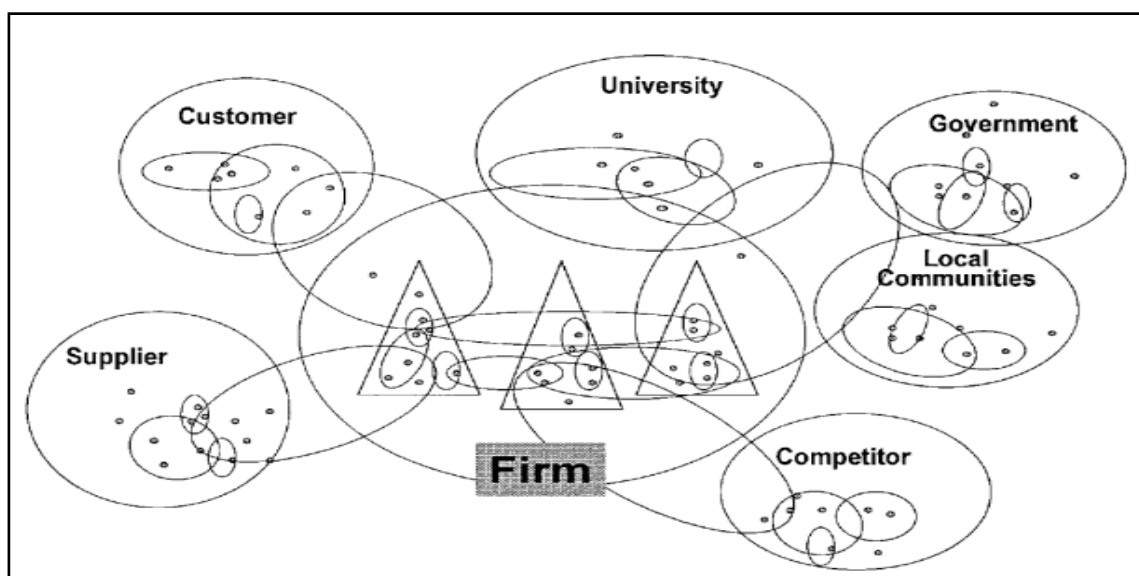
<sup>53</sup> Cabrera & Cabrera (2002) report a study by KPMG (2000), where already in 2000 81% of the most important European and North American companies had adopted knowledge management systems.

"In an economy where the only certainty is uncertainty, the one sure source of lasting competitive advantage is knowledge" (Nonaka, 1991, p. 96). The first proposition of Nonaka's work (1991), which hoped to follow the case of successful Japanese companies in managing and creating knowledge for continuous innovation, is an example of how the interest in knowledge management in the company has developed and deepened over the last two decades. While Resource-Based View (RBV) made it clear that companies' competitive advantage derives from the resources available (Barney, 1991; Wernerfelt, 1984), knowledge-based view (Grant, 1996) differs from it in that it sees organizational knowledge as the key resource to manage for the company (Grant, 1996; Kogut & Zander, 1992). It is therefore essential to distinguish between the organizational resource we are evaluating and the process that leads to an attempt to manage it (Easterby-Smith & Prieto, 2008). In the modern paradigm of the knowledge economy, moreover, a "cooperative relational view" of the company could better express the reality of a close RBV, seeing the single organization as networks of "knowledge workers" and knowledge resources (Grant, 1996) and in which relations with stakeholders, with the environment and in a perspective of enlarged Network Governance, especially in the public sector. After making these preliminary considerations, *the first assumption is that knowledge is a key resource for improve public organizations*. This one starts from a reasoning for individuals within a "single" organization and among organizations (micro level) and goes on with the "single" organizations (meso level) until the more complex networked public governance point of view (meso level of network among organizations and macro level of the knowledge economy). The outlined context of knowledge-economy, in fact, involves the need to study public administration too in a resource-based perspective (Barney, 1991; Wernerfelt, 1984) of which knowledge-based view (Grant, 1996; Kogut & Zander, 1992) is an extension (Easterby-Smith & Prieto, 2008). In private firms as well in public organizations, knowledge is a tacit or explicit (Nonaka, 1994; Polanyi, 1967) firm-specific difficult-to-trade (Teece et al., 1997, p. 521) resource that can improve efficiency, effectiveness and profitability (Barney, 1991; Wernerfelt, 1984). Even if Resource-based view (RBV) theory was born before KM as discipline, resource-based models aren't in contradiction with organizational behaviour theories (Barney, 1991) as organizational learning (Levitt & March, 1988), and its "outgrowth" is the knowledge-based theory that is less focalised on sustainable competitive advantage, but it's more centred on individuals (for March, instead, knowledge in organizations is "in their procedures, norms, rules, and forms" (March, 1991, p. 37)) and recognizes "knowledge as the most strategically important of the firm's resources" (Grant, 1996, p. 110). There is already an empirical literature about enablers and barriers of more general KM system and more specific knowledge sharing in public organizations: Pee and Kankanhalli (2016) made an empirical study with a RBV approach about "Interactions among factors influencing KM in public-sector organizations" and

Amayah (2013) focused on "determinants of knowledge sharing". An international comparison and a stronger confrontation with private sector empirical researches could be necessary to reach a more comprehensive analysis of enablers and barriers of knowledge management and, almost, diffusion of knowledge about sharing, integrating (Grant, 1996), transferring and mutual learning (March, 1991) inside public organizations (keywords include different scholars' opinions and approaches resulting from different theories of the firm). Secondly, public sector can be analysed by a network perspective. Public organizations lost the complete capability to cover all the aspects and objectives of public interests and creation of public value, because the critical variables, the power and actors are dispersed (Longo, 2005). The public interest should be analysed in a more complex social structure, where "administrators are situated in complex structures of networked interdependence" (O'Toole, 1997a, p. 47) and different actors collaborate and compete in a "mixed economy" (Austin & Hasenfeld, 1985). Old bureaucratic paradigm and also New Public Management (Hood, 1991) were no more sufficient to explain interdependencies and social process. In the new paradigm of Network Governance, decision makers in public organization have inevitably in a wider range of choice: from make or buy to make versus buy versus partner, "based on shared resources and enhancements of commercial value" (Riege & Lindsay, 2006, p. 34) and, therefore, public value. In those circumstances, a cooperative relational view can explain the reality better than a strict resource-based view vision: in a network governance approach. A single organization can be seen as a network of individuals as resources of knowledge (Grant, 1996) and knowledge-workers (Drucker, 1999). Intra-organizational linkages among units are crucial to improve performance (Tsai, 2001); also different organizations or member of those different organizations can be connected in a KM system (Bartolacci et al., 2016), though technological and social processes (Easterby-Smith & Prieto, 2008) although diverse organizational culture can cause problems (Kostiainen, 2002). Critical resources may span boundaries and substantial knowledge exchange, joint learning and knowledge sharing can generate relational rents (Dyer & Singh, 1998) and a two-way transfer of knowledge can improve stakeholder participation (Riege & Lindsay, 2006). In networks of public interest, collaboration based on knowledge transfer and integration can enhance innovation (Ahuja, 2000) in a context of absorptive capacity (W. M. Cohen & Levinthal, 1990) in a non-market environment (Harvey et al., 2010) at individual, inter-units and inter-organizational level. Transfer can occur from formal pre-structured face-to-face situations (formal knowledge transfer in training) to informal networked knowledge situations and social interactions, as open innovation (Chesbrough, 2003), community of practices (Allee, 2000; Wenger, 1998), informal network of practice (e.g. Whelan, 2007), networked learning (Dirckinck-Holmfeld et al., 2009) ecosystem of co-creation (European Commission, 2014). Thus, it makes

sense an interaction between Nonaka's concept of *ba*, intended as shared-context in motion (Nonaka & Toyama, 2003, p. 2) and Knowledge Network for KM strategies within public administration (Figure 11). *Ba* is a platform for advancing individual and organizational knowledge (Nonaka, 2005) and can "transcend time, space and organization boundaries" (Nonaka & Toyama, 2003, p. 2); "the contexts and the meanings created and shared through interactions" are its essence (Bartolacci et al., 2016, p. 2). This environmental background is challenging for change and innovation in public sector. A relevant key is planning KM policies considering differences between public and private sector, starting from people, culture, technology, procedures (Cong & Pandya, 2003), managing also context and conditions (Choo & Alvarenga Neto, 2010). In this context, the intra and intercompany network of knowledge where the exchange of knowledge takes place is comparable to the concept of Nonaka's *ba* (Nonaka et al., 2000; Nonaka & Konno, 1998; Nonaka & Toyama, 2003). Figure 11 is a representation (Nonaka & Toyama, 2003, p. 8). "*Ba*", therefore, is intended as a "shared context in motion" (Nonaka & Toyama, 2003, p. 2), that is a platform for the advancement of individual and organizational knowledge, which can "transcend time, space and organizational boundaries" (Nonaka & Toyama, 2003, p. 2); the theme of the *ba* of Nonaka is connected with organizational knowledge, with knowledge management, with the knowledge network and is a concrete representation of the interaction that takes place, for example, in network governance (and of "Fare Sistema" (Borgonovi, 2005)), in industrial districts (Perone, 2001), in the relations of "triple helix" between university, government and enterprise (Leydesdorff & Etzkowitz, 1996). A change in organizational culture and the capability to create partnerships with different stakeholders increase the chance of success of public policies in KM (Riege & Lindsay, 2006).

Figure 11: Configuration of *ba* connections (Nonaka & Toyama, 2003, p. 8).

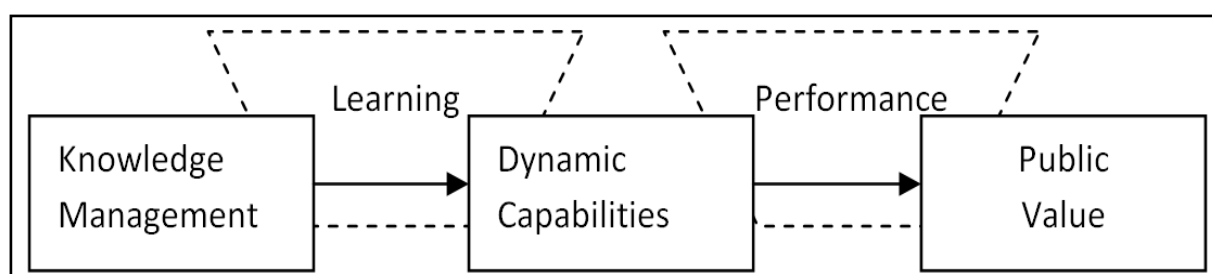


For Cong and Pandya (2003) the main challenge is to develop and nurture knowledge sharing, create customised knowledge platforms that can be connected with stakeholders and build knowledge "centres" wherein a group or a (formal or informal) network of individuals can share, transfer, create and use knowledge. Yuen (2007) finds that sharing and providing access to knowledge and expertise are the most frequent goals in KM plans. In fact, empirically, social interaction is a positive factor, but organisational structure can be depressing (Pee & Kankanhalli, 2016). An actual public manager have to be an autonomous decision-maker, balanced by an appropriate evaluation system of performance, responsibility, accountability, transparency, responsiveness, formal and informal competencies (Anselmi, 2014). So modern public managers can manage organizational knowledge aiming "to effectuate better knowledge practices, improved organizational behaviours, better decisions and improved organizational performance" (W. R. King, 2009, p. 4). **The second assumption, therefore, is that it is necessary managing and planning the continuous of transfer and integrating knowledge in public sector.** In various countries and at European level, in fact, during last decades, there were attempts to reform macro knowledge system. Starting from ambitious goals and proclamations, national legislative reforms and European strategies had problems in implementation. Focusing on the policy of KM in public sector, **the third assumption is that there is a gap between intended strategies and realized strategies.** Thus, if there is too distance between the "a priori guidelines to decision-making" and realised strategies, as "ex post facto results of decisional behavior" (Mintzberg, 1978, p. 945), it means that legislators don't pay sufficient attention to organisational behaviour and the consequent role of individuals in institutions and in networks. The application of emergent strategic decision-making, rather that deliberated strategy, is focused on organizational capability to react and adapt by learning (Senge, 1990) and a trial-and-error process (Bolisani & Bratianu, 2017). In modern economies, KM needs to create a linkage between various level of analysis in organisation theory: micro-individual, meso-organisation, macro-society and inter-institutional network. The starting point is individual ("Many people in the knowledge field insist that there is no knowledge outside of people" (Allee, 2000, p. 4)), but these planes are interconnected: people affect the organisational performances and are societal key actors in networks as well. Empirical connections between levels, however, can be generalised only with consistent and specific models (Kozlowski & Klein, 2000; Wright & Nishii, 2007) avoiding "the fallacy of the wrong level" and too easy generalizations (Raadschelders, 2011, p. 920). The amplified role of knowledge workers in modern business increased the interest on effects of individual performance to organisation one (Brass, 1984), until the reflections about social network performances (Sparrowe et al., 2001). A process of learning by knowledge transfer, as a training for instance, starts from the individual motivation and ends to influencing human perceptions, beliefs and emotional understanding

(Perry, 2000) aptitudes, skills, capabilities, organizational processes regarding a dynamic complex (Brewer et al., 2000) and, also, a new motivation at work (Pandey, 2017). **This process leads to fifth assumption structural strategic gap is due to a lack of universal and practical comprehensibility of conceptual theories of KM in public sector.** In this context, a public management is a leader in a system of profound knowledge (Deming, 1992) and here s/he has to implement a re-starting from the basics to appreciate the system until understanding the microfoundations of social structure and individual behaviour in organisations and networks (Tasselli et al., 2015). So the aim of this article is to try connecting different managerial concepts in a schematic model, that can be used by policy-maker to understand and program the cycle of decision in policies on KM in a practical way. KM model gets complicated when the inter-organizational planning cycle, strategy and control of results by evaluation are inserted in a networked complex public "world", where different levels of analysis and final network performances are interrelated with all knowledge processes, legislative reforms and business-academic-science-government relations, that are interdisciplinary and public-private in nature (Raadschelders, 2011). **The sixth assumption, thus, is that the model shall have the characteristics of scalability.** In other words it needs the capability to grow up versus decrease in scale or light up versus obscure an element of itself upon the event of analysis a knowledge agent (individual, group, single public organization, public networks, public-private networks). Finally, **the seventh assumption is about the idea that managing knowledge effectively improve performances of knowledge agents going through an enhancement of dynamic capabilities based on organizational learning.** In fact, KM process can influence organizational learning and this one is a second-order dynamic capability (Zollo & Winter, 2002), intended as "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments" (Teece et al., 1997, p. 516). Learning is a an "overlap" between KM theories and dynamic capabilities ones (Easterby-Smith & Prieto, 2008). As outlined by Piening (2013, p. 218), the strategic management concepts have a limited applicability in public organizations but he argues that public organizations are facing more pressing environmental changes than private business, so "the dynamic capability approach is in principle applicable to the analysis of organizational behaviour in the public sector"; indeed conventional models of strategic management, as RBV, are relevant for organisations with "a high degree of administrative autonomy, performance-based budgets and market-like conditions" (J. R. Hansen & Ferlie, 2016, p. 4) and "the dynamic capability view fits well with the current volatile environment which many reformed public organizations experience" (J. R. Hansen & Ferlie, 2016, p. 16). In "increasingly demanding environments" (Teece et al., 1997, p. 510), starting from human and social interaction (Teece, 2009), thus, it's assumed that it exists a dynamic capability of learning (Zollo & Winter, 2002), development (Penrose, 1959) or ambidexterity (Gibson & Birkinshaw,

2004) or exploitation and exploration (March, 1991) or creation (Nonaka, 1994) of knowledge as key resource to improve the performance of public service (Pablo et al., 2007a; Salge & Vera, 2013) and, so, increase public value (Bryson et al., 2007; Piening, 2013). This last concept is intended as the capability of public actor to be efficacy and efficient in managing public actions and services associated to general collective utility of fruition (Anselmi, 2014; M. H. Moore, 1995). We use this definition because it is connected with the idea of microfoundation of public value. The scalability of the OK model is interconnected with the scalability of public value creation by individual public servants as well organizations and networks at different level of government. In Figure 12, KM conceptual model is connected with dynamic capabilities and public value. So, under these seven assumptions: *it's possible to draw a conceptual KM model to help decision-makers in managing strategy, organising and controlling knowledge transfer and creating policies within public sector, that can be useful to improve learning from individual to network public governance perspective and influencing dynamic capabilities and public value.* Clearly, this theoretical model underpins microfoundation, in the sense that knowledge management and, in particular knowledge relations connected to knowledge transfer may have an impact on individual and organizational capabilities for public organizations.

Figure 12: connections among KM, dynamic capabilities and public value (elaborated from: Easterby-Smith & Prieto, 2008; J. R. Hansen & Ferlie, 2016; M. H. Moore, 1995; Pablo et al., 2007a; Pee & Kankanhalli, 2016; Piening, 2013; Salge & Vera, 2013; Zollo & Winter, 2002).



### c) Conceptual model of KM in public sector: a back to basics approach.

Public managers (as managers in private sector) cannot be omniscient and all knowing about all the business. This fact is also more stringent for individual knowledge workers. It is too time spending or, maybe, impossible for a decision maker to take decisions, if there is not a scheme that try to simplify reality. Conceptual models give a simplified representation of reality, but the conclusions are also a simulation of "real conclusions" and they do not lead to generalizations. Manager can need these "glasses", because s/he has to project in a long-term, but paying attention in emergent needs and in life cycle of policies and scalability. In fact,

policies may be considered single products with a metaphor of market (Malone, 1999) and, thus, their life cycle matters: launch, implementation, growth, maturity and so decline or re-launch with a new innovation.

Also creating a knowledge architecture is a managerial core competence (W. R. King, 2008). Knowledge transfer in public organizations is a policy and a product-service at the same time for public decision makers inside knowledge governance (Nonaka's *ba*). Eight lenses are necessary to conceptualise KM in public sector. The approach is to give some key issues, all-or-nothing or multiple-choice solutions, to check and chose before managing a plan of KM (Table 9). Each lens takes to a conceptual specification and taxonomy that should be useful in an application of the model: at the end of each point there is a proposition that concern the managerial effects on knowledge core process, knowledge transfer and knowledge creation, as well interactions with dynamic capabilities and could be useful for the strategic choice by practitioners in local governments.

Table 9: conceptual model of Knowledge Management for public organizations.

1) Strategic Cycle	2) Strategic Goals	3) Temporal perspective of planning	4) Organizational Structure	5) Mode of Governance	6) Knowledge Transfer	7) Check Round	8) Knowledge creation
Plan	Education	Short-term	Client-Server (Government)	Hierarchical	Codification	Reaction to knowledge transfer	Socialization
Do	Innovation		Hub <i>versus</i> spoke	Market (or Quasi-Market)	Training	Learning evaluation	Externalization
Study (Check)		Longer-term	Hub and Spoke		Sharing	Micro-Individual	Combination
(Re-)Act	Research	Dynamic	Pendulum	Network	Internalization	Meso-Organization	Internalization
			Peer-To-Peer			Learning Networked Inter-organization	
1) Adapted from Deming (1950; 1993); Wong et al. (2004); Pacheco (2012); Bolisani et al. (2017)							
2) Adapted from Earl (2006); Keeling (2006); European Commission (2008); European Commission (2010); Soriano et al. (2010)							
3) Adapted from Argyris (1976); Kantamara and Ractham (2014), Bolisani et al. (2017)							
4) Adapted from Butera (1990); Pirkul et al. (1998); Soda (1998); Longo (2005) Hess et al. (2007)							
5) Adapted from Powell (1991); Thomson et al. (1991); Lowdes et al. (1998); Pee et al. (2016)							
6) Joya and Lemos (2010), Chirico et al. (2016); Zarone et al. (2015a); Tangaraja, 2016)							
7) Adapted from Zarone and Kudo, 2015; Kirkpatrick (1960; 1976)							
8) Adapted from Nonaka (1991); Nonaka and Toyama (2003); Pacheco (2012)							



### **First lens: strategic planning and strategic thinking capability**

Strategy, as "a deliberate conscious set of guidelines that determines decisions into the future" (Mintzberg, 1973, p. 935). Indeed, it's essential for public decision-makers to "see beyond" having strategic thinking capability: a future-oriented proactive mental process addressed to anticipate exploit and explore organizational resources, as knowledge, and the production of solutions to reach future goals in dynamic complex contexts (Boettger & Tschannen, 2017). The strategic thinking is intended as an anticipation of dynamic capabilities. This is a strategic mental calculus of cause and effects that can be put in a strategic planning, but it is not exploration and exploitation, because it is before the trade-off and the effective action and process. In fact, the challenge is to have a KM cycle that take account of need to think in *a priori* deliberated way, but also to answer to emergencies with emergent strategies and enables the organization or a network of organizations to react promptly. As depicted by Wong and Aspinwall (2004), various authors used a cyclical model of KM inside the organisations with different phases and steps (Rubenstein-Montano et al., 2001; Wiig, 2002). Scholars used different terminologies and there isn't a unique method (Holloway, 1994), but the framework is structured similar as Plan-Do-Check/Study-Act (and Re-act) model created by Shewart and consolidated by Deming (Deming, 1950, 1993). This iterative process is useful for control and "continual improvement", in short run, but also in longer-run or dynamic temporal perspectives. Indeed, as depicted above in Eighth lens planning cycle presents a strict connection with Nonaka's knowledge creation cycle.

*Proposition 1: strategic thinking capability can affect positively KM core process in public organisations though a dynamic PDCA cyclical process.*

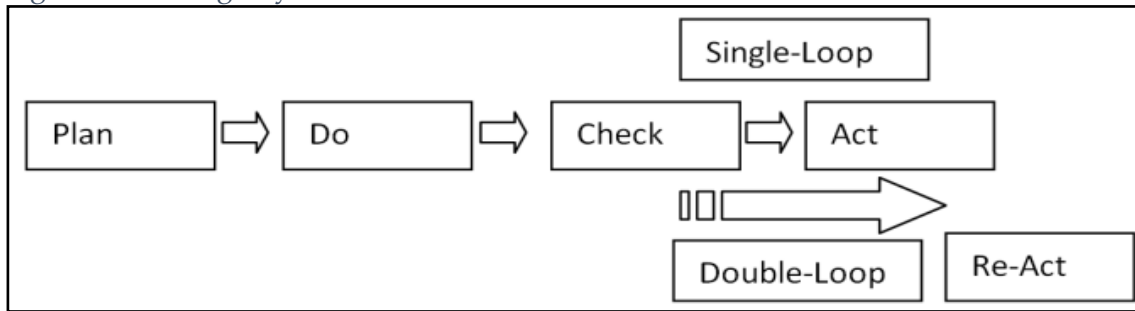
### **Second lens: strategic goals of knowledge management.**

The process of strategic KM starts from the individual in the single organization to move to public governance, that is, at an inter-organizational level, to the macro-network of public, university, and business-industry network that characterizes the triple helix (Leydesdorff & Etzkowitz, 1996) or multiple-helix (where e.g. local communities and citizens as knowledge agents are relevant in the transfer and co-production) of knowledge and Nonaka's *ba*. Realizing a strategic agenda from the concepts of Quintas (1997) means for public organizations to have goals ranging from knowledge agents who can interacts, individuals from one organization to organization networks to the tracking and evaluation of the policy outcomes of KM. The final goals of a KM policy are based on improve performances and the correlated

creation of public value. In Network Governance born strategic KM goals and in *ba* of the same public governance they are firstly discussed and planned by decision makers and then realized. Indeed Knowledge interactions overlaps constantly formal and informal processes of decision making and applications of deliberated strategies in public governance at macro, meso and micro levels. As declined in Lisbon Strategy (Ertl, 2006; European Commission, 2008; Keeling, 2006) and then in EU 2020 strategy (European Commission, 2010), for instance, European Union posed stringent policy objectives as well and set EU benchmarks with its 2020 Strategy, Education, Innovation and Research are the key factors for a knowledge-base economy at macro-societal level; they constitute the "Knowledge Triangle" and they are strictly connected to knowledge agents of triple helix. In Lisbon Strategy the European Institution paid more attention in fostering each vertex (knowledge supply and demand), instead, in the new agenda, the emphasis is on the linkages (knowledge circulation) (Soriano & Mulatero, 2010). Public KM, thus, can focus on just an element of the Triangle or try integrating research, innovation and education in a virtuous cycle, adding up positive externalities through collaboration. This "knowledge triangle" is scalable also for single organizations and individual public servants. Knowledge "transfers" from knowledge network to individuals that are also integral part of the process in Nonaka's *ba*. Network can be more or less structured, so transfer dynamics among individuals (public servants, managers, professionals, experts) and institutions are more complex, mutual and changeable: open knowledge means a move from a bilateral concept as training towards a networked, multi-collaborative knowledge ecosystem (re-adapted from European Commission (2014) that focus on the term "innovation"), as in Cong and Pandya's approach (2003). A single public organization is involved in a network context and networks of public interest are themselves embedded in a context of relationships among different systems for different purposes but find complementarity in the dynamics of KM in knowledge economy. Knowledge should be managed at the level of public servants to single organization up to the triple or multiple helix level to create public value. The scalability of the model lead to apply individually to a knowledge worker within an organization up to the public-private-university network level, where different knowledge agents collaborate and compete and where public value created depends greatly on knowledge transfer and creation in sense of continuous learning by system agents as exploitation and exploration dynamic activities.

*Proposition 2: KM goal setting for public organizations starts from reforms inspired in Network Governance at macro level and it apply in Nonaka's ba at different level of Network Governance.*

Figure 13: Strategic cycle re-elaborated.



### Third lens: time of planning.

This lens is about choosing the time of planning: short-term, longer term and dynamic. Strategy has an orientation towards future and time is a key dimension (Bolisani & Bratianu, 2017, 2017). Moreover organizational knowledge is question of time: time of individual processes, organisational processes, network processes, training, integrating, "open knowledge time" in ba and so on. Short-term planning is as important as an implementation of a longer-term cycle of training, because the obsolescence of knowledge, caused, in particular, by the "zeroing" of innovation rate after the introduction of an innovation (Abernathy & Utterback, 1978). Each level is interconnected, so KM shall pose objectives and a route. In Anthony (1988), strategic planning refers to a series of decision and action. Control is a necessary process ongoing over time. In short-time model there aren't repetitions and the process ends in a period; in longer-time model, strategic planning is deliberate and modifications are taken by the results in previous period and there are fixed goals for the long run. These ones have a "single-loop" perspective (Argyris, 1976). If KM strategic planning is "double-loop" oriented (Figure 13), ("in addition to detection and correction of errors, the organization is involved in questioning and modification of an organization's underlying norms, procedures, policies, and objectives" (Kantamara & Ractham, 2014, p. 56)) the temporal perspective is dynamic: a mixed real-time strategy-making, in sense of continuous interactions between day-by-day learning-by-doing "emergent" strategy and proactive anticipation of future of "deliberate" strategy. *Proposition 3: dynamic strategic planning can enhance knowledge core process of transfer and creation in public organizations.*

### Forth lens: organisational manifestation and knowledge agents' roles.

This lens is about organisational KM process structure and its application to knowledge agents. This concept can be resumed as "network organization": single unit and its individual members, inter-units of a single organization and interactions among individuals from these different units, public governance and interactions among its organizational and individual actors (e.g. planning

for knowledge-based urban development (Yigitcanlar, 2009). Organization coordinates ensemble and maximise the control of the action (Ciappei, 2006). Indeed, paying attention that "Organizational structure dictates the formal channels through which knowledge flows in an organization and a rigid structure can hinder the flow of knowledge." (Pee & Kankanhalli, 2016, p. 3), it's necessary to plan a structure that facilitate KM process. Starting from a taxonomy of managing networked public services, the model develops a theoretical cognitive maps of knowledge agents' role in public governance - *ba*. Knowledge is stock and flow at the same time. Knowledge is diffused in a network based (Saviotti, 2009) because there are at least two nodes interdependent (Soda, 1998; Wellman et al., 1988) and the awareness of the interdependence isn't necessary (Longo, 2005); at the same time, in a cycle of KM planning is possible to find two variable that can delineate the type of structure: centralised *versus* decentralised (adapted from Hess & Adams, 2007; Longo, 2005; Pirkul & Schilling, 1998; Soda, 1998). The most centralised knowledge organisation is *Client-Server*, when a superior institution or a single knowledge manager is charge to make connections and "chose" the stock of knowledge that is necessary to other nodes; this vertical structure is similar to the concept of government: the superior institutional bureaucratic "silo" (Hess & Adams, 2007) has knowledge, e.g., decided by a new legislation. The lowest centralised structure is multi-organisational *Peer-To-Peer*, if connections are "equal" and each node can contribute positively to the transfer and creation of knowledge; there could be a node that facilitate, but it isn't the only one; this structure is strictly connected to the concept of networked public governance, where different stakeholders of knowledge system can collaborate for the same purpose. Other models of network structure are: *Hub versus Spoke*, when a node is more specialised that other ones and it determines political actions for all the network or collects best practices among nodes; *Hub and Spoke*, when there are different gravity centres that alternate as attractive terminal; *Pendulum*, when hub knowledge services rotate among nodes and there isn't a gravity centre (e.g., trainers move among public organizations or a knowledge worker has tasks to take some knowledge best practices among organizational units). This lens is crucial, because it's connected to the linkages between organizational role of responsibility and individual/institutional real capability to transfer and integrate tacit or explicit knowledge to networked knowledge agents, that have a different absorptive capacity.

*Proposition 4: Non hierarchical, non bureaucratic decentralised models of organizational structure can affect positively KM core process in public administration.*

### **Fifth lens: managerial choice of "mode of governance".**

The managerial choice of "mode of governance", "mode of social-coordination" that, as outlined by Lowndes and Skelcher (1998), shall be analytically distinct from organizational structure, even

if it has an organizational sense. Public Management scholars recognise three modes of governance (Lowndes & Skelcher, 1998; Powell, 1991; Grahame Thompson, 1991): *Network*, based on reciprocity, relations, mutual benefits, complementarity, high commitment and social capital among nodes; *Market* (or Quasi-Market, based on high flexibility, the mechanism of prices, the property rights, contracts, independence of nodes and low commitment; *Hierarchy* based on low flexibility, a formal climate, strong dependence among nodes, authority and supervised structure. In this paper, it is assumed that modes of governance, as "social coordination", can be applied not only in inter-organizations relations but also in a single organization where there is a network of specialised knowledge workers (Grant, 1996) and so in different Nonaka's *ba*. For instance, market mode is useful in a single organization when a specialist knowledge agent, as a trainer, is not an employee, but knowledge is bought in the market of instructors. They are formal channels for the flow, the transfer and the storage of knowledge. In public administration, the characteristic of the structural organisation come from legislative formulations or a managerial planning or it's spontaneous. Coordination and interaction among players in the system of proper governance are the organisational basics to a strategy in search of excellence. A single organisation can "face" the knowledge governance (*ba*) and "here" there is the network of agents, as organisational manifestation, that can provide necessary knowledge. E.g., in extreme Client-Server case a subject is structured to pass all the knowledge to single organisation/individual that belong to the network itself; Peer-To-Peer, instead, are totally equal and knowledge can pass from a subject to another; in this kind of network theoretically if there a gap between subjects' knowledge, modes of transfer could be more various. As seen above, structure can have a suppressing effect on knowledge management hindering the flow of knowledge, otherwise social capital (Chirico & Salvato, 2016; Pee & Kankanhalli, 2016; Tsai & Ghoshal, 1998) and commitment (E. F. Cabrera & Cabrera, 2005) have a positive effect. It is assumed that social capital (Nahapiet & Ghoshal, 1998), that is a human (actual and potential) resource, based on interpersonal relationships, that are informal or formal channels for the knowledge flow among employees (Pee & Kankanhalli, 2016) and commitment (N. J. Allen & Meyer, 1990; J. P. Meyer & Herscovitch, 2001), which binds an individual to an entity or to a course of action, are the main distinctive features of modes of social coordination in interpersonal and inter-organizational relationships.

*Proposition 5: networked mode of governance, characterised by high level of social capital and commitment, can affect positively KM core process in public administration.*

### **Sixth lens: mode of knowledge transfer**

The interest is about mechanisms of diffusion and integration passages between nodes, individuals, institutions and networks (how knowledge as "product" pass from nodes, individuals or

institutions). There are some misconception and lack of clarity in literature about KM taxonomy of knowledge transfer and sharing (Paulin & Suneson, 2012; Tangaraja et al., 2016). As outlined by Tangaraja et al. (2016, p. 9), transfer is "a broader concept as compared with knowledge sharing" and it can involve a codification or a personalization strategy (Joia & Lemos, 2010). For the purpose of this thesis, it is assumed to simplify in four useful terms of taxonomy, which derive from the literature.

1) *Codification* is structuring and storing knowledge in repository systems, when there is a knowledge impersonal transfer from a codified impersonal source (as a book or a web site) to an individual receiver, which can read, understand and make sense (Joia & Lemos, 2010; Tangaraja et al., 2016).

2) *Training* is a physical resource (Pee & Kankanhalli, 2016), a unidirectional people-to-people personalization strategy of knowledge transfer (Tangaraja et al., 2016) and occurs when there is a sender, an "expert", and a known receiver, a "novice" (Ko et al., 2005; Schwartz & Te'eni, 2011). In extreme ratio, training is a formal process of knowledge transfer, it's related to a concentration of knowledge and it balances elements between individual instances, organizational needs, and institutional guidelines of change (Vinzenco Zarone, 2012).

3) *Sharing* is a people to people individual process. It can be unidirectional (only a subject involved), when only the supplier plays an active role and engages in the exchange (Yi, 2009), or bidirectional, knowledge exchange, involving at least two people (knowledge provider and recipient are both involved) (Tangaraja et al., 2016, p. 7), when supplier and recipient are both actively and reciprocally involved in the exchange with an interaction between donor and collector (van den Hooff & de Ridder, 2004)<sup>54</sup>. Knowledge sharing involves behavioural attributes as collaboration with others (Amayah, 2013), the contributor could be also unknown (Schwartz & Te'eni, 2011) and it is not necessarily connected to objectives and utilisation (W. R. King, 2008), but knowledge can be shared in formal or informal situations, face-to-face or through technological channels (as chats of Whatsup) (Tangaraja et al., 2016)<sup>55</sup>.

4) *Internalization* (Grant, 1996; Nonaka, 1994) involves people more than transferring and it is the ability "to recognize, assimilate, and exploit each other's knowledge" (Chirico & Salvato, 2016, p. 2). It's a static form of knowledge "integration" and something more than simple knowledge exchange. It "emphasizes the absorption of relevant knowledge by team or organization members and its collective use" (Chirico & Salvato, 2016, p. 3). It is a static form of knowledge "integration"

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<sup>54</sup> For a review of the various measures that are used to measure knowledge sharing behaviour depending on whether it is understood as unidirectional or bidirectional see Tangaraja et al. (2015).

<sup>55</sup> In this perspective, "training" can be understood as a subset of sharing, if implemented in a unidirectional sense and as a formalized process, but always in the perspective of a strategy of personalization and not of codification.

that become dynamic capabilities if individual specialist knowledge integrates over time (Chirico & Salvato, 2008).

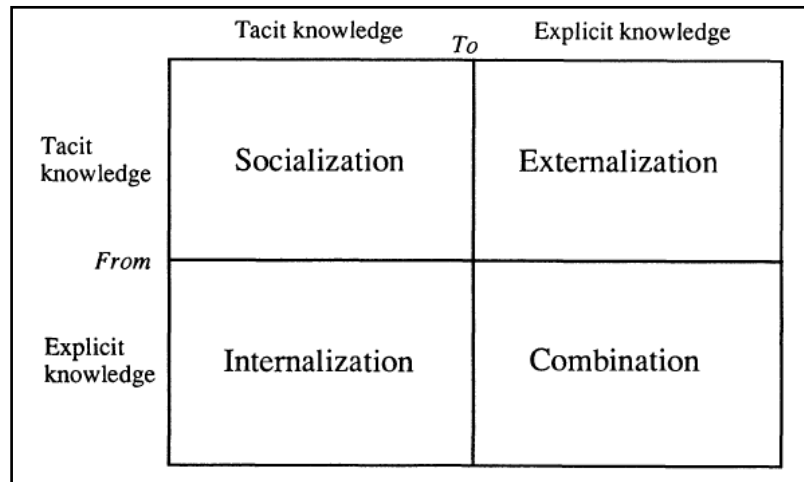
*Proposition 6: different mixed modes of knowledge transfer interact with knowledge creation and can affect the creation of public value through improving organizational learning and dynamic capabilities.*

### **Seventh lens: Check round and evaluation capability**

This lens is about the study-check process of control: evaluation is a critical phase and has a prominent importance in planning cycle of KM (Vincenzo Zarone & Kudo, 2015). As outlined for training by Kirkpatrick (1960, 1976), from which this lens is adapted, the evaluation four different processes and each one can give some information to the following: *Reaction to knowledge transfer* whose aim is to understand the participant's general impressions after a training (or social interaction based on knowledge transfer); *Learning evaluation*, a comparisons of skills before and after a time spend in knowledge transfer; *Micro-Individual*, to understanding the change of behaviour of individuals and the impact on individual knowledge creation, learning and performances and *Meso-organisation*, to understanding the impact on creation, learning and performances of the organisation. The next step is adding the evaluation of the knowledge network as well. The evaluation of knowledge in public administration is a way to improve competitiveness and sustainability as recognized in the European program Horizon 2020. Evaluation of knowledge networking (Tsai, 2001) is a stimulating field of possible applications. In Networked Governance, the evaluation process is challenging because the complexity is very high and differentiated in levels (Grandori, 1997). Knowledge governance concerns structures and mechanism (Foss & Michailova, 2009) that influence knowledge processes. It is useful to evaluate the effects of KM strategy not only inside a single public organisation, but also in the Nonaka's *ba* or knowledge public governance. Value added by knowledge transfer and creation through learning and its outcome in economy are possible thanks to a self evaluation of networks and their dynamic capability to renewal connecting a wider number of stakeholders linked to public organizations, as business, university and government in a "triple helix" (Leydesdorff & Etzkowitz, 1996) or multiple helix model and several drivers and agents in a Innovation Ecosystem (Aulet, 2008). Check round is a preliminary passage in KM and individual, organizational and networked inter-organizations learning in different Nonaka's *ba*; dynamic Check round is crucial to anticipate future re-action strategies, evaluating how and what knowledge agent is learning and how agent's dynamic capabilities impact on performance and public value.

*Proposition 7: Check-evaluation capability of KM can affect positively dynamic capabilities and so public value creation.*

Figure 14: Nonaka's modality of knowledge creation (Nonaka, 1994, p. 19).



### Eighth Lens: knowledge creation and organizational learning

This final lens is about the second KM core process, creation, that is interconnected with the previous one. Knowledge creation is intended as "transcending process through which entities (individuals, groups, organizations) transcend the boundary of the old into a new self by acquiring new knowledge" (Nonaka & Toyama, 2003, p. 3) and it's connected to Nonaka's knowledge spiral (Nonaka, 1991, 1994; Nonaka & Takeuchi, 1995). Moreover Pacheco et al. (2012) really used PDSA to connect strategy, organisation and knowledge management, creating a linkage with knowledge spiral. The PDSA Cycle and the knowledge spiral are more efficient provided that in each PDSA phase there is a facilitation for socialisation, externalisation, combination and internalisation (Nonaka et al., 2000). For instance, an active participation in the planning phase facilitates passages from implicit to explicit knowledge (Pacheco et al., 2012).

Each phase is connected with others in a cyclical way; management learn at each passage, but also each passage and each level of the process within the conceptual model can take individuals, organizations and networks to learn and to build dynamic capabilities renewing organization knowledge and improve efficiency, effectiveness and performances creating public value.

In Figure 14, it is observed that the "SECI" model develops in 4 steps (Nonaka, 1994):

- a) *Socialization* is a mode of conversion of tacit knowledge, which takes place through the interaction between individuals even without language, but through observation (mentor-apprentice relationship) and the acquisition of shared experience; the transfer of information is not abstract, but linked to emotions and contexts that represent the shared experience.
- b) *Combination*, is the second modality and involves the use of social processes to combine and re-combine different bodies of explicit knowledge possessed by individuals; in practice it is the behaviour of knowledge sharing, as it refers precisely to the fact that individuals exchange knowledge through exchange mechanisms such as meetings or telephone conversations.



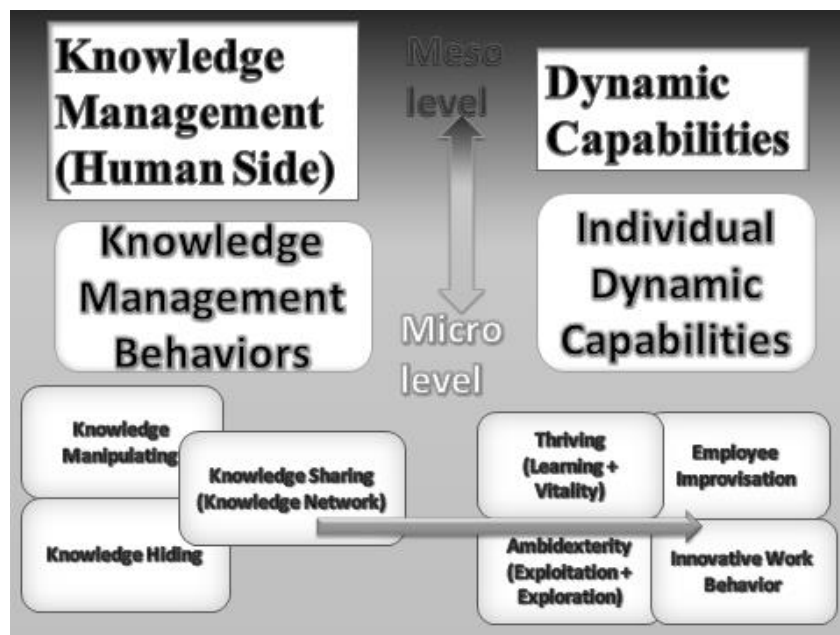
C) *Externalization* is a mode of conversion of knowledge from tacit to explicit.

D) *Internalization* is, finally, the process of conversion of knowledge from explicit to tacit. Knowledge is created at every conversion, however, in a more systemic logic the creation of organizational knowledge can be seen as a spiral, starting from the group level and reaching an interorganizational level, passing through the meso levels of the group and the organization (Nonaka, 1994). The different processes of knowledge conversion, therefore, are linked to different dimensions of the "*ba*" (Bartolacci et al., 2016; Nonaka, 2005; Nonaka & Konno, 1998): Socialization occurs in an "original *ba*" dimension, where individuals share emotions and experiences creating empathy for the first time with others and then removing cognitive barriers; Outsourcing occurs in an "interacting *ba*", i.e. an environment where people with specific knowledge and skills are integrated and where conversion occurs through dialogue and language; Combination takes place in a "cyber *ba*", i.e. a virtual space where explicit knowledge can be combined through the technological world and online networks, documentation and databases; internalization, finally, takes place in an "exercise *ba*", represented by simulated applications or continuous implementation of explicit knowledge in real life. In conclusion, the Nonaka model excels in explaining organizational learning and innovation through different ways of transferring different forms of knowledge, but leaves implicit the causal or correlation link between ways of converting knowledge and individual innovative behaviour, focusing more on how the organization should create knowledge rather than on knowledge-related processes (Nonaka, 1994, p. 15). The different knowledge conversions explain the individual dynamic capacities (including learning) and, therefore, the link between knowledge sharing and the dynamic capacities themselves is transparent (as confirmed by Nahapiet & Ghoshal (1998), for which knowledge creation derives from a double process of information exchange and combination); in essence, one remains on the tip of the iceberg, i.e. one does not actually assess how knowledge transfer steps affect the psychological mechanism of behaving in an innovative way (from creativity to the intention to apply the newly acquired knowledge). It should also be recognised that Nonaka (1994, p. 14) understands innovation as a key form of organisational knowledge creation, therefore, it can be interpreted that knowledge creation behaviour is a parallel of innovative behaviour, maintaining the logic of individual dynamic capacities. At the same time, the focus of the literature on knowledge sharing is in fact on the process of *Externalization*, since the intention to give advice or communicate with others concerns a conversion from tacit to explicit knowledge, although social interaction is also decisive in tacit transfer. After considering the "classical" SECI model of Nonaka, we move to a causal or, at least, correlational conceptualization between sharing and networks of knowledge and innovative behaviour. In Figure 15, we highlight just how knowledge management and dy-

dynamic capabilities at meso-organisational level can intersect with knowledge management behaviours and individual dynamic capabilities. After making these theoretical considerations, it is time for the latest proposition of the knowledge management conceptual model for public administration.

*Proposition 8: Knowledge creation interacts with knowledge transfer process and can affect positively the creation of public value through improving organizational learning and, thus, dynamic capability of public organizations.*

Figure 15: theoretical reference framework of connection between knowledge management and dynamic capabilities at micro and meso organisational level (Elaboration for this thesis).

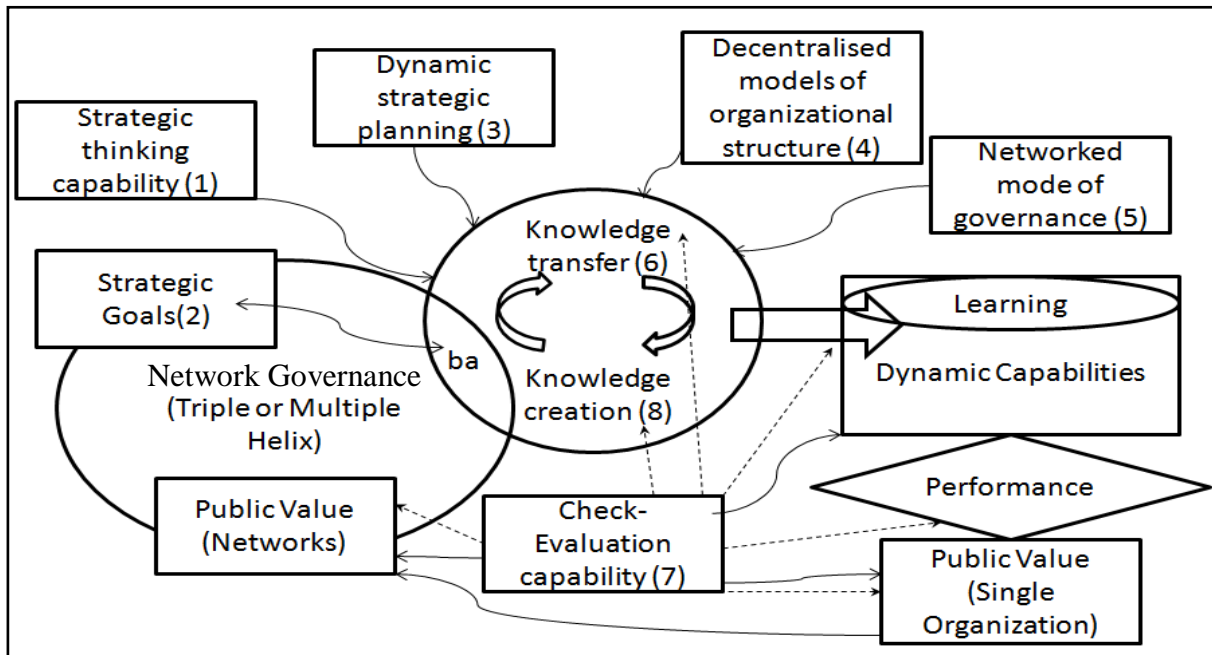


#### d) Discussion: towards a conceptual model of Knowledge Management in practice.

In the discussion above, starting from theories and empirical researches, we organised an eight lenses conceptual model. The overexposed model facilitates decision-makers to understand which key levers can be. Now we try to put the interconnections in a more practical way (Figure 16). Here the focus is on institutions more than on individual organizational behavior. Exploding the model in its key elements, we start from public governance that see organization in a networked way (triple helix, university, business and government, or multiple helix) and where there are organizations with different characteristics. Here there is the agenda setting goals (2) and all relevant parties must interact positively to implement the strategy in its Nonaka's *ba*. The core elements of KM model relate to knowledge transfer (6) and knowledge creation cycle (8). These variables are keys to positive public policy development in KM sense within public organ-

izations and are influenced by strategic elements such as the quality of strategy making: appropriate strategic thinking capabilities (1) and a time perspective that takes into account management systematically Formulated as an "organization-wide strategic policy" (Quintas et al., 1997, p. 387) dynamic (3), that is, "the daily improvement of the business process" that is capable of how dynamic capabilities can be improved. The other two positive influencers are the networked mode of governance (5) in public governance itself, which can be summarized by social capital and network implicit variables and the non-bureaucratic decentralized structure model (4) that can have a positive effect on KM. Knowledge creation and transfer can have a positive coordinated effect on organizational learning, which is a key element in developing the dynamic capabilities of public organizations. Meanwhile, each step should be monitored (dashed arrows) (7) in the sense that the effect of a training course on individual knowledge cannot be detached from a planned check of the ability to codify, share and internalize knowledge to evaluate the implementation of organizational learning within a broader assessment of the impact of the strategy on the dynamic capabilities of the single public administration. The next element is the control of the development of dynamic capabilities in the way they affect the creation of public value by the single public administration and how the KM impacts on output and outcome of public governance. We hypothesize that KM can be an improvement for public services in the sense of greater efficiency and effectiveness, so as to increase public value created by a single organization, but also from the network between public organizations or public-private-university network. A KM strategy must cover all of these aspects, and above all, the individual element within organizational networks, applying a continuous planning, control, action and reaction cycle starting from the scope of individual training in a knowledge worker up to the capacity of inter-organizational integration, assessing the effects on the inter-organizational ba and the socio-economic impacts of public value creation in triple-multiple helix. The discussion shall take to some implications for theory and practitioners. Firstly, public decisions makers and (knowledge) managers should take in consideration the different lenses of this model to develop the social processes of knowledge transfer within and among organizations, considering the importance of social structure and microfoundations of behaviours (Tasselli et al., 2015). Secondly, in KM, human side is complementary with technological one (Easterby-Smith & Prieto, 2008), for which knowledge technologies are an engine for creation of a ba in the public governance. Public and private actors are interconnected formally and informally, but they have different role in a "night-watch" state rather than in welfare state (Raadschelders, 2011).

Figure 16: exploded connections and possible "best practices" in KM conceptual model.



The strategic role of public decision makers is more limited in the first case, because public organizations are secondary actors, but also in the situation of provision of basic services as maintenance of public order and safety, a strategic management of knowledge matters. After the end of welfare state and more recent deadlock of privatizations, the production of services of public interest is dispersed among public, business and non-profit actors so that need for better performances (when resources are increasingly scarce due to the accumulation of public debts) improving efficiency and especially effectiveness lead public administration to try to take collaborative advantages (Vangen & Huxham, 2003) in the transfer and use of knowledge. Different managerial applications of the conceptual model can take to different outcomes, because different ways conceal different roles for people and relative social networking. Indeed, public decision makers should be capable to apply the "best practices" of the model presented in this section, starting from the idea of the scalability, in the sense that knowledge is a human resource inside individuals and that, at the same time, public servants are singular actors of public value. In fact, public servants and public organizations are knowledge actors within the public governance. For instance, a professor in a public school (a knowledge organization) is a knowledge worker that transfers knowledge everyday and his or her efficient and effective job life is strictly connected with the creation of public value. A manager of a public school should have in mind the model that we presented because the individual creation of public value from teachers is correlated with the effectiveness of the organization, but at the same time the strategy of the school is based on strategic goals that should have been born in the labour market (and its interactions with multiple

stakeholders), in the expectative of direct (parents) and indirect stakeholders (companies that look for workers) and at macro level of public governance (central governments) and the dynamic process ends when young knowledge individuals leave the school and contribute to the knowledge economy. This example is useful for public managers and decisions makers that should consider more attentively the scalability of public policies inherent KM (but non only) and the different level of creation of public value inside public governance and its *ba*. In this sense, the model described here assumes the microfoundation perspective. This model is also useful for knowledge workers within public organizations, because their role is not only inside the organizations but also outside. Knowledge workers participate in relations within network governance, where different public or private actors transfer knowledge toward potentially infinite directions. Managers and knowledge workers can be considered as crucial for dynamic capabilities for their role as knowledge agents. Finally, **this model has five main limitations**: 1) It hasn't an empirical confirmation, because it is a conceptual study, based on a speculative analysis of literature; the traditional literature review introduces the model, but the pros of enhance creativity and intuition could be counterbalanced by the difficulty to be replicable and the lack of transparency in the criteria for the selection of the literature (Easterby-Smith et al., 2015). 2) There is a lack of focus on ways of external acquisition, using and applying knowledge, in the sense of absorptive capacity (Lane et al., 2006). 3) In case of quantitative studies, there could be a possibility of endogeneity and reverse causality between variables in different lenses of the model (e.g. "Internalization" is the main important knowledge transfer capability, but also the final step, explicit to tacit, of Nonaka's spiral of knowledge creation). 4) The application of strategic approaches could be limited to specific public organizations. 5) Different definitions of public value from academic debates could be used, but this process is outside the scope of this article and Moore's conceptualization (1995) fits well with our theoretical objective. Consequently, it is crucial to stress this model in qualitative and quantitative ways, to understand if it is a good way of conceptualize for public KM. The main challenges of future researches are to deepen research about: organisational behaviour studies trying to apply the conceptual model in practice also at individual level; knowledge creation, transfer and learning process from individual networks to the network in the governance of education, research and innovation but also in less studied fields (Massaro et al., 2015), as local municipalities; theoretical and practical interactions between public governance concept and Nonaka's *ba*. This conceptual model may be an interpretation of microfoundation of social capital based on knowledge networks typical of public sector. It may underspin research hypotheses about microfoundation of individual and organizational dynamic capabilities.

## 2. KNOWLEDGE NETWORKS (REVIEW AND RESEARCH HYPOTHESES ON MICROFOUNDATION): THE ROLE OF SOCIAL CAPITAL AS ANTECEDENT OF DYNAMIC CAPABILITIES.

### a) Knowledge networks within organizations: a definition.

In this chapter, the focus is on prosocial knowledge sharing behaviour, which is the fundamental element of knowledge management (S. Wang & Noe, 2010) within the structuralist paradigm of social capital. In the previous model, the terminology that differentiates knowledge transfer has been clarified, while here the theoretical focus is on how knowledge exchange takes place in interpersonal knowledge networks within organizations and, finally, how it relates to the manipulation of knowledge and its opposite, that is the anti-social behavior of hiding knowledge at work, which represent the more specific individual knowledge management behaviors (Y. W. Rhee & Choi, 2017). At the end of the chapter are the empirical research hypotheses concerning the social capital resulting from the exchange of knowledge through internal communication within the organization. First of all, social relations and networks represent influential organizational elements to explain the processes of dissemination, creation and use of knowledge (Phelps et al., 2012). Various studies have focused on the role of the knowledge network in identifying behaviour or the organization as a whole. Also, the Nonaka *ba* falls within this perspective when its essence is in the contexts and meanings created and shared through interaction (Bartolacci et al., 2016; Nonaka & Konno, 1998).

Thus, the **knowledge network** is defined as

*"a set of nodes - individuals or collectives of higher-level (groups, units, organizations, etc.) that serve as heterogeneous repositories of knowledge and agents that seek, transmit and create knowledge - interconnected by social relationships that facilitate or constrain the nodes' engagement in acquiring, transferring, and creating knowledge"* (Phelps et al., 2012, p. 1117).

Studies on networks are of its nature multidisciplinary and multi-level, although there is a certain lack of integration between the various disciplines and levels of analysis, which have developed over time and in different strands and journals. Strategy studies, for example, focus on inter-organizational knowledge exchange relations, while organization studies are more focused on intra-organizational networks, both individual and group.

Visions should be more integrated, as members of an organization are connected both within and across organizational "boundaries" through formal and informal relationships that are rarely independent of each other (Zappa & Lomi, 2016). Although there has been less attention over time in the literature, the formal organizational (and inter-organizational) structure can be decisive for

the formation and evolution of informal relational networks (McEvily et al., 2014), which remain fundamental when the reference is to the exchange of the resource of knowledge (Krackhardt & Hanson, 1993). The specific reference is still to social knowledge networks, where the role of people's collaboration is crucial; there are, however, other types of knowledge networks, such as associations between different types of knowledge to create new knowledge, technological networks (the connections between man and computer, as a store of knowledge) or between cognitive nodes (Phelps et al., 2012).

#### **b) Knowledge networks: a social capital (structural) perspective.**

As seen in the introductory chapters of the thesis, social capital is defined in structural terms and this concept leads to observing knowledge networks in the same terms. The network structure works when it allows stakeholders both to create new knowledge in the relationship and to obtain heterogeneous knowledge, allowing an improvement in performance and innovation at managerial level (Rodan & Galunic, 2004). Considering that innovation results from an active combination and re-combination of people, knowledge and other resources (Kogut & Zander, 1992), social connections between people can produce new combinations, thanks to access to the ideas and resources of others (Obstfeld, 2005). A similar process applies to the ambidexterity dimension, so access to a top-down, bottom-up or from peers knowledge exchange within the organization can lead to a balance or a greater orientation towards exploitation or exploration (Mom et al., 2007). In this sense it becomes relevant to have easy access to knowledge that is useful in the working context in which one operates, rather than knowledge that is not applicable, especially when the point of reference is the request for advice between colleagues or above and below on the hierarchical scale (Tasselli, 2015). Social capital is also a crucial also in dyadic relationships in public organizations, so much so that it seems easier to exchange knowledge with those who feel more comfortable than with experts, so that an assessment of the knowledge exchange costs is still necessary to get to individual and organizational learning (Siciliano, 2017). One aspect to note is the debate on the effectiveness of dense or scattered networks, i.e. rich in structural holes (Burt, 1992, 2004): in the former the exchange of knowledge takes place between many nodes that are close and easily coordinated, while in the latter the nodes are disconnected and sometimes difficult to reach (Obstfeld, 2005). Both have advantages and disadvantages in terms of the ability of coordination between the actors and the possibility of reaching new ideas: dense networks have a strong positive impact in the ability to share knowledge (information, advice) among network participants with an initial mobilization, but, the risk is that there are no new ideas, but always remain around the same knowledge, creating obstacles to organizational change and individual

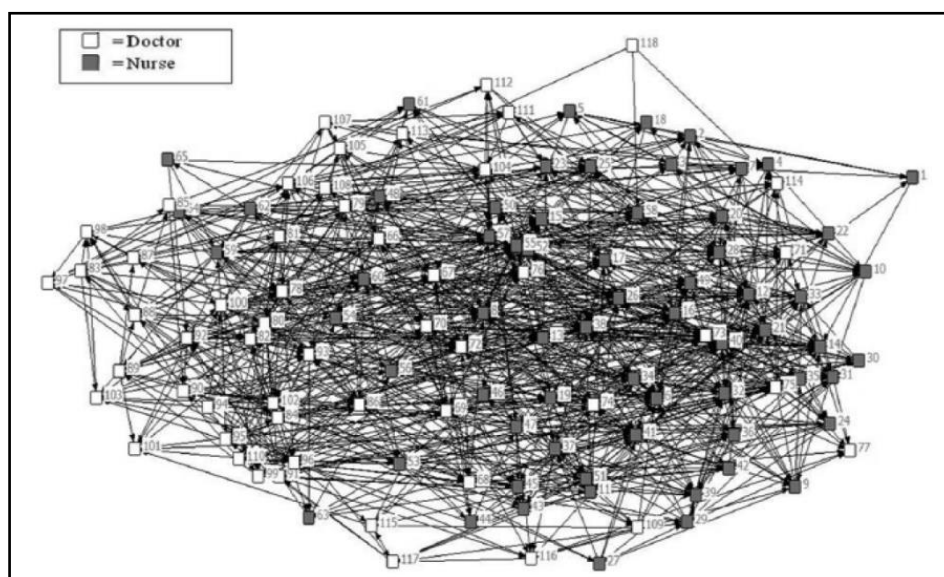
innovative behaviour; in open networks, on the other hand, the potential for access to new knowledge is far greater, but the capacity for coordination may be lacking (Obstfeld, 2005), in fact, even if structural holes can bring new good ideas, there is not necessarily the capacity to be ambidextrous (Mom et al., 2007) or implementation of innovation (Burt, 2004). However, it is precisely the sparse networks and the presence of contacts that contribute heterogeneous knowledge that facilitate innovation, especially at managerial level (Rodan & Galunic, 2004). For the activity of resource mobilization, a key role lies in those subjects that act as brokers in the structural holes (where the subject is connected with two subjects that have no relationship with each other) with a strategic orientation "*Tertius Iungens*", which facilitates the exchange of knowledge between subjects first disconnected and then the involvement in innovation, rather than taking advantage of the connection with the two disconnected subjects (Obstfeld, 2005). Bringing together under a single conceptual framework, according to Quintane and Carnabuci (2016), the knowledge brokerage strategies of brokers are of three types and differ from how actors in dense networks behave: 1) "Non-integrated brokerage", whereby brokers tend to frequently exchange information through short-term interactions with colleagues outside their closer network of relationships; 2) "*Tertius gaudens*", when engaging in non-incorporated brokerage, brokers are more likely than actors in dense network positions to mediate the flow of information between the mediated parties; (3) "*Tertius iungens*", when mediating information through their network of long-term ties (embedded brokerage), brokers are more likely to be densely connected actors to facilitate a direct exchange of information between the mediated parties. Quintane and Carnabuci (2016, p. 1) highlight the role of the broker as a dynamic force driving change in organizational networks. To this is added the relevant debate on the importance of key concepts such as strong ties and weak ties (M. Granovetter, 1973) in social networks: strong ties are characterized by strong emotional impact and frequent and relatively reciprocal contacts; weak ties, on the other hand, are less closed and have lower levels of emotionality and frequency of interaction. As regards the possibility of accessing non-redundant knowledge and information compared to those we already have, weak ties can be effective, as there is the possibility of connecting with disparate and not directly immediate social cycles rather than receiving redundant and repetitive information from the contacts of one's own social cycle alone (M. Granovetter, 1973; Perry-Smith, 2006; Perry-Smith & Shalley, 2003). In the network logic it is relevant to consider the knowledge that can derive from inter-organizational relationships, in which even a single individual can have relevance, if we consider the contacts between organizations in the specific case of their representatives. Since the first studies, for example, the role of the "gatekeeper", which is the one able to have contacts with the outside world and bring knowledge and other strategic resources from the reference environment into the company, has been highlighted; new



ideas taken from the outside can then be implemented with new forms of innovative behaviour within the organisation (T. J. Allen, 1977; Obstfeld, 2005). In this work, intra-organizational relationships are separate from inter-organizational ones. The former concern the knowledge exchange relationships within the organization, while the latter concern the relationships that employees have with subjects external to the local governments where they work. In this chapter, the focus is on internal relations, while in the next, hypotheses will be written concerning external networking with various stakeholders within the network governance in which local governments are inserted. Given these assumptions, the network structure is precisely the area created by the intention to share knowledge and it influences the choice to do it and redo it and above all with whom. Two specific knowledge networks are crucial for organizational studies on the exchange of knowledge: the advice network (Lomi et al., 2013) and the communication network (Zappa & Lomi, 2016). The exchange of advice on work tasks is rarer, driven by an interaction based on the problems to be solved and on meaningful knowledge, while communication relations related to work and professional issues represent routine interaction and also capture the less episodically active intra-organizational knowledge flow channels (Zappa & Lomi, 2016). The focus is on this type of knowledge exchange ties, for two reasons: greater comparability between internal and external relations, greater frequency within work environment. Communication includes formal and informal aspects. Informal interpersonal knowledge exchange ties, which allow obtaining heterogeneous knowledge (Reagans & McEvily, 2003) difficult to mobilize and integrate, are dissociated from relations between units such as workflows, reports and various types of dependence on organizational resources (Zappa & Lomi, 2015). Focusing on interpersonal knowledge relations, three structural network elements emerged that need to be taken into account: the position in the network (centrality in the network, the role of broker), the ego-network (takes into account only the contacts of the analysed network actor), the structure of the whole network (Phelps et al., 2012). Finally, we introduce the dimension of the attitude of hiding knowledge, which differs from sharing: the low level of con-division of knowledge is a behaviour driven by the lack of knowledge to share or by the lack of understanding of the opportunity to share, minus the attempt to hide or suppress readily available knowledge (Connelly et al., 2012). Low knowledge sharing and hiding knowledge, therefore, are two separate constructs (Connelly et al., 2012), two alternative strategies in the social dilemma, which constitute, together with knowledge manipulation, the main behaviours of knowledge management at the individual level (Y. W. Rhee & Choi, 2017). Employees hide knowledge to maintain information that guarantees a certain power built on certain skills and know-how, reduce the waste of time and the risk of being criticized in certain circumstances (Y. W. Rhee & Choi, 2017). Hiding knowledge tends to

have a negative impact on creativity (Černe et al., 2014; Y. W. Rhee & Choi, 2017) and on innovative behaviour as a whole (Černe et al., 2017), in particular, for the reason that those who do not share strategically create a vicious circle for themselves, so that others do not share with them either (Černe et al., 2014) (as is the case for the prisoner's dilemma, wherein the end the individual strategy to optimize individual return is not to confess, how not to share).

Figure 17: Knowledge exchange network (through communication) between doctors and nurses in a hospital department (Tasselli, 2015, p. 859).



### c) Factors influencing knowledge sharing within an organization.

After examining the theme of sharing and hiding knowledge, it is necessary to understand in literature what factors within an organization influence individual knowledge sharing activity. A detailed review of the factors that influence knowledge sharing was carried out by Amayah (2013). The interaction of these factors can inherently balance the benefits and costs of sharing knowledge with others by pushing individual willingness or reluctance to share (Konstantinou & Fincham, 2011). Sharing ideas to improve tasks and processes, information and know-how with colleagues (S. Wang & Noe, 2010), in fact, brings benefits and costs, which can lead to the "social dilemma" of knowledge sharing, leading to psychological states of inner conflict (A. Cabrera & Cabrera, 2002). The exchange between employees of an organization is a problem of social cooperation driven by a socio-psychological process, which parallels the sharing of knowledge with other cooperative and prosocial behaviors (A. Cabrera & Cabrera, 2002). A social dilemma involves a dyscrasy between the optimization of the personal rational pay-off and the collective irrational damage (a classic example is "the tragedy of the common goods") (Hardin, 1968)) Theoretically, in fact, organizational knowledge can be considered a public good: we can improve

our performance by using methods and ideas available from colleagues, and our use of these ideas does not diminish the possibility of use by others, but the possibility of free-riding (exploiting a resource without contribution) can lead to situations of not optimal balance for the organization (A. Cabrera & Cabrera, 2002). Individuals, in fact, have costs in sharing tacit and explicit knowledge (A. Cabrera & Cabrera, 2002, p. 694): if the individual knows good practices, they could outsource them in documents available to all and useful for the organization as a whole, but this involves time and effort, which could be invested in clearer returns (as measurable performance compared to sales), especially in very competitive companies within them, where vulnerability is more pronounced and revealing a secret can damage personal competitive advantage. These extra social costs of time and effort (Klotz & Bolino, 2013) to make knowledge available may also outweigh the benefits, which is a social exchange perspective where people are feeling intrinsically satisfied to have contributed to the growth of others by expecting reciprocal behaviour, taking on the social status of "expert", gaining respect and trust in the group and organization (Flynn, 2003) and improve one's knowledge by "practicing" in the sharing process (Hislop et al., 2018), and as it happens for public goods, it is enough that a small number of people do not participate in the sharing of knowledge, but prefer to accumulate it, hide it or share it substantially little, which the whole system encloses on itself (A. Cabrera & Cabrera, 2002). Even if these situations of negative balance for the organization are reduced thanks to strategies of cost reduction and increased benefits of contributions (A. Cabrera & Cabrera, 2002), there is a "triad" of individual, organizational and technological barriers to knowledge sharing (Riege, 2005). In particular, for the individual level, i.e. the crucial one for the role that people play in all knowledge processes and at the same time in forming and interpreting the organizational context (Empson, 2001), in private companies Riege (2005, pp. 23–24) identifies 17 barriers: Lack of time in sharing knowledge and selecting colleagues who need that knowledge, fear that sharing may reduce job security, low awareness of the value of possessed knowledge given to others, dominance of tacit knowledge over explicit knowledge such as know-how or experience requiring observation and interactive dialogue, use of strong hierarchy and formal power, insufficient feedback and tolerance of past mistakes, differences in experience levels, age, gender and level of education, lack of time for contact and interaction between source and recipient of knowledge, low interpersonal and oral and written communication skills, fear of losing intellectual property without even receiving recognition from superiors and managers, lack of trust in people who may abuse knowledge or gain unfair credit for it, lack of trust in the accuracy of the source of knowledge, differences in values deriving from ethnic background and national culture, and finally, lack of social network. In particular, in the following parts of the thesis, it is analyzed how individual skills have an effect on dynamic abilities, but this shift is mediated by individual social capital in

the knowledge networks inside and outside the organization. A stronger knowledge sharing can lead to a greater number of ties and a better position within the knowledge network. In this paper, these aspects are considered as a unicum, so knowledge sharing is interpreted as social capital in the structuralist vision of knowledge networks. Focusing on intra-organizational knowledge networks, it is evident that without trust in an organization's internal knowledge "market" individuals cannot be sure that their pro-social knowledge sharing behaviour will be adequately rewarded (Davenport & Prusak, 1998; Empson, 2001; Nahapiet & Ghoshal, 1998; Teece et al., 1997). Bloice and Burnett (2016, p. 140) find other interpersonal blocking barriers in the non-profit third sector: lack of personal confidence in participating in knowledge sharing activities, lack of motivation to create knowledge-based relationships, lack of application of acquired knowledge for decisions on service provision. Several authors have also emphasized how an organizational culture that values the sharing of ideas, creativity and continuous improvement can reduce interpersonal barriers and make knowledge management systems efficient and effective (e.g. A. Cabrera & Cabrera, 2002; Davenport & Prusak, 1998; De Long & Fahey, 2000)<sup>56</sup>. Organisational culture is a set of beliefs, values and practices that identify the people who work in an organisation (Vuori & Okkonen, 2012) and can in fact be created and supported by people themselves, such as leaders and managers who become very significant examples (S. Wang & Noe, 2010). It is an organizational barrier to knowledge sharing (Riege, 2005), but it has in fact a strong interpersonal value. For Rowley & Fullwood (2017), on the other hand, the individual beliefs between subjects in a knowledge network are more influential than their attitudes to sharing knowledge. Finally, it should be noted that two different types of culture are rooted in ethnic and national groups and reflected in organizations, such as the individualist culture (where people give more importance to emerge as members of a group), typical of Western countries, and the collectivist opposite (greater importance to conformism), to belonging and adapting to the group) typical of East Asian countries, affect the values of work and make ethnocentric and universal managerial approaches, in which theories derive from a dominant influence and do not dwell on people's different ways of thinking (Hofstede, 1983; Morris & Leung, 2010); in the work context, in fact, a company with a more individualistic "ethos" leaves more freedom to workers to adapt their work style to the tasks assigned, whereas this is not the case for companies with a collectivistic ethos (See Hofstede

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<sup>56</sup> De Long and Fahey (2000) identify four ways in which culture influences the exchange and creation of knowledge: 1) culture models the hypotheses about what knowledge is and what knowledge should be managed; 2) culture defines the relationships between individual and organizational knowledge, defining who controls a specific knowledge, who should share it and who should accumulate it; 3) culture creates the context for social interaction and, therefore, how knowledge will be used in certain situations; 4) culture models the processes through which new knowledge is created, legitimized and distributed in organizations despite its uncertainties.

(1980a) or for a review Hogg and Vaughan (2009)). These issues are related to what the knowledge network is, how it functions, consequently, social capital and how this influences and is influenced by people. After having made these premises and analyzed the theme of knowledge networks from various points of view, the work here focuses on internal relations concerning "communication" between colleagues. There are two research hypotheses that are posed in the thesis and concern the micro-funding of individual dynamic abilities and that are based on the perspective that people who are better connected have more knowledge resources than those who have few connections and have a marginally irrelevant position in the knowledge network. The individual value in the internal network structure is understood as individual social capital (in the following chapter social capital outside the organization is indicated with the terminology of external networking, which is more frequent in public administration, but also in top management).

#### **d) Theoretical connections between social capital embedded in knowledge networks and dynamic capabilities.**

Focusing on the sharing of knowledge within the organization as a form of social capital, some theoretical considerations are still necessary to formulate the research hypotheses. Unless otherwise specified, many theoretical connections between social capital and dynamic capabilities are applicable in both internal and external knowledge networks even with different nodes which are inside the organization or are characterized by different level of distance from it. From what emerges from the literature, it is recognized that conceptually knowledge sharing behaviour can influence the application of knowledge in terms of ambidexterity (Mom et al., 2007, 2009) and employee innovation, as well as the innovation capacity of the organization (S. Wang & Noe, 2010). There is new the study about social capital (internal or external to the organization) and dynamic capabilities, but some issues have not been explained yet. Especially, in public administration and at hierarchical level of knowledge workers rather than top or middle management the studies are limited and there is a research gap. Moreover, studies that putting together cognition and social capital are limited and the microfoundation movement in social capital (e.g. Tasselli et al., 2015) is as recent as the microfoundation of dynamic capabilities. In the structuralist perspective of social capital, the individual is no longer a unitary and indivisible subject, but individuals are considered as organizational networked actors and they can participate in networks where they are embedded and connected with different ties and nodes (Rogan & Mors, 2014). About the **relationship between social capital and innovative work behaviour**, early studies provide evidence for the relevance of networking to improve innovativeness (Perry-Smith, 2006;

Rodan & Galunic, 2004). Providing information about tasks and know-how facilitates collaboration with others not only to solve problems, thanks to the advice, but also to develop new ideas (creativity phase) and implement new procedures (implementation phase of innovative behavior) (Cummings, 2004; S. Wang & Noe, 2010). This is a first "knowledge-based" approach that sees the sharing of knowledge between "knowledge-workers" from different areas of experience and working groups active creativity and innovation, which are the sources of competitive advantage (Konstantinou & Fincham, 2011). Network at work may be a resource to enhance individual innovative work behaviour and in-depth analyses about the quality of nodes and characteristics of networks can still strengthen knowledge on this subject (Messmann et al., 2018). About the **relationship between knowledge social capital and individual ambidexterity**, Rogan and Mors (2014, p. 1861) suggest that, even if there are criticism in literature about the possibility to study ambidexterity at individual level (e.g. Gupta et al., 2006), to seen individuals as "actors within networks" permit to reconceptualize the networks as means to improve the individual capability to balance exploitation and exploration. Interfacing with colleagues at different levels of the organization means being able to have multiple assessments, access to knowledge from different points of view, be more aware of opportunities and organizational needs (Gibson & Birkinshaw, 2004; Mom et al., 2009). Specialized at an intra-organizational level, the individual connection based on the continuous, frequent and non-routine exchange of knowledge is a crucial element that can facilitate understanding and awareness of problems, opportunities and needs, reducing efficiently ambiguities (Mom et al., 2009). Empirically, Mom et al. (2009) find that internal managerial networking has a positive linear effect on managerial ambidexterity<sup>57</sup>. Authors suggest that personal mechanism of coordination based on knowledge and learning are more efficient in improving ambidexterity (Mom et al., 2009). In empirical research it emerges that top-down knowledge flow is a factor that enhance exploitation (Mom et al., 2007) and general individual ambidexterity (Torres et al., 2015) at managerial level in case of industry knowledge based on private companies. Rogan and Mors (2014) find that hereogeneous and informal ties within the organization have a positive impact on ambidexterity thanks to the opportunity to reach different novel knowledge useful to balance exploitation and exploration. As far as empirical studies are concerned, however, the relationships between social capital and dynamic capabilities are not automatically confirmed. Therefore, hypotheses of theoretical and conceptual relationships between dimensions are proposed, which can be analysed empirically, both with qualitative methodology through in-depth interviews and positivistic cause-effect studies (in the laboratory or cross-lagged) or correlation studies through surveys. The latter methodology is applied in this

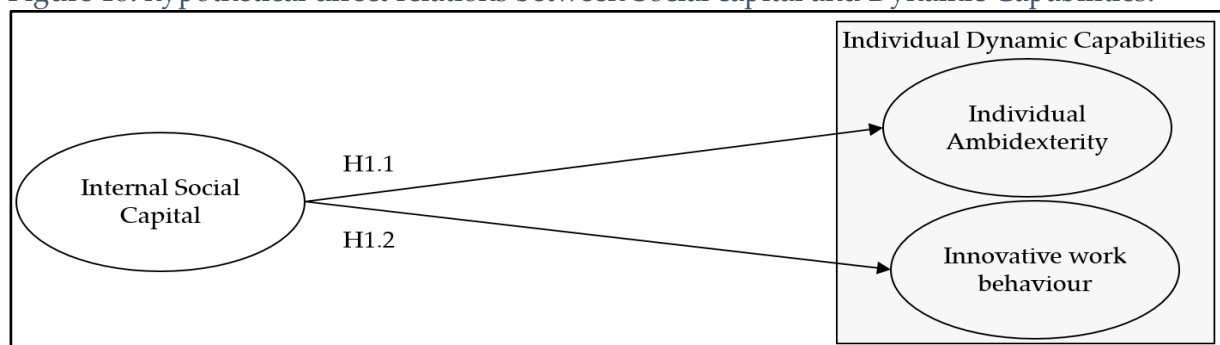
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<sup>57</sup> U-shaped relationship is not confirmed empirically and results are not statistically significant (Mom et al., 2009).

thesis. First of all, a "classical" model is considered, in which no social capital dimensions are included, but only constructs based on measures of individual attitude and behaviour. For example, in the study by Rhee and Choi (2017), the connection between the three main knowledge management behaviours (sharing, hiding and manipulating) and individual creativity was empirically tested; knowledge manipulation has a positive impact, just as hiding knowledge has a negative impact, while knowledge sharing has no effects. Instead, a gap remains open on the role of structural social capital linked to individual dynamic capabilities, especially for studies on several organizations, where employees are inserted in a different knowledge network for each local government. For Blyler and Coff (2003) and Ambrosini and Bowman (2009), social capital is an essential internal component for the development of companies' dynamic capabilities. With the absence of social capital of individuals, resources remain disconnected and opportunities are not realized, not allowing the organization to acquire knowledge, integrate and renew it (Blyler & Coff, 2003). The structure of social capital allows the central actors that occupy structural holes to generate advantages in terms of dynamic capabilities; individuals who have valuable internal and external contacts, in fact, sharing information, innovation and new ways of thinking (Ambrosini & Bowman, 2009; Blyler & Coff, 2003). Moving from strategy literature to one more oriented to psychological aspects, for example also Vinarski-Peretz, Binyamin and Carmeli (2011) recognize that connections and relational experiences are fundamental for behavioral activities both inside and outside the workplace and that these are a key to understand just how people engage (or not) in particular work activities, such as the ability to effectively balance exploitative and explorative orientations and behave proactively towards innovation. In this perspective, the position in the network, the structure of the overall network and the structure of one's own social network (ego-network) are identified as antecedents of individual ambidexterity and innovative work behaviour. In particular, focusing on the individual level, the hypothesis is that the individuals who have the most internal and external contacts within the company and who have the most power in the network (role of broker) are also those who have a greater propensity for change and dynamism. Therefore, a positive correlation between the knowledge network (where knowledge is actually exchanged) and individual dynamic capabilities is hypothesized. About a relation between internal social capital and individual innovation, this has been already validated in literature, but this research adds some novel aspects. In particular, Zandberg and Morales (2017) find that internal networking has a positive impact on all dimension which build innovative work behaviour. At the same time, their research is based on data about a municipality with a small sample size and internal relations are about departments within the organizations and the entire body of colleagues is not considered, moreover, the focus is on only on managers which are hired in a discretionary or political way and their relative perception of networking activity

(Zandberg & Morales, 2017). In this thesis, all knowledge workers in municipalities are considered in a single case study and in many local governments and the construct of internal networking is based on structural theories of social capital. Thus, findings from Zandberg and Morales (2017) can be confirmed in a different context and with different measures. Moreover, literature presents a debate about the effects of weak and strong ties on individual outcomes. Wang et al. (2015) find that strong ties are more efficient to improve innovative work behaviour when they are directed to colleagues within the same group thanks to a better way to think about novel knowledge and implement it. Otherwise, weak ties from outside the work group enhance better individual outcome because nodes outside the group could take new knowledge, feedbacks and resources useful to different phases of innovation at work, so that weak and strong ties may be also complementary within the organization (X.-H. F. Wang et al., 2015). This debate is deepened in this thesis thanks to a case study with data from ego-networks and comparing knowledge communication networks inside and outside the the local governments, increasing the possibility of understanding the role of different ties on innovative behavior in the public sector. At a meso-level, it will be seen in the next chapter, the knowledge network inherent in inter-organizational collaborations and alliances influences the organization's ambidexterity and innovativeness; even in a vast network, thanks to non-redundant connections that are easily accessible and clustered (direct distance with many other organizations very small), a wide range of knowledge resources indispensable for innovativeness can be accessed (Ahuja, 2000; Schilling & Phelps, 2007). At the level of the organization, the social capital inherent in the relationship structure supports dynamic efficiency and growth reducing the costs of obtaining knowledge (Nahapiet & Ghoshal, 1998). At the level of relations between groups, a positive correlation between the position of an organizational unit within the intra-organizational network and the innovativeness of the unit itself has already been shown (Tsai, 2001). At a micro-individual level, weak ties in the social network of knowledge are much more effective than strong ties in explaining individual creativity, because, even if they are not necessarily related to creativity or new knowledge of the contact with which one has a weak link, it is less likely to be repetitive than the strong tie that feeds itself in a closed circle (Perry-Smith, 2006; Perry-Smith & Shalley, 2003).

Figure 18: hypothetical direct relations between Social capital and Dynamic Capabilities.





In the model outlined here, four elements of the knowledge network are considered to be fundamental antecedents for individual dynamic abilities:

1) the **strength of ties**, as we have seen weak ties can lead to access to external knowledge at low relational cost compared to that of one's own working group where communication or exchange of advice is more frequent (M. Granovetter, 1973).

2) The **characteristics of neighbouring nodes**, as working with more ambidextrous or innovative people could affect one's dynamic capabilities, as the imitation of others is part of the dynamics of the construction of one's own social identity and other innovative neighbours can be an organizational resource of useful access on a personal level, remaining in a resource-based view.

3) **Closeness centrality** (Freeman, 2004), which measures the centrality of an individual within the network, so that an individual with a higher value on this dimension will be more capable of reaching many other nodes in a well-connected network and for this reason the individual's centrality makes him relatively autonomous with respect to being dependent on intermediaries (Powell et al., 1996; Tasselli, 2015).

4) **Betweenness centrality** (Freeman, 2004) is a measure of knowledge brokering, that is, of the structurally advantageous position of an individual who manages to connect as an intermediary other nodes of the knowledge network that would otherwise be disconnected (Tasselli, 2015).

Therefore, after analysing the literature on social capital linked to the internal knowledge networks of the organization, firstly, this thesis posit that individual social capital within the organization is positively connected with individual Dynamic Capabilities. Furthermore, the following two hypotheses can be formulated:

**Hypotheses 1:** *Internal social capital has a positive impact on individual and organizational dynamic capabilities in local governments.*

*Hp 1.1 Internal Social capital (i.e. Individual social capital from internal knowledge networks) has a positive impact on individual ambidexterity. In particular, Hp 1.1.a Strong Ties in internal knowledge network and Hp 1.1.b Weak Ties in internal knowledge network have a positive impact on individual ambidexterity.*

*Hp 1.2 Internal Social capital (i.e. Individual social capital from internal knowledge networks) has a positive impact on innovative work behaviour.*

*In particular, Hp 1.2.a Strong Ties in internal knowledge network and Hp 1.2.b Weak Ties in internal knowledge network have a positive impact on innovative work behaviour.*

In this part, it is necessary to underline some limitations concerning this type of research. First of all, in most of the literature analyzed during the PhD years, most of the social network analysis researches concern the comparison between a few networks (usually two), to understand if the effects in one network remain the same in a different network. For a correct analysis, these networks have a number of at least 50 nodes.

At the time the thesis is written, no widespread intra-organizational knowledge exchange networks have been found, where there may be a large scale comparison over a larger sample size. Effectively, to date, the unique article that empirically tested social capital within different organizations was about status and conformity in board of directors (Veltrop et al., 2017). Veltrop et al. (2017) analysed two studies and in the first of them, they tested hypotheses in 30 organizations (on average 6,20 participants for each network), otherwise in the second one, the number of boards considered was 10 (on average from four to eight participants for each board). These numbers could be limits for this kind of research, because the necessary answer rate for the analyses of networks are more numerous than behavioural researches without networked data, following methodological best practices. Moreover, in literature, scholars do not use sometimes measures of social capital following social network measures. For instance, in public sector, Mohd Rasdi et al. (2013) find that internal networking (only in the dimension of increasing internal visibility) has a positive impact on gross income and career success, but their measure of networking is an appropriate proxy and it does not study real relations with social networks questions. In this thesis, the attempt is to give an answer to these two hypotheses; in particular, for the latter, two empirical researches are carried out. In the first, it is studied the Ego-Network in a Municipality. Having available the whole network, albeit with the limitation that this is the one "perceived" by Ego and not the "real" one, some sub-hypotheses are identified to deepen the dimension of Social capital according to various facets and measurements, which are present in the specific literature of social network analysis. The case study explores the hypothesis 1.2 using the instruments of social network analysis, comparing statistically the direct and indirect effects of individual and dyadic knowledge-based social capital. The same hypothesis is also studied through the survey to different municipalities as for 1.1 and other hypotheses. To the first primary and exploratory methodological approach, we add an approach that follows more precisely the suggestions provided in methodological literature about surveys. Innovativeness is measured through individual "perception" and "rated" from colleagues and this thesis expects that results are confirmed for both.

**- About antecedents of (internal) social capital, moderating and mediating effects (preview: the focus on these hypotheses is in next parts of the thesis)**

*Cognitive capabilities have a positive impact on external networking.*<sup>58</sup>

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<sup>58</sup> In particular, in next chapter, it will be hypothesized that mindfulness and political skill have a positive impact on Social capital in term of internal knowledge network (in both dimensions of both weak and strong ties).

*Internal social capital mediates the relation between cognitive capabilities and individual and organizational outcomes. Cognitive capabilities moderates the relation between (internal) Social capital and outcomes.* The focus on specific cognitive capabilities and relations with different forms of Social capital (internal knowledge networks and external networking) are treated carefully in next chapters.

#### **- About a Multilevel ("M") model**

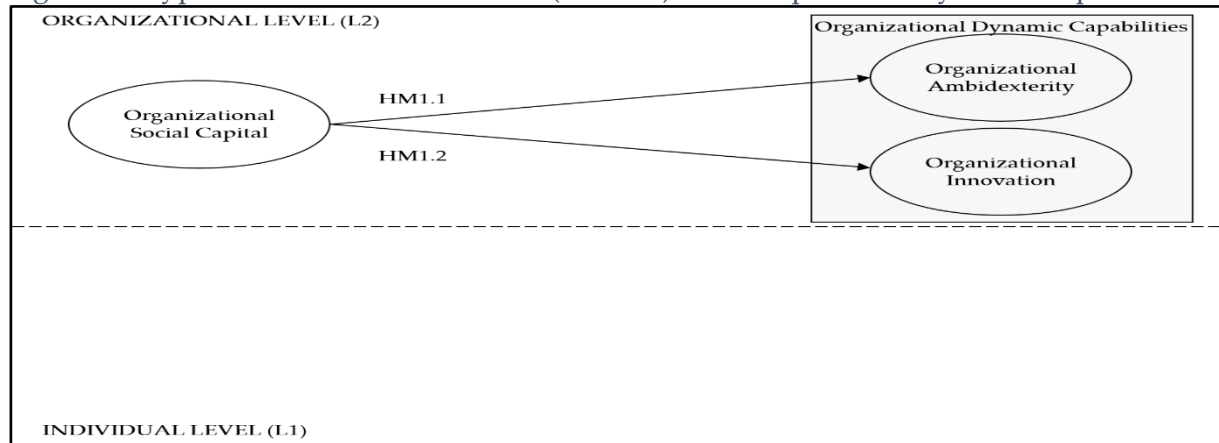
In the perspective of internal social capital, it is more logical to evaluate this dimension as organizational factor rather than a sum of individual one. In social network literature about leadership<sup>59</sup>, there is a difference between emergent leadership (the centrality of a focal people in leadership network) and shared leadership (the density of leadership network). If there is an organizational dependent variable to evaluate, it is more reasonable to consider the internal social capital as a factor at organizational level more than at individual one. The average measure of individual centrality in an internal network may be a non sense if it is used as antecedent for organizational outcomes. Considering the average of weak and strong ties, it is difficult to interpretate. As suggested in multilevel methodological analysis (Hox, 2010), it is payed attention to the right level of dimensions in the model. When there are multilevel hypotheses and the outcomes are organizational, in this work, internal social capital is considered an organizational factor. At the network level of groups or the whole organization, literature takes into consideration two dimensions (Borgatti et al., 2013; Sparrowe et al., 2001; Trobia & Milia, 2011):

- 1) **Density**, which measures the overall level of interactions in the network. The more the individual nodes have a high number of interactions, the higher the density level, which basically constitutes an average.
- 2) **Centrality**, which measures the variance in the number of relationships and indicates whether the networks have nodes with similar access to resources or networks characterized by inequalities in which some nodes have a lot of social capital and other nodes are weak. Conversely, a low level of centrality shows a more egalitarian network, in which there are no nodes that present a significantly higher social capital than the others. The dimension of internal social capital is measured as density of the network: a more dense network means that public servants are well connected within the municipality. Theoretically, a high level of network density means that knowledge management works and, if it has a positive impact on organizational outcomes, it also matters. Results are not unidirectional in empirical research. In dense networks it easier the passage of knowledge and, as seen, internal networking do not present diminishing returns and curvilinear relations (Mom et al., 2009) otherwise, for some authors sparse networks could lead to novel knowledge (e.g. Burt, 1992).

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<sup>59</sup> For literature reviews, for instance: Pearce et al. (2008); Wang et al. (2014).

Figure 19: hypothetical relations between (Internal) Social capital and Dynamic Capabilities.



Rogan and Mors (2014) suggest that density is efficient for internal networking and it could be overabundant for external networking. In the specific case of local governments, this research assumes that internal networks do not present curvilinear effects at individual and organizational level, so that internal knowledge networks enhance individual and organizational dynamic capabilities. Moreover, in the perspective of knowledge management, dense networks are assumed more effective than sparse one to implement ambidexterity and innovation within public administration. The theoretical idea is that it is difficult to have a balanced orientation and implement innovation without a deep knowledge within the organization. Even redundant knowledge could be effective if it not overlapped with bureaucratic formal information that is time spending and inefficient. Dense internal networks help for the mobilization of (knowledge) resources thanks to a better coordination and they have not a negative effect for exploration orientation (Rogan & Mors, 2014). In the next chapter, otherwise, external networking is considered a form of social capital with diminishing return and this is coherent with the idea that dense external networking can be detrimental for ambidexterity (Rogan & Mors, 2014). Otherwise, future researches could compare large local governments with small one and public with private internal organizational network, in particular deeping the research about the content of knowledge exchange. In contrast, next chapter about external networking the positive assumption for internal communication-knowledge network is not confirmed for relationships between public servants and multiple stakeholder in the Network Governance of local governments and curvilinear correlations are hypothesized.

Thus, considered the literature and this last theoretical discussion, this thesis posit that<sup>60</sup>:

*Hp M1.1 Organizational social capital has a positive impact on Organizational Ambidexterity.*

*Hp M1.2 Organizational social capital has a positive impact on Organizational Innovation*

<sup>60</sup> The uppercase M means that the hypothesis concern a multilevel model, where there are individual and organizational dimensions that are evaluated.

### **3. EXTERNAL NETWORKING (REVIEW AND RESEARCH HYPOTHESES ON MICROFOUNDATION): THE ROLE AS ANTECEDENT OF DYNAMIC CAPABILITIES.**

#### **a) External networking: social capital from outside the public organization.**

In the previous part, assumptions were made concerning social capital within public organizations. However, literature in public administration claims that networking is considered a "multi-dimensional activity" (Sargent, 2011, p. 338). Relationships are with politicians, colleagues and disparate public and private actors outside the organization (M. H. Moore, 1995; O'Toole et al., 2005). In addition to the internal networks within the public organization, therefore, it is important to evaluate the individual social capital externally and hypothesize correlations with the individual dynamic capabilities. A comparison between internal and external networking is also necessary, as the literature has shown that in a model in which both dimensions are included, only for the latter it emerges a positive impact on individual performance at managerial level (Sargent, 2011). The approach adopted in this thesis is the micro-endogenic perspective of relations based on behavioural public administration, rather than a meso-exogenous perspective belonging to an institutional research perspective (Shaw & Eichbaum, 2020). In the analysis of the literature, however, we examine the theoretical and empirical debate on the importance of behavioural dimensions compared to contingent ones. In fact, the former belong to the perspective that is adopted here to make hypotheses on the role and the individual differences, rather than on an institutional logic, in which the greatest importance belongs to the aspects exogenous to the individual. Furthermore, from the literature on network governance, which is today the most appropriate method of coordination and structural collaboration in the delivery of public services, the topic of networking in the public administration has developed and is growing. (M. B. Hansen & Villadsen, 2017; R. M. Walker et al., 2007). In public administration, in particular, the resource of knowledge of public managers, leaders, elected politicians and of the most numerous "street-level" bureaucrats (Lipsky, 1971), such as teachers in schools, professors university students, employees of local and state administrations or subsidiaries, doctors and nurses in public health organizations and so on is vital for their outcomes at work. Thus, in a microfoundation perspective, the individual resource of knowledge is crucial also for the group with which they work and for the public organization in which they operate. At the same time public employees, professionals, managers and political representatives and public companies (which they represent) are no longer stable factorial elements within individual organizations as was the case in paradigms of Weberian bureaucracy (Crozier, 1964; M. Weber, 1946) or in following New Public

Management (Hood, 1991). O'Toole (1997a) wrote the seminal paper "treating network seriously" more than two decades ago and recently he has recognised the presence of gaps in this field: "The world of public administration has for some time been treating networks seriously, but the work is far from complete" (O'Toole, 2015, p. 361). Individuals are "tool makers" and "tool users" in the network governance, that includes mechanisms of their inclusion and participation (Bingham et al., 2005). Moreover, Fung (2006) identifies three dimensions through which participation takes place in network governance: who participates, the mode of communication between participants to arrive at decisions, the link between the discussion between the participants and the political decisions. In addition, individual strategies in external networking may influence outcomes strongly (Klijn et al., 2010). As seen in the model of knowledge management in public administration, in networks, knowledge relationships between participants is clearly a challenging priority, which is expressed thought transfer, receipt and integration of the same knowledge (E. P. Weber & Khademian, 2008). This knowledge management theoretically connects the contextual mind-set, skills, strategies and tools that individuals can use during inter-organizational relationships and building capacities in the short and long term (E. P. Weber & Khademian, 2008). Knowledge sharing as practice in network governance has an even greater value of knowledge that can come from outside (Dawes et al., 2009). Knowledge useful at work in the public sector comes not only from formal relationships, but also from informal interpersonal networks in which there is an exchange of experience even beyond bureaucratic formality especially in a decentralized organizational system (Binz-Scharf et al., 2012). Public employees are inserted in a mode of governance in which the network is predominant and in which they are actors in different interconnected production networks of public services with other public actors of different levels and private or third sector actors (R. M. Walker et al., 2007). In this situation, public employees interact in interdependent and increasingly complex environments in an operational and malleable way depending on the circumstances (M. B. Hansen & Villadsen, 2017; R. M. Walker et al., 2007). Nowadays, behaviours of external networking they are an increasingly essential feature in working life in the public sector (Cristofoli et al., 2017; M. B. Hansen & Villadsen, 2017; Zyzak & Jacobsen, 2019). This field of research has been growing in recent years (Zyzak & Jacobsen, 2019). There are three aspects of network treated in literature: the design of the rules and interaction with other organizations on the whole as a networked structure of public governance, management with responsibilities inside networks rather than public organizations, the external networking behavior with individual engagement to create and maintain ties with multiple stakeholders outside the organization (Jimenez, 2017). The focus is on third aspect and the study tries to answer to some questions that are the basis to formulate theoretical hypotheses to be confirmed. To date, there are not empirical studies that contributed to examine the effect of external

networking on dynamic capabilities neither in general public administration nor within the specific field of local governments:

*Do public servant's ties with external networking develop their individual ambidexterity and innovativeness within municipalities?*

*Do public servant's ties with external networking develop organizational ambidexterity and innovativeness of municipalities?*

Moreover, to date, empirical research about "quality manager" as antecedents or moderators use rough measures that don't have any statistically relevant effect (Nohrstedt, 2018) or not replicable in the public sector worldwide (Hicklin et al., 2007; Jimenez, 2017) and, thus, in public administration literature there haven't been yet in-depth attention to behavioural microfoundation. Here, this thesis try to cover a small part of this large gap:

- *Do public servant's ties with external networking mediates the relation between cognitive capabilities and individual ambidexterity and innovativeness within municipalities?*
- *Do public servant's ties with external networking mediates the relation between cognitive capabilities and organizational ambidexterity and innovativeness of municipalities?*
- *Do cognitive capabilities moderates the effects of external networking on individual ambidexterity and innovativeness within municipalities?*
- *Do cognitive capabilities moderates the effects of external networking on organizational ambidexterity and innovativeness of municipalities?*

## **b) External networking: contingency or behavioural microfoundation?**

To answer these questions, it is necessary to put the thesis in a specific theoretical conception. In particular, in fact, as we will see in the literature, some authors of public administration (e.g. Andrews et al., 2011; Jimenez, 2017) are placed under a lens "contingency". For the contingency perspective, the external environmental characteristics generate the same response of the individual in the organization and of the organization itself. This path occurs especially in conditions of uncertainty. In the contingency perspective theory, the basic assumption is that the situational dimensions entail the need to model the organization according to an unequivocal strategy that always applies to a definite performance outcome to which the organization aspires (Greenwood et al., 1975). For contingency theorist, "goodness of fit" capabilities matter, rather than individual ones. In this perspective, therefore, public servants adapt their actions to their perceptions of the external context (Andrews et al., 2011) and, consequently, they are so influenced that their performances depends on an ability to adapt and use a predetermined set of tools to achieve them rather than a capacity to model themselves and the systems where they work. At this point, it is

relevant to understand whether contingency theory, as a more classical perspective, and behavioural approach, as a more contemporary perspective, can be complementary (James et al., 2017) or absolutely alternative and mutually exclusive. In contingency theory, the environmental and structural situational aspects (e.g. organizational size) are relevant and identified since early studies in organizational theory (Greenwood et al., 1975). They can derive from objective archive data or from a perception of individuals themselves and, to date, theoretical correlation hypotheses that follow contingency perspective are not always confirmed by empirical researches or the significance is limited (Andrews et al., 2011). In the literature review below, compared to a theoretical contrast between contingency and behavioural one perspective, we will see that some authors place themselves in a hypothetical condition of complementarity and comparison between contingency and behavioural dimensions as antecedents of the external networking, as was done for other dimensions concerning public servants (e.g. about performance management: Moynihan & Pandey, 2010). In this thesis, the focus is on a behavioural approach, while future research will be able to deepen the microfoundation of dynamic capabilities by including contingent dimensions and revising hypotheses in the sense of complementarity between these two perspectives<sup>61</sup>.

### **c) Motivations for external networking in Network Governance.**

Nowadays, in challenging Network Governance, it is predictable that public servants are involved in multiple relations with disparate stakeholders in this intricate environment for different purposes (Andrews & Beynon, 2017). Public servants should draw key resources that can support them in daily work from networking activities with external organizations and individual stakeholders (van der Heijden & Schalk, 2018). Interaction in Network Governance means to have individual and organizational relations with multiple ties and reciprocally this lead to influence users, resources, programs, goals, and reputation (R. M. Walker et al., 2010). There are several reasons that characterize external networking in the public sector: obtaining human, financial, intellectual resources, advice in addition to those available within the organization, guidance, support so as to be able to improve the efficiency and effectiveness of the organization, but there they are also political, reputational and tokenistic motivations (Andrews & Beynon, 2017).

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<sup>61</sup> *Behavioural approach: do individual differences ("quality management"/"cognitive capabilities") influence external networking and its effects on individual and organizational outcomes?*

*Contingent approach: do individual differences lose their significance to explain individual and organizational external networking, including in the model contingencies?*



Jimenez (2017) identifies in literature a series of theoretical positive outcomes. In particular, external newtorking promotes problem solving and the search for innovative solutions in the production of public services, gathering information on good practices in other organizations, stimulates the co-production of public services, stimulates the support of the local community and other public entities at various levels in the public governance (e.g. managers could use buffering techniques in diffult financial situations), encourages organizational autonomy (Jimenez, 2017). Otherwise, in literature, in addition to the bright side, there is also a dark side to be considered for external networking (O'Toole, 2015; O'Toole & Meier, 2004; Raab & Milward, 2003). In fact public officials have a limited time and must choose with more or less discrimination or work formality how much time to devote to the interaction activity towards the outside of the organization (O'Toole, 2015; R. M. Walker et al., 2007). Walker (2007) found that in local governments the time allocation is 70/75% for managing services and 25/30% in networking behavior outside the organization (R. M. Walker et al., 2007, p. 749). To date, there are no empirical data on networking activities within the organization for work-related reasons (workflow, advice, working in groups and so on). Time is a clearly limited resource and, for that reason, an individual ability to know how to create, maintain and manage relationships in the right balance is required to solve wicked problems in complex networks, so that the time spent in this type of behavior is beneficial at the level of individual and organizational outcome. Jimenez (2017) discloses the negative theoretical aspects that distinguish the behavior of external networking. In particular, he identifies: a trade-off in terms of costs and time spent in networking, a limit to the resources to which you have access that can become redundant, potential delays in decisions when many stakeholders in Network Governance are consulted for participatory choices, increased bureaucratic obligations with other levels of government, some more organized and powerful external actors can influence the organizational strategic choices more and then be favored by public policy decisions<sup>62</sup>. In his review, O'Toole (2015) enumerates some effects of external newtorking: support, negotiation, contribute of effort and helps from stakeholders towards common objectives, exploiting opportunities, protection for core business. More recently, Scott and Thomas (2017) analyzed collaborative networks. They found that external networking reinforces the possibility of reaching financial, human and technical resources especially for those subjects who already had some power and, in this sense, a dark side can be the distribution capacity of the network, because, as a drowback, this process could increase the spread between all the actors

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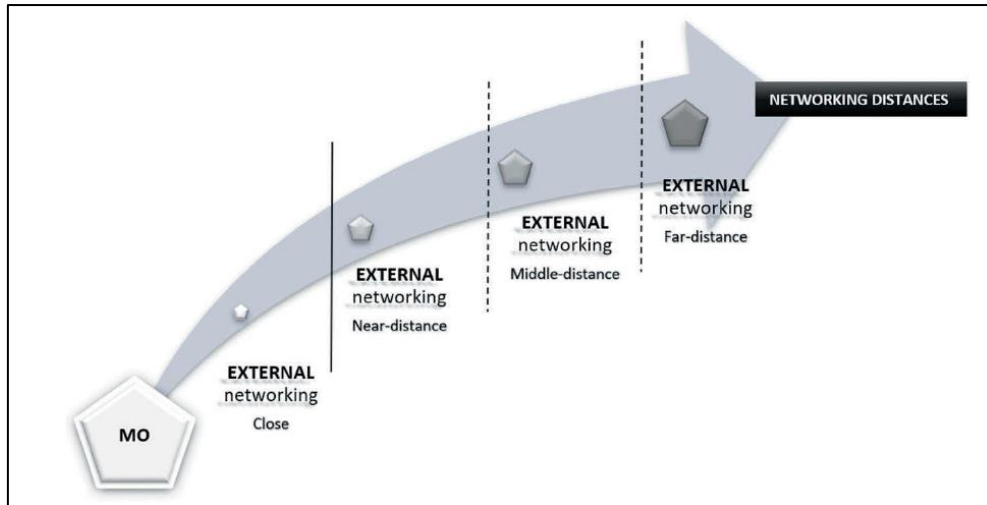
<sup>62</sup> Lubell et al. (2017) assume that, in complex Network Governance, transaction costs are relevant and calculable as "a function of conflict, type of participation, political knowledge, scientific knowledge, and actor resources" (Lubell et al., 2017, p. 668). Transaction costs are a function that public organizations consider both in the choice of network production but also whether to produce public services to citizens internally or to rely on the market (T. L. Brown & Potoski, 2003).

involved (T. A. Scott & Thomas, 2017). Furthermore, there may be risks of free riding in collaborative networks, in which certain actors contribute more and others less, so that the variables that perform the function of moderators are prosocial motivation and the role of the punishment. (Choi & Robertson, 2019). This theme was also decisive in the current update debate about the European Stability Mechanisms, in which some countries have been considered as more free riders for the public debts and the collaborative network would to improve the functioning introducing mechanism of punishment against behaviours of free riding which are dangerous for the network as a whole. In the end, even if the literature on collaboration networks tends to be positive for the ability to coordinate the political, social and economic process with multiple stakeholders, another aspect of the dark side concerns the dark networks, where the ends are criminal or immoral (Raab & Milward, 2003). In these contexts, the network mechanism could facilitate negative outcomes from the viewpoint of the “common good” of the modern society.

#### **d)      Networking classification in literature of public administration.**

In addition to the motivations that underlie the network, in literature there are other classifications of networking. Specifically, in the perspective of Network Governance scholars indicate different general kinds of networks. Walker (2007) was the first to study external networking in local governments and identifies two types of networks, policy and service delivery. Walker and after him the various authors who succeeded him in the empirical research identified in the literature that is argued critically in this thesis, have focused on the latter kind of network, because it has more managerial and strategic implication and public servants are the protagonists rather than politicians in local governments. The focus of the research was on behaviour of organizational individuals in external networking with other individuals in the complex network (R. M. Walker et al., 2007, p. 740), so much so that in the scale of external stakeholders used, there are only individual subjects apart from "trade unions", which tends to identify their representatives, as later used also by the same author in other researches (See: Andrews et al., 2011). In previous studies Moore (1995) distinguished three typologies of managerial networking of public managers: a) upward; b) downward, c) outward. Upward networking concerns relations with political principals and political leaders within the organization (O'Toole et al., 2005) (for example the mayor in a local government). At managerial level, downward networking concerns relations with subordinates within the bureaucratic hierarchy (O'Toole et al., 2005). Lastly, managing outward means face Network Governance and, thus, networked nature of public services and programs (O'Toole et al., 2005). Taking up a similar terminology, a more recent classification is present in literature.

Figure 20: The role of distance from a meta-organization for networking behaviour. Source: Zyzak & Pedersen (2019, p. 9).



At individual level, external networking of public officials is combined with relations “upward” with superiors, “downward” with subordinates and “sideward” with co-producers at the same hierarchical level (Van Den Bekerom, Schalk, et al., 2017; Van Den Bekerom, Torenvlied, et al., 2017). Taken together, these relations constitute the internal and external social capital of managers or employees. Inside these classifications, this thesis distinguishes between internal networking and external one, as in the work of Sargent (2011). In this research, the focus is on knowledge public servants, so that internal relations include networking with colleagues in multiple directions and this is an internal form of social capital. Moreover, following preminent research, upward and outward relations are included together in external networking and then separated to control for singular effects of both dimensions. In conclusion, external networking may be considered an external form of social capital for public servants. Moreover, external networks can be horizontal as well vertical (Kapucu & Garayev, 2016), formal or informal (Robins et al., 2011) and also planned or more spontaneous (Zyzak & Jacobsen, 2019), with relations characterized by strong ties or weak ties (M. B. Hansen & Villadsen, 2017). In a recent article, for Zyzak and Pedersen (2019), the distance between the actors within the focal organization and the external stakeholders is a way to distinguish the network. Distance can be “geographical, formal and functional” (Zyzak & Jacobsen, 2019, p. 16). They introduce a model where external networking can be grouped by distance in four levels (Figure 20) and in which the subjects are external to the focal organization but always in an enlarged governance sphere or are just outside its range of action (Zyzak & Jacobsen, 2019). Zyzak and Jacobsen (2019, p. 11) classify according to distance and subdivide into public subjects external to the meta-organization but “Close” to its networked

public governance (other public subjects in the governance in which the focal organization is inserted; e.g. councils members), public and private subjects ("Near -distance") which are external to the meta-organization but in fact still within a networked governance extended to public (e.g. other public sector organizations) and private (e.g. NGOs) subjects. In addition to these closest subjects, there are public and private subjects at a "Middle" distance, that is, outside the range of action of the networked governance of the focal organization ("other administrative staff from municipalities outside meta-organization domain") and at "Far-distance" (e.g. "state authorities and national media") (Zyzak & Jacobsen, 2019, p. 11).

#### **e) External networking – review of empirical researches for local governments.**

The literature review starts by taking articles published in top journals of public administration and management. The next step is to select the articles that dealt with the topic of external networking in local governments. Other highly cited articles, in fact, focus on school managers' external networking since the seminal studies on the topic in the context of the United States (e.g. Meier & O'Toole, 2001; O'Toole & Meier, 2004), up to more recent research such as in Dutch primary schools (Van Den Bekerom, Schalk, et al., 2017). Finally, another research are concerns collaborative management regarding emergency situations both in local governments (Nohrstedt, 2018), sustainable development and environmental projects (Klijn et al., 2010; Robins et al., 2011; R. M. Walker & Hills, 2012) and in schools (Ryu & Johansen, 2017). The first article with a sample of local governments taken into consideration is that of Walker et al. (2007, p. 746), which analyzed 102 local authorities in England (unitary authorities, metropolitan boroughs, London boroughs, county councils and district authorities) with a survey conducted in 2003. Walker et al. (2010) took the same survey referred to the English local authorities, focusing, however, on those 69 major authorities that filled full data in 2002 and in 2003. Andrews et al. (2011) still analyze English local authorities (i.e. multipurpose organizations that deliver public services in specific geographical areas and have elected bodies (Andrews et al., 2011, pp. 361–362)): 184 out of a population of 386 in a survey in 2007 and respondents are corporate officers, chief officers, and service officers, ma spostano l'attenzione sulle determinanti dell'external networking. Deepening the analysis of the data of the survey conducted in 2007 (Andrews et al., 2011), Andrews and Beynon (2017) study the external networking behaviors of 1008 public managers in the same English local agencies. These studies relating to the English local authorities are based on an administrative level which is difficult to replicate and framed in an international context (Italian in the case of this thesis). The added value of this research is to maintain attention in the theoretical context of local governments, but focusing on municipalities, that is, a level even closer theoretically to the

citizen and user than to local authorities (rather theoretically comparable to the "old" Italian provinces or the "collectivités territoriales" in France) studied in literature in the empirical research seen above. Jimenez (2017) analyze 268 American cities with at least 50.000 residents and the respondents are appointed managers or finance department head. Even in this case, there is a little possibility to replicate results in international context (for example, the Italian one, where only the 31,06% of residents live in municipalities bigger than 60.000 inhabitants that are only the 1,33% of the total for Istat 2018 ([www.Comuniverso.it](http://www.Comuniverso.it))). In addition to a rather generalized vision, the alternative approach has been to see the specific relationships that public managers have within a defined public policy, albeit always in the context of local governments. For example, as regards social care domain in Dutch, it is possible to identify different partners, afferenti a due clusters: a client-interest networking and a professional networking (Schalk, 2017; van der Heijden & Schalk, 2018). Hansen and Villadsen (2017) studies strong and weak about external networking for more than 200 managers in 98 municipalities in Denmark. Nohrstedt (2018) studies external relations of public officials charged for contingency planning and crisis management in 290 Swedish municipalities. Lews et al. (2018) survey 323 senior administrators in three important European cities (Barcellona, Copenhagen, Rotterdam). Until the present day, the last empirical research publied in a top Journal is Zyzak and Jacobsen's study on Norwegian Regional Councils, that are meta-organizations where politicians and public servants from Minicipalities and counties meet for coordination (Zyzak & Jacobsen, 2019). In literature there isn't yet a consensus between scholars about a proper measurement of external networking in public administration (Ryu & Johansen, 2017). A first approach is to investigate relationships according to a scale of temporal frequency (Meier & O'Toole, 2001), while other authors have focused on the intensity of the relationship (Robinson & Gaddis, 2012) or at the same time reconciling a logics of frequency and intensity (Ryu & Johansen, 2017). It should be considered that in literature there is a specific reference to the fact that to study external networking in the public sector it is preferable to systematically search many cases rather than to explore a whole complex network of local actors (R. M. Walker et al., 2007). At the same time, however, it is difficult and risky to generalize as the different external actors can be multiple and have different roles and impacts and, therefore, sometimes in a complex Network Governance some of them could be ignored improvidently (R. M. Walker et al., 2007). In general, however, there is no strong consistency in the literature compared to the measurement of external networking (Nohrstedt, 2018, p. 15). For this reason, this thesis starts from observing the measures that have been used in empirical studies on local governments in the more important journals in public administration, in order to adapt the measurement of the construct to the context of the Italian municipalities and activate the possibility of generalizing at international level. Identified articles are published in journals recognized as top

public administration and that Academic Journal Guide 2018 (AJC2018), from Chartered Association of Business Schools, has classified between 2 and 4\*, on a scale from 1 to 4: “Public Administration: an international quarterly” (4) (R. M. Walker et al., 2007), “Public Administration Review” (4\*) (R. M. Walker et al., 2010), “The American review of Public Administration” (3) (Andrews et al., 2011; Nohrstedt, 2018), “Journal Of Public Administration research and theory” (4) (Jimenez, 2017), “Public management review” (3) (M. B. Hansen & Villadsen, 2017; Zyzak & Jacobsen, 2019), “International review of administratives sciences” (3) (Lewis et al., 2018), “Public Organization Review” (2) (Andrews & Beynon, 2017).

The *fil-rouge* of the literature review on external networking in local governments is based on these articles. First of all, the research begins with the construction of a first table, in which those who are the stakeholders in Network Governance used for the measurement of external networking by the individual studies in chronological order of publication are identified, to have a complete comparison and to be able to reason with respect to the reality of the local governments at Italian and at global level. Subsequently, the empirical evidence provided by these researches on local governments at an international level is critically analyzed. In these articles, the measure of the external networking used is that of the frequency with different external stakeholders, for which an empirical validation of reliability and validity has already been carried out (O’Toole et al., 2005). This measure is used in numerous studies, although it has some limits as it is based on bilateral and non-multi-lateral relationships and on the frequency of contacts, rather than on the quality, intensity and nature of the exchange of resources in relationships (Jimenez, 2017).

At this point, studies emerge that have already led to certain empirical evidence regarding external networking purely to the case of local governments. Then, the literature review focuses on antecedents, outcomes and possible interactive effects of external networking in chronological order in top articles in public administration journals. At the end of this chapter, in Table 10 at page 174, it is outlined the the overall picture of the articles that dealt with the topic of external networking from 2007 (R. M. Walker et al., 2007) to 2019 (Zyzak & Jacobsen, 2019). The empirical study on external networking focuses on the behavior of individuals rather than on the organizational level (O’Toole, 2015). Through the use of surveys often addressed to the managerial level, it attempts to explain individual and organizational outcomes, the relationship with which it is not always linear, but it can present diminishing returns (O’Toole, 2015). Furthermore, in the literature review of the empirical articles concerning external networking in local governments, an in-depth analysis was made between the authors who fall under the contingency paradigm and authors who are more attentive to individual differences. In this thesis, it has been specified that social capital is already an element of microfoundation (e.g. Adner & Helfat, 2003; Helfat & Martin, 2015), for which studying external networking already presupposes (theoretically) a clear

degree of acceptance of behavioral paradigm in the study of public administration. Unlike this recent theory on microfoundation, nevertheless, for contingency-oriented theory<sup>63</sup>, circumstances matter and individuals adapt themselves to internal and external constraints and their individual differences lose consistency. For the contingency perspective, thus, also external networking is only a vehicle, that is, a lever that individuals can use to achieve certain objectives. While maintaining this assumption, however, some authors have given different interpretations to their empirical research, so much so that the same authors in individual articles<sup>64</sup> or in articles in different periods have given greater or lesser emphasis to the "environmental-organizational" role which is contingent in nature or the importance of individual differences. This key of interpretation has led in recent years to put more attention to the comparison of contingency and behavioral dimensions in the formulation of research hypotheses, even if the prospect of micro-foundation of social capital has not yet been fully studied. In short, the authors of the empirical articles in this review try to explain a managerial lever, which is theoretically a microfoundation dimension of individual and organizational outcomes. Following the results of the research of **Walker et al. (2007)**, it is precisely in medium and long-term external relations that public officials build a form of social capital not imposed by external constraints and this process depends in particular on the level of hierarchical responsibility within the organization of origin. In the context of British Local Governments, **Walker et al. (2010)** find that the external networking variable as a whole does not have a significant effect on performance, unlike what was seen in American schools. The authors took a step forward by focusing on relationships with different stakeholders. By disaggregating the external networking dimension, in fact, interactions with central government official and elected members have a negative effect, while relations with managers in other councils and User group representatives have a long-run positive impact (R. M. Walker et al., 2010). Furthermore, by checking for a previous performance assessment, Walker et al. (2010) identify, only relations with

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<sup>63</sup> In early studies on the contingency theory of leadership, Fiedler (1971) hypothesizes that situations and the environment moderate the relationship between the individual characteristic of the leader and the outcome, to the point of canceling the direction of the relationship. As there is no better way to manage a company or make a decision (Morgan, 2006), a contingent leader does nothing but apply a certain style of leadership to respond in the most appropriate way to a given situation with certain individual, group and organizational objectives (Fiedler, 1971). In short, individual differences cancel each other out to make room for the use of organizational "tools" to respond to contingent external or internal needs of the organization.

<sup>64</sup> For instance, Walker et al. (2010) started their paper with "Although managers are by no means the only determinant of performance, they can improve organizational effectiveness—sometimes in substantial ways." (R. M. Walker et al., 2010, p. 731) and they concluded it with "Similarly, we might find that the impact of networking with different actors is contingent on organizational context." (R. M. Walker et al., 2010, p. 739).



central government and user group representatives also have a short-run contribution to organizational performance. Thanks to these further analyzes, Walker et al. (2010) find empirically that the nature of the individual type of relationship can positively or negatively influence performance. This type of analysis will be replicated considering individual dynamic capabilities as outcomes in the empirical part of the thesis for the Italian sample. Andrews et al. (2011) conceptually and strategically start from previous empirical analyzes to research external networking antecedents. Still in the context of English local Authorities, **Andrews et al.** (2011) investigate the organizational and environmental antecedents of external networking behavior. In particular, the empirical results highlight a positive association between different stakeholder demands and slightly formalized organizations with external networking (Andrews et al., 2011). Conversely, this study reveals a negative impact on the part of unpredictable stakeholder demands and defensive and reactive organizational strategies compared to a non-significant correlation for the prospector strategy (Andrews et al., 2011). This is a contingency perspective: "environments seen to be complex can overwhelm the cognitive capacity of an organization's managerial cadre, thus reducing their sense of certainty regarding the external world" (Andrews et al., 2011, p. 358). It is relevant to note that Andrews et al. (2011) interpret the strategy as "the organization's response to the constraints and opportunities that it faces" (p. 358) and refer to the classic strategies of defenders, reactors and prospectors (Miles et al., 1978; Miles & Snow, 1978): the organizational strategy responds to contingent stimuli and "imposes" a line of conduct to public managers. This is the opposite view to the hypothesis that social capital of public officials who do external networking activities influences the individual's ability to be ambidextrous and the dynamic organizational capabilities to be ambidextrous. Recently, by the way, Sollosy et al. (2019) have compared Miles and Snow strategic archetypes with respect to the ambidexterity, which is a more modern strategic management concept, highlighting how the strategies of reactors and defenders can be assimilated to the perspective of exploitation, while the strategies of prospectors to exploration. Thus the ambidextrous strategy would be associated with that of the analysers, or rather, a very explorative and very exploitative orientation is associated with a type of Analyzer strategy (Sollosy et al., 2019), which is not considered, however, in empirical research by Andrews et al. (2011). In fact, these authors consider strategies as a continuum rather than orthogonal and summable and the analyzers would be only redundant (Andrews et al., 2011). The lack of a statistically significant and positive correlation between prospecting strategy and external networking leads to the need for more studies in this regard (Andrews et al., 2011), perhaps with a reformulation of the hypotheses based on microfoundation (as in this work) or, rather, on empirical research repeated over time that can answer hypotheses of causality between variables. It is interest



to notice that, in a more recent article, even the same author (Andrews is co-author and first author in the mentioned paper of 2011 and in that of 2017) author positions himself on a different theoretical paradigm. In resource dependence theory, organizational success derives from the ability to obtain resources in the surrounding environment, especially in the public sector where external stakeholders can play a key role in legitimizing and co-producing strategic choices (Andrews & Beynon, 2017). For **Andrews and Beynon** (2017), in fact, developing external networking with different actors should give the possibility to access critical resources that can simultaneously support operational and strategic decisions crucial for themselves and for the organization. When a technical purpose is paramount, external networking is positively associated with the perception of support by stakeholders, conversely, relational behavior guided by political, reputational and tokenistic motivations is negatively related to perceived stakeholder support (Andrews & Beynon, 2017). In fact, external networking that is not technically oriented can meet problems: constraints, inconsistencies in objectives, power dependence (Andrews & Beynon, 2017). Andrews and Beynon (2017) find that reputation purpose based on legitimation external to strategic choices can hardly improve the support of external actors (however the hypothesis of negative impact formulated by the authors is confirmed in a regression in the statistical analysis phase), while the search for minimal compliance is a highly inefficient strategic logic. In addition to situations of daily complexity, in the literature on external networking in local governments, recently, the focus has been on the effects of external network behavior compared to crisis situations, in which management has additional stresses with respect to the complexity of governance. In particular, financial crisis of municipalities during the great recession (Jimenez, 2017) and crisis management during extreme events (Nohrstedt, 2018) can put a strain on the efficiency and effectiveness of networking, so much so that both of these studies highlight diminishing returns. For **Jimenez** (2017), external networking basically has a positive impact on reducing the financial problems of American municipalities, but this relationship is concave-shaped. Interactions with external stakeholders are associated with an improvement of the budget solvency situation, but only up to a turning point, where too frequent relationships, instead, have a negative impact and rather favour a worsening of the financial situation of the Municipality (Jimenez, 2017). Jimenez (2017, p. 16) identifies some theoretical reasons for diminishing or even negative returns: context make a difference for organizational outcomes of networking; networking isn't a free strategic choice with trade-offs and costs-opportunities, because flexibility level is very low and public governance is a real curb; in Municipalities stakeholders can modify choices and so networking is a political instrument. It is clear that Jimenez (2017) and Andrews et al. (2011) have in mind the perspective of contingency theory applied to public management and in the theoretical analysis of their papers a comparison with other theories is not very significant, because context is a more

prominent driver than individual differences, skills, qualities, cognitive capabilities and so on. Most recently, otherwise, other authors have modelled the dimension and outcomes of external networking with a comparison between contingency and behavioural dimensions. **M.B. Hansen and Villadsen** (2017) analyse determinants of external networking, mixing some behavioural variables with contingent ones. In particular, about behavioural determinants they find that previous experience, age, gender (female) and social science education have a negative impact on strong ties with external stakeholder and, except for age, they don't influence weak-ties networking (M. B. Hansen & Villadsen, 2017). About contingent variables, authors find that organizational variables, as environmental complexity and size, may relate with strong and weak ties, but the statistical support for these findings is mixed (M. B. Hansen & Villadsen, 2017). Finally, following Torienfield et al. (2013), Hansen and Villadsen (2017, p. 1573) found that weak ("less frequent relations with dissimilar outside actors") and strong ties ("frequent interactions to similar other actors") are two different dimensions of external networking. For **Nohrstedt** (2018), it is necessary to pay attention to the management of complex networks still in the context of municipalities and individual quality theoretically matters. In his study, external networking shows a positive association with organizational performance in the crisis management domain. At the same time, the variable of interest generates diminishing and negative returns, due to the increasing costs of networking that may not be adequately considered by the participants (Nohrstedt, 2018). Among other things, in this field of emergencies and disasters, network analysis is a widely used method and local governments need to move towards a network strategy of coordination or collaboration with stakeholders that are interested (Kapucu & Garayev, 2016) and, in specific situations, therefore, public servants have a crucial role as actors within the complex network. By focusing on case studies, Nohrstedt (2018) finds that perseverance in interpersonal networks, a better coordination, a better sharing of problem perceptions and conditions of collaboration reduce combined problems in the governance of extreme events. It is noteworthy that these two studies compared to crisis management in municipalities confirm, in fact, what had already been seen for school managers in Texas. External networking has a positive effect on performance, but nonlinear with evident diminishing returns and so each public servants need to consider this trade-off (Hicklin et al., 2007). If public managers are rational actors, their skills matter, considering that they need to coordinate resources (human, knowledge and so on) and they deal with daily distribution of time and effort during a networked production of public value: research shows that skilful managers are more efficient and perceptive rather than able to calculate returns more effectively (Hicklin et al., 2007). This is a theoretical context of complementarity between contingency theory and microfoundation, as the situation analyzed is completely contingent in

its maximum expression of organization in anticipation of extreme events, but the quality of management is hypothesized as having a significant correlation (Nohrstedt, 2018), as it was already taken into account for school managers (Hicklin et al., 2007). However, more detailed analyses show that training and education of public servants do not positively moderate the non-linear negative impact of external networking, so that there is a gap in the literature on managerial qualities in problematic complex networks (Nohrstedt, 2018). Lewis et al. (2018) also set themselves in a paradigm of comparison between contingency and behavioural theories to explain innovation capacity in three major cities taken as case studies. Indeed, the authors (Lewis et al., 2018, p. 4) hypothesize that the antecedents of innovation capacity are "contingent" innovation drivers (i.e. "structures, processes and contextual factors") and "behavioural" factors, such as the leadership dimension of senior managers (i.e. "the qualities and capabilities of senior individuals within the organization") together with external networking. For Lewis et al. (2018), contingency (innovation) drivers and behavioural dimensions (leadership styles of top managers and politicians) are hypothetically associated with external networking and innovation capacity and are interrelated. According to their research, however, empirical data deny the hypothesis of correlation between contingency and external networking dimensions and it is the leadership style, which can be interpreted as the behavioural element, that has a greater impact on perceived innovation, in particular, than other contextual, procedural and structural factors (Lewis et al., 2018). To date, Lewis et al. (2018) are the only authors in the literature of public administration who have connected external networking with innovation capacity in the context of three case studies that are difficult to replicate cross-section and, therefore, with empirical research that cannot be generalized to other local governments. Zyzak et al. (2019) study the antecedents of external networking classified by distance, comparing contingency and behavioural dimensions. The authors find that the behavioural aspect, which is considered in the study and expressed in terms of leadership experience and managerial capacity, has a greater positive impact on the external networking variable, although differentiated by distance (e.g. leadership experience has a greater positive and significant impact on Far-distance) (Zyzak & Jacobsen, 2019). Viceversa organizational size has a negative, but not significant impact, while age matters to strengthen relationships at greater distance (Zyzak & Jacobsen, 2019). These empirical results, however, are not replicable to the Municipalities: the analysis unit is in meta-organizations (Regional Councils) that have a role of discussion, exchange of information and coordination, when, instead, the real decision-making power is left to the administrative and political level of the Municipalities. Therefore, networking can be of higher base (Zyzak & Jacobsen, 2019), but without an effective application to decisions and strategy.

**In conclusion,** Jimenez (2017) and Nohrstedt (2018) find negative nonlinear effect in local governments, where outcomes are goals attainment for the latter and financial outcomes for the former, and they replicate comparable nonlinear effects education performances (Hicklin et al., 2007), but, to date, in literature of public administration, there is a gap about (possible) microfoundation and strategic outcomes in Municipalities. The nonlinear effects are coherent with the perspective validated at managerial level in private sector that sparsely connected external networks are more positive for ambidexterity than networks with a high level of density (Rogan & Mors, 2014). Recently, Barrutia and Echebarria (2019) find that upward collaboration (ties with the government) and inward collaboration (ties with local stakeholders) have a positive impact on exploitative innovation and outward collaboration (ties with peers) has a positive impact on explorative innovation. Following the theory expressed by advocates of network governance, the article confirms that this process is facilitated by the presence of a context in which trust and appropriate voice prevails and in networks Municipalities can make exploitative innovations using more efficiently the resources that can be made available for explorative innovations (Barrutia & Echebarria, 2019). Apparently this research may resemble the hypotheses that are adopted here of correlation between external networking and dynamic capabilities, but the differences are remarkable. In particular, the authors of this paper focus on Spanish municipal networks concerning sustainability-related issues, so the focus is not on single local governments and the outcome variable is innovation exploitation and exploration according to the measure of Jansen et al. (2006), which is conceptually different from exploration, exploitation and ambidexterity according to the original perspective of March (1991), finally, they only use specific relationships within Spanish networks and not the list of stakeholders, as expressed in the literature on external networking (Barrutia & Echebarria, 2019). Clearly, the article by Barrutia and Echebarria (2019) reinforces the hypothesis of correlation between external networking and individual outcomes of both microfoundation and organizational dimensions. With respect to antecedent dimensions, after Walker's et al.'s the idea that individual managers can boost organizational outcomes in local governments (R. M. Walker et al., 2010), almost ten years have passed and an empirical systematic research about this proposition has not yet arrived. Essentially, public administration research in recent years has left the variability of external networking largely unexplained, because there has been little attention to the antecedents (M. B. Hansen & Villadsen, 2017). There are only two articles in top journals related to local governments in this review in 13 years that have been considered to be considered (2007-2019). In addition, the focus has been on contingency dimensions (Andrews & Beynon, 2017) or rough measures of quality managers that have been deepened below, while research will increasingly focus on behavioural influencers (Zyzak

& Jacobsen, 2019) with a perspective of microfoundation. New research is needed on the variability of antecedents and the effect of external networking (also in terms of ties of different nature) on efficiency and innovativeness (M. B. Hansen & Villadsen, 2017). In fact, research conducted to date has not linked external networking to ambidexterity in the public sector. Similarly, data on the impact towards innovation is limited. Perceived innovation has been studied on three case studies of large cities (Lewis et al., 2018) that cannot be generalized and with a perception of innovation capacity (self-rated) that is difficult to interpret at the micro level and that at the level of groups and macro organizations risks misunderstandings<sup>65</sup>.

The next step is, therefore, to go deeper into the understanding of the microfoundation of networking behaviour, starting from a conceptual vision for which "individual managers matter" (Walker et al., 2007, p. 753). Specifically, in this work the starting point is the idea of microfoundation that consists in deepening the theme of behavioural antecedents of external networking, how they can interact to modify the effects of such organizational behavior on individual and organizational outcomes and, finally, how this measure of (external) social capital can be, hypothetically, a mediator between behavioural antecedents and the same outcomes. In literature, there is a reference that has not yet been sufficiently understood to investigate quality management relationships in a more extensive way according to multiple perspectives (Hicklin et al., 2007). Quality manager is a notably very difficult dimensions to measure in public sector (Meier & O'Toole, 2010). There is a first gap on the lack of empirical explanation of individual differences in external networking behaviour in the public sector. This gap starts from denying the cross-sectional impact of public officials who adhere to a networking behaviour and manage it in order to optimize the outcome of their own performance and organizational ones (Andrews et al., 2011) to the choice of analyzing a behavioural dimension with rough measures. In fact, the public administration literature simplifies the set of "managerial/individual capabilities" (identified as antecedent of the microfoundation of dynamic capabilities in this work) with "quality management". Only rough and spurious measures of human capital have been used (M. B. Hansen & Villadsen, 2017; Nohrstedt, 2018; Zyzak & Jacobsen, 2019), as a relative (current or previous) managerial position in an organization (M. B. Hansen & Villadsen, 2017) or in a meta organization (Zyzak & Jacobsen, 2019) or indirectly with wage differences (Hicklin et al., 2007; Meier & O'Toole, 2002, 2010). Regarding the effects of behavioural antecedents, in Hansen and Villadsen

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<sup>65</sup> These are the statements that Lewis et al. (2018, p. 300) posed to measure innovation: "1) This municipality is innovative. 2) My immediate colleagues are innovative. 3) The division/department I work in is innovative." These statements are not an individual self-rating and they are multilevel in nature, but there is not a nested or multilevel analysis in this empirical research, because it refers to three case studies (Lewis et al., 2018).

(2017) only the variable "age" has a negative effect on weak and strong ties, while the other dimensions of human capital (education, position, tenure, gender, previous experience) have a (negative) association with strong ties, but none with weak ties (M. B. Hansen & Villadsen, 2017). Leader experience and position have a positive impact on external behaviour, but not for all the segments distinguished by a measure of distance (Zyzak & Jacobsen, 2019). From the first paper relative to external networking in local governments by Walker et al. (2007) and to date it seems that there are no researches (theoretically and empirically) based on behavioural public administration on this topic with the available knowledge. The issues about marginal returns and the question on how other behavioural or contingency dimensions interact with external networking to achieve individual and organizational outcomes are more complex. In particular, measures of human capital (education and training) don't provide sufficient qualities (and empirical evidence) in managing trade-offs and challenges in external networking (Nohrstedt, 2018) and, thus, better proxies for skills in networking are necessary. A combination of education and training has no positive association either with organisational performance or with diminishing returns (Nohrstedt, 2018). In this sense, also literature in public administration indirectly confirms the necessity to a deep investigation on individual capabilities as hypothetical antecedents of individual social capital and positive moderators in relations between external networking and individual or organizational outcomes. In fact, there is a demonstrated high variability in managerial quality and its strong impact on individual and organizational outcomes (Meier & O'Toole, 2002). A second way to measure the quality of management has been validated with a rough measure based on residues compared to relative salaries, assuming that the market positively rewards skills and local boards that choose school managers are able to monitor managers' skills (Hicklin et al., 2007; Meier & O'Toole, 2002). This measure of "quality management" based on salary residuals is positively correlated with performance (Hicklin et al., 2007; Meier & O'Toole, 2002) and tends to eliminate the negative impact of negative or diminishing marginal returns of external networking (Hicklin et al., 2007). This measure based on a market wage model, however, is not applicable to the context of local governments in Italy where public servants' wages derive from national collective bargaining and jobs are created through public examinations. In short, in Italy, there is no market supply and demand model because it is a public system, where the introduction of methods derived from the business world has been slow, heterogeneous and difficult to apply in many fields of public administration. this difficulty of interpretation can be applied to most of the public organizations at a global level, therefore, basically, this measure of quality management is not replicable and has an explanatory capacity only in determined and limited contexts. These measures can sometimes be distant from a public system that differs from the market-oriented logic that distinguishes the United States. Finally, Zyzak and Jacobsen (2019)

find that managerial position ("managerial capacity") doesn't have an effect on external networking and, at the same time, leadership experience in different sectors have a positive effect only on the far-distance type of behaviour, but no one for other measures of network distance. In short, on the one hand, quality management has proven positive effects on performance (Hicklin et al., 2007; Meier & O'Toole, 2002), but the simplistic and rough measures adopted do not always succeed in explaining secondary effects and more complex phenomena. After a thorough analysis of these articles in top journals from 2007 to 2019, it is evident that "too much of a good thing" (*"il troppo stropia"* in Italian language or *"trop d'effet tue l'effet"* in French) is an effect concerning external networking behaviour. On this evidence, it is possible to make my hypothesis that also with regard to the individual and organizational outcomes identified in this thesis the effect of diminishing returns comes into motion. In the literature of public administration and public management, there is a gap with respect to the correlation and marginal returns between external networking and ambidexterity and innovation at the individual and organizational level.

The empirical analysis on these relationships is even more limited because rough measures are proxies that are not always applicable, they determine the individual "quality" only in a spurious and indirect way and the effects have limited statistical relevance for what has been observed so far. On the one hand, the type of relationship can be more or less depressing in its direct or indirect effect on the outcome (Andrews & Beynon, 2017). However, there is still a gap in the literature with respect to identifying individual managerial factors that optimize the effectiveness and efficiency external networking in complex networked governance of public services (Nohrstedt, 2018). The objective is to implement directly or indirectly an individual capacity for better management of the costs of external networking in the environment in order to maximize the activity and frequency of relationships, without losing too much "energy" that would be necessary to seize the opportunities necessary to increase performance (Hicklin et al., 2007). Lewis et al. (2018) focus on the "leadership qualities" (p.5) of top managers and politicians and find them relevant to the perception of innovation and positively correlated with external networking, but these authors do not go into the issue of possible mediation and/or moderation models or the marginal effect and returns. In summary, skillful managers should have the capabilities to balance across multiple internal and external functions paying attention on marginal thinking, avoiding diminishing returns (Hicklin et al., 2007). At the same time, there is a gap in literature about the role of "gatekeepers", i.e. "an individual who draws information from the organization's external environment and spreads it internally through his or her workplace social network" (Carnabuci & Diószegi, 2015, p. 897), which are theoretically relevant actors for innovation in organizations from early studies (Michael L. Tushman & Katz, 1980). Table 10 below shows that in last years only an article treats the outcome of innovative work behaviour with the limits that it considers

only senior managers and three large cities (Lewis et al., 2018). Even if there is a research gap from the last decade (Mom et al., 2009) and recent qualitative research highlights the need to deepen the study of the role of external users to facilitate the implementation of ambidextrous activities (Palm & Lilja, 2017), there are not empirical researches connecting external networking and ambidexterity in public administration. These assumptions are congruent with recent articles which promote the development of a collaborative vision of innovation in the public sector (e.g. Bekkers & Tummers, 2018; Torfing, 2019) with the perspective of solve wicked problems in the Network Governance (N. Roberts, 2000). External networking is also a source of technology-push that can enhance the implementation of innovation when knowledge is used by member of public organizations (Clausen et al., 2020). After making these considerations and considering external networking as an external measure of social capital, some hypotheses emerge and this thesis tries to find an empirical answer to them in specific field of municipalities.

#### **- About individual and organizational outcomes of external networking**

**Hypotheses 2:** *External networking has a positive non-linear impact on individual and organizational dynamic capabilities in local governments.*

*Hp 2.1 External networking has a positive effect on individual ambidexterity.*

*Hp 2.2 External networking has a positive effect on innovative work behaviour.*

*Hp Multilevel 2. External networking has a positive effect on organizational outcomes (dynamic capabilities): organizational ambidexterity (M2.1) and organizational innovation (M2.2).*

*The effects of External networking are non-linear, but they contemplate diminishing returns. In particular, these relations in Hp2 and HpM2 between External networking and outcomes (dynamic capabilities) are nonlinear (there are diminishing returns (concave-shaped relation)): individual ambidexterity (2.3); innovative work behavior (2.4); organizational ambidexterity (M2.3); organizational innovation (M2.4).*

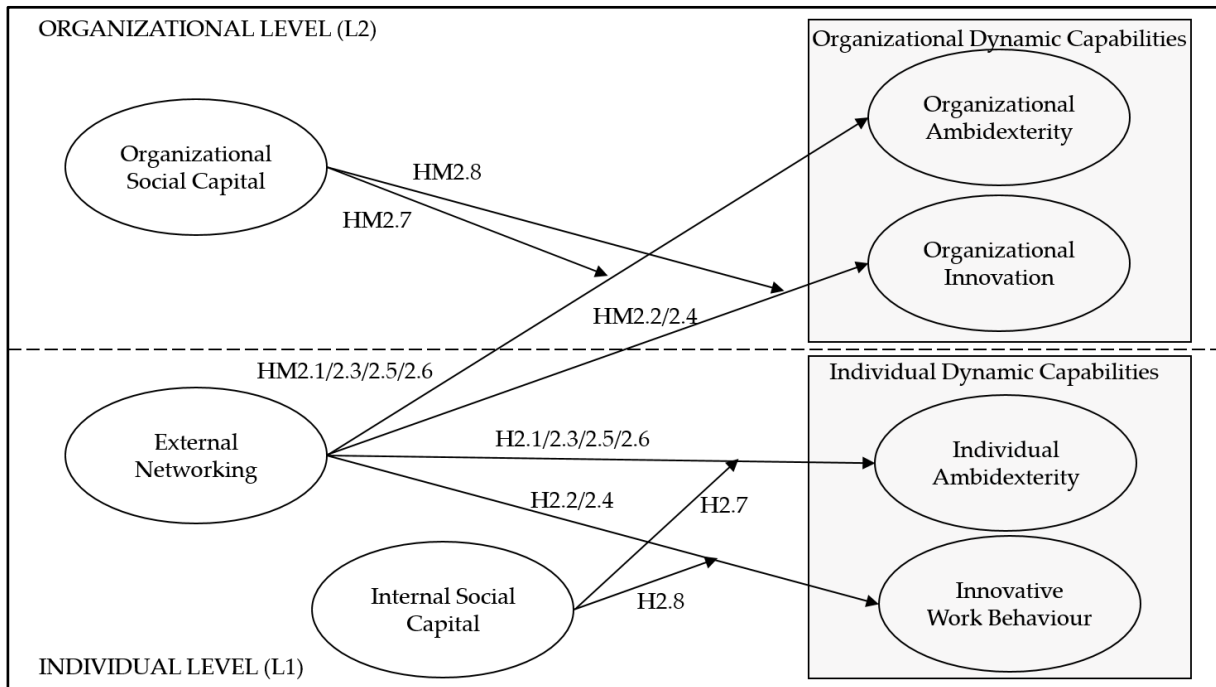
For these hypotheses, the construct of External networking is measured through factor analysis and it is an overall factor score as it is validated in literature of public administration long since (Meier & O'Toole, 2001; R. M. Walker et al., 2010). Following recent suggestions from Hansen and Villadsen (2017) about the application of social network analysis principles, to study more deeply the hypotheses 2 and M2, External networking can be measured in terms of weak and strong ties outside the organization.

Hypotheses 2 and M2 can be evaluated with three different measures of External networking:

- a) Overall Factor Score
- b) Weak Ties
- C) Strong Ties



Figure 21: hypothetical relations between external networking and multilevel outcomes.



Moreover, thanks to considerations in the chapter about social capital and the distinction between two dimensions that shape ambidexterity, this thesis posit also that:

*External Strong Ties have a (nonlinear) positive effect on (2.5) individual and (M2.5) organizational exploitation with diminishing returns.*

*External Weak Ties have a (nonlinear) positive effect on (2.6) individual and (M2.6) organizational exploration with diminishing returns.*

In conclusion, taking in consideration the relevance of internal social capital, it possible to recognize that external knowledge may improve individual and organizational outcomes if the knowledge network inside the local governance is well connected.

Rogan and Mors (2014) study interactive effects between internal and external networking for senior manager in a private company and they can be significative (for exemple, high internal and external ties improve managerial ambidexterity). Ambidexterity can tend slightly towards an exploration or exploitation orientation, so the density of internal and external networks can be favorable to strengthen one of these two groups and in other cases effexts could be absent or different: sparse external networks encourage the identification of novel opportunities and dense internal network foster the support for resource mobilization (Rogan & Mors, 2014). Moreover, they suggest to research these effects at different level in the hierarchy and different organizations (Rogan & Mors, 2014). In this sense, highly connected public servants with stakeholders in the Network Governance take knowledge outside the organization (as in theoretical model at page 133) and an efficient internal knowledge network may help to diffuse the knowledge within the

organization. On the contrary, if the knowledge network is too sparse and does not work, external knowledge is not disseminated among colleagues and probably the positive effect of external networking disappear. After this examination, it is possible to assume that:

*Internal social capital (as individual dimension of internal knowledge network) moderates the relation between External networking and individual Dynamic Capabilities: individual ambidexterity (2.7) and innovative work behaviour (2.8).*

*Organizational Social capital (as organizational dimension of internal knowledge network) moderates the relation between External networking and organizational Dynamic Capabilities: organizational ambidexterity (M2.7) and organizational innovation (M2.8).*

The figure summarizes all the hypotheses on the relationships identified in this part of the thesis for the sake of clarity. The hypotheses 2.5/2.6 and M2.5/2.6 are also included, even if they do not concern the whole constructs of External networking and Ambidexterity, but elements that compose them, so that Exploration and Exploitation at individual and organizational level for the latter, weak and strong ties for the former.

**- About antecedents of external networking, moderating and mediating effects (preview: the focus on these hypotheses is in next parts of the thesis)**

*Cognitive capabilities have a positive impact on external networking.<sup>66</sup> External networking mediates the relation between cognitive capabilities and individual and organizational outcomes. Cognitive capabilities moderates the relation between external networking and outcomes, eliminating diminishing and negatives returns (the relation between external networking and outcomes becomes linear, controlling for cognitive capabilities). The focus about specific cognitive capabilities and relations with external networking are treated carefully in next chapters of this thesis.*

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<sup>66</sup> In particular, in next chapter, it will be hypothesized that mindfulness and political skill have a positive impact on external networking (in both dimensions of both weak and strong ties).

Table 10: external networking in local governments - Findings in empirical research<sup>67</sup>.

Reference	Theories <sup>68</sup>	Independent Variables	Moderation Variables	Mediation Variables	Outcomes (Findings)	Analysis Unit (Final Sample)	Analysis Methodology	Context	Data Collection
Walker et al. (2007)	Not explicit <sup>69</sup>	Position (corporate officers, chief officers, service managers)	-	-	<b>External networking</b> (8 Items: actors and relational frequency; no factor score)	1026 managers in 102 local authorities	Factor Analysis and Anova tests	Public (Local Authorities)	England (2003)
Walker et al. (2010)	Contingency	<b>External networking</b> (8 Items <sup>70</sup> : actors and relational frequency. Only two actors have an impact: <i>User group representatives</i> <sup>*</sup> , <i>Central Government officials</i> <sup>*</sup> ), Strategic Management (rational planning, logical incrementalism, prospector, <i>defender</i> <sup>*</sup> , reactor), <i>Prior Performance</i> <sub>t-1</sub> <sup>*</sup>	-	-	Performance:	Managers in 69 local authorities	Ols regression with robust estimations	Public (Local Authorities)	England (Performance: December 2002 and 2003; External networking: Summer 2003 – Temporal lag)
Andrews et al. (2011)	Contingency, Structural Holes	Archival environment ( <i>Age diversity</i> <sup>*</sup> ), Perceived environment, Stakeholder ( <i>Diverse demands</i> <sup>*</sup> , <i>Unpredictable demands</i> <sup>*</sup> ), <b>Strategy</b> (Prospecting, <i>Defending</i> <sup>*</sup> , <i>Reacting</i> <sup>*</sup> ), Structure ( <b>Decentralization</b> , <i>Low Formalization</i> <sup>*</sup> ) <sup>71</sup>	-	-	<b>External networking</b> (10 Items: actors and relational frequency; overall factor score)	184 local authorities and 1,082 respondents (corporate officers, chief officers, and service officers).	Ols regression with robust estimations	Public (Local Authorities)	England (2007)
Andrews & Beynon (2017)	Resource dependency, Institutional	<b>External networking</b> (7 Items: actors and relational frequency. Cluster analysis identify four types of managerial networking: <i>Technical</i> <sup>*</sup> , <i>Reputational</i> <sup>†</sup> , <i>Political</i> <sup>*</sup> and <i>Tokenistic</i> <sup>*</sup> )	-	-	Stakeholder support	1008 complete respondents: 42 chief executive officers, 260 strategic directors, 401 service heads, and 305 service officers.	Fuzzy clustering and multivariate hierarchical regression	Public (Local Authorities)	England (2007 (Andrews et al., 2011))

<sup>67</sup> In italics and with top apex the variables that are statistically significant (and the sign of the correlation). If there are no signs in apex, it means that the dimension is not statistically significant. In bold the variables that are interesting for the model and variables of the thesis.

<sup>68</sup> As far as public administration and public management theories are concerned, all these articles that are taken as a reference in the table are based on the theory of (networked) public governance and not on classical bureaucracy or New Public Management. The classification concerns the presence of explicitly exposed theories or a clear reference to factors related to contingency theory (organizational, environmental, contingent nature of management (R. M. Walker et al., 2010, p. 738)) or behavioural theory (microfoundation and the role of individuals).

<sup>69</sup> In this seminal empirical research compared to the British local governments, the authors repeatedly mention the importance of contingency and behavioral factors, without, however, delving into the details of the antecedents. (R. M. Walker et al., 2007).

<sup>70</sup> In Table 10, only references to statistically significant stakeholders with respect to performance when the authors introduced the autoregressive performance term (R. M. Walker et al., 2010). Excluding prior performance in the analysis, the authors find that relations with managers in other councils, rational planning, prospector strategy (positive) and elected members (negative) are also statistically significant in the model. The complete list of actors considered in the analysis is in the Appendix.

<sup>71</sup> I have listed only the macro-areas of the independent variables, apart from Strategy and Organization, as regards the elements of comparison with respect to dimensions treated in the model of this thesis.

Reference	Theories <sup>68</sup>	Independent Variables	Moderation Variables	Mediation Variables	Outcomes (Findings)	Analysis Unit (Final Sample)	Analysis Methodology	Context	Data Collection
Hansen & Villadsen (2017)	Strong and Weak ties, Contingency and Behavioural	<i>Previous managerial position, social science education, CEO position, Environmental complexity (Socio-economic index, Non-Western Immigrants), Size (population (ln)<sup>72</sup>)</i>	-	-	<b>External networking</b> (Actors and frequency for 4 private stakeholders and 5 public ones; additive score for weak and strong ties)	240-256 executives in 98 local governments	Poisson regressions (plus Multilevel models not reported)	Public (Municipalities)	Denmark (2008)
Jimenez (2017)	Crisis Management (budgetary after great recession), Contingency	<b>External networking<sup>73</sup></b> (11 Items: actors and relational frequency. Cluster analysis identify a single factor considered as networking index and normalized to zero in the analyses); <b>External networking Squared<sup>74</sup></b>	-	-	Fiscal resilience index, Unrestricted net asset ratio, Change in net asset ratio	268 municipalities (respondents: appointed managers or budget/finance department head)	Pooled OLS, pooled IV regression and Polynomial regression	Public (Municipalities)	Usa (2015)
Nohrstedt (2018)	Crisis Management (Disaster), Contingency and Behavioural	<b>External networking<sup>75</sup></b> (9 x 4 Items; multiplicative score), <b>External networking Squared<sup>76</sup></b> , <i>Past Performance<sup>77</sup></i> , <i>Coordination resources</i> , <i>Central resources</i> , <i>Number of events</i> , <i>Natural hazard experiences</i> , <i>Risk Analysis<sup>78</sup></i> , <i>Quality Management (Education, Training)</i>	(Quality Management)	-	Goal Attainment (Performance at organizational level)	290 Public Managers in Sweden Municipalities (responsibilities for crises)	Linear and nonlinear multivariate regression analysis	Public (Municipalities)	Swedish (2009-2011)
Lewis et al. (2018)	Contingency and Behavioural <sup>73</sup>	<b>External networking</b> (13 Items: actors and relational frequency; prorated summative overall score), <i>Leadership Styles (Altruistic, Transformational, Entrepreneur, Network Governance, Transactional), Innovation, Drivers<sup>74</sup></i>	-	-	<b>Self-Rated Innovation<sup>75</sup></b>	323 Senior Administrators in three European city governments	Structural Equation Model	Public (Municipalities)	Barcelona, Copenhagen, Rotterdam <sup>76</sup>

<sup>72</sup> The authors of this article divide the hypotheses into two series: the antecedents of weak ties are behavioural, while the antecedents of strong ties are contingency (Environmental complexity, size), therefore, the association refers to these two models, apart from the CEO position which is not significant for weak ties.

<sup>73</sup> The authors find a statistical association between leadership (behavioral dimension) and external networking, but, at the same time, there is no significant correlation between innovation drivers (contingency dimension) and external networking (Lewis et al., 2018).

<sup>74</sup> The direct effect of external networking is negative for one of the three cities analyzed as case studies and positive for the other two cities, considering that in the overall sample the direct effect of contingency dimensions is positive.

<sup>75</sup> The scale used by Lewis et al. (2018, p. 13) is difficult to interpret, as the authors de facto consider three organizational levels of analysis, (1- "This municipality is innovative." 2 - "My immediate colleagues are innovative." 3 - "The division/department I work in is innovative. "), although the analysis method used is not multilevel and remains on SEM at individual degree. The authors consider it as "an individual's view of how innovative the organization they work within is" (Lewis et al., 2018, p. 17).

<sup>76</sup> The authors do not indicate the data collection date.

Reference	Theories <sup>68</sup>	Independent Variables	Moderation Variables	Mediation Variables	Outcomes (Findings)	Analysis Unit (Final Sample)	Analysis Methodology	Context	Data Collection
Zyzak & Jacobsen (2019)	Resource dependency, Contingency and Behavioural	<i>Leader experience</i> <sup>*</sup> , Managerial position, <i>Percentage position</i> <sup>*</sup> , <i>Administrative capacity</i> , Organizational size, <i>Organizational age</i> <sup>*</sup> , Symmetry <sup>77</sup>	-	-	<b>External networking</b> <sup>78</sup> (Actors, frequency, 2 kinds of interactions, meeting and general, 4 summative indexes based on distance)	53 Managers in Meta Organizations	Multiple Regression Analysis (OLS)	Public (Regional Councils)	Norway <sup>79</sup>

**f) Relations between politics, management and bureaucracy in local governments: theoretical framework and an in-depth research hypothesis.**

Why is it necessary to study the relationship between politics and administrators? In the study of local government governance and dynamic change processes, it is no longer sufficient to remain within the narrow paradigm of tradition, hierarchy, and rationality. It is necessary to consider the complexity and influence of politics that are reflected in relational phenomena inside and outside the organization (Haveri, 2006). Focusing on the internal level, the relations between elected officials and professional administrations are at the heart of public administration practice (e.g. Demir, 2009; K. M. Hansen & Ejersbo, 2002; Svava, 2001) and their understanding is a critical aspect (Svava, 2015). For over 130 years, public administration studies have been dealing with the relations between politics and administration from different points of view that have been debated over time (K. M. Hansen & Ejersbo, 2002; Svava, 2001). It is an issue that concerns many governments and different levels of government around the world (Svava, 2006a) and it is clear to professionals that relations between politicians and public administrators are a success story for local governments (Nalbandian, 1994). On a terminological level, in the rest of the text, no distinction is made between administration versus management, because the dualism between the two is "sterile" when the aim is to have an integrated and comprehensive view of practice in the context of 21st century public administration (S. P. Osborne, 2006). Actually, Management is sometimes used in a reductive way and in some research, in fact, it concerns only the operational part in a dichotomous continuum separating administration from "management" (*i.e.* Demir, 2009). In contrast to a purely dichotomous model, more and more researches assume the presence of spaces of interaction and overlapping of roles (Alford et al., 2017; Svava, 2006a). These areas of

<sup>77</sup> Dimensions are significant only with respect to one or more of the external networking indicators (see next note) and no antecedent is significant for all four types of interaction. For more details, see the journal article (Zyzak & Jacobsen, 2019, p. 15).

<sup>78</sup> There are four indicators for external networking: close, near-distance, middle-distance, far-distance (Zyzak & Jacobsen, 2019).

<sup>79</sup> The authors do not indicate the data collection date.

complementarity must increasingly have resonance and foundation first from the theoretical level and at the same time from the empirical point of view in which contingent dimensions are relevant and not always considered (Demir, 2009). As Alford points out recently (2017), although New Public Management has revived the dichotomous model (MacDermott, 2008) with the logic of the "steering from rowing" separation (D. Osborne & Gaebler, 1993) and with the idea that accountability requires a clear division of responsibilities, "freedom to manage" and not a diffusion of power, but a clear orientation towards idealistic managerial units in which overlapping is totally absent (Hood, 1991), more recently the paradigm of Network Governance re-establishes the relevance of relations (S. P. Osborne, 2006, 2010) and the potential and effective overlapping of roles, again blurring the dichotomous concept of opposition (Torfing & Triantafillou, 2013). The effect of the NPM in favour of the dichotomous model is only temporary because the NPM itself can be considered as a stage of transition from the classic bureaucratic and static model that had been predominant until the late 1970s to the NPG model that is more pluralistic and pluralistic (S. P. Osborne, 2006). Osborne (2006) specifies that in the bureaucratic model there was a split between politics and administration that was defined in the distance of interpersonal relations within the organization (p. 378), while in the NPM there is an "organizational distance" between the phase of political choice and the phase of implementation of political choices in "arm's length" organizations (p.379). In the bureaucratic-Weberian paradigm, relations were vertical and hierarchical, based on legality, impartiality and *Sachlichkeit* (professional competence) of the administration and the electoral competition of representative democracy on the other hand, with public managers (by definition accountable) implementing and in fact operatively executing the political choices made by elected politicians (S. P. Osborne, 2006; Torfing & Triantafillou, 2013). In the NPM, on the other hand, the contact between policy making and implementation is only partially articulated and unconnected because the organizational units are considered independent according to the logic of public choice (S. P. Osborne, 2006).

From a point of view of the evolution of doctrine in history, Svara (1985) identified three models that had a practical impact until the 1980s:

- The first is the strong dichotomy between politics and administration ("Policy administration dichotomy"), attributed to Wilson (1887) and Goodnow (1900) and which was successful until the 1930s and then after the 1950s the work of Simon (1947).
- The second report model "Mixture in policy model" emerged after the Second World War and provides a strong opportunity for administrators to manage resources ("initiating proposals, exercising discretion, manipulating expertise, writing budgets, and determining the delivery of service" (Svara, 1985, p. 222)) and to implement policy formulations different from what politicians

predicted, which neither with the legislative nor the executive power would be able to control bureaucracy.

- The third model is: "Elected Official-Administrator as Co-Equals in Policy Model". In the 1980s, New Public Administration (Frederickson, 1980; Marini, 1971) took over the previous model giving it a more normative value, so that the administration can go beyond politics in building policy-making and having direct ties with the public to maintain the values of equity and participation. Administrators become "political actors" (Svara, 1985, p. 224) in opposition to the classic concept of democracy theories and the pure dichotomy between politics and administration.

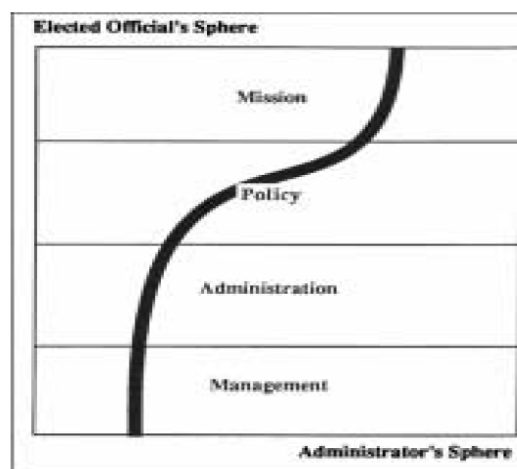
In the following years, this perspective evolves in New Public Management with a return to the dichotomous model, in which the relations between politics and administration are based on the model of the relationship between principal and agent, which leads to a separation of roles, whereby politicians should define the objectives and outputs of policies while administrators should achieve certain objectives and have a wide discretion to choose the methods to achieve them (Svara, 2006a, p. 958). At the extreme we have a management that is isolated and assumed to be neutral in both policy and values, but which acts with discretion (Svara, 2006a). The line of demarcation, therefore, is brought to prescriptions that could bring implications that are not too democratic, in which in the minds of administrators the politician is seen as the one who speaks for the citizens approving objectives and principles rather than acting in their name and on their behalf, while management is conceived of the role of making concrete proposals and controlling the administrative apparatus (Svara, 2006b). The fundamental aspects to define a certain model that is dichotomous of separation, of greater management autonomy (which can lead to the government of bureaucracy, whose example is the government of the military), of "responsive" administrators (with administrators supporting politicians, who occupy a superior position and formal leadership) or of overlapping are the nature of the hierarchical relationship and the differentiation of roles (Svara, 2006a). Clarification is needed with respect to the dichotomous model. The politics-administration dichotomy is one of the most important and enduring constructs in public administration and has tried to justify relations in democratic societies, but it is clear that there has been an "intellectual detour" (Svara, 1999a, p. 52). Historically, in fact, it should be noted that Wilson (1887) never wrote the word "dichotomy", but focused on "separation", i.e. the presence of a dividing line so that politics and administration remained in their own territories (Alford et al., 2017) and only later in the 1920s did scholars uncritically accept the dichotomous model (Svara, 1999a). Wilson and Goodnow's writings focus attention on the idea of reducing the interference of politicians and parties in defence of public administrators (Svara, 2006a) and are substantially inconsistent with the dichotomous model developed later, because from the beginning Wilson had understood that even administrators "interpret and respond to public opinion"

(Svara, 1999a, p. 52) and for Goodnow there was the intention to identify a continuity between the political and administrative spheres, even if the latter had to have discretion, impartiality and efficiency and had to be isolated from "partisan" political inference, and to strengthen relations rather than separate the two groups (Svara, 1999a, p. 53). In essence, in classical writings there is a simultaneous emphasis on the separation of administration from political inference and on relations in the sense of the incorporation of administration in both the design and implementation of political choices (Svara, 2001, p. 176). For example, according to Svara (2001), this approach is confirmed by White (1926) who distracts from the concerns of an uncontrollable administration and pushes for cooperation ("controlling in the first instance the application of law to the individual case, cooperating also in the formulation of policy (White, 1926, p. 22)). The dichotomous model has been criticized since the 1950s for lack of empirical verification (Alford et al., 2017; Sayre, 1958; Svara, 2001; Waldo, 1948), so much so that at the end of the 1990s it was sceptically called an "aberrant" model (Svara, 1999a) and a "myth" (Svara, 2001). Although the dichotomous model remained dominant in theoretical thought (Svara, 2006b) and came back to life with the NPM (Alford et al., 2017), this clear-cut separation, however, is not realistic, since there are intersections in roles and, moreover, the democratic context is decisive (Svara, 2006b). The dichotomous model is more a myth than an empirical reality, which is much more complex (Alford et al., 2017). This phenomenon is more evident in local governments (Svara, 1999a, 2006b), where politicians and managers meet with greater accessibility ("Elected officials and administrators can easily reach each other and may be connected through social ties. (Svara, 2006b, p. 1065)), where civil servants are also part of the voting community and there is often direct contact of public managers and politicians with citizens for the functioning of public services (Svara, 2006b, p. 1065). In essence, the relations between politics and management in local authorities are not a hidden abstraction and complementarity is a more appropriate model than the limited view of the dichotomy (Svara, 2006b). Politicians and managers are separate and only partially separate sets of officials whose roles can strongly overlap in the governance process, thanks to their extensive interaction, mutual influence and interdependence (Svara, 2006b). Already Svara (1999b, p. 225) about twenty years ago noted how the complementarity of political and professional leadership found points of overlap in the relationship between board (under whose sphere there are activities of administration and management) and city manager (who can go so far as to engage in the mission of the organization). There are various approaches that see overlapping roles and mutual influence resulting from overlapping functions and extensive relationships, so that administrators have a wider range of choices and can also deal with policy and politicians make choices related to administration (Svara, 2006a, p. 962). However, there remain distinctions in



values and perspectives (Svara, 2006a), which should not be overlooked in the analysis. For Norton (1991) common work and mutual understanding between elected politicians and the administration are crucial to the good functioning and efficiency of local government. In response and in order to overcome the dichotomous model, a fourth model is developed first to be "dichotomy-duality", in which Svara (1985, 2006b) identifies 4 areas of potential relationships, role intersection and involvement: mission ("the organization's philosophy, its thrust, the broad goals it sets for itself, and the things it chooses not to do" (Svara, 1985, p. 224), policy (it "refers to middle-range policy decisions, e.g., how to spend government revenues, whether to initiate new programs or create new offices, and how to distribute services at what levels within the existing range of services provided" (Svara, 1985, p. 225)), administration ("Administration refers to the specific decisions, regulations, and practices employed to achieve policy objectives." (Svara, 1985, p. 226)) and management (it "refers to the actions taken to support the policy and administrative functions. It includes controlling and utilizing the human, material, and informational resources of the organization to best advantage.

Figure 22: Dichotomy-Duality model related to elected politicians-administrators relationships (Svara, 1985, p. 228).



It also encompasses the specific techniques used in generating service." (Svara, 1985, p. 227)). In particular, according to qualitative research with interviews by Svara (1985, 2006b), to do "Politics" means to give wide-ranging objectives, provide "mission" and specify medium-range policies, while to do "Administration" means to implement policy choices, in the sense of operational programs and service provision. In the "dichotomy-duality" model no group is totally excluded from the 4 areas, but politicians tend to have more space in the mission dimension, while management and public servants' staff as a whole have more space in the management dimension, instead in the policy area interaction can be considerable giving advice and recommendations to

elected politicians (1985, 2006b). In practice, there is a separation of responsibilities for the process of doing the mission that is the responsibility of the policy and the area of operational management that is the responsibility of the administration. The theoretical conformation of the model is taken from the figure below. However, since there is still no evidence in the 1990s of the dichotomous model and little evidence of the dual dichotomous model, in the 2000s, Svara (1999a, 2006b) proposed a "complementary" model on the relations between politics and management, which was already present in the thinking of American scholars, but in the minority compared to the dualists. The parts remain separate and distinct, but thanks to the complementary relationships one comes to understand the contribution of each one to the entire organizational outcome (Svara, 1999a, p. 57). In the new revised model, the focus is no longer on the division of individual function areas, but the ideas of dynamism, interdependence, mutual influence and overlap in the areas of politics and administration are reinforced, albeit in formally distinct roles, so that managers are involved in the policy making process in the same way that politicians give "political oversight" over administration (Svara, 2006b, p. 1082). A complementary model is better able to describe the relationship, because it includes both the space of distinction and overlap, and it is only in limited situations that a narrow "dichotomous" and poorly related separation takes place, as in the cases of services in the form of contracts (Svara, 2015). The crucial difference of the models, which is crucial in the study of local governments as ambidextrous organizations, is that in the "complementary" model, unlike the "dichotomy-duality" model, public managers make a greater contribution to the definition of the mission and objectives of the city on a par with elected politicians and have a greater focus on "long-range issues" (Svara, 2006b, p. 1084) and this characteristic has been increasingly pronounced (Svara, 1999b). The electoral cycle, on the other hand, can be decisive from the perspective of politicians, who look more at short-term issues than long-term issues (Svara, 2006b). To conclude, the thesis uses the theoretical framework of the complementary model assuming that politicians and managers are influential participants in the decision-making process of political choices and that this role of contributing to the organization's policy is mutually recognised (Svara, 2006b). In the complementary model public administrators have policy-making responsibilities and elected politicians have a role in the implementation phase (Demir, 2009; Svara, 2001). Policy that is distinct from policy and remains in the hands of elected politicians and operational management that would be distinct from administration and that remains the prerogative of public administrators (Demir, 2009). In this sense, according to Demir and its complementary continuum model (2009), administrators do not participate in the activity strictly related to "political particularism" (politics), such as participating in campaigns for political positions or creating exceptions for certain social groups in the formulation and implementation of policy, as they maintain professional neutrality, and, at the same time, elected

politicians have room for intervention in personnel management and organizational coordination, even in spoil system conditions. In Demir's empirical research (2009) it emerges that elected politicians are more active in implementing and counteracting poor performance, while they tend to abstain in the field of routines, they are relatively active in inter-organizational departmental coordination rather than micro-organisational coordination. At the same time, public administrators are active in policy formulation and initiation, policy analysis, goal setting and resource allocation, so much so that in the American "city manager" model, this would have the crucial knowledge and skills in these processes in collaboration with elected politicians (Demir, 2009). According to this complementary model, the routines resulting from the application of a given political choice should be the prerogative of the administration and management alone to avoid political intrusion (Demir, 2009; Nalbandian, 1994). However, it is found that there is still a certain level of participation of elected politicians in setting administrative objectives, implementing policy, evaluating performance and above all improving performance (Demir, 2009). In this research, therefore, it is assumed that the relations between politics and administration are also crucial for the development of the dynamic capacities of local authorities. The demarcation line, in fact, can no longer be defined without considering the contingent dimension, such as the contextual and interrelated dimension of reforms, policies and programmes (Haveri, 2006) as well as the variability between countries and governance systems (Alford et al., 2017) and the fact that there are fewer "tame" problems that can be solved with technical solutions by administrators and more "complex and wicked" problems (Rittel & Webber, 1973), which require politicians and managers to relate to many stakeholders (Alford et al., 2017). Contingency factors are crucial, as relationships vary depending on the structure of government, political dynamics and cultural values in a given country (Svara, 2006a). The area of overlapping roles occurs when the level of control by elected politicians over administrators is relatively low, as well as the degree of distance between the two types of actors is relatively low (Svara, 2006a). It is in this perspective that Aldord et al. (2017) propose to pass from a separation line, a concept still present in the complementary model to an area of intersection, a space of variable transition between roles and relational to deal with wicked problems and where both political and managerial skills are needed. In order to study microfoundation of innovation and dynamic capabilities in local authorities, it is assumed that the relational structure between politicians and managers takes place in that purple area that is formed between the red of administrators and the blue of politics. It is an area of indeterminateness of roles and the actors of the system themselves can perceive its dynamism according to the circumstances (Alford et al., 2017). According to the model of the purple area of Alford et al. (2017), the concept of line and boundary is metaphorically surpassed, because they too are in motion and go beyond the idea of redesigning the area on a straight line, in which the relations

between elected politicians and public servants are structured in a continuum (Svara, 2006a). The dynamism of the relations between public servants and elected politicians is itself potentially an element underlying the dynamic capabilities of the organization. On an empirical level, to date, there are two discordant analyses. In particular, in a study of counties in Denmark, Hansen and Ejersbo (2002) find that the logic of disharmony between politicians and administrators cannot be cross not even with managerial tools designed to improve social capital between the two groups. In fact, with regards to politicians, the approach of action is based on deduction, while administrator's logic of action is predominantly inductive (K. M. Hansen & Ejersbo, 2002). More recently, Brorström and Norbäck (2019) find that in a Swedish local government managers move in and out of the purple zone "arm's-length" relationship with the politicians and the increase of organizational collaboration improve the potential possibility that public servants stay in the purple zone. In the context where mayors have a pre-eminent role, such as France, Italy, Portugal and Spain, Mouritzen and Svara (2002) find that the mayor has a pre-eminent role and that top managers are active as "policy innovators" and as advisors to politicians, both in terms of technical information and more "political" recommendations, compared to other forms of local government. Likewise, it is expected that in this research, given the same context, the mayor is prominent in the leadership network and that the public managers of municipalities have a role as "policy innovators". In future researches, however, more attention should be paid to the role of politicians and, in particular, the collegiate board of government (Svara, 2006b). The purple area is the new governance of relations between politics and management, because there are complex and interconnected tasks where the legal definition of the "line" of demarcation is no longer sufficient (Alford et al., 2017). Much of the research on the subject, moreover, concerns the form of decisions or non-decisions, but there is a lack of focus on the distribution of power between the two "realms" (Alford et al., 2017, p. 3) and, therefore, an effective study on their relationships of network analysis terms and microfoundation of social capital. We are now fully in a context of new local governance, in which the actors of the complex system have a collaborative research behaviour rather than being linked to the traditional, managerial and hierarchical system of public administration (Haveri, 2006). If the change intervening at local level is interconnected with the complexity of the phenomena, the co-operative strategic solution (the author refers mainly to the inter-municipal one) to the uncertainty depends, among other things, on the skills, management styles and personal relationships of political leaders and leaders of public officials (Haveri, 2006). Finally, within the academic debate that has been exposed in this part, the theme of the contrast between neutrality and politicization on the side of civil servants emerges. In particular, in the system of Italian local governments, this topic is relevant with regard to the top managerial

figure of the town clerk, who is chosen by the mayor. The town clerk must win a national competition and not the municipality where this public manager works because he is chosen directly by the mayor. According to Peter and Pierre's definition, politicization is "the substitution of political criteria for merit-based criteria in the selection, retention, promotion, rewards and disciplining of members of the civil service" (Peters et al., 2004, p. 2). The debate on the effects of politicization of public servants is open in the literature, on the assumption that it may have a negative impact on professionalism and meritocracy (Ebinger et al., 2019). Following the methodology of vignette technique in 40 in-depth interviews, Ebinger et al. (2019) find that there are not empirical evidence that politicized public employee have a behaviour more responsive and less responsible than their non-politicised counterparty. Furthermore, in literature it emerges that there is still a lack of empirical evidence on the effects of politicization from the contingent-institutional perspective (the phenomenon is driven from the outside and the individual responds with certain mental scripts), but also for behavioural public administration, which focuses on endogenous criteria, as well as on the co-presence of endogenous and exogenous elements (Shaw & Eichbaum, 2020). Moreover, in literature it emerges that there is still a lack of empirical evidence on the effects of politicization from the contingent-institutional perspective (the phenomenon is driven from the outside and the individual responds with certain mental scripts), but also for behavioural public administration, which focuses on endogenous criteria, as well as on the co-presence of endogenous and exogenous elements. Moreover, in literature it emerges that there is still a lack of empirical evidence on the effects of politicization from the contingent-institutional perspective (the phenomenon is driven from the outside and the individual responds with certain mental scripts), but also for behavioural public administration, which focuses on endogenous criteria, as well as on the co-presence of endogenous and exogenous elements (Shaw & Eichbaum, 2020). In conclusion, in the current Network Governance paradigm, a double pluralism emerges (Torfing & Triantafillou, 2013), in the sense that there are interdependent actors and political decision-making process "cuts across" political and administrative levels (S. P. Osborne, 2010, p. 9).

### **Social capital between politicians and administrators: in-depths hypotheses.**

Gabris et al. (2001) study the relationships between staff and elected politician in local governments in the application of innovation at organizational level and they suggest that many factor have to be explained yet. A first aspect concerns leadership. In fact, in the first studies on the relations between politicians and public managers, the focus was on measures of involvement in the four areas, for example how the different actors are involved in starting a certain political proposal, while only later was the influence variable inserted with respect to the various areas. In the change of local authorities, individual actors are increasingly incapable of controlling their

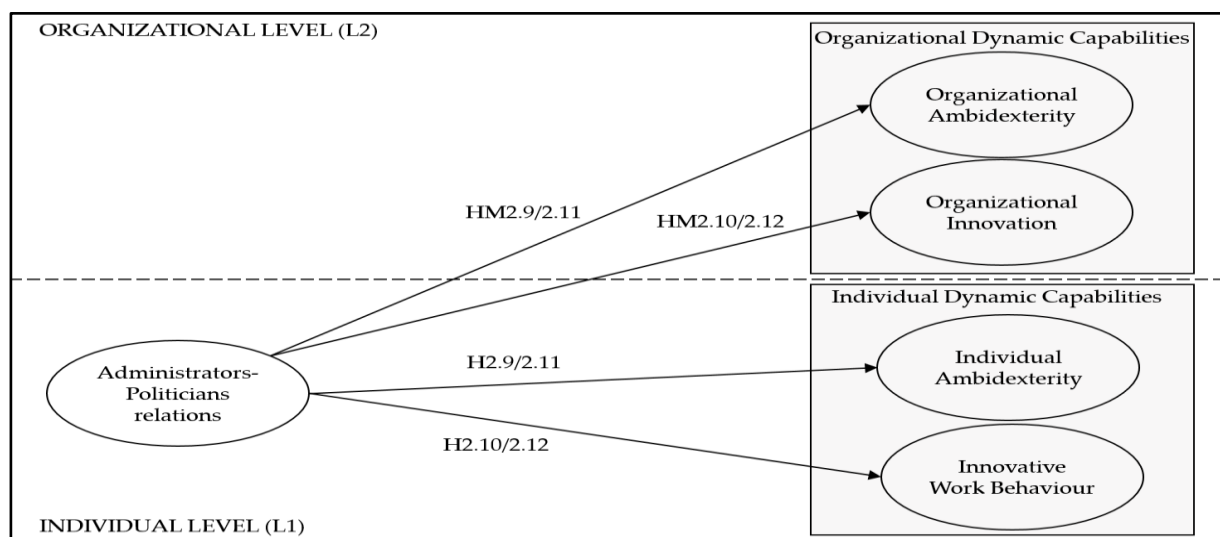
processes and implementation on their own, so that co-operation is necessary and (specifically inter-organisational strategies) leadership capacity is more relevant than the growth of expert knowledge (human capital) in making decisions (Haveri, 2006). While in the implementation of inter-organizational cooperation reforms, change depends substantially on dynamic relationships and "the emergence of political leaders" (Haveri, 2006, p. 44), the same processes are also relevant in intra-organizational change when entering the micro level of the complex local government system. Moreover, in decision-making processes, uncertainty increases when actors do not express their preferences and trust (as well as knowledge) about each other's intentions and objectives (Haveri, 2006). Without networks of knowledge and trust, therefore, one can assume that the uncertainty of complexity reduces the possibility of making "good" strategic choices and, therefore, the organization would not be able to achieve dynamic capabilities, in particular ambidexterity. This problem can weaken in intensity if information exchange practices are implemented. As far as the pre-eminent theme of social capital linked to knowledge networks is concerned, public servants may have more knowledge, i.e. a superior human capital compared to politics, which puts them in a strong position. In certain circumstances, managers, in fact, try to give political and technical advice and this can put them in a position of boasting in terms of personal resources (experts) compared to politicians and political choices, especially in small municipalities (Svara, 2006b). The role of adviser of local government CEOs is bi-univocal towards internal administration, but also towards politics (Mouritzen & Svara, 2002). In this sense, advice network could be preliminary to shared leadership. Alford (2017, p. 14), for example, finds that the role of managers is not so much to usurp elected politicians, but to "advise" especially when there are problems, complex, interrelated, wicked and under pressure. The scarcity of communication between actors leads to greater uncertainty in cases of inter-organizational cooperation strategies (Haveri, 2006, p. 42). Taking up the hypotheses seen in the previous chapter, it is assumed that the relations in terms of social capital with elected politicians:

- *Administrators-politicians relations have a positive impact on individual dynamic capabilities, in particular individual ambidexterity (2.7) and innovative work behaviour (2.8).*
- *Administrators-politicians relations have a positive impact on organizational dynamic capabilities: organizational ambidexterity (M2.9) and organizational innovation (M2.10).*

As shown in the chapter on the methodology, the measure used in this thesis and in previous work is based on tie strength (M. B. Hansen & Villadsen, 2017), so that these hypotheses do not consider the role of weak ties if the scale of external networking is seen as a continuum and ordinal number. To overcome this limitation and assuming that even in this case there are diminishing returns, as in hypotheses about the general measure of External networking, theoretically other hypotheses are necessary. In the questionnaire about External networking, there is only a

unique measure about the relations with elected politicians. This is a general item and it do not permit to distinguish different relations with different politicians that have different roles (major, municipal assessors, city councillor in the minority or in the majority). Therefore, it is not possible to count the number of weak or strong ties and to determine the effect of marginal returns for both of them. The tie strength is thus considered a measure of the relation between the focal public servant and elected politician. In this thesis, it is possible to hypothesize that the tie strength of this relation may have a positive impact at individual and organizational level, but this relation is concave-shaped. This is a proxy, for which weak ties continue to have a positive effect conceptually, but when the strength of ties becomes too strong it is possible to think that the marginal effect is negative. Thus, the thesis posit that: *Administrators-Politicians relations measured as tie strength have a positive impact, but this relation is non-linear (there are diminishing returns (concave-shaped relation)) for: individual ambidexterity (2.9), innovative work behaviour (2.10), organizational ambidexterity (M2.11), organizational innovation (M2.12)*. Therefore, hypothetically, the point at which the presence of a weak tie is delineated is theoretically in the positive area of the relationship, vice versa the break-even, in which the relationship takes the form of negative marginality, is found in the presence of a stronger bond strength. For the relations between politicians and public servants, the idea of negative marginal returns are coherent with the literature about the politicization of public employees. Here, there is not a direct measure of politicization, but, following social psychology, it is easier for people to have relations with similar. So indirectly, tie strength may represent a spurious proxy of public servants' politicization.

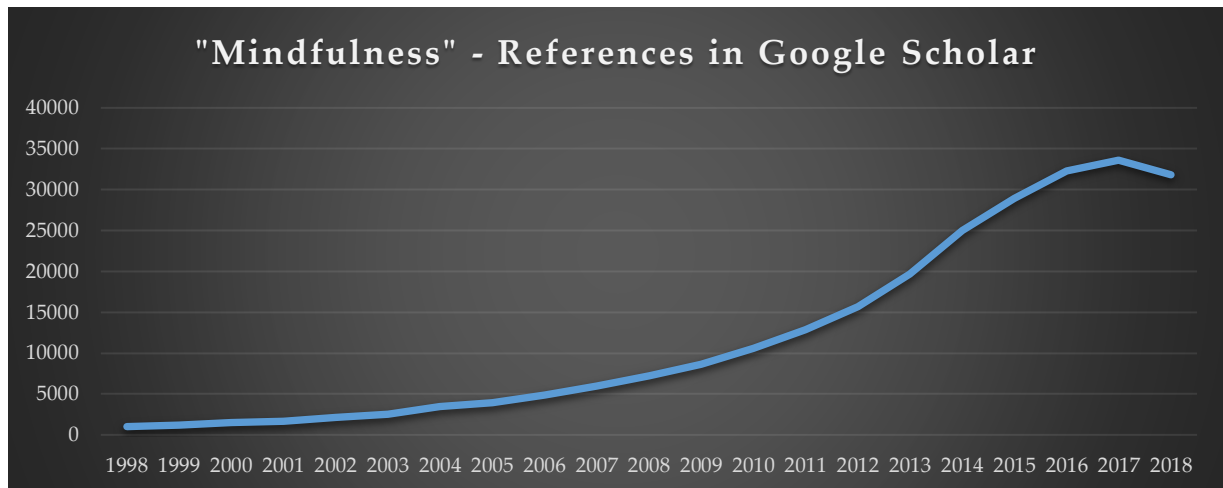
Figure 23: hypotheses between Administrators-Politicians relations and multilevel outcomes.



## D. COGNITIVE CAPABILITIES: MINDFULNESS AND POLITICAL SKILL.

### 1. MINDFULNESS (REVIEW AND RESEARCH HYPOTHESES).

Figure 24: Number of references for the word "mindfulness" (Source: Google Scholar 2019).



#### a) Mindfulness: a theoretical foundation.

##### **Mindfulness: definition and features of this construct.**

The term mindfulness was introduced by Langer (1978, 1989, 1997) and it has been used within the debate between automatic and non-automatic psychological information processing for a long time (Sandelands & Stablein, 1987). Nowadays, mindfulness is a root construct in organizational science (Good et al., 2016). During last years, the concept of mindfulness became more and more popular so that organizations predispose programs for their workers (Hyland et al., 2015). Amazon propose more than 50.000 results for books with the word “mindfulness”; on Google Scholar there are 31.600 results for “mindfulness” in 2019, they were 7.220 in 2008 and only 1.010 in 1998. In Figure 24, it is possible to note the increase of interest on this field of research. In recent years, practitioners report like a mantra that mindfulness training for leaders take to increased social capabilities, ability to think strategically and innovation, but to date, empirical evidence is sporadic (Good et al., 2016). Mindfulness concept has historical basis (Dane & Brummel, 2014). It was developed in Oriental Buddhist traditions and nowadays a modern adaptation is thought in Western culture (Hyland et al., 2015). Only some ancient Western philosophical traditions, as ancient Greek philosophy, phenomenology, existentialism and naturalism in Europe and tran-



scendentalism and humanism in America share some features with Buddhists concept of mindfulness (K. W. Brown et al., 2007, p. 212). In fact, mindfulness is a property of consciousness and until the recent past Western researchers have paid little attention about this field because the prominence of cultural attitude about Ego in psychology (K. W. Brown et al., 2007). Today, there is not a unique definition, because mindfulness is considered an “umbrella construct” (Kudesia, 2019) and it is opened the debate between individual and collective mindfulness (Sutcliffe et al., 2016). Otherwise scholars in the field of organizational behaviour and organizational psychology are quite on the same line of convergence (Sutcliffe et al., 2016). Remote Buddhist roots and a consensual approach of the construct around the concepts of attention and awareness lead to a common definition of mindfulness in literature (Good et al., 2016). In fact, following prominent literature, in a general way, mindfulness is a meta-cognitive ability (Eisenbeiss & van Knippenberg, 2015; Kudesia, 2019). **Mindfulness can be defined** as *a nonjudgmental receptive attention and awareness of experiences, reality and events that occur in the present moment* (K. W. Brown et al., 2007; K. W. Brown & Ryan, 2003; Glomb et al., 2011; Good et al., 2016). Moreover, in Journal of Management, Dane’s definition of mindfulness strengthens the relevance of external and internal stimuli: “a state of consciousness in which attention is focused on present-moment phenomena occurring both externally and internally” (Dane, 2011, p. 1000). For Glomb et al. (2011, p. 219), three features are absent in mindfulness: evaluation, judgement and cognitive filters. For Brown and Ryan (2003), mindful is a perceptual and nonjudgmental “pre-reflexive” capacity. In sum, consciousness covers attention and awareness (K. W. Brown & Ryan, 2003) and mindfulness is a quality of consciousness (K. W. Brown et al., 2007). Awareness is the “background radar” of consciousness (K. W. Brown & Ryan, 2003, p. 822) and it combines the recording of internal and external stimuli through five physical senses, kinesthetic and mind activities to produce a first connection with reality (K. W. Brown et al., 2007, p. 212). Attention arrives in a more limited range of situations than awareness and only if singular stimulus is enough strong (K. W. Brown et al., 2007, p. 212), so it implements an intense sensitivity exclusively to some experiences (K. W. Brown & Ryan, 2003, p. 822). Mindfulness is something more than normal functioning that characterize individual attention and awareness, that is, it is a capability of boosted attention to and awareness of reality and experience within the present moment (K. W. Brown & Ryan, 2003). Conceptually, mindfulness is an intentional mental mechanism based on investigative awareness about the continuously changing flow of individual reality though better comprehension of thoughts and feeling (Bishop, 2004). Better awareness can lead to greater capacity for action (Gärtner, 2011). In recent scientific literature, mindfulness concerns different perspectives: a (meditation) practice, a mode of being, a state, an ability, a trait (Reb et al., 2015, p. 111).

More specifically, in literature, Hülshager et al. (2013) and Jamienson and Tuckey (2017) indicate three different conceptualizations of mindfulness:

a) *State mindfulness*: “being attentive to and aware of what is taking place in the present” (K. W. Brown & Ryan, 2003, p. 822). It is a “nonjudgmental attentiveness to and awareness of moment-to-moment experiences” (Hülshager et al., 2013, p. 311).

b) *Trait mindfulness*: “degree to which one is fully immersed in the present moment as well as the duration of such a moment and the frequency with which they occur vary, between and within persons” (Hülshager et al., 2013, p. 312).

c) *Mindfulness practice*: “a mechanism directed at enhancing one’s state mindfulness and subsequently trait mindfulness” (Jamieson & Tuckey, 2017, p. 180). For this last conceptualization, two terms are used in literature: meditation practices based on mindfulness and therapeutic programs (at clinical level for patients with problems but also in organizations) useful to increase mindful capability (Glomb et al., 2011). Sometimes, literature confuses (or includes) the concept of mindfulness with meditation, but this is a mistake, because even individuals that do not meditate can reach a state of mindfulness (Dane, 2011). This research focus on the second concept, because the interest is about individual and organizational outcomes that are not in a single moment or after a mindfulness-based intervention in the workplace. Mindfulness is essentially a state-level construct, but it can be considered and assessed also as a **trait-level construct** (Dane, 2011; Sutcliffe et al., 2016), as stable individual difference (Glomb et al., 2011), even if in literature state-level and practice are more frequent (Dane, 2011, p. 999). In fact, trait mindfulness displays experiences and behaviour over a long period of time, that cannot be represented by a psychological state or an intervention (Reb et al., 2018). In everyday life and at work there are a lot of opportunities or situations in which people are immersed in the present moment or vice versa they “walk” with autopilot and their attention to the present moment is zero (Hülshager et al., 2013). Otherwise, a person with an high mindful capability encounters mindfulness more regularly, more profoundly and over longer temporal spans and even they have periods in which mindfulness is not present (Hülshager et al., 2013, p. 311). Mindfulness is considered a “human capacity that varies in strength, both across situations and persons” (Hülshager et al., 2013, p. 311), considering that people have a different propensity even if there could be intra-individual differences (K. W. Brown & Ryan, 2003).

### **Mindfulness compared with other cognitive capabilities with attentional roots.**

The definition of mindfulness may be better understood through a **comparison with other constructs** connected with attention. In particular, in Journal of Management, Dane (2011) indicates “what is not mindfulness”, noting that there are two comparison parameters: attentional breadth

and present moment orientation (Figure 25). Mindfulness presents relatively wide attentional breadth and high orientation to present moment. Dane (2011) indicates that this construct should be not confused with absorption (e.g. Wild et al., 1995) and flow (M. Csikszentmihalyi, 1990; Mihaly Csikszentmihalyi & LeFevre, 1989).

They share present-moment orientation, but for the latter the difference is based on a low level of attention and a greater relationship with job engagement within the present experience (Dane, 2011; Sutcliffe et al., 2016) and mainly externally oriented (Dane, 2015). Furthermore, mind wandering manifests when there is a detachment between thoughts and both task and environmental stimuli (Dane, 2018) and it means a frequent change of attention towards different targets and thoughts and for this reason it is clearly disconnected from the present moment (Dane, 2011). Finally, some constructs are very different in comparison with mindfulness, because the relatively narrow attention could be direct to dissimilar temporal orientations (Dane, 2011): the past (“what could have been”) with counterfactual thinking (Roese, 1997), the future with prospection (Gilbert & Wilson, 2007) or fantasizing (Oettingen & Mayer, 2002). In this thesis, the definition of mindfulness is connected with the dimension of attention. In literature there are other point of views and the definition used in this thesis is largely approved in literature but it could be seen as limited (Kudesia, 2019). For example, Kudesia (2019) enumerates different definitions that come from the perspective on how individual mind processes information, in particular in linear modeling of processing information, attention is opposed to conceptualizing, while in practice modeling, they interact. For Kudesia (2019) the attention definition has some limits in the applicability in work context: it requires the access to direct objective information rather than second-end knowledge (a report about production is different than seeing directly the production line at work).

Figure 25: mindfulness and other attention-related concepts (Dane, 2011, p. 1002).

		Attentional Breadth	
		Relatively Wide	Relatively Narrow
Present Moment Orientation	High	Mindfulness	Absorption Flow
	Low	Mind Wandering	Counterfactual Thinking Prospection Fantasizing

Kudesia suggests that mindfulness attention is more useful for situation where focal individuals have direct contacts to relevant stakeholders (e.g. sellers with clients) in “periphery of organizations” (Kudesia, 2019, p. 410) and “street-level” public servants in local governments present this features compared to other centralized forms of public administration far from the citizen. Moreover, mindfulness attention reinforces the idea of a dynamic optimization of resources with a capacity to regulate attention over time, rather than a static factor (Kudesia, 2019). In particular, Dane and Brummel (2014) define “workplace mindfulness” as trait mindfulness in work contexts. Most scholars agree that each person can experience this human capacity and it as a trainable skill (Verdorfer, 2016; Zivnуска et al., 2016), so that mindfulness is a relevant dimension in organizational behaviour studies and microfoundation, whose direct and indirect effects can be extensively investigated. Cognitive capabilities connected to attention are allocated heterogeneously between persons (Posner & Rothbart, 2007) and thus they can sustain the microfoundation of dynamic capabilities (Helfat & Peteraf, 2015). In fact, the construct of mindfulness is relevant even in the perspective of **attention-based view of the firm** (Ocasio, 1997). In fact, in organization science, the theoretical and empirical interest about a conceptualization of attention is present in the early days of the research field (Simon, 1947) and has increased in last years (Ocasio, 2011) and mindfulness may be seen as a cognitive capability source of microfoundation based on the attention process (Helfat & Peteraf, 2015). In early studies, Ellen Langer (Langer, 1989, 1997) indicates three features of mindfulness that is seen as a heterogeneous construct: constant mental creation of new categories, openness to novel information, awareness of different point of view (for a review, see: Gärtner, 2011). The Western point of view about mindfulness is that it is more related to cognitive interpretation of reality and goal oriented behaviours (Roche et al., 2014), so much so that Weick and Roberts (1993) introduced it to management and they conceptualized it as cognitive flexibility and attention to novelty. The concept of mindfulness was developed at the organizational level too. For Weick et al. (1999), collective mindfulness have five antecedent sub-processes: preoccupation with failure, reluctance to simplify interpretations, sensitivity to operations, commitment to resilience, under-specification of structure. Mindfulness is opposite to mindlessness, “automatic pilot”, based on old information and mental categories with a unique perspective (Weick, 2006; Weick & Sutcliffe, 2006). In 2006, the journal *Organization Science*, one of the most cited reviews about organizational research, proposed an academic debate about the role of mindfulness in organizations (Levinthal & Rerup, 2006). It is therefore evident that in recent years mindfulness has become a very popular construct in organizational practice and scholarship (Kudesia, 2019). In the recent past, studies investigated positive effects of mindfulness on human functionality and behaviours: mental and physical health, well-being, self-regulation and social relations (K. W. Brown et al., 2007, p. 211). During last years the interest about mindfulness

has increased in behavioural, managerial and organizational research (e.g. Dane, 2011; Eisenbeiss & van Knippenberg, 2015; Good et al., 2016; Jamieson & Tuckey, 2017; Kudesia, 2019). A lot of studies are about clinical effects or mindfulness interventions at work (Jamieson & Tuckey, 2017). Literature about mindfulness at work is emergent (Reb et al., 2018) and empirical research is scarce (Verdorfer, 2016). Good et al. (2016) diagnose that mindfulness may have positive effect on performance, relationships and well-being at work. In literature, it is possible to indicate two different field of analysis about the outcomes of mindfulness: intrapersonal and interpersonal effects (K. W. Brown & Ryan, 2003; Sutcliffe et al., 2016). In a recent literature review, Good et al. (2016) identify the underlying quality of attention stability, control and efficiency as mechanisms by which mindfulness influence affects various spheres of human functioning (i.e. cognitive, emotional, behavioral, and physiological). About the first field of research, different scholars find positive **intrapersonal effects** that are useful in life and organizational situations. There are multiple studies and a focus on different outcomes. Generally, intrapersonal effects concern individual performance, well-being and decision-making (Schuh et al., 2019). For example, mindfulness can have a positive impact on well-being, individual functioning and stress reduction (e.g. Eberth & Sedlmeier, 2012). Mindfulness training (Mrazek et al., 2013) and trait mindfulness (Ruocco & Wonders, 2013) are both correlated positively with working memory capacity. Moreover, mindfulness has a positive effect on well-being of leaders and it correlates negatively with dysfunctional outcomes (Roche et al., 2014). Also mindfulness-based interventions have positive practical impacts in organizations for their role to improve health and well-being (Jamieson & Tuckey, 2017). Mindfulness is positively related to emotional regulation (e.g. Teper et al., 2013), emotional exhaustion (Hülshager et al., 2013), job satisfaction (Hülshager et al., 2013; Zivnuska et al., 2016), work engagement and affective commitment (Zivnuska et al., 2016), reducing distress (Virgili, 2015). Mindfulness is negatively correlated to turnover intention (Dane & Brummel, 2014; Reb et al., 2017; Zivnuska et al., 2016). This list of outcomes is not comprehensive of all researches in literature, but it can make clear the idea of the relevance of mindfulness. In particular, Mesmes-Magnus et al. (2017) find that mindfulness is significantly correlated with a long list of personal and professional outcomes at work through a meta-analytic study. In spite of theoretical and practical attention, there are still not many studies on this topic, especially about empirical relation between mindfulness and performance (E. King & Haar, 2017). The firsts relevant study about relations between mindfulness and performance was conducted in dynamic industry context, as nuclear power plants (J. Zhang et al., 2013) and services (Dane & Brummel, 2014) (Table 11). Authors find that trait mindfulness correlates positively to performance (when accounting for service experience and job engagement) and negatively to turnover intention (when account-

ing for work engagement, this effect disappears) in dynamic work environments (Dane & Brummel, 2014). After those seminal empirical articles, few researches focused on performance: a review of selected recent articles is resumed in Table 11 at the end of this part. The potential function of mindfulness in individual and organizational work-related outcomes has already developed in theoretical literature of management, but, to date, a gap is still present with respect to the relationship between mindfulness and different job outcomes (Dane, 2011; Dane & Brummel, 2014; Glomb et al., 2011; Good et al., 2016; Hülshager et al., 2013). About intrapersonal relations, for the purpose of this thesis, in literature there are different studies about positive effects of mindfulness, but there are no studies on direct effects on political skill, individual innovativeness<sup>80</sup> (for a study about creativity as outcome see: S. Y. Cheung et al., 2020; for a moderation effect, see: Montani et al., 2018) and ambidexterity in workplace to date. Good et al. (2016) suggest that context is a relevant boundary condition, but to date, no studies have emerged that dealt with the role of trait mindfulness in specific context of public administration and, specifically, in local governments. This detail is not disjointed by theoretical framework. In fact, Dane (2011) consider that mindfulness is a positive individual quality for organizations that face dynamic environments and it is detrimental in routine context. However for Good et al. (2016) mindfulness is positive also in routine context, because it can reduce attention lapses (Smallwood & Schooler, 2015), so that mindfulness is different in the activation of different psychological levers to improve outcomes in organizations. In development of the hypotheses about the quality of decision-making, it will emerge the debate about the linearity and the cost-opportunity of mindfulness at work. Two considerations are necessary in this introduction about the conceptual modelling in behavioural public administration. Historically and in a simplistic perspective, public administration in the world of bureaucracy and routines are the main features of this paradigm. As seen, new public management and Network Governance revolutionize the field of public organizations. In this sense, clearly, routines does not dead in public administration as well in private sector, but the environment is not static daily. Municipalities are the nearest organizations for citizens and provide any sort public services for users. At the same time, an employee face service users (directly, face-to-face daily), citizens, electors (of the political side of public administration, responsible for 5-year strategic programs with which majors stand for elections and won), elected politicians in majority or in opposition in the municipal council, other public and private stakeholders. The context is extremely dynamic and the pressure in local governments to deal with multiple objectives is not comparable with other public organizations. A job that externally seems routine, in reality include the necessity to include the answer to wicked and complex

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<sup>80</sup> For instance, recently, Hyland et al. (2015) called attention for a research gap about the relation between mindfulness and innovation.

problems. In this perspective, a positive effect of trait mindfulness is theoretically conceivable in local public organizations. Secondly, this thesis is based on the perspective of microfoundation of dynamic capabilities in public sector. This viewpoint includes the ideas that mindfulness is a capacity inherent the microfoundation of individual and organizational capabilities: the hypothesis is that mindfulness correlates positively to the individual and organizational capabilities to renew routines, though ambidexterity and innovation. In addition to these intrapersonal aspects, simultaneously, a second framework involve **interpersonal effects** of mindfulness. Various authors suggest that mindfulness is particularly useful to improve relational quality and functioning (e.g. K. W. Brown et al., 2007; Glomb et al., 2011; Good et al., 2016; Reb et al., 2014), but, as for job outcomes, empirical studies in organizations are scarce. Moreover, to date, the majority of studies on mindfulness focus on intrapersonal effects: the attention dedicated to intra-personal effects have been higher than for interpersonal ones (Reb et al., 2014). In fact, relational researches focused on marital relations and they are limited in workplace (Reb et al., 2014), even if there are different call for them (Good et al., 2016; Reb et al., 2018; Schuh et al., 2019; Sutcliffe et al., 2016). Some empirical papers concern relations between mindfulness and leadership (e.g. Eisenbeiss & van Knippenberg, 2015; Reb et al., 2018; Schuh et al., 2019; Verdorfer, 2016), but at the moment of writing, there is a gap in literature about empirical researches on mindfulness and social capital. Finally, in organizational literature, it was developed before at the individual psychological level and then at the organizational level, for an analysis about the tensions between mindful and less-mindful (i.e. routines) behaviours in the process of organizational learning (Levinthal & Rerup, 2006). In this research, the focus is about the dimension of mindfulness is at the individual level, even if a theoretical idea is that an aggregation of individual mindfulness is positive for organizational outcomes. This research present positive hypotheses between mindfulness and other dimensions (directly or indirectly). In fact, in a general perspective, mindfulness is seen as a positive quality that reinforces people at work. Chiesa et al. (2011) find that mindfulness training can have a positive effect on cognitive abilities within the spheres of memory and executive tasks, through the mechanism of attention. Glomb et al. (2011) consider that mindfulness improve the quality of use brain automatic process (and indirectly heuristics) though an efficient flexible redirection of attention to correct external stimulus when a skillful answer is more appropriate. Recently, Schwager et al. (2016) find that mindfulness is negatively related to counterproductive behaviours at university. A further confirmation of the appropriateness of studying mindfulness as a positive aspect for organizations. In next paragraphs, research gaps and hypotheses about relations between mindfulness and other constructs in this thesis are delineated with theoretical justifications and predictions. The Table 11 below shows results from recent empirical research about mindfulness and other dimensions at work, adopting the methodology of the surveys.

Table 11: Selected<sup>81</sup> journal articles about mindfulness and work-related matters 2014-2019<sup>82</sup>.

Reference	Theoretical context	Independent Variables	Moderation Variables	Mediation Variables	Outcomes (Findings)	Analysis Unit (Final Sample)	Analysis Methodology	Data Collection
Zhang et al. (2013)	Dynamic work environment	Mindfulness	Task complexity	-	Safety Compliance <sup>83</sup> , Safety Participation <sup>+</sup> and Task Performance <sup>+</sup> (rated by supervisors)	136 nuclear power plant operators	Hierarchical multiple regression analysis	China
Dane and Brummel (2014)	Dynamic work environment	Mindfulness <sup>84</sup>	-	-	Performance (rated by supervisors) <sup>+</sup> , turnover intention <sup>-</sup>	98 servers in 7 restaurants	Hierarchical regression analysis	USA
Reb et al. (2015)	Organizational well-being	Mindfulness <sup>85</sup>	-	-	Well-being <sup>+</sup> (emotional exhaustion, job satisfaction, need satisfaction), Performance <sup>+</sup> (task performance, OCBs, and deviance; rated by supervisors)	Study 1: 124 working adults Study 2: 107 working adults (Time-lagged questionnaire)	Multiple regression analyses	Singapore
Eisenbeiss and Van Knippenberg (2015)	Managerial ethics	Ethical leadership	Mindfulness	-	Discretionary work behaviour (extra effort and helping)	Leader (79)-Follower (135) dyads in a High-technology company	Hierarchical linear modelling	Germany
Zivnuska et al. (2016)	Conservation of resource theory/ Organizational well-being	Mindfulness	-	work-family balance <sup>+</sup> , job engagement <sup>+</sup>	Psychological distress, job satisfaction <sup>+</sup> , turnover intention <sup>-</sup> , affective commitment <sup>+</sup>	503 employees	Structural equation modelling (SEM)	-
Verdorfer (2016)	Servant leadership	(Leader) Mindfulness	-	-	Humility <sup>+</sup> , Non self-centered motivation to lead <sup>+</sup>	Study 1: 93 focal individuals and raters (general population). Study 2: 82 leaders (managers) and 223 followers.	Study 1: Structural equation modelling (SEM) with ML estimation. Study 2: hierarchical linear modelling.	Germany
Reb et al. (2017)	Organizational well-being	Mindfulness	-	Emotional Exhaustion <sup>-</sup>	Turnover intention <sup>-</sup> , Task performance <sup>+</sup> (rated by supervisors)	Study 1: 251 employees in call center of an American multinational S2: 286 supervisor-subordinate dyads	S1: Structural equation model (SEM) S2: 286 supervisor-subordinate dyads	India
Reb et al. (2018)	Managerial ethics	(Leader) Mindfulness	-	LMX quality <sup>+</sup> , interpersonal justice <sup>+</sup> , stress <sup>-</sup>	Employees performance <sup>+</sup> (in-role and extra-role)	Study 1: 88 triads (undergraduate students) S2: 227 employee	Study 1: serial mediation model (OLS) S2: SEM	Singapore
Decuyper et al. (2018a)	Conservation of resources theory/Transformational leadership	Mindfulness	Neuroticism	Need Satisfaction (Autonomy, Competence, Relatedness)	Transformational leadership <sup>+</sup>	277 head nurses in elderly homes	Moderated mediation model with bootstrapping	Belgium

<sup>81</sup> Starting from seminal empirical papers of Zhang et al. (2013) within organizational psychology and Dane and Brummels (2014) within the field of organizational behaviour, the selection here is not comprehensive of all journal articles published about outcomes of mindfulness, but there are some relevant articles about workplace trait mindfulness and outcomes interesting for organizational research. The list includes only articles that treated mindfulness with survey method, not experiments.

<sup>82</sup> The table includes two journal articles that are published at the beginning of 2020.

<sup>83</sup> The symbols (+, -) mean that mindfulness has a significant impact on this dimension.

<sup>84</sup> Two other "accounted" variables in the hierarchical model are experience and work engagement.

<sup>85</sup> Authors focalize also on antecedents of mindfulness: organizational constraints and organizational support; the latter has a positive correlation whereas the former has a negative impact (Reb et al., 2015).



Reference	Theoretical context	Independent Variables	Moderation Variables	Mediation Variables	Outcomes (Findings)	Analysis Unit (Final Sample)	Analysis Methodology	Data Collection
Baron et al. (2018)	Leadership development	Mindfulness	-	-	Behavioural flexibility <sup>*</sup>	150 leaders in public or private organizations	Linear regression analyses	USA
Ramaci et al. (2019)	Organizational well-being	Sources of stress (managerial factors, <b>relationships at work</b> , intrinsic factors)	Mindfulness, flexibility	-	Psychological and physical consequences of stress	411 public employees in a hospital	SEM	Italy
Schuh et al. (2019)	Managerial ethics	(Leader) Mindfulness	-	Leadership procedural justice enactment <sup>*</sup> , employee emotional exhaustion <sup>*</sup>	Employee performance <sup>*</sup>	Study 1: 275 employees (USA) S2: 182 employees and 54 leaders (China) (time-lagged) S3: 62 senior executives (China) (experiment)	Study 1: Serial mediation model S2: Serial mediation model (consistent for aggregated and multilevel model) S3: t test	USA, China
Arendt et al. (2019)	Leader-follower relationships	(Leader) Mindfulness	-	Mindfulness in Communication <sup>*</sup>	Followers' Satisfaction With Leader-Follower Communication <sup>*</sup> , Followers' General Satisfaction With Their Leaders <sup>*</sup>	34 leaders, 98 followers	Multilevel Analysis	Germany, Austria, Switzerland
Christensen-Salem et al. (2020) <sup>86</sup>	Leader-follower relationships	Ethical leadership (unit level)	Relational climate (unit level)	Employee state mindfulness	Employee ostracism <sup>*</sup>	210 employees in 72 work units (time-lagged)	Path analytical modeling	China
Cheung et al. (2020)	Creativity in organizations	Mindfulness	Perceived leader humility	Creative process engagement	Employee creativity <sup>*</sup>	S1: 280 employees and 80 supervisors (time-lagged) S2: 282 employees and 52 supervisors in 3 companies (time-lagged)	Multilevel analysis (Monte Carlo simulation)	China
Walsh and Arnold (2020)	Organizational well-being	Transformational leadership, Abusive supervision	Mindfulness	-	Employee well-being	246 employees in different industries (time-lagged)	Hierarchical regression analysis	-

<sup>86</sup> The table includes only the model using mindfulness and not the entire multilevel one in the paper.

## **b) The direct relationship between mindfulness and dynamic capabilities.**

Helfat and Peteraf suggest that cognitive capabilities may be a factor for the microfoundation of dynamic capabilities through an enhanced attention to the environment, the information in external stimuli and the discovery and implementation of opportunities (Helfat & Peteraf, 2015, p. 839). In their simulation model, Romme et al. (2010) found that mindfulness has a positive effect on dynamic capabilities. Romme et al. (2010) see mindfulness as a communication style more than a cognitive capabilities and researches connecting mindfulness in the latter sense and dynamic capabilities in a microfoundation perspective are limited even if authors called for them some years ago (Gärtner, 2011). Attention resources are seen as relevant in the process of identifying strategic opportunities in balancing exploitation and exploration at the top management level in the private sector (Shepherd et al., 2017). Consistent with the perspective of the attention-based view of the firm, Ren and Guo (2011) suggest that, thanks to attention-based effects, middle-managers take advantage of relational structures and above all collect the opportunities to know how to manage exploitative and explorative initiatives at work.

Mindfulness has the cognitive function that it is useful to reduce inertia, distortion and promote changes, like “putting some new wine into old bottles” (Gärtner, 2011, p. 256). Starting for an individual level of analysis, this research postulates that mindfulness is a capacity that can improve individual positive outcomes in organizations through different mind mechanism. In literature, it is limited the connection between mindfulness and dynamic capabilities. In neurosciences, attention is seen as an antecedent of the dilemma between exploitation and exploration (Laureiro-Martínez et al., 2010). Laureiro-Martínez et al. (2015) observe that attention is a brain area and a neurocognitive mechanism associated to exploitation and exploration in decision-making. In organizational behaviour research, for instance, Charoensukmongkol (2016) finds that mindfulness can be useful in condition of change for workers that have to suffer a merger and acquisition. Montano et al. (2018) find that mindfulness moderates the relation between deactivating negative affect states and innovative work behaviour. Different authors suggest that there are gaps in literature about mindfulness and outcomes at work (e.g. Dane & Brummel, 2014; Decuyper et al., 2018a; Good et al., 2016). In particular, Hyland (2015) suggests that academic research should treat to deal in depth with the direct relationships between mindfulness and change, creativity and innovation at various levels. In a meta-analysis, Lebuda et al. (2016) argue that mindfulness and creativity have a positive connection, but, compared to other outcomes, this is equivocal and small. Cheung et al. (2020) find that mindfulness has a positive impact on creativity in organizations, but to date it is not present in the web an article about the complete process of innovation, as depicted in the relative chapter. Kudesia (2019) proposes that mindfulness is a meta-cognitive capability which may be a positive factor for change at individual and collective

level. In this thesis, individual ambidexterity and innovative work behaviours are considered the behavioural results of processing internal and external stimuli at work. In the first case, there is a gap in literature about the use of the mind during the evaluation of trade-offs between exploration and exploitation orientations. Mindful people have stronger attention and awareness capabilities at present moment and theoretically this aspects lead to the possibility to understand better the choice between different orientations on work-related matters, having the possibility to evaluate present situations in details or with large views at the same time. Here, some theoretical justifications are outlined. Moreover, collective mindfulness is not considered as an organizational construct, but the average level of individual mindfulness is considered as factor of microfoundation in this thesis. Individuals are mindfulness or less-mindful within the organization and Sutcliffe et al. (2016) suggest that individual mindfulness could be a cross-level antecedent of collective mindfulness and organizational outcomes. At the end of this parts, multilevel hypotheses are added with a theoretical discussion about these. In this sense, mindfulness is considered a microfoundation factor also for organizational dynamic capabilities. Multiple interconnected mind mechanisms consist in the foundation of mindfulness as individual factor that can have a positive impact on dynamic capabilities.

Firstly, Glomb (2011) indicate two primary cognitive process that are mindful-based and that may have relations with individual ambidexterity and innovative work behaviour: a **decoupling of the self** and a **decreased automaticity of mental processes**. These mindful-based processes may induce a freer, aware, non-judgmental and critical thinking, because events, experiences, mental schemas, cognitive habits and thoughts are seen for what they are and they are no more constraints (Glomb et al., 2011, p. 124). This feature of broader awareness in mindfulness is experiential processing that is characterized by “decentering” for which people can view common psychological content for themselves (e.g. to observe emotions as just emotions) (Good et al., 2016). Mindful people build a meta-awareness toward an objective perception and observation of internal and external stimuli from a distance without a pre-existent evaluation (Glomb et al., 2011). This factor may reduce the natural instinct to evaluate events through automatic responses driven by experience and instinct (Bishop, 2004; Kang et al., 2013). It reduces automatic solutions (Ostafin & Kassman, 2012), automatic responses to attractive foods (Papies et al., 2012), automatic social cognition like implicit out-group bias (Lueke & Gibson, 2015). Thus, theoretically, a reduced automaticity and a less constrained thinking may be positive mindful-based mechanisms to drive individual and organizational dynamic capabilities at work within an organization. For example, (mental and practical) routines at work can be seen in their identity through attention and non-judgmental awareness based on “decentering” and this mindful-based meta-cognitive processes

may be stimuli for an efficient use of them in the short-run (exploitation), an effective use in the long-run (exploration) and a renewal of them with new ideas (innovation).

Secondly, connected with the first reason, another argument to consider mindfulness an antecedent of individual ambidexterity and innovative work behaviour derives from the fact that its crucial characteristic is **flexibility** (K. W. Brown et al., 2007; Kudesia, 2019). Behavioural flexibility consists in different dynamic processes that develop in the relations between individuals and environment: “adapts to fluctuating situational demands, reconfigures mental resources, shifts perspective, and balances competing desires, needs, and life domains” (Kashdan & Rottenberg, 2010, p. 866). Mindfulness has a positive relation with leadership flexibility, in specific with two dualities, forcing/enabling and strategic/operational<sup>87</sup>, and this can be worth for job demands (L. Baron et al., 2018). This adds to the positive relationship with transformational leadership (Decuyper et al., 2018b). Moreover, the effect of mindfulness on flexibility is confirmed in experimental studies, when personality trait is in connection with meditation and/or practical intervention (Creswell, 2017). In particular, Moore and Milinovski (2009) find that meditators have an high level of mindfulness and this is positively related to cognitive flexibility. Alkobi et al. (2019) find that an eight-week mindfulness-based stress reduction workshop improve regulatory individual choice flexibility in emotion regulation. Chang et al. (2018) evaluate the effect of high trait mindfulness and brief mindfulness manipulation group compared to less mindfulness and a control group in two studies. Authors find that the first groups (high mindfulness as trait or activated) have significantly higher levels of proactive and reactive mental control, showing a better capability to balance this control system then compared to the second groups for which the proactive control dominate and the mindset is more inflexible (J.-H. Chang et al., 2018). This kind of mental process favored by mindfulness is obviously a potential stimulus especially for the balance between exploitation and exploration, because a mental system too rigid and top-down can reduce the possibility of having skills to obtain and use new knowledge (J.-H. Chang et al., 2018). The methodology of diary study confirm that there is a positive relation between mindfulness and adaptive coping in daily life and a greater coping flexibility (Keng et al., 2018). Recently, also neurosciences has started to study mindfulness. Lim et al. (2018) find that there are biological markers for the objective measurement of dispositional mindfulness. High mindful people keep their brains in “task-ready” state more time and an “idling” state less time state compared with

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<sup>87</sup> In particular, the duality between operational and strategic has some theoretical connection with the concept of ambidexterity, because the latter refers to the long-term, while, the former concerns a short-term execution (L. Baron et al., 2018).

individual with a low trait mindfulness (Lim et al., 2018). Deng et al. (2020) find that trait mindfulness influence the regulation of negative emotions and the process of treating them through a neurological study with event-related potentials (ERPs) in the brain.

How does conceptually mindfulness put flexibility into action?

Brown et al. (2007, p. 213) define the underpinning process like a “zoom lens”, which means that mindful capability can pass from a large perspective from present experience through clear awareness to a focused attention to details. Moreover, mindfulness means a fluid modality to manage awareness and attention (K. W. Brown et al., 2007). Theoretically, this feature is more useful for increase ambidextrous capabilities and innovative work behaviour than concentration capability, that is a restricted attention to a unique object (K. W. Brown et al., 2007). In this perspective, it is necessary to consider that mindfulness and concentration are two different unique constructs and they are not solely a degree in a range of a state of relaxation (Dunn et al., 1999). For Brown et al. (2007), mindful people are not restricted by habitual thoughts and the psychological response to stimuli is more informed and nonjudgmental, so that consequently behavioural responses can be more flexible and informed. Thus mindfulness is also a mode of open mindedness (Kashima et al., 2017). Glomb et al. (2011) suggest that response flexibility is a secondary process of mindfulness that may improve individual decision-making and communication, displaying new opportunities for better outcomes. The first path is useful to manage paradoxical dilemmas about exploitation and exploration orientation and respond to the relative relevance to be a multitasker as characteristics of ambidextrous individuals (Mom et al., 2009). Moreover, both features are particularly interesting in different components of innovative work behaviour. In fact, mindful flexibility in decision-making and communication may have a specific role in different recognized phases (Janssen, 2000, 2001) of creation, introduction and implementation of new ideas at work. Furthermore, Good et al. (2016) indicate that mindfulness has a positive effect not only in cognitive capacity but also in cognitive flexibility though a process of stabilizing and controlling attention. Cognitive capacity and flexibility built on mindfulness quality may help to respond to environmental pressure (Good et al., 2016). In this perspective, Good and Michel (2013, p. 437) consider that individual ambidexterity is psychologically based on divergent thinking, focused attention and cognitive flexibility. Dane (2011, 2015) suggests that mindfulness offers a better way to identify risks, threats and in general inputs to take informed decisions. Clearly, these are mechanisms not far from those activated by mindfulness.

Thirdly, mindful people may have advantages in **quality of decision-making** and about this feature there is an open debate about the nature of effects in all situations at work. About empirical studies, for instance, mindfulness has a positive effect on reducing costs biases in actual decisions (Hafenbrack et al., 2014) and promote critical-thinking (Noone & Hogan, 2018). In fact, a better

problem solving may be an effect of reduced rumination and an enhanced capacity to take care of multiple demands may be based on expanded working memory, thanks to mindfulness (Glomb et al., 2011, p. 128). About this feature, the academic debate is relevant, because empirical analyses could take to same reflections. For instance, mindfulness enhances insight problem solving, but, empirically, it has not significant effects on non-insight problem solving (Ostafin & Kassman, 2012). Moreover, for some authors, in fact, mindfulness at individual or organizational is always positive because they suggest that non-automatic thinking is the unique right way to have positive outcomes (Levinthal & Rerup, 2006). Otherwise, literature alerts that it is possible that mindfulness present a “dark side” for individual and organizational outcomes (Hülshager et al., 2013). In fact, for some other authors, even automatic-pilot is useful in certain circumstances and less-mindful may be more efficient in time and effort spending and it is necessary to consider negative and positive outcomes in organizations (Levinthal & Rerup, 2006). In same situations a reduced use of attention and awareness could take to better outcomes thanks to the use of mental heuristics and routines at work. This second perspective does not give axiomatic and universal the fact that a rational-based decision involves higher quality and better outcomes (March, 1994). For these authors, in fact, mindfulness is not for free and it presents some costs, that push research to reflect about mindfulness more accurately using contingent theories (Dane, 2015; J. Zhang et al., 2013). The choice between mindfulness and less-mindfulness becomes a cost-opportunity. In particular, Rerup (2005) consider the positive (“help”) and negative (“harm”) effects of different sub-processes of mindfulness on “opportunity discovery” and “opportunity exploitation”. For Levinthal and Rerup (2006), a less-mindful behaviour may be positive in the form of routines because it deploys previous experience and this mechanism save limited attentional cognitive resources, efforts and costs, to situations that are more important for the organization. Although this academic debate remains open without a single solution, several authors in the field of individual or collective mindfulness share the idea that mindfulness is more useful and efficient in dynamic and complex organizational and work situations (e.g. Dane & Brummel, 2014; Levinthal & Rerup, 2006). The first two scholars to observe this issue are Weick and Sutcliffe (2001, pp. 87–88): “mindful moments are important if the contexts in which you operate are dynamic, ill-structured, ambiguous, unpredictable. In less dynamic contexts, mindfulness is less necessary and the economies of mindlessness are more appropriate. Mindfulness takes effort and cost; mindlessness in the form of routine can be cost-efficient.” Indeed Rerup (2005, p. 463) suggest that even if mindfulness may have positive and negative effects, “when the venture, industry and/or technology are complex, dynamic, ill-structured, ambiguous and unpredictable, the cost of mindfulness outweighs the benefits of mindlessness”. This is a contingent theory and mindfulness may be a positive factor for experts in a new context and detrimental for newcomers in routine situations

(Dane, 2011; Good et al., 2016). From a neuroscientific point of view, Laureiro-Martínez et al. (2015) suggest that exploitative orientation is based on narrow attention and it is efficient in tasks for which the level of uncertainty is low and the opposite path is for exploration, that is based on broad attention and is better in situations of uncertainty. In Dane and Brummel's study (2014), this complexity and need for speed and decision-making quality is empirically validated in a sample of waiters in restaurant service industry. Cheung et al. (2020) suggest that mindfulness may be a positive factor in revisiting and changing routines at work thanks to a less automatic and based on heuristic and previous experience use of them. In the specific case of public administration, Public servants must also be able to respond to wicked problems in a network governance context, which, as seen, is increasingly complex and difficult compared to the New Public Management and old bureaucratic system where discretion is limited by the use of practices that should apply to each situation. In Network Governance, decisions must be fast and of quality and public servants should have cognitive capabilities of attention and awareness in dealing with different internal and external stakeholders in order to have positive outcomes in the short and long term. This mindfulness opportunity is reinforced by Dane's study (2013), so attentional breadth implements a greater capacity of attention to the events and the environment around them and, at the same time, attentional integration improves the possibility to find and collect the opportunities present in these events in a dynamic work setting. In this sense, the two sides of the attention can be interpreted as elements of strength to exploit and explore resources external to the focal individual and also to find, diffuse and implement new ideas at work thanks to attention and awareness to right channels at work for innovation. A criticism of the assumption that public administration is a dynamic organization in a complex environment may concern the fact that the public sector cannot be compared to certain private productive sectors that are very dynamic as for technologies. In public administration, changes are often only in the formal form of reform processes and not in practice, many activities are also bureaucratic routine in the response to wicked problems. From an empirical point of view, this thesis focuses on municipalities, which are the most complex organizations for the closeness to citizens who observe daily the quality, efficiency and effectiveness of public services offered. From a theoretical point of view, on the other hand, it should be noted that not all authors believe that mindfulness is a net detrimental for routine situations. For instance, Good et al. (2016) suggest that mindfulness may have positive effects even in the case of routine contexts. There are two possible explanations. Contingent theories of mindfulness are not confirmed on a large scale empirically with cross-sectional, cross-sector and longitudinal data. To date, the unique empirical study about the contingent effect is Zhang et al. (2013). Authors find that task complexity moderate significantly the relation between mindfulness and safety and task performance, finding that mindfulness may be costly for low-

complexity-tasks (J. Zhang et al., 2013). Otherwise, researches have not compared in different settings yet. In fact, to date, there is still a gap in the literature about contingent conceptual framework for its effect on mindfulness (Good et al., 2016; Sutcliffe et al., 2016). Moreover, mindfulness can intervene on three factors of attention, stability, control and efficiency, and these ones can reduce attentional costs and risks of error lapses during routine activities (Good et al., 2016; Smallwood & Schooler, 2015). The debate about the efficiency of mindfulness in all situation does not finish in the fields of organizational routines or the use of mental heuristics, but it concerns also other cognitive features about attention and awareness. In this sense, Dane (2015) warns against easy conclusions with respect to the positive aspects of mindfulness, because even if it has a positive impact on individual outcome, this factor can become overabundant. In particular, mind wandering that is not distraction and can be defined as “a psychological state in which one’s thoughts have departed from the task at hand as well as the stimulus environment more generally” (Dane, 2018, p. 180) and, as seen in Figure 25, it maintains a relative wide attention breadth but not directed to present moment. The positive effects of mind wandering at work are considered in managerial (Dane, 2018) and psychological research (Smallwood & Schooler, 2015). For Dane (2015), this means that mindfulness may have diminishing returns in organizations and some amount of mind wandering could be an adaptive cognitive resource and useful, limiting the positive effects of being oriented to the present moment. In particular it may be a stimulus when there are activities with multiple goals or that need creativity and mindfulness could be more costly in some situations (Dane, 2015). From another point of view, otherwise, Kudesia (2019) believes that seeing mindfulness only as a way of processing information is limiting with respect to the metacognitive dimension of mindfulness. In fact, this construct does not concern a style of information processing, but it refers to a previous metacognitive process, in particular about how to choose the modality to process information in all current situations (Kudesia, 2019). Other authors are of the same opinion. The underlying idea is that mindfulness attention can allow for greater awareness of the nature of a particular thought as a mere mental event and is not just an explicit process to make a specific decision or achieve a goal (Papies et al., 2015), but is a form of “metaconsciousness” (Winkielman & Schooler, 2011). This interpretation is over the debate about the trade-off between the costs and benefits of mindfulness, because it considers that mindfulness itself is the metacognitive capability that underpins the evaluation of this trade-off. This path of monitoring and adjusting the way of information processing may improve also flexibility (Kudesia, 2019), that is individuated as the first strength of mindfulness.

A fourth strength of mindfulness concept is the idea that the way it manages awareness is **non-conceptual and nondiscriminatory**: in this sense mindfulness is not contrary to thought and it



can permit to use it more efficiently without cognitive contents that can be constraints with respect to the perception of stimuli (K. W. Brown et al., 2007). Emanuel et al. (2010) find that mindfulness correlate positively to an increased ability to forecast emotional experiences. Moreover, these characteristics does not means that mindfulness takes to being indifferent or aloof, but individual action is more cautious that lead by reflexive reactions (Arendt et al., 2019). Recent literature suggest that it is possible to go beyond “nonjudgement” to understand how past judgements take individuals to change and this passage could take individual outcomes from the first-person level to collective one at group and organizational level (Kudesia, 2019). In a similar perspective, mindfulness attention is a metacognitive awareness that underlies a process of learning that simulations, emotions, and thoughts are transitory mental events and do not exist in nature, making this process essential in contemplative practices (Papies et al., 2015). In general, anyway, this feature may be a mechanism to improve the managerial trade-off between exploration and exploitation individual orientation and the effectiveness of innovative work behaviour though a better quality of choice though possible innovations at the moment and this meta-cognitive process could be expanded at organizational level through relations. Flexible, high-quality and less-biased in decision-making can be three mutually reinforcing mindful-based processes (Glomb et al., 2011). Above all, this consideration should not take to a misunderstanding: mindfulness is not opposite to evaluation or judgment, on the contrary attention and awareness about the present experience can take to a qualitatively better cognitive use of evaluations, judgements and connected memories (Good et al., 2016). This mechanism may help the attention towards new ideas and awareness of them, enhancing the creative phase of innovative work behaviour. Moreover, the challenge of public servants is about daily dealing with wicked problems and mindfulness may support the ambidextrous balancing the cognitive management of conflicts and contradictory expectations from different stakeholder within and outside the local government.

Fifthly, trait mindfulness lead to a superior regulation of behaviours (Good et al., 2016), preventing mindless impulses and empowering individual capability of **self-regulation** (Hülshager et al., 2013; Papies et al., 2012). This is a key process in the determination of the mindset for the decision-making (Decuyper et al., 2018a; Glomb et al., 2011; Hülshager et al., 2013). In fact, through a mechanism of self-regulation of action, mindful capacity helps the realizations of objectives (K. W. Brown et al., 2007) in the short and in the long run (individual ambidexterity) as well to regulate individual behaviour toward innovativeness. Mindfulness is correlated with self-regulation and this path can enhance organizational transformation (E. King & Haar, 2017). Moreover, self-regulation could help individuals to manage better stress, during the efforts of balancing exploitation and exploration and the different passage of innovative work behaviour, as assumed for creativity (S. Y. Cheung et al., 2020). In a laboratory experiment, mindful people are

more able than less mindful individuals to recognize trade-offs and take better choices, through better accuracy in understanding the situation, a deeper and more informed mental process and a greater ability to recognize risk in different alternatives (K. W. Brown et al., 2007). Mindful people present less automatic cognitive operations and behaviours to internal and external stimuli, in two perspectives: they have a wider possibility of conscious choices and capacity of regulation of themselves, they have a better capacity to reduce bias from stimuli though a reduced use of filters of memory and prior conditioning thanks to non-judgmental awareness (Good et al., 2016).

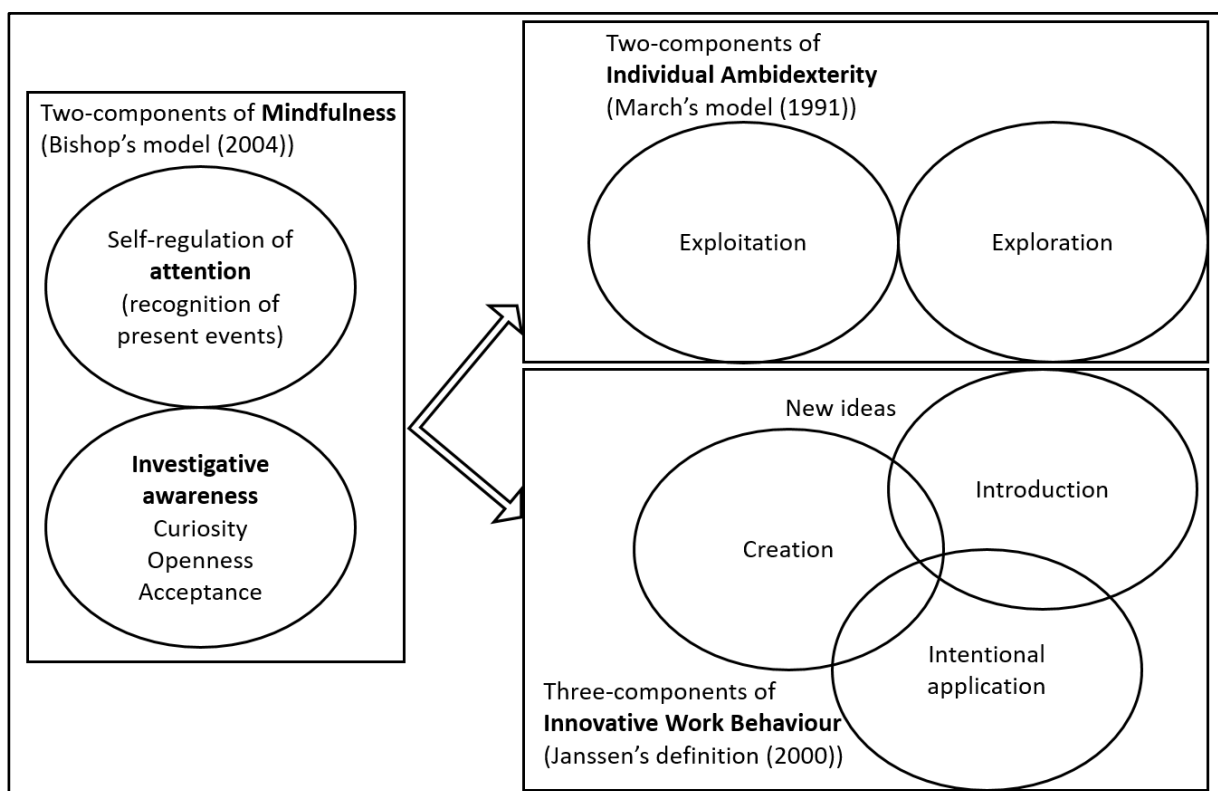
Sixthly, mindfulness affects non-striving, but this is not passivity (Good et al., 2016), considering also the Oriental view of strategy. This perspective is connected with the concept of **motivation** and, in particular, intrinsic motivation (e.g. Ryan & Deci, 2000). In fact, theoretically, mindful workers may have a superior capacity to activate intrinsic motivation (K. W. Brown & Ryan, 2003; Good et al., 2016), even if there are not studies about a mechanism of mediation or moderation. The same mechanism can drive an implicit positive correlation between mindfulness and public service motivation (e.g. Perry, 2000). It is beyond the interest of this study to understand the mechanism of motivation, but implicitly mindfulness may drive public service motivation and intrinsic motivation to implement ambidexterity and create, introduce and applicate new ideas with a single implicit interest to improve the quality, effectiveness and efficiency of the public organization in which one works. In particular, ambidexterity needs individuals that are motivated to refine and renew knowledge, skills and experience in a continuous indispensable process of learning (Mom et al., 2009). This path can lead to innovation too, even through an improved capability to resist to resistance at work in the different phases of innovation, especially during intentional application and attempt of implementation ones.

Seventhly, in theory, Glomb et al. (2011) suggest that mindfulness lead people to a better comprehension of goals and values and a behaviour more congruent with them. In fact, authors' proposition is based on the idea that **self-determination and persistence** are mindful-based processes that influence positively goal-directed effort, greater learning and performance on creative tasks (Glomb et al., 2011, p. 128). Based on self-determination theory (Deci & Ryan, 2008), Decuyper et al. (2018a) find that mindfulness is positively correlated to increased autonomy, competence and relatedness need satisfaction.

Eighthly, it is possible to look at innovative work behaviour and ambidexterity as individual outcomes separately by theoretical glasses of mindfulness. In the first case, For Good et al. (2016), mindful worker is more careful toward deployment of present resources and explore new possibilities and, at the same time, s/he pay more attention to avoid decision biases, though an aware use of mental cognitive processes. For Bishop et al. (2004) mindfulness is composed by a two-

component model: **self-regulation and orientation toward experience**. Thus, following the ideas of this model (Bishop, 2004), in two ways mindfulness may be supportive for individual ambidexterity: the self-regulation at the present moment is the component that may influence exploitation, the orientation toward experience (curiosity, openness, acceptance) is the second component that may affect exploitation. The presence of two theoretical components in the construct of mindfulness is a foundation for regulation of exploitation and exploration toward individual ambidexterity. Furthermore, this model can influence also individual innovative behaviour. It is out of the objective of this thesis to investigate relations between individual ambidexterity and innovativeness, but Caniëls and Veld (2019) find that there is a linear relation between high ambidexterity (a balanced combination between high exploitation and high exploration) and, at the same time, a specialization in exploitation or exploration is positive for innovativeness. A mindful person presents a more relevant commitment to maintain curiosity, experiential openness and acceptance and a deepen perception of intellectual events (Bishop, 2004). These features may impact on characteristics and multiple processes inside innovative work behaviour and delineate its definition, that is creation, introduction and intentional application of new ideas at work (Janssen, 2000). The two mechanisms of self-regulation of attention and investigative awareness at the present moment and, simultaneously, the improved understanding of feeling and thoughts (Bishop, 2004) are foundations for this hypothetical connection (Figure 26).

Figure 26: theoretical connections between models of mindfulness, ambidexterity and innovative work behaviour.



Lastly, following the perspective of attention-based view (Ocasio, 1997), Levinthal and Rerup (2006) theorize that mindfulness has an added value in identifying appropriate actions depending on the interpretation of the context and circumstances, so as to have a good organization in the management of novel stimuli and routines within the organization over time. More recently, Ocasio (2011) identify mindfulness as a core element for attentional engagement, which he defines “the process of intentional, sustained allocation of cognitive resources to guide problem solving, planning, sense-making, and decision making” (Ocasio, 2011, p. 1288). For Ocasio, attentional engagement is a cognitive search that take to the identification of issues, the provision of new solution to organizational problems and generation of new alternatives, which are crucial aspects for individual and organizational ambidexterity and innovativeness. Attentional engagement is multilevel in nature: Ocasio (2011) suggests that it can connect top-down and bottom-up processes. Clearly, Ocasio’s (2011) concept of cognitive search is theoretically related to Bishop’s (2004) dual model of self-regulation of attention and even more investigative awareness. For Rerup, mindfulness “helps organizations to notice more issues, process these issues with care, and detect and respond to early signs of trouble” (Rerup, 2005, p. 452) thanks to quality attention, improved awareness and conservation of attention. Even if scholars called attention about the importance to study attention as a microfoundation dimension of dynamic capabilities (e.g. Helfat & Martin, 2015; Helfat & Peteraf, 2015), to date, there is still a research gap in organization science and more in behavioural public administration. For instance, Hargadon & Bechky (2006) found that mindfulness has a positive impact on collective creativity. More recently, Yu and Zellmer-Bruhn (2017) studied team mindfulness to evaluate effects on team functioning. Helfat and Peteraf (2015, p. 837) suggest that attention and perception are two illustrative managerial cognitive capabilities that are the (micro-) foundation of strategic change and, thus, they may have a positive potential impact on opportunity recognition and creation. Considering these theoretical premises, this thesis postulates a third group of hypotheses (Figure 27).

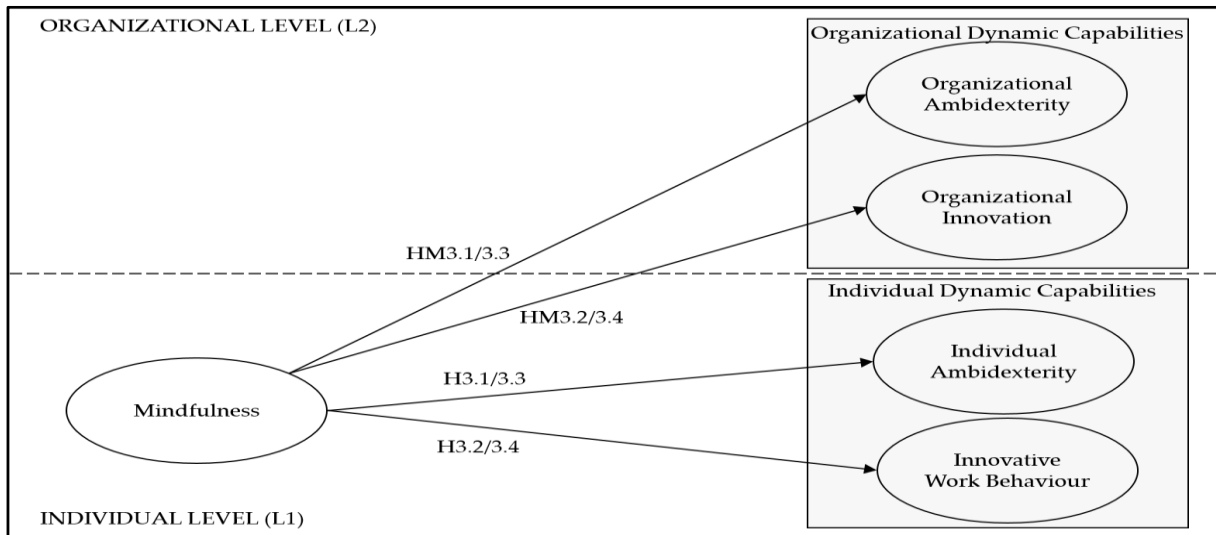
**Hypotheses 3:** *Mindfulness has a positive linear impact on dynamic capabilities.*

*Hp 3 Mindfulness is positively related to individual dynamic capabilities, in particular individual ambidexterity (3.1) and innovative work behaviour (3.2).*

*Hp Multilevel 3. Mindfulness is positively related to organizational dynamic capabilities, in particular organizational ambidexterity (M3.1) and organizational innovation (M3.2).*

As we have seen, the literature on mindfulness still presents an open debate among authors who believe that this construct always has a positive outcome even net of costs and others who believe that in certain circumstances, especially in less dynamic contexts, mindless is more efficient.

Figure 27: hypothetical relations between mindfulness and dynamic capabilities.



In this thesis a contingent comparison has not been made, but it is possible to outline the possibility that mindfulness is not always positive and sometimes automatic pilot is preferable for efficiency and saving time and energy. Given the lack of linearity in the theoretical proposition, empirical evidence becomes necessary to understand whether mindfulness maintains a positive factor role in the local governments' contest at any level or whether at some point there is a break-even point where mindfulness costs outweigh the benefits. Following the idea from Good et al. (2016) and the Kudesia's perspective (2019), the starting point is that mindfulness continues to have a positive net effect in any situation. Moreover, for Kudesia (2019), mindfulness as metacognitive practice, may have a multilevel impact in group and organizational level through amplifying processes. Therefore, it is possible to assume that:

*The effects of mindfulness are linear and they do not contemplate diminishing returns. In particular, these relations in Hp3 and HpM3 between mindfulness and outcomes (dynamic capabilities) are linear (there are not diminishing returns (concave-shaped relation)): individual ambidexterity (3.3); innovative work behavior (3.4); organizational ambidexterity (M3.3); organizational innovation (M3.4).*

### c) The direct relationships between mindfulness and social capital and indirect effects on dynamic capabilities.

The links between social network analysis and attention have not been studied enough to date (L. Rhee & Leonardi, 2018). Mindfulness has intra-individual effects, but it is a cognitive capacity that can impact on other's attitudes and behaviours at work (Schuh et al., 2019). The research about connections between mindfulness and social relationship started in everyday life with the hypothesis that this cognitive quality has a positive impact in romantic relationships (K. W.

Brown et al., 2007) and parent-child relationships (Singh et al., 2006). Mesmer-Magnus et al. (2017) find a positive correlation between trait mindfulness and interpersonal relations through a meta-analysis. Recently, Pratscher et al. (2019) have developed a new scale to measure interpersonal mindfulness. In work context the research is limited and there is a research gap about mindfulness and social capital (Decuyper et al., 2018a), but the literature about romantic and family relations shows positive effects (Reb et al., 2018). Furthermore, van Knippenberg et al. (2015) called for new studies connecting attention, information and decision making in a multilevel fashion. In organizational studies, it is possible to cite Weick's textual words which clearly relate the importance of attention and awareness at work to the position in which the focal worker is and therefore his social structure: "When people expand their repertoire, they improve their alertness. And when they see more, they are in a better position to spot weak signals which suggest that an issue is turning into a problem which might well turn into a crisis if it is not contained." (Weick, 2006, p. 1724) To date, it has not been possible to find studies about mindfulness and knowledge networks or social network analysis at work, a part of some recent studies about leadership (e.g. Reb et al., 2018; Verdorfer, 2016). Mindfulness is seen as a dimension that can increase individual social relationships (K. W. Brown et al., 2007; Dekeyser et al., 2008; Glomb et al., 2011; Good et al., 2016), both in quality of interpersonal connections (e.g. Hutcherson et al., 2008) and greater social connectedness (e.g. J. S. Cohen & Miller, 2009).

Firstly, mindful employees engage in enhancing various kinds of relations and they are more **attentive to them** and aware. In recent experiments based on social psychology, Golubickis et al. (2016) find that mindfulness reduces egocentrism and the attention goes from the first person to a third person. Moreover, mindfulness practice is also beneficial for improving prosocial behaviors (Hafenbrack et al., 2019). Theoretically, Glomb et al. (2011) indicate various positive features of mindful workers in creating social relations: a more open communication, a reduction of conflicts and their contagion, an acceptance of other's imperfections, though mechanism of empathy and response flexibility (Glomb et al., 2011, pp. 139–140). The non-judgemental aspect of mindfulness means that people are more aware (and sensible) to marginal physical and emotional signals reducing the negative effects of subsequent reactivity (Glomb et al., 2011). Empathy and compassion driven by attention and awareness towards a better understanding of other's emotions, needs and differences may ameliorate dyadic workgroup relationships (Good et al., 2016).

Secondly, an important aspect in relations with others is the **control of emotions** and mindfulness seems to have a positive function on this mechanism, so that various articles concern this subject (Hülshéger et al., 2013), even though a study in social networks at work is still absent. Two fea-

tures connected to control of emotions are a capacity to reduce conflict and an improved management of emotional reactivity (Good et al., 2016). Neurological functioning of the brain confirms the increased ability of trait mindfulness to control emotions (Deng et al., 2020).

Thirdly, some theoretical insights concern the perception of **leadership**<sup>88</sup>. Widely, scholars consider mindfulness as a beneficial antecedent of positive leadership behaviours and follower's outcomes (Schuh et al., 2019). Empathy may be a mindful-based process that comes into operation toward constructive leadership (Glomb et al., 2011). To date, the studies about mindfulness and leadership are relatively scarce in comparison to the importance that this relationship can have in management (Good et al., 2016). This process happens in different interpersonal perceptions and features of leadership. In a recent research (proceeding in Academy of management journal), Dietl (2015) find that mindfulness improves characteristics of authentic leadership. Verdorfer (2016) identifies that dispositional mindfulness correlates positively to genuine servant leadership (humility, standing back and authenticity) as assessed by followers' rates. Mindfulness is positively indirectly connected to transformational leadership through need for satisfaction and in this perspective mindful employees can improve their individualized consideration thanks to awareness during communication (Decuyper et al., 2018a). Mindfulness impacts positively on leader procedural justice enactment and thought the mechanism of reduced emotional exhaustion mindful leaders increase followers' performance (Schuh et al., 2019). In relationship between leadership and mindfulness, there are some dualities. In particular, mindful leaders improve the quality of relation with subordinates and, then, there is a positive effect on individual outcomes (Reb et al., 2014, 2018), but, in a different perspective, mindful followers are those who perceive the indications of ethical leaders more efficiently and the individual outcomes are better (Eisenbeiss & van Knippenberg, 2015). Only recently, Reb et al. (2018) find that leader's mindfulness is a predictor of employee performance through an increase in respect towards subordinates and a decrease in stress perception. Even if practitioners call for a great importance of mindfulness in leadership, empirical evidences are few even if it is a key area for organization (Reb et al., 2018; Schuh et al., 2019). Mindful leader improve the quality of leader-member-exchange (LMX), by improving interpersonal justice and reducing relational stress (Reb et al., 2018). Thus, even if another people in the organization is not a formal leader, it is possible to hypothesize that other's mindfulness could improve the quality of relation between equals, though interpersonal similar mechanisms. In fact, this aspect is bidirectional: from the point of view of others and of the focal

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<sup>88</sup> Considering the next theoretical analysis, another hypothesis could be relevant and it is not treated in this thesis: mindfulness is positively related to emergent leadership and mindfulness is positively related to organizational shared leadership.

person. Firstly, mindful people could increase the possibility that another person have the perception focal colleague is a leader. At the same time, for knowledge networks, observers perceive mindful people as a “good knowledge individual” for his/her (cognitive) attention and awareness capabilities boosted by mindfulness and, so, it could be more probable that another person (inside or outside the organisation) go for knowledge exchange (communication, information, advice) to a mindful person. Thanks to mindful capacity, a colleague could improve other’s perception that s/he is a leader or increase her/his knowledge social capital, maintaining fairness in the relationship and understanding other’s needs (Reb et al., 2014). In a microfoundation social network perspective, theoretically, mindful people are more attentive to social capital situations and observers understand these social behaviours.

Fourthly, mindful people may present a stronger **orientation toward other** rather than self-orientation, caused by a mechanism of less-referential or ego-involved attitudes (Good et al., 2016). Other orientation improve attention toward others in interpersonal relations rather than self-concerns (Good et al., 2016). This mechanism can be useful at individual level (individual social capital) as well at the organizational level (organizational social capital).

In conclusion, fifthly, in addition to the considerations written above, focusing on **knowledge networks**, mindful people are more flexible in attention and awareness during verbal and non-verbal communication with other subjects in the terms in which others communicate and interact, as well as in their cognitive and emotional reactions, thoughts and coping with needs for interpersonal welfare (K. W. Brown et al., 2007). Mindfulness helps individuals to individuate stimuli, materials, and data in external phenomena (Dane, 2011, p. 1004). Good et al. (2016) propose again that mindful workers are better in general communication. This feature is confirmed with the use of modern communication technologies (J. A. Roberts & David, 2017). Schuh et al. (2019) suggest that mindfulness may increase divergent thinking through the communication of ideas. Mindful workers can access to more information through the awareness of the present-moment reality at work (S. Y. Cheung et al., 2020). In sum, these positive aspects indicated by literature have mutual repercussions on other’s perceptions. For this dual mechanism, this thesis assume that mindful employees present a stronger social capital. This assumption takes in considerations the same theoretical idea in the conceptual paper of Glomb et al. (2011). As consequence of these dual considerations, that is from the point of view of the leader and the follower, the theoretical idea is that employees as raters consider colleagues as more leader if they are mindful. At the same time, this thesis posit that mindful public servants have more strong and weak external relationships (these data derive from an evaluation of a focal person) and they are more central in internal knowledge networks (as for leadership, even in this case, the position come from observation by



colleagues within the organization). In summary, after making these considerations, it is possible to hypothesize interpersonal effects of mindfulness.

Considering findings and research gaps in literature and predictions, this thesis posit that:

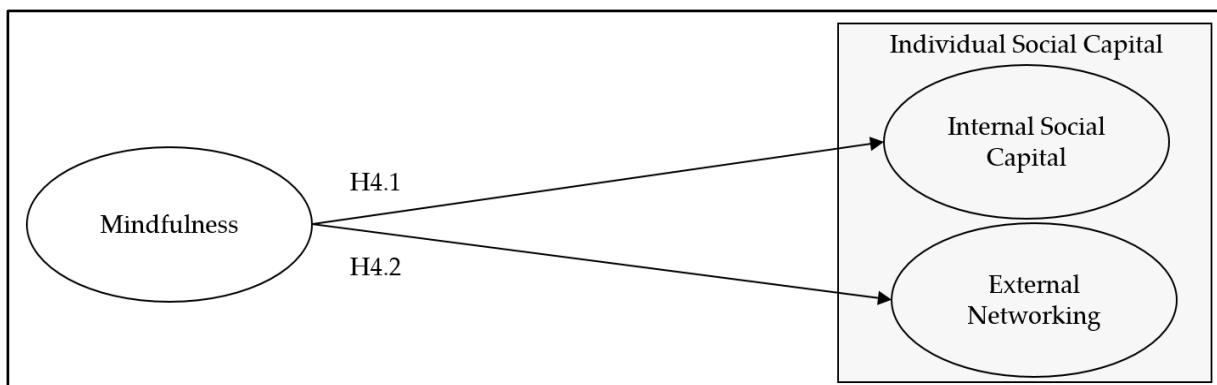
**Hypotheses 4:** *Mindfulness has a positive impact on social capital. Especially, starting from an individual level of analysis:*

*Hp 4.1 Mindfulness is positively related to internal social capital.*

*Hp 4.2 Mindfulness is positively related to external networking overall factor (a) and in particular both to external strong ties (b) as well on external weak ties (c).*

Moreover, a further consideration is required to make hypotheses in a **multilevel perspective**. Following the paradigm of attention-based view of the firm, attentional perspective of individual when take decisions is embedded in social structures (among other thinks as organizational culture and sector structure, beyond the focus of this thesis) (Ocasio, 2011, p. 1292). This conceptual idea adds to the considerations at the individual level and, at the same time, in this sense, mindfulness is seen as a microfoundation dimension of organizational social capital. In fact, within this theoretical point of view and keeping in mind the same considerations made for the individual level, it is possible to expand hypotheses in a multilevel mode: (individual) mindfulness may have an impact on organizational social capital. Here, the focus is not the impact of an individual construct to individual socially-based outcomes. Conceptually, to simplify the reasoning, organizations where “many” people present a high average level of mindfulness (in the sense of external social attention and awareness) may be characterised by more inter-connected and dense intra-organizational networks. More attentive and aware individuals understand better the social context and engage in the creation of more connected positive social environments at work.

Figure 28: hypothetical relations between mindfulness and individual social capital.



Kudesia (2019) suggest that metacognitive practice is stronger for organizational transformation when there are relations among individuals, in the sense that individual action led by mindfulness take to collective outcomes through interrelations between actors. The social capital may facilitates agreement between colleagues in the use of mindfulness meta-cognitive practices, reducing fragmentation risks within the organization and augmenting consensus in the sense of high-quality “heedful” interrelating (Kudesia, 2019, p. 418).

Considering the theoretical premises, in a multilevel perspective, the thesis postulates that:

*H<sub>p</sub> Multilevel 4.1 Mindfulness is positively related to organizational social capital.*

At this point, it is necessary to consider that literature suggests that high quality relationships enhanced by mindfulness have a positive impact on employee performance (Reb et al., 2018). For example, following the conservation of resources theory (Hobfoll, 1989), Koon et al. (2015) assume that mindful people evaluate differently job resources through their nonjudgmental awareness inherent to mindfulness and thus they have a better feeling of competence and motivation, especially in situation of organizational change (Koon et al., 2015). In this theoretical perspective, mindful workers are more inclined to improve in-role and extra-role performance (Koon et al., 2015), enhancing directly individual outcomes and indirectly organizational ones. The critical conditions of change, due to continuous reforms in public sector and economic crisis, and the environmental pressure of multiple proximal stakeholder’s expectations in local governments (from politicians to citizens to service users) put to the test public servants every day. An attention-based view of the firm suggests that communication channels may be a mediator towards strategic decision-making in organizations (Ocasio et al., 2018). In this perspective, mindfulness can boost ambidextrous and innovative behaviours at work through the structure of social capital. In the first case, mindfulness is a cognitive capability that can increase the individual dynamic capability of contemplate exploitation and exploration individual orientation effectively through a mechanism of attention and awareness. In this sense, greater flexibility could guarantee a greater ability to manage exploitation and exploration orientation, without excessive concentration on one of the two aspects. This path may be easier if focal individual can access to relevant resources in individual and organizational social networks. In a similar perspective, mindfulness may be useful to improve social capital and in turn innovation at work. If on the one hand, mindfulness is connected positively to social capital in the sense that it may improve the number of relations and structural resources as a cognitive microfoundation, on the other hand, attention and awareness about the capital social actually present can increase the probability of deploy it to the fullest in order to achieve stronger positive outcomes.

In this sense, it is possible that high mindfulness public servants will have a greater ability to obtain resources from their current internal and external relations to the organization to enhance individual level of ambidexterity and innovation. Likewise, in a multilevel perspective, focal public servants with a high level of mindfulness could be more aware and attentive of organizational knowledge networks and be "protagonists" and relevant nodes in the network to implement ambidexterity and innovation at an organizational level, using network resources collectively present. Knowledge resources are embedded in networks and mindfulness may help public servants to be able to deploy the benefits from knowledge ties inside and outside the organization, which in turn are instrumental to achieving improved dynamic capabilities. Even if a longitudinal perspective is absent, microfoundation assumptions may indicate that mindfulness can increase social capital and high mindful workers than low mindful colleagues can deploy actual social capital more profitably. In a multilevel perspective, the average level of individual mindfulness can act in the exploitation of the internal network.

Considering these theoretical premises, this thesis postulates that there could be indirect relations with the dimensions of mindfulness, social capital and dynamic capabilities.

Firstly, this work posit some hypotheses about the role of social capital as mediator:

**Hypotheses 5:** *Social capital mediates the relations between mindfulness and individual and organizational dynamic capabilities in local governments.*

- *Hp 5 Internal Social capital (i.e. Individual social capital from internal knowledge networks) mediates the relation between mindfulness and individual dynamic capabilities, in particular: individual ambidexterity (5.1) and innovative work behaviour (5.2)*

- *External networking mediates the relation between mindfulness and individual dynamic capabilities, in particular: individual ambidexterity (5.3) and innovative work behaviour (5.4).*

In a multilevel perspective:

- *Hp Multilevel 5. Organizational social capital mediates the relation between mindfulness and organizational dynamic capabilities: organizational ambidexterity (M5.1) and organizational innovation (M5.2).*

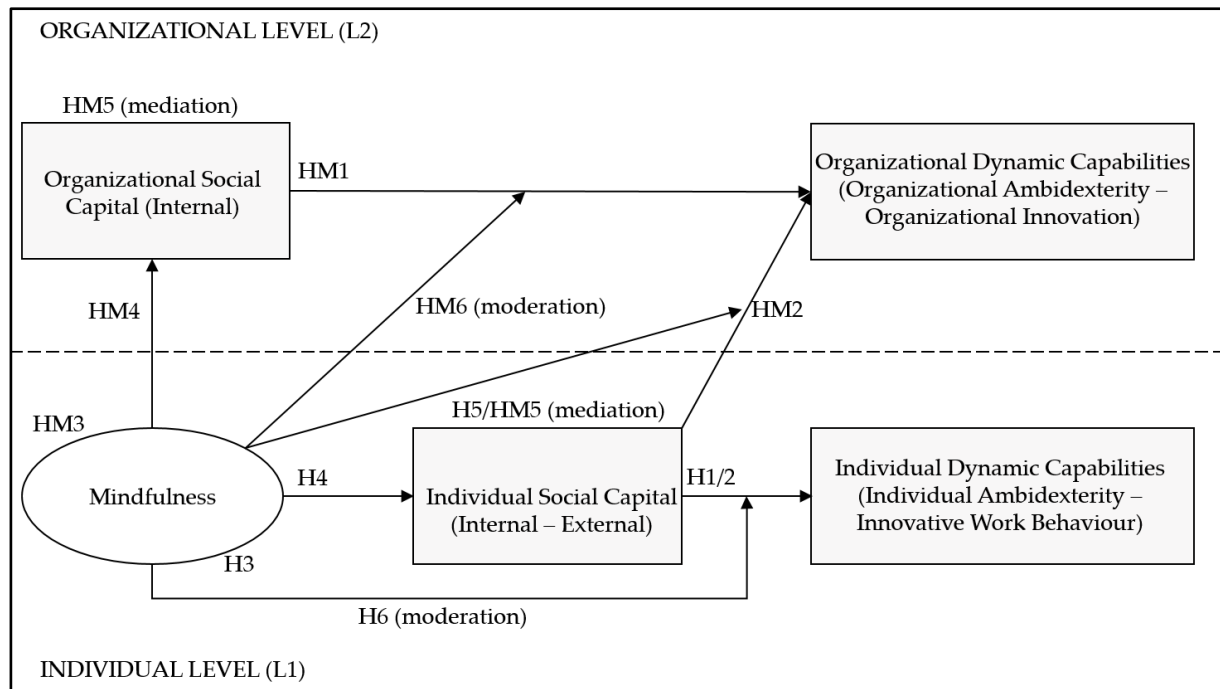
- *External networking mediates the relation between mindfulness and organizational dynamic capabilities: organizational ambidexterity (M5.3) and organizational innovation (M5.4).*

Secondly, there is a research gap about the cognitive capabilities of "gatekeepers" (Carnabuci & Diószegi, 2015). This thesis posit some hypotheses about the role of cognitive capabilities as moderators in the relations between various dimensions of social capital and different outcomes. Mindfulness and political skill (as it will be hypothesized in next chapter) Brown et al. (2007) and

Dane (2011) suggest that an increased awareness of both internal and external stimuli may facilitate a better connection between behaviours and outcomes. In organizations, the enhanced cognitive capability to be attentive and aware of external stimuli in the work surroundings may lead to a better use of relationships at work (Eisenbeiss & van Knippenberg, 2015). This passage may be favoured by an improved capacity to implement individual intentions and shaping them (Reb et al., 2017). In this thesis, it is assumed that public servants with a higher level of mindfulness are more able to efficiently cope with internal, external and organizational social capital, using in a better way the large amount of knowledge inside the networks. Good et al. (2016) propose that mindfulness may improve capability to modulate tones in relationships depending on whether the situation is good or bad. In particular, for Metiu and Rothbard (2013), mindfulness is useful to improve coordination and sharing of mental models among people.

At the same time, less-mindful employees are more prone to experience job difficulties and less able to cope with effort associated to networking behaviour. Through a series of laboratory and in the field experiments, Papies et al. (2015) demonstrate the metacognitive role of mindfulness which can significantly modulates the relation between motivation and behaviour, improving the capacity to understand past behaviours and guide the future ones. Social capital could be also a form of stress for employees and, as seen, it could have diminishing returns for effort and time used. Ramaci et al. (2019) find that mindfulness moderates the relation between relations as a source of stress at work and psychological and physical health. Mindfulness may have an effect also in a multilevel or hierarchical perception of social capital. For instance, Eisenbeiss and Knippenberg (2015) find that follower mindfulness moderates the multilevel relationship between ethical leadership and follower discretionary work behaviour, through a different mental way of processing hierarchical information. Mindful people may have more attention to catch more information and they can process knowledge better in the mind (S. Y. Cheung et al., 2020), improving the capacity of balance exploitative and explorative knowledge and implement new ideas at work in the present moment thanks to a enhanced attention and awareness about the actual knowledge network. It is possible to find knowledge resources inside and outside the organization and mindful workers could be more able to search, identify and encode tacit and explicit knowledge (S. Y. Cheung et al., 2020). Moreover, Kudesia (2019, p. 419) suggests that in a mirror perspective if a person shows meta-cognitive capabilities in relationships and this is both an invite and a help to others to apply a similar mental process, which leads to an **amplification** of the effects on individual and collective dynamic capabilities.

Figure 29: hypotheses about conceptual multilevel mediation and moderation model with mindfulness and social capital as microfoundation of dynamic capabilities.



**Hypotheses 6:** *Mindfulness moderates the relations between individual and organizational social capital and individual and organizational dynamic capabilities in local governments.*

- *Hp Mindfulness moderates the relation between internal social capital (i.e. Individual social capital from internal knowledge networks) and individual dynamic capabilities: individual ambidexterity (6.1) and innovative work behaviour (6.2,), both for strong ties (a) and weak ties (b).*
- *Hp Mindfulness moderates the relation between external networking and individual dynamic capabilities: individual ambidexterity (6.3) and innovative work behaviour (6.4). Mindfulness eliminates (potential) diminishing returns of external networking at individual level.*

Moreover, in a multilevel perspective, this thesis posit that:

- *Hp Multilevel 6. Mindfulness moderates the relation between organizational social capital and organizational dynamic capabilities: organizational ambidexterity (M6.1) and organizational innovation (M6.2).*
- *Hp Mindfulness moderates the relation between external networking capital and organizational dynamic capabilities: organizational ambidexterity (M6.3) and organizational innovation (M6.4). Mindfulness eliminates (potential) diminishing returns of external networking at organizational level*

## **2. POLITICAL SKILL (REVIEW AND RESEARCH HYPOTHESES).**

### **a) Political skill: a theoretical foundation.**

In the framework of microfoundation of dynamic capabilities, Helfat and Peteraf write that “social cognitive capability includes the capacity to understand the point of view of others, and therefore provides the potential to influence the behavior of others as well” (Helfat & Peteraf, 2015, p. 844). Scholars in public administration are beginning to focus on political astuteness as capability that connect public leadership and public value thanks to a better approach to coalitions and competing interests (Hartley et al., 2019). Political astuteness permits to manage relations in local governments traversing the zone between politicians and administration (Hartley et al., 2015) even in periods in which political climate is intense and there is a research to build political capital for future changes within the organization (Vinarski-Peretz & Kidron, 2018). These theoretical movements enlight the necessity to deepen the knowledge about the how political skill influence outcomes at work (Ferris et al., 2005), also in the field of behavioural microfoundation of dynamic capabilities in public administration.

Political skill is defined as:

“the ability to effectively understand others at work and to use such knowledge to influence others to act in ways that enhance one’s personal and/or organizational objectives” (Ahearn et al., 2004, p. 311; Ferris et al., 2005, p. 127).

The term political skill is first used in the organisation literature in the early 1980s and from the very beginning indicates a crucial individual quality of influencing others successfully in the workplace (Mintzberg, 1983; Pfeffer, 1981). Mintzberg described organizations as political arenas and, in these political environments, political skill is a key for success (1985). Persuasion, manipulation and negotiation are seen as key factors in a political perspective of organizations (Mintzberg, 1983). These concepts are coherent with themes that concern public organizations for the organizational political climate (Kidron & Vinarski Peretz, 2018) and for dynamic phenomena of influence, status and power within them (Magee & Frasier, 2014). Early studies referred to a formal conception of politics and power in organizations, while, over time, scholars focused on the individual’s ability to have effective relations at work and socio-cognitive aspects (Kimura, 2015; Perrewé et al., 2004). The interaction between political skill and interpersonal power is crucial in evaluating individual performances (Treadway et al., 2013). For over a century there has been research on the effects of social influence on behaviour and attitudes and today this is a fundamental element in organisational studies and it is studied in multiple disciplinary viewpoints (Ferris et al., 2017). The first study on social influence dates back as far as the end of the

nineteenth century: Triplett studied the cyclists' performances when they are alone with respect to the situation in which they ride in the presence of other ones (1988). Nowadays, political skill is seen as a worthwhile "social effectiveness competency" that can improve individual and organizational outcomes (Ferris et al., 2017, p. 6). In this sense, political skill is a crucial dimension in the study of microfoundation and it can be learned and developed (Ferris et al., 2005), so that it has also practical relevance for human resources management in local governments. In last two decades, Ferris and his colleagues have been the most important scholars that studied the dimension of political skill in management and organizational literature. The contemporary construct of political skill includes **four dimensions**: social astuteness, interpersonal influence, networking ability, and apparent sincerity (Ferris et al., 2005, 2007). **Social astuteness** concerns the capabilities to understand the social situation precisely, to be cleaver in treating with others and interpret personal and other's behaviours in interactions (Ferris et al., 2005, 2007). **Interpersonal influence** relates to the capabilities of flexibility and calibrating behaviours in different circumstances, a subtle and convincing way of relation and influence with others (Ferris et al., 2005, 2007). **Networking ability** means to have the capabilities to develop and use social networks, but also to negotiate and manage conflicts (Ferris et al., 2005, 2007). Finally, **apparent sincerity** involves the capabilities to appear a person with a high level of integrity, sincerity and, above all, without a second end or motivation, so they do not appear manipulative or coercitive and they inspire trust and confidence leading to a greater influence capability (Ferris et al., 2005, 2007). This structure of political skill is validated repeatedly with empirical tests (e.g. Ferris et al., 2008). In general, political skill is a multidimensional construct that includes social competences and highlights cognitive, affective and behavioral aspects with effects on both self and others (Ferris et al., 2007). "The leader does not have to be the most intelligent person in the room. But he or she should be one of the most emotionally in tune people in the room." (Kiel & Watson, 2009, p. 22). In this perspective, political skills can be considered theoretically a point of reference also for the success of public managers and civil servants, as expressed in the article comparing academia and practice by Kiel and Watson (2009). Employees of local governments often have a frontline relationship with service providers and citizens, therefore, there is an increased need for them to have sufficiently developed cognitive skills in terms of relationship management skills as they have to solve wicked human problems rather than technical ones daily (Kiel & Watson, 2009). The pure rationality that is typical of the bureaucratic model and New Public Management leaves room for the need to know how to better manage emotions, feelings and relations to improve public outcome in Network Governance (Vigoda-Gadot & Meisler, 2010). The authors state that a thoughtful and effective emotional working approach can improve the outcome, whereas a mechanical



and unsympathetic approach can lead to negative outcomes, loss of time and credibility and dissatisfaction of the stakeholder with whom one has a relationship (Kiel & Watson, 2009). Already from the first impact, the impression can improve stakeholders' perceptions of the service offered by a municipality. Moreover, public servants with higher skills are better able to cope with relationships with dissatisfied citizens and other stakeholders, so that social cognitive skills often become more relevant than cognitive skills for which public employees are hired, even through a public competition. Emotional management is combined with affective leadership skills in relations with elected officials, other stakeholders in a community and public employees of other organizations even at a different level of government (Kiel & Watson, 2009). In particular, for Kiel and Watson (2009), the lack of emotional skills and responses can lead to problems in relations with elected officials and politicians, while social cognitive capabilities can benefit the creation of positive relations within the municipality with the consequence of improving the organizational outcome. Finally, it is relevant to ask whether social cognitive capabilities related to relationships are related only to top managers or also to employees. For Kiel and Watson (2009), networking is a critical skill even for public servants because at the local level in Network Governance paradigm the need for cooperation and resource sharing is increasingly strong by nature and therefore the cunning in relationships becomes relevant and critical at all levels to create relationships with different stakeholders. Political skill, therefore, can be considered as a relevant dimension for all knowledge workers who have relationships evidently within modern Network Governance, where relational skill and cunning can lead to better individual and organizational outcomes at a time when cooperative and competitive skills are increasingly relevant to create public value for stakeholders in networks of public interest.

#### **b) Social cognitive capabilities: political skill and comparison with other social effectiveness constructs.**

At this point it is appropriate to observe how political skill has been studied in the field of public administration and public management compared to other “social effectiveness constructs” (Ferris et al., 2002), considering that this kind of comparison is typical in literature (Semadar et al., 2006)<sup>89</sup>. It is necessary to explain some differences between political skill and other relevant social constructs. Some of them are chosen, because the list is wide and includes many facets, which can be superimposed, ranging from the definition of the construct to its interpretation in psychological terms to understand if the dimension is a fixed personality trait or a state and how much

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<sup>89</sup> Leadership self-efficacy was used for the comparison by Semadar et al. (2006), but it is excluded in this review because this variable is clearly more relevant for the managerial level than for all public servants and knowledge workers.



learning and experience can intervene in shaping a person. Ferris et al. (2005) suggest that there are some overlaps between different constructs of social effectiveness, otherwise, political skill is distinct from others. In particular, firstly, the construct of **emotional intelligence** was introduced in 1990 by Salovey and Mayer. Emotional intelligence can be defined as “the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions” (Peter Salovey & Mayer, 1990, p. 189) and it is a “core aptitude or ability to reason with emotions” (P. Salovey & Mayer, 1997). Emotional intelligence focuses mainly on the emotional aspects of relationships, instead, political skill encompasses a wider range of social skills (Ferris et al., 2007; Semadar et al., 2006). Different authors studied emotional intelligence and political skill in competition (Ferris et al., 2005; Semadar et al., 2006), because there are some overlaps, but they are conceptually distinct constructs (Meisler, 2014; Semadar et al., 2006). Considering Vigoda-Godot and Meisler (2010) find that Emotional intelligence has a positive association with political skill and this dimension is a mediator with work outcomes. This path is confirmed by Meisler (2014) for a financial organization. In this sense, emotional intelligence may be considered an antecedent of political skill, which it is logically nearer to outcomes. In fact, this path is confirmed by Kimura et al. (2015, p. 314), who write that emotional intelligence is more general and it is a requisite for Political skill, so that the latter can be considered a “proximate predictor” and the former a “distal predictor”. In summary, political skill is correlated with emotional intelligence, but, at the same time, this construct includes more aspects than only emotion-based ones (Ferris et al., 2005). Political skill combines also knowledge, mental abilities and skills useful in interpersonal effectiveness, influence and control, that is dimensions that are beyond emotions (Ferris et al., 2005, p. 130). Another possible resemblance is between political skill and **machiavellianism**. This latter construct “is conceptualized as one's propensity to distrust others, engage in amoral manipulation, seek control over others, and seek status for oneself” (Dahling et al., 2009, p. 219). Machiavellianism is also defined as “a strategy of social conduct that involves manipulating others for personal gain, often against the other's self-interest” (D. S. Wilson et al., 1996, p. 295). The literature on Machiavellism is based on the works *The Prince* (1513/1981) and *The Discourses* (1531/1984) written by Nicolo Machiavelli. This is a historical perspective on research on the power and foundation of modern political science. The Machiavelli's *Prince* is a book that is set in a historical period of great confusion, chaos and relative political instability (Christie & Geis, 1970) and the author provided the first example of a manual of political survival (Shultz, 1993). In *Journal of Management*, Dahling et al. developed a four factors model for a new scale of Machiavellianism: “a tendency to distrust others, a willingness to engage in amoral manipulation, a desire to accumulate status for oneself, a desire to main-

tain interpersonal control" (Dahling et al., 2009, p. 227). The Machiavellianism construct was initially elaborated by Christie & Geis (1970), who in "Studies in Machiavellianism" carried out various experiments to understand the behavior of bull-handled leaders, Machs<sup>90</sup> and the differences between those who presented a High Mach and a low level. The authors focused mainly on the effects of manipulative tactics, amoral actions, cynicism and an untrustworthy and real-life view of human nature (Christie & Geis, 1970). Mach is a construct of social psychology (Shultz, 1993), is a trait-like variable (D. S. Wilson et al., 1996) and refers to a behavioural strategy of social conduct characterized by strong ambition, amorality and sel-fishness tending to be stable (Christie & Geis, 1970; D. S. Wilson et al., 1996). Mach is included in the "dark triad" together with Neuroticism and Psychopathy (Paulhus & Williams, 2002) and in the "dark side" of management and organization science (Paulhus & Williams, 2002). Therefore, Machs are cynical individuals, poorly ideological and seen as manipulators because they use "guile, deceit, and duplicity" to achieve their goals, they are not very involved in interpersonal affective relationships and conventional morality (Christie & Geis, 1970; Shultz, 1993). This view of Machs could lead to simplifying conclusions. It is, in fact, a debated question, however, of the characteristic nature of Machs that are only cynical or opportunistic or rational game players or even a combination of them (Shultz, 1993), which leads academic research to reflect on potential negative and positive aspects of Machs. Most authors see this construct as a negative psychological trait belonging to the "dark side" (e.g. Dahling et al., 2009; Paulhus & Williams, 2002), so much so that Machiavellians (Machs) are seen as manipulators and destroyers of social capital in groups (Gunnthorsdottir et al., 2002). High Machs, in fact, "feel very little emotional connectedness or normative obligation towards others at work" (Dahling et al., 2009, p. 249). Machs are seen as very adaptive and collaborative when these relationships allow for personal gain (Hawley, 2003) and not a lack of ethics as an end in itself (Schepers, 2003). For these reasons, under contingent circumstances Machs contribute positively and constructively to the organization (Belschak et al., 2015). In these cases, in fact, Machs turn out to be cooperative and trustworthy when this type of behavior is perceived as beneficial to them (D. S. Wilson et al., 1996, p. 295). The environmental context of the organization has a potential value of moderation with respect to the effects of Machs (Belschak et al., 2015). Although many performance studies have given little in the 1970s and 1980s (Belschak et al., 2015), in the Christie & Geis model (1970) Machs are more effective in contexts where they can express greater autonomy in the choice of behavioural tactics to achieve the objectives of interest (Shultz, 1993). Compared to non Machs, "high Machs" are highly self-interested and goal driven (D. S. Wilson et al., 1996), self-enhancement and impression management reasons (J. A.

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<sup>90</sup> Mach is often used in literature to indicate Machiavellianism and Machs for Machiavellians (Christie & Geis, 1970; Dahling et al., 2009).

Becker & Dan O'Hair, 2007; Bolino & Turnley, 2003). Compared to the negative definition, in fact, in organizations, there can be positive consequences contingent and contextual to Machiavellianism thanks, for example, to the intervention of leadership, i.e. the influence of moderation of the leader's behavior (Belschak et al., 2015). The aspect of destruction or construction of social capital, therefore, is ambivalent, as "For Machs, the ends justify the means" (Belschak et al., 2015). Machs are not expected to be hostile in interpersonal relationships (Christie & Geis, 1970, p. 48), on the contrary, in complex, competitive and vis-a-vis stressful interpersonal situations (in laboratory experiments) they manage to perform better than non-Machs (Christie & Geis, 1970, p. 74), while in non-face-to-face, ambiguous and non-competitive situations neither High nor Low Machs have an advantage (Christie & Geis, 1970, p. 104). Machs succeed do not necessarily have counter-productive, deceptive and manipulative behaviors (Belschak et al., 2015). The strategy of Machs is cool, cognitive and situation-specific, but it is not "obviously manipulative", because being obvious could be a disadvantage, on the contrary, it is possible that the help of others to win in bargaining can be thanked by others for the opportunity received (compared to low Machs that could assume the constant presence of fair play and appear less political with a losing tactic): "The high Mach is the one who gets others to help him win in such a way that, in the process, they thank him for the opportunity (Christie & Geis, 1970, p. 304). According to the authors, moreover, the ability to adapt the tactic to the situation of relationship with others can be extended from the laboratory to real life in a "free" environment (Christie & Geis, 1970, p. 342). For their own benefit and in calculating their own well-being, they can collaborate and make political alliances (Belschak et al., 2015) and have the skills to create a positive and desirable image of themselves (Deluga, 2001) and adapt to prosocial behaviour (D. S. Wilson et al., 1996). Most of the studies on Mach concern the characteristics of the leader and how Machs leaders influence followers, while few recent studies concern the Mach level of followers and how this can be addressed by the leader (Belschak et al., 2015) and, at the moment, there is no deepening of the relationship with shared leadership. Especially how Machs exploit the condition of shared leadership for the achievement of goals that are of benefit in public administration seen under the critical lens of the public choice paradigm. Machiavellianism had a particular interest in research in the 1970s and 1980s and had been abandoned over time (Belschak et al., 2015; Christie & Geis, 1970; Dahling et al., 2009; D. S. Wilson et al., 1996), but it is a particularly relevant concept in the themes of management and leadership and extremely contemporary for organization research (Dahling et al., 2009). In conclusion, both Machs and potically skilled individuals are socially clever and tehoretically well connected (Dahling et al., 2009). There are some overlaps, but theoretical differences are confirmed studying different dimensions of political skill: networking ability and social astu-

teness are statistically predicted by Machiavellianism, but the mechanism does not work for apparent sincerity and interpersonal influence (Dahling et al., 2009, p. 242). Early studies have speculated that Mach was a precursor to political skill, but still the number of studies on this subject has been limited (Ferris et al., 1994). In this context, for this reason, the definition of machiavellianism has been more deepened: to explain the differences and peculiarities with respect to political skill; to distinguish this dimension of social effectiveness with respect to the others, as there are still relevant gaps in the literature, which could not be answered in this thesis, but which will be briefly identified in the conclusions regarding future research, which can still allow a step forward in research on microfoundation in the field of behavioural public administration.

Moreover, a third brief conceptual comparison concerns the construct of Bandura's **self-efficacy**, that is defined "judgments of how well one can execute courses of action required to deal with prospective situations" (Bandura et al., 1982, p. 122). In general, the space of overlap between self-efficacy and political skill is relatively small. If a person is aware to be politically skilled is more probable that former would be improved as part of self-confidence (Kimura, 2015) and the latter is a more general and comprehensive construct (Zellars et al., 2008) connected to contextual performance rather than only to task performance (Jawahar et al., 2008).

A relevant fourth comparison is with **self-monitoring** and, even in this case, there are some similarities but overlaps are limited and it is a different construct than Political skill. In particular, self-monitoring is a trait of personality that concerns the flexibility of selfpresentation to different actors (Snyder, 1974; Snyder & Gangestad, 1986). In literature, self-monitoring refers to a chameleon-like personality (Bedeian & Day, 2004; Kilduff & Day, 1994). Inoltre, a differenza di Political skill, l'outcome di self-monitoring è decisamente più ambiguo: vari autori fanno emergere il rischio che questo social construct abbia un dark side che comporta una qualità peggiore delle decisioni e un minore well-being per sé e per gli altri (Kudret et al., 2019; Van Quaquebeke, 2016). To date, the effect for an organization of having a high concentration of chameleon self-monitors is uncertain (Kudret et al., 2019). Thus, the effect on social capital could have a decreasing marginal returns, as the growth of positive ties (Day & Schleicher, 2006; Landis, 2016; Tasselli & Kilduff, 2017) can be contrasted with a reduction in value added in terms of resources resulting from diversity (Bedeian & Day, 2004). The overlap between Political skill and Self-Monitoring is also reduced in another way. In fact, Briggs and Cheek (1988) developed a scale for the latter variable that has two different sub-dimensions: a "public performance" factor<sup>91</sup>, that considers the individual skill to generate a positive image; an "other-directedness" factor<sup>92</sup>, that concerns an indi-

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<sup>91</sup> An example of item of the scale is: "I would probably make a good actor" (Briggs & Cheek, 1988).

<sup>92</sup> An example of item "I guess I put on a show to impress or entertain people" (Briggs & Cheek, 1988).

vidual search to reduce negative images (for a recent review: Kudret et al., 2019). High self-monitors may emerge as informal leaders at work (Kilduff et al., 2017) and develop relations thanks to their impression management ability that they show, otherwise they could not be good leaders in comparison with true ones (Bedeian & Day, 2004; Kilduff et al., 2017). Moreover, it is not still clear the long-run effects of high self-monitors in other's perception. In particular, Snyder and Gangestad (1986)<sup>93</sup> developed a scale with some items that lead to think about long-run effects, for example "others may change I can look anyone in the eye and tell a lie with a straight face (if for a right end)" and "I'm not always the person I appear to be." Other can change one person's opinion about the initial impression. Especially if the other person has relevant social cognitive capabilities (for example emotional intelligence), he or she can understand if the focal high-monitor tends to be a liar (even if for good) and this process could lead to negative relational outcomes and problems in terms of outcomes over time. In conclusion, from a **quantitative empirical point of view**, Ferris et al. (2005) find that political skill is significantly distinct from emotional intelligence and self-monitoring in addition to other social effectiveness variables that are not considered here. The correlation with emotional intelligence is only moderated (Ferris et al., 2005). In particular, the dimension of apparent sincerity is negatively correlated or not correlated significantly to self-monitoring (Ferris et al., 2005). With regard to an empirical comparison between Machiavellianism and political skill, Dahling et al. hypothesized that the latter variable relate positively with they former, but they find that Mach can explain an additional 1% of the variance in political skill and so the assumption is sot supported (Dahling et al., 2009, p. 242). There are not other studies about machiavellianism and political skill together, even if in literature it is powerful the idea that the latter can moderate the relation between personality traits and individual performances (Ferris et al., 2017). Semedar et al. (2006) find that political skill remains the only significant independent variable when it is in competition with other effectiveness construct that are considered here (emotional intelligence, self-efficacy and self-monitoring) and also with leadership. These considerations led to using political skills as the main social cognitive capability in the model rather than other social effectiveness constructs. In summary, in this thesis, political skill is the unique social cognitive construct that was considered in the empirical research. This is congruent with relative importance of political skill for the prediction of effectiveness (e.g. Snell et al., 2014; Geir Thompson et al., 2017).

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<sup>93</sup> This scale of Self-Monitoring was used recently by Pillow (2017) and Tasselli and Kilduff (2017).

### **c) Political skill, performance and other social constructs in public administration.**

There are different theoretical reasons and questions to which empirical answers that have not yet been analyzed can be sought, following the most updated reading in literature possible. Firstly, there is a gap in literature about a possible sequential relation with mindfulness. Furthermore, to date, there are not sufficient studies in public administration; in particular, there are not studies about connections between political skill and external networking, that it is a specific sectorial dimension, and positive outcomes variables. Secondly, the studies about links between political skill and dynamic capabilities remain limited and rare. A socio-political microfoundation of innovation that include both political skill and network was elaborate in the private sector in the field of production of computer microchips (Grosser et al., 2018). Results from a large microprocessor firm are relevant theoretically to develop hypotheses, but results can be generalized to the field of public administration. It is beyond the goal of this thesis to do a specific literature review for the dimension of political skill, as there are already some articles on this topic quite recent. For example, Kimura et al. (2015) investigate the relationship between political skill and various outcomes dimensions: stress management, career success, individual performance, leadership effectiveness. The association with leadership effectiveness is confirmed also more recently (Geir Thompson et al., 2017). To date, the studies about political skill concentrated to effect on performances (e.g Ferris et al., 2005), but there are still gaps in literature about the effect of this dimension on various individual and organizational outcomes at work and mediation effects with other possible determinants (Meisler, 2014). In a meta-analysis, political skill has a positive impact on self-efficacy, job satisfaction, organizational commitment, work productivity, organizational citizenship behavior, career success, and personal reputation, and negatively related to physiological strain (Munyon et al., 2015). It may enhance also the dimension of thriving at work (Cullen et al., 2018), that can be considered an individual dynamic capabilities. The positive results of political skill on performance are also confirmed in the study by Blickle et al. (2011), in which the methodologies used are manifold, using surveys cross-section and longitudinal and evaluating political skill and performance with different sources. Political skill interact positively with reputation to the assessment of performance (Y. Liu et al., 2007). Political skill is clearly relevant for salespersons' work outcomes (Li et al., 2017). Sometimes, the relationship of political skill on performance can inverted U-shaped, so the individuals with an average value of political skill are those who have a better rating by an external evaluator, but this effect is less pronounced when the moderation of the closeness of relations with the supervisor is maintained (Zettler & Lang, 2015). Blickle et al. (2013) find that political skill has a positive impact on performance also in complex jobs including higher education, public administration and health care. Political skill

dimensions also play a role of positive moderation in the connection between culture for personal initiative and personal initiative with performance at work (McAllister et al., 2018). Networking ability has a positive effect on performance also in harmony with working autonomy (Nesheim et al., 2017). In a similar way, also social astuteness is an antecedent of opportunity recognition and capitalization (Wihler et al., 2017). In

Table 12, it is possible to notice that various authors studied political skills with different outcomes (e.g. Epitropaki et al., 2016; Wei et al., 2012). However, some years have passed, but from what emerges from the literature, empirical work on political skill have still remained to be done, especially in the specific cases of public administration and behavioural microfoundation of dynamic capabilities. Moreover, as suggested by Kimura (2015), it is necessary to focus on the direct and indirect individual effects of the four factors that make up the construct of political skill in the empirical evaluation of the various research hypotheses. Before going on to justify the research hypotheses concerning political skill, this thesis proceed to some comparisons. Only recently, Clarke and Higgs (2019) find positive direct and indirect associations between political skill and innovation for junior doctors, but these results concern the environment of health care and it is difficult to generalize them to all public organizations (results are reported in Table 6). The table is not exhaustive of all the existing literature, but it helps to bring out the need to study political skills in the case of public organizations. In fact, to date research focused to emotional intelligence and it is limited the study about the effects on social capital and individual and organizational dynamic capabilities. Although it is a relevant dimension for labour relations, studies on social capital including political skills are very limited (e.g. Fang et al., 2015; Grosser et al., 2018). These two gaps in literature are promising.



Table 12: Social Cognitive Capabilities (and Public Administration)<sup>94</sup>

Reference	Independent Variables	Moderation Variables	Mediation Variables	Outcomes (Findings)	Analysis Unit (Final Sample)	Analysis Methodology	Data Collection
Berman and West (2008)	Code of conduct; Selection and Promotion; Training ( <i>indirect effect</i> <sup>+</sup> )	-	Feedback, modeling and mentoring ( <i>direct effect</i> <sup>+</sup> )	Emotional intelligence	212 Chief administrative officers in <b>municipalities</b>	SEM	American cities
Vigoda-Godot and Meisler (2010)	Emotional intelligence (EI)	Emotional intelligence	<b>Political skill</b> ; Perception Of Politics	Performance orientations <sup>95</sup>	380 employees in two <b>municipalities</b>	Hierarchical regression analysis	Israel
Wei et al. (2012)	<b>Political skill</b> <sup>+</sup>	<i>Political skill</i> <sup>+</sup>	<i>Network Resources</i> <sup>+</sup>	Job Performance; Career Growth Potential <sup>96</sup>	281 matched supervisor-subordinate dyads in 6 private companies.	Four-step hierarchical multiple regression analyses	China
Epitropaki et al. (2016)	<b>Political skill</b> <sup>+</sup>	<i>LMX</i> <sup>+</sup>	<i>LMX</i> <sup>+</sup>	Job satisfaction, task performance, and contextual performance/citizenship behavior	185 subordinates and 50 supervisors in 12 multinational companies <sup>97</sup>	Multilevel mediation (robust full maximum likelihood estimation)	Greece
Levitats and Vigoda-Godot (2017)	<i>Emotional intelligence (EI)</i> <sup>+</sup> ; <i>Public Service Motivation</i> <sup>+</sup>	<i>Emotional intelligence</i> <sup>98</sup>	<i>Public Service Motivation</i> <sup>99</sup>	Public servants' job outcomes <sup>100</sup>	200 Nurses in a <b>public</b> hospital	Bootstrap mediation analysis; Moderated regression analyses	Israel <sup>101</sup>
Lu and Guy (2018)	<b>Political skill</b> <sup>+</sup>	<i>Organizational justice</i> <sup>+</sup>	-	Internal marketability, Career success	220 employees in <b>public</b> organizations	Hierarchical regression analysis	China
Lee (2018)	<i>Emotional self-awareness</i> <sup>+</sup>	-	Regulation emotion, Emotional other awareness	Job satisfaction, Burnout	167 <b>public</b> service workers	SEM	United States
Kapoutsis et al. (2019)	<i>Managers' influence tactic</i> <sup>+</sup> <i>Ambidexterity</i> <sup>+</sup>	<b>Political skill</b> <sup>+</sup>	-	Task Performance	211 managers and 71 supervisors	Multilevel hierarchical linear modelling (full maximum likelihood estimation)	Greece
Kwon (2020)	<b>Political skill</b> <sup>+</sup>	-	-	Retard performance	In central government	Multilevel hierarchical linear modelling	South Korea
Levitats and Vigoda-Godot (2020)	Employees emotional intelligence	Public service motivation, Managers' emotional intelligence	-	Social responsibility, Employee work engagement, Organizational citizenship behavior toward individuals (OCBI)	-	Conceptual framework	-

<sup>94</sup> In italics and with top apex the variables that are statistically significant (and the sign of the correlation), when it is possible to individuate the relation with a single variable. If there are no signs in apex, it means that the dimension is not statistically significant. In bold the variables that are interesting for the model and variables of the thesis.

<sup>95</sup> *Job satisfaction* (*Political skill*<sup>+</sup>, *EI*<sup>+</sup>), *Emotional commitment to public service* (*Political skill*<sup>+</sup>, *EI*<sup>+</sup>), Burnout, Exit Intentions, *Negligent Behaviour* (*EI*), Public Personnel Absenteeism. Perception Of Politics is significant for all the outcomes other than Public Personnel Absenteeism. Political skill partly mediates the relation between EI and Job Satisfaction.

<sup>96</sup> From supervisors.

<sup>97</sup> Only the results to multilevel study 2 are reported.

<sup>98</sup> Emotional intelligence moderates significantly only the relation between PSM and Job satisfaction.

<sup>99</sup> Only for Affective commitment.

<sup>100</sup> Job satisfaction, Affective commitment, Service quality (Levitats & Vigoda-Gadot, 2017).

<sup>101</sup> The date of data collection is not indicated.

#### **d) The direct relationship between political skill and dynamic capabilities.**

Ferris introduces the specification of the construct of political skill, writing that the strengthening of relationship skills is also linked to the ability to adjust one's behavior in different and changing situations, thanks to self-confidence (Ferris et al., 2005, 2007). Moreover, politically skilled individual can have "proper balance and perspective" (Ferris et al., 2005, p. 128). Political skill is a construct that includes to know what to do and how to execute in a particular situation (Ferris et al., 2005). By effectively calibrating behavior according to circumstances, politically skilled individuals may change and balancing the ways of influencing others to achieve goals at work (Kapoutsis et al., 2019). Vigoda-Godot and Meisler (2010) find that political skill has a positive impact to job satisfaction and emotional commitment to public service, but it is not significant to explain other positive or negative performance orientations. Political skill may help individuals to calibrate their behaviour depending on the circumstances arising (Ferris et al., 2005, 2007; Kapoutsis et al., 2019; Zellars et al., 2008) and this positive effect may shape the intrinsic cognitive flexibility in individual ambidexterity. Likewise, political skill can have a positive effect in the various phases that characterize innovative work behaviour, especially in the dissemination and implementation phases where focal individuals can influence other colleagues at work in a genuine and sincere way (Ferris et al., 2005, 2007; Kapoutsis et al., 2019). Clarke and Higgs's results can be tested in local governments that that environments extremely different than health care organizations and, undoubtedly, public servants have different roles than doctor in the specific field of innovation. From the early studies about political skill, authors recognized that this social cognitive capability is an "antidote" in the reduction of stress and tensions at work (Perrewé et al., 2000, 2004, 2005). Politically skilled worker can control better job situation (Kimura, 2015). In this sense, political skill may improve ambidextrous individual capability: to be multitasker and fulfill multiple roles in the organization (Mom et al., 2009). Ambidextrous orientation is based on the capability to balance exploitation and exploration and these decision can be daily and chronic stressors for workers, so that politically skilled ones may cope better with them and in less aversive ways (Perrewé et al., 2004), reducing job tensions (Perrewé et al., 2005). Sometimes employees with a relatively high level of political skill are an underutilized human resource, which could bring benefits in terms of outcomes for the individual and the organization (Russell et al., 2016, p. 201). A similar path concern the different phases of innovativeness at work. It can be assumed that high politically skilled workers are more able to cope with change and to promote and implement innovation. McAllister et al. (2015) find that political skill helps to recognize opportunities at work and, at the same time, effectively capitalize them for goal attainment, congruent with the idea of microfoundation of ambidexterity.

These paths may be stronger when the outcome is evaluated by a rater: thanks to improved impression management capabilities, a genuine social interaction and a calm self-confidence, politically skilful worker have better results from other's judgment (Kimura, 2015). In this thesis, innovative work behaviour is measured by personel perception and by a colleagues' rate. It is possible that, spourusly, they may have better results, because of the trust gained thanks to political skill. This possibility is confirmed in literature (Ferris et al., 2007). This thesis assumes also that political skill can be a factor of microfoundation of organizational dynamic capabilities. Ten Years ago Vigoda-Godot and Meisler (2010) suggested to study the effect of emotional intelligence to organizational outcomes in public administration. For the time being, this call has been received in the literature neither for emotional intelligence nor for political skills for public organizations, therefore, there is still a gap. An organization in which the average level of political skill among employees is high, can have an atmosphere of greater trust and mutual understanding within, thanks to the individual's social cognitive capabilities (Kapoutsis et al., 2019). Authors consider that individual social cognitive capabilities have an impact on organizational strategic change thanks to better strategic asset alignment and overcoming resistance to change (Helfat & Peteraf, 2015). Politically skilled individuals can enhance cooperation within the organization and so reduce inertia and barriers to organizational change through a positive influence to others (Helfat & Peteraf, 2015). In summary, this thesis posit that:

**Hypotheses 7:** *Political skill has a positive linear impact on dynamic capabilities.*

*Hp 7 Political skill is positively related to individual dynamic capabilities, in particular individual ambidexterity (7.1) and innovative work behaviour (7.2).*

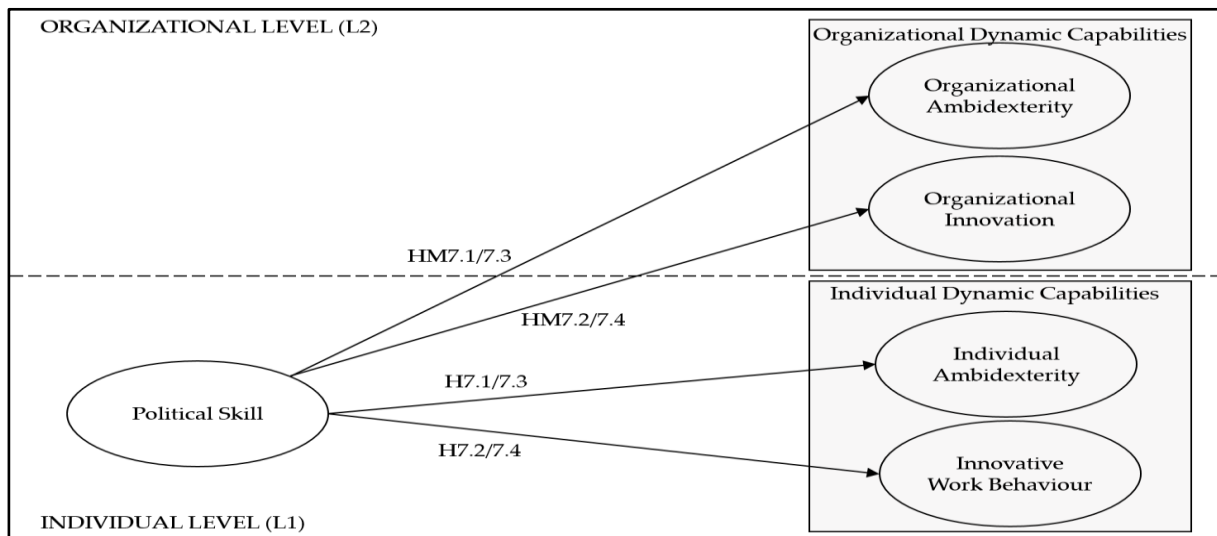
*Hp Multilevel 7. Political skill is positively related to organizational dynamic capabilities, in particular organizational ambidexterity (M7.1) and organizational innovation (M7.2).*

In this chapter, there has been a focus about other construct of social cognitive capabilities. This thesis assumes that political skill is always a positive construct, as recognized in the literature that developed it (Ferris et al., 2005). This feature take to the idea that there are not negative marginal returns of political skill unlike other constructs as self-monitoring or Machiavellianism that could present this negative draw-back. An higher level of politically skilled workers can be the basis for microfoundation reducing barriers to change and implementing a balanced behaviour through interpersonal relations.

Having made these considerations, it is possible to add specifically:

*The effects of political skill are linear and they do not contemplate diminishing returns. In particular, these relations in Hp7 and HpM7 between political skill and outcomes (dynamic capabilities) are linear (there are not diminishing returns (concave-shaped relation)): individual ambidexterity (7.3); innovative work behavior (7.4); organizational ambidexterity (M7.3); organizational innovation (M7.4).*

Figure 30: hypothetical relations between political skill and dynamic capabilities..



**e) The direct relationship between Political skill and Social capital and the mediating role of the latter.**

In primis, political skill is an interpersonal style construct (Ferris et al., 2005, 2007). Political skill is a positive factor in obtaining support and trust from others, who have a feeling of comfort when they enter into relationships with politically skilled individuals for their ability to inspire sincerity, security and calm self-confidence (Ferris et al., 2005). It is a greater ability to attract and influence others in positive terms and without appearing arrogant (Ferris et al., 2005). Politically skilled workers can manage relationships smartly leading a positive influence towards the realization of personal and organizational objectives (Ferris et al., 2012). In the theoretical introduction to political skill, it emerged the importance of having social skills to deal with people and problems rather than technical ones. (Kiel & Watson, 2009). Political skill is part of those individual dimensions that may be crucial tool to improve relations with different stakeholders in public sphere (Vigoda-Gadot & Meisler, 2010). Even in public administration literature, attention is drawn to the importance of developing networking skills, as antecedents of networking behaviours that have positive outcomes (Rasdi et al., 2013). Politically skilled employees are more astute in social relations and the way they calibrate their behaviour has these characteristics: sincerity, effective to improve influence, inspires trust (Zellars et al., 2008). Political skill has a positive role in the developing of network resources: it improves the ability to communicate and thus it increases the individual opportunity to obtain knowledge resources within knowledge networks inside and outside the organization (Wei et al., 2012). In particular, with respect to different outcomes than ambidexterity and innovative work behaviour, Wei et al. (2012) find that social capital

mediates the relation between Political skill with performance and career growth potential. In fact, Wei et al. (2012) justifies their hypothesis writing that knowledge resources are embedded in the structure of the networks and politically-skilled public servants have more capacities to collect benefits from different ties, which consecutively are influential to achieve positive effects, as it is hypothesized in the chapter about Social capital. Epitropaki et al. (2016) find that political skill has a positive effect on job satisfaction, task performance and citizenship behavior with the mediating role of Leader-Member-Exchange that is a relationship social construct.

Following social capital theory, Kimura (2015) suggests to study the mediation role of social capital (network structure, network benefits, network resources) between Political skill and individual performance, both when they are objective and when they are derived from perceptual data from one's own evaluation or from raters' evaluation. In a multi-level mediation model, Social capital can be a proximal antecedent of dynamic capabilities and Political skill is a more distal one (Kimura, 2015). In this sequential mediation model, following assumption in previous chapter, Mindfulness could be the first antecedent and it is even (the) more distal construct (in this hypothetical model). Moreover, external networking is a contextual form of Social capital inherent to the specific case of local governments and Ferris et al. (2017) have recently suggested studying Political skill with other situational variables and indirect relations with outcomes.

**Hypotheses 8:** *Political skill has a positive impact on social capital.* Especially, starting from an individual level of analysis:

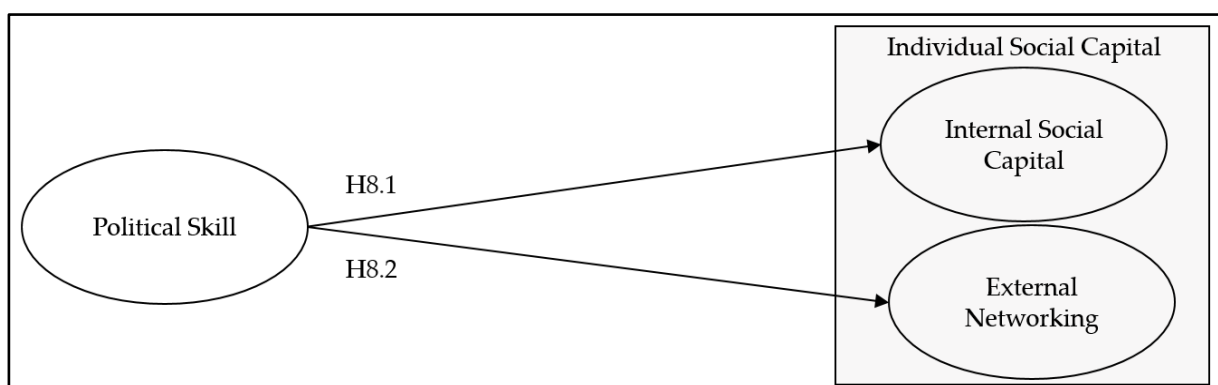
*Hp 8.1 Political skill is positively related to internal social capital.*

*Hp 8.2 Political skill is positively related to external networking overall factor (a) and in particular both to external strong ties (b) as well on external weak ties (c).*

In a multilevel perspective:

*Hp M 8.1 Political skill is positively related to organizational social capital.*

Figure 31: hypothetical relations between political skill and individual social capital.



Given that political skill is expected to have a positive effect on dynamic capabilities and social capital also has a positive effect on dependent dimensions, following methodological theory of mediation, this work posit some hypotheses about the role of social capital as mediator:

**Hypotheses 9:** *Social capital mediates the relations between political skill and individual and organizational dynamic capabilities in local governments.*

- *Hp 9 Internal Social capital (i.e. Individual social capital from internal knowledge networks) mediates the relation between political skill and individual dynamic capabilities, in particular: individual ambidexterity (9.1) and innovative work behaviour (9.2)*

- *External networking mediates the relation between political skill and individual dynamic capabilities, in particular: individual ambidexterity (9.3) and innovative work behaviour (9.4).*

In a multilevel perspective:

- *Hp Multilevel 9. Organizational social capital mediates the relation between political skill and organizational dynamic capabilities: organizational ambidexterity (M9.1) and organizational innovation (M9.2).*

- *External networking mediates the relation between political skill and organizational dynamic capabilities: organizational ambidexterity (M9.3) and organizational innovation (M9.4).*

#### **f) The moderation effect of political skill between social capital and dynamic capabilities.**

The theoretical idea is that individuals' social cognitive capabilities may have an intervening effect on social capital. People with a high level of political skill may deploy better internal and external social capital. If the direct effect assumed above concerns the creation of social capital, the moderating effect concerns the capacity of the public servant to make the best use of current internal and external relations to strengthen individual and collective outcomes. A high level of political skill can help to gather valuable resources in knowledge networks to develop ambidextrous skills and innovation. A capacity to exploit networks can also have a positive impact on the organizational level. External and internal social capital is not an end in itself and static, but cognitive social skills can make relationships dynamic over time so that the benefits of social capital are not interrupted but can be perpetuated. Even though it does not have longitudinal data, theoretically, political skill allows one to maintain relations and make the best use of weak ties and strong ties, according to their endogenous peculiarities. The hypothesized effect of moderation means that political skill can make more efficient and effective the time and commitment that individuals employ in the already developed social network, both in the relationship with colleagues and in the complex and diversified relationships with external stakeholders with whom

relationships are consolidated. In literature about external networking, it is evident the effect of negative marginal returns. Political skill may be a dimension that reduces or even eliminates negative marginal returns of social capital. It is considered as a individual quality that can reduce and eliminate diminishing returns identified in literature of networking in public administration. In particular, the actual structural social capital of focal individual can be a source of stress that derives from energies and time spent to have and to maintain a certain position in the social network. Politically skilled public servants may be more capable to regulate interpersonal relations and balancing uncertainty (Kimura, 2015), reducing structural pressure and stress. Moreover, following the theory of conservation of resources (Hobfoll, 1989), political skill may help to maintain actual personal resources through an improved coping ability and capability to control social stressors (Kimura, 2015). This effect is confirmed in longitudinal studies (L.-Z. Wu et al., 2012; Zhao et al., 2013), but, to date, this mechanism should be examined in depths (Kimura, 2015).

In literature, there are some empirical examples about the moderating role of Political skill in work-related situations. For instance, Political skill moderates the relations between perceived role overload and strains at work, reducing negative effects on all of three dimensions, thanks to the ability to adapt to different situations and control on relationships (Perrewé et al., 2005). Wei et al. (2012) find that political skill is a moderator in the relation between network resources and job performance and career growth thanks to a greater capability to implement a leverage effect on actual network resources. Theoretically, these authors suggest that political skill is useful not only for the developing, but also of the using of social resources for some reasons: influence capability lead high political skilled individuals to have better heterogeneous information, they can go over obstacles more easily thanks to self confidence and self-efficacy in relationships, they are goal-oriented and therefore engage more in activities that lead to obtaining the desired results, they can cope better with the stress of having more knowledge and resources to use at work (Wei et al., 2012, p. 387). Kapoutsis et al. (2019) find that high politically skilled managers can balance and moderate the way the influence other to improve performance. Politically skilled public servants are theoretically more capable to modify their behaviours in different situations at work and they can calibrate influence attempts as needed by the context (Ferris et al., 2005; Kapoutsis et al., 2011, 2019). Moreover, politically skilled employees are efficient to fit their behaviour depending on the people and circumstances they face daily (Kapoutsis et al., 2019; Zellars et al., 2008).

**Hypotheses 10:** *Political skill moderates the relations between individual and organizational social capital and individual and organizational dynamic capabilities in local governments.*

- *Hp Political skill moderates the relation between internal social capital (i.e. Individual social capital from internal knowledge networks) and individual dynamic capabilities: individual ambidexterity (10.1) and innovative work behaviour (10.2), both for strong ties (a) and weak ties (b).*
- *Hp Political moderates the relation between external networking and individual dynamic capabilities: individual ambidexterity (10.3) and innovative work behaviour (10.4). Political eliminates (potential) diminishing returns of external networking at individual level.*

Moreover, in a multilevel perspective, this thesis posit that:

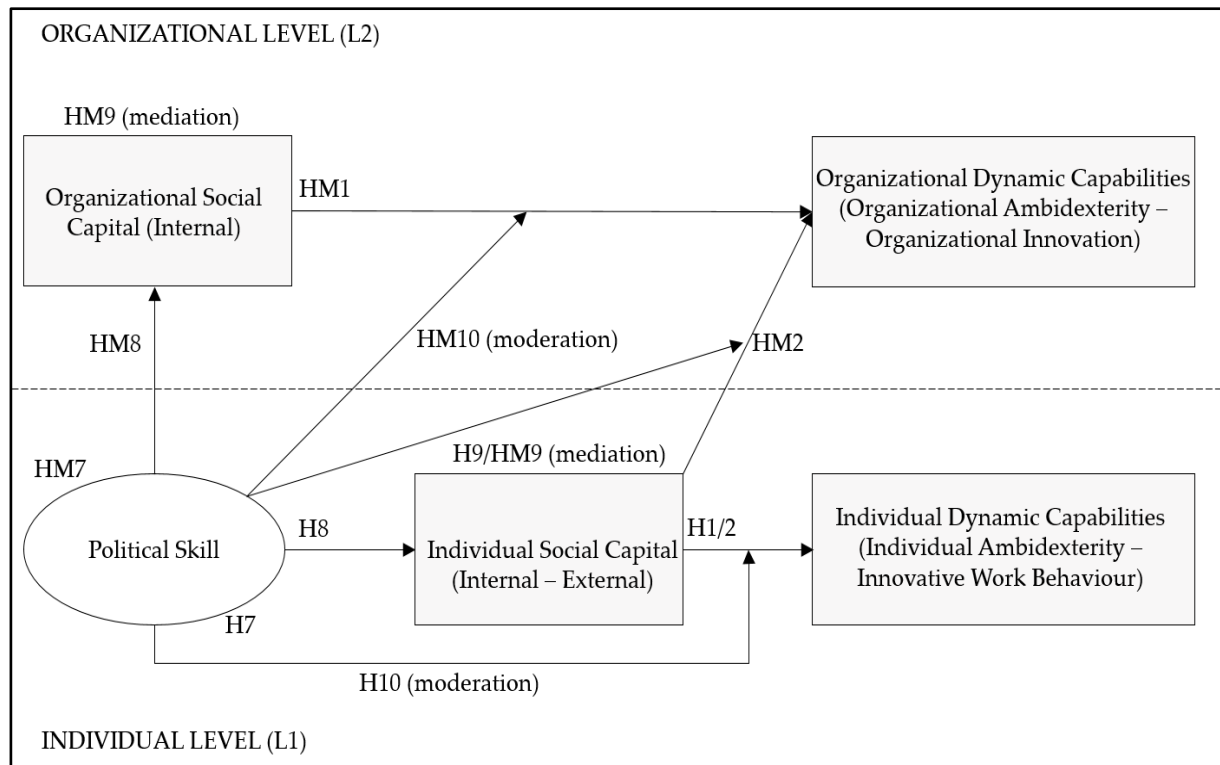
- *Hp Multilevel 10. Political skill moderates the relation between organizational social capital and organizational dynamic capabilities: organizational ambidexterity (M10.1) and organizational innovation (M10.2).*
- *Hp Political skill moderates the relation between external networking capital and organizational dynamic capabilities: organizational ambidexterity (M10.3) and organizational innovation (M10.4). Political skill eliminates (potential) diminishing returns of external networking at organizational level.*

Considering these theoretical premises, this thesis postulates that political skill is an individual factor that is useful in the use of actual individual and organizational social capital.

These relations mean that the positive relation between Social capital and Individual Outcomes is higher for the public servant who is more politically skiful. Moreover, studying in-depths this hypothesis, political skill eliminates diminishing returns. Moreover, considering the theoretical relation between mindfulness and political skill, this thesis posits that there will be a role of political skill as mediator in the moderation effect of mindfulness between social capital and dynamic capabilities.



Figure 32: hypotheses about conceptual multilevel mediation and moderation model with political skill and social capital as microfoundation of dynamic capabilities.



**g) The direct relationship between mindfulness and social cognitive capabilities, in particular political skill.**

It is not new the idea that mindfulness can enhance social skills. This assumption consists that mindfulness can be a positive factor in interpersonal development and it has always been strong in literature (Dekeyser et al., 2008). Moreover, in the theoretical framework of microfoundation of dynamic capabilities, Helfat and Peteraf suggest that attention is a mental activity which is involved to social cognition in the relation with individual's external environment (2015, p. 843). Mindfulness may have these features, thanks to its quality of pay full attention during interpersonal interactions and improved awareness of subtle other's thoughts and feelings (K. W. Brown et al., 2007). In particular, firstly, different authors find a positive correlations between mindfulness and **emotional intelligence** (Baer et al., 2004, 2006; K. W. Brown et al., 2007; Schutte & Malouff, 2011). Otherwise, to date, there are not studies investigating the direct relation between mindfulness and political skill. In the literature, there are various theoretical studies that indicate emotion regulation as a central process of mindfulness (e.g. K. W. Brown et al., 2007; Quaglia et al., 2015; Shapiro et al., 2006). Empirically Hülshager et al. (2013) find that emotion regulation (though surface acting) mediate the relation between emotional exhaustion and job satisfaction. Teper et al. (2013) consider that mindfulness push for executive control and, thus, it rises attention

and responses to marginal affective cues. Secondly, Schuh et al. (2019) propose that it is less probable that mindful employees use **tactics of influence and manipulation** through a mechanism of reducing superficial and automatic cognitive processes. In this sense, social cognitive capabilities, as political skill, may be more relevant for consequent attitudes and behaviours at work than (“negative”) social traits (e.g. machiavellianism). Mindfulness may enhance the capability to influence others in a manner that takes trust and perception of sincerity through the non-automatic attention and awareness of others’ needs. Thirdly, Winning and Boag (2015) find that mindfulness induction is positively related to cognitive **empathy** and this effect is stronger for people that present lower trait Conscientiousness and Extraversion scores. For Glomb et al. (2011), empathy is a mindful-based process that may improve interactional and informational justice and reduce antisocial behaviour. In this perspective, mindfulness may reduce the negative effect on connectedness which derives from traits that have social implications and indirectly it is a stimulus to develop social skills. Moreover, fourthly, Arendt et al. (2019) observe that mindfulness improves the **quality of communication**, in particular mindful communication, considered as an interpersonal skill. Theoretically, response flexibility and affective regulation are mindful-based processes that influence positively communication (Glomb et al., 2011). In contrast, **absentmindedness** may lead to behaviours that reduce social efficiency and effectiveness: individuals could be more distracted during interpersonal relationships, because their attention could be dedicated to other internal activities as ruminating or to other external activities as reading at their mobile phone or at the laptop (Reb et al., 2018). The lack of mindfulness could reduce the quality of relations in the perceptions of colleagues and they could replicate with the same negative behaviours in following social exchange situations.

In conclusion, sixthly, Ferris et al. (2005) suggest that politically skilled individuals are characterized by self-awareness and not by self-absorption. This awareness may take to a social behaviour more calm and attentive to others. Thus, in summary, it is interesting to anticipate that mindful individuals could have a cognitive stimulus to improve personal skills. They could be able to self-regulate better behaviour in social relations, though a mechanism of better understanding of others with nonjudgmental attention and awareness, personal social cognitive capabilities are enhanced by mindfulness. These considerations can be applied to public servants’ political skill in public administration. This last observation can be detrimental: for Arendt et al. (2019) mindfulness effect is less strong in bureaucratic organizations where communication is driven by rules and strict protocols. In this thesis, the idea is that hypotheses work to public sector as to private organizations, even if there is not a control for these two fields of economy.

Figure 33: hypothetical relation between mindfulness and political skill, as social cognitive capability.



Considering theoretical framework, empirical studies about interpersonal effects of mindfulness and predictions, this thesis hypothesizes that:

**Hypotheses 11.1:** *Mindfulness has a positive impact on cognitive capabilities, in particular to political skill.*

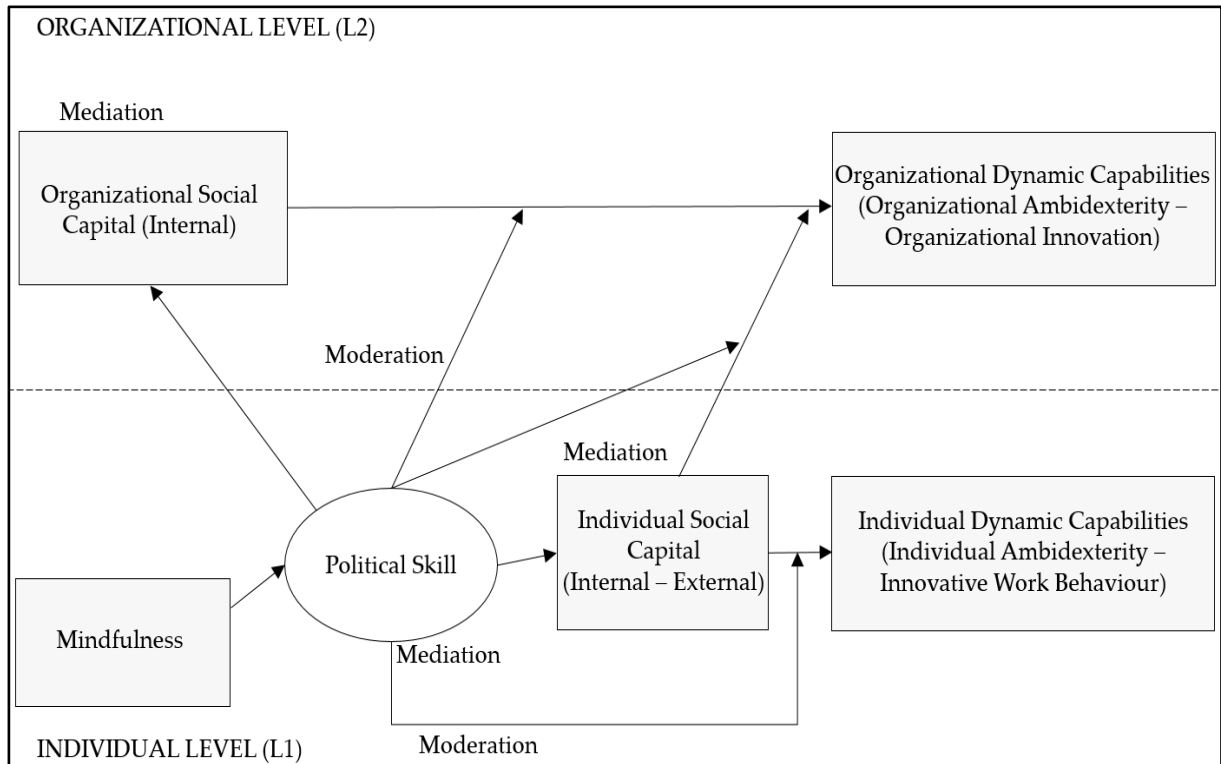
The next section explores the theoretical and empirical aspects of political skill in literature and, at the end, a sequential model from mindfulness to dynamic capabilities, passing through political skill and social capital. The main idea is that in the field of cognitive capabilities, mindfulness is a more distant antecedent and political skill is a proximal one for social capital and dynamic capabilities. A significant relation between mindfulness and political skill could take the latter to be a mediator for different outcomes.

Conceptually, more attentive and aware workers would develop social skills through which they can take more resources in the social structure internal or external to the organization and in turn use instrumentally social embedded resources to improve individual dynamic capabilities and, in a multilevel perspective, organizational ones.

**h) Full sequential multiple mediation model: mindfulness, political skill, social capital, dynamic capabilities.**

The micro-foundation of dynamic capabilities is affected by a multiplicity of social and cognitive processes, which presuppose the presence of mental cognitive capabilities, social cognitive capabilities and social capital. This thesis assumes that the direct relationship is in terms of a full sequential mediation model. Although this is a correlation study and causality conclusions cannot be made, it is assumed that the dynamic capabilities of ambidexterity and innovativeness are primarily related to the mental capacity of attention and awareness (mindfulness), which strengthens social cognitive capabilities. Thanks to political skill, in turn, individuals can access

more easily to knowledge resources in internal and external organizational networks. As the last step, social capital broadens the perspective of the individual, alone and separate individual and puts it in a universe of relationships that open the doors to the resources necessary to balance the orientation of exploitation and exploration for a certain period, as well as achieve all the phases that distinguish the creation up to the implementation of new ideas on the work logo. When the various pieces of the chain are missing, there is a risk of being reduced to simple, routine exploitation activities which are usually naturally preferred to exploration activities (March, 1991). This process of a natural tendency towards exploitation is also identified in neuroscientific research (Laureiro-Martínez et al., 2015). In a behavioral public administration perspective, therefore, the loss of pieces in the mediation chain can lead the worker to be a bureaucrat who looks only at the short term and cannot renew himself and thus a bureaucracy is plastered, unable to learn and to base its long-term sustainability thanks to the link between the individual goal and socio cognition and social-relational knowledge factors. Hence, a sequential mediation model is assumed to exist. The first step is the individual level, where this thesis takes on the presence of a mediation effect of political skill between mindfulness and different outcomes. Then, this assumption can be enlarged including the perspective that employees are not alone, but embedded in social relations at work. In previous the chapter, it was indicated that a hypothesis is that mindfulness may have a positive effect on social cognitive capabilities. This hypothesis can be specified for Political skill as first step of the model. Theoretically, the cognitive capability of attention intrinsic to Mindfulness may have a mediated effect to Social capital (second step of the chain) and then to individual and organizational outcomes (third step). In literature, there is still a gap about antecedents of Social capital (Kimura, 2015). Moreover, this research posit that **political skill** has a significant mediating role, in the sense that mindful employee improve his/her social capital by enhancing relational skills and abilities. For Good et al. (2016) mindful employees may have superior outcomes because improved cognitive capacity can be an engine to develop and enlarge cognitive resources and, thus, benefit from environment (individual social capital). In turn, this thesis suppose **mediating role of different social capital dimensions**: mindful people are more ambidextrous and innovative, by building social capital and so accessing more resources inside and outside the organisation. Schutte and Malouff (2011) find that emotional intelligence mediates between mindfulness and personal well-being. Their hypothesis is based on the idea that attentional and non-judgemental features of mindfulness may push the improvement of emotional intelligence, that in turn it has a positive impact on individual outcome thanks to its characteristics (Schutte & Malouff, 2011). A similar path can be hypothesised for political skill, that is correlated to emotional intelligence and it has a larger perspective as social skill.



Mindfulness can have a positive role in the development of social skills, in the sense that its characteristics are levers for their development, including emotional intelligence, as in previous empirical researches and political skill. At the point developed Social skills improves personal outcomes, as individual social capital and some kind of performance at work, over than personal functioning and well-being, that have been studied more thoroughly in literature. Moreover, mindful-based processes (flexibility, empathy, reduced rumination, affective regulation) (Glomb et al., 2011), may have an impact on political skill and this construct may mediate the relation with increased individual social capital. Political skill improve the opportunity to reach knowledge in social networks and knowledge can be used to develop ambidextrous capabilities balancing better the orientation between exploitation and exploration. Moreover, novel knowledge is a source of innovation and political skill helps during the implementation phase in the organization for the stronger social cognitive capabilities to communicate and convince colleagues. In turn, individual ambidextrous orientation and innovation that develop in this micro-sequential mediation model can have an impact at the meso-organizational level of analysis.

**Hypotheses 12.** At the individual level, there will be a sequential mediation from mindfulness to dynamic capabilities through social cognitive capabilities, in particular political skill, and social capital in local governments. *Hp 12.1 Political skill mediates the relation between mindfulness and individual social capital, in particular internal social capital (a) and external networking (b).*

*Hp 12.2 Political skill mediates the relationships between mindfulness and dynamic capabilities, in particular, individual ambidexterity (a) and innovative work behaviour (b).*

*Hp 12.3 There will be a sequential mediation from mindfulness to dynamic capabilities, in particular individual ambidexterity and innovative work behaviour, through political skill and internal social capital (knowledge networks).*

*Hp 12.4 There will be a sequential mediation from mindfulness to dynamic capabilities, in particular individual ambidexterity and innovative work behaviour through political skill and external networking.*

Moreover, in a multilevel perspective, this thesis posit that:

**Hypotheses multilevel 11.** At the organizational level, there will be a sequential mediation from mindfulness to organizational dynamic capabilities through social cognitive capabilities, in particular political skill, and social capital in local governments.

*Hp 11.1 Multilevel. Political skill mediates the relation between mindfulness and individual organizational social capital.*

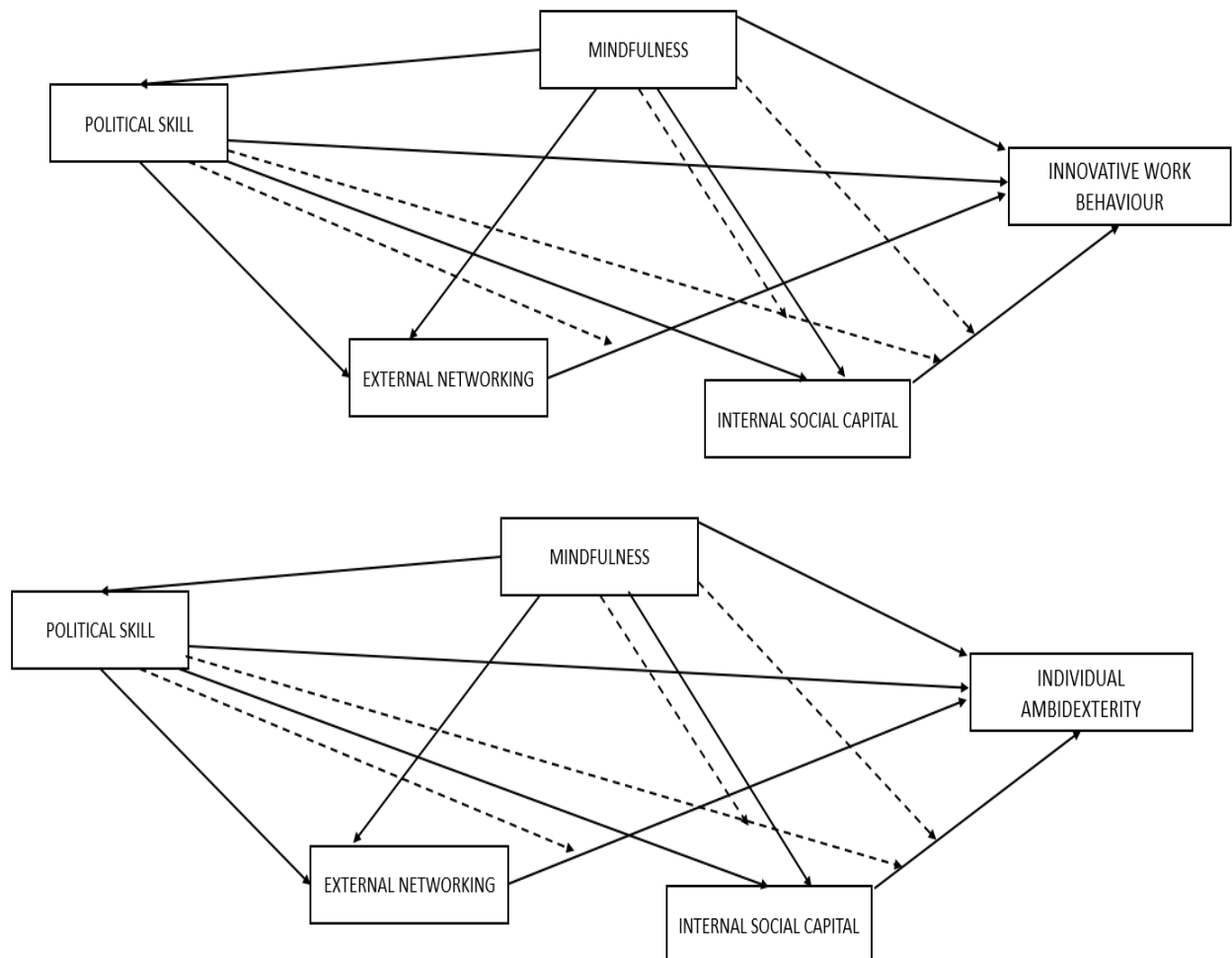
*Hp 11.2. Political skill mediates the relationships between mindfulness and organizational dynamic capabilities, in particular, organizational ambidexterity and innovation adoption.*

*Hp 11.3. There will be a multilevel sequential mediation from mindfulness to dynamic capabilities, in particular organizational ambidexterity and innovation adoption, through political skill and social capital.*

*Hp 11.4. There will be a multilevel sequential mediation from mindfulness to dynamic capabilities through political skill and social capital.*

## II. Second part: empirical researches.

Figure 34: simplified model of the relationships tested in this empirical part<sup>102</sup>.



### LEGEND

————→ Direct Effect

- - - - -> Moderation Effect

<sup>102</sup> This simplified model includes individual ambidexterity and innovative work behaviour when they are measured with self-assessment in the questionnaire. This model does not include mediation and other secondary effects.

## **A. SOCIAL CAPITAL AND INNOVATIVE WORK BEHAVIOUR: AN EXPLORATIVE PRELIMINARY CASE STUDY THROUGH A PERSONAL COGNITIVE SOCIAL STRUCTURE.**

### **a) Introduction to an ego-network case study in an Italian local government.**

In order to begin to study the hypotheses examined in this thesis in the public sector in a local authority, an exploratory research was carried out taking as a case study an almost apical employee of the organizational structure of the municipality of San Vincenzo in the province of Livorno. The but of this research is to explore the existence of a positive relation between internal social capital and innovative work behaviour thought the principles of social network analysis. This research is based on the standard methodology for egocentric network designs (e.g. Burt, 1984, 1992) and, in particular, on a data collection through cognitive social structure (Borgatti et al., 2013) limited to a personal case. This methodology requires that the whole network is built by one or more subjects who identify not only their ties and their strength, but also the ties between others and their strength (Borgatti et al., 2013). Thanks to this methodology it is possible to have a lot of data of the perceived whole network, but such perceptions could be biased or inaccurate, so the results of this chapter are exploratory. This method is used for example for complex political network, where is hard to reach some respondents (e.g. Johnson & Orbach, 2002). I was used also in organizational science for the research of multiple professional networks (Rogan & Mors, 2014). While considering the limits of generalizability, may be suitable for studying knowledge-communication relationships in a reduced set of ties (e.g. Borgatti et al., 2013). The method of data collection for social network research is deepened in the paragraph B.1.d) at page 278 in next chapter. Utilising case studies is coherent with mainstream research on social network analysis (e.g. knowledge network in a public hospital: Tasselli, 2015). In this case study, the focal public employee has a recognized organizational position (role immediately under the management) and has been working in this local authority for over 30 years, therefore, is considered as a reliable and particularly peculiar source for a social network analysis starting from ego-network. The subject of the case study, moreover, had for a period of his career responsibility in public works, instead, until the beginning of the 90s and since 2014 he has been involved in urban planning, construction and productive activities. The areas are different both for the activity of the employee and for the functions of the municipal administration; in fact, in public works the municipality directly implements public services, the manager has a direct relationship with citizens and external workers (not all are included in the transparency portal of the municipality, only



some are included in the social network analysis); in urban planning, on the other hand, the work is more concerned with urban planning procedures and tools, so that the service to the citizen is more mediated by current municipal and supra-municipal regulations, but also by the role of private technicians and professionals who interface with the public administration. The social network data were collected through a questionnaire created through Excel, after the interviewees were verbally given the instructions for the compilation, again in November 2017 (T1); about 2 weeks later, in December 2017 (T2), the specific question of evaluation of the innovative behaviour of colleagues was given, taking as a reference point the definition and the sixth item of the scale of innovative behaviour at work by Scott & Bruce (S. G. Scott & Bruce, 1994, p. 606): "Given this definition of innovation (Innovation is a process that involves simultaneously generating and implementing ideas. Therefore, it requires a wide variety of specific behaviours on the part of individuals. Although people can be expected to show all the behaviours involved in innovation, others can only show one or some types of behaviour<sup>103</sup>), indicates in the list of your colleagues who is innovative on a Lickert scale from 1 "For Nothing" ("*Per nulla*") to 7 "To an exceptional degree" ("*In misura eccezionale*"), with 4 as neutral value (neither very nor very innovative); the evaluation has also been extended to itself in a self-reported way. The single-factor question allows the respondent to evaluate all colleagues more carefully; compared to some of them, the individual case study was, moreover, over time also supervisor, therefore, at least in part respects the need to avoid only self-reported outcomes. The only item is very specific and complete with respect to the definition provided, however, it may not cover all the variability and give only a partial explanation of the innovative behaviors involved. Both for the knowledge network analysis among others and for the evaluation of the innovative behaviour of other colleagues in the intra-organizational network of which the subject of the case study has never been supervisor, memory and attributional bias may be more sustained. For the questions in the questionnaire, which were very simple, intuitive and not confusing, a simple literary translation from English was carried out without a complex translation-back translation procedure (Brislin, 1970). The methodological strategy of data collection and analysis is taken from Borgatti et al. (2013). The sample (taken from the transparency site of the municipality) was of 67 other employees; the respondent answered to 63 contacts, excluding four that Ego does not know because they presumably just arrived or because they are not close to the organizational machine (in particular 3

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<sup>103</sup> This is the specific definition in English provided by Scott & Bruce (1994, p. 606) "Innovation is a process involving both the generation and implementation of ideas. As such, it requires a wide variety of specific behaviors on the part of individuals. While people might be expected to exhibit all the behaviors involved in innovation, others may exhibit only one or a few types of behavior. Please rate each of your subordinates on the extent he or she ...". The sixth item is: he or she is innovative (I'm innovative).

out of the 4 excluded subjects work at the municipal pharmacy); all the others are known colleagues. To this sample is obviously added the data on himself self-reported. The interviewee confirms that the transparency portal lacks some external workers (e.g. gardeners, electrician), but Ego confirms that these subjects are not relevant from the point of view of the exchange of knowledge and innovative behaviour, because it is an exchange of information related to the task and only with who is responsible for them (perhaps for improvement of the analysis, however, it may be necessary to include these subjects through contact with the human resources manager of the municipality, especially if this research will lead to a comparison between different local authorities and, therefore, we will try to obtain a homogeneous data compared to the sample). Following a correct ego network methodology (Borgatti et al., 2013), the interviewee was asked the following relational questions, enabling him to observe the whole list of colleagues (rost method), thus avoiding significant memory bias. For reasons of respect for privacy, the names of the nodes of internal and external relations of ego and the entire network are without labels.

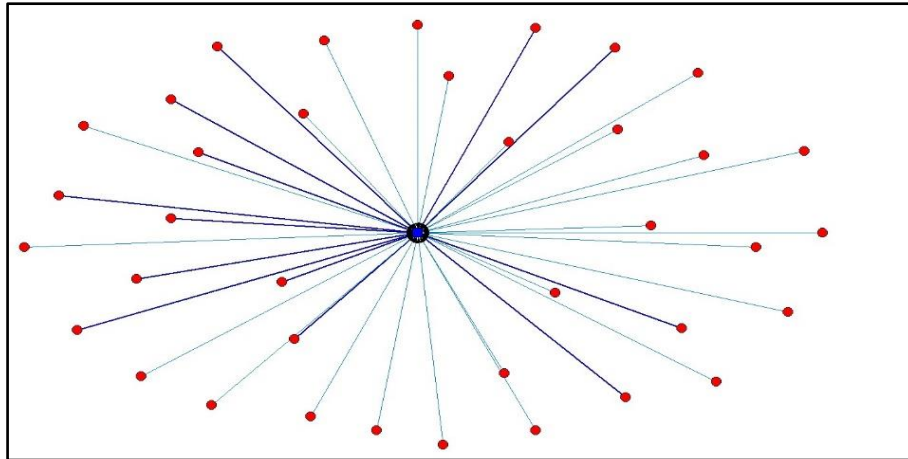
## **b) Graphical analysis of egonetnetwork and of complete knowledge network (as perceived by a public middle manager “Ego”).**

(a) 'Which of the following communicate on work-related issues “often” (i.e. at least once a week) or “rarely” (i.e. once a month or more)?’<sup>104</sup>). Frequent communications are strong ties, whereas infrequent relationships are weak ties. The question was asked in order to receive feedback on a horizontal type of knowledge exchange. In Figure 35, strong ties are in bold (13), whereas weak ties (24) are not in bold; ego does not have knowledge exchange relationships via a communication network with the remaining colleagues (not present in the Figure 35).

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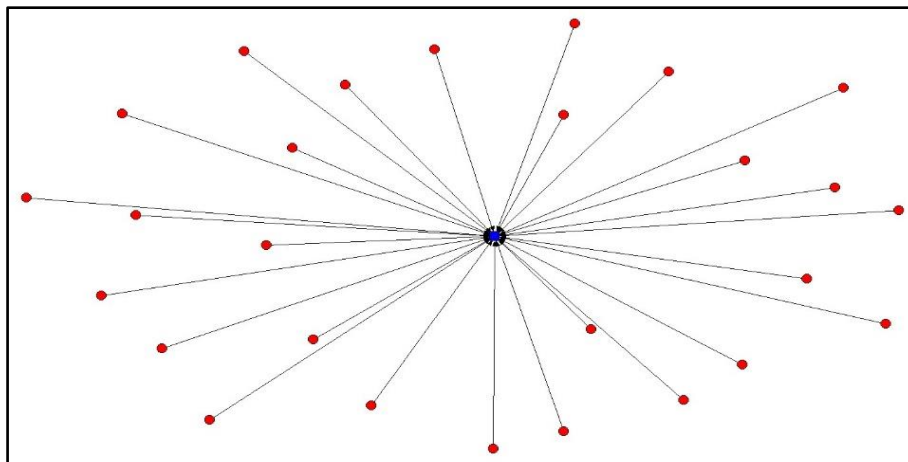
<sup>104</sup> Focusing on the colleagues listed below in alphabetical order, indicate by writing 1 next to those with whom you communicate, i.e. in the specific exchange of knowledge or information on work topics (in the excel questionnaire there were two columns, the first for frequent reports and the second for rarer reports). Italian version: ("Focalizzandoti sui colleghi messi sotto in ordine alfabetico, indica scrivendo 1 accanto a quelli con cui comunichi, cioè nello specifico scambi conoscenza o informazioni su tematiche di lavoro?

Figure 35: communication network (horizontal knowledge exchange on working issues). Strong (frequent) ties are in bold, weak (infrequent) ties are not in bold.



(b) "Who do you go to for advice if you need it on business matters?"<sup>105</sup> It requires a vertical feedback of incoming knowledge; it is, in fact, a vertical exchange of knowledge; no differentiation between weak and strong ties was required by frequency. The respondent identified 27 incoming ties with respect to advice (in Figure 36 the link arrows from the nodes to the Ego are oriented).

Figure 36: advice network direct from alter (rosso) to ego (blu).

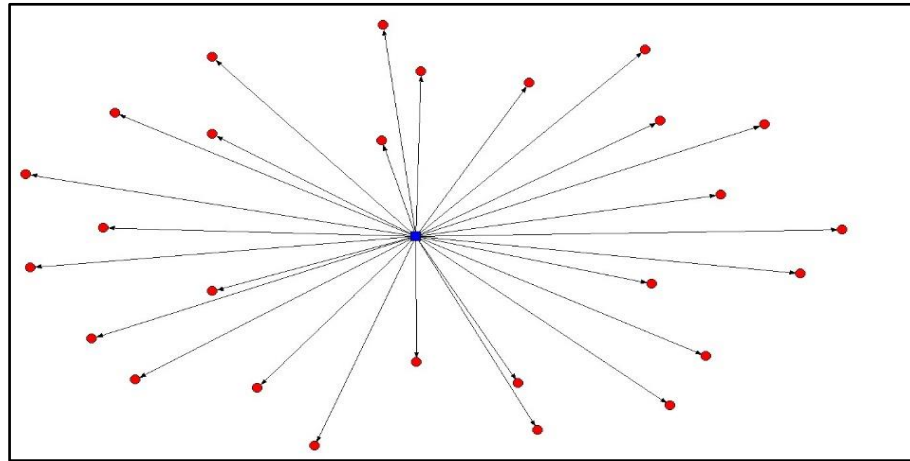


(c) "Who comes to you for advice on work related issues?"<sup>106</sup> It requires a vertical feedback of outgoing knowledge; it is a vertical exchange of knowledge; the differentiation between weak and strong ties was not required by frequency. The respondent indicates 27 subjects asking for advice, so the knowledge is unidirectional oriented towards alters.

<sup>105</sup> Italian version: "Da chi vai a chiedere consigli se hai necessità su tematiche di lavoro?"

<sup>106</sup> (Italian version: "Chi viene da te a chiedere consigli su tematiche riguardanti il lavoro?").

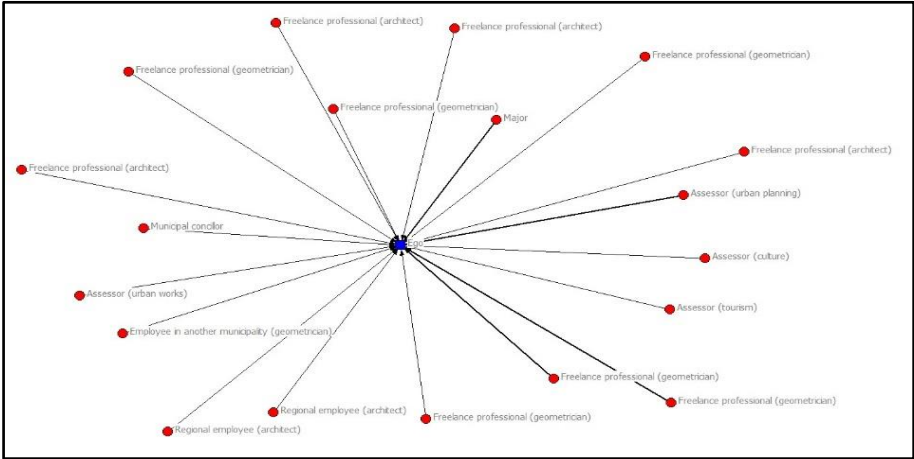
Figure 37: advice network from Ego (blu) to Alter (rosso).



(d) "List all those outside the close colleagues who are listed in the online list with whom you exchange knowledge: colleagues who are not in the online list, politicians, external stakeholders, other workers of public administrations or investee companies. the subjects who are not internal can indicate the role they play (for example, region official, hotelier association president, ...). Then indicate whether the communication takes place at least once a week or at least once a month or more."<sup>107</sup> This allows to evaluate the ego-network external to the intra-organizational network represented by the relationship only with fellow public employees; a horizontal exchange of knowledge is considered and a distinction can be made between weak and strong ties (in bold). In particular, the nodes of interest are the political representatives who are the "political" side of the local authority, in addition to the external stakeholders. As emerges from the network graph, Ego has strong and frequent relations with the mayor and the councilor of reference, has weak relations with various professionals in the urban planning sector (architects and surveyors) and with two managers of the Tuscany Region, while relations with other political representatives are scarce or absent (especially with the elected majority and minority councilors). It should be noted that in this section, unlike all the other questions, an example list was prepared (with 9 out of the 12 city councilors, including the Mayor) and Ego was asked to continue with the list. In this situation, therefore, the size of the network is determined by Ego and by his precise interpretation of the question that was submitted to him.

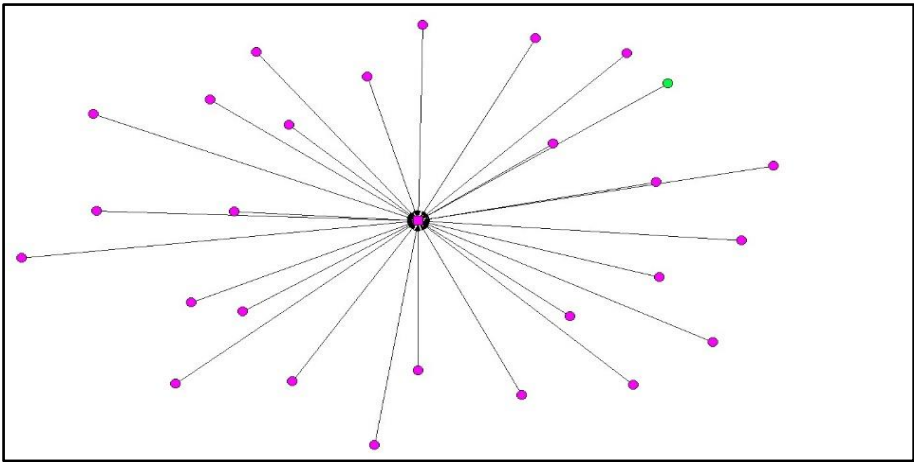
<sup>107</sup> Italian version: "Elenca tutti quei soggetti fuori dai colleghi stretti che sono riportati nell'elenco on line con i quali scambi conoscenza: colleghi che non sono nell'elenco on line, politici, portatori di interesse esterni, altri lavoratori di pubbliche amministrazioni o società partecipate. Per i soggetti che non sono interni puoi indicare il ruolo che hanno (ad esempio funzionario regione, presidente associazione albergatori.

Figure 38: external communication network (non colleagues). Strong (frequent) ties are bold.



(e) "It indicates which colleagues over time you have been a supervisor for."<sup>108</sup> Ego indicated 33 colleagues with respect to which he was a supervisor, then the municipality currently has three managers and Ego has been supervised by only one of these (in green and bold line; the other two managers are not inserted in the network in Figure 39). This variable has a qualitative nature of graphic of the ego-network. In the statistical analyzes it did not show significance, therefore, there is basically no assessment bias due to different supervisor experience with different colleagues.

Figure 39: Supervision Network (the circles in purple are supervised over time by Ego and in green his current supervisor).



(f) "Focusing on the colleagues listed below in alphabetical order, indicate if you think that the colleague on the vertical axis communicates information and knowledge on work issues with the colleague on the horizontal axis (above), write 1 if you think they do it "often" (i.e. at least once a week) or 2 if you think they do it at "rarely" (i.e. once a month or more)<sup>109</sup>. Thanks to this

<sup>108</sup> Italian version: "Indica quali sono stati nel tempo i colleghi per i quali sei stato supervisor".  
<sup>109</sup> (Italian version : "Focalizzandoti sui colleghi messi sotto in ordine alfabetico, indica se pensi che il collega sull'asse verticale comunica informazioni e conoscenza su tematiche di lavoro con il collega sull'asse

question, it is possible to grasp the entire network and not just that of ego, although there may be memory or attribution biases; the limit is that there is no confirmation of the interested party. An analysis of an entire network built by Ego that indicates the relationships of exchange of knowledge between the various alter has the advantage of the ease of data collection, but the limit that in truth is the whole network as seen by ego, but not as seen from all subjects. Being a medium-high level professional figure with high experience in the organizational structure (about 33 years), it is clear that Ego can have a good knowledge of the relationships between others. Another limitation is that ego could attribute the exchange of knowledge via communication as an exchange of tasks and therefore there could be a confounding bias between the knowledge network and the task-related network. Figure 38 shows the network deriving from the answer to this question, whereby the entire network is highlighted except for Ego relations (weak and strong ties are not highlighted because they would be difficult to distinguish). At a methodological level, here the question of the ego-ego network is replicated concerning the communication network: given the framing of the different questions, during the analysis phase, there were discrepancies between the answer to the question and this. In fact, the interviewee can be influenced by framing, that is how the question is asked (here he faces the entire network of organizational knowledge to be evaluated and, moreover, being in alphabetical order and being about halfway through the list, despite being an exchange of horizontal knowledge, ego evaluates when communicating on work issues with a certain number of alter, then for the alter below in alphabetical order it is assessed how much they speak with him), moreover, the interviewee confirmed that he replied to the two questions in two successive steps and, in particular, the 9 subjects for whom there is a discrepancy in the two answers derives from the fact that they are relationships that ego defined as "borderline" (some subjects worked with him in the previous assignment, therefore, now there are relationships that are fading over time; others are tendentially occasional relationships such as those with the head of the transparency or information technology department). It should be noted that a subsequent comparison with the interviewee revealed that the interpretation given is very tied to the flow of knowledge and task-oriented information: being this an exploratory research, this aspect can bring out the need for a better specification of the questions. During the administration of a questionnaire to the entire organization, by administering a specific control request on the exchange of specifically task-oriented information and one on purpose, specifically on the exchange of "friendly" knowledge not directly related to the job, because only

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orizzontale (in alto), metta 1 se pensi che lo facciano almeno 1 volta a settimana e 2 se pensa che lo facciano solo una volta al mese o più. Scrivere 1 se pensa che lo facciano almeno 1 volta a settimana e 2 se pensi che lo facciano almeno una volta al mese o più").



in this the knowledge that is truly the driver can emerge and distinguish it from the network of vertical directional advice. The communication-knowledge network seen by Ego is in Figure 40.

Figure 40: intra-organizational communication network (seen by Ego) with node weighted for their evaluation of innovative behaviour; in blue the male employees and in pink the females.

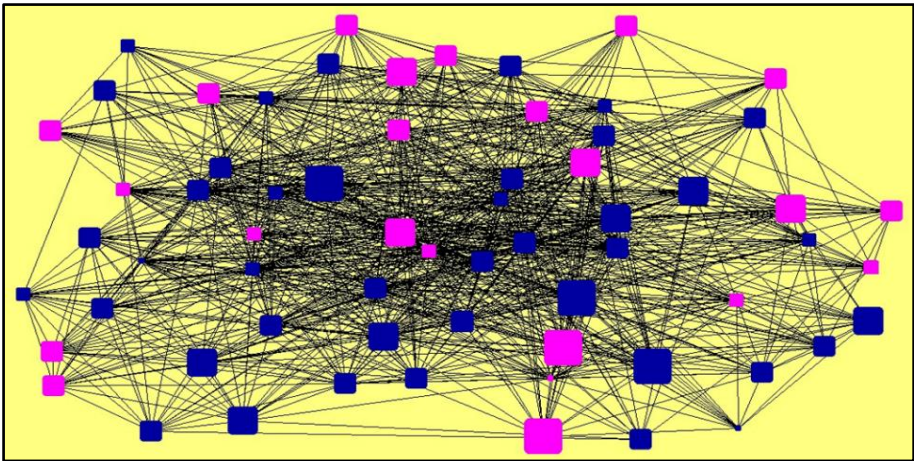
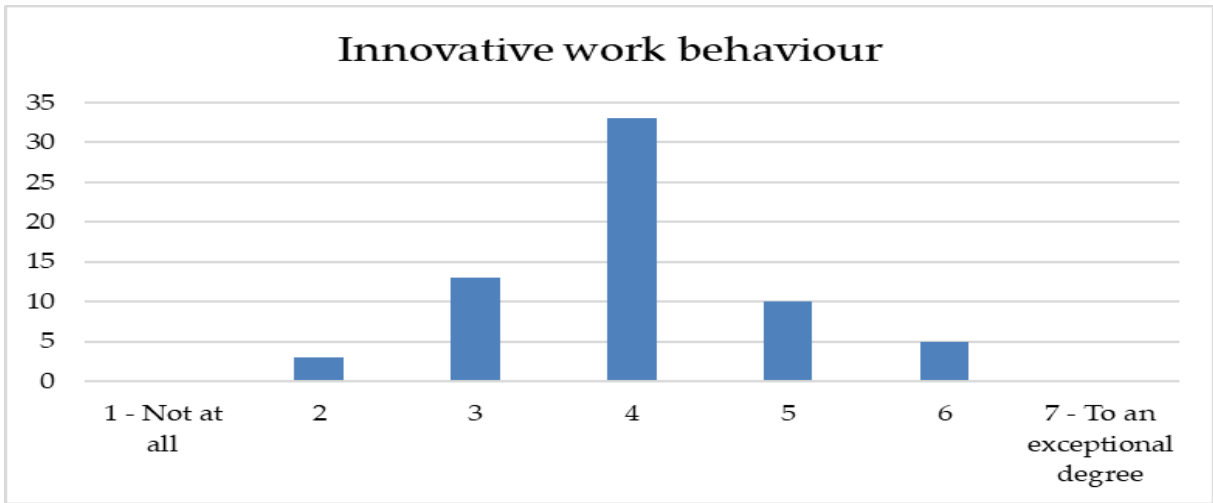
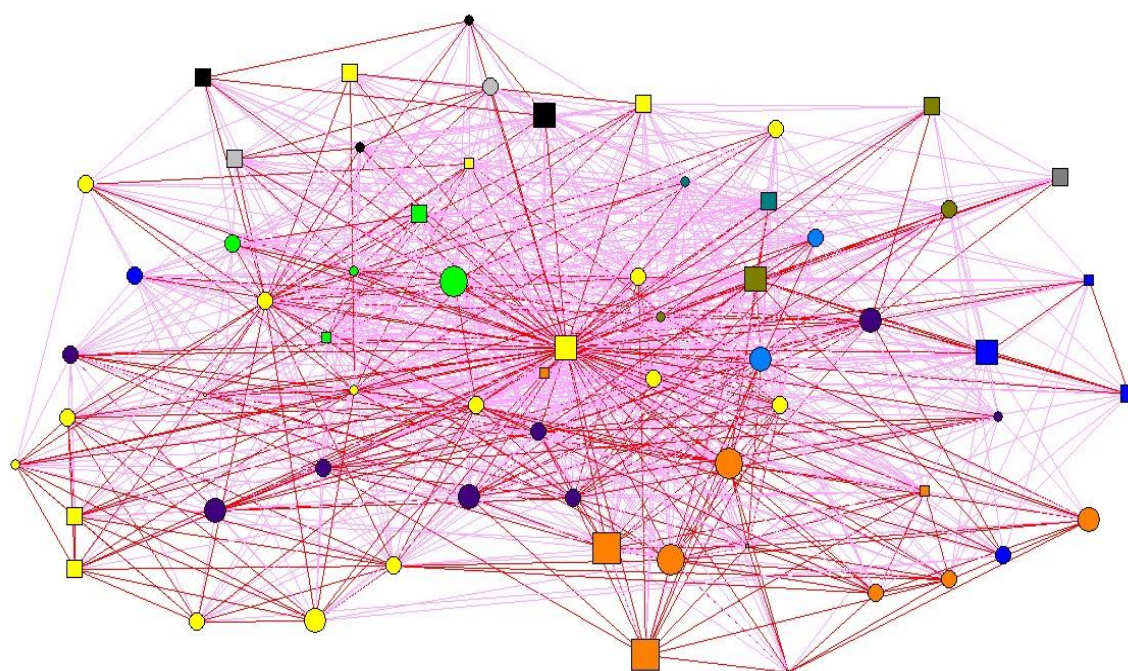


Figure 41: Innovative work behaviour Evaluation (self-reported for Ego and how Ego evaluates the whole network of colleagues in an Italian municipality).



(g) Finally, Ego answered the question about individual innovativeness seen above. Already in other studies, such as that of Perrone (2001), the question was asked which company had a reputation for innovation. The advantage of this question is that it allows the behaviour to be seen on a scale (1 represents no innovativeness, 4 a neutral evaluation, 7 very innovative) and, therefore, to give a synthetic measure of innovative behaviour. The data limited to a single item may not be able to fully represent the three dimensions of innovative behavior as in the various psychometric scales seen above, but on the one hand, the definition of innovative behavior given with the question allows a better interpretation by ego.

Figure 42: intra-organizational communication network (as seen by Ego) with node weights weighted for their evaluation of innovative behaviour; strong ties in red and weak ties in pink; women in square and men in circles; the nodes are coloured according to the operational unit/function/office of the municipality.



Public Works	Black
Revenue Management - Tribute	Dark Blue
Social Services - School - Culture	Black
Personal Services - General Affairs	Yellow
Single Client Central	Blue
Tourist Office, Public-relations and Communication, Associations, Sport, Hunting	Green
Urban Planning	Orange
General Accounting and Financial Services	Olive Green
Territorial Government, Environment and Productive activities	Teal
Municipal Pharmacy	Grey
Public Education - Social Sector	Light Grey



In addition, the question respects for most of the sample an evaluation of the supervisor (Ego was higher by one part of the sample, for the others equal, lower or higher in the hierarchical scale is still an evaluation of colleagues, therefore, theoretically better than a self-reported evaluation, which occurred only with regard to himself).

After analysing these networks individually, further steps were taken. First, a network graph was created in which the individual nodes are attributed the value of innovation (self-reported or attributed by Ego). Figure 40 shows the nodes in squares weighted by the value given to the innovation; the colours represent the operational offices-units of the Municipality (the data are obtained from the transparency portal of the Municipality of San Vincenzo). Subsequently the network has been dichotomised (the strength of the ties is not considered, but their presence) and made symmetrical (it is a horizontal exchange of knowledge), in order to calculate two individual network measurements (the same two have been selected and used also in the analysis by Tasselli (2015)) through UCINET (Borgatti et al., 2002): "Closeness centrality" and Brokerage, measured with "betweenness centrality" (and normalised betweenness centrality) (Freeman, 2004); the results are a continuous variable for each respondent (In Annexes). These data are combined with the counting of strong ties (at least one knowledge exchange once a week) which is in total 306 ties and weak ties (knowledge exchange once a month or more) which is equal to 674 (the total sum if counted for each single subject is double because the ties are seen symmetrically). The table with the results database is in the Annexes at pag 480.

### **c) Social capital impact positively on innovative work behaviour in a local government? In-depths hypotheses and statistical inferences.**

Following this graphic and descriptive "analysis" of the network dimensions, an exploratory analysis of the model is carried out. For this analysis, the Ucinet VI inference procedure is used (Borgatti et al., 2013) checking on Stata through a regression in which a linear regression model is used, clustering the error terms with respect to the subject identifier for the models in which there are dyadic characteristics, i.e. strong and weak ties, so that the problems of heteroskedasticity and autocorrelation presumably present for the potential non-independence of the residuals by network size can be solved (Hoechle, 2007; for an empirical application: Tasselli, 2015) the results tend to be equivalent for analyzes without interactions, while Stata 14 is used directly to test the mediation of strong and weak ties. In the theoretical part, the second hypothesis for this thesis is that "Individual social capital from internal knowledge networks has a positive impact on individual ambidexterity ". In this explorative analysis, it is possible to deepen this hypothesis, unpacking the concept of social capital within a case of knowledge network. It is an explorative case,

because all data came from a unique person, who was interviewed, and so this is more a perception of the network than the real one. At the same time, this methodology is recognized in the literature for the social network analysis (Borgatti et al., 2013) and perception could be seen as a proxy of reality. Moreover, the interviewed have a long experience in the organization and he was a supervisor for many colleagues during his different tenures in the local government. The sample is large enough for social network analysis. Starting from the second hypothesis of the thesis, concerning the impact of knowledge-based internal social capital on individual innovativeness, some in-depth research hypotheses emerge as well as 4 control hypotheses. To hypothesis 1.2, these propositions (sub-hypotheses) are added and explored statistically<sup>110</sup>.

- 1) The number of strong ties (32% on average per single node) has a "small" positive effect on individual innovative behavior (H 1.2.a).
- 2) The number of weak ties (68% on average per single node) has a "big" positive effect on individual innovative behavior (H 1.2.b).
- 3) Betweenness centrality positively influences innovative behavior.
- 4) Closeness centrality positively influences innovative behavior.
- 5) The number of weak ties has a moderating (interaction) effect with the two dimensions of individual centrality. The interaction effects are assumed to be positive.
- 6) The number of strong ties has a moderating (interaction) effect with the two dimensions of individual centrality. The interaction effects are assumed to be positive.
- 7) Control hypothesis 1: the male sex can positively influence the evaluation of the innovative behavior, as Ego is male and therefore the sex bias could occur with respect to the innovative behavior, as outlined above.
- 8) Control hypothesis 2: Those who work or have worked with Ego in the Public Works (before) and Urban Planning (now) sectors are considered to be more innovative (attribution bias, represented by the idea that Ego knows better self-evaluated and the subjects with whom has worked, psychologically defends its positive image and, finally, the outgroup evaluation may be lower because it is stereotyped; this control is necessary to try to delimit the limits of an analysis made on data of a single respondent subject).
- 9) Control hypothesis 3: the managerial role or organizational position positively influences the propensity for innovation. Who has a managerial role even in a bureaucratic body can have more possibilities to express innovative behavior.

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<sup>110</sup> Only hypotheses about strong and weak ties are treated in the case study here and in the large empirical study with data about internal social capital in 44 municipalities. Thus main hypotheses of the thesis concern in particular the debate between strong and weak ties.

10) Control hypothesis 4: the role of supervisor over time could positively influence the evaluation of the individual innovative behavior (it should be noted that this dimension cannot be inserted in conjunction with the two dichotomic control dimensions in hypothesis 8, because substantially they are the same subjects included in the two offices). For Model 1, the only significant and positive coefficient regressor is strong ties. Diagnostic tests of OLS regression are conducted.

Figure 43: Regression models: effect of social capital on innovative work behaviour.<sup>111</sup>

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
N. Strong Ties	0,027***		0,039***			
N. Weak Ties	- 0,006			-0,039***		
Closeness Centrality		4,468	4,16	11,16 ***		
Betweenness Centrality		-0,019	-0,024*	-0,034**		-0,027*
BC x N. Strong Ties					0,00019***	
BC x N. Weak Ties					-0,0001**	
CC x N. Strong Ties						0,073***
CC x N. Weak Ties						0,036
Gender (Man)	0,015				0,077	
Public Works	0,271	0,299	0,125	0,142	0,362	0,163
Urban Planning	0,269	0,394	0,313	0,309	0,424	0,377
Position	0,233					
Model F	2,57**	1,12	4,75***	4,84***	11,13***	5,79***
R <sup>2</sup>	0,1319	0,0757	0,1656	0,1727	0,1044	0,1574

The values represent non-standardized estimation parameters; the intercept and the dispersion parameters are inserted in the model, as well as the standard errors, they are not shown here; \*  $P_v < 0,1$  \*\*  $P_v < 0,05$  \*\*\*  $P_v < 0,01$

Multicollinearity (VIF: elements just above 1); residue normality (it is ok for Shapiro-Wilk test and IQR test); model specification (there are no variables omitted for the RESET test, but the linktest does not make much sense because the control variables are dichotomous, while the model remains significant and the significance of the regressor coefficients does not change in a model without control variables; in this case, the linktest identifies a correct specification). The tests to control the heteroskedasticity are not performed, since an analysis derived from dyadic network data is used the cluster option (compared to the individual "IDi" code of each subject). For

<sup>111</sup> The output result from Stata is in Annexes for the Model 1 as example. The Annexes includes a hierarchical regression model where in the first block there are only demographic variables (including the two sectors where Ego used to work), in the second the number of weak ties is added and in the third the number of strong ties is added. The interactive effects are not included because they are not significant without the presence of direct relationship. The output is at page 384 in the annexes.

Model 2 there are no significant coefficients and the model as a whole is not significant compared to what is expected. As far as the diagnostic tests are concerned: VIFs higher than 10 for betweenness centrality (10.51) and closeness centrality (10.85); the data is borderline with respect to acceptability, therefore, more investigations would be necessary with respect to a potential problem of multicollinearity; the normality of residues is acceptable; the problem of this model is that it is underspecified and presents the possibility that there are omitted variables. Even in the absence of dyadic dimensions, the data reported are those with the option of clustering by ID, but even with this specification, the significance of the model does not improve sufficiently. Model 3 is significant, so the strong ties still have a highly significant positive effect and brokerage has a negative effect; the collinearity between betweenness centrality (9.72) and closeness centrality (9.96) regressors has a VIF of less than 10, therefore, is acceptable; the normality of residues is acceptable; there is no problem of the model specification or missing variables. In Model 4, compared to Model 3, the size of the strong ties is removed, which collects most of the variability, to add, instead, the variable weak ties: with this model specification all three network dimensions are significant; the model respects the parameters of the diagnostic tests, apart from a VIF beyond the threshold of 10 for betweenness centrality (10.57) and closeness centrality (13.52), however, by testing the model with a quadratic specification of betweenness centrality, the VIF falls within the parameters and the significance of the models and regressors does not substantially change; by adding the two regressors of gender control and Role, the VIFs increase, but the statistical results do not change yet. A model with all 4 individual network and dyadic dimensions is not statistically plausible, due to a multicollinearity problem (average VIF 231.93). To move on to the study of the moderation of weak and strong ties, a post regression procedure has been followed with respect to the margins and margin forecasts of the international effect; first, the two dimensions have been made categorical by distinguishing between subjects having weak and strong ties above average (ManyST and ManyWT) and those having fewer or equal numbers (FewST and Few WT)<sup>112</sup>. The results of the relative graphs are shown in Figure 44 and Figure 45. As far as the impact of weak ties (graphs on the left) is concerned, these show a negative interaction effect for both measures of network centrality; for strong ties, the interpretation is more complex, since the interaction effect resides almost completely in the intercept, so that those who fall into the category of having more strong ties, interacting with the measures of centrality, have a positive effect at the base that separates between two groups, the slope, however, is decreasing, especially for the interaction with closeness. There is a sort of "advantage" for those who have a higher

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<sup>112</sup> It is necessary to consider that the average of strong bonds is 10, while the average of weak bonds is 21, while the minimum value of Betweenness is 0.33 and the maximum value is 112.79; the maximum value of Closeness is 1 and the minimum value is 0.56.

than the average number of strong ties. For the strong ties, therefore, a second analysis of the marginality of the interaction effects has been carried out<sup>113</sup>. Finally, to evaluate the interaction processes, models for betweenness and closeness with or without the dimensions of interaction with weak and strong ties were tested. It is noted that betweenness becomes significant and, above all, changes sign depending on whether interaction with strong or weak ties is included in the regression. In Model 5 both terms of interaction are inserted and it precisely is that the interaction with strong ties leads to a significant positive effect, vice versa the interaction with the number of weak ties. Model 5 does not present problems of multicollinearity between regressors, normality of residues and specification. Finally, Model 6 is the ultimate version of Model 2 and is the one that respects the parameters of Multicollinearity (only the VIF of betweenness is 9.81 is at the limit of acceptability), normality of residues and correct specification (it does not change the sign and significance of the regressors excluding betweenness).

Figure 44: Interaction analysis between Betweenness centrality and strength of ties.

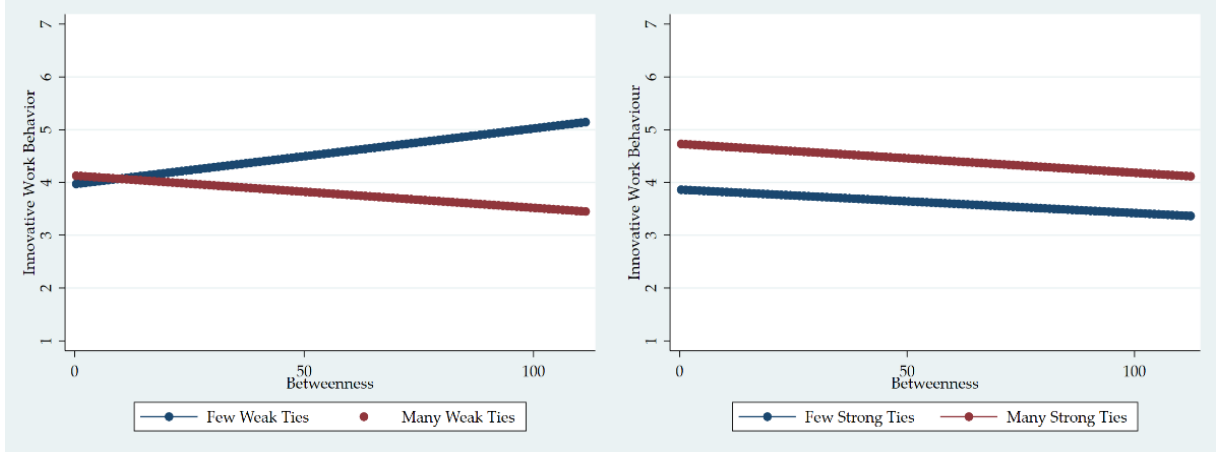
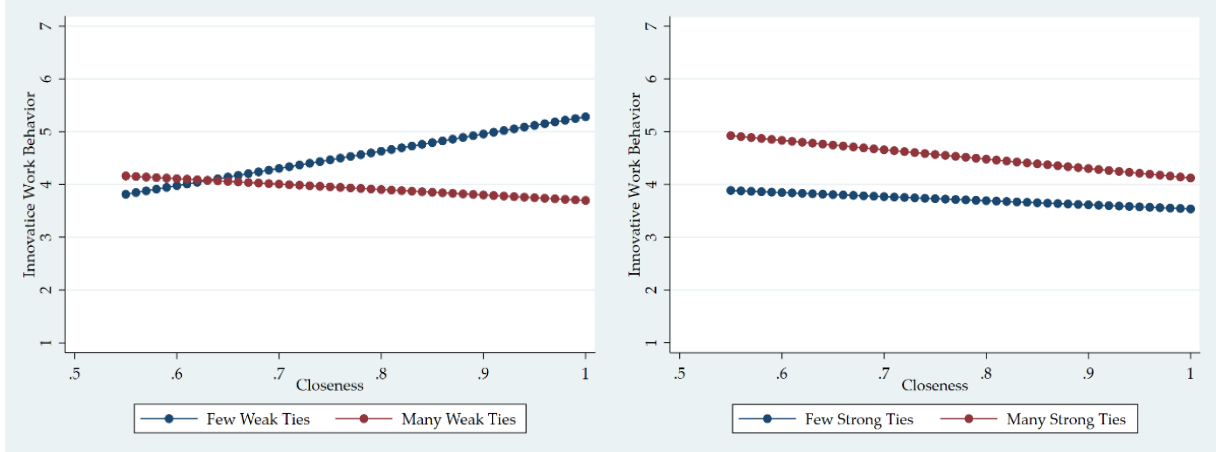


Figure 45: Interaction analysis between Closeness centrality and strength of ties.



<sup>113</sup> Observation: the predicted values of the interaction were higher than 7, therefore, they were limited to the maximum value of the variable that is 7 (in bright red in the figure of the interaction with closeness); for the interaction between strong bonds and betweenness the range for the excessive numerosity with respect to the analysis was reduced (including brokerage values between 6 and 55; including betweenness values between 1 and 100); an alternative strategy of analysis would have been to increase the parameter of sensitivity to a marginal increase of 2 with respect to a marginal increase of 1.

Table 13: Models for evaluating the interaction between measures of individual centrality and dyadic measures of relationships (strength of ties).

Interactions		Between- ness Centra- lity	Between- ness Cen- trality x Strong Ties	Between- ness Cen- trality x Weak Ties	Close- ness Centra- lity	Closeness x Strong Ties	Closeness x Weak Ties
Closeness	Centra- lity				0,1872	-1,1719	3,3882***
Betweenness	Cen- trality	-0,0010	-0,0075***	0,0124***			
BC x N. Strong Ties			0,0003			0,0362***	
BC x N. Weak Ties				-0,0003***			-0,0362***
CC x N. Strong Ties							
CC x N. Weak Ties							
Gender (Man)		NS	NS	NS	NS	NS	NS
Public works		NS	NS	NS	NS	NS	NS
Urban Planning		NS	NS	NS	NS	NS	NS
Positions		NS	NS	NS	NS	NS	NS
Model F		0,84(NS)	10,60***	6,80***	0,83(NS)	3,18**	
R <sup>2</sup>		0,0536	0,1004	0,1053	0,0534	0,1225	

The values represent the non-standardised estimation parameters; the intercept and dispersion parameters are included in the model, as well as the error standards, are not reported here; \* PV < 0.1 \*\* PV < 0.05 \*\*\* PV < 0.01; NS = Not Significant (Only regressions in which interactions with dyadic dimensions are clustered for individual ID).

#### d) Discussion of results for the explorative analysis in a municipal case study: Social capital and Innovative work behaviour.

Now the results about the assumptions for each model of social capital are examined.

**Sub-Hypothesis 1.2.1.** Confirmed and the effect tends to be strong and significant. The number of strong ties has a positive correlation effect on individual innovative behaviour (H 1.2.a). Despite the theoretical discussion that the social support given by strong ties is not sufficient to justify the innovative work behaviour, Perry-Smith & Shalley (2003) hypothesize that individual creativity is advantaged only when the subject has a low number of strong ties because these are expensive and create a vicious circle of redundancy of information and knowledge flow (M. Granovetter, 1973). Presumably in public administration, having strong relationships, perhaps with innovative people, promotes one's innovative behavior thanks to social support. This conclusion

is part of the logic of the importance and positive aspects of strong ties too (Krackhardt et al., 2003; Nelson, 1989). Granovetter (1983) also states that strong ties can play a unique role because they are linked to greater motivation and ease of access<sup>114</sup>. To be considered that the substantial limit of this research is that the data are obtained only from a subject's questionnaire, therefore, the costs of having strong ties could be underestimated; moreover, as the question is asked, the strength of ties is seen according to frequency (Mark Granovetter, 1983), while other dimensions such as reciprocity and the psychological link between the nodes of the network could be underestimated. The importance of strong ties is confirmed in studies concerning product development and innovation so that weak ties are useful in the knowledge research phase, but for the exchange of complex knowledge, the decisive role is played by strong tie (M. T. Hansen, 1999). The role of strong ties in knowledge exchange networks (not distinguishable between complex and non-complex) on innovation is confirmed by Reagans & McEvily (2003). More recently, also Tortoriello & Krackhardt (2010) have found a positive correlation for strong ties and "Simmelian strong ties" (i.e. when two subjects are connected with strong ties and these are connected with a common subject through a strong tie) with the production of innovations.

**Sub-Hypothesis 1.2.2.** The research hypothesis was based on Granovetter's (1973) theory on the strength of weak ties and their role in creativity in the models of Perry-Smith & Shalley (2004) and Perry-Smith (2006). The results of this research, however, show that the number of weak ties has a direct negative effect on individual behaviour (the opposite in relation to hypothesis 1.2.b.) The results of the first two hypotheses are consistent with Hansen (1999), who, studying the knowledge network and the impact in the development of new products, found that in the relations between units, weak ties allow the search for knowledge (they, therefore, have an impact on the exploration phase), while the transfer of complex knowledge occurs through strong ties between two subjects and, indeed, weak ties reduce the speed of development of projects when they are complex. There is, therefore, a dyscrasia between studies that assume that weak ties are the proponents of creativity and those that give more emphasis to strong ties for the production of objective innovations (products, patents). More studies on individual networks (Intra- and inter-organisational) and individual behaviour would be needed to find a conclusion, both from the perspective of a separate vision of creativity (first phase) and innovation (implementation only) and from the perspective adopted here of innovativeness as individual and organizational behaviour encompassing the phases from creation to implementation; as Hansen (1999) states, moreover, more attention would be needed to separate the two phases of research and transfer;

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<sup>114</sup> Granovetter (1983, p. 209): "I had better say that strong ties can also have value. Weak ties provide people with access to information and resources beyond those available in their own social circle; but strong ties have greater motivation to be of assistance and are typically more easily available. I believe that these two facts do much to explain when strong ties play their unique role"

in further research, therefore, it would be interesting to understand the interaction and correlation between weak ties and ambidextrous activities, assuming that the special interaction with the exploration dimension could mean a change in individual innovative behaviour.

**Sub-Hypothesis 1.2.3.** Unconfirmed: betweenness centrality has a significant but negative effect on individual innovative behaviour. It is possible that, seeing only the intra-organizational network, and asking the question as communication on work issues, there is a bias due to a confounding between simply task-related communication and knowledge exchange in a broader sense. The role of brokers, therefore, according to this analysis is not that of the subjects who have greater access to knowledge, but is more that of "passacarte" between individuals and offices.

As pointed out by Tasselli & Kilduff (2017), the negative relationship could be due to endogenous personality elements or brokers could be seen as negative if they connect two very cohesive groups, because of the skepticism that can be created for his behavior until judging him not one of us (Stovel & Shaw, 2012, p. 144). In the next empirical studies, a better specification of relational questions will be necessary, in order to have a precise distinction between task-related network, "work" communication network, advice network and "gossip/social" communication network (related therefore to talk and exchange knowledge at work on non-work issues, but that in public administrations can lead to exchange knowledge and information related to the intra-organizational situation or related to network and public governance): only with this distinction it is possible to effectively understand who has a role of broker/"passacarte" of the procedures or who has a role of "broker" because within the organization has more contacts with distant offices or subjects not in contact; even if it is difficult to define the network of public governance and the system, the role of the positive broker would presumably be positive if it could be of connection with the outside and therefore able to acquire knowledge from the outside and pass it on to the outside, without being a node that "doesn't reason" and only acts as a medium to transfer procedures and practices even in the case of connecting with the outside. To underline, also the interaction with the number of weak ties, so that subjects with few weak ties, but in a broker position, tend to be more innovative than those with many weak ties. The result of this hypothesis is in contrast with analyses that assess as measures of the network structure, as the presence of structural holes, It is interesting, finally, to note the relationship with the size of the number of weak and strong ties: in fact, the broker has a positive role when it is interconnected with strong ties, vice versa when it is connected with many nodes weakly; this analysis confirms, therefore, the role of strong ties in brokerage situations (Tortoriello & Krackhardt, 2010). It must be taken into account, finally, that the paradigm of this research falls within the role of the network position of the single node and not within the logic of the conformation of the structure of the complex on the individual behavior: Carnabuci & Dioszegi (2015) measure brokering as the opportunities



that the network gives, i.e. in the number of structural holes compared to a dispersed network, and it is in the first case that the authors find a positive effect on creativity, while it is in the second case that the authors find a positive effect on implementation.

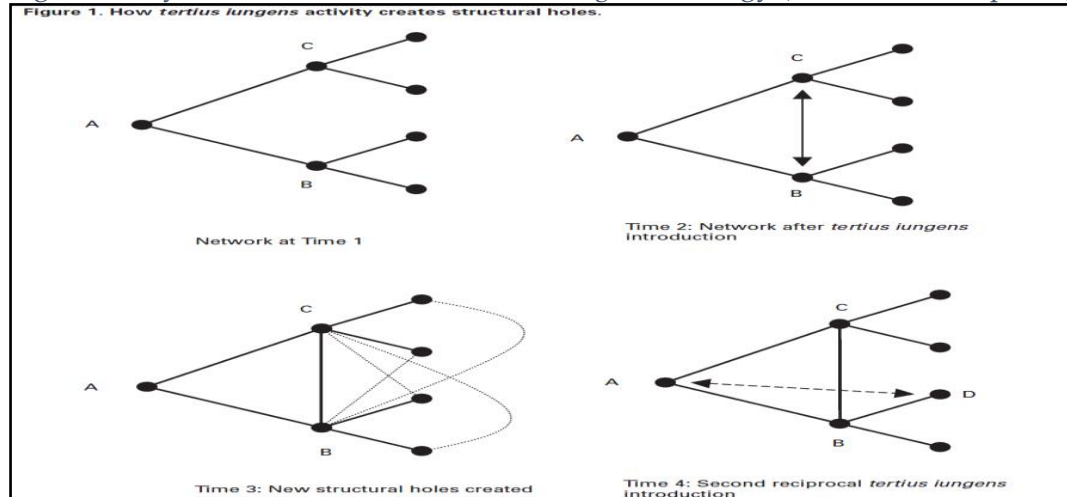
**Sub-Hypothesis 1.2.4.** Confirmed: Closeness Centrality has a positive effect on innovative individual behaviour, especially when it supports the number of strong bonds (Model 3) or when it interacts with the number of strong bonds (Model 6). In the sub-specified models (2) or in conjunction with the presence of the number of strong bindings as a regressor, the dimension loses its significance, while maintaining a positive coefficient.

**Sub-Hypothesis 1.2.5.** The number of strong bonds interacts on the network centrality dimensions analyzed, in particular, subjects that have a higher than average measure tend to have a positive impact on how much the centrality measures affect the innovative behaviour; the spread is more on the intercept (between low number and a high number of bonds) than on the slope. The interaction is highly significant with both Betweenness and Closeness and manages to change the sign of the relationship. Further empirical studies are necessary to confirm this hypothesis, which tends to be confirmed according to this analysis.

**Sub-Hypothesis 1.2.6.** The number of weak ties presents the conditions to have a negative moderating effect for both measures of individual centrality; presumably having many even weak ties can distract from the energies compared to having a broker role or being central in the network. For those with few weak ties, the impact of brokerage and closeness is positive, vice versa for those with many weak ties. The analysis reports a fact that opposes the research hypothesis, while it confirms the idea that weak ties positively influence the search for knowledge, while they can be a block for the implementation of innovation.

**Control dimensions.** The gender variable has no influence and has a very low explained variability; it is inserted only as a control in Model 1, while in the following ones it is not inserted as a dimension in order not to have an excessive number of variables for the number of data and, above all, to avoid an excessive number of dichotomous variables. Including the dimension of supervisor (i.e. dichotomous that indicates that Ego has been a supervisor in the time of permanence in this organization) has been checked for the various models in order to evaluate the distortion due to the data collection only on Ego; it is not significant and does not change the significance of the other regressors; in the models, the dummies have been kept with the two organizational offices where Ego has worked overtime, concerning this dimension. Starting from these results, conclusions can be drawn with respect to this social network analysis case study that can influence this field of research.

Figure 46: dynamic network with "*Tertius Iungens*" strategy (Obstfeld, 2005, p. 122)



Compared to the current research trend, a more specific focus seems to be missing on innovative behavior in the network, since most of the studies are cross-section or limited to single "case studies" of networks. With longitudinal studies and dynamic networks (Snijders, 2001) it is possible on the one hand to have a cause-effect relationship, on the other hand, to find how individual innovative behavior at time 1 can affect network position and ego-network at time 2, seeing, that is, how individual dynamic capacities (affirmed thanks to the time-based knowledge exchange structure can affect changes in the time-based network 2. Innovative behaviors in the network can also lead to significant changes in the structure of the entire network. From this point of view, it would be interesting to investigate in more depth how the network with its social influence affects individual ambidextrous behavior (at time 1) and how it affects the short (time 2) and long-term (time 3). research should extend on how and if individuals manage to combine over time the ability to exploit the contacts they have (Exploitation) and find n new contacts with which to exchange knowledge (Exploration) or the network confirms that the binomial inherent in ambidextrous behavior is not complementary but substitute. In this circle, one can highlight the "*Tertius Iungens*" strategy (building bridges between separate people) (Obstfeld, 2005) or the "*Tertius Gaudens*" strategy (exploiting the contacts of two separate people being in the messenger) (Burt, 1992; Simmel, 1950) or manage to combine them both in an ambidextrous sense. In the first strategy (Figure 28), similarly to "Exploration", the actor has a behaviour oriented to introduce disconnected individuals and facilitate coordination and cooperation between already connected individuals. In the second strategy, however, there is an active separation and the subject is positioned between two disconnected nodes close to a structural hole and can manipulate and exploit ("Exploitation") the parts to their advantage (Obstfeld, 2005). It remains to be evaluated, therefore, whether, again taking Latin as a reference, it is possible to define a new (fourth) strategy of "*Tertius Aequimanus*" in knowledge sharing relations, which is able to explore new network solutions, creating bridges and coordinating new contacts, but also to exploit more effectively the contacts

already existing in one's own social network, remaining within the conceptual framework of Quintane & Carnabuci (2016). With a non-social network analysis approach, however, a positive relationship between social capital and exploration-exploitation has already been highlighted (Mura et al., 2014). Wang et al.'s research goes in this direction (2013), which focuses on multi-level knowledge networks of researchers and organizations in the field of microprocessors and uses the number of patents as a real indicator of innovation (and innovative behavior of researchers); although it is difficult to generalize to less innovative sectors where the subjects of investigation are not product researchers, a relevant conclusion is that researchers fall into the so-called "competency trap" (Levinthal & March, 1993), in the sense that they focus on Exploitation activity to the detriment of Exploration, as it tends to be cognitively convenient and economical for him to take advantage of the opportunities given by the structural holes in the knowledge network of the company having considerable combinatorial possibilities, although he runs the cost of renouncing the exploration of new knowledge elements compared to the knowledge stock of his organization (C. Wang et al., 2013, pp. 508–509). For future research and, in particular, to test the models presented in this report, it is also necessary to stress that particular attention should be paid to the problem of endogeneity and so-called "reverse causality", so that very innovative individuals could be those who share the most innovation or who occupy more central and relevant positions in knowledge networks (Phelps et al., 2012). Another relevant methodological aspect, moreover, is the objective difficulty to compare different empirical works both for the current theoretical debate (in particular, on creativity and innovation) and for the presence of numerous constructs and relative scales that are not always superimposable. A greater systematization of the use of scales for measuring the dimensions of knowledge sharing and innovative behaviour should be made both to clarify the theoretical assumptions and to avoid situations of misunderstanding (knowledge sharing behaviour should not be confused with the culture or organizational climate of sharing and vertical sharing has a different meaning than simultaneous horizontal sharing); it would also be challenging to seize the opportunity to construct theoretically and empirically a scale of first- and second-order individual/managerial dynamic capabilities covering the elements considered here separately; the validation of such a scale should start from the theoretical relationships outlined in this report, in order to empirically understand whether the relationships and the various dimensions (innovative, ambidextrous behaviour, improvisation and "thriving at work") can actually be part of a single multifactorial construct. Finally, we have to consider the need to evaluate the various scales with a trans-cultural approach, because it is conceivable that the very meaning of the dimensions focused on collaboration can assume symbolic meanings and different attitudes according to individualistic or collectivistic cultures, according to Hofstede's classification (Hofstede, 1980a, 1983).

## B. RESEARCH METHODOLOGY AND METHODS.

### 1. ORGANIZATION AND CONSTRUCTION OF A QUESTIONNAIRE.

#### a) Introduction to survey design. and construction of the questionnaire.

The purpose of this chapter is firstly to identify good practices and suggestions in methodological literature to build accurately the research design of this thesis through (complex) choices. Secondly, it presents the measures used to assess constructs and in particular the adaptation of some of them to the local government context in public sector. The methodology and the empirical methods of this thesis are based on three general methodological books recognized in academic literature, exactly *Research methods for organizational studies* (Schwab, 2005), *Internet, Phone, Mail, and Mixed-Mode Surveys: The Tailored Design Method* (Dillman et al., 2014), *Management and business research* (Easterby-Smith et al., 2015), *Research methods* (Trochim et al., 2015). Two specific methodology books are taken into account on social network analysis, in particular *Analyzing social networks* (Borgatti et al., 2013) and *Social network analysis* (Trobia & Milia, 2011). Academic articles and book chapters on methodology (especially in *The Palgrave book of survey research* (Vannette & Krosnick, 2017)<sup>115</sup>), as well as scientific articles specific to this research topic and the methodology used, complete the theoretical or empirically tested framework on which pondered choices about research design are based. The theme of this chapter is precisely the methodological choices and, in this thesis, it falls on a research survey, in a manner consistent with the research philosophy of behavioural public administration (G. Lee et al., 2012). Within this decision, the methodology coherently groups a selection of method and technical choices that start from data collection up to the analysis and discussion of empirical results (Easterby-Smith et al., 2015). In this research, the data are collected through a web-based survey and a questionnaire administered in Italian local governments as well as some secondary data that are available for these organizations and they are used as contextual demographic control variables (e.g. size of an organization, population of reference for a municipality).

Surveys are a common instrument for evaluating public opinions, perceptions, attitudes and behaviours in the general field of social science and in the specific field of research in public administration and there is a specific academic discipline in the United States (G. Lee et al., 2012, p. 87). In scientific research, quantitative cross-sectional design studies and measured constructs

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<sup>115</sup> This book is divided into articles written by different authors, therefore, the quotations in the thesis concern the authors of the chapters rather than the entire volume, even if the reference is inserted in the bibliography for *The Palgrave Handbook of Survey Research*.

with single sources are the most frequent research typology (Spector, 2019). These studies are also the most used for data collection in public administration, where informants are managers, employees and/or politicians and there are no differences with other disciplines such as psychology and management (George & Pandey, 2017; G. Lee et al., 2012). Also in public administration research, surveys allow to obtain data at individual, group or organizational level (George & Pandey, 2017). This chapter outlines how the methodological problems that are usually inherent in questionnaires and specifically in survey designs and decisions taken to improve the quality of work can be addressed. The aim is to minimise the sources of error in survey research that typically characterise public administration research (G. Lee et al., 2012). In particular, this study design is cross-sectional with a "prospective" time-lag (Spector, 2019) and, apart from certain organizational dimensions of control, social relations, evaluation of colleagues' innovation, individual variables are evaluated with the same respondent. This methodological process involved the ex-ante and planned research of methodological remedies to reduce possible method bias and spurious correlations to improve the research quality (Brannick et al., 2010; S.-J. Chang et al., 2010; Podsakoff et al., 2003, 2012). The data collected are partly time-lagged and partly obtained with a single observation depending on the municipality or the respondent's choice and response time. In the data analysis a dummy variable was then constructed to evaluate the effect of having responded in a single solution compared to two times time-lagged, so that it is also possible to evaluate the effect over time between early and late respondents. Therefore, this chapter deals with good practices and methodological choices to optimize the quality of a questionnaire. It is clear that the choices involve trade-offs, since, for example, using only time-lagged data can potentially reduce the problem of common method biases, but at the same time significantly increases the risk of non-response to the second part of the questionnaire, because they are the motivational and commitment factors for answering twice are complicated, all the more so when the requests in the questionnaire for academic research are complex. Starting from the beginning, in the context of survey design, building an academic questionnaire is a complex and challenging work (Schwab, 2005), which includes the choice of variables to be inserted, after research hypotheses have been formulated, the scales to be used (sometimes modified to apply to a given context up to construction) and, if necessary for applicability, to do a rewording action, organize the format, translate into the language of the interviewees for correct comprehension in the reference context. Good choices allow to reduce measurement biases and nonresponse rate while bad choices in the decisional process could increase errors and biases (Dillman et al., 2014). Each choice of research design depends on many factors and must be scientifically justified, because there is no single best road (Easterby-Smith et al., 2015, p. 221). Sometimes the theoretical metho-

dological considerations recognized in scientific academies are contradicted by subsequent empirical analyzes on the topic, highlighting how the method can be a source of variance and response biases in a non-unique way, but potentially identifiable and minimizable by the researcher. This re-view on the method enlightens the choices in which there are contradictions and multiplicity of views in literature, on which there is still no single common vision in quantitative research. However, there remain limits that lead to research biases often due to methodological trade-offs inherent in it. In fact, it is difficult to bypass measurement error, even if a great aspiration of the researcher who approaches with a scientific method is precisely to make methodologically correct choices to avoid the bias of his research as much as possible (Moors et al., 2014, p. 370). In fact, as recognised first by Campbell and Fiske (1959), in behavioural research, method variance<sup>116</sup> is a “both familiar and vexing” (Brannick et al., 2010, p. 407) problem and one of the most studied topics by organizational researchers (Spector et al., 2019). In particular, it can be a complication especially when it is systematic and not random (Podsakoff et al., 2003). It can be confounding and influence reliability and validity of a construct (Podsakoff et al., 2003, 2012). Parameter estimates about relazioni between constructs may disattendere le ipotesi di ricerca with ambiguous results (S.-J. Chang et al., 2010; Podsakoff et al., 2003, 2012; Siemsen et al., 2010; R. M. Walker & Andrews, 2015) o unidentifiable relations for the presence of too much deflation, as for quadratic or interaction ones (Siemsen et al., 2010) leading to different evidences and explanations of empirical results (Brannick et al., 2010). Method bias can augment, diminish or have no effect on covariance between two dimension (Podsakoff et al., 2012). Each construct of the model is measured in such a way as to present unrelated elements of interaction that can give rise to method bias and contaminated correlations (Spector et al., 2019). For Podsakoff et al. (2003) in the procedure for the construction of data collection tools, it is necessary to take into account above all the “common” method variance that derives from relations between dependent and independent variables: same respondent, measurements within the questionnaire, questionnaire format design (Podsakoff et al., 2003, p. 887). Method variance can be positioned together with the methods and responsiveness of the person to whom the questionnaire is administered. In fact,

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<sup>116</sup> In literature there is not a unique vision about definition of methods and nature of method variance (Podsakoff et al., 2012; Spector & Brannick, 2010). For Pace’s research (2010), ad esempio, metà dei reviewers rispondenti ha problemi a trarre conclusioni su una ricerca se ci sono problemi di common method bias, mentre l’altra metà ha una visione opposta (Pace, 2010). The definition of method variance is given by the exact words of one of the most cited articles in *Journal of applied psychology* (36880 citation on Google Scholar in August 2019; 37237 in September 2019): “variance that is attributable to the measurement method rather than to the constructs the measures represent” (Podsakoff et al., 2003, p. 879). Brannick defines method variance as “an umbrella or generic term for invalidity of measurement. Systematic sources of variance that are not those of interest to the researcher are good candidates for the label “method variance.” (Brannick et al., 2010, p. 418). In *Journal of Management*, recently, there is a similar concise definition “systematic variation in an observed variable due to the method used” (Spector et al., 2019).

the respondent can be facilitated to respond in an optimizing way, that is, with a mental process that starts from the understanding of the question up to giving a synthetic judgment based on the format of the stairs passing through to find the necessary information in the memory to make an overall judgment, rather than satisfying, that is using shortcuts (eg answer at random or always with the same rating) (Krosnick, 2017, p. 97). Thus, a questionnaire must be written in a correct and understandable way, so that sample members can adequately interpret the questions, be able to answer with full knowledge of the facts, have motivation to answer (Dillman et al., 2014). Paragraph b) is dedicated to the choice of obtaining data through a web-based written questionnaire and paragraph c) is about closed-ended questions and wording of the questionnaire. Following theoretical and empirical indications in the literature, study design try to reduce administration troubles for respondents and increase the ease and motivation of understanding and answering the questionnaire (Krosnick, 2017). In many fields of social sciences, the procedures for improving response rates are particularly relevant as well as obtaining data with a good quality level and not approximate (J. M. Hansen & Smith, 2012), as a greater availability of data allows to answer more accurately to research questions, therefore a section is devoted to methodological theory, based principally on suggestions by Dillman et al. (2014) and Easterby-Smith et al. (2015) and the procedural choices made. Paragraph d) is about the building of a research with social network data and it is complementary to the case study in the previous chapter. The paragraph e) is about question order in the questionnaire. Overall this chapter highlights the various steps of the method choice process and in paragraph 2 focuses also on ways to reduce common method bias, which are a relevant topic to consider in the structure of research design. The academic debate in literature enlightens the need to control, reduce or avoid potential problems through an ex-ante planning phase of research design rather than limiting oneself to subsequent analysis phases in which it is difficult to find a solid and unique systematic approach (Brannick et al., 2010; S.-J. Chang et al., 2010). Common method bias (or "monomethod bias" or "same source bias" (Spector & Brannick, 2010, p. 403)) differs from method variance and is a specific aspect of it. The latter concerns "systematic error variance due to the method of measurement" (Conway & Lance, 2010, p. 326), on the contrary, the former relates to an "often assumed" (Spector & Brannick, 2010, p. 403) "inflation of relationships by shared method variance » (Conway & Lance, 2010, p. 326)<sup>117</sup>. In the last part of the chapter on the construction of the questionnaire, the potential procedural limits of research design in the thesis are identified. For example, those concerning the choice of a cross-sectional study rather than longitudinal or experimental. Paragraph 3 concerns

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<sup>117</sup> As detailed in the section dedicated to the common method variance, some authors refer to false correlations which, especially for self-repondent problems of all the variables of the model, can lead a inflated and also deflated estimated parameters (S.-J. Chang et al., 2010; Siemsen et al., 2010).

the methodology used to motivate respondents and consequently increases the response rate. In the separate paragraph 3.b) below, the choice options in the literature on sampling and the decisions taken in this thesis in this field are discussed. Finally, in the next chapter about measurements of the constructs, the scales used in the questionnaire are analyzed, that is, the choices on questions to be inserted or not according to the research hypotheses, questionnaire scales already used in literature or new or reworded.

### **b) Survey definitions: web-based written self-administrated questionnaire.**

The first methodological choices to be made concern deciding whether to use self-reported or observers' data and whether to ask through written self-administered/self-completion questionnaires or interviews<sup>118</sup>. In this research, the questionnaire is written and self-administered with self-report measures, (self-report and observational) social network data and questions about organizational outcomes that are observational. Also, the choice is for web-based written questionnaires self-administered by online email with the Google Form application. The most relevant choice, therefore, is between written questionnaires and interviews in which oral answers are given to a researcher who is interviewing and recording (Dillman et al., 2014; Krosnick, 2017; Rowley, 2014; Schwab, 2005). The distinction between the two research tools is sometimes "fuzzy", in the sense that the range goes from open interviews to written questionnaires only with closed questions, but sometimes the boundary can be blurred (Rowley, 2014, pp. 308–309), especially when structured-interview surveys (Easterby-Smith et al., 2015), and both must have the same methodological depth (Schwab, 2005). However, there is a substantial difference. Self-administered questionnaires are characterized by a lack of direct interaction with the researcher (Rowley, 2014) and, therefore, can be compiled autonomously without the need for verbal exchange and codification by the interviewer (Schwab, 2005), which can lead to more complex and above all subjective results (Krosnick, 2017). The greater flexibility and the possibility to go dee-

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<sup>118</sup> As for the terminology adopted in this doctoral thesis, some definitions from Schwab's book are taken to the letter about methodology in organization research (2005, pp. 49–50):

**Questionnaires:** "Measuring instruments that ask individuals to respond to a set of questions in verbal or written form."

**Self-report questionnaires:** "Questionnaires that ask respondents to provide information about themselves."

**Interviews:** "Measuring instruments in which another individual (the interviewer) asks the questions verbally and is responsible for recording responses."

**Secondary data:** "Information used for research purposes but that has been collected for other purposes."

**Open-ended response format:** "Questionnaire scaling that has participants respond in their own words."

**Closed-ended response format:** "Questionnaire scaling in which the researcher provides participants with fixed response categories."



per into the questions of interviews is contrasted with the fact that written self-completion academic questionnaires allow for greater uniformity and bring more benefits than interviews. Indeed, interviews can lead to risks, such as lack of systematicity and bias of interaction between respondent and interviewer (Schwab, 2005, p. 39). Increased motivation and the caregiving relationship, such as making the questions easier to understand, can lead to interviewer bias due to different influences such as time spent understanding the question and answering, as well as problems of social desirability and acquiescence of the respondent towards the interviewer (Dillman et al., 2014). Conversely, written questionnaires can be administered to several people at the same time, allowing easier comparability, replicability and leading to more generalized results (Rowley, 2014), while maintaining the limits of sampling and statistical inference. Written questionnaires are useful both for self-reported data and for observations. Self-reported questionnaires are usually used to obtain data on attitudes, behaviours, cognitive skills, individual information (Schaeffer & Presser, 2003; Schwab, 2005). In this paper, self-report questionnaires are used to obtain data on cognitive capabilities, knowledge relations, demographic data on human capital. In the same questionnaire, however, it is included a relational question that is observational concerning an innovation dimension of colleagues. Observers are used in the research to evaluate organizational and individual variables (Schwab, 2005), i.e. a certain "object" from external observers, as when a superior gives a performance judgement on his subordinates in a working group. The organizational outcome variables are observations because they concern the perception of an organizational phenomenon and not an individual construct. As far as the choice of the medium for the administration of the questionnaire is concerned, the research design of this thesis is focused on a web-based survey. There are several reasons to prefer this medium rather than a postal questionnaire survey or telephone one. The use of the internet increases the ease of reaching more subjects than these questionnaires delivered by hand or by mail (Easterby-Smith et al., 2015) and does not present the disadvantages of using the telephone, which is however framed as an interview. Web-based questionnaires allow realizing an accurate and customized format for research and individual respondents (Easterby-Smith et al., 2015). Web-based questionnaires are extensively used in research in the field of public administration for large surveys (G. Lee et al., 2012). In particular, as far as social network questions are concerned, the use of Internet tools allows each respondent to automatically observe the list of the other subjects of the network without having to see himself in the roosted list, when not necessary, while for paper-and-pencil questionnaires, this step can be more difficult because an ad-hoc questionnaire has to be printed for each respondent rather than imposing conditionals in the web-based steps<sup>119</sup>. Moreover, web-

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<sup>119</sup> An impact on the construction of the questionnaire for the purpose of this thesis. Google form does not allow to introduce a conditional so that after declaring your name, it is not present in the following list,

design survey coverage the effort to process data entry, therefore, the possibility of errors in the transcription of raw data is minimised, as online software such as Google Form operates automated and easily exporting the data in order to statistical software (Easterby-Smith et al., 2015). In addition to these advantages, web-based survey give the possibility to reduce a common method biases, as is analysed in the final part of this chapter concerning the method of variation and research limits. In addition to these advantages, web-based survey give the possibility to reduce a common method biases, as is analysed in the final part of this paragraph concerning the method of variation and research limits. In any event, it is necessary to consider that the disadvantage of using only web design survey is that the same response rate could not theoretically be achieved, as this would be achieved by means of a mixed mode of communication survey defined by an appeal to a greater and more personalised view that a different medium may have on the individuals of the sample who would otherwise not be online (Dillman et al., 2014). Moreover, after having administered the questionnaire via the web, other limitations were found: the need for a fast internet connection, the portal from which the interviews are done must support the various formats and not block if the questionnaire is too long, especially when there are social network analysis questions, difficulty in reaching the respondent individually, because the contacts provided are not always individual, updated or checked systematically daily. Despite these observed limits, the web search is still efficient, also because the limits are reduced until they disappear when the degree of digitization increases in the context of the phenomenon that the researcher is analyzing. After these methodological considerations, in the following text, the term "questionnaire" means "web-based written self-administrated questionnaire". The further aspects to consider in the next paragraphs, in fact, are: format of the questionnaire also for social network analysis, the order of questions, common method biases and questionnaire design limits, procedures used to increase the response rate, sampling target to which the questionnaire is administered.

### **c) Closed-ended question format and survey wording.**

An additional choice is between the open-source and closed response questions, which can be placed in the interview or written record in the questionnaire. The latter one give the opportunity to respond in their words and are used especially in small groups or in interviews, while the former are very popular (Höhne & Krebs, 2018) and allow for choices based on categories already

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therefore, it was necessary to create an ad hoc list for each respondent to whom it is addressed after choosing their name drop-down in the previous section. It was a rather inefficient, but indispensable step and repeated checks were carried out before administering the questionnaire to confirm the effectiveness of the tool. After a consultation with IT experts, this was the only method available for free and without having to rely on websites created from scratch just for this research.

in place, are smart and for research more easily (and validly) codifiable (Dillman et al., 2014, p. 110; Schwab, 2005, p. 44).

Open-ended questions give more freedom to the respondent, but this advantage is often not compensated by the disadvantages: the rate of non-response or out-of-context answers, too short or in any case not usable, is quite high; the qualitative analysis of data, from data entry (starting from bad text writing) to coding, is quite complex and involves subjective interpretations by the researcher (Dillman et al., 2014). In the closed-ended question format, the number of options is limited and binding, but the advantages are that the data can be analyzed immediately with a reduced number of transformations and with results in a short time (Dillman et al., 2014). In this thesis there are closed-ended questions with self-report and observational answers; as far as network analysis is concerned, there are also two semi-structured closed-ended questions in which the respondent has to indicate the nodes of a network that are rooted in terms of a communication knowledge network and innovative work behaviour. Closed-ended questionnaires lead to the use of "closed" scales. A preliminary methodological choice to other evaluations is the use of Likert scales, which is the most used psychometric scale for self-reporting and which provides a decisive assumption that the psychological distance is the same for all categories included (Hamby & Levine, 2016; Wakita et al., 2012). In organizational studies, other scales used are: Thurstone scale, Behaviorally anchored observation and semantic differential scale (Schwab, 2005, p. 46). With respect to this methodological choice of a questionnaire with the use of Likert scales, other decisions are consequently made in refining the instrument to be used in order to obtain data useful to accurately answer the research questions. In the context of closed-ended questionnaires, attention to **item wording** is relevant. It is not obvious that all respondents have the cognitive abilities to answer rigorously to the questions of a scientific questionnaire (Podsakoff et al., 2012). A too complex cognitive effort or a poor motivation to strive to respond leads to respond satisfactorily and stylistically rather than optimizing (Podsakoff et al., 2012, p. 560). In the literature, there is still no guide to best practices on how to write questions and items (Krosnick, 2017). In general, this thesis presents the use of stairs already validated in the literature and does not provide for the introduction of new tools, therefore, it is a relatively minor problem in research design compared to the construction of new stairs as in other research. However, for some constructs in this research, a rewording was necessary to be able to apply the scale to the context of the public sector which is different from the private sector. In particular, external networking sees attention in the choice of those external stakeholders to be included in the questionnaire, within the literature in which the set of actors external to public organizations is vast and complex. For individual and organizational ambidexterity it was necessary to adapt to the peculiarities of the public sector, as both scales are studied and validated in the private context. As for

the mindfulness scale, some respondents asked by telephone and email the need for certain questions in the workplace. The original scale has been validated in terms of social psychology studies and is widely used in literature (K. W. Brown & Ryan, 2003), but in the field of work, academic research has also expressed the need for an adaptation to the context (Dane & Brummel, 2014). At the methodological-conceptual level, the basic assumption of the wording is that the process difficulty of information related to a cognitive effort has a negative relation to the accuracy of the response (Grant Levy, 2018). Items ambiguity led respondents to use heuristics, systematic tendencies, random answers (Podsakoff et al., 2003, p. 882). The research design effort, therefore, is to reduce complexity, vagueness and ambiguity (Podsakoff et al., 2012). Easterby-Smith et al. propose six principles to be respected in the drafting of the questionnaire: only one reference per item, avoid colloquialism, use understandable expressions for sample members, avoid negative sentences<sup>120</sup>, insert precise temporal references, avoid "leading questions"<sup>121</sup> (Easterby-Smith et al., 2015, p. 232). Schwab (2005) identifies four elements that should be avoided in questionnaires for problems of interpretation and meaning that respondents give (which theoretically should be equivalent): ab-solutes (e.g. always, never, all), "you", quantity adjectives (e.g. sometimes, frequently, often), "and" (Schwab, 2005, p. 44). With regard to quantity adjectives, it is methodologically preferable to use ranges that are perceived as equivalents such as numerical values, rather than values that can be interpreted differently by each respondent (Schwab, 2005). A specific case concerns the term "and". This word in the questionnaires involves double-barreled items, which is a long-recognized problem in the scientific community, because it is a logical structure that may lead the respondent to consider only one of the two options considered most relevant and not the other l'altra (Grant Levy, 2018; Schwab, 2005). It is preferable to decompose a question or statement to make them less ambiguous, easier to understand and above all more focused and specific on a single concept (Podsakoff et al., 2012). Another problem is the use of the term "or", which involves a particularly complex logical structure and can lead to confusion in the process of valuation of information by the respondent (Grant Levy, 2018). Grant Levy (2018) empirically found the need to ask simply one thing at a time and also avoid implicit double-bareling, in order to get more reliable and less unbiased answers. The principle is that "each item should express only one idea" (Easterby-Smith et al., 2015, p. 232). The researcher tends to underestimate this by wanting to put more different aspects into the usual item rather than putting himself in the respondent's shoes (such as writing "reduce quality and increase efficiency" in the same item) and

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<sup>120</sup> (the Italian term "non" can pass in front of quick reading, the same for English and then it is cognitively complex to respond to statements written in negative to which a negative anchor is added as "disagreement").

<sup>121</sup> Leading questions is "a form of wording of a question that leads the respondent to give the answer preferred by the questioner." (Easterby-Smith et al., 2015, p. 336)






sometimes there are published scales that hide this kind of ambiguity. A revision of the scale to be presented is also necessary after the evaluation of the questionnaire test by experts<sup>122</sup>. As far as the terms of frequency are concerned, in order to have greater comprehensibility and univocal interpretation it is preferable to use numerical values (Schwab, 2005) or in any case according to intervals that do not lead to confusion. In conclusion, ambiguous items can take to idiosyncratic interpretations (Podsakoff et al., 2003, p. 883) and research design should try to minimize their presence (Podsakoff et al., 2012, p. 551). Another relevant aspect of the wording is the way the question is asked: the format can be for instance "agree/disagree" or with the construction of an item-specific question, where there is a question for the item and a tailored response (Höhne & Krebs, 2018; Saris et al., 2010). In literature, item-specific questions may have a better quality (Höhne & Krebs, 2018; Saris et al., 2010).

Concerning acquiescence bias, there are conflicting results: for Saris et al. (2010) item-specific questions reduce this problem, otherwise, Lelkes and Weiss (2015) don't find an empirical evaluation to support this. Furthermore, they strengthen the attention and consideration of the respondent and reduce response order effects (Höhne & Krebs, 2018). In the questionnaire, direct questions were used for the scales related to innovative work behaviour (based on the Italian version of NG and Luciantetti (2016). For individual and organizational ambidexterity and external networking, the items are modified (in the first case) or customized for local governments (in the second case), compared to different types of scales that can be used in the private sector. Since the questionnaire with specific questions is more challenging and has no improvement in motivational and inspirational terms than the respondent (Höhne & Krebs, 2018), as well as no substantial differences in extreme response bias (M. Liu et al., 2015) and data quality (Lelkes & Weiss, 2015), the direct question form (albeit without tailored anchors for each item) for each item is only used for the innovative work behaviour scale to increase the level of attention and have a methodological separation. Items more specific for the field of public administration, ambidexterity and external networking, increase the difficulty of interpretation in terms of comparison between private and public sector, but also between local governments and other public organizations like schools or central departments of the State. Finally, always within the issue of wording, the questionnaire must provide correct comprehensibility of the items in the respondent's language. At the same time, the scales used must continue to measure the same constructs of the language in which they were constructed. For this reason, this research has foreseen a **translation-back-translation procedure**.

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<sup>122</sup> In the procedure for adapting external networking to the context of Italian public administration, as specified in the dedicated part, the pilot test of the scale had led to problems with double-barrel items, therefore, it was necessary to modify the final version to remove ambiguities.

Figure 47: response format for satisfaction (Source: Schwab, 2005, p. 45).

Very Dissatisfied	Dissatisfied	Neither Satisfied Nor Dissatisfied	Satisfied	Very Satisfied
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<div style="display: flex; justify-content: space-between; align-items: center;"> <span>Dissatisfied</span> <div style="flex-grow: 1; border-top: 1px solid black; position: relative;"> <div style="position: absolute; left: 0; top: -5px;">1</div> <div style="position: absolute; left: 20%; top: -5px;">2</div> <div style="position: absolute; left: 40%; top: -5px;">3</div> <div style="position: absolute; left: 60%; top: -5px;">4</div> <div style="position: absolute; left: 80%; top: -5px;">5</div> <div style="position: absolute; right: 0; top: -5px;">Satisfied</div> </div> </div>				
				

This methodological standard procedure used in the psychology literature for cross-cultural studies has been followed and includes several steps (Brislin, 1970). The scales for which a scale already validated in Italian was not present in the literature were first translated from English to Italian by a professional bilingual mother tongue English-Italian translator, then the Italian version was sent to another independent translator (a multinational company manager who does this kind of work also for international web marketing campaign operations) who back-translated into English in a "blind" way, i.e. without knowing the original version. The discrepancies between the original version and the back-translated version were compared and discussed until a satisfactory solution was found and, therefore, adjusted in the translation in agreement with the two translators and Italian professor supervisor (Niccolini). The only limitation of this procedure is that, compared to the original Brislin (1970) suggestions, there was no participation of a second bilingual translator (e.g. R. Chiesa et al., 2019; Veneziani & Voci, 2015). Other authors make specific reference only to the translation-back-translation procedure without specifying who did the translation (e.g. Barbaranelli et al., 2018; Kaupila & Tempelaar, 2016) or the intervention of bilingual mother-tongue translators (e.g. Stawarczyk et al., 2012). Since the professors concerned and the second translator work in an international context, the translation method used in this thesis is appropriate according to the canons of scientific research. Even if before the administration of the questionnaire, advice to the American professor developer of the scale was asked by email and he answered that the translation was right. The only critical element was the translation of an item on the political skill scale, so the Italian interpretation of the English version is not unique. This topic and the method choices are explained in the part concerning the scales used in empirical research. As far as the **questionnaire format** is concerned, in academic research there are various ways of organising the questionnaire style with a number of categories and labels (Weijters et al., 2010). The topic of this choice has been debated in the literature, but only a few empirical studies offer statistically reliable results that help the researcher's decision. For Schwab (2005), the format style has no effect and, as shown in Figure 47, the measurement is acceptable.

Scales are equivalent when drawn with "equal-appearing" intervals (Schwab, 2005, p. 45). Recently, the academic debate on the effects that the format has on the way to answer has widened, because questionnaire format style can have an impact on the choices in the answers and there is a lack of standardization in the choice of response scale formats (Weijters et al., 2010). In the literature, in fact, some method biases in the answers were analyzed<sup>123</sup>: net acquiescence response style, disacquiescence, extreme response style, misresponse to reversed items, random responding and midpoint response style (see: Baumgartner & Steenkamp, 2001; Spector et al., 2019; Weijters et al., 2010). The design-related choices it faces involve trade-offs in impacting common response biases. In empirical research, the most used Likert scales are 4 or 6, without a midpoint, and 5 and 7, with a midpoint between the extremes (Weijters et al., 2010). They can be fully labeled (for each category there is a verbally explicit label, similar to the first possibility identified in Figure 47; each category can also be identified with a number) or labelled only at the extremes (when only the first and last category have a label, similar to the second possibility in Figure 47) (Moors et al., 2014; Weijters et al., 2010). Over time, few scientifically proven analyses have been made that could guide the use of one format versus another (Weijters et al., 2010). Before choosing five, six or seven categories and typology of labelling, reference was made in the thesis to some empirical research on method bias that served as guidelines in the format choices of the questionnaire. So far, most of these choices have been guided by the researcher's orientation or participant evaluation (Wakita et al., 2012). Regarding labels, surveys present scales with only numbers and words on the extreme points, only word labels or words and numbers for all the points (Krosnick, 2017). Numbers alone without words are more likely equivocal (Krosnick, 2017). The choice is between **full labeling and end labeling**, for which there is an open debate in methodological literature although in the empirical articles written to date and included in the various reviews of this thesis, the focus on this topic has been practically absent. Firstly, a background trade-off exists: the latter reduce the bias of mid-scale preferences, the former reduce the preferences for extreme categories (Moors et al., 2014, p. 371). Full labeling appears not to direct attention to extremes, a hypothetically more evident problem for end labelling (Krosnick, 2017), and puts everyone on the same level without preferences (Moors et al., 2014). The theoretical justification for full labeling is that it improves the facility to understand the questionnaire so as to answer carefully and without an impossible cognitive effort (Podsakoff et al., 2012). The comprehensibility of the meaning of the scale points, however, does not occur when labels are vague (e.g. sometimes) or extremely specific, because the difficulty of finding the preferred answer point can augment cognitive effort and the answer is not necessarily optimizing respondent's belief (Krosnick,

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<sup>123</sup> Response style is "the tendency to respond to survey items in particular ways regardless of item content" (Spector et al., 2019, p. 875).

2017). Full labeling is seen more as an ordinal scale (Hamby & Levine, 2016), instead, end labeling appears more as an interval scale (Schaeffer & Presser, 2003). Empirically Hamby and Levine (2016) found that full labeling leads to a lower perception of scales as intervals, while end labeling is more effective in this sense. In a follow-up study, Weijter et al. (2010) detected that criterion validity is better when the format is end-labeled rather than fully labeled (Weijters et al., 2010, p. 244). Weijters et al. (2010) suggest to use fully labeled scales for the development and validation of them or for opinion measurement, otherwise end-labeled scales are more suitable for estimation models, as Structural Equation Modeling (SEM) (Weijters et al., 2010) (Table 14). Finally, on this topic, it should be stressed that repeating the same wording of labeling of anchor points (e.g. agree/disagree, never/always) throughout the questionnaire can lead to common method variance, which can be reduced through the use of different anchor points (Podsakoff et al., 2003). Following the indications of the literature, the questionnaire of the dissertation included the choice of end-labeling for all questions related to mindfulness, political skill, individual and organizational ambidexterity and innovativeness. The questions related to internal and external social capital have full-labeling frequency. At the same time, when choosing the **number of categories** for the Likert scale, it is necessary to take into account the trade-off between discrimination capability if categories increase and respondent's limited capability and skills to answer in a more refined way (Schaeffer & Presser, 2003, p. 78). The objective is a proper trade-off between discrimination and scale reliability (Krosnick, 2017). Options must be capable of making the choice understandable according to an implicit continuum (Vannette, 2017). In the literature, the equality of the psychological distance between items has been analyzed, which is the basic assumption of Likert scales also for subsequent steps of analysis of measurement errors and statistical validity of the scale. According to a purely theoretical perspective, Krosnick (2017) and Vannette (2017) suggest using a 5-point scale for unipolar questions and the 7-point scale for bipolar ones (that are not included in this thesis). Recently there is empirical research to validate the effectiveness of the number of anchors. Wakita et al. (2012) found that the number of options matter. In particular, in a sample of undergraduate students, the authors identify that a 7-point scale is the least appropriate for this bias because it influences more the psychological distance between items (Wakita et al., 2012, p. 533). Hamby and Levine (2016) replicated this study and found that the number of categories is correlated with a reduction in accuracy, thus they recommend the use of a 5-point end-labeling scale (Hamby & Levine, 2016, p. 74). In the empirical evaluation of Weijter et al. (2010), the authors found that in marketing the most widely used scale is 7-items by default, but, according to an assessment of the impact of the number of items on response bias, 7-items does not automatically lead to data of an excellent nature. According to this research, the 5-items end-labeled scale is the most appropriate to improve data quality (Weijters et al., 2010, p. 243).



Another relevant point to consider is the use of scales with a **midpoint**. Theoretically, the use of a midpoint is not recommended because it can be identified as a "normal" response signal for the respondent and becomes a strong gravitational point (Krosnick, 2017, p. 99). According to an empirical study, however, the authors find that the use of scales without midpoints is discouraged if there are no particularly valid reasons to adopt them because they have a significant impact on the presence of response bias (Weijters et al., 2010, p. 246). This result confirms the first Cronbach's studies, so the presence of the midpoint allows the choice of a neutral value that makes the responses more accurate as well as improving the reliability of scores (Cronbach, 1950).

Table 14: Preparatory choice scheme for modeling a response scale format in questionnaires for stand-alone researches (Source: Weijters et al., 2010, p. 246).

Format \ Population	Student	General
5 Points	x	x
7 Points	x	
Fully labeled	Scale development, Opinion measurement, Frequencies	Scale development, Opinion measurement, Frequencies
End labeled	Estimations of linear relations	Estimations of linear relations

In summary, the presence of a midpoint is highly advocated, and, for this reason, the mindfulness scale is adapted with a midpoint (Veneziani & Voci, 2015) even if the original one was a 6-point Likert scale (T. L. Brown & Potoski, 2003). However, there does not seem to be an unambiguous view at present on the greater effectiveness between 5-point and 7-point and the result may depend on the target respondents considered and the type of study. Weijter et al. (2010) indicate which choice to opt for depending on the type of study that the researcher intends to carry out and, in particular, for stand-alone (and comparative) research identify a decision tree that can help to address, reported in Table 14. In particular, it is necessary to identify whether the research concerns university students, who have a basic preparation, experience with questionnaires, cognitive capabilities, verbal skills above the population average or the whole population (Weijters et al., 2010). 7-point scales may be more cognitively demanding than 5-point scales for those with lower experience and skills, compared to a higher information potential and differentiation of intervals (Weijters et al., 2010, p. 245). In this thesis, being an organizational study, the target of the research are knowledge workers, with a preparation that can be understood as intermediate between that of the sample of students and the average population. The subjects of the research, in fact, work in local governments and have a level of study between the high school degree and the Phd degree, distinctive elements to be able to work in these organizations through public

competition according to Italian law. As described in next section about sample, “non-knowledge” workers that are in organic of participating organizations are not included in the research. For the purpose of this thesis, following empirical suggestions in Table 14, in the research design there are 5-point and 7-point scales. Internal social capital and outcome variables are measured with 5-point scale, while, mindfulness, political skill and external networking are measured with 7-point scales. Secondly, one opt to endpoint labeling if the study is about the estimation of linear regressions, because this format style suits better linear models (higher criterion validity), or to full labeling if the study is about the development of a new scale or opinion measurement (Weijters et al., 2010, p. 245). Internal social capital and external networking are measured with frequencies, so, following Weijters et al. (2010), the full-labelling is adopted. This research aims to make inferential analyses, so theoretically the format to adopt is end-labeling. An exception is made for those variables for which there are frequencies and theoretically for respondents it is more easy to read each answer and for the purpose of the thesis is easier to find a measure of social capital in term of weak and strong ties as indicated in literature. Moreover, Podsakoff et al. (2012) suggest changing the number of categories as well as wording and positions of labels within the questionnaire to increase respondent's motivation to do not answer satisficing and stylistically. Finally, the unambiguous choice of a standardized format, a single mode of labeling and scales anchors (i.e. always "agree"/"disagree"), a single number of categories throughout the questionnaire facilitates the respondent, but part of the covariance may be determined by the properties of scales rather than the actual relationships between constructs, outlined in the meaning of items (Podsakoff et al., 2003, p. 884). In this sense, on the one hand, to avoid confusion, each scale has low values on the left and high values on the right in coherence between numbers and labels. However, on the other hand, to reduce variance in the use of common method, for the outcome variables, the research uses 5-point Likert scale while for antecedent there are 7-point scale. There are two distinctions from this standard: internal social capital has a 5-point Likert scale and rated innovativeness has a 7-point Likert scale. This choice is to facilitate the answer with the roster method and to reduce common method variance in the questionnaire for employees that answered the complete instrument (and not Time-lagged). In fact, in the Google form version, the two question with the roster method are alongside. As far as the type of labeling is concerned, the thesis has frequency questions for mindfulness, internal social capital and external networking, innovative work behaviour, an agreement scale for political skill, organizational ambidexterity and organizational innovation adoption, an "extent" labeling for individual ambidexterity. Concerning these choices, however, it is necessary to consider the limits of "perfection" and vulnerability in research: response biases are inevitable, because the negative (even predictable) effects of the trade-off of the choices on format styles remain (Moors et al.,

2014, p. 393), but can be reduced and corrected in a preventive way with choices based on evidence from empirical studies. Different formats used involve difficulties of interpretation and are not comparable, because as a matter questionnaire is written and organized to influence the answers, therefore, it is preliminary to indicate in a transparent way which format has been used (Weijters et al., 2010, p. 245) and, therefore, to justify the choice for the theoretical and empirical evidence and the concrete target of the research in question. The respondent has a way of understanding and choosing the answer according to a process that is not always independent and linear (Schaeffer & Presser, 2003), especially when it is necessary to refer to memories and it is easier to refer to events more easily reached through the heuristic cognitive process (Tversky & Kahneman, 1973). Personality characteristics strengthen the limits of cognitive capacity so that they influence how questions and statements and after the answer to them are interpreted (Podsakoff et al., 2012). Before the administration phase, the control of the questionnaire as an effective tool goes through to make the terms and form simple for the target respondents, to specify the reference context to allow comprehensibility, to reduce ambiguity, as well as to consider the level of knowledge of the respondent regarding the information asked (Schwab, 2005, p. 43). For this reason, a mid-level manager and a mid-level employee of a local government pre-tested the comprehensibility of the questionnaire and gave their opinions which served to refine the tools used if there were critical elements in the Italian translation and in the organization of the questionnaire format.

#### **d) Research design for social network analysis.**

This thesis uses the social network analysis method in three situations: it is based on a study of whole networks among employees in local governments for the case study analyzed in the previous chapter and to measure internal social capital based on knowledge network, a measurement based on a personal network to measure the variable external networking with selected stakeholders in the Network Governance. Moreover, this method has been used to obtain rated innovative work behavior from the evaluation of colleagues within the network at work. Theoretically, network questions require more attention than individual perceptions, as mental mechanisms come into play that affects emotions and the ability to remember even more (Borgatti et al., 2013). For network questions, Borgatti et al. (2013) indicate three aspects that must be considered for the success of obtaining relational data: a clear definition of the dimension to be measured, the presence or absence of scales that measure the strength of ties, the format of the questions. As regards the first and second aspects, Borgatti et al. (2013) advise doing an ethnographic

analysis to understand the comprehensibility of the questions by the target audience and the reliability of the scales. This research defines the dimensions of knowledge networks (advice, communication) and innovation (for peer review). Furthermore, the Likert scale is present to be able to access the measurement of tie strength within and outside the organization. In particular, applications require tie frequency in absolute terms (e.g. "Every day"), rather than relative (e.g. "Very infrequently"). The former gives less freedom to the answer and more information and it is suggested to determine appropriate time intervals preliminary (Borgatti et al., 2013, pp. 51–52). The choice of absolute frequencies in scale labeling was assessed in terms of literature review on external networking and knowledge networks. In both cases, the full labeling method was used to facilitate the comprehensibility of the respondent. In the case study, given that it is very costly to answer for only one individual compared to all the perceived ties of the network in local government, the question provided only two-time options. As regards the format, on a methodological level, relational questions can be asked with a roster of names or in an open-ended format (Borgatti et al., 2013; Wasserman et al., 1994). The roster method provides a data collection in which the respondent already has the whole list of nodes sorted alphabetically (Borgatti et al., 2013; Trobia & Milia, 2011). It is widely used in organizational behavior research in top journals (e.g. Tasselli & Kilduff, 2017) because it reinforces the respondent's probability of remembering (Marsden, 2011, p. 372). "Free recall" method is less time consuming, but the information is less accurate and it takes to systematic bias (see: Carnabuci & Diószegi, 2015). Roster method need a preliminary procedure of data collection. The complex preliminary activity to carry out a social network analysis research is to recover the complete list of participants from the entire network beforehand (Stark, 2017). In this way, the list of colleagues is completely presented to the respondent, to reduce memory problems and cognitive limits in remembering names and relationships (Stark, 2017). The search is more complex when in addition to a single network (case study) it is necessary to have the names of whole net-works compared to many organizations. To measure internal social capital, therefore, it was necessary to ask previously the list of municipal employees to the Municipalities that decided to participate and provide it. For the measurement of external networking, however, we proceeded to limit the number of potential stakeholders of Network Governance between public and private actors. The definition of this dimension follows the methods used in research in public administration about external networking from seminal research realized by Meier and O'Toole (2001). For the collection of relational data, Stark (2017) asserts that web survey is an adequate mode, because for whole networks it is not necessary to enter follow-up questions related to relations between colleagues, being also respondents, and, as with paper-and-pencil questionnaires, the list of names is visually available in a specific section.

#### e) **Question order in the survey: methodological theory and practical choices.**

A further decision for the drafting of the questionnaire concerns the **order** and **positioning of the questions**, because also "item context" (Podsakoff et al., 2003, p. 884) matter in influencing method variance. In order to prepare the questionnaire adequately for the indications of methodological littering, Chapter 7 in Dillman et al. (2014, pp. 229–257) was used as a reference. The order of the questions in the questionnaire has motivational, normative and cognitive effects on the respondent, therefore, an adequate structure must be able to increase the response rate and reduce method bias related to the influence early questions have on the following questions through the respondent's mental, informational and transient mood process (Dillman et al., 2014). The objectives of increasing motivation to respond and reducing order effects are sometimes opposite (Dillman et al., 2014). The questions are asked in a conversational order, i.e., by grouping the items of a construct in the same section of Google Form. There is not yet an empirical assessment in methodological literature as to whether the strategy of random "intermixing" questions is less optimal than "grouped" items (Podsakoff et al., 2012, p. 885). However, this method is preferable to the use of mixed questions for several reasons: more professionalism, giving the respondent the feeling that the surveyor is listening rather than switching from one topic to another, less cognitive effort to continuously recall different information (Dillman et al., 2014). In methodological literature, moreover, a relevant aspect is not to start with sensitive, cognitively complex and boring questions because they can increase the number of subjects leaving the questionnaire (Dillman et al., 2014). The respondent is often reluctant even to start the questionnaire (Schwab, 2005). In the same social exchange logic of the cover letter, the process of answering the questionnaire should be motivating, by increasing trust, benefits and reducing perceived costs (Dillman et al., 2014). To increase the commitment to the questionnaire, the first questions (starting from the first one) must be salient and interesting (Schwab, 2005) and sometimes it is recommended to add interesting-getting questions that have the sole purpose of motivating the respondent even though they do not correlate with the research (Dillman et al., 2014). These questions of interest may concern, for example, current affairs, politics, sports or events Empirically they may have a positive impact on the response rate as well (J. M. Hansen & Smith, 2012). After careful analysis and despite the potential benefits, given the length of the questionnaire for the presence of social network analysis questions, these kinds of questions have not been included. Similarly, less interesting and personal questions are preferable towards the end of the questionnaire, as the respondent has already spent time on the questionnaire and is tending to be quite engaged (Dillman et al., 2014; Schwab, 2005). This research presents the classic questions of human capital demography in the last section of the first part of the questionnaire. In this way, the name is asked only

in the last group of demographic questions, therefore, the salience of the inevitable loss of anonymity due to the need to collect relational data is reduced<sup>124</sup>. In this sense, the separation between individual cognitive questions and the knowledge network question useful for reducing common method bias (as analyzed below) is conducted only by response scale format. Social network questions, which are cognitively more complex and demanding (especially for those networks that have a greater number), which have a personal reference (their name has been given) and which transform the respondent into a rater in the case of innovative behavior, are placed in the central part of the first questionnaire. For the second part of the questionnaire and the questionnaire provided in an overall form in a further recall of the survey, however, the relational questions in terms of a communication knowledge network and innovativeness of colleagues are initially due to the limit of the web design of the seeking to connect the individual with the network of colleagues of the local government where he works. The relational questions, however, are absent for those local governments that have not provided the list. A significant problem in the construction of the questionnaire order is the effect that early question has on the following ones. Dillman et al. (2014, p. 235) identify normative-based effects, whereby individuals tend to want to appear fair, consistent and moderate, and cognitive-based effects (anchoring to previous answers that become a standard, hypothesizing relationships between variables, priming as mental salience of the previous questions, the way of judging the first answers is completely separate from how you think about the following). Normative and cognitive effects take to greater similarity of responses or, on the contrary, greater differences (Dillman et al., 2014), increasing systematic method variance. Furthermore, respondent's mood can induce spurious covariation and bias in estimated parameters and reading and answering to a first set of items could modify transient mood or activate stable one (Podsakoff et al., 2003). For instance, as extreme situation, a suspicious of surveyor's lack of integrity caused by early question related to stereotypes can influence severely the completion of the questionnaire (Podsakoff et al., 2003). In order to reduce or reduce those method bias caused by question order, Dillman et al. (2014) propose to introduce a questionnaire with completely random questions, even if this is in contrast to the need to have an organized questionnaire to avoid confusion. In both parts of the questionnaire, some constructs could present common method problems and the unique solution is a sort of proximal separation. While keeping separate sections of the questionnaire that group items from a single construct, it is possible to randomize the presentation of the sections related to these

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<sup>124</sup> For example, in the complete questionnaire kindly emailed by NG and Lucianetti (2016), which was useful to have the already validated version of Janssen's innovative work behaviour scale (2000, 2001), the question about the respondent's name is the last of the whole questionnaire.

constructs. In this way, inter-construct correlations theoretically present a minor spurious correlation due to (group of) question order. This problem can be minimized, annulled or statistically kept under control: groups have a proximal separation, which reduces common method bias, but does not give the certainty to annul question order effects, and, in addition, are presented randomly for random respondents (Dillman et al., 2014). Since there is the problem that the respondent can try to give "relational" interpretations in the order in which he reads the questions (Dillman et al., 2014; Podsakoff et al., 2003), the randomness of groups can sterilize this bias. However, this model is difficult to apply online and Google Scholar does not allow it, in terms of a preset model. Moreover, the theoretical model of this thesis is quite complex, with hypotheses of moderation and mediation, individual, relational and multilevel variables. Therefore, a cognitive path of "illusory correlation" (Podsakoff et al., 2003) and of desirable answers (Malhotra et al., 2006) is difficult to implement, because it is beyond respondent's cognitive maps (Caniëls & Veld, 2019; S.-J. Chang et al., 2010).

Table 15: the design of question order in this survey for individual variables.

QUESTION ORDER IN THIS SURVEY – Variable and position in the questionnaire		
Part 1 (Time 1)	Part 2 (Time 2)	Complete (if there are not social network questions, this part is excluded with *)
Mindfulness - 1	Local government - 1	Local government - 1
Political skill - 2	Name - 2	Name - 2
Communication Knowledge network (rooster) - 3	Innovativeness of colleagues (rooster) -3	Communication Knowledge network (roster) – 3 *
External networking - 4	Individual exploitation - 4	Innovativeness of colleagues (roster) -4 *
Name - 5	Individual exploration - 5	Mindfulness - 5
Human capital demography - 6	Innovative work behaviour - 6	Political skill - 6
		Individual exploitation -7
		Individual exploration -8
		Innovative work behaviour - 8
		Human capital demography - 10
		Organizational exploitation 11 <sup>125</sup>
		Organizational exploration - 12
		Organizational innovation - 13

<sup>125</sup> Only middle managers, managers, town clerks and majors have these questions.

## 2. COMMON METHOD VARIANCE AND LIMITS PROCEDURES.

### a) Introduction to common method variance.

Methodological choices involve trade-offs, and it is necessary at the end to identify what may be weaknesses and limitations in the methods used, to justify decisions and to adequately justify when a choice is due to reduce common method bias. The method variance is a sort of spurious variance that does not concern the real dimension of interest and, in the same perspective, the sharing of a method of measurement between the two dimensions alter the relationship between them (Spector & Brannick, 2010). A more relevant issue concerns the measurement of dependent and independent variables with the same method. A rather frequent phenomenon in academic research on public administration (Favero & Bullock, 2015). The problems that research design encounters concerning common method bias need to be made explicit and treated seriously (S.-J. Chang et al., 2010). The literature recognizes various terminology to indicate the same issue: common source bias, common method bias, common method variance, monomethod bias (George & Pandey, 2017). This spurious variance can be defined as "systematic error variance shared among variables measured with and introduced as a function of the same method and/or source" and it is "a confounding (or third) variable that influences both of the substantive variables in a systematic way" (Richardson et al., 2009). If up to now standard methodological choices have been analysed independently from common method bias, this section presents remedies to reduce these in the ex-ante phase of the questionnaire administration. In addition to ex-ante techniques, the literature sometimes analyses statistical control remedies for common method biases (S.-J. Chang et al., 2010), but to date in the public administration research field, the various statistical control methods used, like adding marker variables, Harman's single factor test and Brewer's split-sample method, have not been effective (Favero & Bullock, 2015, p. 304). In Table 16, there are the techniques, to reduce the **common method biases** that have been identified by the complete review of Podsakoff et al. (2003, 2012) and the methodological choices within this research. In fact, about common method variance, the specialist articles of Podsakoff et al. (2003, 2012) identify what are good procedural and static good practices to reduce common method bias, although there is no single best remedy because the source of the method variance may be different (Podsakoff et al., 2003, p. 899). It is relevant for research purposes to consider method variance when assessment tools are shared. Indeed, Siemsen et al. (2010) empirically tested the effects of common method variance. Authors found that common method variance can increase or decrease parameter estimations in linear relations and, at the same time, it can critically deflate quadratic and interaction relations, reducing the possibility to identify them with statistical methods



(Siemsen et al., 2010). Chang et al. (2010) expose the problem of common method variance as a possible element of false correlation and inflation or deflation of the real relationships assumed between constructs (S.-J. Chang et al., 2010, p. 178). Research in public administration shows that statistically the impact of common method variance is not supported in samples of public servants and managers at different organizational levels (George & Pandey, 2017).

Table 16: design procedures for common method biases (Source: Podsakoff et al., 2003, 2012).

TECHNIQUES FOR COMMON METHOD BIAS	IN THIS THESIS	REASONS AND TRADE-OFFS
Predictors and dependent variables from different sources	<p>1) <b>Partially</b> included at the individual level</p> <p>2) <b>Partially</b> included at the relational level</p> <p>(3) <b>Yes</b>, included for organizational outcomes)</p>	<p>1) Top managers are included in the survey with all knowledge workers, so there could be problems of “performance” evaluation, independence of variables and choice about who evaluates the top managers because there are too different pattern of evaluation between top managers and other workers within the surveyed organizations. There are not feasible secondary data about innovation and ambidexterity in Italian municipalities. Moreover, in the literature about individual innovation and ambidexterity, the use of self-report is thoroughly justified. Otherwise, in the second wave of the questionnaire, a question with a single item about colleagues innovativeness is included with roosted method. This choice reduces common method variance and permits a comparaison between “perceived” and “rated” innovativeness, but it costs a reduced response rate at the second wave.</p> <p>2) Knowledge-based social capital may derive from rater’s evaluations (data from whole network or managing of missing data) or from focal respondent perception (e.g. individual perception of weak ties). The response rate may take to a trade-off between using individual percpetions and different sources in the organizational network.</p> <p>(3) The difference between politicians and administrators in local government lead to the need to different evaluations. Therefore, mayor is a different rater for organizational outcomes in municipalities. This procedure was adapted from Korac et al. (2017). Organizational data are collected for future research, to respond to the multilevel hypotheses developed in this thesis.)</p>
Temporal separation (time lag from the first answers about predictors to the administration of a new part of the questionnaire about dependent variables)	<p>1) Yes, included at individual level, with some exceptions.</p> <p>2) Yes, included for organizational outcomes.</p>	<p>A time-lag can reduce common method bias and at the same time this temporal separation does not increase research complexity inefficiently and the possibility of attrition to the administration of the questionnaire. Generally, the survey provided for time lag between the first part and the second part of the questionnaire.</p> <p>The second part of the questionnaire was delivered for the first time about 10-15 days after the reply to the first part. On average the time distance between the two parts is about 55 days. By mistake in sending reminders and presumably in reading the emails received, three public servants answered the second part before answering the first, however the answers are considered time-logged and the time distance calculated simply in the opposite direction. Methodologically nothing changes.</p> <p>Individual outcomes are predictors for organizational outcomes in the multilevel model, so raters evaluate organizational dependent constructs after all other questions and in</p>

		<p>the second wave of the survey. Mayors received the questionnaire about only organizational outcomes during the second wave of the survey.</p> <p>The general rule used in this thesis indicates the time lag, but for some organizations, the temporal separation for individual variables was not possible, because they do not provide the list of employees. This required exception take to the need of statistical comparison between the group that received the questionnaire with time lag and the group that answered with one instrument. Among the data collected in the sample of 551, 140 respondents responded in one single response, while the remaining 411 public servants responded with time-lag. In the data analysis part, in general the data were analysed without considering time-lag. In a separate section, a check analysis is carried out for the presence of this term, which can be evaluated either as a dummy (two-part response or one-time response) or as temporal distance (0 for one-time respondents).</p>
Psychological separation (e.g. Propose a cover story to detach apparently independent to dependent variables, minimizing the salience of a connection)	Only minor inclusion in this thesis	<p>Adding psychological separation lead to risk to add contaminating factors. Two actions have been developed. In the emails sent the reference is always to more academic research from more universities rather than one single research from a Ph.D. student (the statement is real because the answers can be used for future studies, but it can create a perspective of psychological separation when filling in the various sections of the questionnaire). Among the various sections of Google Form, at the beginning at the top, the search field was indicated (psychology searches, organizational behaviour searches, searches on Italian municipalities, sociology searches and so on). In this way, an apparent break is created for respondents who are not aware of complex microfoundation models in which multidisciplinary research converge. This psychological separation is less problematic and could reduce common method bias through short-term memory intervention when time distance cannot be used.</p>
Methodological or Proximal separation (differentiation of conditions and circumstances in answering to dependent and independent variables: 1) survey media, 2) response formats and anchors, 3) location, 4) proximal distance between measures)	<ol style="list-style-type: none"> <li>1) Only a medium: questionnaire web designed</li> <li>2) Different response formats and anchors</li> <li>3) Only a location</li> <li>4) Measures are separated by different "sections"</li> </ol>	<ol style="list-style-type: none"> <li>1) Cost-opportunity and error risk</li> <li>2) Following suggestions in literature on methodology, it is possible to choose good practices to create a methodological separation efficiently through using of scale formats and anchors</li> <li>3) It is not possible to control for location (in front of a PC or even by smartphone) without a different method to ask questions (face-to-face interviews)</li> <li>4) Possibility on Google Form medium</li> </ol>
Guarantee Anonymity	<ul style="list-style-type: none"> <li>- Not Possible for Social Network data</li> <li>- Respect of laws about privacy</li> <li>- Confidentiality</li> </ul>	<p>The nature of data collection about social network is unavoidably not anonymous for the researcher's point of view and it is not ethical to promise anonymity in this case. Otherwise, the research design guarantee complete privacy and confidentiality. Moreover, after the reception of questionnaires, individual names are transformed to ID, so the anonymity is guaranteed starting with the following analyses phase.</p>

For other authors, on the other hand, common method bias has a very limited impact compared to the tones of exaggeration and emphasis of the problem that are placed in the literature (Spector, 2006) and it is quite an "urban legend" (Spector, 2006; Vandenberg, 2006), as the effect of inflation is limited and is counterbalanced by attenuation effects of measurement error (Conway & Lance, 2010). For other authors, some methods have more problems and not all constructs measured with shared methods involve a different correlation, but distortion can affect the relationship between two variables and have no effect between other pairs (Pace, 2010; Spector & Brannick, 2010). Spector et al. (2019) find that shared methods increase the correlation between variables, while unshared methods have a deflative effect, so this potential relationship must be specified to avoid misspecifications of the research models (Spector et al., 2019). In this sense, method bias has a more complex potential systematic influence than looking only at common methods and is accidental, so that contamination of the measurement may emerge for shared and unshared methods (Spector et al., 2019). In summary, considering that in literature the assumptions about common method variance say that it does not exist or it exists but effects can be equal or unequal across constructs (Richardson et al., 2009), this thesis tries to keep a balanced approach to common method variance, as suggested by George and Pandey for research in behavioural public administration (2017). In this thesis, the idea is to approach with attention the control of common method bias (S.-J. Chang et al., 2010; Podsakoff et al., 2012), while being aware all in all is a limited problem compared to the emphasis that is sometimes given in organizational research (George & Pandey, 2017; Lance et al., 2010; Spector & Brannick, 2010). In particular, for many constructs and surveys are the most suitable method because they are perceptive, archival data can be flawed and limit the aspects of generalization of research in various contexts of public organizations (George & Pandey, 2017). On the other hand, public administration scholars tend to avoid employing methods to reduce common method biases, ignoring the problems or accustoming the explanation of construct (empirical research about perception, when the theory is about nonperceptual constructs) (Favero & Bullock, 2015). Concerning this academic debate, this thesis takes into account the suggestions given by the literature on common method variance, but with a balanced logic. Archival data are not available for innovative work behaviour and the inclusion of all knowledge workers of local governments does not allow to have an evaluation of the supervisor as often happens in studies on the subject. For this reason, the question about individual innovativeness was also asked colleagues with the roster method. However, ambidexterity is a more perceptive dimension than individual activities in terms of exploitative or explorative orientation. In the specific case of individual's perceptions, beliefs, judgements and feelings is appropriate to use predictor and criterion variable with the same source (Podsakoff et al., 2012) also in research in the field of public administration (George & Pandey, 2017). For instance, Meier and

O'Toole (2013b) suggest that common method variance is not a problem for question like net-working, observable and strategic behaviours at managerial level.

This section, then, describes this process of common method bias control and analyzes the procedural choices for the construction of the survey within the thesis, specifying with justifications what decisions have been taken and what are the limits that the literature on the methodological diagnoses. At the methodological level it is required that the researcher explains step-by-step steps to reduce the negative effects of method variance in research design, although there is no certainty that these can be reset (Conway & Lance, 2010).

#### **b) Outcome variables: assessed by the same person or an observer?**

A relevant problem of common method bias may be present when the same person answers self-report questionnaire for the questions of the predictor variables and for the dependent variable for the presence of a correlation due to the fact that there are not two different persons and not to the actual relationship between the two variables (Podsakoff et al., 2003, p. 881). For strengthening of quality standards absent in the past, this complex problem is often faced negatively by reviewers of scientific articles (S.-J. Chang et al., 2010; George & Pandey, 2017), 50% according to Pace empirical research (2010), with the justification that parameter estimates of relationships between variables may not be completely correct for self-report surveys (Brannick et al., 2010). In particular, the problematic of a common respondent derives from bias in the respondent's own way of responding: consistency effect, illusory correlation, implicit theories, social desirability, raters' tendencies (Podsakoff et al., 2003, 2012). This latter bias concerns a mode of response that wants to show itself in a favourable and positive perspective to others and could be less truthful (Podsakoff et al., 2003; Schwab, 2005) and has a very low impact in public administration compared to other behavioural sciences (G. Lee et al., 2012). According to the meta-analysis of Podsakoff et al. (2012, p. 546), when data are collected with the same source rather than different sources the relationships between independent and dependent variables are greatly inflated. This difference is due to two factors: common method bias (Podsakoff et al., 2012), observer's point of view and information about other's outcomes evaluations (Lance et al., 2010). Several authors recommend, therefore, to have different people (source separation) to answer questions about independent and dependent variables (S.-J. Chang et al., 2010; Podsakoff et al., 2003, 2012). Another solution is to use secondary data for one of the two measures (Podsakoff et al., 2012, p. 548). However, about archival data there is a total absence of transparency and the procedure by which they are developed and produced is not always linear, understandable and generalizable (George

& Pandey, 2017). For other authors, however, it should be considered that self-report measurements are a more suitable method for research (Brannick et al., 2010). In the most recent meta-analysis by Carpenter et al. (2014), the differences between organizational citizens behaviours self-rated and assessments from raters tend to be non-meaning and questionnaire design, as response scale style or reverse items, don't have relevant consequences (Carpenter et al., 2014). In this research, it is necessary to distinguish the study at the individual level from the multi-level study that foresees organizational as well as individual variables. In the individual level study of this thesis, for the constructs of innovative work behaviour and individual ambidexterity, individual criterion variables, scales with self-report responses are used, as well as for their predictors, excluding social network measures that have multiple raters. In particular, perceived individual innovativeness was evaluated both with a self-reported scale and by colleagues with an item. Common respondent bias, therefore, can be encountered. Although having two different respondents can bring advantages from a methodological point of view, Podsakoff et al. (2003) also enumerate some disadvantages: need to obtain sensitive information such as the identification of the respondent, loss of information because both answers are necessary otherwise the match is lost, reduction of efficiency in terms of cost and time, finally, sometimes, it is just not possible to have archival data or other sources (Podsakoff et al., 2003, p. 887).

At the same time, however, there are also biases from the **observer**. A common bias is leniency one, i.e. evaluating more positively the people we know and like rather than those we do not know and especially those we do not like, whose traits, attitudes and behaviors tend to be established in a less favorable way (Podsakoff et al., 2003; Schwab, 2005). In the literature of methodology, therefore, problems emerge when the rater has limited knowledge of the observed subject is influenced positively or negatively by the relational affinity with it. However, having a rater allows avoiding totally that the same subject enters the mindset of hypothesizing relationships between variables in the questionnaire (Podsakoff et al., 2012). Compared to these suggestions, authors in methodological literature have a more or less problematic view about common method bias (S.-J. Chang et al., 2010; Podsakoff et al., 2012), but self-reports can be considered correct (Conway & Lance, 2010) or even qualitatively superior in some cases (Brannick et al., 2010). In the research it can be specified that these are perceived measures rather than objective work behaviors (Conway & Lance, 2010; Judge et al., 2000; Spector, 2006), for which there are no specific employee-specific data in local governments, although it would be preferable to avoid "perceived" data for employee and independent individual and organizational dimensions (Favero & Bullock, 2015). In this thesis, the survey design decision-making process concerns four criterion variables, two at the individual level, i.e. individual ambidexterity and innovative work behav-

iour and two at the organizational level, i.e. organizational ambidexterity and innovation adoption. For the latter, the strategy of multiple respondents, the mayor (which is an external rater to the rest of the questionnaire), the town clerk (who is also an employee of the local government and, therefore, included in the sample of the questionnaire) and other employees who have a more responsible managerial role was used. Knowledge workers at a lower level were not asked questions about the organizational level. This reduces the problem of common method bias for the organizational level, although Meier and O'Tool (2013a) found that the manager's assessment of organizational performance is often unsophisticated because the judgment is satisfying and the information considered is poor rather than systematically assessing the public organization so that they become a source of biases (Meier & O'Toole, 2013a) and, therefore, recommend using secondary data for organizational outcomes variables (Meier & O'Toole, 2013a). This modality is however little used in public administration studies and it happens that archival data present the same problems as common method bias, especially when the person who completed a performance evaluation is the same person who would have answered the questionnaire, and, therefore, subjective and perceptual rather than objective data remain (Meier & O'Toole, 2013a). The double evaluation of organizational outcomes (organizational ambidexterity and innovation adoption) by mayor and town clerk follows the methodology adopted by Korac et al. (2017), who studied the external antecedents of innovation adoption and suggest to include the evaluations of both managers and politicians, as their way of reasoning is based on different rationales (Korac et al., 2017, p. 580). Thanks to this research design, the presence of the mayor, a top-level subject in the political dimension of local governments, as a respondent sterilizes the problem of common method variance in the relations between multilevel constructs. At the organizational level, the dimensions of social networks are still determined by peer observations (knowledge networks) are grouped in aggregate form to determine the variable that represents the characteristic of the whole network (e.g. density of the knowledge network). For social network dimensions, the common method bias is minimized to the evaluation of a single respondent compared to all network participants, therefore, rather, the pros and cons of observational data emerge. For individual variables, however, there are common respondents and measures are perceived. The reasons why self-reports are used in research design must be justified correctly (Conway & Lance, 2010). According to Chan, it is not obvious that self-report data are worse than non-self-report ones and should be evaluated pros and cons (Brannick et al., 2010). For Chan, especially for perceived self-references, a self-report measurement can have a higher quality for three reasons: the perception is more accurate than that observed by an external subject because not all behaviors are observable, behaviors can be observed but not accurately observed by the rater who had no need to see

them and therefore omit them, greater validity because, otherwise, the rater must make a cognitively complex assessment on the real values of the observed subject (Brannick et al., 2010, p. 413). The scale of **innovative work behaviour** has also been validated for self-reported measures and, according to literature, empirical evidence shows that it is not automatically biased or polluted (Ng & Lucianetti, 2016, p. 21). In literature there are various reasons to use self-reported measures: the evaluation of innovative performance is very discretionary (Janssen, 2001); employees know better the subtleties and historical patterns of their innovative behavior than any rather and can judge the impact within the organization (Janssen, 2001; Ng & Lucianetti, 2016); the supervisor can realize innovative actions to impress him/her and lose genuine behaviors (Janssen, 2001; Ng & Lucianetti, 2016); strong correlation of self-rating measures with supervisor ratings and objective measures (Ng & Lucianetti, 2016, p. 21); common method biases (impression management, trait effects, acquiescence bias, self-esteem, narcissism) do not moderate the relation between predictors and outcome (Ng & Lucianetti, 2016, p. 21). In the review carried out in this thesis and organized in Table 6 at page 89, out of 35 articles considered, dealing with innovation or similar constructs, 20 present data of the outcome self-reported dimension, 13 have the data rated by a supervisor and only 2 have the data taken from rated innovation of colleagues belonging to a specific working group. In order to overcome the common source problem and the bias of a single rater, the questionnaire included a question on individual innovation asked with the social network analysis mode, therefore, with only one item and the evaluation of all colleagues. This question had a positive aspect related to the greater knowledge of how innovative work behaviour is evaluated, but also a negative aspect because many employees refused to answer even communicating it by email during the administration of the questionnaire and this led to a significant reduction in the response rate in the second wave of the survey. This aspect must be carefully evaluated in future research, because the reduction of common method bias problems conflicts with the difficulties existing in contexts where the evaluation process is substantially non-existent or strongly opposed, as often present in public administration, despite the reform attempts addressed by contemporary perspectives, NPM and Network Governance.

As far as **individual ambidexterity** is concerned, this multidimensional construct has been measured with self-reported scales of exploitation and exploration (Mom et al., 2007, 2009) also by various authors who have recently empirically studied the topic (Caniëls et al., 2017; e.g. Caniëls & Veld, 2019; Kobarg et al., 2017; Mom et al., 2019). The analysis of the articles that have empirically assessed individual ambidexterity in Table 8 at the page 108 shows that the majority of articles have measured this construct with self-reports (12 out of 14). Individual ambidexterity falls within the scope of personal initiative, which is validly measured with self-reports (Frese & Fay, 2001). Furthermore, the justification for using a self-report scale for ambidexterity derives from

the fact that individuals can better assess their behaviour in each situation, rather than only under certain circumstances (Parker & Collins, 2010). Furthermore, ambidexterity behaviour can be judged negatively as it can challenge the status quo at work, especially in explorative orientation (Caniëls et al., 2017). Compared to these data emerging from the literature, it is evident that the attention to common method bias and common respondent resolution mode is less than in the methodological debate. In addition to the research published specifically on the subject, the literature on common method variance is not in agreement in evaluating negatively shared respondents for dependent and independent variables. For example, Conway and Lance (2010) define it as a myth to think that the same respondent has inflated coefficients in comparison with observational scores from a rater because the former are a fairly reliable representation of the latter and both accurately measure variance in individual performance and do not present only a measurement error due to the method (Conway & Lance, 2010). Spector and Brannick (2010) also state that it is not always a proven assumption that the same source leads to inflated bias. Moreover, using different respondents is not likely to lead to more accurate measurements of real relations between variables, indeed the estimates risk being overly attenuated (Conway & Lance, 2010). Recently, Spector et al. (2019) indicate that assessments of organizational behavior by outsiders are influenced by impression management, limited information because certain behaviors are difficult to observe, a difficulty for people to reveal certain behaviors. After all, it varies according to personal sensitivity (Spector et al., 2019). These elements can also influence the self-rating mode, as well as social desirability and preference to avoid admitting negative behaviours (Spector et al., 2019). The aspect of evaluation error on the part of the rater expands when performance is evaluated in addition to organizational behavior: in this case, political organizational motives and answer only following approximate impressions can reduce the reliability of evaluations (Spector et al., 2019). As it is possible to observe in Table 17 down, the research design of the thesis presents some situations where a common respondent is present, while the variables measured by social network analysis have peer respondents, so the evaluation comes from the network participants and, therefore, the self-reported response on the network is deflated. The variables at the organizational level are administered to the mayor, who is a different subject from the other respondents, and to the town clerk, who is also respondent to the rest of the questionnaire, so there are two different measures of organizational ambidexterity and organizational innovation adoption, similar to the survey methods used in Korac et al. (2017). To counter-balance the problem of common respondents and to reduce method biases, Podsakoff et al. (2003) suggest to introduce a sort of separation between items concerning independent variables and items concerning dependent variables to compensate for the presence of the common respondent. According



to the authors, the implementation of temporal, psychological or methodological separation allows to moderate problems related to the relevance of the information within the short-term memory, to reduce problems related to the perceived relevance previously acquired, to decrease the possibility that the respondent uses the information in previous items to make inferences that determine artifactual covariance (Podsakoff et al., 2003, p. 888). Each of these separation modes works differently. Temporal separation reduces the possibility that short-term memory remembers some information, psychological separation diminishes the heed in mind on significant knowledge antecedently provided in the questionnaire, methodological/proximal separation avoids common recover stimuli and guiding suggestions (Podsakoff et al., 2012, p. 549). Podsakoff et al. (2003) confirm that separation (especially temporal separation) can reduce the risks of spurious covariance due to transient mood states (i.e. when events and situations change the respondent's mood, i.e. the respondent's internal world view and, therefore, also influence the way he responds (Podsakoff et al., 2003)). The mood can create spurious correlations when it is an unmeasured variable, i.e. not included in the model, even if it implicitly influences the construct of dependent and independent variables (e.g. perception of the relationship with the higher and satisfaction at work) (Spector, 2019). However, the respondent's mood is responsible for common method variance if it only influences the evaluation of a given construct unintentionally (Spector, 2019). Even in the choice of separation tools, however, it is necessary to consider disadvantages, particularly the certain increase in costs and complexity of research, and the fact that they are not always effective in reducing systematic error variance. In Table 16 are summarized and here the method choices are justified following the debate in the literature.

### **c) A separation between independent and dependent variables: Time-lag.**

For time-lagged surveys, the conceptual assumption is that the relationship between independent and dependent variables is assumed to be stable over time, vice versa method bias disappear in time (Podsakoff et al., 2012, p. 550). The method variance is in short-term memory, by contrast, the "real" relationship between constructs of interest is in long-term memory (Podsakoff et al., 2012, p. 563). Even for the most "skeptical" authors about the criticality of common method variance, the measurement of variables at different time steps is an advantageous separation to avoid the effect of mood bias (Spector, 2006, 2019). There are two limits to consider for this type of separation: an excessive time distance can be a determining factor to cancel an inter-constructs relationship that exists, just as a too-short distance has no effect in reducing common method biases (Podsakoff et al., 2012) and the attention to the choice depends mainly on the time that elapses to have a change in the respondent's mood (Spector, 2006); a problem is triggered if time

lag influences construct itself rather than its evaluation (Spector, 2006). Besides, temporal separation is opposed only to some risks such as transitory mood, but it is not effective compared to a "permanent" mood characteristic of a person (Spector, 2019), such as traits (e.g. neuroticism), attitudes, character and stable psychological condition (e.g. depression). For example, at the psychological level, it was found that people that present negative affect personality tend to dampen, that is to answer with downgrading feedbacks to positive situations and people with a high level of positive affect trait tend to "enhance" responses because they pay more attention to positive emotions and self-qualities (Nelis et al., 2016). Theoretically, it is conceivable that positive or negative affect personality can influence answering style through dampening and enhancing to the questionnaire and time lag cannot reduce this permanent effect of a personality trait. In short, time lag solves contingency problems rather than potential abiding measurement errors inherent in common method bias (Spector, 2019). In the literature, only 7 out of 35 articles have adopted a temporal lag between independent and dependent variables. Among only one has a truly longitudinal study design. For example, Wallace et al. (2016) use a rather complex temporal lagging, but consistent with the research hypothesis: they gave 3 months to answer (Time 1), a month later they asked questions about the mediating variables (Time 2) and finally after about four weeks they asked questions about dependent variables (Time 3). This is the only research that separates the mediation variables with a time lag. In fact, in the two previous pieces of research, Carmeli and Spreitzer (2009) and Vinarski-Peretz et al. (2011) used Time 1 for independent variables and Time 2 (four weeks the latter and three weeks the formers after the answer to the first part of the questionnaire) for mediation variables and criterion variables. The study by NG and Lucianetti (2016) is longitudinal, as data on independent, mediated and criterion variables are collected through three waves of surveys over eight months (Ng & Lucianetti, 2016). Not so many of these four empirical studies, all the other studies identified in this thesis in the review part of the literature on innovative work behaviour have only one time of administration, i.e. they are cross-section. Concerning the researches about individual ambidexterity, 9 studies adopt a cross-section survey method and only 5 administer questions in a time-lagged manner. The temporal separation must be indicated ex-ante in the research design (S.-J. Chang et al., 2010). This research foresees that there is a time lag of one week receipt of the first part of the questionnaire (T1 = Time 1) and delivery to the respondent of the second part of the questionnaire (T2 = Time 2). At the town clerk (who is the top manager obligatorily present in each municipality), moreover, a third part of the questionnaire concerning organizational outcomes is administered after another week together with the Mayor who should answer to the same questions (T3 = Time 3). There is not a correct convenient time-lag that is recognized in the literature for the propriety of solving common method biases problems and that applies to all relationships (Podsakoff et al., 2012, p. 549).

Too long a time lag can hide a relationship that is present (Podsakoff et al., 2003, p. 288) lowering estimated parameters and activating nonmethodological biases (Podsakoff et al., 2012, p. 549). A week time-lag is a temporal distance that allows obtaining the benefits of reducing common method biases and minimizes disadvantages recognized in the literature such as increased complexity, the possibility of attrition with the respondent and the intervention of new factors that can moderate spuriously the relations (Podsakoff et al., 2012). Also, the choice of method may fall on selecting a whole period in which respondents can respond to the first part of the questionnaire and a subsequent period in which respondents respond to the second part of the questionnaire, rather than having the second part delivered after a certain delay in the receipt of the first part's response. In the first case, it may happen that firstly respondents receive the second part of the questionnaire long after the first part has been received by the respondent at the end. Thus the time-lag is less controllable and for some respondents it may be too short for others too long, creating the risk of activating a new systematic bias in this sense. In the second case, adopted in this research, instead, each respondent has the same basic time-lag, although subsequently, the response time may be different, but always within a given range. This second modality, however, has entailed the necessity to preliminarily obtain the emails of the subjects of the sample to whom the questionnaire should be sent directly, rather than using only the intermediation of a person in charge within the organization. Moreover, there is an uncontrollable risk that a respondent will show or send the second part of the questionnaire to a colleague who has not yet finished the first one. In order to avoid this possible problem, the time-lagged response mode is accurately specified in the individual introductory email to the questionnaire and responses to the second part of the questionnaire are accepted only one week after receipt of the first completed part. In Table 17, time-lagged relationships are observational for those for which there is no temporal separation. Being a model in which there are mediation relations, as in other previous studies on innovative work behaviour, two limits of this thesis are not to have ad-hoc time-lags for each relation and not to have a longitudinal research design that could hypothetically give more explanations of causality between constructs. To be considered that, however, in literature, longitudinal studies are not those that solve the problem of giving answers to randomness and not even a temporal precedence relation (Spector, 2019). For the former, experimental studies are needed, while for the latter, it is clear that establishing a temporal lag a priori does not give the certainty that one element comes before another because they are temporal points chosen arbitrarily in time and not when an intervening element is present (Spector, 2019). As regards the relationships between constructs within the same part of the questionnaire, this research uses other technical procedures to induce a sort of separation from the respondent's point of view.

Table 17: hypothetical direct relations and separation to reduce method biases in the survey.

HYPOTHETICAL DIRECT (->) OR INTERACTIONAL RELATIONS (X) BETWEEN VARIABLES IN THIS RESEARCH	PROCEDURAL TECHNIQUES AND CONTROLS TO REDUCE COMMON METHOD BIASES						
	Source separation	Temporal separation <sup>126</sup>	Psychological separation <sup>127</sup>	Methodological separation			
				Labeling (end vs full)	Anchors	Number of scale points	Proximal
Mindfulness (T1) -> Political skill (T1)	-	-	m	-	x	-	x
Mindfulness (T1) -> External networking (T1)	-	-	m	x	x	-	x
Mindfulness (T1) -> Internal social capital (T1)	- <sup>128</sup>	-	m	x	x	x	x
Mindfulness (T1) -> Individual ambidexterity (T2)	-	x	m	-	x	x	(x)
Mindfulness (T1) -> Innovative work behaviour (T2)	-	x	m	x	x	x	(x)
Mindfulness (T1) -> Organizational ambidexterity (T2)	x	x	m	-	x	x	(x)
Mindfulness (T1) -> Organizational innovation (T2)	x	x	m	-	x	x	(x)
Political skill (T1) -> External networking (T1)	-	-	m	x	x	-	x
Political skill (T1) -> Internal social capital (T1)	x	-	m	x	x	x	x
Political skill (T1) -> Individual ambidexterity (T2)	-	x	m	-	x	x	x
Political skill (T1) -> Innovative work behaviour (T2)	-	x	m	x	x	x	x
Political skill (T1) -> Org. ambidexterity (T3)	x	x	m	-	(x) <sup>129</sup>	x	(x)
Political skill (T1) -> Organizational innovation (T3)	x	x	m	-	(x)	x	(x)
External networking (T1) -> Internal social capital (T1)	x	-	m	-	x	x	x
External networking (T1) -> Ind. ambidexterity (T2)	-	x	m	x	x	x	x
External networking (T1) -> Inn. work behaviour (T2)	-	x	m	-	x	x	x
External networking (T1) -> Org. ambidexterity (T3)	x	x	m	x	x	x	x
External networking (T1) -> Org. innovation (T3)	x	x	m	x	x	x	x
Internal social capital (T1) -> Ind. ambidexterity (T2)	x	x	m	x	x	-	x
Internal social capital (T1) -> Inn. work behaviour (T2)	x	x	m	x	x	-	x
Internal social capital (T1) -> Org. ambidexterity (T3)	x	x	m	x	x	-	x
Internal social capital (T1) -> Org. innovation (T3)	x	x	m	x	x	-	x
Ind. ambidexterity (T2) -> Org. ambidexterity (T3)	x	x	m	-	x	-	(x)
Individual ambidexterity (T2) -> Org. innovation (T3)	x	x	m	-	x	-	(x)
Inn. work behaviour (T2) -> Org. ambidexterity (T3)	x	x	m	x	x	-	(x)
Innovative work behaviour (T2) -> Org. innovation (T3)	x	x	m	x	x	-	(x)

<sup>126</sup> The research is structured to have temporal separation. As data collection has gone on for many months, it includes civil servants who answered in two waves but also who answered all the questions at once. In this thesis, the work was to collect data in the most appropriate way with respect to the requests of the methodological literature. However, the analyzes are carried out with all the data collected and only one section analyzes the topic of time lagging. Even with the awareness that the initial expected method of data collection was the most appropriate, to have analysis on a larger sample possible and avoid a significant loss of knowledge, the preference was to analyze all the data collected regardless of the time lagging foreseen in the good methodological practices. From fact, the study becomes cross-section, coherently with most of the studies that empirically analyze perceived innovative work behavior.

<sup>127</sup> There is not a strong storytelling, but, at the beginning of each section there are the words: researches about (eg. Psychology, organizational behaviour, activities at work). This is coherent with the idea that the survey provides for multiple researches as written in the email with the presentation. It is a minor form of psychological separation. It is used for all the couples of variables. The M means minor.

<sup>128</sup> The measure is based on the individual perception of the number of strong and weak ties. A higher response rate, however, would have made it possible to calculate the internal social capital of the organization through the responses of all civil servants of each local government. This method is usually used in social network analysis searches that are based on surveys on one or at most two networks, so as to obtain a high response rate.

<sup>129</sup> Political skill has strong agreement and disagreement. Dynamic capabilities have simple agreement.

Table 18: a comparison of scale properties used in the research design of this thesis.

COSTRUCT	SOURCE	TIME	LABELING (FULL VS END)	NUMBER OF AN- CHORS	NUMBERS OF QUESTIONS
Mindfulness	Self-reported	1	End	7	15
Political skill	Self-reported	1	End	7	18
External networking	Self-reported	1	Full	7	16
Individual human capital (demography)	Self-reported	1	-	-	6
Internal social capital	Peer-rating (roster method)	1	End	5	1 x N° of em- ployees
Individual ambidexterity	Self-reported	2	End	5	14
Innovative work behaviour	Self-reported	2	Full	5	9
Rated innovativeness	Peer-rating (roster method)	1	End	5	1 x N° of em- ployees
Organizational ambidexterity	Two different sources (Town clerk vs Major)	3	End	5	14
Organizational innovation	Two different sources (Town clerk vs Major)	3	End	5	8

#### d) Psychological separation.

The second mode of separation in literature is the psychological one. It is a recommended procedure in the literature that foresees the insertion of a cover story between dependent variable and outcome to reduce the salience of the previous measures in respondent's mind, to make people think that the reasons for obtaining the answers to the two variables are distant or lead them to think that a part is not relevant for the research in question (Podsakoff et al., 2012). This technique focuses on making one believe that the variables are extraneous between them, e.g. using a "multiple study" cover story (e.g. "the questionnaire concerns questions on various unrelated studies on different topics made at the same time for the sake of saving resources") or making one believe that the topics are completely detached and one is perceived as outside the scope of the study (Podsakoff et al., 2012, p. 550). A further technique of psychological separation is to "camouflage" the items of a variable in the context of other completely different questions, which diminishes the importance of a certain measure in the respondent's reasoning (Podsakoff et al., 2012, p. 550). This technique is similar to the proximal distance, which is included in the methodological distance. The limit of psychological separation with cover stories is that it could bring contaminating factors between constructs (Podsakoff et al., 2003), so the story must have the characteristics of credibility, creativity and naivety (Podsakoff et al., 2012, p. 550).

In this research, psychological separation is used more specifically between the hypothetical relationships that exist in the same part of the questionnaire, where the temporal separation was not possible, although the probability that it intervenes to reduce method variance inherent in the influence of short-term memory (Podsakoff et al., 2012). Podsakoff et al. (2012) suggest using psychological separation even in conjunction with a time-lagged research design. In the presentation

of the research, therefore, from the beginning with the email presentation and official request for participation, it was explicitly mentioned that this is a more academic research and not only a data collection at the end of the doctoral thesis.

#### **e) Methodological separation.**

As far as methodological separation is concerned, there are several possibilities in the literature to consider to put it into practice: a medium for the administration of the questionnaire, questionnaire format, location where respondents are during the compilation of the questionnaire, proximal separation between items within the questionnaire (Podsakoff et al., 2003, 2012). First, the choice of the data collection medium, interview versus computer-based questionnaire or paper-and-pencil can lead to common method variance per se (Podsakoff et al., 2003, p. 885). For example, telephone interviews are those that may involve more bias than other media (Weijters et al., 2008). Self-administered paper-and-pencil questionnaires can increase variance methods because the respondent can go back and see the answers given previously by going back to the previous pages so that the previous answers are physically more accessible and can be returned to short-term memory (Podsakoff et al., 2012). In the empirical research design of this thesis, as seen above, the choice fell on the use of a computer-based online questionnaire only. In particular, in online questionnaires, it is possible to avoid that the respondent goes back to the previous sections before answering the following questions. This tool is unique for all the questions in the questionnaire and a methodological separation based on different media has not been implemented, due to the difficulty and the opportunity cost of having the paper tool delivered in a different way than the Google Form email link. Adding a paper-and-pencil questionnaire would have considerably increased the search effort, compared to additional risks of data entry and transcription of the obtained data, greater difficulty in reaching all potential respondents and incomplete data (avoidable option with Google Form) (Easterby-Smith et al., 2015). The limit of using only one tool and not mixed-mode is to reduce the possibility of giving alternative solutions to respondents to answer the questionnaire (Dillman et al., 2014). However, a web-based halo survey makes it easier to reach targets, but the questionnaire is constructed in separate sections, i.e. it is divided so that each measurement of a construct is separated from the others by switching between different sections. The respondent can switch from one section to another after answering all the questions (so the problem of missing is greatly reduced) and click the switch button from one step to the next. In this way, items from different constructs are visually separated. This questionnaire construction guarantees basic methodological separation inter-constructs for all the relationships studied in this research. In addition, common method biases can be reduced by

adjusting the questionnaire format. Minimizing common scale properties as recommended in the literature (Podsakoff et al., 2012, pp. 550–551), however, may conflict with the methodological analysis seen above with respect to the effects of the questionnaire format on response biases. The methodological choice must, therefore, be weighted by recognizing potential advantages and disadvantages about trade-offs. Number of scale point, wording of anchors and decision about end or full labeling are properties of scales that affect the creation of common method biases if they are identical for dependent and independent variables. Changing these elements between variables can reduce the biases of common scale properties (e.g. anchor effect), but this set of practices is useful only if the meaning of the scale does not change, otherwise, the risk is to reduce one problem and increase other problems such as those concerning scale validity or response effects (Podsakoff et al., 2003). Table 18 lists the properties of scales in research design and Table 17 summarizes the methodological separation.

#### **f) Proximal separation**

An emerging aspect is proximal separation, which derives from the concept that items are sources of information and salience in the cognitive process of respondents (for a review, see: Weijters et al., 2009). The proximity between two items increases the correlation between them (if the pair is not reversed and they are not related to each other) or decreases it (if the pair of items is reversed) because of the information that the previous item provides and remains in the short-term memory to respond to the next item leading to a mechanical reiteration based on previous beliefs (Weijters et al., 2009). The same correlation between items is significantly reduced to six intervening items, and then gradually reduced as the inter-item distance increases (Weijters et al., 2009). The authors, therefore, recommend disseminating items within the questionnaire with a distance of six items apart in the middle (but at least 4) rather than using the classical model in which items are grouped by content (Weijters et al., 2009). Even maintaining a traditional approach, where items of the same construct are placed in the same section, following Weijters et al.'s findings of inter-item proximal correlation (Weijters et al., 2009), however, a distance of at least four items apart between items of different constructs can be considered a methodological separation between different constructs. The distance can be created by inserting items related to other constructs with the same or different formats or buffer items (Weijters et al., 2009). The advantages of proximal distance are to pay more attention to the new information and to lose the influence of the previous information in short-term memory (Weijters et al., 2009). In the thesis, proximal distance is respected by placing items of different constructs in different sections, so as to reduce the short-term memory based on visual frames (Weijters et al., 2009). Moreover, as seen above for the order

of the questionnaire, order effect can matter, thus to reduce it and control, for the first three main constructs of the first questionnaire and for the constructs of the second one a random order is applied as casually to respondents (Dillman et al., 2014). For the two constructs of mindfulness and political skill, which have a limited number of separation modalities (Table 17), the methodological recommendation to insert in the middle of the two variables the items related to demographic measurements of the respondent could have been applied (Weijters et al., 2009). This choice contrasts with the suggestion to put the most personal dimensions (e.g. age, role, name) in the questionnaire last (Dillman et al., 2014; Easterby-Smith et al., 2015) because they are sensitive and could discourage the continuation of the questionnaire (Rowley, 2014). The limits of proximal separation, moreover, are that the questionnaire may become too long to compile and intervening items may be theoretically related with the following construct, so as to counterbalance the reduction of method bias on one side with a different dimension on the other (Podsakoff et al., 2012). Weijter et al's (2009) methodological suggestion could meet this trade-off, but for the purpose of this thesis, it is more relevant to reduce method variance between two constructs of interest rather than the possible inflated variance between control demographic variables and the items about the second interest construct. To conclude, in the thesis, checks were made for method variance and common method bias, as requested in the literature (Podsakoff et al., 2012) and in a planned way with respect to the administration of the questionnaire (Brannick et al., 2010; S.-J. Chang et al., 2010). This thesis follows good practices taken in consideration in international journals for Chang et al. (2010), the combination of procedural remedies (different anchors, manipulation of questions order, time lag and so on) can reduce the presence of common method biases for those hypothesized relationships in which the constructs are evaluated by the usual respondent. To conclude, the elements that influence the measurement of the relationships between variables can derive both by common methods and by additional different factors (Spector & Brannick, 2010). In fact, a single study does not give certainties that estimated parameters are correct and, therefore, to draw more reliable and convergent conclusions on the hypothesized relationships more investigations (also replicating) are necessary with the use of different methods and comparable and comparable analyses (Spector & Brannick, 2010). According to Spector's reasoning, a more relevant limitation of this research is that conclusive considerations on inter-constructs causality cannot be made as it is a cross-section study and is not controlled for other critical factors of potential biases such as social desirability and mood (Brannick et al., 2010). According to the same author, however, it should not be taken by faith that longitudinal studies, in which all variables are replicated in the questionnaire in all steps of the research, are superior to cross-sectional ones, because the value of the latter is different and multiple concerning the topic of causality (Spector, 2019). Even if causality conclusions, typical of experimental studies,



cannot be drawn, the research design inserts the role of time through some retrospective approaches and the temporal separation between variables, which Spector calls "prospective design" (Spector, 2019, p. 126). Although totally cross-section studies are more efficient to give introductory answers to research questions, introducing time lag makes research design more complex but, as seen above, reduces contingency problems of common method bias and transitory mood of the respondent (Spector, 2019). Finally, in addition to strengthening the causality assessment analysis, future research designs experimental in the laboratory or in the field allow for more accurate control of method variance, thanks to a careful manipulation of the constructs of interest and sources of method bias (Spector, 2019).

### **3. INCREASE THE RESPONSE RATE AND SAMPLING.**

#### **a) Increase response rate: literature suggestions and strategies applicated.**

In scientific research, the survey response rate is a crucial element to make inferences of the reference sample with respect to a population (Easterby-Smith et al., 2015). Moreover, people usually decide to answer a self-administered questionnaire in the first two days (Dillman et al., 2014). Since university research carried out by students has rather low response rates between 20 and 30%, "strategies" are needed to increase the response rate to the questionnaire (Dillman et al., 2014), in particular, because of the need to have relational data on several organizations and not for a single case study (or two) as widely used in the literature on social network analysis (Stark, 2017). Thus, this section takes up specific theoretical advice provided by Dillman et al. (2014) and Easterby-Smith et al. (2015) until delineating which strategic choices have been made to increase the response rate. This chapter was written after an initial request to participate in the survey had already been sent to local governments via certified email and directly to the mayor and town clerk. The certified email was sent on July 22 and the reminder was sent to individual email in the organization one week later<sup>130</sup>. One month later, on August 22nd, only 5 municipalities out of

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<sup>130</sup> Italian version of the first formal email to 32 municipalities direct to majors and town clerks.

"Egregio Sindaco, Egregio Segretario Generale,

sono un dottorando in economia e management all'università di Pisa e sto facendo una ricerca sul comportamento organizzativo, le relazioni e l'innovazione nei Comuni.

Sono a scriverle per chiederle la disponibilità a partecipare all'indagine statistica, che sarà indirizzata a dirigenti, segretari, dipendenti di categoria D e C, più poche domande dirette al sindaco. In allegato la domanda di partecipazione da parte del mio tutor di dottorato Prof. Niccolini.

Per poter somministrare il questionario, avrei anticipatamente bisogno della lista dei dipendenti sopra menzionati e della loro email per poter inoltrare a tutti il questionario e soprattutto per poter realizzare uno studio di analisi di rete multilivello. I dati personali saranno trattati solo per motivi di ricerca acca-

32 (15,63%) answered to the preliminary request to have the list of target employees in the organization to build the questionnaire for social network analyses purposes. After a month, only 3 municipalities provided the complete list (only 9.38%), while the remaining two organizations only gave generic approval to the research. It was necessary to expand the methodological background to increase immediately the response rate on the preliminary request at least for its indispensability in the research design. This section covers a brief review about good practices and the choices from a new email to municipalities until the last reminder to individual respondents. Social psychology is an influential factor in the response rate to questionnaires. In literature, the theory that has been used to explain this phenomenon and give theoretically founded advice is social exchange theory (Dillman et al., 2014; Easterby-Smith et al., 2015), which was developed in the second half of 1900 by various authors (Blau, 1964; Homans, 1961; Thibaut & Kelley, 1959). Social exchange theory is based on the concept that interpersonal relationships depend on a perception of the relationship between costs and benefits and in order to perform a given social action the individual calculates and trusts that rewards are greater than costs (Dillman et al., 2014). It is possible to compare social exchange with the economic one. The latter is based solely on real monetary values about services or products, instead of the former concerns expectations about costs and benefits, that are multidimensional and include social, psychological and economic ones (Dillman et al., 2014, p. 25). Following this theory, according to Dillman et al. (2014), therefore, participation in the questionnaire depends on three factors: rewards, costs, actualized trust that a positive present value calculated as benefits less costs will be maintained in the long run (Dillman et al., 2014). Dillman et al. (2014) identify nine steps **to increase perceived rewards** (Dillman et al., 2014, pp. 28–31), then three additional aspects based on the same paradigm are found

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demica e in modo completamente anonimo, utilizzati solo alle condizioni previste dalla normativa vigente sul riutilizzo dei dati pubblici (direttiva comunitaria 2003/98/CE e d.lgs. 36/2006 di recepimento della stessa), in termini compatibili con gli scopi unicamente scientifici per i quali sono stati raccolti e registrati e pieno nel rispetto della normativa in materia di protezione dei dati personali (GDPR).

Come può ben sapere, per poter conseguire il dottorato di ricerca è necessaria una ricerca empirica complessa, quindi, vi chiedo per favore disponibilità all'importante partecipazione come rispondenti del questionario. Sarà fornita ad ogni comune partecipante una breve relazione con i risultati della ricerca di comportamento organizzativo all'interno dell'ente, il che può essere utile anche per venire a conoscenza di aspetti rilevanti. Il questionario sarà somministrato appena 30 Comuni di varia dimensione forniranno la lista dei dipendenti e ci saranno poi due settimane per rispondere al questionario, che prenderà al massimo 15/20 minuti di tempo.

Spero vivamente in una sua gentile disponibilità a collaborare a fine di ricerca accademica, la ringrazio per l'attenzione cordiali saluti,

Cordialmente,

Luca Cosimi

Dottorando Università di Pisa

(Private phone number)"

in Easterby-Smith et al. (2015, pp. 224–226)<sup>131</sup> and, below, in italics, there is the text of the cover letter of the questionnaire.

1) Specify the usefulness of the research because people like support benefits for other people and other organizations (Dillman et al., 2014, p. 28). In the letter of presentation of the questionnaire to the organization (mayor, town clerk, human resource manager if necessary) and in the cover letter addressed to individual respondents it is emphasized how research can contribute to strengthening the knowledge of the organization in the municipalities for the benefit of scientific community and practical implementation: *“Infatti, grazie ai dati raccolti e analizzati in forma aggregata, future pubblicazioni scientifiche e lezioni nei corsi universitari basate sui risultati di queste ricerche permetteranno di trasmettere una conoscenza più approfondita delle istituzioni pubbliche per studenti, ricercatori, decisori politici e manager pubblici con lo scopo di diffondere buone pratiche e suggerimenti accademici per migliorare praticamente le organizzazioni pubbliche.”* (“Thanks to the data collected and analyzed in aggregate form, future scientific publications and lectures in university courses based on the results of these researches will allow transmitting a deeper knowledge of public institutions for students, researchers, policymakers and public managers with the aim to disseminate good practice and academic suggestions to practically improve public organizations.”)

2) Asking for support, help, advice, as it makes you feel good when helping someone else, is a daily social activity and is legitimate as there are no alternative sources for obtaining certain information (Dillman et al., 2014, p. 28): *“Sono a scriverLe per chiderLe un sostegno per l’attività di ricerca scientifica e di partecipare e far partecipare i dipendenti del Comune di cui Lei è massimo rappresentante a un questionario.”*<sup>132</sup>. (“I am writing to ask you for support for scientific research and to participate and involve the employees of the Municipality of which you are the highest representative in a questionnaire.”)

3) Asking interesting questions, constructing a questionnaire design in a strategic way whereby questions that are recognized as having greater appeal are inserted at the beginning, adding questions that are not specifically relevant to the research, but which can be for the respondent and to strengthen engagement (Dillman et al., 2014, pp. 28–29). This aspect concerns the questioning of the questionnaire and there is no specific reference in the presentation cover letter.

4) Insert reference to specific organizations that practice research, recognized and legitimized.

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<sup>131</sup> Easterby-Smith et al. (2015) reproduce explicitly the methodological paradigm written by Dillman et al. (2014), but some suggested strategies are added to complete the range of proposals to increase response rates.

<sup>132</sup> This is the form of the text used for the second reminder to the mayor (and for the first email to new municipalities). The version for the town clerk has little difference due to the different role in the organization (responsible for the workforce and transparency). Nella cover letter del questionario si domanda ai potenziali rispondenti solo di partecipare allo stesso come forma di support.

Cognitively the respondent perceives that the legitimacy of the organization is transferred to the legitimacy of the survey and people have a tendency to support legitimacy organizations (Dillman et al., 2014, p. 29) and this aspect adds to the social benefit perceived in general from the help seen in point 2: *“Con il Prof. Niccolini dell’Università di Pisa e il Prof. Huron dell’università di Nizza, entrambi in copia conoscenza, stiamo lavorando ad alcune ricerche accademiche internazionali sull’organizzazione nei Comuni e il suo è un aiuto rilevante che può devolvere alle università.”* (“With Prof. Niccolini of the University of Pisa and Prof. Huron of the University of Nice, both in copy knowledge, we are working on some international academic research on the organization in the Municipalities and it is a significant help that he can donate to the university.”) Also, an official request for data collection signed by Prof. Niccolini with the official logo of the University of Pisa was attached in the email requesting the municipalities to participate.

5) Openly showing that the target of respondents is limited and only they have opportunities to respond rather than others increases the possibility of motivational cognitive processes being activated (Dillman et al., 2014, p. 29): *“Il suo Comune (di cui lei è massimo rappresentante a un questionario per il sindaco; di cui lei è responsabile del personale per il town clerk e per human resource manage if presents; in cui lavora, for individual respondents) è stato selezionato accuratamente tra i pochi su scala nazionale che sono nel campione della ricerca e hanno l’opportunità di rispondere.”* (“Your municipality (of which you are the highest representative on a questionnaire for the mayor; of which you are responsible for the staff for the town clerk and human resource manager if presents; where you work, for individual respondents) has been carefully selected among the few on a national scale who are in the research sample and have the opportunity to respond.”). Furthermore, in the e-mail sending the questionnaire, maximum response time should be indicated (Easterby-Smith et al., 2015, p. 224) to create a feeling of containment: *“Per motivi di tempi di ricerca, avremmo bisogno di questi dati preliminari entro dieci giorni.”* (“For reasons of research, we would need this preliminary data within ten days.”) (letter of recall to have the list of target employees); *“Il tempo per rispondere a questo questionario è al massimo di tre settimane”* (“The time to answer this questionnaire is a maximum of three weeks”) (in the cover letter to the individuals to whom it is administered).

6) Passing on the information that there are already respondents can be a form of encouragement, although attention must be paid to ethical issues in declaring who has already responded, so the information must be rather general (Dillman et al., 2014, p. 30). In the preliminary request to the municipalities of participation, the names of those who have already participated are included by sending the list of names requested, while in the individual questionnaire the number of those who have already replied is included in the recall e-mails and in the email relating to the second part of the questionnaire. Delivering information that other similar respondents are participating in the activity increases social validation for the survey (Easterby-Smith et al., 2015, p. 224).

7) Sending a small symbolic monetary incentive (token) is a very effective stratagem according to empirical studies when reciprocity is not required a priori, because it stimulates a mood favorable to respond by the recipient (Dillman et al., 2014, p. 30), creating a sort of obligation towards the surveyor (Easterby-Smith et al., 2015). It is an extrinsic motivational incentive. This research did not put this reward into practice, due to the difficulty of putting it into practice especially via the internet, as recognized in the literature (Dillman et al., 2014), although there are new payment methods that could facilitate this system.

8) Use more reinforcements of benefits, because their combined effect on the positive perception of the respondent is complementary, cumulative and tendentially exponential (Dillman et al., 2014, p. 31). For this reason, the (new) cover letter and questionnaire design present some out of twelve suggestions to increase the chances of increasing the response rate of target respondents.

9) Avoid phrases like "there are no benefits in this research", because it is demotivating for the respondent and does not correspond to reality: there are no economic benefits, but, as seen, there may be many psychological and social benefits (Dillman et al., 2014, p. 31).

10) Demonstrate particular attention and respect to people whom the questionnaire is administered (Easterby-Smith et al., 2015, p. 225). These details were present in the first email to municipalities and were reinforced in the recall email and the emails addressed to individuals. As recommended by Easterby-Smith et al. (2015) it is pre-feasible to provide a point of contact: *"Per domande sul questionario e maggiori chiarimenti, possiamo comunicare per email o per cellulare, per cui Le lascio il mio numero (numero telefonico in fondo all'email)"* ("For questions about the questionnaire and further clarification, we can communicate by email or mobile phone, so I leave you my number (phone number at the bottom of the email.)")

11) After receiving the completed questionnaire, it is appropriate to send a final email with thanksgivings to respondents (Easterby-Smith et al., 2015, p. 224). The expectation of thanksgivings can theoretically increase the expected value of perceived re-words because it is a socially valid and appropriate action in the daily life of respondents' relationships. In research design, thanks are given after the response to the first part of the questionnaire, to stimulate the response to the second part of the questionnaire after a week of time-lag, as discussed below in the section on common method variance, and after the second part has been completed.

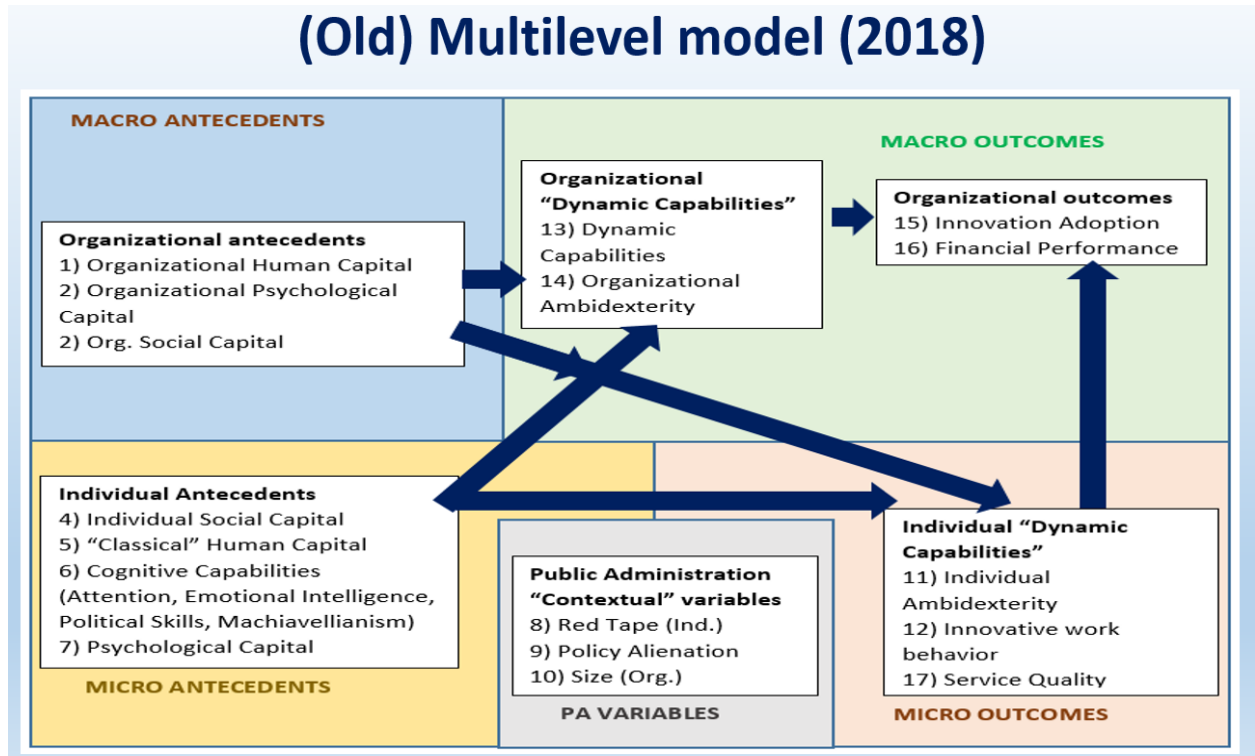
12) Please refer to the values that are predominant for the target group (Easterby-Smith et al., 2015, p. 224). Public service motivation is a characteristic element of public employment and is recognized in the literature. The construct of public service motivation is based on the motivation to do good for others and society and it has been found that the level of this dimension is higher in public organizations than in private ones (Perry & Hondeghem, 2008). Theoretically, public service motivation explains more accurately the behaviour in public administration (Perry, 2000).

This construct is composed of three dimensions that are present in the scale validated by Perry (D. H. Coursey et al., 2008; Perry, 1997): self-sacrifice (e.g. "I am one of those rare people who would risk personal loss help someone else."), commitment to the public interest (e.g. "I unselfishly contribute to my community."), compassion (e.g. "I am often reminded by daily events about how dependent we are on one another."). It is over the purpose of this thesis to study public service motivation in answering the survey. However, terms are included in emails to the organization and individuals that can make public service motivation in readers' cognition salient and strengthen, for example, the request for support: ... *"il Suo è un aiuto rilevante che può devolvere alla comunità università pubbliche"* ... *"per migliorare praticamente le organizzazioni pubbliche ... nell'interesse pubblico"*. ("... Yours is a relativistic help that can donate to the public university community" ... "to practically improve public service organizations ... in the public interest".)

In addition to increasing perceived benefits, the second aspect to consider is the **reduction of perceived costs in answering the questionnaire**. Dillman et al. (2014, p. 32) identify eight strategies to increase the response rate to the questionnaires by reducing the costs for the respondent and some of these methodological suggestions followed in the survey design:

1) Limit the length of the questionnaire, because too many questions reduce the attention of the participant who in modern society is used to considering posts on social networks with few words (eg Twitter) and is a strong investment of time and energy for the respondent (Dillman et al., 2014, p. 32). In many questionnaires, surveyors have tried to hide the actual number of questions, by dividing across multiple pages or writing in the email that there would have been 100 questions when in fact there were four times as much and these are not adequate strategies to increase response. rate, because it increases the risk of nonresponse for some questions and half-completed questions (Dillman et al., 2014). In web-designed questionnaires it is possible to prevent a respondent from skipping a question, however, at that point, he could decide not to conclude the questionnaire and exit the application. Although the opportunities for studying micro-foundations in public administrations were manifold, this study had to limit the dimensions of interest and research hypotheses to only a few useful dimensions to strengthen theoretical and practical knowledge in the public sector. In this way, the number of questions in the questionnaire is 100 plus two networks for those who answer everything, including the organizational level. A problem on length has arisen when it comes to relational questions within the organization, as, in addition to representing a substantial cognitive effort, the number of colleagues changes and the respondents are faced with more or more lists. less long, with the result that the perceived cost is higher for some respondents than others.

Figure 48: slide presented to the commission for the transition to next Ph.D year at IAE (18/06/2018).



At the end of the data collection, it is necessary to evaluate whether the use of a specific method influenced the cross-section response rate. In addition to reducing the length of the questionnaire, the wording is seen above and web-design are tools that simplify the completion of the survey and can increase the response rate (Easterby-Smith et al., 2015, p. 224).

2) Balance the information requested from the respondent and the difficulty in responding, because too long times, an excessive skill required can bore, reduce patience and decrease the quality of the answers, especially in a world where communication is simple and direct (Dillman et al., 2014, p. 33). In conjunction with the previous suggestions, it is evident in the literature that the questionnaires should be as short and easy to finish as possible (Easterby-Smith et al., 2015, p. 224). In research design, only questions that have been planned to be used in the subsequent analysis are included, avoiding as much as possible a researcher-centric strategy, although in the course of the doctorate and of formulating research hypotheses, repeatedly the temptation to ask everything at the expense of the respondent (and the likely response rate) it emerges.

In Figure 49, for instance, the overall micro-foundation model presented at the doctoral interview for the passage of the academic year at the IAE Univesity of Nice doctoral laboratory, which includes many dimensions of interest for literature and the gaps present, but which, subsequently, were not put into research design to avoid that the questionnaire was too long and excessively

complex<sup>133</sup>. Furthermore, for the reduction of the complexity, reference is made to what has already been written regarding the wording of the questionnaire.

3) Implement the greatest possible ease of use of the questionnaire by the respondent (Dillman et al., 2014, p. 34). The choice of web applications makes it possible to tailorize the questionnaire format and make it as usable as possible for the respondent, who, for example, can interface via the web or even via smartphone. Questions with similar content are grouped into carefully separated sections. The respondent can only continue to the next session if they have filled in all the questions.

4) Respect people and have an assertive communicative style (such as asking for help to improve a common good, thus, increasing benefits and reducing costs temporarily) rather than imposing (Dillman et al., 2014, p. 35). Indeed, resistance to respond in the latter method is more likely to grow because people don't like to listen to what they should do (Easterby-Smith et al., 2015).

4) Organizing a research design for which providing answers is convenient (Dillman et al., 2014, p. 36). Thanks to the use of the web questionnaire, it is possible to send an email with the link to the questionnaire which opens directly and is easy to use. The respondent does not even have to make an effort to send the questionnaire, as can be done in the exchange by letter or email, but just click on the end of the questionnaire, which is sent directly to the surveyor and registered in an online database.

5) Provide comfortable ways to answers to questionnaires: even if web surveys can find a complete aversion from certain targets, the sample of this thesis are knowledge workers used to work daily in front of a pc (Dillman et al., 2014, pp. 35–36). The choice of web-survey, therefore, allows avoiding additional costs such as the discomfort of answering live to the phone, whose response rate has been reduced in recent years for the habit of viewing short written messages or having to go and send a letter envelope (Dillman et al., 2014).

6) It provides only one way to respond (web or mail or telephone), because the use of multiple media as a proposal for the potential respondent reduces the response rate according to what was found in the literature and compared to what could be hypothesized assumed (Dillman et al., 2014, pp. 35–36). Even though respondents may have different preferences, the choice of a single

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<sup>133</sup> About 150-200 questions were expected to be included in the questionnaire, so, following the suggestions of the University Commission, the number of variables and reports assumed has been reduced. The other microfoundation reports may be a first step for further research on the subject in the future.



medium as in this research leads to lower costs in terms of decision making on which one to use (Dillman et al., 2014).

7) Diminish to indispensable minimum personal and sensitive questions (Dillman et al., 2014, p. 36; Easterby-Smith et al., 2015, p. 224)). The thesis presents only a few questions related to the demography of human capital, while there are questions of an even more sensitive level. Two aspects are considered with respect to the methodology. The literature advises requesting personal information at the end (Dillman et al., 2014; Easterby-Smith et al., 2015; Rowley, 2014), while as seen below, to reduce method biases it is recommended to include general demographic questions in the middle among other constructs (Weijters et al., 2009). This thesis follows the second procedure, so the personal questions are not at the end but anyway after the two sections concerning mindfulness and political skill. Regarding the protection of anonymity, privacy and confidentiality and sensitive information, this research design optimizes the respect of these aspects as it is confirmed in the questionnaire presentation emails. The only problem concerns social network questions that are not anonymous in nature, because the respondent has to be recognized by the researcher as an "ego" in the network, in order to be able to make in-depth analyses at an individual level with respect to the relationship between personal dimensions of social leaders and individual outcomes. Although the literature recommends maintaining full anonymity when research is done in the public sector where there is strong regulatory protection of privacy (D. Vogel, 2018), maintaining plan respect of anonymity cannot be respected when social network analysis is done and when a performance rating is done (in the case of the thesis concerning the innovative behaviour of colleagues). This research does not promise anonymity also may increase the risk of non-response because it creates an ethical and transparency problem towards the respondent (Chang et al., 2010, p. 183). However, as highlighted in Table 16, a sort of anonymity is guaranteed in the next phase of data analysis, so immediately after receiving the questionnaires, the names are transformed into IDs. In graphs and statistical analysis, therefore, people are always supported by these IDs. In this way, the research reduces the impact of the lack of anonymity due to the social network analysis and guarantees privacy in compliance with the current law (as explained in all emails presenting the questionnaire) and confidentiality that only the researcher can observe the non-anonymous data.

8) Make sure that the respondent perceives that he is taking an action that is consistent with what has been done in the past, because people tend to be consistent with their behavior over time (Dillman et al., 2014, p. 37). This aspect is to be considered especially for studies that are longitudinal or that have a time-lag in the responses. As analyzed in the part on common method variances, time-lagged research designs can reduce biases (Podsakoff et al., 2003, 2012) and this thesis

presents a survey temporally divided into two parts. The risk of reducing the number of respondents between the two phases contrasts with the likely reduction of the common method biases. In support of a positive aspect from this trade-off, the consistent behavior of respondents is present, so answering two questionnaires, of which the first is clearly stronger and less complex than a single questionnaire increases the ease of reply to the same and, due to the cognitive mechanism of consistency, the probability of answering the questionnaire also increases in the second phase. Finally, the last aspect to consider to increase the survey response rate is to use the necessary tools to increase the **respondent's perceived confidence in the surveyor**. The contacted person we do not know must achieve a good level of trust and positive expectation towards promises written in the questionnaire to respond to do something (Easterby-Smith et al., 2015). The probability that sample members respond increases if the confidence that rewards announced by the study will be achieved (Dillman et al., 2014). Dillman et al. (2014, pp. 37–41) identify six ways to increase trust:

1) Make explicit and transparent that the survey request refers to authentic research (Dillman et al., 2014, p. 38). The greater legitimacy of the research comes from easily identifiable sponsors, therefore, the methodological suggestion is to apply various ways, so that the respondent can find information (or request information on the survey) about the sponsor (Dillman et al., 2014, p. 38). In this thesis, the legitimate sponsors are the Ph.D. tutor professors and the universities of Pisa and Nice. The e-mail cover of this work, therefore, presents a working personal telephone contact, the logos of the two universities of reference of the Ph.D. in collaboration (this aspect also reinforces point 4 concerning perceived benefits), links to the institutional web reference of Prof. Niccolini and Prof. David Huron. In which it is also possible to find their contactable institutional e-mails.

2) It is useful to accentuate the reference to legitimate sponsors especially when it can be seen positively by the targets (Dillman et al., 2014, p. 39). The reference to the university seen above is advisable for two reasons: the wider reference to research conducted by experienced professors increases the confidence towards research; trust is greater than surveys conducted by private consulting firms (Dillman et al., 2014; Easterby-Smith et al., 2015). As highlighted in the previous point, in the cover letter to the organization and employees, the role of university sponsors is repeatedly highlighted in e-mails.

3) Confidence is more relevant in relationships of friendship or already present previously (Dillman et al., 2014, pp. 39–40). As an example, this applies mainly to studies where the sample concerns students at the university if the survey is organized by researchers at the university. For the convention sampling used in this thesis (see in the section about this point), the two previous points are more relevant in establishing a relationship of trust, since especially the University of

Pisa is known and legitimized especially in Tuscany and central Italy. Apart from contacts to increase the response rate of the sample according to a logic similar to snowball sampling, this suggestion does not apply to this research, although a certain sense of similarity and therefore of mutual trust theoretically grow when research coming from a public subject (researcher in a public university) contacts another public subject (employee in a municipality).

4) Provide to sample respondents a monetary token, which increases rewards, but also establishes an expected value in the relationship of trust with surveyor (Dillman et al., 2014, p. 40). This strategy is not applied in this research.

5) Guarantee confidentiality, privacy, protection of personal and sensitive data (Dillman et al., 2014, pp. 40–41).. As seen above, however, anonymity can only be maintained during data analysis, presentation and discussion. The thesis does not explicitly ask for informed consent with a specific introductory form in the questionnaire, but explicitly refers to the legislation and the commitment of the research managers to keep these values unchanged (Easterby-Smith et al., 2015): *“I dati personali saranno trattati solo per motivi di ricerca accademica e in modo anonimo e confidenziale, utilizzati solo alle condizioni previste dalla normativa vigente sul riutilizzo dei dati pubblici (direttiva comunitaria 2003/98/CE e d.lgs. 36/2006 di recepimento della stessa), in termini compatibili con gli scopi unicamente scientifici per i quali sono stati raccolti e registrati nel pieno rispetto della normativa in materia di protezione dei dati personali (GDPR).”* (“Personal data will be processed only for academic research purposes and in an anonymous and confidential manner, used only under the conditions provided for by current legislation on the re-use of public data (EU Directive 2003/98/EC and Legislative Decree 36/2006 transposing the same), in terms compatible with the purely scientific purposes for which they were collected and recorded in full compliance with the legislation about personal data protection (GDPR).)

6) Balancing personalized professional communication with questionnaire design and cover letter appropriate to the context (Dillman et al., 2014, pp. 40–41). The text of the cover letter and the introduction to the questionnaire was formally drafted and suited to relations between the world of research and public administrations, in which the habit of using a certain refined language is rather frequent in Italy. Furthermore, after the first emails addressed to unnamed mayors and town clerks, all communications are subsequently made specifying who the communication is addressed to.

This is more professional communication than sending an equal email for everyone<sup>134</sup>. Finally, Easterby-Smith et al. (2015) identify a seventh way to increase trust: increase research credibility,

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<sup>134</sup> The emails were sent via personal and university “outlook.com” accounts, rather than with messaging and newsletter apps, to minimize the problem that the email could end up in spam. In institutional communication, moreover, the communication channel used was that of certified mail.

referring to the fact that previous research has had a positive impact and practical use. All the elements are seen above for the benefits also interact in a logic of credibility of the survey and subsequent action that increases the expected value of the research (Easterby-Smith et al., 2015, p. 225): *“Infatti, grazie ai dati raccolti e analizzati in forma aggregata, future pubblicazioni scientifiche e lezioni nei corsi universitari basate sui risultati di queste ricerche permetteranno di trasmettere una conoscenza più approfondita delle istituzioni pubbliche per studenti, ricercatori, decisori politici e manager pubblici con lo scopo di diffondere buone pratiche e suggerimenti accademici per migliorare praticamente le organizzazioni pubbliche nell’interesse pubblico.”*

("In fact, thanks to the data collected and analyzed in aggregate form, future scientific publications and lectures in university courses based on the results of these researches will allow transmitting a deeper knowledge of public institutions for students, researchers, policy-makers and public managers with the aim to spread good practices and academic suggestions to practically improve public organizations in the public interest.")

#### **b) Sampling and data: theory and practice in this thesis.**

The data collection phase begins with sampling. For this empirical work, the sampling was carried out in two phases, with the aim of reaching a sufficient number of responses in terms of organizations and employees at the individual level. At the individual level, the questionnaire is administered to knowledge workers, middle-managers, managers and town-clerks. In Italy, according to the legislation of the National Collective Contracts for Regions and Local Autonomies of 1999 (C.C.N.L., 1999), in annex A, there are four categories of grading (Table 19). This professional classification does not include staff with managerial qualifications (e.g. responsible for the finances of the municipality, town-clerk), which is included in the model and, thus, in the design of the survey. Following the indications of this table, the questionnaire was administered to municipal employees of category C and D (sometimes they have a higher managerial role). Knowledge workers are nested in local governments, so it is necessary to consider this feature of data. For studies that have a natural multilevel approach and structure like this, the methodological literature recommends reaching a relevant number of observations at the organizational level. A minimum sample of 50 organizations (Maas & Hox, 2004, 2005) is required to achieve the subsequent accuracy of statistical analysis.

Table 19: Categories of grading for Italian public servants: Contratti Collettivi Nazionali Regioni ed Autonomie Locali – Revisione sistema classificazione professionale (C.C.N.L., 1999).

	<b>Category A</b>	<b>Category B</b>	<b>Category C</b>	<b>Category D</b>
<b>Knowledge</b>	General operational knowledge (whose theoretical basis develops with compulsory education) acquired through direct experience of the job.	Good specialist knowledge (the theoretical knowledge base can be acquired with compulsory education and generally accompanied by specialized training courses) and a discrete degree of experience.	In-depth mono-specialist knowledge (the theoretical knowledge base can be acquired with high school) and a degree of multi-year experience, with the need for updating.	High level of multi-specialist knowledge (the theoretical knowledge base can be acquired with undergraduate or graduate university degree) and a degree of multi-year experience, with frequent need for updating.
<b>Job Content</b>	Auxiliary content with respect to wider production/administrative processes.	Operative content with responsibility for partial results compared to wider production/administrative processes.	Conceptual content with responsibility for results related to specific production/administrative processes.	Technical, managerial or executive content with responsibility for results related to important and different production/administrative processes.
<b>Problems</b>	Simple working problems.	Discrete complexity of the problems to be faced and discreet amplitude of the possible solutions.	Medium complexity of the problems to be faced based on predefined external models and significant extent of possible solutions	High complexity of problems to be faced based on theoretical models not immediately usable and high extent of possible solutions
<b>Organizational Relations</b>	Predominantly internal type based on interaction between a few actors.	Internal organizational relationships of a simple type also between multiple interacting subjects, external relations (with other institutions) of an indirect and formal type. Relations with users of direct nature.	Internal organizational relations also of a negotiating nature and with positions outside the organizational units of belonging, external relations (with other institutions) also of a direct nature. Relations with users of a direct nature, even complex and negotiating.	Internal relations of a negotiating and complex nature also managed between different units other, external relations (with other institutions) of a direct nature also with the role of institutional representation. Relations with users of a direct nature, even complex, and negotiating.
<b>Job Examples</b>	Caretaker, Janitor.	Professional worker, driver of complex machines (school bus), archivist, social welfare worker.	Municipal police officer, administrative instructor, accountant, kindergarten teacher, surveyor.	Specialist in administrative and accounting activities, engineer, architect, geologist, lawyer, school services specialist.
<b>Inclusion in the survey design?</b>	Not Included	Not Included	<b>Included</b>	<b>Included</b>

For an optimal study should follow a rule of 100 groups and at least 10 respondents for each group (Hox, 2010; Maas & Hox, 2005), which is difficult to achieve in the reality of empirical research. The only research that to date analysed multi-level elements including social capital was Veltrop et al. (2017) which includes 185 respondents in 30 organizations. Mom et al. (2019) amazed together individual and organizational ambidexterity in the private sector with data on 487 operational managers from 55 firms. It should be specified that the model is multilevel in the sense that there are relationships between individuals and the social context and the various levels influence each other (Hox, 2010).

In public administration, there are individuals, who are part of working groups and of offices and departments which in turn are part of the whole organization. The assumption is that individual variables can influence organizational outcomes as well as the organisational context influences individuals. It is necessary to use multilevel analysis when, for example, even non-statistical sampling is done before the municipalities to be analysed and then the subjects analysed within each individual organization, because within a certain organization individuals tend to be more similar (as children in one school than in other schools because of their economic background) and there is a risk of having too positive correlation results and losing the basis of independence between the observations (Hox, 2010, p. 5). The sampling and analysis phase takes into account the presence of individual data nested in local governments. The objective of the data collection is to obtain information on the variables at the individual level, which are statistically analysed with models that consider the possibility that the assumption of independence of observations is not achieved, and on the organizational variables that are included in the survey (and in the models developed in the hypothesis part), but not statistically analyzed in this work. Methodologically these are the suggestions written by Hox et al:

“First, we take a sample of schools, and next we take a sample of pupils within each school. Of course, in real research one may have a convenience sample at either level, or one may decide not to sample pupils but to study all available pupils in the sample of schools. Nevertheless, one should keep firmly in mind that the central statistical model in multilevel analysis is one of successive sampling from each level of a hierarchical population” (Hox, 2010, p. 1).

The municipalities were initially contacted by email, through the mayor's email and the town clerk's email when available, the institutional email and the certified institutional email, which allows to officially register the request made to the administration. The initial contact informs about the administration of the questionnaire and requests the list of employees working in the organization and, if possible, their email contact or their office (which should usually be public under the Transparency Act as they are civil servants). Given the complexity of the request, many organizations have asked for further explanations by email or telephone (e.g. what questions are

asked in the questionnaire and the reasons for the research). Answers were sometimes also provided by Prof. Niccolini, who was always copied when sending emails and actively contributed. Since the interlocutor could be a potential respondent, the strictly necessary information was given without spoilers the research intentions and the complete questionnaire (e.g. at most some random questions were provided). Some municipalities decided to participate without the list of employees, others replied that they would not participate, most of the municipalities did not reply to the formal request made, also in contrast with the reference legislation on the procedure of public acts in Italy. These are the two procedures followed for the sampling of municipalities.

1) July-August 2019. In the first phase, all municipalities were contacted and 81 municipalities in 4 provinces near Pisa were asked to participate in the academic questionnaire. The municipalities contacted have more than 2000 inhabitants, but 4 larger municipalities corresponding to provincial capitals are also included, which however are not part of the final sample analysed. This is a sample of convenience, therefore, the idea was that the response rate was particularly high for the influence and prestige of the University of Pisa. However, the response rate is after two months of reminders was too low compared to the initial initiatives, so it is necessary to provide a second strategy. In agreement with the professors of Pisa and Nice, the next step was to try to increase the reference sample on a larger population of municipalities.

2) September-mid October 2019. The list has been downloaded from the website [comuniverso.it](http://comuniverso.it) which reports the data of the Italian municipalities updated by Anci and Istat (2018). Through Excel, random sampling has been prepared at the national level. In the second phase, a random sampling method was adopted, more precise from a scientific point of view, but with a lower response rate forecast. The request for participation in the questionnaire of this thesis to 604 randomly selected municipalities in the database of Italian municipalities with a population between 2000 and 50000. The lower population was excluded because the number of employees of each municipality is very limited compared to the possibility to evaluate the internal social capital, in terms of communication-knowledge network relations, moreover, they have limited management of resources, the town clerk is obligatorily present but often has a role also in larger municipalities and comes to these municipalities may be only one day a week. Larger municipalities have been excluded from this random sampling, due to the difficulty to find the network of the whole organization and, therefore, to do internal social capital analysis. It is also difficult to realize the perspective of asking the level of innovation of colleagues because the main assumption of interpersonal knowledge is missing if the municipality is too big and there are detached offices of which colleagues are unknown. However, the population taken as a reference between 2000 and 50000 inhabitants represents more than 54% of all the municipalities on the Italian territory. As a result of the two steps, the final sample is a mixture of sampling of convenience limited to the

Pisa area and random sampling on a national basis. Lacking the general assumptions of causality for the two sampling steps, the empirical research concerns a sampling for convenience on a national basis. In some cases, the municipalities that were randomly sampled overlap with those present in the initial sampling for convenience.

In order to calculate the final participation rate, therefore, it was necessary to see the number of municipalities actually contacted, removing double values from the count (3 in Tuscany, of which none participated in the survey at the end). A total of 681 municipalities were contacted and of these 56 agreed to participate, of which 47 provided the list of di-pendants and 8 did not provide the names, but the emails of the employees were present on the organization's website and in two cases the emails were forwarded by the human resources manager. The requests to participate stopped at this number because more than 15% of the population and could allow to reach a sufficient response rate to make the hypothetical analysis. For the former it was possible to send the questionnaire with all the questions, while for the latter it was not possible to administer in two parts between independent variables and individual employees and they received the questionnaire in a single version. Subsequently a questionnaire was sent to these municipalities only for middle-managers, managers and town-ckerks with questions on the organizational level. In terms of precision, convenience sampling makes it easier to obtain sufficient data and to ensure that there are also consistent response rates with the population (Easterby-Smith et al., 2015). Conversely, convenience sampling does not share a probability level with the population.

The sampling of this thesis, however, is credible, as respondents are civil servants in the real situation of local governments and not university and masters students as often happens in management research (Easterby-Smith et al., 2015). Moreover, in terms of validity (Easterby-Smith et al., 2015), the research is cross-sectional and nationwide for small and medium municipalities. The sampling and analysis are therefore potentially generalizable in terms of the correlation between variables and non-causality for realities similar to the system of Italian municipalities and small-medium-sized organizations. For larger organizations, for countries where the hierarchical model of public services organization, for realities that differ in terms of organizational culture as individualism and collectivism (Hofstede, 1980b), this sampling is not a sufficient tool at an external validity level for all employees in local governments in every situation worldwide.



Table 20: examples of sampling in studies of local governments in top journals.

Article	Number of public servants in the analyses	Number of organizations	Journal (AJG rank)
Berman and West (2008)	212	-	Public Administration Review (4*)
Vigoda-Godot and Meisler (2010)	380	Two municipalities	Public Administration Review (4*)
Quratulain and Khan (2015)	217	"different localities in Pakistan"	Review of Public Personnel Administration (1)
Franch and Emerson (2015)	250	"a medium-sized municipality in the state of Mississippi"	Review of Public Personnel Administration (1)
Nisula (2015)	593	"a large municipal (city) organization"	Leadership & Organization Development Journal (1)
DeHart-Davis et al. (2015)	1655	Two municipalities	Journal of Public Administration: Research and Theory (4)
Zandberg and Morales (2017)	64	"Milpa Alta municipality in Mexico City"	International Review of Administrative Sciences (2)
Hansen and Villadsen (2017)	242-255	98 local governments	Public Management Review (3)
Lewis et al. (2018)	323	Barcelona, Copenhagen and Rotterdam	International Review of Administrative Sciences (2)
Nohrstedt (2018)	517	290 municipalities in Holland	American Review of Public Administration

This sampling is in line with most of the reviews analysed in this thesis in the dedicated tables. Future research can externalize sampling and evaluate the results in terms of greater international and dimensional generalization. In researches on public organizations, the sampling process has often been neglected in academic papers (G. Lee et al., 2012). The number of responses found is in line with other research on local governments on public service motivation in top journals (George & Pandey, 2017). For instance, some samples are included in Table 20. **L'origine riferimento non è stata trovata..** Only one study has many organizations (M. B. Hansen & Villadsen, 2017) and one has more respondents, although the number of questions asked to respondents is limited to 19 plus the municipality they belong to (DeHart-Davis et al., 2015). After collecting the data on the networks and the approval of the municipalities, the ad hoc questionnaire was created for each organization when possible (each interview must be able to see the list of their colleagues). Whenever possible, the emails were sent to the individual emails of the municipal employees, otherwise, the manager in charge of human resources sent personally to all contacts together with the email provided. The first part of the questionnaire was administered from mid-October 2019 to mid-November with a reminder in the middle of this period. The second part of the questionnaire was sent in mid-December and responses were collected until mid-February 2020. Two reminders were sent, the first in early January and the second in early February. The

time on the second part of the questionnaire is more extended (about 6 weeks compared to 4 weeks) for the presence in the middle of the Christmas holidays and because during the data collection there was a sharp initial drop in responses, therefore, we proceeded to send a second reminder and leave more time to respond. From December 2019 to February 2020 the questionnaire was sent again in full form to all employees who had not answered the first part. For those municipalities that did not provide the list, the first submission of the questionnaire was in mid-October 2019 and in total there were three monthly remote reminders. There have been some exceptions. In some cases, the employees replied by email saying that they would not answer the colleagues' innovation question that had been expressed in terms of the obligation to answer as for the rest of the questionnaire. For this reason, the questionnaire was sent without the obligation to answer this question or with the exclusion of this question depending on the request. For municipalities that applied to participate after mid-October, the complete questionnaire was sent as soon as possible. The response time for the employees of these municipalities was lower because the organizations were formally contacted all at the same time as described.

Table 21: construction of the sampling for the empirical work of this this thesis.

	Convenience sampling in four provinces near Pisa University <sup>135</sup>	Random sampling of Italian municipalities	Convenience sampling at national level
Total population of local governments (2000-50000 habitants)	78 <sup>136</sup>	7914 (4239 sub-group with a population between 2000 and 40000)	7914 (4239 sub-group with a population between 2000 and 40000)
Total initial sample of local governments	78	600 (7,63% of the population – 14,15% of the sub-group) - with 2000-40000 habitants	676 (8,54% of the population – 15,95% of the sub-group) - with 2000-40000 habitants
Potential sample in the thesis (number of considered local governments)	15 (19,23% of the initial sample)	41 (0,97% of the sub-group with a population between 2000 and 40000); 0,52% of the total population; 6,83% of the initial sample)	<b>55</b> : 47 with the list of employees, 8 without the list.
Final sample in the thesis (at least an answer)	15 (19,23% of the initial sample; 100% of the potential sample)	36 (0,85% of the sub-group with a population between 2000 and 40000); 0,45% of the total population; 6% of the total initial sample; 88% of the potential sample)	<b>50</b> : <b>44</b> municipalities present complete data at the individual level; <b>6</b> municipalities does not present data about internal social capital; <b>47</b> municipalities have at least one observation for each level ( <b>45</b> municipalities have at least 2 observations at the individual level).

<sup>135</sup> Provinces of Pisa, Livorno, Grosseto and La Spezia (22 municipalities). This population includes four town with more than 40000 habitants, but in addition to being out of the sampling range, no provincial capital replied, therefore this figure was in no way considered in the sampling. The number indicated is that of the sum of the municipalities between 2000 and 40,000 inhabitants in the 4 provinces considered.

<sup>136</sup> This number includes a municipality with a population of 1984 at time of data collection in official statistics (1904 at time of data analysis). It is included in the survey and it is considered in the group of 2000 habitants.

## ORGANIZATIONAL LEVEL

Table 22: summary table of the data obtained from the questionnaire administered to civil servants in Italian municipalities – organizational level.

Municipalities contacted to participate	676
Municipalities that participated to the survey (at least an answer at individual level)	50
Municipalities that participated to the survey ( <b>with</b> the list of employees)	44
Municipalities that participated to the survey ( <b>without</b> the list of employees)	6
Answers from majors	22
Answers from managers (with the list second wave + with the list 1 general wave + without the list)	55
Municipalities with an answer for organizational level from public managers ( <b>with</b> roster list of knowledge workers)	37
Municipalities with an answer for organizational level from public managers ( <b>without</b> roster list of knowledge workers)	6
Total Municipalities with an answer for organizational level from public managers	43
Municipalities with at least an answer for organizational level (matching majors' and public managers' answers) – Municipalities with at least two observations at the individual level	47 - 45

## INDIVIDUAL LEVEL

Table 23: summary table of the data obtained from the questionnaire administered to civil servants in Italian municipalities – individual level.

Total employees (knowledge workers) in the sample	2796
Employees <b>with</b> list of colleagues in the questionnaire	1722
Employees <b>without</b> list of colleagues in the questionnaire	1072
Answers for the first part of the survey (all data available)	633
Answers for the second part of the survey ( <b>without</b> answers about innovation of colleagues)	452
Answers for both first and second part together ( <b>with</b> answers about innovation of colleagues)	450
Usable raters for innovativeness of colleagues	386
Answers for both first and second part together ( <b>without</b> answers about innovation of colleagues)	450
Answers for questionnaire without list of colleagues (with valid indication of the municipality of provenience)	67
Answer time-lagged (without considering innovation of colleagues)	412
Answers for usable questionnaire without roster list (without considering internal knowledge network and innovation of colleagues)	<b>551</b>
Answers for usable questionnaire without roster list (considering internal knowledge network)	<b>484</b>
Answers for usable questionnaire without roster list (considering internal knowledge network and innovation of colleagues)	<b>474</b>

## C. RESEARCH DESIGN: MEASUREMENTS.

This section presents all the measures adopted for the construct of this thesis. All the scale are validated in literature or adapted for the specific case of local governments and public servants. The process of adaptation involved scholars and practitioners in the field. The order of presentation is the same of the web survey on Google Form<sup>137</sup>. The scales used followed the translation-back-translation procedure, otherwise scales already used in Italian literature were used and the respective authors were contacted.

### a) Mindfulness: MAAS

In the empirical work of the thesis, the scale adopted to evaluate mindfulness is Mindfulness Attention and Awareness Scale (MAAS), whose original version in English was developed by Brown and Ryan (2003). This scale is one of the most utilized in literature, as it emerges even in the evaluation of recent empirical studies in Table 11. It measures individual mindfulness as a trait and through a single dimension (Sutcliffe et al., 2016). Moreover, Sutcliffe et al.(2016) suggest that MAAS is adapt for people that have not experience with meditation, because it is not related to meditation and it measure an unidimensional trait of the personality. MAAS asks to respondents the frequencies about the experiences described in 15 statements (K. W. Brown & Ryan, 2003). The different items concerns various psychological spheres concerning open and receptive attention and awareness in specific day-to-day circumstances: cognitive, emotional, physical, interpersonal, and general domains (K. W. Brown & Ryan, 2003). Items are written as reverse-coded in the sense that they measure mindless states, so that the opposite means mindfulness (K. W. Brown & Ryan, 2003; Schwager et al., 2016). In this thesis, it is used the **MAAS-Italian** that was translated and validated by Veneziani and Voci (2015). This version presents two relevant differences with original MAAS. In particular, MAAS-Italian is a 7-point Likert scale rather than a 6-point one as original MAAS. Veneziani and Voci (2015) implemented this change with the expressed objective of include a midpoint that is a positive method that make the scale more accurate (as seen in the chapter about the construction of the questionnaire from page 269). Furthermore, Veneziani and Voci (2015) used an end-labelling scale, while Brown and Ryan (2003) used a full-labelling method. Recently, Eisenbess and van Knippenberg (2015), Decuyper et al. (2018a), Cheung et al. (2020) used MAAS with end-labelling and changing also the wording from a frequency scale to an agreement one. Other authors used a 5-point Likert scale (e.g. S. Y. Cheung

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<sup>137</sup> With the exception of mindfulness that after an explicit request by a top manager of a municipality and other employees by email or telephone, for the complete version of the questionnaire sent subsequently, was placed in the middle and no longer at the beginning to make it more interesting.

et al., 2020; Montani et al., 2018; Roche et al., 2014). This thesis adopted a 7-point end-labelling scale with 1 as “almost never” and 7 as “almost always”. The original MAAS used the contrary labels at the end (1 as “almost always” and 6 “almost never”). There are not empirical differences between the two orders of response options, considering that the words in the labelling are the same, and the idea is to facilitate a linear comprehension of the items. Low scores reflect higher mindfulness, so scores are reversed-coded, making higher (reversed) scores indicate a great degree of mindfulness. The Italian version of MAAS was provided directly by the authors through email (Veneziani & Voci, 2015)<sup>138</sup>. Some researchers have followed these response choices and this procedure to date (e.g. Black et al., 2012; S. Y. Cheung et al., 2020; Decuyper et al., 2018a; Roche et al., 2014; H.-S. Shin et al., 2016). The use of MAAS-Italian presents some possible **limits** for the research. Firstly, a limit of the use of this scale is that in this research the original scale was adopted without changes concerning job features. Otherwise, some scholars have suggested to adapt it to the work context (e.g. Dane & Brummel, 2014). For instance, Montani et al. (2018) excluded three items even if they were administered for a lack of relevance in the organizational context of study. Some other authors used original MAAS at work without contextual modifications (e.g. S. Y. Cheung et al., 2020; Eisenbeiss & van Knippenberg, 2015; Reb et al., 2017, 2018). Moreover, it is not possible to compare total score of MAAS-Italian with ones of other researches using original MAAS (Veneziani & Voci, 2015) or 5-point Likert scale. Another limit is that MAAS measure a single dimension corresponding to attention and awareness that relate to the definition of awareness. It cannot evaluate multiple dimensions of mindfulness, as it is possible with other scales (Sutcliffe et al., 2016). In conclusion, even if there are not theoretical nor empirical evidence, during the administration of the questionnaire, there were some complaints about the items in the questionnaire, which are first in the link of Google Form, because some readers thought that the questions were not significant for life or for work. The possible suggestions for future comparative researches in public administration are to follow the ideas to revisit the scale for work evaluations or the validation of a new MAAS adapted at work with similar psychometric characteristics. With a simpler method, it is possible to change the position of items about mindfulness in the scale, so that respondents are less focused on the primacy of questions and they can get in the mood of work-related questions. In fact, as seen in methodological part about the building of the questionnaire, the position of a scale matters. It is possible to compare unidimensional results

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<sup>138</sup> In the file that one of the authors sent by email the labelling of the scale are 1 – almost never and 7 – almost always and the questionnaire presented this feature. The developers of Italian scale sent me a file “ready for the administration” with the same labelling that I used in the questionnaire and they precise the necessity to reverse the results to find the measure of mindfulness. Within the article, they write a different think and labeling is opposite, but theoretically and practically there are not differences. One of the authors suggest to use scales with odd intervals, even if it depends on the research.

with other studies using multidimensional scales (e.g. Five Factor Mindfulness Questionnaire (Baer et al., 2008)), which should start from a different vision of mindfulness as multidimensional construct (Reb et al., 2018). In fact, some authors suggest to use multidimensional aspects of mindfulness in future researches, because in this way it is possible to include other factors as non-reactivity to inner experience and non-judging of experience to have more in-depth information (Baer et al., 2006; Decuyper et al., 2018a; Ruedy & Schweitzer, 2010; Shapiro et al., 2008). Brown and Ryan (2003) assumes that mindfulness has an unidimensional structure. The same choice is adopted here. These changes could enhance the opportunity to compare results and effects of mindfulness to the best practice that remains in the use of original wording of items in MAAS. In next table, the statements of English and Italian version of mindfulness scale are inserted. An introductory statement preceded the 15 items of the Italian version of MAAS. The translation is in note<sup>139</sup>. “Below, you will find some statements about your daily experiences.

Please indicate how frequently you happen to feel any of the experiences described. Please answer according to your actual experiences, rather than thinking about what experiences should be.” (K. W. Brown & Ryan, 2003, p. 825). A seven-point Likert-type scale was used, where 1 = “almost never” and 7 = “almost always”. The statement is an instruction for a reduction of socially desirable responding. It asks to answer thinking about what “really reflects” actual experience more than what an experience “should be”.

In summary, this thesis measures mindfulness in two ways:

- Mindfulness - Latent variable with 15 items as observed.
- MindfulnessMEAN – Mean of 18 items of PSI

In literature, the practice of measure the Likert scale with mean rather than sum of items is very extensive from the description of variables in empirical articles. The average allows the value to be kept within the same range of items and the standard deviation calculates the dispersion with respect to the individual items. A zero standard deviation means that the respondent has always put the same value for the items in the scale. This choice can ensure a more agile interpretation of the results. Therefore, a composite indicator averaging the score of the scales is adopted as an alternative construct measurement tool for the descriptive part of variables and for those analysis strategies that prefer the use of mean scores rather than factorial analysis.

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<sup>139</sup> “Qui sotto trova una serie di affermazioni riguardanti le sue esperienze quotidiane. Per favore indichi quanto frequentemente vive ognuna delle esperienze elencate. Risponda in accordo alle sue reali esperienze, non a come pensa dovrebbero essere. Per favore consideri ogni affermazione separatamente dalle altre.” 1 = quasi mai. 7 = quasi sempre.

Table 24: statements of MAAS in the questionnaire.

Original English Version (K. W. Brown & Ryan, 2003)	Italian Version (Veneziani & Voci, 2015)
1) I could be experiencing some emotion and not be conscious of it until some time later.	1) Potrei fare esperienza di alcune emozioni e non esserne cosciente fino a qualche tempo dopo.
2) I break or spill things because of carelessness, not paying attention, or thinking of something else.	2) Rompo o faccio cadere cose per sbadataggine, non prestando attenzione, o pensando ad altro.
3) I find it difficult to stay focused on what's happening in the present.	3) Mi riesce difficile restare concentrato/a su quello che sta accadendo nel presente.
4) I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.	4) Tendo a camminare velocemente per arrivare dove sono diretto senza prestare attenzione a ciò che incontro lungo la strada.
5) I tend not to notice feelings of physical tension or discomfort until they really grab my attention.	5) Tendo a non notare sensazioni di tensione o di disagio fisico fino a quando non catturano veramente la mia attenzione.
6) I forget a person's name almost as soon as I've been told it for the first time.	6) Dimentico il nome di una persona quasi subito dopo che mi viene detto per la prima volta.
7) It seems I am "running on automatic" without much awareness of what I'm doing.	7) Mi sembra di andare in automatico senza rendermi conto di cosa sto facendo.
8) I rush through activities without being really attentive to them.	8) Faccio le cose in fretta senza essere attento/a ad esse.
9) I get so focused on the goal I want to achieve that I lose touch with what I am doing right now to get there.	9) Sono così concentrato/a sull'obiettivo che voglio ottenere che perdo il contatto con quello che sto facendo nel presente per raggiungerlo.
10) I do jobs or tasks automatically, without being aware of what I'm doing.	10) Compio lavori o attività in modo automatico, senza essere consapevole di quello che sto facendo.
11) I find myself listening to someone with one ear, doing something else at the same time.	11) Mi trovo ad ascoltare qualcuno con un orecchio e fare qualcos'altro allo stesso tempo.
12) I drive places on "automatic pilot" and then wonder why I went there.	12) Mi capita di guidare con il "pilota automatico", di arrivare in un posto, e di domandarmi perché ci sono andato.
13) I find myself preoccupied with the future or the past.	13) Mi trovo a preoccuparmi per il futuro o per il passato.
14) I find myself doing things without paying attention.	14) Mi ritrovo a fare le cose senza prestare attenzione.
15) I snack without being aware that I'm eating.	15) Faccio spuntini senza essere consapevole che sto mangiando.



## b) Political skill Inventory.

The Political skill Inventory was developed by Ferris et al. (2005). It is measured by 18-items with a 7-point Likert scale, from 1 – Strongly disagree to 7 – Strongly agree. It is multidimensional scale that measure four relevant dimensions in the organizational politics literature: social astuteness (items: 5, 7, 16, 17, 18), interpersonal influence (items: 2, 3, 4), networking ability (items: (1, 6, 9, 10, 11, 12, 15)<sup>140</sup>, apparent sincerity (items: 8, 13, 14) (Ferris et al., 2005). An introductory statement preceded the 18 items of the Italian version of PSI: “Instructions: Using the following 7-point scale, please indicate how much you agree with each statement about yourself (1 = strongly disagree - 7 = strongly agree)<sup>141</sup>.”

In summary, this thesis measures political skill in two ways:

- **PoliticalSkill** - Latent variable with four sub-dimensions.
- **PoliticalSkillMEAN** – Mean of 17 items of PSI (Item1 is dropped after factor analyses as it emerges in next chapter).

Table 25: statements of PSI in the questionnaire.

Original english version (Ferris et al., 2005)	Italian version <sup>142</sup>
1) I spend a lot of time and effort at work net-working with others. (NA)	1) Spendo molto tempo e fatica lavorando in rete con gli altri. (*Mi impegno e spendo molto tempo a lavorare in rete con gli altri.) <sup>143</sup> <i>*Item dropped after factor analyses</i>
2) I am able to make most people feel comfortable and at ease around me. (II)	2) Sono in grado di far sentire la maggior parte delle persone intorno a me a proprio agio.
3) I am able to communicate easily and effectively with others. (II)	3) Sono in grado di comunicare facilmente ed efficacemente con gli altri.
4) It is easy for me to develop good rapport with most people. (II)	4) Mi è facile sviluppare buoni rapporti con la maggior parte delle persone.
5) I understand people very well. (SA)	5) Capisco molto bene le persone.
6) I am good at building relationships with influential people at work. (NA)	6) Sono bravo/a a sviluppare relazioni con persone influenti al lavoro.
7) I am particularly good at sensing the motivations and hidden agendas of others. (SA)	7) Sono particolarmente bravo/a a percepire le motivazioni ed i secondi fini degli altri.

<sup>140</sup> Item1 is dropped after factor analyses and item 12 is added even if in the original version was considered a form of measurement for social astuteness.

<sup>141</sup> Italian version. Istruzioni: Utilizzando la seguente scala a 7 punti, si prega di indicare quanto è d'accordo con ciascuna affermazione che la riguarda. 1 = fortemente in disaccordo 7 = fortemente d'accordo

<sup>142</sup> Items 2, 3, 4, 12 have already passed the translation-back-translation procedure (R. Chiesa et al., 2019). Other items are translated-back-translated by the methodological procedure of this research.

<sup>143</sup> After receiving the first part of the questionnaire and an observation of the descriptive data on google form, a second version of this item was inserted in the second part of the questionnaire and in the complete version sent after. For the municipalities that completed the questionnaire in the absence of the list, the employees replied only to the first Italian version of the item. A careful analysis was made on the decision to use the first version or not.



8) When communicating with others, I try to be genuine in what I say and do. (AS)	8) Quando comunico con gli altri, cerco di essere sincero/a schietto/a in quello che dico e faccio.
9) I have developed a large network of colleagues and associates at work whom I can call on for support when I really need to get things done. (NA)	9) Ho sviluppato un'ampia rete di colleghi e collaboratori al lavoro a cui posso rivolgermi per sostegno quando ho veramente bisogno di portare a termine le cose.
10) At work, I know a lot of important people and am well connected. (NA)	10) Al lavoro, conosco molte persone importanti e ho molti validi contatti.
11) I spend a lot of time at work developing connections with others. (NA)	11) Passo molto tempo a sviluppare relazioni con gli altri sul luogo di lavoro.
12) I am good at getting people to like me. (II)	12) Sono bravo ad indurre le persone ad apprezzarmi. <i>*Item used in the sub-scale of NA after factor analyses</i>
13) It is important that people believe I am sincere in what I say and do. (AS)	13) È importante che le persone credano che sia sincero/a in quello che dico e faccio.
14) I try to show a genuine interest in other people. (AS)	14) Cerco di mostrare un sincero interesse per le altre persone.
15) I am good at using my connections and network to make things happen at work. (NA)	15) Sono bravo/a nell'usare i miei contatti e la mia rete per far sì che le cose accadano al lavoro.
16) I have good intuition or savvy about how to present myself to others. (SA)	16) Ho un buon intuito e buon senso per capire come presentarmi agli altri.
17) I always seem to instinctively know the right things to say or do to influence others. (SA)	17) Mi sembra di conoscere sempre istintivamente le cose giuste da dire o da fare per influenzare gli altri.
18) I pay close attention to people's facial expressions. (SA)	18) Presto molta attenzione alle espressioni facciali delle persone.

### c) Social capital: external networking.

The "external networking" variable measures the social capital outside the organization by municipal employees. In literature, different authors have included a series of stakeholders with whom the interviewee says their relationship frequency. To date, there is no single validated scale, although different empirical studies repeat and use more frequently some external actors in Network Governance. It can be seen in the relevant table of the literature review about external networking. Thus, in the public administration and management literature, there is no single and uniform scale for the external networking dimension. This thesis, therefore, provided for a procedure of reworking the scale, following the advice that is present in the literature on the methodology (Dillman et al., 2014). The procedure involved eight steps in total. It has the primary objective of determining a scale adaptable to the Italian context, but that it can also be used for international comparisons in the specific field of municipalities, which are essentially a subset of local governments. The table below concerns the stakeholders inserted in different empirical studies about external networking of which was covered in the literature review. Another table with different passages and evaluations from experts is in Appendix (Table 93).

In addition to the organizational aspects of the scale, at the end of this part, the choices regarding the measurement are analyzed in relation to the different evaluations made in the literature. In Table 26 the stakeholders used as external interlocutors in the analysis of Zyzak et al. (2019)<sup>144</sup> are not mentioned since they are strictly connected with the specific case of meta-organizations that have a wider context than the single municipalities and, therefore, cannot be replicated in the analysis of this thesis, although the internal references to the groups do not differ from those used by the other authors. In the empirical studies, there are different types of networks analyzed (the precise question asked can be found in the footnotes): general interaction, coordination (Nohrstedt, 2018) and communication (Lewis et al., 2018; Zyzak & Jacobsen, 2019). In order to arrive at generalizations, the use of coordination in a specific case limits the study to that same case of management analysis or to a specific governance organization. However, at the other end of the spectrum, the interaction, in general, is a rather vague type of social relationship, as there may be a friendship between two subjects and then, however, they never talk about topics that may be relevant for the public servant. For these reasons, in this thesis, the analysis is limited to the communication network, which is linked to the concept of knowledge management. However, this measure of knowledge mood of interaction has limits: the time and energy used by public servants to communicate outdoors do not presuppose the quality and usefulness of the information acquired in the work environment (Lewis et al., 2018).

In summary, it is relevant to notice that, even if it can presents limits focusing on frequency more than in quality of relationships and bilateral rather than multilateral relationships (Jimenez, 2017), this way of measurement of external networking with the frequency of relationships with a limited number of relevant stakeholders is valid and realible (Meier & O'Toole, 2005). It is strongly used and recognized in literature of public administration from ealy studies of managerial relations of managers in Americal schools (Meier & O'Toole, 2001) and it is also used in the field of non-profit organizations (Johansen & LeRoux, 2013). All the articoles in top journal that are evaluated in this thesis present the same measurement mode

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<sup>144</sup> Zyzak et al. (2019) domandano la frequenza di external networking con stakegolders esterni rispetto a due dimensioni: general interaction and "meeting", cioè una comunicazione più specifica faccia a faccia, su Skype, per telefono, per email o in chat.

Table 26: stakeholders used to measure external networking scale in local government by top scholars in Public Administration.

<b>Author(s) (Contest)</b>  <b>Stakeholder(s)</b>	Walker et al (2007); Walker et al. (2010) (English local authorities)	Andrews et al. (2011) (English local authorities)	Andrews & Beynon (2017) (English local authorities)	Hansen & Vil- ladsen, (2017) (Danish Muni- cipalities)	Jimenez et al, (2017) (American Municipali- ties)	Lewis et al., (2018) (Three Euro- pean Citi- ies) <sup>145</sup>	Nohrstedt, (2018) (Sweden Mu- nicipalities) <sup>146</sup>
Elected Members	x	x	x				
User group repre- sentatives	x	x ("service users representa- tives")			x ("Service us- ers")	x ("A representa- tive of a citizens' group")	
Trade unions	x	x ("representa- tives")		x ("Union repre- sentatives")	x	x ("A repre- sentative of a union")	
Local business lead- ers	x	x	x	x	x ("Business groups")	x ("A leader of a medium or large private firm")	x ("Business or- ganizations")
Voluntary sector ac- tors	x	x ("organiza- tions")	x	x ("Leaders in vol- untary organiza- tion")		x ("A representa- tive of a commu- nity sector peak organization")	x ("Voluntary Groups")
MPs (Members of the Parliament)	x	x	x				
Managers in other councils	x	x		x ("other muni- cipalities")	x ("Representa- tives from other local govern- ments")	x ("An officer in another muni- cipality")	x ("other muni- cipalities")
A politician from an- other municipality						x	
CEOs from other mu- nicipalities				x			
Central government officials	x	x	x	x ("Employees in central gov- ernment")	x ("State gov- ernments offi- cials")	x ("An officer in the national de- partment that regulates munic- ipalities")	
An officer from an- other national gov- ernment department						x	
An officer from the EU						x	
Regulatory agencies		x	x				
Employees in re- gional government				x		x ("An officer in the region")	
A representative from a business asso- ciation						x	

<sup>145</sup> "Survey participants were asked to indicate how often they communicate with a range of different organizations about a municipality-related matter, and that this should include communication by phone, email or in person, but exclude bulk email circulars." (Lewis et al., 2018, p. 10)

<sup>146</sup> Nohrstedt (Nohrstedt, 2018, p. 6) inserisce anche altri 5 soggetti che riguardano le opportunità di relazioni "interorganizzative: local crisis management councils, regional crisis management councils, intermunicipality councils, and other venues" L'autore, inoltre, usa una domanda su una situazione più specifica di crisis management rispetto alle altre ricerche che sono più generiche "With what actors does your municipality collaborate with to achieve coordination before and during extraordinary events?" (Nohrstedt, 2018).

Police							x
County Administrative Board							x
County Councils							x
Military Organizations							x
Religious Organizations					x ("Groups")		x
Regional associations					x		
Neighborhood associations					x		
Financers					x		
Service organizations					x		
Political clubs or political party committees					x		
Members of the press				x		x ("A representative of the media")	
The professional organization Municipalities (Denmark)				x			
An officer from the national association of municipalities						x	
Other public agencies		x	x				x ("Other organization – Open Category")
<b>TOTAL NUMBER OF STAKEHOLDERS</b>	<b>8</b>	<b>10</b>	<b>7</b>	<b>9</b>	<b>11</b>	<b>13</b>	<b>9</b>

### External networking – Steps for the construction of the scale adapted to the Italian system of local governments.

**Step 1.** A review of the literature has been made with the scales adopted for local government that have generic stakeholders, therefore not considering studies that concern schools or specific issues, such as emergency management situations. In Table 26 all the voices of the actors have been included to allow a comparison between the articles in the literature. In order to refine this scale for the empirical study of the thesis, I compared myself with the two doctoral tutors, with a professional middle manager who works in an Italian municipality who has had various experiences in different offices in relations with external subjects and with a top researcher Italian regarding the management of public administrations. Subsequently, the discussion was with an Assessor in a municipality, a top manager and a knowledge worker. The three municipal employees contacted currently work in three different sectors of the same municipality: top manager in accounting and social policy, the middle manager in urban planning and knowledge worker in public works. In total seven sectorial experts were considered to refine the scale, adapt it to an applicability at an international level and to the current context of local governments in Italy. This procedure follows the pilot test process of the questionnaire through the advice of expert reviewers as suggested in methodological literature (Dillman et al., 2014, pp. 242–243).

Indeed, Dillman et al. (2014) recommend that all the steps taken in the pilot phase be noted in order to maximize the quality of the questionnaire. Having followed this procedure, absent in previous studies, can allow replication of the study at the level of local governments in other countries, so that international comparison is favored.

**Step 2.** from the list of actors used in literature, I wrote my initial proposal of "interesting" external subjects in the Italian context. With the doctoral tutors of the Universities of Nice and Pisa, I have set some firm points with respect to some concepts debated in literature and in the formation of the scale of external actors.

a) Use of the plural ("members of the press") or use of the singular ("a member of the press")? I proposed the use of the plural for actors.

b) Items: Use of individuals / people (not organizations).

Both of these choices are consistent with the theoretical perspective of microfoundation and behavioral public administration.

**Step 3.** I presented a first proposal of scale and the table with all the scholars' choices to the middle manager that works in an Italian municipality. In order to make this step, the comparison was on a version I translated directly in a simple and direct way of the potential stakeholders involved. The reading of the questionnaire by the middle manager took place aloud and an oral explanation was requested on the various stakeholders indicated and taking note of the specific indications (Dillman et al., 2014). The middle manager's considerations translated into English are in the footnote<sup>147</sup>.

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<sup>147</sup> Notes of the complete conversation in Italian with the knowledge worker (English version): The term "local administrators" is understandable with respect to elected and non-elected political subjects who are part of the council and city council and this term is not confused with respect to managers and other employees. Knowledge worker says that as far as representatives of citizens and service users are concerned, he means different things. For the first field, "neighborhood delegations to ask for things in common (cutting the grass)", while for the second "school and kindergarten users". However he believes that they can be put in a single item of your choice. Given that for trade unions the question is more complex between being internal and external, it was asked how to make more precise reference to external subjects. The internal ones are part of the local RSU (Unitary Union Representations), instead Cisl, Cgil ... provincial and regional are external ". The term local business leader is difficult to understand and "local entrepreneurs" are better understood. Local entrepreneurs have companies, which also work for the Municipality as suppliers or for example ask for public land ". "Voluntary associations such as the Red Cross, mercy, fraternes, charade-are actors with whom we collaborate to make events". "Never seen regional, parliamentary and provincial councilors. Sometimes a Member of Parliament planning. Leave it to us and then they put you

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zero zero zero. " "Employees in other municipalities are calling for advice and advice on how they work for some services, for public land and for concessions authorizations". "Councilor of some other municipality (type on tourism, urban planning)". "Ministerial employees is more understandable than central government employees." "Understandable category representative". "Religious organizations separate from volunteering and there are fairly frequent relationships. Understandable to put representative of religious organizations. There are Catholics, Jehovah's Witnesses, Buddhists, Muslims ... in Italy the aspect of religious presence is relevant and representatives of these groups, like parish priests, are often asking for the intervention of the municipality for certain services ". "Political party in a sense included in local associations". "Press and newspapers do, if they want to make articles. Sometimes even radio if they make common blitz to find out what happened or didn't happen. Specify in brackets what the media are ".." Schools are always asking for an intervention from the municipality ... from the janitors to the principal to do work ... windows ... bathrooms ". He recommends inserting "employees in local state public schools (all types of schools still refer to the municipal technical office)". Private companies of public services, asa (water), enel, reclamation consortium, companies that have a partnership with the municipality provide public services and utilities ". Difficult to give a specific term. Recommend to use: employees of companies of other public services. "Freelancers" is the correct and understandable term in Italian and "with these several meetings because they are given assignments". "The other relationships we talked about are to be forgotten, because they aren't there."

Notes of the complete conversation in Italian with the knowledge worker (Italian version): Il termine "amministratori locali" è comprensibile rispetto ai soggetti politici eletti e non che fanno parte del consiglio e della giunta comunale e non si confonde questo termine rispetto a dirigenti ed altri impiegati. Knowledge worker afferma che per quanto riguarda rappresentanti di cittadini e utenti di servizi intende cose diverse. Per il primo campo vengono in mente "Delegazioni di quartiere per chiedere cose in comune (tagliare l'erba)", mentre per i secondi "utenti scuole e asilo". Comunque ritiene che possono essere messi in un unico item a scelta. Dato che per i sindacati la questione è più complessa tra essere interni ed esterni, è stato chiesto come fare più preciso riferimento a soggetti esterni. Quelli interni fanno parte della RSU (Rappresentazioni Sindacali Unitarie) locale, invece cisl, cgil ... provinciali e regionali sono esterni". Il termine local business leader (leader di aziende locali) è poco comprensibile e si capisce meglio "imprenditori locali". Imprenditori locali hanno le ditte, che lavorano anche per il Comune come fornitori o ad esempio chiedono il suolo pubbliche". "Le associazioni di volontariato come Croce Rossa, misericordia, Frates, sciarada-sono attori con cui si collabora per fare eventi". "Mai visti consigliere regionali, parlamentari e provinciali. Talvolta a urbanistica un parlamentare. Ce lo lasci e poi ti mettono zero zero zero". "Impiegati in altri comuni si chiamano per consulenze e consigli su come agiscono per alcuni servizi, per il suolo pubblico e autorizzazioni concessioni". "Assessore di qualche altro comune (tipo su turismo, urbanistica)". "Dipendenti ministeriali è più comprensibile di dipendenti del governo centrale". "Rappresentante categoria comprensibile". "Organizzazioni religiose separato da volontariato e ci sono rapporti abbastanza frequenti. Comprensibile mettere rappresentante di organizzazioni religiose. Ci sono cattolici, testimoni di Geova, Buddisti, Musulmani ... in Italia l'aspetto della presenza religiosa è rilevante e rappresentanti di questi gruppi, come i parroci, sono spesso a chiedere l'intervento del comune per determinati servizi". "Political

**Step 4.** The proposal that came out of the confrontation with the middle manager was presented to the top scholar from Bocconi University in Milan, which made its own new proposal compared to the previous one. The top scholar looked at the previous scale and the proposals of the other researchers in international contexts and we had a 40-minute telephone comparison, in which Professor gave his explanations on what the most interesting stakeholders could be and how to simplify the questionnaire. I have rewritten the updated version of the scale, compared to the contribution of the middle manager and the Professor of management of public administrations and the constraints placed by the comparison with the doctoral tutors. In particular, the Top scholar posed the problem of leaving only organizational subjects as external stakeholders in an institutional relations perspective. However, in the perspectives of behavioral public administration and microfoundation, the level of relations between individuals has been maintained.

**Step 5.** A document was prepared with the proposals on the first page in the literature and the space to give your opinion ("indications") and on the second page the table with the three proposals organized until that moment (Initial Proposal, Proposal after a confrontation with a municipal middle manager, Proposal after a confrontation with Italian top scholar in public management) and a space for making proposals. The table was reorganized after a comparison with Phd professors of Nice and Pisa University. At the same time, the document was presented to a CFO top manager of a municipality (not present in the sampling, because in the meantime it has changed workplace) and to a local administrator with a role of Assessor for Youth Policy in a municipal council (another local government not present in sampling). Unlike the previous versions, where the top scholar (and the Phd professors) had seen the initial version and that of the middle-manager, the documents for the consultation on the pilot scale were provided blind on the first page of the document sent. After a telephone explanation of the refinement process of the questionnaire, a list of stakeholders was sent by email to a top manager of a municipality and to the municipal councilor. On the first page in a first table it is indicated to give a consultation

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party in un certo senso incluso nelle associazioni locali". "Stampa e giornali sì, vengono se vogliono fare articoli. A volte anche radio se fanno blitz comune per sapere che cosa è successo o non è successo. Specificare tra parentesi che cosa sono i media" .. "Scuole sono sempre a chiedere un intervento del comune ... dai bidelli al preside per fare lavori ... finestre ... bagni". Consiglia di inserire "impiegati in scuole pubbliche locali statali (tutti i tipi di scuola fanno comunque riferimento all'ufficio tecnico comunale)". Aziende private di servizi pubbliche, asa (acqua), enel, consorzio di bonifica, aziende che hanno la compartecipazione con il comune forniscono servizi pubblici e utenze". Difficile date un termine specifico. Consiglia di usare: dipendenti di aziende di altri servizi pubblici. "Liberi professionisti" è il termine corretto e comprensibile in italiano e "con questi parecchi incontri perché si danno incarichi". "Le altre relazioni di cui abbiamo parlato sono da lasciar perdere, perché non ci sono".

with a cross on the most interesting actors in the study of the external relations of municipal employees according to the literature. On the second page, in a second table, the initial proposals were placed, for comparison with the first middle manager (with whom he is a colleague in the same Municipality albeit in different offices) and with the top scholar in public management in three separate columns. The CFO replied to the email after a week and "put a cross on the first table, considering the external actors with greater relationship with the municipal employees" (13 out of the 23 indicated in the literature) and on the second table he declared "perfectly in line with what is proposed ", compared to the table with the middle-manager and top scholar proposals already entered. Compared to the proposals previously made, according to the advice of the top manager, relations with politicians at national level and other municipalities are not interesting in terms of employee relations and introduces the relevance of relations with regional associations and with Anci (Associazione Nazionale Comuni Italiani – national association for Italian municipalities) that otherwise had not been taken into consideration. The local administrator who responded to the last pilot had the utility of seeing the scale from a different perspective, highlighting what are the interesting relationships held by politicians and not by employees, as specified by the same in the compilation of the document. The elected politician recommends adding the comparison with public educational institutions, because they have a specific value compared to the general term of other public organizations, because the offices where she worked have a daily relationship with them. In addition, she suggests including also the police, because contacts are frequent even for the most trivial issues (e.g. the organization of cultural events for children in open spaces). The only difference compared to what has been seen according to the other interlocutors is that "as regards the third sector in the Municipality where you are Councilor there are voluntary associations, but I have not noticed significant relationships with the offices. In any case, the city councilor thinks that it is an area in which the employees of a municipality in general often deal with ". At this point, in agreement with the doctoral tutors Professors Huron and Nicolini, who viewed the answers of the top manager and the assessor, the updated version of the external networking scale has been reworked.

**Step 6.** A knowledge worker from a municipality was contacted by phone. The purpose of the questionnaire was explained to this public servant and the complete list of external stakeholder contacts in the literature was read one by one and was asked: an opinion on the stakeholder indicated, suggestions on the comprehensibility in Italian of each subject. Public servants of the same organizational level are included in the sampling of the questionnaire, therefore, a preliminary direct comparison was necessary. The telephone interview lasted thirty minutes. The scale and direct translation from English to Italian were refined after this professional dialogue.



**Step 7.** The scale was proposed with a further telephone comparison to both the first public middle manager and the scholar for a final refinement. From this dialogue, no substantial differences emerge from the previous steps, so there is a tendency to conform the questionnaire in terms of stakeholders selected on the scale, comprehensibility, uniformity and relevance.

**Step 8.** In the end all the suggestions received were included in the table and after three comparisons with the doctoral tutor of Pisa a definitive version was brought in the first translation phase. In accordance with the professor of the University of Pisa, some choices were made, putting together the theoretical foundations and suggestions from expert professionals. Throughout the 8-step process, researchers maintained the highest possible level of objectivity and neutrality. In the last step, it was decided to reduce the number of items to 16 instead of 18. In particular, "Members of the Parliament or the Regional council" (Membri del Parlamento o del Consiglio Regionale) and "Representatives of the media" (press, online newspapers, TV, Radio) (Rappresentanti dei media (stampa, giornali online, TV, Radio)) have been eliminated in the final version of the instrument for different reasons came out of the previous steps. Principally, even if various authors used "member of the parliament", as external stakeholder, for the middle manager, the knowledge worker and the Italian top scholar it is an exaggeration to consider this group for the Italian context of municipalities, in which relations are rather with politicians at the regional level or in other neighboring municipalities. The problem is that in this way it can create a double-bareled statement. Furthermore, both the politician and the top manager advise against adding the item relating to relations with national and regional politicians because it is more relevant to the role of politicians. Given that there are inter-municipal relations and in many cases it is the region that has favored the extension of an organization of public services at an inter-organizational level, while being of greater interest to politicians, only one statement is maintained with respect to relations with politicians of other municipalities. Regarding elected politician, the terms "in this municipality" was added for clarity. The problem is that in literature many authors consider these subjects as "external" because they are democratic representatives of citizens. As for city councilors, this division can work, but for mayor and assessors who are an integral part of the organization this classification is more difficult and in fact there is a whole literature on administration and management. A researcher may wonder if it is right continue to consider these stakeholders as "external" or is it better to put in "internal" relations. In any case, it may be a forcing putting elected politicians among external or internal stakeholders. In this thesis, as in previous researches published in top journal of public administration and management, "elected politician in this municipality" are considered as external networking, otherwise, some statistical analyzes can be conducted considering this item of the scale or not (Andrews et al., 2011). The elected politicians are inserted in this municipality both because they represent the interest

of citizens and because they are at the top of external political forces. In Italy the term in use according to the legislation (and confirmed by the pilot test interlocutors) is local administrators (*"amministratori locali"*). Trade unions also have a similar potential problem (Andrews et al., 2011). They can be internal or external to the focal organization, because some public servants may be union representative within his organization for Italian law. So, to avoid problems and overlaps, *"external to the organization"* has been added in parentheses. A methodological choice for the scale also involved *"service users"*, *"service users representatives"* and *"representatives of a citizen's group"*. If an employee works with the public, service users see them every day and in the front office it could become the focus of the work itself, conversely the relationship with *"representatives"* could be more significant, but also very limited. For experts, the term service users is difficult to understand and suited to the context of municipalities, while the citizens' group is more relevant and coherent. Three authors used *"local business leaders"* and only a scholar used the item *"A leader of a medium or large private firm"*. These last terms are difficult to understand in Italian context and at the same time it is not generalizable internationally and for municipalities that have a different dimension. The former terms are maintained, but the Italian translation specifies that these are entrepreneurs. Concerning employees in other public services organizations, after 8-steps and various dialogue with experts, the decision fell on putting both stakeholders from the healthcare sector and the school sector at local level. These two items are more precise and leave less doubts and freedom of interpretation on the part of the respondents. Furthermore, they are the sectors in which the public has a predominant role even if only in the political direction of the services together with the local governments. Finally, as for *"central government official"*, to clarify the Italian context, according to an initial comparison analysis with professors and professionals, everyone made different proposals, so that the direction was to simplify and generalize, in particular to avoid different interpretations and double-barelled statements. After these final considerations, the list of actors was written in English and Italian and send to the first responsible of translation-back-translation procedure. The two subjects who participated in the translation back-translation compared the two versions that had been presented to the experts and then refined to arrive at a definitive one. Finally, the middle manager and the knowledge worker filled in the online questionnaire before the overall administration as an operating test. The external networking scale did not pose any comprehensibility problems in this final test phase of the questionnaire. Otherwise, the labelling had some problems in Google Form.

As for the labeling used, after careful analysis and face-to-face comparison with the professor and the two professionals who represent the target, the difficulty in displaying the scale from 1 to 7 on the Google Form website was assessed. Compared to the translation-back-translation, once a month was used rather than monthly and once a year rather than annually. The latter value, however, created confusion in a tester, therefore, on his initiative it was decided to set the value of “2” as one or more times a year. This clarifies the value for the respondent, keeping the same value of the scale substantially unchanged. After this refinement work, this is the definitive external networking scale adopted in the empirical research of this Phd thesis (in footnote the Italian version<sup>148</sup> that was effectively administered to public servants in municipalities). “Each informant was asked: how often do you communicate with a range of different actors about a municipality-related matter, and this include communication by phone, email, on Skype, in digital chats, in person, but exclude bulk email circulars.” (This sentence is revised from: Lewis et al. (2018) with some adds from Zyzak and Jacobsen (2019)). A seven-point scale was used, where 1 = never, 2 = yearly, 3 = monthly, 4 more than once a month, 5 = weekly, 6 = more than once a week, and 7 = daily. In this research we refer to this approach: the construct basically concerns the relationships that one has with other stakeholders and the frequency, then, through this data, it is possible to have an overall factor score index (Walker et al. (2007, 2010) do not make index, but only factor analysis for comparison; the other users, such as Andrews et al. (2011), which make a specific control, excluding from a second factorial analysis the actors that could have internal and external value at the same time, i.e., elected members and trade unions representatives and finds that this measure is however correlated by 0.96 with respect to the overall factor score, which includes all stakeholders and is used as a measure of re-score in the analysis; likewise, the factor-score measure is correlated at 0.9 with the factor weighted for the temporal frequency of relationships. Andrews et al. (2011) normalize the factor correlated with all items with mean 0 and standard deviation 1. Andrews and Beynon (2017) find three main factors Politicians, Policy-Makers and Partners. Jimenez et al. (2017) still use a networking index, i.e. a factor derived from the 11 items that in the analysis is normalized to zero and centered. Lewis et al. (2018) uses a percentage score derived from the overall score on 13 items compared to the maximum attainable. Jimenez (2017) find an index by factorial analysis as for previous authors. Hansen and Viladsen (2017) divide between weak ties, less frequent relationships, less than once a week, but at least once a month, with private stakeholders, and strong ties, frequent relationships with other public stakeholders).

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<sup>148</sup> “Utilizzando la seguente scala a 7 punti, si prega di indicare con quale frequenza comunica con una serie di soggetti su una questione relativa al comune; questo include le comunicazioni per telefono, per posta elettronica, tramite Skype e chat digitali, o di persona, ma esclude messaggi collettivi di posta elettronica.” 1 = mai, 2 = una o più volte all’anno, 3 = una volta al mese, 4 più di una volta al mese, 5 = una volta a settimana, 6 = più di una volta a settimana, e 7 = tutti i giorni.

Table 27: External networking scale in the questionnaire.

Ties	English Version	Italian Version
Strong (public) ties	1) Local Administrators in this municipality	1) Amministratori locali di questo comune
	2) Local Administrators in other municipalities	2) Amministratori locali di altri comuni
	3) Employees in other municipalities	3) Dipendenti di altri comuni
	4) Employees in regional government	4) Dipendenti del governo regionale
	5) Employees in local public schools	5) Dipendenti delle scuole pubbliche locali
	6) Employees in public healthcare	6) Dipendenti della sanità pubblica
	7) Representatives of law enforcement	7) Rappresentanti delle forze dell'ordine
	8) Other State employees	8) Altri dipendenti statali
Weak (private) ties	9) Representatives of a citizen's group	9) Rappresentanti di un gruppo di cittadini
	10) Trade union representatives (external to the organization)	10) Rappresentanti sindacali (esterni all'organizzazione)
	11) Local business leaders	11) Imprenditori leader locali
	12) Voluntary sector actors	12) Operatori di Enti del Terzo Settore
	13) Representatives from business associations	13) Rappresentanti di associazioni di categoria
	14) Freelance professionals	14) Liberi professionisti
	15) Representatives of religious organizations	15) Rappresentanti di organizzazioni religiose
	16) Employees in public utilities	16) Dipendenti di aziende erogatrici di servizi pubblici

Nohrstedt (2018, p. 6) measures the construct as a multiplication between a maximum of 9 collaborations with actors from other organizations and a maximum of 4 opportunities for interorganizational relationships, therefore, in a range between 0 and 36. Zyzak (2019) divides four groups of public and private actors according to the distance from the focal organization and identifies its operationalization with four indexes for external networking, considering the sum of two kinds of relations, general interaction and meeting (nearer to the concept of knowledge network). In summary, this thesis calculates social capital of external networking in four ways:

- **ExternalNetworking\_score** - factor score including all sixteen items (with control for the two items of local administrators and trade union representatives as realized in literature by Andrews et al. (2011)). In-depths factor analyses show that external networking has two sub-dimensions in relation with distance to focal actor. External networking can be considered a second-order latent construct with two sub-dimensions of **proximal\_en** and **distal\_en** stakeholders. This distinction improves the validity of this scale.

- **StrongTies\_en** - following the empirical work of Hansen and Viladsen (2017), strong ties in external networking are calculated as sum of public sector stakeholders with whom a given public servant has at least weekly contacts (5, 6 and 7 in the scale for items 1-8)

- **ModerateWeakTies\_en** - as Hansen and Viladsen (2017), weak-tie in external networking as the sum of private sector stakeholders with whom a given public servant has less than weekly,

but at least monthly contact (3 and 4 in the scale for items 9-16). This is a measure of moderate weak ties, so in the analyses it is possible a comparison with a weaker measure of ties (**weak-ties\_en**), including counts for label 2 (yearly).

- **ExternalNetworkingMEAN** - indicator as mean of each item in the scale.

#### **d) Social capital: internal knowledge network. Strong and weak ties.**

The internal social capital is measured following the methodology of social network analysis (Borgatti et al., 2013). Before the administration of the survey instrument, each municipality was asked to furnish the entire list of knowledge workers. Thus, this dimension is measured only for that organizations which provided the list. For others one, the questionnaire did not presented this questions. In municipality with the list, each respondent had the entire list of colleagues (knowledge workers), so that the used method is based on the roster list. A statement adapted from Tasselli (2015), Lewis et al. (2018), Zyzak & Jacobsen (2019) was written and after translated in Italian following the procedure of translation-back-translation “Focusing on all the colleagues within the municipality listed in alphabetical order below, please indicate with whom you communicate – specifically/ how frequently you communicate with each of the following employees, to whom you generally go for knowledge or information on work-related topics. This includes communication by phone, email, on Skype, in digital chats, in person, but exclude bulk email circulars. (The roster with the names of all employees working in the municipality is provided: you are included in the list of employees in your municipality: please, indicate 1 for your-self)”. (1 less than once a month, 2monthly, 3weekly, 4 more than once a week, 5 daily)<sup>149</sup>. A five-point full-labeled Likert scale was used to differentiate with the measurement of other constructs. The full-labelling is used to improve the comprehensibility in frequency scales. Following the preminent literature about the relevance of tie strength (e.g. M. Granovetter, 1973) and recent articles about the effect of weak and strong ties in the field of organizational behaviour (e.g. X.-H. F. Wang et al., 2015), the measures of internal social capital are composed in this way. As measured by Wang et al. (2015) for analyses about groups with different sizes, in order to compare the

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<sup>149</sup> Concentrandosi su tutti i colleghi all'interno del comune elencati di seguito in ordine alfabetico, si prega di indicare con quale frequenza comunica con ognuno dei seguenti dipendenti, in particolare a chi si rivolge per avere informazioni o conoscenze su argomenti relativi all'attività lavorativa. Questo include le comunicazioni per telefono, per posta elettronica, tramite Skype e chat digitali, o di persona, ma esclude messaggi collettivi di posta elettronica (Viene fornito l'elenco dei nomi di tutti i dipendenti che lavorano nel comune: lei è incluso nell'elenco dei dipendenti del suo comune: si prega di indicare 1 per se stesso/a). La ringrazio per collaborazione e la pazienza per questa importante domanda per le ricerche (I added: Thank you for your cooperation and patience for this important research question). The Italian labelling is: 1 - meno di una volta all'anno, 2 - mensilmente, 3 - settimanalmente, 4 - più di una volta a settimana, 5 - giornalmente

numbers of weak and strong ties across organizations of different sizes, number of internal weak and strong ties is divided by maximum possible within-group ties (i.e.,  $N-1$ , where  $N$  is respective municipality size). The ties are counted from the perception of the focal individual and without considering for example different perceptions of another respondent. In this way, the focus stay at the level of individual perception of focal respondent. It is a communication-knowledge network, so, the relation is bidirectional and there could be differences between two nodes (if a person  $i$  communicates with a colleague  $j$ , theoretically the person  $j$  should indicate also daily in the questionnaire). Otherwise, biases in the interpretation of the frequency scale or memory-based could take to different responses. Considering the presence of missing, the more clear procedure is to take answers counting directly from the individual perception of focal respondent. In this perspective, it is her/him perspective of number of weak and strong ties within the organization. This procedure is coherent with Wang et al.'s (2015) analyses. The internal social capital are calculated in two ways:

- **StrongTies(ISC)** is the sum of daily and more than one a weak relationships at work with colleagues (4 and 5 in the scale) divided by the  $N-1$ , where  $N$  is the organization size.
- **WeakTies(ISC)** is the sum of daily and more than one a weak relationships at work with colleagues (2 and 3 in the scale) divided by the  $N-1$ , where  $N$  is the organization size.

Some considerations. The values of 1 are excluded in the count because the frequency may include never. Moreover, the research present a huge number of missings about non-respondents in the network. Future researches should use validated methodological strategies of imputing social network data to “build” the whole network. The problem is above all to attribute the relationships between non-respondents. Only following strategies of imputing data also with efficient probabilistic methods as ERGM (e.g. Huisman, 2014), it is possible to measure other measures of individual social capital (as betweenness and cloneseness centrality) or organizational social capital. Further analysis can be done if you rebuild the network: to have individual centrality measures and organizational density, the entire network must first be reconstructed.

#### e) **Individual ambidexterity.**

The scale adopted for the measurement of individual ambidexterity was developed by Mom et al. (2007, 2009) for researches at managerial level. This scale was adapted for the use at individual level of employees in public services organizations, similar to recent reseaches (Caniëls et al., 2017; Caniëls & Veld, 2019). The scales of individual exploitation and individual exploration were asked in two separate sections of the web questionnaire to reduce the risk of spurious variance. In literature, it is open the dabate about the measurement of ambidexterity. For the majority of

authors, the prevalent way of measurement is multiplicative (Gibson & Birkinshaw, 2004; Jassmand et al., 2012; Kobarg et al., 2017). Otherwise, for other authors, a continuum is more similar to March's definition of exploitation and exploration and ambidexterity means to have a high level for both of them at the same time (e.g. Caniëls et al., 2017; He & Wong, 2004; Lubatkin et al., 2006; Rogan & Mors, 2014). This second operationalisation is coherent with a contextual vision of ambidexterity and it avoids the idea of trade-offs (Cao et al., 2009). Another way to measure ambidexterity is the difference between two scores, giving importance to a relative equal relevance to each dimension (e.g. He & Wong, 2004). More recently, the concept of individual ambidexterity is operationalized as a multidimensional construct which includes both exploitation and exploration (Mom et al., 2019; C. L. Wang & Rafiq, 2014). It is beyond the objective of this thesis to assess what is the most consistent or effective method of measurement. Since the debate does not have a single theoretical-practical conclusion, this research involves measuring the construct in the three out of four ways that have had the greatest impact in the literature. Different measurements are used in different strategies of analyses of the hypotheses.

Thus, following the literature on ambidexterity, this construct is measured in three ways:

- **AmbidexterityC** as a sum between exploitation and exploration (e.g. Caniëls et al., 2017; He & Wong, 2004)
- **AmbidexterityM** as the multiplication between exploitation and exploration (e.g. Kobarg et al., 2017; Mom et al., 2007, 2009)
- **AmbidexteritySO** as a second-order formative latent variable, with individual exploration and individual exploitation as its two indicators (Mom et al., 2019). For AmbidexterityC and AmbidexterityM, it was necessary to measure before exploitation and exploration. Exploration and exploitation were measured by taking the means of their respective seven items. These scores are multiplied or summed to find the ambidextrous score. This procedure has been already used in literature at individual level of analysis (Caniëls et al., 2017; Kobarg et al., 2017). The following tables report the scale of individual exploitation and exploration used in the questionnaire. This research adopted a 5-point Likert scale to create a differentiation with antecedents. Moreover, items are questioned to capture respondents' attention on individual items and to reduce the problem of common method variance (Höhne & Krebs, 2018). An introductory statement preceded the items of the Italian version of exploitation and exploration scales: "Statement: To what extent did you, last year, engage in work related activities that can be characterized as follows: (1 = strongly disagree - 5 = strongly agree)<sup>150</sup>

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<sup>150</sup> "In che misura si è impegnato/a, nell'ultimo anno, in attività lavorative che possono essere caratterizzate come segue." 1 in minima parte – 5 in larghissima misura.

Table 28 scale of individual exploitation in the questionnaire.

<b>English version</b> (adapted from: Mom et al., 2007, 2009)	<b>Italian version</b>
1) Activities of which a lot of experience has been accumulated by yourself?	1) In attività in cui ha maturato molta esperienza?
2) Activities which you carry out as if it were routine?	2) In attività che svolge come se fossero routine?
3) Activities which serve existing (internal) customers?	3) In attività a servizio dei colleghi?
4) Activities of which it is clear to you how to conduct them?	4) In attività che le è chiaro come svolgerle?
5) Activities primarily focused on achieving short-term goals?	5) In attività principalmente incentrate sul raggiungimento di obiettivi a breve termine?
6) Activities which you can properly conduct by using your present knowledge?	6) In attività che riesce a svolgere correttamente usando la sue attuali conoscenze?
7) Activities which clearly fit into existing company policy (Economic and managerial program of the municipality) <sup>151</sup> ?	7) In attività che chiaramente rientrano nel già esistente "Programma Economico e Gestionale" del Comune?

Table 29: scale of individual exploration in the questionnaire.

<b>English version</b> (adapted from: Mom et al., 2007, 2009)	<b>Italian version</b>
1) Searching for new possibilities with respect to services, activities or processes?	1) Nella ricerca di nuove opportunità concernenti i servizi, le attività o i processi?
2) Evaluating diverse options with respect to services, activities or processes?	2) Nella valutazione di diverse opzioni concernenti i servizi, le attività o i processi?
3) Focusing on strong renewal of services, activities or processes?	3) Nella focalizzazione su un forte rinnovamento di servizi, attività o processi?
4) Activities of which the associated yields or costs are currently unclear?	4) In attività delle quali i relativi rendimenti o i costi sono attualmente poco chiari?
5) Activities requiring quite some adaptability of you?	5) In attività che richiedono una certa adattabilità da parte sua?
6) Activities requiring you to learn new skills or knowledge?	6) In attività che richiedono di acquisire nuove competenze o conoscenze?
7) Activities that are not (yet) clearly existing company policy ("Economic and managerial program" of the municipality)?	7) In attività che non fanno ancora chiaramente parte del "Programma Economico e gestionale" comunale esistente?

<sup>151</sup> The terms "company policy" are adapted to the Italian municipalities that have a sort of business plan called "programma economico e gestionale" the is an official document for the organization. The translation adapted to the reality to a better comprehension of the item for public servants.



#### f) Innovative work behaviour.

This thesis follows the theoretical and empirical framework depicted by Scott and Bruce (1994). Innovative work behaviour in the workplace is conceived as complex behaviour consisting of a set of three different behavioural tasks: idea generation, idea promotion, and idea realization.” (Janssen, 2000, p. 288). Two procedures are used to calculate individual innovativeness of public servants in local governments. The first procedure concerns the measurement of innovative work behaviour as a perception construct with the 9-items Likert scale from Janssen (2000, 2001). The Italian version was provided from Ng and Lucianetti (2016). It is relevant to notice that this is a measure of behaviours at work and it is not a measure of individual beliefs about the personal innovative capacity (Ng & Lucianetti, 2016). It is multidimensional scale that measure three relevant dimensions in the organizational behaviour literature: idea generation (items: 1, 2, 3), idea promotion (items: 4, 5, 6), idea realization (items: 7, 8, 9). This scale is frequently used in literature as it emerged in Table 6 for the self-evaluation of perceived innovative behaviour at work. This first measurement is self-reported. In empirical literature, self-reports of innovative work behaviour are frequent. There is a second procedure in this thesis. There is attempt to measure innovativeness with different sources. Thus, the questionnaire asked to each respondent the innovativeness of all colleagues that are present in the roster list.

Table 30: scale of (perceived) innovative work behaviour in the questionnaire.

English version (Janssen, 2000, 2001)	Italian version (Ng & Lucianetti, 2016)
1) Creating new ideas for improvements.	Creo nuove idee per il miglioramento?
2) Searching out new working methods, techniques, or instruments	Cerco nuovi metodi di lavoro, tecniche o strumenti?
3) Generating original solutions for problems	Genero soluzioni originali a problemi?
4) Mobilizing support for innovative ideas	Mi mobilito per sostenere idee innovative?
5) Acquiring approval for innovative ideas	Acquisisco l'approvazione per idee innovative?
6) Making important organizational members enthusiastic for innovative ideas	Rendo entusiasti per le idee innovative membri importanti dell'organizzazione?
7) Transforming innovative ideas into useful applications	Trasformo idee innovative in applicazioni utili?
8) Introducing innovative ideas into the work environment in a systematic way	Introduco idee innovative nel mondo del lavoro in modo sistematico?
9) Evaluating the utility of innovative ideas	Valuto l'utilità di idee innovative?

For the self-reported measure, the statement at the beginning of the scale was: "Please answer using the proposed scale. How often:<sup>152</sup>". It is adopted a 5-point end-labelled Likert scale, ranging from 1 (never) to 5 (always) as the original version of the scale<sup>153</sup>.

In literature it is extremely rare to find peer-evaluation. To date, the unique article about innovative work behaviour which evaluated the network was Wang et al. (2015). This thesis tries to adopt an innovative way to evaluate the innovation through the evaluation of all colleagues within the organization. Each respondent could evaluate each colleague. In this sense, the result measures the way a focal person is perceived within the municipality. Data are collected from all knowledge workers and managers participated to the survey, so it was not feasible to ask questions about innovativeness only to superiors. This procedure is a first methodological step to have a have an evaluation of innovativeness from multiple point of views. Otherwise, this procedure takes to some inconveniences. Firstly, the response rate of the second part of the questionnaire has practically collapsed by about one hundred comments, of which only a few decided to answer the questionnaire without the question about innovation from colleagues. However, the response rate is good enough to have a peer-evaluation of individual innovativeness from 382 raters<sup>154</sup>. An introductory statement preceded the item and the roster list of colleagues:

"Innovation is a process involving both the generation and implementation of ideas. Given this definition of innovation indicate in the list of employees of your municipality who is innovative on a scale from 1 "Not at all" to 7 "Exceptionally"<sup>155</sup>. This statement is adapted from the introduction and the sixth item used by Scott and Bruce (1994). The data are considered if there are at least two ratings by two colleagues. There are 467 observations from 38 local governments.

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<sup>152</sup> The Italian version of the statement was: "Si prega cortesemente di rispondere utilizzando la scala proposta. Quanto spesso:". From 1 – "mai" to 5 – sempre.

<sup>153</sup> It is necessary to notice two differences with the version of Ng and Lucianetti (2016): the scale is end-labelled even if it is a frequency one, because in this way the possible common method variance with the measures of social capital are reduced; questions are at the first person. After a comparison with a professional working together in a pre-test of the questionnaire, after a careful evaluation it was decided to put the question as referring to oneself (as in the case of external networking) and to use likert scale only end-labeling, because there was a problem of comprehensibility. For end-labeling, the same as for Janssen were used. Maintained the 5-point scale to differentiate it from variables that are hypothetically antecedent.

<sup>154</sup> This number excludes raters which gave only a choice for all the colleagues. All data with the same rate for each member of the network are eliminated, because it cannot be considered an evaluation. One case was eliminated because he gave a different rate only for herself. In some cases for a municipality, rating of some raters are not complete for all the colleagues as they asked to have the freedom to answer or not to the question for each person. This number exclude when in the organization there is only an observation and so there is not a possible rating to a colleague because no other colleague answered.

<sup>155</sup> The Italian version of the statement: "L'innovazione è un processo che coinvolge contemporaneamente la generazione e l'implementazione di idee. Data questa definizione di innovazione indichi nella lista dei dipendenti del suo Comune chi è innovativo in una scala da 1 "Per nulla" a 7 "In misura eccezionale".

Thus, following the literature on innovative work behaviour and the two procedures, this construct is measured in three ways:

**InnovativeWorkBehaviour** – Unidimensional factor with 9 items<sup>156</sup>.

**InnovativeWorkBehaviourMEAN** – Mean of 9 items.

**Idea\_Generation** (sum of items 1, 2, 3), **Idea\_Promotion** (sum of items 4, 5, 6), **Idea\_Realization** (sum of items 7, 8, 9). Innovative work behaviour has an unidimensional factor structure in empirical literature and also in this case. Subdimension from literature are used in specific tests to analyses if direct effect on overall perceived innovativeness is confirmed at different phases of innovation process at work.

**RatedInnovativeness** – Mean of retes from colleagues in the organization

In conclusion, it is necessary to notice some limits in the use of the mean of raters. Firstly, in Journal of Management, Wu et al. (2014) use the mean only for preliminary statistical analyses, but in main analysis, they consider that evaluations are nested in raters so they use a multilevel perspective. Moreover, in this sense, data are nested in different organizations, so there are different multilevel perspectives to consider to implement deep analyses. Future researches may use a similar procedure deepening the analysis with the data collected through this survey.

Secondly, the indicator does not take in consideration the information included in communication-knowledge network. This work use all data without considering if there is a knowledge relation between two colleagues or not. Thirdly, the research uses only one item for the peer-evaluation of innovativeness. It is efficient and a direct question as used in other field of peer-evaluation (e.g. shared and emergent leadership of colleagues (Carson et al., 2007; Pearce et al., 2008). In sum, the means of rated innovativeness is a first efficient indicator and future researches will take in considerations limits to control results with a broader perspective, following indication of recent methodological improvements in organizational research (C.-H. Wu et al., 2014).

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<sup>156</sup> Theoretically, it can be considered as a latent variable with three sub-dimensions. Otherwise, in literature confirmatory factor analyses confirmed that all items can be correlated directly to innovative work behavior without passing for sub-dimension (e.g. X.-H. F. Wang et al., 2015).

### **g) Organizational dynamic capabilities.**

In the survey, questions are asked to managers and majors of local governments with respect to organizational ambidexterity and organizational innovation. No empirical analyses have been written on the answers to these questions which can be developed later. The collected data can be used in future research. The adaptation of the scales about organizational ambidexterity has seen the collaboration of ph.D supervisors, two professionals and two other professors of public management, to get to the version used in the survey. The scales adapted with the necessary precautions for relevance and comprehensibility in local governments can be used in future empirical researches in this field. For this reason, space is given in the thesis, starting from the qualitative comparison of the wording of the scales already adopted in literature and the concepts of March (1991). Then there are the tables relating to organizational innovation in municipalities, organizational exploration and exploitation. These scales were administered to the mayors of the participating municipalities, to the town-clerk (segretario generale), to the top (managers) and managers (D with organizational position). There are also 9 answers from knowledge-workers and 5 from middle-managers, for two reasons: it was not possible to obtain data from another organizational level, so in the last reminder it was also asked at these organizational levels (11 answers in 4 municipalities), for the municipalities for which the list of employees was absent, in the second part, the response to the questionnaire was free for all without a role constraint in the municipal organization (3 answers in 3 municipalities). even if initially a constraint on the answer to the organizational questions was foreseen, in the second wave of the survey the sample of possible respondents was enlarged. Change may be a limit, but, at the same time, it has made it possible to reach the share of information at the organizational level sufficient for future research that includes organizational ambidexterity and innovation. In conclusion, the adaptation of these scales is a useful added value to the work done in the construction of the thesis questionnaire.

### **h) Organizational ambidexterity in the public sector.**

This is a very hard concept to adapt in public sector because there are not in literature specific scales for it. After a change of email with Professor Umans (e.g. 2018), a scholar of ambidexterity in the public sector, suggested to use rewording strategies that are appreciated in the public sector. He used rewording strategies using He and Wong's scale (2004) and Jansen's scale (2006), considered the latter is not connected with Mach's ideas (1991) and is more about innovation ambidexterity. Which procedure can be used for local governments?

O'Really and Tushman (2013b) in a literature review published in "The Academy of Management Perspective" cited 6 articles as example of organizational exploitation and exploration scales:

Lavie et al. (2010); Bierly & Daly (2007); Jansen, Van den Bosch, & Volberda (2006); Lubatkin et al. (2006); Auh and Menguc (2005); Gibson & Birkinshaw (2004); He & Wong (2004). Jansen et al.'s scale about innovative orientation, Lavy et al.'s scale for inapplicability (unidimensional), Auh and Menguc (learning orientation more than dynamic capability) and Gupta and Birkinshaw's one are excluded because they focus on different concepts (alignment and adaptability) here the other scales. The other scales are considered. In the second column, there are considerations for inclusion and exclusion in the questionnaire for the three left scales. In the fourth column, a qualitative evaluation between March's terms and the item is added. Reading this, it's clear that Lubatkin's scale (2006) validated in Journal of Management (that is based on He and Wong (2004)) cover March's terms with 2 exceptions "flexibility" and "play". It is necessary to understand if Bierly and Daly's "radical new ideas" (2007) can be covered by technological ideas (two Lubatkin's items) or complementarity is better than redundancy (for the public sector). The problem is the necessity to reword and change some items to adapt to local governments.

Table 31: comparison between scales of organizational exploration used in the literature and March's concepts and applicability/utility in public administration.

ORGANIZATIONAL EXPLORATION			
Author/s	Sentences	Applicability in PA	March's terms?
Bierly & Daly, 2007	1. We frequently <b>experiment</b> with radical new ideas (or <b>ways of doing things</b> ).	Yes (rewording)	Experimentation, search, variation
Bierly & Daly, 2007	2. At our company, employees frequently come up with <b>creative ideas</b> that challenge conventional ideas.	Yes (rewording)	Search, discovery
Bierly & Daly, 2007	3. Compared to our principal competitors, a high percentage of our company sales come from new products launched within the past 3 years.	No	Risk taking, innovation
Bierly & Daly, 2007	4. We are usually one of the first companies in our industry to use new, breakthrough technologies.	No	Discovery, variation, experimentation
He & Wong, 2004	Introduce new generation of products	Yes (Rewording)	Variation
He & Wong, 2004	Extend product range	Yes (Rewording)	Variation, discovery
He & Wong, 2004	Open up new markets	Yes (Rewording)	Risk taking, discovery, variation
He & Wong, 2004	Enter new technology fields	Yes (Rewording)	Variation, discovery
Lubatkin et al. 2006	(a) looks for novel technological ideas by thinking "outside the box,"	? (Rewording)	Discovery, search, experimentation
Lubatkin et al. 2006	(b) bases its success on its ability to explore new technologies,	? (Rewording)	Discovery, variation, experimentation
Lubatkin et al. 2006	(c) creates products or services that are innovative to the firm,	Yes (Rewording)	innovation
Lubatkin et al. 2006	(d) looks for <b>creative ways</b> to satisfy its customers' needs,	Yes (Rewording)	Experimentation, search, variation
Lubatkin et al. 2006	(e) aggressively ventures into new market segments, and	?→ Change necessary	Risk taking, discovery, variation
Lubatkin et al. 2006	(f) actively targets new customer groups.	Yes (Rewording)	Risk taking, discovery, variation

Table 32: comparison between scales of organizational exploration used in the literature and March's concepts and applicability/utility in public administration.

ORGANIZATIONAL EXPLORATION			
Author/s	Sentences	Applicability/Utility	March's terms?
Bierly & Daly, 2007	1. At our company, a strong emphasis is placed on improving efficiency.	Yes	Efficiency
Bierly & Daly, 2007	2. Our company excels at refining existing technologies.	Yes	Refinement, Implementation, Execution
Bierly & Daly, 2007	3. We frequently adjust our procedures, rules, and policies to make things work better.	Yes (rewording)	Selection, control, choice
He & Wong, 2004	Improve existing product quality	Yes	Refinement
He & Wong, 2004	Improve production flexibility	Yes	***Possible interpretation: this item is more related to EXPLORATION
He & Wong, 2004	Reduce production cost	yes	Efficiency
He & Wong, 2004	Improve yield or reduce material consumption	yes	Efficiency
Lubatkin et al. 2006	(a) commits to improve quality and lower cost,	Yes, Change	Efficiency, Refinement
Lubatkin et al. 2006	(b) continuously improves the reliability of its products and services,	Yes (rewording)	Refinement, control, production
Lubatkin et al. 2006	(c) increases the levels of automation in its operations,	yes	Refinement, production, variance reduction
Lubatkin et al. 2006	(d) constantly surveys existing customers' satisfaction,	yes	Refinement, control
Lubatkin et al. 2006	(e) fine-tunes what it offers to keep its current customers satisfied	yes	Refinement, control, selection
Lubatkin et al. 2006	(f) penetrates more deeply into its existing customer base.	Yes, Change	Implementation, execution

Reading this Table, **Lubatkin's** scale (2006) validated in Journal of Management (that is based on He and Wong (2004)) cover March's terms with 2 exceptions "choice", "selection" and "certainty". The problem is the necessity to reword and change some items to adapt to local governments. The scale should be reworded in 1 sentence and two sentences have some troubles:

1) There isn't a unique sentence only for efficiency (two items in He and Wong and 1 item in Bierly and Daly); 2) It's a very difficult interpretation without adding the idea of quality: "penetrates more deeply into its existing customer base."; 3) Bierly and Daly's third sentence could cover "choice" and "selection" March terms.

**At the end of this qualitative analysis, a possible idea is:** to use Lubatkin's scale refining items (a), exclude (f) and add 1 item from Bierly and Daly's scale, in particular the third.

Table 33: scale of organizational ambidexterity in the questionnaire.

English version (adapted from: Bierly & Daly, 2007; He & Wong, 2004; Lubatkin et al., 2006)	Italian version
Please evaluate the orientation of your municipality during the past three years using the proposed scale (consider the period in which you played a role in the organization, if it is less). It is a municipality that:	Si prega cortesemente di valutare l'orientamento del suo comune negli ultimi tre anni utilizzando la scala proposta (si consideri il periodo in cui ha avuto un ruolo nell'organizzazione, in caso sia inferiore). È un comune che:
Exploration	
(a) looks for novel technological ideas by thinking "outside the box"	cerca nuove idee tecnologiche pensando "fuori dagli schemi".
(b) bases its success on its ability to explore new technologies	basa il suo successo sulla capacità di esplorare nuove tecnologie.
(c) creates public services that are innovative to	crea servizi pubblici che sono innovativi
(d) looks for creative ways to satisfy its customers' needs	cerca modi creativi per soddisfare le esigenze dei suoi utenti
(e) "Extends "public services" range to meet to new customers' needs	amplia la gamma di "servizi pubblici" per soddisfare le esigenze dei nuovi utenti
(f) actively targets new customer groups.	si rivolge attivamente a nuovi gruppi di utenti.
(g) Frequently experiments with radical new ideas (or ways of doing things)	sperimenta frequentemente con nuove idee radicali (o modi di fare le cose).
Exploitation	
(a) commits to improve efficiency,	si impegna a migliorare l'efficienza.
(b) continuously improves the reliability of its "public" services,	migliora costantemente l'affidabilità dei suoi servizi "pubblici".
(c) increases the levels of automation in its operations,	incrementa i livelli di automazione delle sue operazioni.
(d) constantly surveys existing customers' satisfaction,	monitora costantemente la soddisfazione degli utenti esistenti.
(e) fine-tunes what it offers to keep its current customers satisfied,	mette a punto ciò che offre per soddisfare gli utenti esistenti.
(f) improves the quality of existing public services for the needs of existing customer base.	migliora la qualità dei servizi pubblici esistenti per le esigenze della base di clienti esistente.
(g) frequently adjusts its procedures to make things work better.	aggiusta frequentemente le sue procedure per fare sì che le cose funzionino meglio.

## i) Organizational innovation in the public sector.

For organizational innovation, the scale adopted and translated into Italian is the reduced scale of 8 items by Korac et al. (2017), which incorporates the items developed by Walker et. to the. (2006) (the original scale was made up of 20 items). The scale provides a judgment on various types of innovation: organizational (items 1 and 2), services (items 3,4 and 5), marketization (items 6 and 7), ancillary (item 8). The scale was developed and validated mainly on the basis of New Public Management concepts (Korac et al., 2017; R. M. Walker, 2006).

Table 34: scale of organizational innovation in municipalities in the questionnaire.

English version (Korac et al., 2017; R. M. Walker, 2006)	Italian version
Instructions: Using the following 5-point scale, please indicate how much you agree with each statement about the major part of the approach of your municipality within the last three years (consider the period in which you played a role in the organization, if it is less).	Utilizzando la seguente scala a 5 punti, si prega di indicare quanto è d'accordo con ciascuna affermazione concernente la maggior parte dell'approccio adottato dal suo comune negli ultimi 3 anni (si consideri il periodo in cui ha avuto un ruolo nell'organizzazione, in caso sia inferiore).
1) New budgeting processes (e.g. global budgets)	1) Nuovi processi di bilancio (ad es. bilanci globali)
2) New management processes (e.g. personnel management)	2) Nuovi processi gestionali (ad es. gestione del personale)
3) Providing existing services to new users	3) La fornitura di servizi esistenti a utenti nuovi
4) Providing new services to existing users	4) La fornitura di servizi nuovi a utenti esistenti
5) Providing new services to new users	5) La fornitura di servizi nuovi a utenti nuovi
6) Contracting out/outsourcing to the private sector	6) L'appalto/esternalizzazione al settore privato
7) Externalization of services to other public sector entities/organizations	7) L'esternalizzazione di servizi ad altri enti/organizzazioni del settore pubblico
8) Developing local/regional strategic partnerships	8) Lo sviluppo di partenariati strategici a livello locale/regionale



#### j) **Control variables at individual level: human capital and demography.**

A number of control variables are included in the questionnaire (first part) and in the analyses to better isolate the effects of the hypotheses. First, a dummy variable with *gender* (1 = Female and 0 = Male) and *age* (measured in years) of the respondents are included as demographic control variable. Secondly, a measure of human capital is included: educational level (*education*) (higher scores reflect higher educational levels, in particular 0 = high school degree, 1 = bachelor degree, 2 = master degree, 3 = Ph.D; a dummy *variable university* is also created to distinguish between 0 = not university and 1 = yes university). Thirdly, three dimensions of organizational demography are added: tenure in organization (measured in years)<sup>157</sup>, tenure in position (measure in year), actual rank in the organization (0 = knowledge worker, 1 = middle-manager, 2 = manager, 3 = top-manager; 4 = town-clerk<sup>158</sup>; a dummy variable is also created to distinguish between 0 = not manager and 1 = yes managerial role). In conclusion, two other variables are included. In particular, the variable *time-lagged* indicates if the respondent answered to the questionnaire with the first part separated temporally from the second part (1 = time-lagged and 0 = questionnaire in only one solution). Following the literature review about methodology, the suggestions concern the use of time-lagged data to reduce common method variance. This control variable is include to isolate the effect of the method used. Another control variable is the temporal-distance (*TemporalDistance*) between the first and the second part of the questionnaire. This is a continuous variable with the value 0 for respondents without time-lagged and a positive time-lag in term of days for respondents which complete the questionnaire in two waves<sup>159</sup>. At the organizational level, there is the data about the size, which can be used in future multilevel studies.

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<sup>157</sup> In particular, empirical evidence shows that organizational tenure moderates the relationship between personality traits and innovative work behaviour (Woods et al., 2018).

<sup>158</sup> In Italian law, town-clerk has not only a role of control in the organization and she or he can have also responsibilities as top-management. This research distinguish top-managers to town-clerk for the different procedure they are hired in Italian local governments.

<sup>159</sup> Three respondents answered firstly for the second part and after for the first part. Even if the emails were send in order, maybe, they read before the second part and only after they answered to the first one. These data are considered time-lagged and the temporal distance is evaluated in opposite terms.

## D. STATISTICAL RESULTS

### a) Introduction to statistical analyses and results.

The data analyses are carried out at various levels and with different methodologies. The first exercise was to evaluate the measurement of the constructs through descriptive and factorial analyses of the scales used in the questionnaire. This research contains measurement scales that have already been adopted in the literature. The scales are adopted in a specific context (municipalities) in a language other than the original construction language of the scale (Italian public servants in local government rather than students at the university level, in most cases, or employees, often in the private sector). External networking and ambidexterity scales, in particular, measure a specific perceived behaviour that has a different conceptual and practical basis between the public and private sector and also within the primary sector. For these reasons, the thesis envisages various phases that start from purifying the measures up to assess reliability, validity and develop standards for their use in comparable contexts, according to what is Churchill's paradigm (1979) about the development and validation of new scales in marketing. Exploratory and factor analyses permit to assess construct discriminate validity of the measures in this research. This first evaluation is developed on all dimensions except internal social capital and rated innovativeness which are considered as observed variables. The second step was to evaluate the hypotheses according to a basics OLS presented as hierarchical linear regression, which allows the variables of interest to be shown in the following order to understand when they manage to explain the variance of the dependent variables. This is a way to compare different linear models. In particular, the use of linear regression after confirmatory factor analysis for direct and moderating effects is performed in methodological literature (R. M. Baron & Kenny, 1986) and empirical paper about innovativeness (e.g. Bysted, 2013; Bysted & Hansen, 2015). Data from survey are nested in local governments and the requirement of independence of the observations must be relaxed. In the analyses, it is applied the option *cluster* (clustered sandwich variance estimator) for organization identity number (*orgid*). This procedure postulates that observations are independent across groups, but not automatically within organizations. Moreover, a third methodology, Hierarchical Linear Modelling (HLM) is adopted to check the validity of previous results and this method is coherent with the multilevel nature of data (Hox, 2010; Raudenbush & Bryk, 2002; StataCorp LLC, 2019). HLM is used also in recent studies about innovative work behaviour (Audenaert et al., 2019; Rehman et al., 2019). In this research it is possible to use Hierarchical Linear Modelling with a collection of data from 46 (with internal social capital)-50 organizations

(without internal social capital), when the methodological suggestion is to have at least 50 organizations (Hox, 2010; Maas & Hox, 2004, 2005), as seen in the phase of building of the questionnaire. The fourth analytical step concerns the use of Structural Equation Modelling (SEM), which is a different research philosophy than the previous ones. SEM is a different methodology than OLS and it is used here as valid test of robustness. SEM is performed first with the same measures adopted in the previous analyses by evaluating the values in terms of both average and factors as if they were observed variables. After this introduction, the analysis is complicated by measuring the variables through the models developed from the literature and from exploratory and confirmatory factorial analyses including the measurement of latent variable through observed dimensions. A similar comparison between results from hierarchical regression and path analyses is conducted by He and Wong (2004). Finally, multilevel elements are introduced. The reference sampling is 551 in 50 organizations. Otherwise, measurements are tested also for a sample of 484 which is used when internal social capital measures and rated-innovativeness (with 10 missing) are considered in the regressions. For each construct, before starting with factor analyses, there were basic analyses about inter-items correlations (Spearman non-parametric test and Pearson's correlation), average inter-items correlation<sup>160</sup> and covariances, average item-total correlation and Cronbach's Alpha, which represent a relevant indicator as scale reliability coefficient. Relevant results are reported here. Various tables show for each construct considered those which are the most relevant indicators used in the literature when scales are used to measure constructs according to the methodological indications with respect to the level of acceptability recognized at the level of scientific research.

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<sup>160</sup> It is necessary to consider that "the average inter-item correlation is simply the average or mean of all these correlations." (Trochim et al., 2015, p. 124).

# 1. EXPLORATORY FACTOR ANALYSES, CONFIRMATORY FACTOR ANALYSES, RELIABILITY, VALIDITY.

## a) Introduction to factor analyses.

Table 35: Acceptable thresholds for fit-indices after CFA.

Indicator	Thresholds
Chi-squared (Chi/df)	Non-significant (good data-model fit) (Chi/df<3 good; Chi/df<3 sometimes permissible)
RMSEA	<0.08 (<0.10 marginal fit)
CFI (Comparative Fit Index)	>0.90 (>0.87 marginal fit)
TLI	>0.90 (>0.87 marginal fit)
SRMR	<0.08 (<0.10 marginal fit)
CD	>0.70
Raykov's composite reliability (RRC)	>0.60
AVE – Discriminant validity	AVE of each of the latent constructs > the highest squared correlation with any other latent variable ("Yes"/"Not")
Convergent validity	AVE > 0.5 and/or RRC>0.6

The scale used in this study are validated in other countries, with a different language and with a different sample of individuals. The first step is a factor evaluation, mixing analyses from correlations of all the items in the questionnaire, exploratory and confirmatory factor analyses, comparing models from the literature with possible different structure and measurements, which may emerge from data. Exploratory factor analyses (EFA) is conducted in different ways taking as a reference how the variables were originally developed and validated.

The statistical procedures for carrying out and selecting the exploratory factor analyses are specified for each construct. These statistical evaluations are preliminary to the decisions about the instruments that are used in following analyses to test and answer to research hypotheses. Moreover, even if it is not a main problem in organizational behaviour research and this analysis is not reported in published articles, an assessment shows that mindfulness, political skill, external networking, innovative work behaviour, individual ambidexterity (calculated as means of items) lack of multivariate normality (tests: Mardia mSkewness, Mardia mKurtosis, Henze-Zirkler,

Doornik-Hansen). Non-normality of data could reduce the fit-indices of structural models improperly (e.g. D. A. Walker & Smith, 2017). In confirmatory factor analysis (CFA), the procedure of Satorra-Bentler (2001) are used to evaluate the structural model dealing with the issue of non-normality for all the variables (e.g. Dagnall et al., 2018). The procedure of bootstrapping with adjusted-fix indices is used also as validity checking for the different arrangement of political skill inventory after factor analyses (D. A. Walker & Smith, 2017). As regards the configuration and evaluation of confirmatory factor analyses, some clarifications are examined. Confirmatory analysis is conducted with maximum likelihood (ML) estimation and Satorra-Bentler (2001) estimator for non-normal data. Some indices indicated in literature are reported for the goodness of fit (e.g. Dagnall et al., 2018; Gatignon, 2010; Hooper et al., 2008; Kline, 2010): chi-square test<sup>161</sup>, Root-Mean-Square Error of Approximation (RMSEA)<sup>162</sup>, Comparative Fit Index (CFI)<sup>163</sup>, Standardized Root-Mean-Square Residual (SRMR) evaluated model fit. Evaluating a range of indices confirms an assessment of model fit that is robust. The table reports the threshold for the indices that are evaluated, following cut-offs present in the academic debate about statistical methodology (e.g. L. Hu & Bentler, 1999). These indicators are generally necessary and sufficient in the context of scientific publications concerning research in organizational behavior and public management. Generally, when all fitness indexes respect the thresholds, construct validity and the measurement model are supported (Ahmad et al., 2016; Awang, 2015). For meticulous analysis, two validity indicators of construct measurements are added, in order to make the results obtained even more explicit. In fact, validity is a complex issue not only for methodology but also for epistemology and ontology (Borsboom et al., 2004). Validity is the capability of an instrument to measure what it expected to be measured for a focal construct (Ahmad et al., 2016; Awang, 2015). The two indicators used are Average Variance Extracted and composite reliability. The AVE measures the average variation that a latent construct can explicate in the observed variables that are associated to it theoretically (Farrell, 2010). Discriminant validity is the capability of a latent variable to explain more variance in the observed variables related with it than a measurement error s or other constructs in the same conceptual framework (Fornell & Larcker, 1981). The AVE allows to highlight discriminant validity of latent variables, so the level of AVE of each latent construct should be higher than the highest squared correlation with other latent variables. If this principle

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<sup>161</sup> Generally, non-significant value of Chi-square concerns good data-model fit The problem of Chi-squared is that it sensitive to sample size (Byrne, 1994). It may fail to reject an inappropriate model when the sample size is small and reject a good model in the case of large sample sizes. Chi-squared and degree of freedom are reported in this thesis, but, nowadays, the value of this index is less relevant than in the past.

<sup>162</sup> A value of RMSEA between 0.08 and 0.10 provides a marginal fit of the model, while a value below 0.08 shows a good fit and a value that is less than 0.03 represent an excellent fit. (Hooper et al., 2008).

<sup>163</sup> A value more than 0.90 is good and a value more than 0.95 is excellent, a value under the cut-off 0.90 is mediocre (Hooper et al., 2008; L. Hu & Bentler, 1999).

is respected, discriminant validity is supported for focal latent construct (Farrell, 2010). The calculation of this statistic has not been possible with respect to second-order latent variables with the statistical tools available and its value is usually recognized in methodology as useful for first-order latent variables. Composite reliability is measured with Raykov's reliability coefficient (RRC) after confirmatory factor analysis. In the last few years, this composite reliability measure is considered to be more accurate than Cronbach's alpha, as it avoids taking the tau-equivalence of measures. Finally, these two indicators together with the significant correlation of each item of the measurement model allow to evaluate convergent validity. The AVE threshold greater than 0.5 is considered to be the most significant in assessing convergent validity (Ahmad et al., 2016). However, lower values of this threshold are considered acceptable if the composite reliability index is greater than the value 0.6 (Fornell & Larcker, 1981). Considering that these measures have greater limits especially for second-order latent variables and that the management and organizational behavior literature does not usually report these analyses, in this research the convergent validity is considered respected if at least one of the two indicators is greater than the threshold, calculating the AVE for first order latent dimensions.

#### **b) Mindfulness.**

Brown and Ryan MAAS (2003) is considered a unidimensional scale in the literature. A preliminary exploratory factor analysis with iterated principal factor method shows that the first factor has a strong explicative strength (eigenvalue 4.96558 and proportion of variance explained 64.19%). The second factor has an eigenvalue under the threshold of 0.10 (0.60785). Exploratory factor analysis shows that unidimensional version of mindfulness is congruent with previous results. Confirmatory factor analysis displays that unidimensional model presents very good fits. Even without Satorra-Bentler estimator for non-normal data fit-indices are better than cut-off thresholds. This model was compared with a model which presents two sub-dimensional factors found after oblique oblimin rotation (including items 4, 5, 6). This second model does not achieve convergence, coherently with MAAS that does not measure mindfulness as a second-order latent variable with sub-dimensions. Data are tested also for the reduced sample and results do not change. Mindfulness has been kept as unidimensional scale in following analyses. Internal consistency assessed with Cronbach's Alpha is more than 0.85 and this is over the cut-off value of 0.70. All items are positively correlated with the total score considering Spearman ( $\rho$ ) and Pearson correlations ( $PV < 0.001$ ). There are not significant differences using larger sample or reduced for quality of the measurement of mindfulness. CFA shows that there are not problems with discriminant validity of the construct. The AVE is under the threshold of 0.50, but RRC is higher

than 0.60. The AVE value is due to items that have a different factor loading value. After a sensitivity analysis, to reach a value of the AVE greater than 0.50 it is necessary to drop up to 9 items that have a factor loading lower than 0.55. Fit-indices and coefficients of reliability changes marginally with 15-items MAAS and the reduced version. The trade-off between loss of information and increase in the AVE indicator pushes to keep more items for greater constructability. Results do not change, confirming the possibility of affirming the convergence validity of the 15-items MAAS, according to the criteria adopted in this research (Fornell & Larcker, 1981).

Table 36: exploratory factor analysis of mindfulness (retaining unidimensional factor).

Variable	Factor1	Uniqueness	Factor analysis/correlation				
			Method: iterated principal factors		Number of obs = 551		
			Rotation: (unrotated)		Retained factors = 14		
					Number of params = 105		
			Factor	Eigenvalue	Difference	Proportion	Cumulative
mindfulness1	0.3797	0.8558	Factor1	4.96558	4.35774	0.6419	0.6419
mindfulness2	0.5252	0.7241	Factor2	0.60785	0.13500	0.0786	0.7205
mindfulness3	0.6123	0.6251	Factor3	0.47285	0.09670	0.0611	0.7817
mindfulness4	0.4587	0.7896	Factor4	0.37615	0.04901	0.0486	0.8303
mindfulness5	0.4167	0.8263	Factor5	0.32714	0.05732	0.0423	0.8726
mindfulness6	0.3947	0.8442	Factor6	0.26982	0.06206	0.0349	0.9075
mindfulness7	0.7866	0.3812	Factor7	0.20775	0.05582	0.0269	0.9343
mindfulness8	0.7363	0.4578	Factor8	0.15193	0.01177	0.0196	0.9540
mindfulness9	0.5488	0.6989	Factor9	0.14016	0.03449	0.0181	0.9721
mindfulness10	0.7190	0.4830	Factor10	0.10567	0.04665	0.0137	0.9857
mindfulness11	0.4268	0.8178	Factor11	0.05902	0.02355	0.0076	0.9934
mindfulness12	0.5998	0.6403	Factor12	0.03547	0.02269	0.0046	0.9980
mindfulness13	0.4367	0.8093	Factor13	0.01278	0.00943	0.0017	0.9996
mindfulness14	0.7441	0.4463	Factor14	0.00335	0.00365	0.0004	1.0000
mindfulness15	0.4306	0.8145	Factor15	-0.00030	.	-0.0000	1.0000

LR test: independent vs. saturated:  $\chi^2(105) = 2419.22$  Prob> $\chi^2 = 0.0000$

Table 37: indices for acceptability, reliability and validity of mindfulness scale (Italian-MAAS).

Fit-Indices (Satorra-Bentler)	Unidimensional version (original version) - 551	Unidimensional version (original version) - 484
Chi-squared $\chi^2$ (df)	162.467 (90)	208.066 (90)
RMSEA	0.038	0.036
CFI	0.954	0.961
TLI	0.947	0.955
SRMR	0.043	0.044
CD	0.898	0.901
<b>Cronbach's Alpha</b>	0.8539	0.8542
Average inter-items covariance	0.7045986	0.7200023
Average inter-items correlation (standardized items)	0.2995	0.2995
Average inter-total correlation (rho)	0.581873333	0.579713333
AVE – Discriminant validity	0.318 - Yes	0.32 - Yes
Composite reliability (RRC)	0.853	0.854

### c) Political skill.

Political skill is build as a second-order latent construct based on a measurement model with four latent constructs (Ferris et al., 2005). Before starting with an exploratory analysis, the political skill conformation was tested according to the development of the scale in literature, to understand if the structure was confirmed or not in the Italian sample. Confirmatory factor analysis with four factor as original version in literature show that the model has acceptable fit-indices for RMSEA and SRMR, but CFI and TLI have only extremely marginal values in comparison with best practices suggested in methodology. Confirmatory factor analysis without item 1 does not give a unique and univocal direction of fit-indices of the model. Some indicators are worse with the drop of item 1. Otherwise, item 1 is not correlate significantly with the latent variable of networking ability. From these assessments, it emerges the need to study in more depth the structure of the mixing data the respect of the theory in the construction of the scale already validated in literature with what are the actual characteristics of the data collected in Italian local governments. A step back to exploratory analysis was necessary. Two procedures are developed to improve the fitting of the model. The first procedure was to evaluate the EFA of results in this research with results in development of the scale (Ferris et al., 2005) and CFA for each original sub-dimension. The second procedure was the analysis of modification indices for the entire model and for each sub-dimension. Methodologically, modification indices give advice about possible remedies to discrepancies between the proposed model and estimations. Exploratory factor analysis with iterated principal axis method and oblique oblimin factor rotation was conducted to compare the factor structure with the results of Ferris et al. (2005) in the phase of scale development with results from data in this research.

Table 38: outputs of Stata for factor analyses of political skill inventory.

Factor analysis/correlation					Number of obs =	551	Factor analysis/correlation					Number of obs =	551
Method: iterated principal factors					Retained factors =	17	Method: iterated principal factors					Retained factors =	4
Rotation: (unrotated)					Number of params =	153	Rotation: oblique oblimin (Kaiser off)					Number of params =	66

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	6.20405	4.72132	0.5243	0.5243
Factor2	1.48273	0.38124	0.1253	0.6495
Factor3	1.10148	0.31677	0.0931	0.7426
Factor4	0.78472	0.30573	0.0663	0.8089
Factor5	0.47898	0.03790	0.0405	0.8494
Factor6	0.44108	0.11732	0.0373	0.8867
Factor7	0.32377	0.07188	0.0274	0.9140
Factor8	0.25189	0.01603	0.0213	0.9353
Factor9	0.23586	0.07197	0.0199	0.9553
Factor10	0.16388	0.03697	0.0138	0.9691
Factor11	0.12691	0.04006	0.0107	0.9798
Factor12	0.08685	0.03050	0.0073	0.9872
Factor13	0.05635	0.00972	0.0048	0.9919
Factor14	0.04663	0.01996	0.0039	0.9959
Factor15	0.02667	0.01361	0.0023	0.9981
Factor16	0.01306	0.00362	0.0011	0.9992
Factor17	0.00943	0.00976	0.0008	1.0000
Factor18	-0.00032	.	-0.0000	1.0000

Factor	Variance	Proportion	Rotated factors are correlated
Factor1	4.81505	0.5330	
Factor2	3.70450	0.4101	
Factor3	3.12135	0.3455	
Factor4	2.95250	0.3268	

LR test: independent vs. saturated:  $\chi^2(153) = 4117.48$  Prob> $\chi^2 = 0.0000$

Rotated factor loadings (pattern matrix) and unique variances

Variable	Factor1	Factor2	Factor3	Factor4	Uniqueness
political~11					0.9612
political~12		0.7489			0.4338
political~13		0.7379			0.3282
political~14		0.7579			0.3694
political~15		0.2838	0.6158		0.3718
political~16	0.6216				0.4137
political~17			0.6502		0.4389
political~18		0.2539		0.3260	0.7344
political~9	0.3249	0.3990			0.5953
political~10	0.7286				0.4622
political~11	0.6273				0.5491
political~12	0.6284				0.5474
political~13				0.8242	0.3561
political~14				0.7165	0.3810
political~15	0.7366				0.4819
political~16	0.4948		0.2652		0.4419
political~17	0.6630		0.2300		0.4281
political~18			0.4076	0.2972	0.6723

(blanks represent abs(loading)<.2)

LR test: independent vs. saturated:  $\chi^2(153) = 4117.48$  Prob> $\chi^2 = 0.0000$



Four factors are retained before the oblique rotation as in literature and together they arrive to explain cumulatively 80,89% of the variance. The eigenvalues of the first three factors are (before the rotation) more than 1, that is recognised as cut-off number in the methodological literature by Kaiser-Huttnam criterion. Only the factor 4 is less than 1 but the proportion of variance explained of 6.63% can be considered considerable. After this passage, four factor are retained and the rotation takes to results comparable with factor structure in the literature with some potential differences. The loading are represented only if they are 0.20 to identify correlation. In this study, EFA shows that factor 1 is networking ability (the same for the original scale), factor 2 represents interpersonal influence, factor 3 is social astuteness with the same items as the original scale and, finally, factor 4 represents the sub-dimension of apparent sincerity. It is possible to retain the same structure composed by four sub-dimensions as in the original Ferris's scale with some differences to evaluate with confirmatory factor analyses. In particular, the loading of items 16 and 17 are higher for factor 1 even if they can be used for factor 3 of apparent sincerity as in the validated scale. About main differences, item 1 is not correlated with the four factors at the loading level of 0.20 and the loading with factor 1 is 0.1603 and it presents a high level of uniqueness. Item12 is correlated with factor 1 and it is has not correlations with the factor of interpersonal influence as in the original scale (retesting without the limit of 0.20, the result does not change). To confirm these results, similar analyses are conducted for the sampling of 484 individuals (with complete answers for internal social capital and rated-innovativeness (that presents only 10 missing)). The exploratory factor analysis does not present significant differences. Considering the sampling of 484, it is possible to test the factor structure with second version of item1 with a different translation and administered in the second wave of the survey and in the complete one. The tests with the second version of the first item do not change results. Confirmatory factor analysis with one factor (unidimensional) confirms that the presence of four sub-dimensions improves the statistics of fir-indices. In the use of modification indices, the rules were to start with higher level to minor possible modifications and to stop when the level of fit-indices become adequate for the factor structure of political skill. Firstly, as EFA, modification indices suggest to change the position of item 12 from interpersonal influence factor to networking ability. This change improves the model-fit largely. This change can arrive from a different interpretation of the same item in Italian language and culture or from a common method bias, because item 12 is immediately after item 9, 10 and 11 that concerns networking ability. In this research, item 12 is used as observed dimension of networking ability unlike the original scale where it belongs to

interpersonal influence. This choice is coherent with exploratory and confirmatory factor analyses. Moreover, the replacement of item12 improve the AVE of interpersonal influence, confirming that in this way the validity of the construct is enhanced. Future researches should pay attention to the order of questions in survey with political skill. Perhaps, a random order of question or items that in original version are in the same factor are more efficient than following the order provided in seminal article (the random order could cut common method biases, the grouped order is coherent with the literature). Modification indices indicate the possibility to add path between items as observed variables and latent variables and covariances. Methodology recognizes that it is appropriate to covary error terms that are part of the same factor. It is unacceptable to add covariance of error terms with observed or latent variables and with other error terms of other observed variables that are not part of the same factor. Modification indices are tested to include 13 covariances between error terms in the same factor (6 for social astuteness, 5 for networking ability and 2 for apparent sincerity). These covariances improve the model fit up to acceptable and good indices. The model with 13 covariances was tested with bootstrapping, clustered for each organization and 1000 replications<sup>164</sup>. 3 covariances results not significant and 1 covariance has a  $PV > 0.07$ . These covariances are cut and 9 covariances between error terms are kept (3 for social astuteness, 5 for networking ability and 1 for apparent sincerity). The statistics of fit-indices with Satorra-Bentler estimator are acceptable testing with 9 significant covariances between error terms. Bootstrapping with 1000<sup>165</sup> replications shows the same results than the estimations without Satorra-Bentler ( $\chi^2$  523.559, RMSEA 0.085, CFI 0.896, TLI 0.866, SRMR 0.063, CD 0.905) and it confirms the acceptable validity of this scale<sup>166</sup>. In particular, adding covariances between measurement error is like a “latent variable” useful to reduce possible problems of redundancy between items and it is an amount of variance non-relevant to construct but shared between to observed variables (for example wording, format, etc). Otherwise, it is necessary to paying attention to write conclusions, because adding path in the model could take harder to make conclusions about possible causality. In conclusion, the Cronbach’s Alpha is over the threshold of 0.70 for the complete scale of PSI and also for each sub-dimension (social astuteness = 0.7876; interpersonal influence = 0.8320; networking ability = 0.8332; apparent sincerity = 0.7084).

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<sup>164</sup> 881 effective replications completed, because in 119 replications one or more parameters could not be estimated by the statistical software.

<sup>165</sup> The final test with bootstrapping was conducted effectively by Stata 16 on 928 replication, because the replication was not possible on 28 parameters.

<sup>166</sup> Only CFI is about the acceptable range. Satorra-Bentler takes it over the threshold.

These results of exploratory and confirmatory factor analysis can be already interesting. In particular, even with a different language, different culture, different sampling, the structure of political skill with 4 sub-dimensions is still valid. Fit-indices statistics show that unidimensional model is substantially inefficient. Differences can be explained. For political skill, some in-depth analyses were conducted to decide if it was a better solution to do not maintain 18 items as the original version of the scale<sup>167</sup> and use 17 items.

Table 39: indices of acceptability, reliability and validity of political skill scale (Italian-PSI).

<b>Fit-Indices (Satorra-Bentler)</b>	Unidimensional version (with all items)	Exact 4-factors model as original version	Original 4-factors model without item 1	<b>Italian Political Skill Inventory version (551)</b>	Italian Political Skill Inventory version (484)
Items	18	18	17	<b>17</b>	17
Chi-squared $\chi^2$ (df)	1290.348 (136)	709.225 (131)	666.432 (115)	<b>398.762 (106)</b>	356.440 (106)
RMSEA	0.124	0.090	0.093	<b>0.071</b>	0.070
CFI	0.638	0.819	0.822	<b>0.905</b>	0.902
TLI	0.593	0.788	0.789	<b>0.879</b>	0.874

<sup>167</sup> The first Italian version of the first item presented some “descriptive” troubles in the first part of the survey, so in the second part of the questionnaire and for respondents to the general surveys (for municipalities that gave the list of employees) a second Italian version of the first item was administered. After analysing descriptive data, I asked to Prof. Ferris some suggestions about keeping the first item (he is the creator of Political Skill Inventory). My email: “Dear Professor Ferris, how are you? I’m sending to you some basics results about the scale that I used. Before I need to say that I have more or less time-lagged 500 data for a specific group of municipalities, 72 data from employees in the same municipalities but they are not time-lagged, 69 data from another group of municipality (not time-lagged). Firstly, political skill was asked in the first temporal part of the questionnaire. The following analyses are about all the dataset for the first part (636 answers), but this sample number can be useful only for an outcome variable, because for the other two outcomes the size is smaller. In the thesis I would like to write about the three outcome variables, but the size it is different. Do you think that I need to evaluate the scale for the entire sample or only for the number of observation I’m analysing? As you can see, the first Item is negatively correlated (Spearman) with other items (2, 3, 4, 5, 9, 14). Otherwise, the first item is positively correlated with the total and the Cronbach’s alpha does not change a lot with or without the first item. ALPHA with 1item 0,88 and without 0,89 AVERAGE INTER ITEMS CORRELATION with 1item 0,73 and without 0,80. Do you think I can keep this item? Do you think that these analyses are sufficient to decide? If I have to cut the item, I have two possible solutions: 1) The subdimension loses the item and I have an item less that the original scale in the analyses. 2) In the second wave of the questionnaire, I asked another Italian version of the item and, as you can see, it is positively correlated with other items of the scale. One word in Italian changed everything and we used translation-back-translation! In that case, this item can have some problems: a) It is in the second part of the questionnaire (because first analyses of the first part showed some problems) and this could be a problem if I’ll use only time-lagged data. b) I’ll lose 69 observations from the second group of municipalities. You can see in the image that the second version of the first item is correlated positively with other items and with total. At the same time, the increase in alpha (0,89) and average-inter-item (0,77) correlation is limited. Thank you for your suggestions...”. His answer: “The results sound good. I would probably just use the sample size on which you have complete data. Good luck with your research. GRF”. I replied: “Okay thank you, so, with these results I can keep the first version of the first item with the entire sample size. In the trade off, I agree with you to keep the entire scale even if some inter item correlations with the first one are not perfect. ok?”. The professor finished the conversation by email with: “yes”. After this interesting dialogue by email, other analyses were conducted and, at the end, the decision arrived to change the position of item12 and drop item 1 in following analyses.

SRMR	0.141	0.092	0.096	<b>0.063</b>	0.066
CD	0.899	0.915	0.915	<b>0.905</b>	0.902
<b>Cronbach's Alpha</b>	0.8848	0.8848	0.8961	<b>0.8961</b>	0.8727
Average inter-items covariance	0.7399692	0.7399692	0.8244902	<b>0.8244902</b>	0.6849727
Average inter-items correlation (standardized items)	0.3033	0.3033	0.3387	<b>0.3387</b>	0.3181
Average inter-total correlation (Rho)	0.5727	0.5727	0.5940	<b>0.5940</b>	0.5786
AVE – Discriminant validity <sup>168</sup>	0.323 - Yes	NA = 0.393; II = 0.482; SA = 0.423; AS = 0.488	-	NA = 0.434; II = 0.624; SA = 0.494; AS = 0.488	NA = 0.404 ; II = 0.614 ; SA = 0.479 ; AS = 0.486
Composite reliability (RRC)	0.000	0.858	0.877	<b>0.868</b>	0.853

In summary, item 1 of PSI in the sub-dimension networking ability presents some problems:

- Compared to all other items it has a lower significance than other items due to inter-total correlation and a significant negative Spearman correlation ( $PV < 0.10$ ) with items 2, 3, 4.
- Exploratory factor analysis showed that it is not correlated with 4 principal factors.
- Confirmatory factor analysis confirmed that it is not correlated with the sub-dimension of networking ability. This can be an issue for the validity of the measurement.
- The presence of item 1 is not univocal in the evaluation of fit-indices (an improvement in the RMSEA value corresponds to a worsening of the CFI and TLI levels).
- Cronbach's Alpha is slightly lower with the presence of item 1.
- The Ave of the latent variable of networking ability is lower with the presence of item1.
- Raykov's composite reliability is lower with the presence of item 1. The first version of the translated item 1 has a more negative connotation for the tem "effort". The second version of the item do not present this problem, but it is still not significant in the factor structure of political skill in the Italian version even if without four factor retention presents a loading more than 0,3. In future research of political skill in Italian language, it is suggested to use the second version of the item 1. It was asked in the second part of the questionnaire or alone in a different part in the complete one, so, perhaps, the distance from other items of the scale reduced the relevance of this new version in this study). Otherwise, it is possible to elaborate a different translations starting from the problems of translation explained with these results. Moreover, a similar attention to the connotation of the term "effort" could done in any other language, even detecting this issue during

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<sup>168</sup> Values of the AVE for networking ability (NA), interpersonal influence (II), social astuteness (SA) and apparent sincerity (AS) are calculated only for original version and new version to make a comparison.

the translation-back-translation phase. In summary, Confirmatory factor analysis after exploratory factor analysis indicate that item1 is not correlated with factor of networking ability. The different considerations made take to drop the item1 in the version of PSI used here. Differences in the assessment of item 1 and item 12 are limits of this research in comparison with the original literature. Otherwise, data in the specific case of local governments in Italy confirm the presence of four sub-scales. As regards discriminant validity, the test was carried out on the one-dimensional version of and, as expected, this this assessment does not present discriminant problems. Hence, it is possible to assume that models in which political skill is calculated with second-order latent dimension also confirm discriminant validity. Convergent validity is not present in the one-dimensional model in which all the items converge on a single latent variable, but is acceptable in other cases. For the 4 sub-dimensions model the AVE is about 0.4 on average for each sub-dimensions and composite reliability is over the threshold. The Italian version without item1 and with the displacement of item12 improve the AVE for sub-dimensions and on average is about 0.5 that is the threshold. Composite reliability (RRC) is over the threshold, so the constraints for compliance with convergent validity are respected. Removing the items with a lower although significant factor loading, the result does not tend to change, still confirming the validity of the measurement model of this construct. To conclude, it is necessary to observe that the model is more performing in the complete sample than in the reduced one, presumably for the complexity of the measurement structure, which can be more efficient in a larger sample than in the case of lesser numbers. This new measurement model adapted to the Italian case will have to be validated in further studies, to understand if the structure depends on this sample and, therefore, on the language and culture of the country, in particular for the linguistic difficulties for the term "effort". On the other hand, the measurement model adopted here is more efficient than the original one, in particular as regards the displacement and the related interpretation of the item12. The analyses carried out in this section were limited to calculating the AVE for sub-dimensions of political skill. Future research can deepen the study of this indicator also for second-order dimension. However, the validity of the measurement is confirmed by the fitness indices, by the correlation between the items with item 1 which has been excluded, by an average value of the AVE which is about 0.5 and by reliability, alpha and CRR values, greater than the respective acceptability thresholds. The limitation of the drop of item 1 is the reduction of the possibility of comparing the results with the studies that used the full scale of 18 items. Confirmatory factor analysis is also implemented with the bootstrapping method, which is a further test for validit

#### **d) External networking.**

The majority of studies about external networking use a single factor (e.g. Andrews et al., 2011) or a single observed measure based on the sum of frequencies (Lewis et al., 2018). Starting from theory and empirical researches, the scale adopted an equilibrated number of items for public and private stakeholders. In particular, Hansen and Villadsen (2017) calculate weak ties within private actors and strong ties within the group of public actors. For the use of external networking, different measurement analyses and strategies have been used: 1) one-dimensional factor, which emerges from EFA as unique with a threshold higher than 1 and from use in the literature. However, the fit-indices of this structure are lower than the after CFA threshold values. In summary, the use of a one-dimensional version can be acceptable when the mean is used in OLS regressions. For SEM analyses, other structural measurements are necessary for the validity of the construct. 2) Two-dimensional structure according to the division in public (strong ties)-private (weak ties) as emerges from the literature (M. B. Hansen & Villadsen, 2017). The estimations of EFA and CFA do not provide sufficient statistical approval for this aprioristic division based on social network theory. For a comparison with the literature, some analyses are carried out in this way, albeit with the awareness that the structural measurement model is structured differently. In particular, the authors count the strong and weak external ties according to the frequency of the relationship. Estimates with these divisions are possible because they are connected with the theoretical framework of social network analysis and public administration. 3) A two-dimensional structure as it emerged from EFA, which divides between proximal and distal stakeholders. CFA corroborates the assumptions of these divisions. In fact, fit-indices are correct. 4) Finally, an attempt to mix the theoretical net division between public and private subjects with the distance factor. The theoretical foundations of Network Governance, therefore, can lead to consider an external networking measurement model, in which it is a second-order latent variable based on three sub-dimensions. EFA and CFA are tested in this perspective. The preliminary exploratory factor analysis is useful to understand the structure of external networking. The use of EFA is even more desirable than the other constructs as the scale is an update of the existing ones for specific cases of network governance according to the administrative level.

Table 40: Stata output of EFA for external networking and retention of factor 1.

Factor analysis/correlation		Number of obs =	551	Factor analysis/correlation		Number of obs =	551
Method: iterated principal factors		Retained factors =	15	Method: iterated principal factors		Retained factors =	1
Rotation: (unrotated)		Number of params =	120	Rotation: oblique oblimin (Kaiser off)		Number of params =	16

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	5.66925	4.72207	0.5965	0.5965
Factor2	0.94717	0.27616	0.0997	0.6961
Factor3	0.67102	0.07280	0.0706	0.7667
Factor4	0.59822	0.12303	0.0629	0.8297
Factor5	0.47519	0.19875	0.0500	0.8796
Factor6	0.27644	0.05798	0.0291	0.9087
Factor7	0.21846	0.03033	0.0230	0.9317
Factor8	0.18813	0.04771	0.0198	0.9515
Factor9	0.14042	0.03570	0.0148	0.9663
Factor10	0.10473	0.00404	0.0110	0.9773
Factor11	0.10068	0.03234	0.0106	0.9879
Factor12	0.06835	0.04159	0.0072	0.9951
Factor13	0.02676	0.01406	0.0028	0.9979
Factor14	0.01270	0.00514	0.0013	0.9992
Factor15	0.00756	0.00789	0.0008	1.0000
Factor16	-0.00033	.	-0.0000	1.0000

LR test: independent vs. saturated:  $\chi^2(120) = 3101.37$  Prob> $\chi^2 = 0.0000$

Factor	Variance	Proportion	Rotated factors are correlated
Factor1	5.42834	1.0000	

LR test: independent vs. saturated:  $\chi^2(120) = 3101.37$  Prob> $\chi^2 = 0.0000$

Rotated factor loadings (pattern matrix) and unique variances

Variable	Factor1	Uniqueness
externaln-g1	0.4924	0.7576
externaln-g2	0.5424	0.7058
externaln-g3	0.4407	0.8058
externaln-g4	0.5551	0.6918
externaln-g5	0.5388	0.7097
externaln-g6	0.5770	0.6671
externaln-g7	0.5477	0.7000
externaln-g8	0.5857	0.6570
externaln-g9	0.7117	0.4935
externaln-g10	0.3941	0.8447
externaln-g11	0.6516	0.5754
externaln-g12	0.7483	0.4401
externaln-g13	0.7029	0.5060
externaln-g14	0.4028	0.8377
externaln-g15	0.5998	0.6403
externaln-g16	0.6788	0.5392

(blanks represent  $\text{abs}(\text{loading}) < .25$ )

EFA and CFA could endorse the existence of a single factor or it is possible to analyse data with two factors, confirming the string separation public-private as Hansen and Villadsen (2017) or mixing the concept, that could be explained theoretically. An exploratory factor analysis with iterated principal axis method shows that factor 1 has an eigenvalue 5.66925, factor 2 of 0.94717 and factor 3 of 0.67102. These last values are around the threshold of 1, that is recognised in the literature, however further analysis is significant. A secondary exploratory factor analysis was conducted with the method of principal components. The first component has an eigenvalue of 6.0501, the second one has a level of 1.3371 and the third one 1.0936. The first two factors together explain cumulatively 0.4617 of the variance. Three factor arrive to explain cumulatively 0.53 of the variance. Exploratory factor analysis was conducted with iterated principal factor and oblique oblimin. Table 40 and report the output of results and both unidimensional and bi-dimensional version of external networking are possible solutions. In the output after rotation in Table 41, n unidimensional version, only item 10 has a factor loading below 0.40. Retaining two factors and with an oblique oblimin rotation, two factors emerge: the first one includes items 1, 2, 3 and 4; the second one include the items from 5 to 16. The latter group represents distal stakeholders, including public and private nodes in external social capital, while the former represent proximal ties. Andrews et al. (2011) include item 1 (“Local administrators in this municipality”) in the analyses suggesting to control for it because local administrators could be interpreted for their internal and external status. An overall factor with and without item 1 is calculated. The second one was correlated with the original one at 0.9974 (for Andrews et al. (2011) the correlation was 0.90; here it is excluded the analyses about item10 because it was explicated that the group of trade unions concerns individuals outside the focal organization).

Table 41: factor analyses (iterated principal factors and oblique oblimin rotation) and principal component analysis (orthogonal varimax rotation) for external networking. 2 factors retained.

Factor analysis/correlation		Number of obs =	551	Principal components/correlation		Number of obs =	551
Method: iterated principal factors		Retained factors =	2			Number of comp. =	2
Rotation: oblique oblimin (Kaiser off)		Number of params =	31			Trace =	16
				Rotation: orthogonal varimax (Kaiser on)		Rho =	0.4617

Factor	Variance	Proportion	Rotated factors are correlated
Factor1	5.24169	0.8347	
Factor2	3.32397	0.5293	

Component	Variance	Difference	Proportion	Cumulative
Comp1	4.71511	2.04303	0.2947	0.2947
Comp2	2.67208	.	0.1670	0.4617

LR test: independent vs. saturated:  $\chi^2(120) = 3101.37$  Prob> $\chi^2 = 0.0000$

Rotated factor loadings (pattern matrix) and unique variances

Variable	Factor1	Factor2	Uniqueness
externaln~g1		0.4917	0.6580
externaln~g2		0.8472	0.3203
externaln~g3		0.4701	0.7123
externaln~g4		0.4472	0.6224
externaln~g5	0.4388		0.7128
externaln~g6	0.5098		0.6690
externaln~7	0.5701		0.6833
externaln~8	0.4478		0.6588
externaln~9	0.6378		0.4944
externaln~10	0.2826		0.8437
externaln~11	0.7416		0.5186
externaln~12	0.7530		0.4170
externaln~13	0.7303		0.4763
externaln~14	0.5173		0.7935
externaln~15	0.5983		0.6282
externaln~16	0.7069		0.5115

(blanks represent  $\text{abs}(\text{loading}) < .25$ )

Rotated components (blanks are  $\text{abs}(\text{loading}) < .18$ )

Variable	Comp1	Comp2	Unexplained
externaln~g1		0.4307	.5296
externaln~g2		0.5500	.3247
externaln~g3		0.4627	.5273
externaln~g4		0.3644	.5423
externaln~g5	0.1809		.6655
externaln~g6	0.2253		.6212
externaln~7	0.2924		.6167
externaln~8	0.1911		.6087
externaln~9	0.2837		.4578
externaln~10			.8002
externaln~11	0.3869		.4264
externaln~12	0.3337		.3942
externaln~13	0.3424		.4335
externaln~14	0.3451	-0.2115	.6289
externaln~15	0.2859		.5755
externaln~16	0.3374		.4602

The results of factor analyses do not change without the item 1, so it is possible to use the 16-items entire scale that measure all the relevant external stakeholders that are representative for external networking in this sample (Andrews et al., 2011). A series of confirmatory factor analyses makes possible to analyse the structure of the data using already set causality hypotheses. The model with a single latent factor with all the observed variables connected to it is compared to the model hypothesized starting from the literature, that is, with two latent variables concerning public and private actors and finally a model in which the two latent variables correspond to the two potential factors found in the exploratory analysis. The Table 42 at the end of this section shows the fit-indices for the structural models taken into consideration.

The model with two sub-dimensions from literature (private versus public stakeholder) is excluded because the convergence is not achieved. The bi-dimensional model that include two latent factors presents better fit-indices than a unique overall factor in the sample of 551 and in the reduced sample of 484. In relation to the EFA results, CFA takes into consideration all 16 items on the scale and all are positively correlated with the relative latent dimensions, including item 10 which had a lower factor loading than the others. Significant values corroborate the measurement validity of the construct. These results are different from what it was expected from the differences between public and private stakeholders, otherwise these differences are coherent with a theoretical framework of proximal and distal distance of external stakeholders (e.g. Zyzak & Jacobsen, 2019). In particular, items 1, 2, 3 and 4 represent a relevant group of public stakeholder in which relations are theoretically more frequent and, moreover, these stakeholders are



similar. In fact, politicians for the focal municipality and for another one are stakeholders representative for citizens. The value expressed in the item is a univocal perception of relations with different local administrators that have different role in the contact with public servants. Public servants in other municipalities and at regional level are also proximal stakeholder and during a year of work it is very likely to expect employees from different municipalities to work together and those at the regional level are also involved. The hierarchy of local authorities in fact provides for a strong collaboration between the municipal and regional level as sometimes the local autonomy of choices is limited by the intervention of the regional level (as for urban planning). Likewise, for certain strategic sectors such as health and tourism, the region has divided the territory into territorial areas made up of several municipalities that must collaborate for territorial marketing. Proximal stakeholder, therefore, tends to be imposed by legislation. This kind of relationship can be guided by law and bureaucratic formal aspects rather than by structured links on the most recent needs that have emerged with the network governance paradigm. They are not among the employees of an organization, but their role can sometimes be interpreted as borderline, as it can be for certain local political administrators or employees of other municipalities that participate in common projects. At the same time, distal actors represent stakeholders that do not have contacts that are sometimes obliged from the law.

They are private or public actors and relations with them may depend from responsibility of the office or tasks at work. In summary, factor analyses of external networking may show different types (e.g. Andrews & Beynon, 2017; Zyzak & Jacobsen, 2019). After exploratory and confirmatory factor analyses, it emerges that external networking can be measured as a second-order latent variable with two dimensions of proximal and distal relations. All items are positively correlated between them and with the total score considering Spearman ( $\rho$ ) and Pearson correlations ( $PV < 0.001$ )<sup>169</sup>. The analysis with three sub-dimensions becomes more complex from the point of view of the factorial structure. Both factor analysis and principal components analysis was conducted to make a comparison of results. Retaining three factors, EFA shows that the three sub-dimensional structure is possible. The figure below shows all the factor loading values greater than 0.14 to simplify the reading. The analysis shows that distal private ties (items 9-16) continue to count as external networking factor 1. As expected from previous analyses, factor 3 represents proximal external ties including items 1-4. Only item 3 competes with factor 2. Considering the choices made for the previous analysis of two latent variables, item 3 is still included in the proximal public ties. Future researches may validate the presence of employees of other municipalities precisely among proximal public ties.

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<sup>169</sup> Only between item10 and item4 the  $\rho$  has a  $PV < 0.005$  and between item 13 and item3 and item4 the  $PV < 0.05$ ).

Figure 49: EFA for external networking with the retention of three principal factors.

Factor analysis/correlation                      Number of obs = 551  
Method: iterated principal factors              Retained factors = 3  
Rotation: oblique oblimin (Kaiser off)        Number of params = 45

Factor	Variance	Proportion	Rotated factors are correlated
Factor1	4.77955	0.6933	
Factor2	3.51846	0.5104	
Factor3	2.92681	0.4246	

LR test: independent vs. saturated:  $\chi^2(120) = 3101.37$  Prob> $\chi^2 = 0.0000$

Rotated factor loadings (pattern matrix) and unique variances

Variable	Factor1	Factor2	Factor3	Uniqueness
externaln~g1	0.2190		0.5097	0.6274
externaln~g2			0.8164	0.3057
externaln~g3	-0.2007	0.4922	0.3895	0.5843
externaln~g4	0.2360		0.4322	0.6212
externaln~g5	0.3526	0.1405	0.1501	0.7147
externaln~g6	0.1539	0.5654		0.5554
externaln~g7	0.2189	0.5552		0.5694
externaln~g8	0.1720	0.4432		0.6065
externaln~g9	0.6306		0.1724	0.4622
externaln~g10	0.2097		0.1505	0.8446
externaln~g11	0.7876			0.4444
externaln~g12	0.6654			0.4099
externaln~g13	0.7139			0.4407
externaln~g14	0.4458			0.7918
externaln~g15	0.3604	0.3515		0.6111
externaln~g16	0.5319	0.2410		0.5172

(blanks represent  $\text{abs}(\text{loading}) < .14$ )

The most obvious problem concerns the factor loading of item 5 (employees of local public schools). In respect of theory and wording, item5 is kept in the group of public distal ties. Future research will compare the statistical evaluation carried out in this research. Confirmatory factor analysis, however, highlights how these choices are applicable with respect to the measurement results of the model. In particular, all items are correlated significantly and positively with each of the three latent variables, including items 3, 5 and 10. Fitness indices, the determination coefficient and composite reliability (CRR) and the AVE on average are better than unidimensional and bi-dimensional models. In summary, using three sub-dimensions, the measurement model appears more efficient theoretically and statistically. The division into three groups of stakeholders is coherent with the current environment of Network Governance, in which at a closer level there are the public actors with whom there are the most frequent relationships, then there are the public actors with less frequent relationships and, finally, the private actors. However, the use of the structure with two sub-dimensions and with three sub-dimensions are both valid, as the average level of the AVE is still around 0.4 and, above all, composite reliability is higher than the acceptability threshold value. Cronbach's alpha and fit-indices confirm that this version of external networking built from an enhancement of the scales used in the literature and a pre-test with a working group of civil servants is valid for the context of Italian municipalities. Theoretically, this new version of the scale can be used also in other public organizations that have a local base of Network Governance. The results show that the measurement model is valid, so much so that modification indices are not necessary and the fit-indices surpass the acceptability threshold values even without Satorra-Bentler. Composite reliability is higher than the threshold value even in cases where latent variables have the AVE level of less than 0.5 (Fornell & Larcker, 1981).

Table 42: indices for the acceptability, reliability and validity of external networking scale.

<b>Fit-Indices (Satorra-Bent- ler)</b>	Unidimensio- nal version (551)	Unidimensio- nal version (484)	Two sub-di- mensions version (551)	Two sub-di- mensions version (484)	Three sub-di- mensions (551)	Three sub-di- mensions (484)
Chi-squared $\chi^2$ (df)	476.237 (104)	439.140 (104)	432.278 (102)	398.093 (102)	317.644 (101)	298.921 (101)
RMSEA	0.081	0.082	0.066	0.067	0.062	0.064
CFI	0.846	0.849	0.900	0.901	0.910	0.911
TLI	0.822	0.826	0.882	0.884	0.894	0.894
SRMR	0.064	0.064	0.053	0.054	0.050	0.052
CD	0.902	0.905	0.839	0.889	0.946	0.967
<b>Cronbach's Alpha</b>	0.8802	0.8845	0.8802	0.8845	0.8802	0.8845
Average inter- items cova- riance	0.7171853	0.7383493	0.7171853	0.7383493	0.7171853	0.7383493
Average inter- items correla- tion (standar- dized items)	0.3280	0.3381	0.3280	0.3381	0.3280	0.3381
Average inter- total correla- tion (Rho)	0.6117	0.6171	0.6117	0.6171	0.6117	0.6117
AVE – Discriminant validity	0.338 - Yes	0.348 - Yes	Proximal = 0.414; distal = 0.375	Proximal = 0.414; distal = 0.386	Proximal Pu- blic = 0.414; Distal Public = 0.365; Distal Private = 0.417	Proximal Pu- blic = 0.417; Distal Public = 0.38; Distal Private = 0.423
Composite re- liability (RRC)	0.882	0.887	0.833	0.795	0.888	0.889

Assuming a more stringent measurement of convergent validity, as was done for mindfulness, items that have a lower factor loading should be drop to reach the minimum level. The problems of these considerations are manifold: to reach a more stringent value of convergent validity a lot of information is lost, the drop of the items depends on choosing a one-dimensional structure, with 2 or 3 sub-dimensions. For example, in the unidimensional measurement model, the factor loading is lower ( $<0.45$ ) for items 3, 10, 14. With the presence of two latent sub-dimensions, the factor loading lower ( $<0.45$ ) is for item 4 for proximal ties and items 5, 8 and 10 for distal ties. In addition, the situation of three sub-dimensions shall be considered. In this version of the measurement of external networking, item10 and item15 could be drop from the measurement of the sub-dimensions of distal private ties. Their factor loading is below 0.4. This value could be potentially under the threshold of acceptability for convergent validity in the strictest version. Factor 2 concerns public distal ties and could include items 6, 7, 8. Finally, the latent variable of proximal private ties could be represented by items 1, 2, 4. Items 3 and 5 could be drop for their possible correlations with different factor. These results are difficult to reconcile statistically and depend on the previous choice of measurement mode. Dropping only items 3 and 10, CRR drops to 0.879 and the AVE rises to 0.363 in the case of the unidimensional model. Even estimating the effects

of the dropping of the results on the single sub-dimensions, the result changes marginally in positive. In sumamry, the preference is to keep all the items available because the trade-off between loss of information and placing a more stringent limit on validity hangs on the side of keeping all the items, as composite reliability (RRC) is above the threshold value and allows to accept the reliability and validity of the measurement model. Thus, in all estimations 16 items are kept. To conclude, external networking is a ladder built from new on the basis of the stakeholders adopted in the literature and a direct comparison with civil servants before the administration of the questionnaire. The measurement can have different directions depending on the needs of the researcher and the research questions to which he tries to answer. Reliability and validity values are acceptable for the use of this scale to measure external relations in local governments. A more stringent measure of convergent validity with the AVE involves a significant loss of information. In conclusion, there a trade-off in the choice of the measurement model. The unidimensional version respect the thresold for exploratory factor analysis (only the factor 1 has an eigenvalue > 1), but the measurement with two or three sub-dimensions improve indices after CFA.

Considering these results that are different from expectations, next analyses about research hypotheses are leaded in three strategical ways. In linear modelling and in simple SEM created with “observed” variables, the test of hypotheses is with both the *ExternalNetworkingMEAN* and *ExternalNetworking\_score* as unidimensional version of external networking while, when the model needs the inclusion of latent variables as measurement the three sub-dimensions are included and external networking is a second-order form of social capital.

#### **e) Individual ambidexterity.**

Following the literature, individual ambidexterity can be measured in different ways. In this section, the assessment is about the measurement as second-order latent variable with two sub-dimensions of exploitation and exploration. Factor analysis with method of iteration and principal axes shows that Factor and Factor 2 explain together 80.36% of variability and their eigenvalues are superior than 1.00. An oblique oblimin rotation retaining two factor displays that the structure of correlation is as expected with 0.35 as a cut-off of factor loading: items 1-7 are correlated with Factor 1 (exploration) and items 8-14 are correlated with Factor 2 (exploitation). Some more analyses are necessary for Item10 (“exploitation3”), because it presents a high level of uniqueness and a factor-loading higher than 0.30. Mom et al. (2009) extracted data with a different method. Replicating the analysis, principal component analysis and Varimax rotation with Kaiser normalization confirm previous assessments. Item10 is still correlated with component 2, but it present a form of correlation also with component 1. From confirmatory factor analyses with and without

item10 (exploitation 3), it emerges that the model presents some improved fits when this item10 is dropped, but coefficient of determination fall from 0.78 to 0.49. Moreover, Cronbach's alpha for exploitation is with item10 0.8454 and without item10, so there are not significant changes (0.8514). Inter-item covariance for exploitation increase from 0.44 up to 0.48. Otherwise, Cronbach's alpha fall from 0.8635 with 14 items to 0.8547. Composite reliability it is clearly below the value of the dropping threshold item10. Only the value of the AVE for higher, as expected after exploratory factor analysis. In this study in sum, factor analysis revealed that two sub-scales can be used together as developed in literature from first studies at managerial level in private organizations (Mom et al., 2007). 7 items are kept for exploration and 7 items are kept for exploitation. AmbidexterityC, ambidexterityM and ambidexterity as second-order latent variable are so measured with 14 items as expected, maintaining an equilibrium for the number of items for both of the two sub-scales. All items are positively correlated with the score of ambidexterity as continuum and ambidexterity as multiplication of exploitation and explorations means, considering Spearman (rho) and Pearson correlations (PV<0.001). The unique limit to keep item10 is that CFI is 0.866, which value is above the threshold. Checking for modification indices from sub-scales, covariance between item 1 and 2 and 5 and 6 is added in the sub-group of exploration. These modifications take the structural model of ambidexterity and exploration over the threshold of acceptability. Table report fit-indices that are good for all the values. The improvement of the model in the transition from one-dimensional to two-dimensional is an element of validity checking of the measurement (Bagozzi & Phillips, 1982). The values of fit-indices, the AVE and composite reliability allow jointly to assess the validity of the measurement model of ambidexterity and also for exploitation and exploration.

Table 43: outputs of Stata for exploratory factor analyses of individual ambidexterity.

Factor analysis/correlation				Number of obs	=	551	Principal components/correlation				Number of obs	=	551										
Method: iterated principal factors				Retained factors	=	2					Number of comp.	=	2										
Rotation: oblique oblmin (Kaiser off)				Number of params	=	27					Trace	=	14										
								Rotation: orthogonal varimax (Kaiser on)				Rho	=	0.5774									
Factor	Variance	Proportion	Rotated factors are correlated																				
Factor1	4.16801	0.5800																					
Factor2	3.46323	0.4819																					
LR test: independent vs. saturated: chi2(91) = 3897.65 Prob>chi2 = 0.0000																							
Rotated factor loadings (pattern matrix) and unique variances																							
Variable	Factor1	Factor2	Uniqueness																				
exploration1	0.8341	-0.0277	0.3138																				
exploration2	0.8435	-0.0108	0.2925																				
exploration3	0.8211	0.0017	0.3251																				
exploration4	0.6254	-0.0052	0.6104																				
exploration5	0.6379	0.1344	0.5370																				
exploration6	0.6652	0.0316	0.5472																				
exploration7	0.6517	-0.0953	0.5937																				
exploitat~n1	0.1657	0.5976	0.5715																				
exploitat~n2	-0.0845	0.7261	0.4929																				
exploitat~n3	0.3310	0.3660	0.7027																				
exploitat~n4	-0.0757	0.8459	0.3071																				
exploitat~n5	0.1284	0.5894	0.6025																				
exploitat~n6	-0.0032	0.8419	0.2925																				
exploitat~n7	0.0597	0.5968	0.6245																				
Rotated components																							
Variable	Comp1	Comp2	Unexplained																				
exploration1	0.4075	-0.0086	.2894																				
exploration2	0.4092	0.0014	.2753																				
exploration3	0.4025	0.0058	.2949																				
exploration4	0.3344	-0.0078	.5219																				
exploration5	0.3274	0.0757	.4635																				
exploration6	0.3475	0.0159	.4657																				
exploration7	0.3516	-0.0602	.4965																				
exploitat~n1	0.0576	0.3481	.4879																				
exploitat~n2	-0.0751	0.4123	.4007																				
exploitat~n3	0.1595	0.2208	.6331																				
exploitat~n4	-0.0661	0.4512	.2773																				
exploitat~n5	0.0373	0.3477	.5121																				
exploitat~n6	-0.0300	0.4476	.2703																				
exploitat~n7	0.0003	0.3542	.5279																				

Table 44: indices for the acceptability, reliability and validity of individual ambidexterity.

Fit-Indices (Satorra-Bentler)	Exploitation (7 items)	Exploration (7 items)	Individual Ambidexterity (14 items)	Individual Ambidexterity (13 items) <sup>170</sup>	Individual Ambidexterity (14 items)
Sample	551	551	551	551	484
Chi-squared $\chi^2$ (df)	40.751 (14)	65.237 (12)	320.273 (73)	352.134 (63)	298.263 (73)
RMSEA	0.042	0.090	0.068	0.091	0.069
CFI	0.988	0.972	0.942	0.906	0.942
TLI	0.982	0.951	0.928	0.884	0.928
SRMR	0.031	0.044	0.085	0.075	0.086
CD	0.890	0.890	0.639	0.490	0.782
<b>Cronbach's Alpha</b>	0.8454	0.8859	0.8635	0.8547	0.8715
Average inter-items covariance	0.4376878	0.648737	0.3481077	0.3481077	0.3502302
Average inter-items correlation (standard-ized items)	0.4466	0.5261	0.3117	0.3117	0.3278
Average correlation (rho) with AmbidexterityC	0.644257143	0,5096	0.576928571	0,577284615	0,590157143
Average correlation (rho) with AmbidexterityM	0,682442857	0,449171429	0,565807143	0,565807143	0,580464286
AVE – Discriminant validity	0.462 - Yes	0.513 - yes	Exploitation = 0.462 Exploration = 0.513	Exploitation = 0.508 Exploration = 0.513	Exploitation = 0.481 Exploration = 0.509
Composite reliability (RRC)	0.845	0.853	0.653	0.465	0.637

#### f) Innovative Work Behaviour.

In the literature, innovative work behaviour is considered a unidimensional scale, including different phases of innovativeness (Janssen, 2000, 2001). From exploratory factor analysis with the method of iterated principal axis emerges that Factor 1 has an eigenvalue of 5.70 with a higher level of proportion of variance explained 0.8425. An oblique oblimin rotation retaining one factor displays that all factor loading are higher than 0.70. From the exploratory factorial analysis, it emerges that the first factor is the one that has the greatest explanatory capacity and, therefore, the scale can be used in a one-dimensional way. The sub-dimensions have little explanatory capacity and this result is consistent with the items analyzed in the literature review, in which an assessment of the three phases of innovation at work is substantially absent. In this thesis, even

<sup>170</sup> Values are calculated without modification indices.

keeping unidimensional version of innovative work behaviour, sub-dimension are calculated to realize some in-depths analyses. The level of reliability permits to use these subscales to understand in an explorative ways the microfoundation of each singular phase of innovation. In theory of the scale development and in the use here Idea generation is the sum of items 1, 2, 3 and its Cronbach's alpha is 0.8590. Idea Promotion is the sum of items 4, 5, 6 (alpha 0.8670), Idea realization is the sum of items 7, 8, 9 (alpha 0.8398). EFA retaining three factors over the threshold of proportion in Table 46 shows an interesting structure that is more complicated than what it is assumed in the building of the scale in particular for public administration. Factor 2 actually groups those items, which could have social foundations in innovation.

Therefore, if items 4, 5 and 6 by definition are elements of promoting innovation, items 7 ("Transforming innovative ideas into useful applications") and 8 ("Introducing innovative ideas into the work environment") in a systematic way also have of social elements, as if the realization can only take place in social terms within the local government. The "applications" can be social within the "work environment". These are purely theoretical and deductive statements with respect to the data obtained. Further studies should focus on the three sub-dimensions in more in-depth methodological terms. As emerged in the debate on the definition of innovation and the difference with creativity, even scholars do not have a univocal view of the innovation construct on an individual level. The high factor loading for items 7 and 8 compared to a different phase, in fact, could be caused not so much by social perception of innovation as by the positioning of the question within the questionnaire. In this research the main analyses are carried out in one-dimensional terms, however, some statistical studies concern the sub-dimensions.

Table 45: baseline exploratory factor analysis for perceived innovative work behaviour.

Factor analysis/correlation		Number of obs =	551	Rotated factor loadings (pattern matrix) and unique variances				
Method: iterated principal factors		Retained factors =	8					
Rotation: (unrotated)		Number of params =	36					

LR test: independent vs. saturated:  $\chi^2(36) = 3611.17$  Prob> $\chi^2 = 0.0000$

LR test: independent vs. saturated:  $\chi^2(36) = 3611.17$  Prob> $\chi^2 = 0.0000$



Table 46: EFA with iterated principal axis, oblimin rotation and retention of three factors.

Rotated factor loadings (pattern matrix) and unique variances

Variable	Factor1	Factor2	Factor3	Uniqueness
innovative~1		0.8854		0.2463
innovative~2		0.7832	0.1325	0.2922
innovative~3	0.3268	0.4579		0.3610
innovative~4	0.4791	0.2396	0.1975	0.3103
innovative~5	0.8258			0.3287
innovative~6	0.9511			0.2325
innovative~7	0.7158		0.1263	0.2648
innovative~8	0.6408	0.1005	0.1530	0.3081
innovative~9			0.8503	0.2249

(blanks represent  $\text{abs}(\text{loading}) < .1$ )

However, the two items have a factor loading positive also for the realization phase, therefore, some exploratory analyzes are conducted, although future research will have to focus on the microfoundation of the three phases, using measures in the questionnaire to avoid potential problems of common method bias related to the sub-dimensions. Moving on to the next step confirmatory factor analysis endorses the unidimensional model as hypothesized. The post-estimation procedure of modification indices highlights the necessity to include a covariance between items 1 and 2 to improve the performance of fitness indices.

The Table 47 show that individual work behaviour present good fit-indices both for general and reduced sample used when the variable of internal social capital is included. All items are positively correlated with the total score of innovative work behaviour considering Spearman ( $\rho$ ) and Pearson correlations ( $PV < 0.001$ ). The AVE is calculated to check discriminant validity on the unidimensional structure and results from CFA shows that the level is higher than 0.50 and there are not issue about discriminant and convergent validity. The Raykov's composite reliability presents an excellent value over the threshold of acceptability. The AVE and RRC confirm the convergent validity of this scale. The significant is that the one-dimensional version is clearly the most effective in the overall representation of the innovation phases, from the creation to the implementation of the ideas, passing to the socialization phase. These results confirm the strength of this scale that is widely used in the literature. In conclusion, this measurement is valid for the individual perception of innovation also in public administration. The measure of rated innovativeness is composed of a single item and is a simplification of reality, to allow for a easier response. Future research that uses rated innovativeness could be based on factorial analysis of innovative behavior and take the 3 items with the highest factor loading (items 1, 6 and 9 which have the highest value in EFA based on retaining three main factors).



Table 47: indices for the acceptability, reliability and validity of innovative work behaviour.

<b>Fit-Indices (Satorra-Bentler)</b>	<b>Innovative Work Behaviour</b>	<b>Innovative Work Behaviour (reduced sample)</b>
Sample	551	484
Chi-squared $\chi^2$ (df)	122.870 (126)	115.173 (26)
RMSEA	0.082	0.084
CFI	0.961	0.959
TLI	0.946	0.944
SRMR	0.041	0.042
CD	0.937	0.937
<b>Cronbach's Alpha</b>	<b>0.9351</b>	0.9349
Average inter-items covariance	0.6327662	0.6071909
Average inter-items correlation (standardized items)	0.6173	0.6162
Average items-total correlation (Rho)	0,803444	0,804944
AVE – Discriminant validity	0.614 - Yes	0.612 - Yes
Composite reliability (RRC)	0.927	0.928

#### g) Descriptive statistics and correlations.

The first step is about descriptive statistics and preliminary analyses about correlations between scales. Mean, standard deviation, min, max and correlations between variables are measured on the mean of each scale for each respondent. The rank and education variables are categorical variables, therefore, have been transformed into the dichotomous managers, which indicates the managerial role within the organization according to the Italian classification, and university, which indicates with 1 having successfully attended university or having stopped at high school level with 0. As far as education is concerned, the university was attended by 271 respondents, of whom 119 completed a Bachelor's degree program, 150 Master's degrees and only two completed their entire degree program with a doctorate. In order to simplify the interpretation of the analyses, considering that the sample is divided in half in terms of frequency, the value of human capital in terms of education is summarized in whether or not the university has been completed. As far as position is concerned, the sample is composed of 315 knowledge workers, 122 middle-managers, 92 managers, 6 top managers and 16 town clerks. In order to facilitate the interpretation of results on categorical variables, the managerial dimension summarizes by dividing between those who have a position with managerial responsibility (42.83%) and knowledge workers (57.17%). Descriptive analyses about the scale are evaluated with the maximum number of observations for that specific dimension (in general 551; 484 for two dimensions of internal social capital and 467 for rated innovativeness).

For clarity of presentation, the table below shows the data on Spearman's rho in the part below the vertical axis in the left part and the Pearson's correlation above the vertical axis in the right part. Two common method bias control elements are added to this first descriptive table that includes individual dimensions. The first variable is "time-lagged", which is a dummy and identifies that you have responded in two parts or in one section to the questionnaire. The other is a temporal distance, which measures the time elapsing between replying to the first and second part of the questionnaire (the value is obviously zero when the reply is made at once). For 412 (74.77% on 551) individuals the questionnaire was administered at once, while 139 responded at once (25.23%). Some in-depth analyses are conducted to understand the effect of setting up a survey with a temporal lag in common method bias treatment.

Table 48: means, standard deviations, minimum and maximum values, correlations<sup>171</sup>.

DIMENSIONS	Mean <sup>172</sup>	Standard Deviation	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1) Gender (1 = female)	.6552	-	0	1	-	-.11***	-.05	-.04	-.03	-.05*	-.07	-.07	-.10**	-.07	-.17***	-.01	-.00	-.07	-.01
2) Age	50.48	8.03	27	66	-.11***	-	-.24***	.59***	.48***	-.07*	-.07	-.00	-.04	.08*	-.03	.01	.02	-.1	-.27***
3) University (1 = yes)	.4918	-	0	1	-.05	-.24***	-	-.39***	-.25***	.34***	-.05	.10**	-.11**	-.10*	.10**	.10**	.09**	.10**	.09**
4) Tenure in organization	17.68	11.53	1	42	-.04	.60***	-.39***	-	.55***	.05	.03	.01	.03	.17***	.07	-.01	.00	-.05	-.15***
5) Tenure in position	13.29	13.29	1	41	-.04	.50***	-.23***	.54***	-	-.00	.09**	.01	.06	.21***	.06	-.02	-.01	-.07	-.07
6) Manager (1 = yes)	.4283	-	0	1	-.07*	.34***	.31***	.05	.00	-	.00	.04	.00	.09**	.26***	.13***	.11***	.15***	.03
7) Mindfulness	5.46	.91	2	7	-.07	.06	.00	-.01	.04	-.02	-	.04	.04	.05	.03	.05	.04	.06	.03
8) Political Skill	4.56	.96	1	7	-.07	.00	.00	-.03	.01	-.02	.00	-	-.03	.01**	.27***	.29***	.29***	.34***	.03
9) WeakTies(isc)-484	.31	.19	0	.92	-.11**	-.02	-.12***	.03	.06	-.02	.04	-.06	-	.19***	.21***	.05	.05	.07	.14***
10) StrongTies(isc)-484	.27	.23	0	1.00	-.05**	.07	-.10***	.18***	.18***	.08*	.03	.10**	-.04	-	.39***	.14***	.13***	.15***	.26***
11) External Networking	2.55	0.90	1	6.06	-.17***	.03	.08*	.09**	.07*	.25***	.04	.25***	.15***	.36***	-	.29***	.28***	.24***	.03
12) Ambidexterity (Multiplicative)	11.27	4.30	1	25	-.01	-.00	.10**	-.01	-.03	.12***	.03	.30***	.02	.15***	.29***	-	.99***	.63***	.15***
13) Ambidexterity (Continuum)	6.71	1.27	2	10	-.00	-.00	.09**	-.00	-.02	.12***	.01	.30***	.04	.12***	.29***	.98***	-	.62***	.15***
14) Innovative Work Behaviour	3.07	.82	1	5	-.06	-.18	.11**	-.06	-.08*	.15***	.08*	.33***	.06	.16***	.23***	.64***	.64***	-	.19***
15) Rated Innovativeness-474	3.83	.77	1.33	6.5	-.03	-.27***	.10**	-.19***	-.19	.13***	-.03	.05	.11**	.25***	.02	.14***	.15***	.19***	-
<b>Significance: PV&lt;0.1*; PV&lt;0.05**; PV&lt;0.01***</b>																			

<sup>171</sup> All data are approximated to the second digit. Statistics are calculated with the sample of 484 for weak ties and strong ties as measures of internal social capital and 467 for rated innovativeness.

<sup>172</sup> It is indicated the proportion of 1 on 0 for dummies (gender, university, manager (rank)).

A reading of the correlations between the model's variables reveals in particular a positive correlation between forms of social capital inside and outside the organization and the variables of individual dynamic capabilities. There is a correlation between political skills and dynamic capabilities with the exception of rated innovativeness. There is also a very significant correlation between self-reported outcome dimensions and rated innovativeness. This correlation is a first evaluation element that rated innovativeness is a first methodological approach to measure the innovative behaviour at work by colleagues.

The limit of this form of measurement can be traced back to the strong correlation existing with the forms of internal social capital, considering that the exchange of communication is also a means to know other people's activities through the frequency of interaction and, therefore, to have a greater possibility to evaluate the colleague correctly. Future studies can refine the measurement of rated innovativeness based on the dyadic relationship between the two subjects and the characteristics of the respondent through cross-classified multilevel modelling of innovation behavior (e.g. Wu et al., 2014). Finally, the correlation that exists between universities as a form of human capital and other model variables is evident. In particular, there tend to be more young graduates. In the sample of 551, the average number of municipal graduates is around 48 years old, while non-graduates are on average 52 years old. The dummy variable related to managerial position also has a statistically significant correlation with the other variables.

## **MICROFOUNDATION OF INNOVATIVE BEHAVIOUR: OLS, MAIN AND INTERACTION EFFECTS.**

The first methodology used to test hypotheses is Ordinary Least Square linear regression with a hierarchical presentation. This procedure has been already used in the study of innovativeness in public sector (e.g. Bysted, 2013; Bysted & Hansen, 2015). Baseline models are regressed on the mean of dimensions which mean to give an identical weight for each item of the constructs and it is a simple summary score and an instrument easy in the interpretation. Generally, the use of an average score or factor scores depend on the suggestions of reviewers in Academic journals. The use of means seem more suitable than factor scores in linear regression analyses. OLS regression assumes zero measurement error and normality, while factors scores from EFA (principal component analysis and principal axis factoring) accept some measurement error and it does not assume normality. The methodological choice is to use the average for baseline models, the factors scores is used to test non-linear effects and in validity estimations with Structural Equation

Modelling. The Table 49 reports the coefficients and their level of significance with stars. The robust clustered standard errors are omitted due to space and clarity (a complete table with standard errors is reported in Annexes). The Model 1 include control variables and they are used in all other models. After a careful comparison of the results in the models shown here, only the tenure in position control variable has been maintained (the tenure in organization variable is never statistically significant and there tends to be an overlap between the two variables, therefore, only the first one is maintained to purify the result from interactions). The Model 2 include the cognitive capabilities, political skill and mindfulness (including the two construct separately does not change results). The Model 3 includes the terms of social capital alone, in particular external networking (3a) and internal social capital (3b) and both of them (3c), the Model 4 takes all the variables together, (4.b) including or (4.a) less internal social capital (reduced sample). The Model 5 includes interaction effects of political skill and mindfulness on external networking. The model 6 include interaction effects of political skill and mindfulness on internal social capital and external social capital<sup>173</sup>. By including only the terms of interaction of mindfulness or political skill, the result does not change. From this first analysis some answers to the research hypotheses emerge. Firstly, control variables are assessed. *Gender*, *age* and *university* are not significant including all 5 control variables. University becomes significant without the dummy *manager*, because they have some elements of overlapping. Tenure in position (the same for tenure in organization) is significant and related negatively with perceived innovativeness. The rank at work in the municipality as manager has a positive strong significance, so that managers are more innovative (or at least, they perceive themselves as more innovative in the municipality). Gender is added to control even it is expected that there are not differences between women and men. Gender does not affect innovative work behaviour (e.g. Bysted, 2013; Pieterse et al., 2009). About this effect, empirical studies report different results (Miron et al., 2004) also in public administration (Bysted & Hansen, 2015). Age has not effect on innovativeness and this results is coherent with previous studies (Janssen, 2000) also in public administration (Bysted, 2013). Education in the form of the dummy variable *university* is not significant and this is congruent with other studies about individual innovativeness (e.g. Grosser et al., 2018). Tenure in position (and tenure in organization) are negatively related to innovative work behaviour in public administration. This is congruent with similar studies that use this control variable in public organizations (Bysted & Hansen, 2015; Pieterse et al., 2009). Other studies found that job tenure is not significant (Janssen, 2000; Miron et al., 2004).

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<sup>173</sup> In this last model, the dummy managerial was dropped to permit the emergence of direct effects of other variable. The test including managerial dummy does not change results. Only external networking mean becomes not significant.

Table 49: OLS regressions about perceived innovative work behaviour. Baseline models.

Variable	model_1	model_2	model_3a	model_3b	model_3c	model_4a	model_4b	model_5	model_6
gender	-0.090	-0.039	-0.031	-0.045	-0.008	-0.007	-0.002	-0.007	0.004
age	0.001	0.001	0.003	-0.000	0.000	0.002	0.000	0.002	0.000
university	0.076	0.045	0.070	0.049	0.030	0.045	0.019	0.043	0.019
tenureposition	-0.007*	-0.007**	-0.008**	-0.008**	-0.008**	-0.008**	-0.008**	-0.008**	-0.008**
manager	0.226**	0.224***	0.139*	0.219**	0.163*	0.170**	0.184**	0.169**	0.189**
mindfulnessmean		0.072**				0.068**	0.049	0.071**	0.047
politicalskillmean		0.295***				0.268***	0.257***	0.265***	0.260***
externalnetworkingmean			0.198***		0.156***	0.124***	0.076*	0.122***	0.073
weakties_isc_				0.348**	0.218		0.350**		0.375**
strongties_isc_				0.618***	0.399*		0.402**		0.398**
mindfulness_externalnetw								0.033	
politicalskill_extnetw								-0.016	
politicalskill_weakties									0.071
politicalskill_strongties									0.020
mindfulness_weakties									-0.184
mindfulness_strongties									0.033
_cons	3.017***	1.293***	2.476***	2.794***	2.498***	1.094***	1.227***	1.112***	1.206***
N	551	551	551	484	484	551	484	551	484
F	2.749	15.329	5.768	5.712	6.516	14.014	10.364	12.397	14.152
r2_a	0.027	0.148	0.068	0.050	0.072	0.163	0.151	0.161	0.145
rmse	0.812	0.759	0.794	0.786	0.776	0.753	0.743	0.754	0.745

legend: \* p<.1; \*\* p<.05; \*\*\* p<.01

Next section focuses on sub-groups by gender, education and rank in organization to check if the overall effect could have a different impact. Even if they may not have a different impact, the cognitive and social capital variables in the subgroups could behave differently, in a sense that the control variables interact with the independent variables. The relevant result concerning microfoundation of individual dynamic capabilities in local governments is that regressions show that individual social capital from internal knowledge networks has a positive significant impact on perceived innovative behavior (H 1.2). The coefficient of strong ties is more relevant than that of weak ties and is always significant even in different model conformations.

This result confirms what was found in the case study regarding strong ties. In particular, in every conformation of the micro-foundation model, strong ties with colleagues are always significantly positive in explaining innovative behavior at work (H1.2.a). With the exception of the model in which only forms of internal and external social capital are present, weak links are significantly positive in relation to innovative behavior at work. This result seems to confirm the hypothesis H1.2.b and goes to the opposite direction of what was found in the case study. It is clear that strong ties remain significant regardless of how they are measured (perception of a "supervisor" who evaluates the whole network in the case study of a municipality, individual perception of relations with colleagues in the analysis conducted here). However, for weak ties within the municipality in the case study, the coefficient was the opposite sign. In this study, it is significant and positive. Testing the model in the municipality on which the case study of SNA is developed,

in the 27 observations present for this municipality the relationship between weak ties (calculated as a proportion of the total possible relationships, as in the models here, or as a total) and innovative work behavior is not significant. While strong ties continue to be positive and significant as in the same case study. If on average, weak ties within the municipality have a positive impact, it is not certain that this result can be generalized to individual case studies of intra-organizational networks. External social capital based on the network for the exchange of knowledge with external stakeholders also shows a positive significance concerning innovative behavior (H 2.2). The presence of interaction variables reduces the significance of external networking as a singular element, because they capture part of the variability, but add nothing to the result found in the absence of moderation tests. Moreover, the conjoint presence of internal and external social capital may change significance of coefficients. In summary, these results confirm that individual knowledge management and as an organizational tool are therefore a strong tool in the development of innovation in public administration. Mindfulness has positive coefficients, but significance is lost when internal social capital is present in the model, which intercepts most of the variability of the models. It is possible to suggest a minor validation of the hypothesis 3.2. Political skill is strongly significant for all the models. This is a first approach to confirm the validity of the hypothesis H 7.2. In general, socio-cognitive and relational aspects seem to have relevant empirical impacts on innovative work behaviour. However, these analyses do not allow to confirm the moderation hypotheses. The interaction between mindfulness and the various forms of social capital internal and external to local government is not significant (H 6.2 and H 6.4). The same goes for political skills (H 10.2 and H 10.4). In the next sections, attention is paid to some relevant aspects on which it is possible to focus on in order to have a clearer understanding of how variables interact and understand if there are phenomena not expressed in these micro-foundation baseline models of individual innovation.

### **Regression diagnostic of OLS for baseline models of innovative work behaviour.**

At this point, it is necessary to check the different models. The correct use of ordinary least squares regression is feasible only with the respect of some assumptions otherwise results can be misleading. The first diagnostic is about **linearity** in the sense that the relationship between predictors and outcomes should be linear. The diagnostic of linearity is graphical. The command *acprplot* (“augmented component-plus-residual plot”) after regression provides a graphical a testing to examine the linearity in the relationship between variables. The option *lowess* (“locally weighted scatterplot smoothing”) draws the observed pattern in the data and this curve permits to assess issues of nonlinearities. Graphically, the diagnostic could present some issues of linearity for the main variables in the model. Some researches in public administration does not even

include this check after linear regression (e.g. Zandberg & Morales, 2017). The second diagnostic is about **normality of residuals**, in fact, for the validity of test hypotheses, errors should normally distributed. The test used is Shapiro-Wilk W test (Upton & Cook, 2008). The null hypothesis of the test say that data are normally distributed. If  $PV > 0.10$ , it is possible to not reject the null hypotheses and keep the assumption that residuals are normally distributed. The third diagnostic is about checking the **homoscedasticity** of variance of residuals. The heteroscedasticity is a problem for OLS when error variance is not constant. In this research, it is assumed that there could be a possible correlation within organizations<sup>174</sup>. In this situation, the assumption of independence of errors is violated and unadjusted OLS standard errors may have downward biases, so the option *cluster* solves this possible problem consenting valid inferences (Moulton, 1986). A fourth check is about **multi-collinearity**, which means that some variables are near linear combination of another. A high degree of multi-collinearity can cause unstable coefficient and inflated standard errors. The multi-collinearity is assessed by VIF (variance inflation factor). When VIF is higher than 10 or lower than 0.10, it could be possible the presence of multi-collinearity. If the level of VIF is lower than 10, there is not a problem of multi-collinearity. For models 5 and 6, to avoid multi-collinearity problems, the interaction terms were created based on previous mean-centering of the independent variable and the intervening variable (Aiken & West, 1991). In the table, it is reported the mean VIF. Finally, the fifth check is about model specification that can affect regression coefficients. A wrong model specification occurs in two possible situations: the omission of a relevant variable, the inclusion of an irrelevant variable in the model. Two tests are used to check possible specification errors. *Linktest* is a specification link test for single-equation models. For this test, the predicted values should be significant while the squared predictions should not to be significant

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<sup>174</sup> It is not possible to test for intra class correlation because there is different number of observations and data are unbalanced in the sense that for each municipality the number of answer is different.

Table 50: tests for the assumption of OLS for models about perceived innovative work behaviour.

Assumptions for OLS	Test	Model 1	Model 2	Model 3a	Model 3b	Model 3c	Model 4a	Model 4b	Model 5	Model 6
Linearity	Graphical	! <sup>175</sup>	! <sup>176</sup>	! <sup>177</sup>	! <sup>178</sup>	!	!	!	!	!
Normality of residuals	Shapiro-Wilk ( <i>ok if PV&gt;0.10</i> )	!	-	-	-	-	-	-	-	-
Multi-collinearity	VIF (mean)	1.26	1.19	1.25	1.22	1.26	1.21	1.23	1.18	1.20
Model specification 1	Linktest ( <i>ok if hat_sq PV&gt;0.10</i> )	-	-	-	-	-	-	-	-	-
Model specification 2	Reset test ( <i>ok if PV&gt;0.10</i> )	-	-	! <sup>179</sup>	-	-	-	-	-	-

The symbol “-” indicates the lack of problems for this test. The symbol “!” indicates that there is a possible issue for this test.

The adjusted- $R^2$  of the model is relatively low (about 0.15-0.17) so it is expected that global predicted values (*hat*) could be not significant even if the model tested are statistically significant. Otherwise, for an acceptable specification of the model, it is expected that squared prediction present a  $PV>0.10$  (*hat\_sq*). Ramsey's Reset test is a general specification test for the linear regression model and it concerns omitted variables. It should be not significant. If  $PV>0.1$ , it is not possible to refuse the null hypothesis that there are not omitted variables. The results of both specification tests are reported. The table below resumes results from diagnostic test. In this first regression analysis, all models are evaluated (in particular 4a, 4b, 5 and 6). To make reading easier, for the next analyses, evaluations are made only for models that include all variables (4a and 5). From these checks, some relevant aspects emerge. All regressions respect the principles of residual non-normality, multi-collinearity and model-specification. There is a possible issue about linearity. This topic has been covered in the hypotheses and is consistent with the literature and with the methodology for evaluating and analysing this aspect. In particular, non-linearity of

<sup>175</sup> The variable tenure in position is tested here. It has a graphical linear relation with innovative work behaviour. For values higher than 30 years, the relationship is slightly less linear. A logarithmic and a quadratic transformation does not change results. Data without transformations are considered acceptable.

<sup>176</sup> Mindfulness presents a plot of augmented component plus residual. With the exception of the presence of potential outliers, the relationship between political skill mean and innovative work behaviour mean tends to be graphically linear.

<sup>177</sup> Graphically external networking seems to be non-linear as expected from the literature. In other model with different variable, this path tends to be less evident. A section dedicated to the effects of social capital outside the organization deals with this topic.

<sup>178</sup> The plot of relationships between internal social capital and innovative work behaviour tends to be less linear for low and high observations. Transformations of weak and strong ties with logarithm and exponential do not change results.

<sup>179</sup> the presence of external networking only tends to highlight the possibility that there are omitted variables. The co-presence of other dimensions removes this problem.

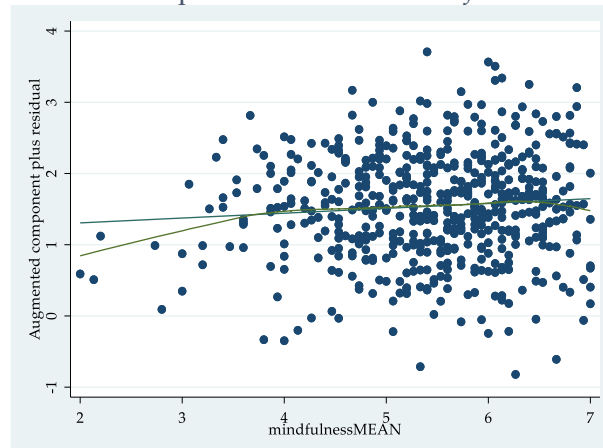


relationships was hypothesized for external networking (H 2.4), vice versa for mindfulness (H3.4) and political skill (H 7.4), the relationship was hypothesized as linear and without diminishing marginal returns. For internal social capital, an assumption was not made regarding the linearity of the relationship with innovative work behavior because the results from social network analyses are sometimes discordant with respect to the relevance of weak and strong ties. Considering the results obtained with respect to regression diagnostic, the next sections focus on the potential non-linearity detected graphically of the relationship with innovative work behavior and secondary effects of cognitive capabilities and social capital.

### Focus 1: does mindfulness have a non-linear relationship with innovative behaviour?

In the hypotheses of research, the relation between mindfulness mean and innovative work behaviour mean is assumed as linear (H 3.2) and without diminishing returns (H 3.4). The models analyzed show that there is a significantly positive relationship between mindfulness and the outcome variable. Otherwise, checking for normality the plot in Figure 50 shows that the relationship may be potentially not linear. For values less than 3 and higher than 6.5, the graphical prediction shows a light reduction of linearity in the relationship. A logarithmic and a quadratic transformation does not change results. Data without transformations are considered acceptable in the model above even in the possible presence of some outliers. Otherwise, hypothesis 3.4 may be questioned. Some analytical strategies are conducted. The first is to include a squared term of mindfulness to incorporate diminishing returns. VIF is higher than accepted threshold, but it is necessary to consider that it is not a main issue in the case of inclusion of a squared term of the variable because the relations between the focal variable and its square is not linear. They are correlated so multi-collinearity has not adverse consequences. A second strategy concerns the mean centering mindfulness to reduce the problem of multi-collinearity (e.g. Jimenez, 2017). The significance of the model does not change but the level of VIF remains high (about 70).

Figure 50: augmented component-plus-residual plot of model 4a of innovative work behaviour with the independent variable *mindfulnessmean*.



A third test concerns the inclusion of the scores of the main mindfulness factor always with the presence of squared of *mindfulnessmean*. The VIF resulting from this third test is reduced (about 12 for the two variable and mean VIF 3.79) and the regression model therefore can be considered more stable. In all three regressions carried out the result does not change, in the sense that the mindfulness coefficient is significantly positive conversely squared value shows that this construct can have a negative marginal effect compared to what was assumed in 3.4. To deal with the problem of collinearity (Meier & O'Toole, 2002), other studies on public administration have already used the superior partitioning strategy the sample using different sub-set of mindfulness level in quartiles (e.g. Hicklin et al., 2007; Nohrstedt, 2018; for the case of external networking). The analyses are carried out with respect to model 4a which contemplates the whole sample and the direct effects of the variables of interest of the study are all significant. Partitioning the variable *mindfulnessmean* and after analyses of sensibility, when values of mindfulness are within the first quartile (model *mindfulnessq1*) there is still a positive significant relation with innovative work behaviour. When the values are within other quartiles it seems that the association with the outcome is no more significant. In the last model (*mindfulness5*), tests are conducted for values higher than 6.3 and for 101 observations there is a significant negative relation between mindfulness and innovative behaviour. In aggregate, these tests offer crucial empirical confirmation of a nonlinear relationship between mindfulness and perceived innovation. These results give a first sentence with respect to the lack of linearity of the relationship between mindfulness and innovative work behavior. However, partitioning the analyzes, the positive correlation remains only in the first quartile, while in the range of the last 101 observations the ratio coefficient changes sign and becomes negative. Partitioning confirms the test results which include squared of mindfulness. Using the scores of the first mindfulness factor instead of the variable built on the average the test result does not change. Empirically, it is clear that hypothesis 3.1 tends to be confirmed, however the relationship is not linear and with excessive growth of mindfulness there are negative marginal returns. An excess of mindfulness risks having harmful effects on innovative behavior.

Table 51: models of mindfulness and innovative work behaviour to test non-linear effects<sup>180</sup>.

Innovative Work Behaviour								
	mindfulness1	mindfulness2	mindfulness3	mindfulne~q1	mindfulne~q2	mindfulne~q3	mindfulne~q4	mindfulness5
Controls:								
gender	-0.00 (0.07)	-0.00 (0.07)	-0.01 (0.07)	0.24 (0.10)**	-0.17 (0.15)	0.08 (0.17)	-0.12 (0.15)	-0.15 (0.18)
age	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	-0.01 (0.01)	0.01 (0.01)	0.00 (0.01)	0.01 (0.01)	0.00 (0.01)
university	0.04 (0.08)	0.04 (0.08)	0.04 (0.08)	0.03 (0.14)	-0.05 (0.13)	0.14 (0.14)	0.02 (0.18)	0.06 (0.19)
tenureposition	-0.01 (0.00)**	-0.01 (0.00)**	-0.01 (0.00)**	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
manager	0.16 (0.08)**	0.16 (0.08)**	0.16 (0.08)**	0.25 (0.17)	0.12 (0.15)	0.05 (0.13)	0.23 (0.19)	0.22 (0.22)
Main effects:								
mindfulnessmean	0.54 (0.21)**			0.19 (0.08)**	-0.36 (0.26)	0.06 (0.40)	-0.10 (0.24)	-0.64 (0.34)*
mindfulnessmean2	-0.05 (0.02)**	-0.05 (0.02)**	-0.02 (0.01)**					
politicalskillmean	0.27 (0.04)***	0.27 (0.04)***	0.27 (0.04)***	0.24 (0.06)***	0.27 (0.07)***	0.26 (0.06)***	0.27 (0.08)***	0.31 (0.07)***
externalnetworkingmean	0.12 (0.04)***	0.12 (0.04)***	0.13 (0.04)***	0.12 (0.07)*	0.02 (0.08)	0.18 (0.09)*	0.15 (0.08)*	0.15 (0.10)
C_mindfulnessmean		0.54 (0.21)**						
mindfulness_score			0.26 (0.09)***					
_cons	-0.12 (0.65)	2.82 (0.73)***	2.06 (0.40)***	0.90 (0.66)	3.66 (1.44)**	1.01 (2.42)	1.98 (1.63)	5.40 (2.49)**
N	551.00	551.00	551.00	140.00	153.00	130.00	128.00	101.00
F	14.31	14.31	13.30	7.25	4.08	6.19	5.03	9.11
r2	0.18***	0.18***	0.18***	0.21***	0.13***	0.17***	0.26***	0.35***
r2_a	0.16***	0.16***	0.17***	0.16***	0.08***	0.12***	0.21***	0.29***
rmse	0.75	0.75	0.75	0.71	0.76	0.77	0.80	0.77
Standard errors in parentheses								
Range for mindfulnessmean in quartile 1 =2-4.86; quartile 2 =4.87-5.6; quartile 3 =5.61-6.13; quartile 4 =6.131-7.								
* p<0.10, ** p<0.05, *** p<0.01								

Hypothesis 3.4 goes in the opposite direction from the results found. In conclusion, other tests with three different phases of innovative work behaviour show that *mindfulnessmean* and its square are significant for the phase of idea generation and idea realization. Unlike political skills and external networking which remain statistically significant for all three phases of innovation, mindfulness seems to have no effect in the idea promotion phase. Analyses of quartiles and higher mindfulness values are not reported here, but confirm that mindfulness has a negative impact when the average of the items is “almost always” close to. This result may be consistent with the definition of the construct and the scale adopted which are more intra-psyhic than relational in nature. For both phases in which mindfulness matter, it is evident that the relationship appears non-linear, so that at low levels the increase in mindfulness capacity has a positive effect on the generation and realization of ideas<sup>181</sup>. When the level of mindfulness is too high, however, the risk is that excessive concentration on the present is decisive for innovation. Further studies will need to focus on replicating these studies in other contexts and with other ways of measuring mindfulness that are multidimensional or related to social mindfulness in terms of attention and non-judgment during actual moment of relations.

<sup>180</sup> The robust standard errors are omitted due to space and clarity.

<sup>181</sup> Next analyses including different phases of innovative work behaviour do not include the squared of mindfulness, so results could seem different. For example, without the interaction with the value of square, mindfulness is positively related with idea promotion and it loses significant the relation with idea generation. Otherwise, results found in this section are congruent with the literature

Table 52: models 4.a of innovative work behaviour devised by phases (mindfulness).

	Idea generation	Idea promotion	Idea realization
Controls:			
gender	0.23 (0.24)	0.01 (0.23)	-0.28 (0.20)
age	0.01 (0.02)	-0.00 (0.02)	0.01 (0.02)
university	0.20 (0.27)	-0.03 (0.28)	0.24 (0.25)
tenureposition	-0.03 (0.01)**	-0.02 (0.01)	-0.02 (0.01)**
manager	0.34 (0.23)	0.66 (0.24)***	0.42 (0.28)
Main effects:			
mindfulnessmean	2.45 (0.70)***	0.75 (0.69)	1.66 (0.74)**
mindfulnessmean2	-0.22 (0.07)***	-0.05 (0.07)	-0.14 (0.07)*
politicalskillmean	0.76 (0.13)***	0.90 (0.11)***	0.79 (0.11)***
externalnetworkingmean	0.40 (0.13)***	0.37 (0.13)***	0.35 (0.13)**
_cons	-1.68 (1.91)	1.48 (2.22)	-0.91 (2.27)
N	551.00	551.00	551.00
F	11.39	16.47	12.32
r2	0.16***	0.17***	0.14***
r2_a	0.14***	0.15***	0.13***
rmse	2.37	2.51	2.56
Standard errors in parentheses			
* p<0.10, ** p<0.05, *** p<.01			

### Focus 2: does political skill have a non-linear relationship with innovative behaviour?

In the hypotheses of this research, the relation between political skill and innovative work behaviour mean is assumed as linear (h 7.2) and without diminishing returns (H 7.4). The possibility of a non-linear effect was first performed graphically. Irregularities emerge potentially caused by the possible presence of outliers (2 mild outliers, calculated with *iqr* (Hamilton, 1992), regressing only political skill with innovative behaviour), but, in general, the trend tends to be close to the linear one. After that, to check the multi-collinearity problem (which in any case remains beyond the threshold of VIF = 0.10), four models were analyzed. In PS1, political skill is measured with the average (higher VIF 43.51), in PS2, the construct is measured after mean centering (higher VIF 43.01), in PS3, the construct is measured with the score of the first main factor (higher VIF ). In PS4, political skill is scissor in the 4 sub-dimensions. Even if the factorial analysis does not give independent validity to the individual sub-dimensions, the analysis is still conducted to reduce the problem of multi-collinearity (Higher VIF of model PS4 is 26.10, but only for *politicalskill-mean2*; in other regressions at least two variables have VIF higher than 0.10).

Figure 51: augmented component-plus-residual plot of model 4a of innovative work behaviour with the independent variable *politicalskillmean*.

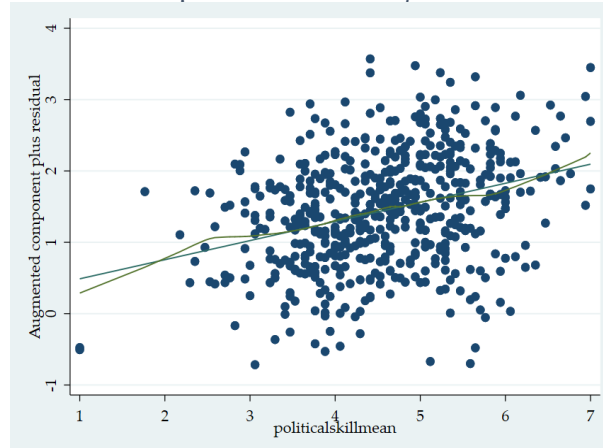


Table 53: political skill regressions and innovative behaviour to test non-linear effects.

Dependent variable: Innovative Work Behaviour				
	PS1	PS2	PS3	PS4
Controls:				
gender	-0.01 (0.07)	-0.01 (0.07)	-0.00 (0.06)	0.00 (0.06)
age	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)
university	0.05 (0.08)	0.05 (0.08)	0.04 (0.08)	0.05 (0.09)
tenureposition	-0.01 (0.00)**	-0.01 (0.00)**	-0.01 (0.00)**	-0.01 (0.00)**
manager	0.17 (0.08)**	0.17 (0.08)**	0.17 (0.08)**	0.15 (0.08)*
Main effects:				
mindfulnessmean	0.07 (0.03)**	0.07 (0.03)**	0.06 (0.03)**	0.08 (0.03)**
politicalskillmean	0.37 (0.21)*			
politicalskillmean2	-0.01 (0.02)	-0.01 (0.02)	-0.01 (0.01)	-0.01 (0.02)
externalnetworkingmean	0.12 (0.04)***	0.12 (0.04)***	0.12 (0.04)***	0.12 (0.04)***
C_politicalskillmean		0.37 (0.21)*		
politicalskill_score			0.33 (0.13)**	
social_astuteness_mean				0.12 (0.08)
interpersonal_influence_mean				0.02 (0.03)
networking_ability_mean				0.17 (0.06)***
apparent_sincerity_mean				0.08 (0.05)
_cons	0.86 (0.59)	2.55 (0.57)***	2.45 (0.36)***	0.84 (0.59)
N	551.00	551.00	551.00	551.00
F	12.22	12.22	12.65	10.22
r2	0.18***	0.18***	0.18***	0.18***
r2_a	0.16***	0.16***	0.16***	0.16***
rmse	0.75	0.75	0.75	0.75
Standard errors in parentheses				
* p<0.10, ** p<0.05, *** p<0.01				

The analyses reveal that the problem of non-linearity for political skills with respect to innovative work behavior does not exist, therefore, the research hypotheses are respected. These hypotheses are also respected by seeing the sub-dimensions of innovative work behavior. From the table, it emerges that, as envisaged by the factorial analysis, networking ability explains a large part of the variability in all three phases of innovation. Social astuteness has a slight significance and, in particular, affects the idea promotion phase. Apparent sincerity is positively related to the idea realization phase. The results are consistent with the theoretical expectations; in fact, the phase most explained by the variables is that of idea promotion. The networking ability coefficient is almost double for this phase of innovative behavior. Finally, the term square of political skill incorporates the marginal effects. The result is also a lack of significance for each sub-dimension, therefore, according to the results of the regression analysis, after various tests at various levels, it is possible to confirm that political skill has a positive impact on innovative behavior also in local governments and this relationships is basically linear, as expected from the research hypothesis.

Table 54: sub-dimensions of political skill and phases of innovative work behaviour<sup>182</sup>.

	Innovative work behaviour	Idea generation	Idea promotion	Idea realization
Controls:				
gender	-0.02 (0.06)	0.14 (0.22)	0.01 (0.22)	-0.35 (0.20)*
age	0.00 (0.01)	0.01 (0.02)	-0.00 (0.02)	0.01 (0.02)
university	0.05 (0.09)	0.22 (0.29)	-0.01 (0.30)	0.25 (0.27)
tenureposition	-0.01 (0.00)**	-0.03 (0.01)**	-0.02 (0.01)	-0.02 (0.01)**
manager	0.20 (0.08)**	0.52 (0.26)*	0.73 (0.25)***	0.56 (0.29)*
Main effects:				
mindfulnessmean	0.08 (0.03)***	0.18 (0.09)*	0.30 (0.10)***	0.25 (0.10)**
social_astuteness_mean	0.14 (0.08)*	0.39 (0.26)	0.45 (0.24)*	0.38 (0.26)
interpersonal_influence_mean	0.02 (0.04)	0.00 (0.12)	0.06 (0.11)	0.10 (0.12)
networking_ability_mean	0.19 (0.06)***	0.43 (0.19)**	0.79 (0.19)***	0.49 (0.22)**
apparent_sincerity_mean	0.08 (0.05)	0.26 (0.16)	0.21 (0.15)	0.25 (0.14)*
politicalskillmean2	-0.02 (0.02)	-0.03 (0.06)	-0.07 (0.04)	-0.04 (0.06)
_cons	1.00 (0.56)*	4.33 (1.79)**	2.23 (1.58)	2.47 (1.93)
N	551.00	551.00	551.00	551.00
F	10.21	7.42	11.93	9.26
r2	0.17***	0.14***	0.17***	0.13***
r2_a	0.15***	0.12***	0.15***	0.12***
rmse	0.76	2.40	2.51	2.58
Standard errors in parentheses				
* p<0.10, ** p<0.05, *** p<.01				

### Focus 3: external networking, marginal returns and secondary effects.

In previous regression analyzes it emerged that external networking had a positive impact. Now, these results are analyzed again taking into consideration the main one-dimensional factor, the two dimensions coming from the weak and strong ties theory and the two factors found through factor analyses. In addition, this section focuses on potential negative marginal effects that are expressed in the literature, even if in the graphical analysis of the check of the models relating to innovative behavior no non-linearity trends were found. Partitioning of the *externalnetworkingmean* variable by quartile is not necessary because there are no non-linearity effects, as the empirical data on the square of the value confirm what emerged from an impression of reading the graph. After the model, it is tested for relations between politics and public servants, to understand whether the single item that includes this dimension is significant by itself to explain innovation at work. Finally, there is an in-depth analysis of the effects of external networking according to the nature of the relationships in terms of distance and frequency and the effect on the various phases of innovation at work. The results are summarized in the table below and are similar to baseline model 4a of innovative work behavior. From this in-depth analysis on external networking, some relevant aspects emerge. Using the one-dimensional score instead of the average, the result does not change, the size of the social capital outside the organization remains

<sup>182</sup> These models include only cognitive capabilities. Social capital forms are not considered to highlight only the role of the various dimensions of political skill components. Including external networking, the result differs slightly. In particular, only networking ability remains significant.

significant in the reference sample of public servants. Moreover, the regressions confirm the absence of a non-linear relationship between external networking. However, this result relating to an overall measure of external networking is difficult to generalize when various stakeholders are present. The hypothesis of non-linearity, therefore, must be seen not only in symmetric terms but also asymmetrical. The existence of a different significance of the coefficients for weak, strong, proximal or distal ties leads to observe with greater attention what are the diversified effects of groups of stakeholders within the network governance. Going in detail which relationships actually have a significant impact, only the weak links according to the measurement definition of Hansen and Villadsen (2017) (*moderateweakties\_en*) and also the wider one which includes even less frequent relationships (*weakties\_en*)<sup>183</sup> have a significant impact on innovative work behavior, while strong ties appear ambivalent and insignificant. By analyzing the two factors selected in the factorial analysis according to the distance (Zyzak & Jacobsen, 2019), the factor related to proximal distance is positively and significantly related to innovative work behavior. However, the distal stakeholder factor is not significant. Given that the measurement is different between the ties according to the strength and distance, an interpretation of the results is possible.

Table 55: different way to measure external networking and innovative work behaviour.

Innovative Work Behaviour						
	Unidimensional	Strong_Weak_en	Proximal_Distal	Marginal_Effects	Politicians	Politicians2
Controls:						
gender	-0.01 (0.07)	-0.02 (0.07)	-0.02 (0.07)	-0.01 (0.07)	-0.03 (0.06)	-0.03 (0.06)
age	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)
university	0.04 (0.08)	0.03 (0.09)	0.02 (0.09)	0.04 (0.08)	0.04 (0.08)	0.04 (0.08)
tenureposition	-0.01 (0.00)**	-0.01 (0.00)**	-0.01 (0.00)**	-0.01 (0.00)**	-0.01 (0.00)**	-0.01 (0.00)**
manager	0.17 (0.08)**	0.17 (0.08)**	0.13 (0.08)*	0.18 (0.08)**	0.13 (0.08)*	0.13 (0.08)*
Main effects:						
mindfulnessmean	0.07 (0.03)**	0.07 (0.03)**	0.06 (0.03)**	0.07 (0.03)**	0.07 (0.03)**	0.07 (0.03)**
politicalskillmean	0.27 (0.04)***	0.27 (0.04)***	0.26 (0.04)***	0.27 (0.04)***	0.27 (0.04)***	0.27 (0.04)***
externalnetworking_score	0.11 (0.04)***			0.04 (0.18)		
weakties_en		0.04 (0.01)***				
strongties_en_		0.04 (0.02)				
proximal_en			0.12 (0.04)***			
distal_en			0.01 (0.05)			
externalnetworkingmean2				0.01 (0.03)		
politicians_en					0.07 (0.02)***	0.08 (0.09)
politicians_en2						-0.00 (0.01)
_cons	1.40 (0.38)***	1.23 (0.37)***	1.10 (0.38)***	1.31 (0.42)***	1.10 (0.38)***	1.08 (0.43)**
N	551.00	551.00	551.00	551.00	551.00	551.00
F	13.78	19.06	13.95	12.32	16.04	14.29
r2	0.17***	0.18***	0.19***	0.17***	0.18***	0.18***
r2_a	0.16***	0.16***	0.17***	0.16***	0.17***	0.17***
rmse	0.75	0.75	0.75	0.75	0.75	0.75
Standard errors in parentheses						
* p<0.10, ** p<0.05, *** p<.01						

<sup>183</sup> The table shows only the measure of weak ties that counts the links with relationships ranging from 2 to 4. The sign and significance of the coefficients does not change if the more "moderate" version of weak ties is used which excludes frequency 2. In sum, weak ties in the table also considers annual frequency relationships. With or without their inclusion in the measurement of the construct, the result does not change, therefore, only one datum is reported here.

With private subjects, weak ties (items 9-16) are decisive and positively linked to individual innovative behavior. Having strong ties with more distant subjects basically does not lead to benefits. Relations with proximal public subjects (measured on items 1, 2, 3, 4) also stimulate innovative behavior at work in local governments. Proximal distance is practically a more stringent measure of strong ties because it is linked to a smaller number of public stakeholders closer to the organization. This aspect is confirmed also for the sole relationship between public servants and elected politicians who are considered as representatives of citizens. Relations with politicians are significant on their own and positively related to individual innovativeness. These results are congruent with what emerges with respect to the studies on internal social capital. Strong ties to internal stakeholders and external close one matter. Ultimately, potentially, ties with more distant public entities may be less significant in the relationship with innovation. These results highlight the methodological need about the assessment of a measurement of external networking scale and the necessity to pay attention to external knowledge management optimized for the nature of the stakeholders and their distance from the public organization. A further test was conducted to understand better previous results and confirm what emerges from these analyses, which are based on different measurement tools. Compared to these results, two new variables of strong ties and weak ties have been created mixing by Hansen and Villadsen (2017). The two new variables are **proximal\_strongties** and **distal\_public\_weakties**. The latter represents the number of weak ties with distal subjects and it is built on items 5-8 as emerged from the exploratory and confirmatory factor analyzes (2, 3 and 4 in the scale for items 5-16<sup>184</sup>). The former represents the sum of the number of strong ties with respect to links with stakeholders furthest from local government both public and private ones (5, 6 and 7 in the scale for items 1-4). Weak ties is renamed as **distal\_private\_weakties**, but they measure the same construct (external relationships with private stakeholders). The three variable correspond to three different group of stakeholder identified mixing result from the literature and from the analyses conducted here. Table 55 shows that, as expected, strong ties with proximal stakeholders and weak ties with distal public and distal private stakeholders are significantly related to perceived innovativeness. As the last step, the complete model of the three types of external relations has been correlated with respect to the three distant phases of the innovation process. The various dimensions analyzed maintain their significance with respect to the outcome, with the exception of external distal public weak ties, which remains significant in a micro-foundation model that includes social capital and cognitive capabilities only for the idea realization phase.

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<sup>184</sup> Compared to the measurement of Hansen and Villadsen (2017), the term yearly is also added here. The result does not change if this value is removed. The inclusion of the value 2 seems more consistent with the literature referring to weak ties.



Table 56: Output of Stata on dimensions of external networking and innovative behaviour.

Linear regression		Number of obs	=	551		
		F(7, 49)	=	5.91		
		Prob > F	=	0.0001		
		R-squared	=	0.0867		
		Root MSE	=	.79119		
(Std. Err. adjusted for 50 clusters in orgid)						
innovativeworkbehavio~n	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
age	.0034851	.0060728	0.57	0.569	-.0087186	.0156888
university	.0696078	.0949532	0.73	0.467	-.1212079	.2604235
tenureposition	-.0093947	.0034373	-2.73	0.009	-.0163022	-.0024872
manager	.1297186	.0789972	1.64	0.107	-.0290322	.2884694
proximal_strongties	.127544	.0385044	3.31	0.002	.0501666	.2049214
distal_public_weakties	.0519248	.0220153	2.36	0.022	.0076835	.0961661
distal_private_weakties	.0399035	.0122613	3.25	0.002	.0152635	.0645436
_cons	2.528534	.3095086	8.17	0.000	1.906553	3.150515

The results are quite significant as regards theory and practice in public administration. External relations work and have different significance according to the various aspects of innovation. Strong ties with people close to the organization encourage the development of each phase for the individual who works in local government. Relations with private stakeholders are also positive at every stage. It is in the phase of promoting ideas that the knowledge that derives from the outside and the relationships with the outside that favour the ability to promote new ideas within the organization. Weak relations with more distant public stakeholders have a real significance in the complete model in the idea realization phase. This result is congruent with the theoretical and practical perspective that the intervention phase remains in the public sphere and it is in this phase that relationships in network governance strengthen innovation. In summary, external relations function as a knowledge interceptor to reinforce innovative behavior at work (H 2.2). Also relationships with elected politicians have a positive impact on individual innovative behaviour in local governments (H 2.10). Even if the report does not present symmetric aspects of non-linearity as assumed in the hypothesis H 2.4 (*Model Marginal\_Effects* in the table) and H 2.12 (*Model Politicians\_en2*), the external knowledge network can have different effects depending on the distance of the stakeholders and of the strength of the ties developed. The linearity of the overall measure contrasts with the diversifications according to the stakeholders. These results lead to the conclusion that linearity is confirmed on an overall external networking measurement value and on the specific relationships between civil servants and politicians. However, this linearity dates back to seeing external networking in a single form. Differences in measurements due to theory, to the empirical value of the factors present in the data and to the practical interpretation of the nature of external relations in terms of distance and private or public quality of the stakeholder lead to the conclusion that the hypothesis of non-linearity in the relationship on the entire external networking construct is partially confirmed.

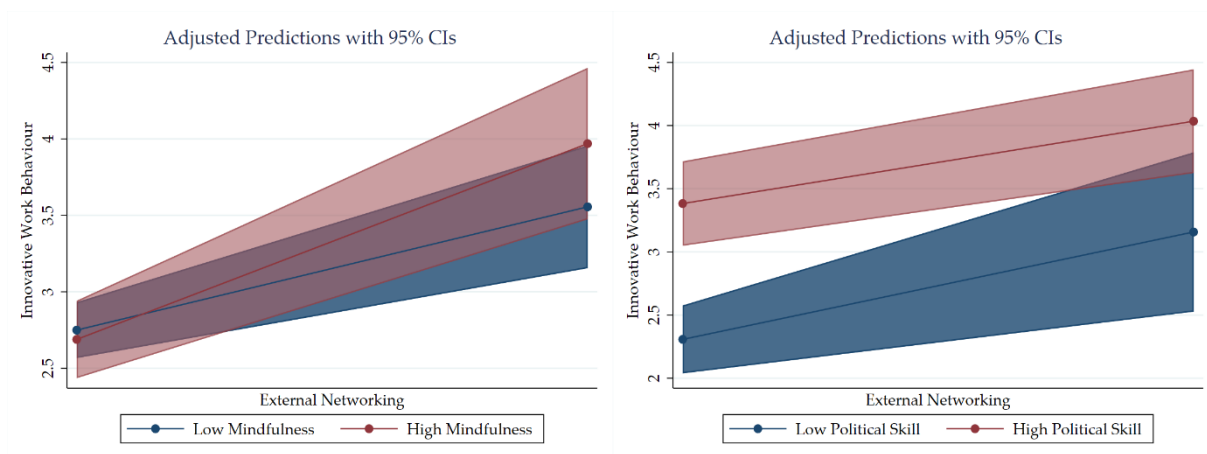
Table 57: models 4.a of different form of external networking and phases of innovation.

	Innovative work behaviour	Idea generation	Idea promotion	Idea realization
Controls:				
gender	-0.01 (0.07)	0.20 (0.25)	0.03 (0.23)	-0.28 (0.21)
age	0.00 (0.01)	0.01 (0.02)	-0.00 (0.02)	0.01 (0.02)
university	0.04 (0.08)	0.20 (0.29)	-0.04 (0.28)	0.25 (0.25)
tenureposition	-0.01 (0.00)***	-0.04 (0.01)**	-0.02 (0.01)*	-0.03 (0.01)**
manager	0.16 (0.08)**	0.39 (0.23)*	0.61 (0.23)**	0.41 (0.27)
Main effects:				
mindfulnessmean	0.07 (0.03)**	0.15 (0.09)	0.26 (0.10)**	0.24 (0.09)**
politicalskillmean	0.26 (0.04)***	0.75 (0.13)***	0.87 (0.11)***	0.76 (0.11)***
proximal_strongties	0.08 (0.04)**	0.22 (0.11)*	0.26 (0.12)**	0.25 (0.12)**
distal_public_weakties	0.03 (0.02)	0.07 (0.08)	0.09 (0.08)	0.14 (0.07)*
distal_private_weakties	0.03 (0.01)**	0.09 (0.04)*	0.12 (0.05)***	0.08 (0.04)*
_cons	1.12 (0.39)***	4.49 (1.28)***	2.78 (1.25)**	2.77 (1.26)**
N	551.00	551.00	551.00	551.00
F	17.13	9.84	21.19	14.92
r <sup>2</sup>	0.18***	0.15***	0.18***	0.15***
r <sup>2</sup> <sub>a</sub>	0.17***	0.13***	0.17***	0.13***
rmse	0.75	2.38	2.49	2.56
Standard errors in parentheses				
* p<0.10, ** p<0.05, *** p<.01				

#### Focus 4: interactions between cognitive capabilities and social capital.

The previous results show that contemplating the joint effects of the whole model, the interactions appear not significant. To better understand whether or not the hypotheses of moderation of cognitive skills on forms of social capital in relation to individual dynamic capabilities are acceptable, the model has been revised to purify the direct effect of the intervening variables. In this way, only the moderating effect compared to the direct effect of cognitive abilities is highlighted. In addition, the managerial dimension as constant has been removed due to the high degree of significance it presented and interference with possible less evident results on micro-foundation variables. In the latter case, the moderation hypotheses were tested for managers and non-managers in order to reveal potential ambivalences in the results. Despite these changes, the result does not change and the moderation effects seem not to be significant unlike what has been hypothesized. Moreover, the nature of interactions between cognitive capabilities and social capital is performed graphically on simple slopes analysis (Aiken & West, 1991). Variables are mean centered before creating the interaction term (Aiken & West, 1991). The values of the intervening variable are set to one standard deviation above (high level) or below the mean that is centered in 0 (e.g. Pieterse et al., 2009). When the range for the intervening variable is higher, it is set to two standard deviations above (high level) and below (low level) (Grosser et al., 2018). In the plot, the range of the independent variables is set from the minimum to the maximum level (Grosser et al., 2018).

Figure 52: Interactions plot of mindfulness (+/- 1 s.d.) (H 6.4) and political skill (+/- 2 s.d.) (H 10.4) with external networking predicting innovative work behaviour.



In this way, it is possible to observe the effects on all the values, rather than setting them one standard deviation below and above the mean. In any case, for a graphical interpretation, on the left there are values below the mean and on the right data above the mean. Plots of regressions line are in following figures. An inspection of the graphs allows to evaluate the nature of the interactions. As for external relations, the plot shows that political skill does not influence, therefore, the hypothesis of moderation H 10.4 is not confirmed. Political skill changes the intercept, but it has not interactive effect with external networking unlike what was expected from the literature. However, for mindfulness further study is needed because, even if the PV of the interaction term is over the threshold of acceptability ( $PV > 0.18$ ), the plot shows that the innovation value of those with low mindfulness is lower for those with low external networking than those with a higher mindfulness value. The regression was divided into two subgroups, below the external networking average and above the average (including the mean in the second sub-group). Table 58 shows that mindfulness can be considered a mediator in the relation between external networking and innovative work behaviour, when the value of social capital is below the mean. When external networking is a range from the mean to higher values, the interaction effect of mindfulness is not more significant. These results mean that mindfulness is a cognitive capability useful when the external social capital is low.

Table 58: external networking, mindfulness and interaction with perceived innovative work behaviour (below and above the mean refer to the level of external networking).

	Below the mean	Above the mean
C_mindfulnessmean	0.31 (0.13)**	0.11 (0.06)*
C_externalnetworkingmean	0.31 (0.16)*	0.12 (0.06)*
c.C_mindfulnessmean#c.C_externalnetworkingmean	0.38 (0.16)**	-0.01 (0.06)
_cons	3.12 (0.12)***	3.16 (0.07)***
N	296.00	255.00
F	3.91	3.16
r2	0.05**	0.03**
r2_a	0.04**	0.02**
rmse	0.83	0.75
Standard errors in parentheses		
* p<0.10, ** p<0.05, *** p<0.01		

When there are few relationships and less frequent, mindfulness allows you to make the most of them to obtain the knowledge resources needed to strengthen innovative behavior while working in the local government. When there are many relationships and these are very frequent the role of cognitive capabilities based on attention becomes less relevant. In summary, the H 6.4 hypothesis can only be partially confirmed for those civil servants who have relatively lower external networking. For those employees who have a lot of external social capital, the moderation of mindfulness loses interest. This result is also consistent with the decreasing marginal effect of mindfulness so that at some point even the interaction loses strength when innovation values are already relatively high. The following plots highlight that the hypotheses for moderating cognitive capabilities with respect to strong and weak forms of internal social capital are not significant. From a graphic perspective, mindfulness seems to have a slight impact on the slope of the regression curve, conversely political skill affects only the intercept and does not have any type of interaction with internal social capital. Data the results of the regressions and the graphical analysis of the slope, it is possible to assert that mindfulness and political skills do not significantly moderate the relationship between weak and strong ties within the organization in relation to innovative behavior at work. By repeating the results for the three sub-dimensions, the significance results do not change. Future studies must take into account the internal and external knowledge networks in a longitudinal way. In fact, with a single reference time, the moderation of the cognitive attention and social capabilities seem to have no effect in the use of the available networks, in the sense that they do not amplify or reduce the effect compared to innovative behavior, unlike what is expected from the literature and hypotheses. The study of social networks over time can also allow us to understand how individuals shape the network and use it to obtain positive outcomes at work.

Figure 53: Interactions plot of mindfulness (+/- 1 s.d.) (H 6.2a) political skill (+/- 2 s.d.) (H 10.2a) with strong ties (internal social capital) predicting innovative work behaviour.

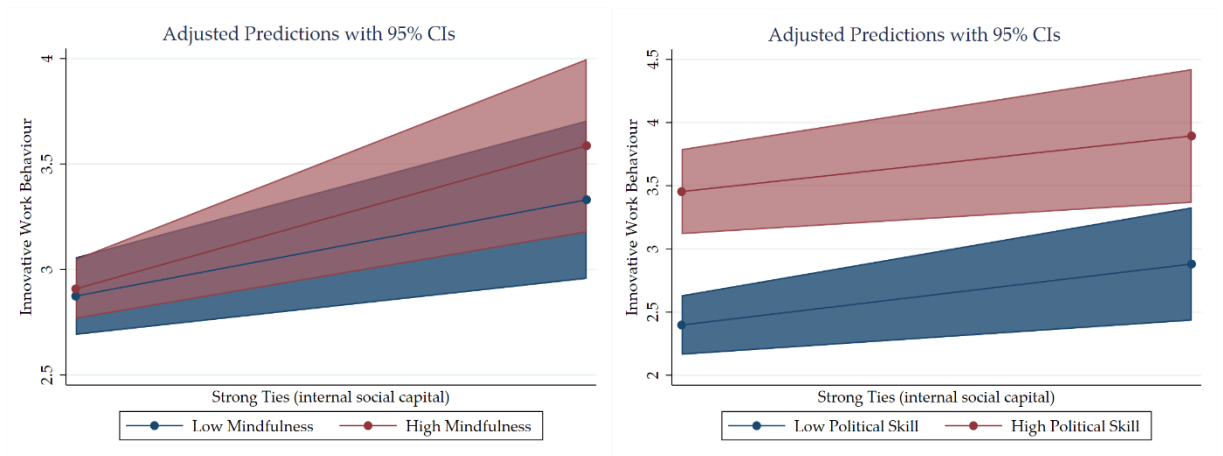
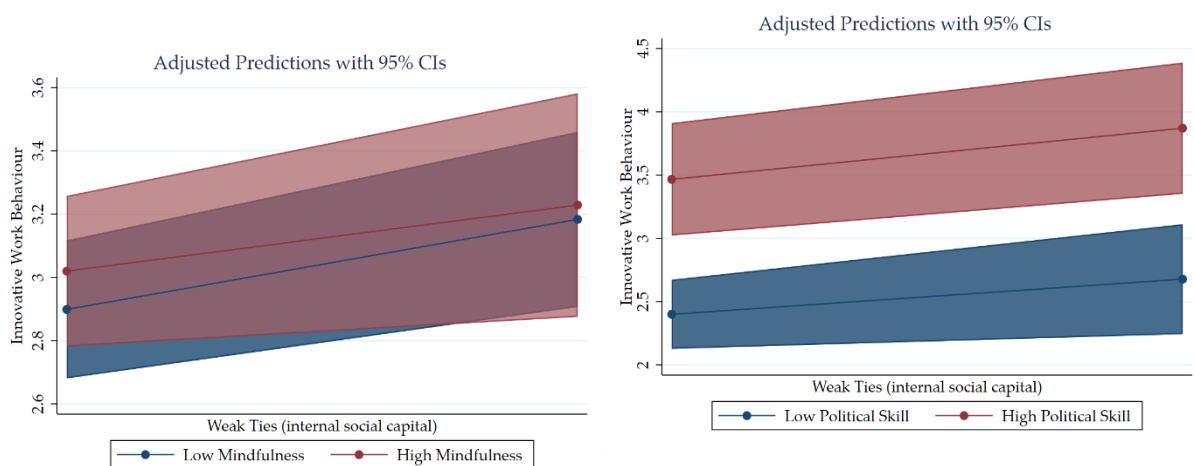


Figure 54: Interactions plot of mindfulness (+/- 1 s.d.) (H 6.2b) and political skill (+/- 2 s.d.) (H 10.2b) with weak ties (internal social capital) predicting innovative work behaviour.



### Focus 5: interactions between different forms of social capital.

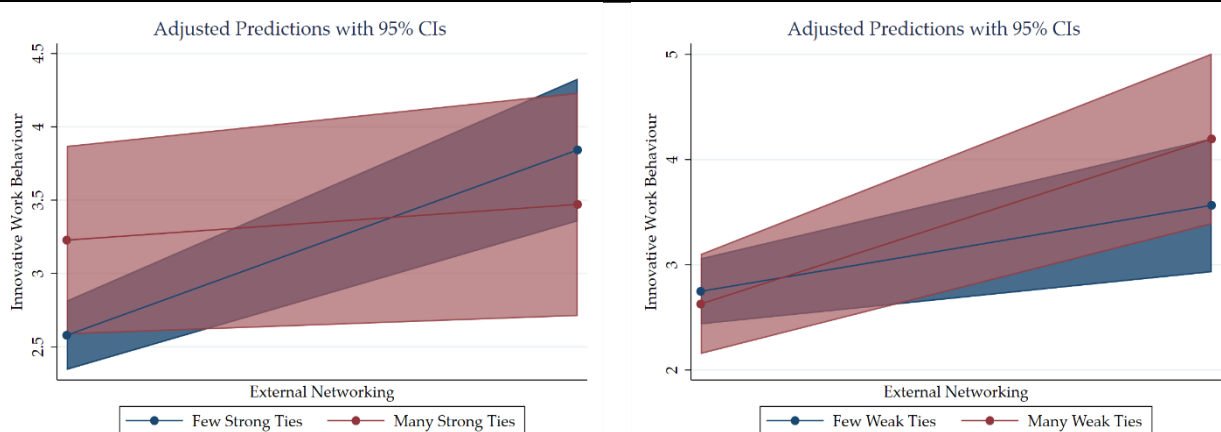
As regards the aspects of the interaction between variables, the micro-foundation of innovative behavior could also depend on how the forms of social capital based on knowledge within and outside the organization can act jointly. Hypothesis H 2.8 assumes that the effect of external relations is moderated by the presence of internal relations within the organization. It is obviously a hypothesis of the relationship between variables, since, with the data available, it is not possible to make inferences and give causality interpretations. The problem that arises here concerns the fact that external knowledge can be effectively used in the event that the social network internal to local government is equally interconnected. Or more precisely. External knowledge becomes useful only in cases where there is an adequate internal social capital capable of receiving the knowledge that derives from the outside. This hypothesis is consistent with what emerged in the development of a knowledge management model in the public sector and Network Governance. At the methodological level, the answer to this hypothesis is limited to the fact that it was not

possible to have the complete data on the entire networks as occurs in the SNA studies. The advantage of this work is that there is no comparison between two networks of two organizations, but internal social capital is measured individually on 44 local governments. The regressions include only the variables involved in this hypothesis and mean-centered to eliminate the multicollinearity problem (Aiken & West, 1991). There is no significance of internal social capital moderation for weak ties or strong ties. However, graphically, the slope analysis indicates that there is a tendential influence on the number of weak and strong links in the relationship between external networking and perceived innovation. The slope takes a different direction depending on whether the social capital is measured with strong bonds and weak bonds. In the latter case, many weak bonds increase the slope of the curve in positive. In the former case, on the other hand, having too many strong links outside and inside the organization in a joint way reduces the slope. Statistical analyzes clearly do not allow to fully confirm hypothesis H 2.8. However, future research with different measures of internal social capital may give a more precise answer than this research question. Furthermore, these hypotheses are developed on the assumption that it is internal social capital to moderate the relationship, while, it is possible that longitudinal studies support that moderation derives from external networking. Only data on dynamic networks and with repeated and spaced observations over time can be given more certain conclusions on the hypotheses concerning the interaction between the forms of social capital.

Secondly, the innovation dimension has been divided into 3 sub-dimensions. Strong ties is significantly a negative moderator of the relationship between external networking and idea generation. This result can be interpreted as consistent with the literature. In fact, the research hypothesis does not give a specific sign to the interaction effect.

An exclusive presence of strong ties within and outside the organization leads the individual to have a strong access to knowledge resources

Figure 55: Interactions plot of strong ties (+/- 1 s.d.) (H 2.8a) and weak ties (+/- 1 s.d.) (H 2.8b) with external networking predicting innovative work behaviour.



Therefore, taken individually the two variables have a positive effect. The presence of strong links inside and outside in proportion to all stakeholders involves constant and strong access to a certain type of knowledge, which reduces the potential to generate innovative ideas at work. The theoretically unexpected aspect, on the other hand, concerns the idea promotion phase, as the expectation was that having strong internal and external links jointly strengthened this phase thanks to the support that public servants could ask in both directions. . As for the effect of weak links as an intervening variable, it is always insignificant. From a graphic reading, however, it emerges how the presence of many weak ties can change the slope of the relationship between external networking and innovative work behavior in its different phases. The following two pages show the results of the OLS regressions and the plots that show the different interactions for each phase of innovation. In summary, the interaction between elements of social capital is not significantly an element of micro-foundation of innovation in local governments unlike what was expected. Moreover, the inclusion of moderation between forms of social capital can make the direct effect of strong and weak ties on innovation no longer significant. Remaining a simple graphic interpretation, however, the role of weak bonds tends to be more significant than strong bonds within the organization. As written at the beginning of this section, the limits of this analysis concern the methods of measuring the internal social capital which is limited to the strength of the bonds, while there is no overall assessment of the networks. A simultaneous development of strong links inside and outside the organization could jointly have a decreasing marginal return, although this figure is not significant for the individual independent variables. In addition, the reference sample is out of 484 employees in 44 municipalities and the analysis is not complete on all organizations. These analyzes can be the subject of future studies on these data through probabilistic ways of reconstructing the links within the local governments. Further details may concern the subdivision of external weak ties according to the distance and strength of the bonds as analyzed in the relative previous section.

Table 59: interaction between strong ties and external networking with perceived innovation.

	Innovative behaviour	Idea generation	Idea promotion	Idea realization
C_strongties_isc_	0.34 (0.21)	0.88 (0.57)	1.37 (0.73)*	0.78 (0.73)
C_externalnetworkingmean	0.20 (0.05)***	0.56 (0.15)***	0.63 (0.16)***	0.58 (0.17)***
c.C_strongties_isc_#c.C_externalnetworking	-0.20 (0.15)	-0.98 (0.46)**	-0.44 (0.51)	-0.39 (0.53)
_cons	3.05 (0.05)***	9.82 (0.13)***	8.89 (0.14)***	8.77 (0.16)***
N	484.00	484.00	484.00	484.00
F	7.33	6.93	8.01	5.62
r <sup>2</sup>	0.07***	0.06***	0.07***	0.05***
r <sup>2</sup> <sub>a</sub>	0.06***	0.05***	0.07***	0.04***
rmse	0.78	2.43	2.59	2.65
Standard errors in parentheses				
* p<0.10, ** p<0.05, *** p<0.01				



Table 60: interaction between weak ties and external networking with perceived innovation.

	Innovative behaviour	Idea generation	Idea promotion	Idea realization
C_weakties_isc_	0.12 (0.22)	0.28 (0.71)	0.10 (0.75)	0.69 (0.62)
C_externalnetworkingmean	0.21 (0.05)***	0.57 (0.15)***	0.72 (0.16)***	0.61 (0.16)***
c.C_weakties_isc_#c.C_externalnetworkingme	0.16 (0.19)	0.36 (0.63)	0.55 (0.59)	0.54 (0.64)
_cons	3.03 (0.04)***	9.73 (0.13)***	8.84 (0.14)***	8.73 (0.15)***
N	484.00	484.00	484.00	484.00
F	8.00	5.94	8.08	8.19
r <sup>2</sup>	0.06***	0.05***	0.06***	0.05***
r <sup>2</sup> _a	0.05***	0.04***	0.06***	0.04***
rmse	0.78	2.45	2.60	2.66
Standard errors in parentheses				
* p<0.10, ** p<0.05, *** p<0.01				

## 2. MICROFOUNDATION OF AMBIDEXTERITY: OLS, MAIN AND INTERACTION EFFECTS.

The first method of analysis Ordinary Least Square linear regression with a hierarchical presentation, as it was done for perceived innovation. Using the same methodology and procedure also allows a comparison of the results with respect to two different individual dynamic capabilities in local governments. The first baseline models concern regression on the two modes of calculation of ambidexterity which are multiplicative and continuous summative. To avoid repetition and to weigh down the work, subsequent analyzes are carried out on both methods of calculation, but only the version of individual ambidexterity calculated as the multiplication between the average of exploitation with the average of exploration is reported here. Linear regressions are made with these simplified dimensions, while the subsequent structural equation model provides for the measurement of ambidexterity as a second-order latent variable, with a weighting of the values that do not depend on ex-ante choices such as the sum or multiplication. The use of different measurement strategies can allow greater confidence in the validity of the results obtained. The baseline models are the same as those who have been seen for innovation. The Model 1 is composed of control variables which are then replicated in the various more complex subsequent models. Model 2 includes the dimensions of cognitive capabilities. Model 3 is organized in three different versions to focus attention on the role of internal and external social capital. Model 3a focuses on external networking, while models 3b and 3c include the internal dimensions of the social capital and are calculated on the basis of the data of the reduced sample. In the same way that for innovative work behavior, In the Model 4 there are all the variables together, (4.b) including or (4.a) less internal social capital (reduced sample). The Model 5 includes the



interaction effects of political skill and mindfulness on external networking. The model 6 includes the interaction effects of political skill and mindfulness on internal social capital and external social capital. By including only the terms of the interaction of mindfulness or political skill, the result does not change. From this first analysis some answers to the research hypotheses emerge. In all models, political skill emerges as a statistically explanatory variable of ambidexterity as expected from hypothesis 7.1. The result is significant for ambidexterity calculated in multiplicative and summative terms. External networking is a significantly significant dimension in all models. If, on the one hand, these results confirm that the microfoundation of innovation and ambidexterity follows a similar path, conversely, mindfulness does not have the same effect and is not significant (H 3.1). Separate discussion for internal social capital. Strong ties are significant only in an externally closed organization model, therefore, strong relationships, in a certain sense, remain positive if you look at them in themselves. Weak ties is significant when the outcome variable is calculated summatively and is continuous and of slight significance even in model 6 which includes the terms of interaction. From a reading of the results, it is possible to affirm that there is less confirmation for the direct effect of the social capital internal to local governments on individual ambidexterity. The way in which the variable is measured and the complexity of the model can indicate the significance, but not the direction of the relationship.

Table 61: OLS regressions about individual ambidexterity (multiplicative). Baseline models.

Variable	model_1	model_2	model_3a	model_3b	model_3c	model_4a	model_4b	model_5	model_6
gender	-0.049	0.163	0.363	0.439	0.724**	0.447	0.735**	0.452	0.705**
age	0.008	0.007	0.016	0.003	0.005	0.014	0.005	0.012	0.006
university	0.528	0.380	0.492	0.494	0.347	0.378	0.284	0.353	0.262
tenureposition	-0.012	-0.015	-0.024	-0.018	-0.021	-0.024	-0.022	-0.023	-0.021
manager	0.832*	0.831*	0.224	0.781*	0.352	0.356	0.455	0.376	0.517
mindfulnessmean		0.163				0.133	0.085	0.141	0.072
politicalskillmean		1.341***				1.108***	1.180***	1.095***	1.200***
externalnetworkingmean			1.381***		1.202***	1.080***	0.839***	1.048***	0.781***
weakties_isc_				1.006	0.004		0.626		0.695
strongties_isc_				2.918**	1.227		1.247		1.262
mindfulness_externalnetw								0.273	-0.007
politicalskill_extnetw								0.058	0.221
politicalskill_weakties									-0.520
politicalskill_strongties									-0.093
mindfulness_weakties									0.016
mindfulness_strongties									1.293
_cons	10.451***	3.465*	6.671***	9.406***	7.113***	1.731	2.009	1.878	1.995
N	551	551	551	484	484	551	484	551	484
F	1.789	11.557	10.805	2.927	7.240	20.281	14.717	17.545	14.702
r2_a	0.009	0.097	0.084	0.028	0.079	0.139	0.136	0.139	0.131
rmse	4.282	4.089	4.117	4.166	4.055	3.991	3.926	3.992	3.938

legend: \* p<.1; \*\* p<.05; \*\*\* p<.01

Table 62: OLS regressions about individual ambidexterity (summative). Baseline models.

Variable	model_1	model_2	model_3a	model_3b	model_3c	model_4a	model_4b	model_5	model_6
gender	0.004	0.062	0.124	0.149*	0.234***	0.146*	0.233**	0.144*	0.230***
age	0.003	0.002	0.005	0.001	0.001	0.004	0.001	0.004	0.001
university	0.142	0.096	0.131	0.143	0.100	0.096	0.077	0.089	0.071
tenureposition	-0.002	-0.003	-0.006	-0.004	-0.005	-0.006	-0.005	-0.005	-0.005
manager	0.256**	0.257**	0.079	0.252*	0.125	0.119	0.159	0.119	0.166
mindfulnessmean		0.018				0.009	-0.010	0.017	-0.007
politicalskillmean		0.396***				0.328***	0.358***	0.319***	0.353***
externalnetworkingmean			0.403***		0.356***	0.315***	0.247***	0.307***	0.236***
weakties_isc_				0.427**	0.131		0.323		0.353*
strongties_isc_				0.825**	0.325		0.333		0.324
mindfulness_externalnetw								0.099	0.033
politicalskill_extnetw								-0.031	-0.003
politicalskill_weakties									0.016
politicalskill_strongties									0.091
mindfulness_weakties									0.064
mindfulness_strongties									0.330
_cons	6.426***	4.524***	5.322***	6.084***	5.406***	4.018***	4.047***	4.073***	4.062***
N	551	551	551	484	484	551	484	551	484
F	1.901	7.552	9.274	3.455	6.529	12.003	9.594	13.718	16.309
r <sup>2</sup> _a	0.009	0.095	0.082	0.028	0.077	0.137	0.136	0.138	0.129
rmse	1.263	1.206	1.215	1.250	1.218	1.178	1.178	1.177	1.183

legend: \* p<.1; \*\* p<.05; \*\*\* p<.01

The results that emerge from the columns of models 5 and 6 confirm what has been found for innovative behavior, so the assumptions made on the interactions between variables tend not to be generally significant. Compared to the initial expectations based on theory, the moderation effects do not seem to have effects in the explanation of individual ambidexterity. To calculate them, however, the procedure recommended in the methodological literature was followed whereby To assess interaction effects, in each model, interaction terms were entered in a separate step after the main terms were entered. To correct for the multicollinearity that can arise when testing moderate relationships among continuous variables, independent and interaction variables were centered before generating interaction terms (Aiken & West, 1991)

#### Regression diagnostic of OLS for baseline models of individual ambidexterity.

The table shows that the models analyzed do not present substantial problems of linearity, Multicollinearity and model specification. A model specification problem tends to emerge in model 3a for which control and external networking variables are present. This model could present the lack of omitted variables. A possible problem is the non-normality of the residues even if the literature and the methodological debate evaluate this assumption for OLS not very relevant, when robustness factors are present (the cluster option also goes in this direction).

Table 63: tests for the assumption of OLS for models about perceived individual ambidexterity (multiplicative).

Assumptions for OLS	Test	Model 1	Model 2	Model 3a	Model 3b	Model 3c	Model 4a	Model 4b	Model 5	Model 6
Linearity	Graphical	! <sup>185</sup>	! <sup>186</sup>	! <sup>187</sup>	! <sup>188</sup>	!	!	!	! <sup>189</sup>	
Normality of residuals	Shapiro-Wilk ( <i>ok if PV&gt;0.10; acceptable PV&gt;0.01</i> )	! PV= 0.00266	! PV= 0.04178	! PV= 0.00002	! PV= 0.03374	! PV=	! PV= 0.00095	! PV=	! PV= 0.00148	! PV= 0.03779
Number of outliers (Mild/Severe)	Severe outlier - problem	6/0	6/0	6/0	3/0	4/0	11/0	6/0	11/0	6/0
Multi-collinearity	VIF (mean)	1.26	1.19	1.25	1.22	1.26	1.21	1.23	1.18	1.20
Model specification 1	Linktest ( <i>ok if hat_sq PV&gt;0.10</i> )	-	-	-	-	-	-	-	-	-
Model specification 2	Reset test ( <i>ok if PV&gt;0.10</i> )	-	-	! PV= 0.0916	-	-	-	-	-	-

The symbol “-” indicates the lack of problems for this test. The symbol “!” indicates that there is a possible issue for this test.

In specific, the Gauss-Markov Theorem considers that the OLS estimate is the best linear unbiased estimator (BLUE) of the regression coefficients as long as the errors

For each model it is not possible to reject the null hypothesis of that residuals are normally distributed when the pv is above a certain threshold value. The table also reports the PVs of the Shapiro-Wilk test and, assuming the methodological considerations on the relative relevance of this preliminary assumption to OLS, the assumption relaxes in these analyses, The models analyzed remain valid, especially for the presence of the cluster option which is robust. The problem may be more present for models that use summative ambidexterity, since the PV of the Shapiro-

<sup>185</sup> The variable tenure in position is tested here. It has a graphical linear relation with innovative work behaviour. For values higher than 30 years, the relationship is slightly less linear. A logarithmic and a quadratic transformation do not change results. Data without transformations are considered acceptable.

<sup>186</sup> Graphically, mindfulness has no linearity problems. However, political skill presents a mono linear relationship shape presumably due to the presence of outliers.

<sup>187</sup> The relation between external networking and individual ambidexterity appears non-linear graphically. A logarithmic transformation brings this relationship to linearity. The results compared to the models do not change. In the paragraph dedicated to the non-linearity of the relationship is tested for the presence of decreasing marginal effects with the presence of the term to the square of external networking. Moreover, using the scores of first factor of external networking, the relation become linear.

<sup>188</sup> The relation between strong ties and individual ambidexterity appears linear graphically.

<sup>189</sup> The interaction between mindfulness and external networking with ambidexterity appear linear, otherwise the interaction between political skill and external networking is not linear.

Wilk test is always lower than the acceptability threshold value of 0.01. This is a further methodological motivation to continue the analysis of multiplicative individual ambidexterity in the following statistical analyses. In order to confirm the possibility of continuing with this type of analysis, the *iqr* test (Hamilton, 1992) relating to the presence of mild and severe outliers in the model was developed. The latter can seriously change effects, while the former are often natural in sampling (Hamilton, 1992). The test confirms the limited presence of mild outliers while severe outliers are absent. Since mindfulness is not significant, unlike the previous section on innovative work behavior, the focus is on possible non-linear relationships, marginal and secondary effects of political skill and external networking. Even in the absence of significance, the focus is subsequently on slope analysis of the interactions.

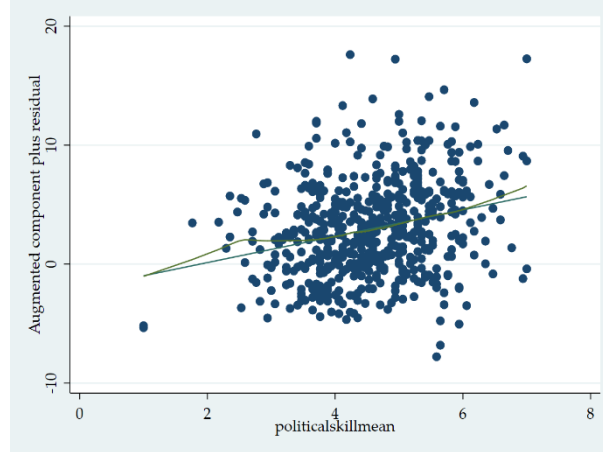
### Focus 1: does political skill have a non-linear relationship with individual ambidexterity?

In the hypotheses, the relation between political skill and individual ambidexterity is assumed as linear (h 7.1) and without diminishing returns (H 7.3). The possibility of a non-linear effect was first performed graphically. Irregularities emerge potentially caused by the possible presence of outliers (5 mild outliers, calculated with *iqr* (Hamilton, 1992), regressing only political skill with individual ambidexterity).

Table 64: political skill regressions and individual ambidexterity to test non-linear effects.

Dependent variable: Individual Ambidexterity				
	PS1	PS2	PS3	PS4
Controls:				
gender	0.47 (0.29)	0.47 (0.29)	0.47 (0.29)	0.56 (0.31)*
age	0.01 (0.02)	0.01 (0.02)	0.01 (0.03)	0.01 (0.02)
university	0.37 (0.38)	0.37 (0.38)	0.37 (0.38)	0.40 (0.39)
tenureposition	-0.02 (0.02)	-0.02 (0.02)	-0.02 (0.02)	-0.02 (0.02)
manager	0.38 (0.40)	0.38 (0.40)	0.38 (0.39)	0.29 (0.41)
Main effects:				
mindfulnessmean	0.12 (0.17)	0.12 (0.17)	0.12 (0.16)	0.16 (0.17)
politicalskillmean	0.14 (1.27)			
politicalskillmean2	0.11 (0.14)	0.11 (0.14)	0.12 (0.08)	0.12 (0.10)
externalnetworkingmean	1.08 (0.19)***	1.08 (0.19)***	1.09 (0.19)***	1.07 (0.19)***
C_politicalskillmean		0.14 (1.27)		
politicalskill_score			-0.00 (0.70)	
social_astuteness_mean				-0.23 (0.32)
interpersonal_influence_mean				-0.13 (0.19)
networking_ability_mean				0.32 (0.36)
apparent_sincerity_mean				0.05 (0.29)
_cons	3.93 (3.27)	4.55 (3.61)	4.24 (2.17)*	4.25 (2.81)
N	551.00	551.00	551.00	551.00
F	17.38	17.38	17.67	15.25
r <sup>2</sup>	0.15***	0.15***	0.15***	0.16***
r <sup>2</sup> <sub>a</sub>	0.14***	0.14***	0.14***	0.14***
rmse	3.99	3.99	3.99	3.99
Standard errors in parentheses				
* p<0.10, ** p<0.05, *** p<.01				

Figure 56: augmented component-plus-residual plot of model 4a of individual ambidexterity with the independent variable *politicalskillmean*.

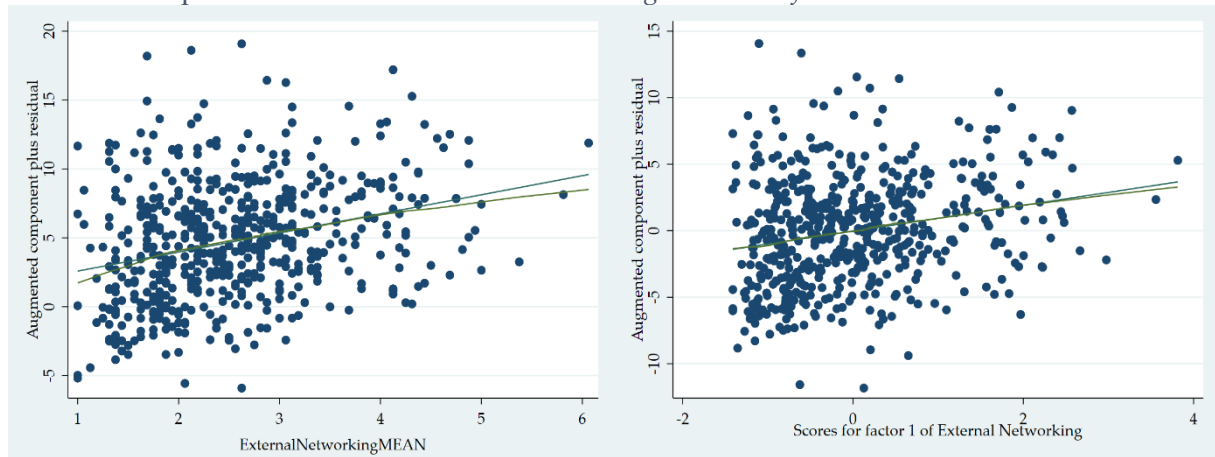


In general, the trend tends to be close to the linear one. Subsequently, to check the multi-collinearity problem (which in any case remains beyond the threshold of  $Vif = 0.10$ ), four models were analyzed. In PS1 political skill is measured with the average (higher Vif 43.01), in PS2 the construct is measured after mean centering (higher Vif 43.01), in PS3 the construct is measured with the score of the first main factor (higher Vif 20.61). Finally, in PS4, political skill is scissor in the 4 sub-dimensions. Factorial analysis does not give independent validity to the individual sub-dimensions of political skill, otherwise the analysis is still conducted to reduce the problem of multi-collinearity (Higher Vif of model PS4 is 26.10, but only for *politicalskillmean2*, while in other regressions at least two variables have Vif higher than 0.10). The results reveal that the problem of non-linearity for political skills with respect to individual ambidexterity does not exist, therefore, the research hypotheses of direct linear effects are respected.

### Focus 2: external networking, marginal returns and secondary effects.

In previous regression analyses it emerged that external networking presents a positive but graphically nonlinear relationship with individual ambidexterity. A linear transformation of the external networking dimension makes the relationship linear. A deeper understanding is necessary to understand the nature of the relationship with respect to the assumption made of decreasing marginal returns (H 2.3). In this part, the analyses carried out for innovative behavior are replicated. In particular, first the regression analysis is carried out with a single main factor, then with the dimensions of weak and strong ties that emerge from the literature on the subject and subsequently with the two factors found through factor analyses. A further focus concerns potential negative marginal effects that are expressed in the literature, considering that the graphical analysis of the check of the models relating to individual ambidexterity (multiplicative) shows some non linearity trends.

Figure 57: augmented component-plus-residual plot of model 4a of individual ambidexterity with the independent variables *external networking mean* and *factorial scores*.



The use of the score of the main external networking factor shows that the relationship is practically linear. Partitioning of the *externalnetworkingmean* variable by quartile (Meier & O'Toole, 2002) does not give evident results empirically. This procedure can be biased and overabundant and the results are therefore not reported. To compare the result with respect to the analyses with innovative work conditions above, the model on the marginal effects includes the score of the first factor external networking (VIF = 24.01) and the quadratic form of the dimension (VIF = 23.67) (using the mean center of external networking mean, the result does not change).

The VIF is above the 0.10 threshold as it often happens for interaction analyses, therefore, the result must be interpreted carefully. Since the two terms, linear and nonlinear, are not significant when they are jointly present, it is possible to say that this is not nonlinear regression. Furthermore, in a one-dimensional model, the score of external networking confirms that it is significantly positively associated with individual ambidexterity and graphically does not show significant problems of non-linearity of the relationship. H2.3 is not supported. The effect remains linear and there are no statistically significant diminishing returns. In the baseline models and in the subsequent analyses, for simplicity of interpretation and the possibility of comparing with the results obtained with respect to innovative work behavior, the external networking average is maintained as an independent variable rather than using the score or a logarithmic transformation. With regard to an in-depth analysis of the nature of relations with external stakeholders, in this section too, an in-depth analysis is required with respect to reading the statistical data obtained. In the second model, the dimensions of weak private ties and strong public ties according to the classification of Hansen and Villadsen (2017) and both have a significant and positive effect on individual ambidexterity, consistent with the research hypotheses and the theory of Network Governance.

Table 65: different ways to measure external networking and individual ambidexterity.

Individual Ambidexterity - Multiplicative						
	Unidimensional	Strong_Weak_en	Proximal_Distal	Marginal_Effects	Politicians	Politicians2
Controls:						
gender	0.44 (0.29)	0.30 (0.31)	0.37 (0.30)	0.44 (0.29)	0.27 (0.31)	0.27 (0.31)
age	0.01 (0.03)	0.01 (0.02)	0.01 (0.02)	0.01 (0.03)	0.02 (0.02)	0.02 (0.02)
university	0.36 (0.38)	0.26 (0.38)	0.23 (0.40)	0.38 (0.38)	0.37 (0.39)	0.35 (0.39)
tenureposition	-0.02 (0.02)	-0.02 (0.02)	-0.03 (0.02)	-0.02 (0.02)	-0.03 (0.02)	-0.03 (0.02)
manager	0.40 (0.41)	0.44 (0.41)	0.12 (0.40)	0.42 (0.41)	0.14 (0.40)	0.13 (0.41)
Main effects:						
mindfulnessmean	0.13 (0.16)	0.11 (0.16)	0.11 (0.17)	0.12 (0.17)	0.12 (0.17)	0.12 (0.17)
politicalskillmean	1.14 (0.19)***	1.17 (0.18)***	1.05 (0.18)***	1.14 (0.18)***	1.16 (0.17)***	1.17 (0.17)***
externalnetworking_score	0.97 (0.19)***			0.17 (1.04)		
weakties_en		0.19 (0.08)**				
strongties_en		0.42 (0.11)***				
proximal_en			0.84 (0.21)***			
distal_en			0.32 (0.23)			
externalnetworkingmean2				0.14 (0.18)		
politicians_en					0.53 (0.09)***	0.33 (0.52)
politicians_en2						0.02 (0.06)
_cons	4.42 (2.13)**	3.28 (2.17)	1.79 (2.12)	3.33 (1.88)*	2.00 (2.07)	2.34 (2.09)
N	551.00	551.00	551.00	551.00	551.00	551.00
F	17.83	17.80	24.92	19.08	18.65	17.19
r2	0.15***	0.14***	0.17***	0.15***	0.16***	0.16***
r2_a	0.13***	0.12***	0.15***	0.13***	0.15***	0.15***
rmse	4.00	4.03	3.96	4.00	3.97	3.97
Standard errors in parentheses						
* p<0.10, ** p<0.05, *** p<.01						

The analysis was subsequently carried out considering the two distal and proximal factors found in the factor analysis relating to external networking. Based on the distance, as per perceived innovation, it is the ties with the nearby public stakeholders that are significant, while the distant external relations are not significant. Also in this case the effect is not due so much to relations with private external subjects (weak ties is positive and significant), when rather to relations with public subjects more distant from the focal local government. The last models concern relations between politics and public servants in local governments, to assess whether the single item is significant by itself to explain individual ambidexterity or less. The last two columns show that administrators-politicians relationships have a positive impact on individual ambidexterity, supporting H 2.9. In the last column, however, it is possible to note that, by inserting the quadratic form of the relationship with elected, politicians, the effect of both dimensions is not significant, therefore, the hypothesis of decreasing marginal returns is not basically supported (H 2.11 ). To better understand external relations according to strength, nature, distance and frequency, the forms of external networking based on mixing the approach adopted in the literature Hansen and Villadsen (2017) and the results from factor analyses

. **Distal\_private\_weak** ties have the same value as weak ties analyzed above (change the name only for display clarity). **Distal\_public\_weakties** ties concern the relationship with public organizations that may be more distant than focal organizations (public school, healthcare, law enforcement, other State employees ).



Table 66: models 4.a - forms of external networking, ambidexterity, exploitation and exploration.

	Ambidexterity_Multiplicative	Ambidexterity_Summative	Exploitation	Exploration
Controls:				
gender	0.32 (0.32)	0.11 (0.09)	0.08 (0.06)	0.03 (0.07)
age	0.01 (0.03)	0.00 (0.01)	0.01 (0.00)*	-0.00 (0.01)
university	0.38 (0.38)	0.09 (0.11)	-0.02 (0.07)	0.11 (0.08)
tenureposition	-0.02 (0.02)	-0.01 (0.01)	0.00 (0.00)	-0.01 (0.00)*
manager	0.50 (0.42)	0.16 (0.12)	0.04 (0.06)	0.11 (0.08)
Main effects:				
mindfulnessmean	0.17 (0.17)	0.02 (0.05)	-0.02 (0.03)	0.03 (0.03)
politicalskillmean	1.20 (0.18)***	0.35 (0.05)***	0.16 (0.04)***	0.20 (0.04)***
proximal_strongties	0.36 (0.18)*	0.10 (0.05)*	-0.00 (0.03)	0.10 (0.03)***
distal_public_weakties	0.18 (0.13)	0.04 (0.04)	-0.02 (0.03)	0.07 (0.03)**
distal_private_weakties	0.16 (0.07)**	0.06 (0.02)***	0.03 (0.01)**	0.03 (0.01)**
_cons	2.57 (2.23)	4.26 (0.68)***	2.59 (0.37)***	1.67 (0.45)***
N	551.00	551.00	551.00	551.00
F	10.08	7.06	4.80	13.34
r2	0.13***	0.13***	0.07***	0.14***
r2_a	0.11***	0.11***	0.05***	0.13***
rmse	4.05	1.19	0.70	0.80
Standard errors in parentheses				
* p<0.10, ** p<0.05, *** p<0.01				

**Proximal\_public\_strong** ties concerns the number of more frequent relationships with stakeholders in Network Governance (Local administrators in this municipality, local administrators in other municipalities, Employees in other municipalities, employees in regional government). From the regressions, it emerges that proximal strong ties and distal private weak ties are significant as expected, while distal public weak ties are not significant for ambidexterity. However, when evaluating for exploitation and exploration, the results show more details. In particular, (in addition to political skills), only relations with external private individuals have a positive effect on both exploitation and exploration. Furthermore, relations with external private individuals are the only dimension that influences exploitative activities. This result is consistent with the development of the knowledge management model, which sees in knowledge-based external collaborative relationships a potential added value for the individual and the public organization. Relations with the private sector bring knowledge that allows us to be efficient in the short term but also dynamic in the long term. Relations with public subjects, on the other hand, push more towards exploratory activities. In particular, distal public weak ties are correlated with exploration, but not with exploitation and individual ambidexterity. This result is consistent with what has been found for the innovation phases, so these external relations are significant in the final idea realization phase. Using the strong and weak ties measures of Hansen and Villadsen (2017) on which the original hypotheses were developed as regressors, the result is not different. So weak ties have a positive impact on both exploitation and exploration (distal private weak ties are the same so it is clear that the result is the same), vice versa external strong ties have a positive impact with exploration and not with exploitation, therefore H2.5 is not supported.



Table 67: testing linear and not linear effects of external weak ties on individual exploration.

Linear regression		Number of obs	=	551		
		F(10, 49)	=	19.09		
		Prob > F	=	0.0000		
		R-squared	=	0.1559		
		Root MSE	=	.79342		
(Std. Err. adjusted for 50 clusters in orgid)						
exploration	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
gender	.022138	.0713174	0.31	0.758	-.1211796	.1654555
age	-.0046935	.0051825	-0.91	0.370	-.0151082	.0057212
university	.0844605	.0798059	1.06	0.295	-.0759155	.2448365
tenureposition	-.0072891	.0043243	-1.69	0.098	-.0159792	.001401
manager	.1006432	.0773391	1.30	0.199	-.0547756	.2560621
mindfulnessmean	.0178163	.0328987	0.54	0.591	-.0482961	.0839287
politicalskillmean	.1921631	.0348354	5.52	0.000	.1221587	.2621676
C_weakties_en	.0668752	.0691605	0.97	0.338	-.0721081	.2058585
weakties_en2	-.0033013	.0077169	-0.43	0.671	-.018809	.0122063
strongties_en_	.1125393	.0224009	5.02	0.000	.067523	.1575556
_cons	2.131049	.3888194	5.48	0.000	1.349687	2.912411

Weak ties have a positive impact on exploration and the relationship is linear and does not present diminishing returns, consequently, the hypothesis H2.6 is partially confirmed. These results allow analysing in detail the relationships between civil servants and the world outside the local governments, increasing capacity to interpretate relationships..

### Focus 3: internal weak ties.

In models that include this dimension, weak ties is significant only when the variable of interest is continuum while it is not when it is multiplicative. Graphically, the relationship with this second measurement of the outcome appears non-linear. Testing with the presence of the quadratic form (VIF around 0.10 and on average 3.49), data that emerges is quite relevant. Internal weak ties have a positive impact on individual ambidexterity, but the effect has a decreasing marginal return, given that the quadratic shape has a statistically significant negative effect.

Table 68: augmented component-plus-residual plot of model 4a of ambidexterity with *WeakTies*.

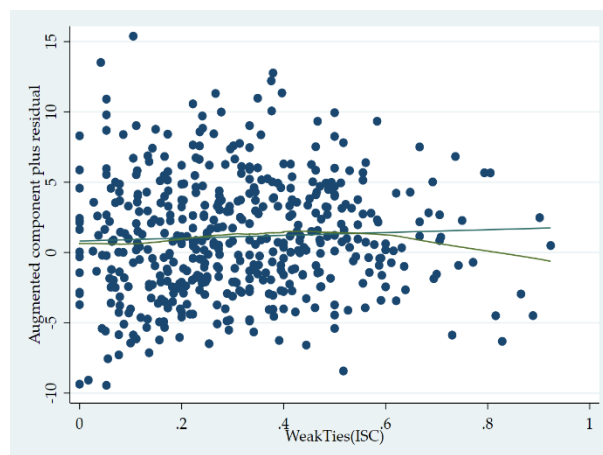


Table 69: weak ties, linear and non-linear effects on individual ambidexterity.

The marginal effects of internal weak ties on individual ambidexterity		
	Individual ambidexterity_multiplicative	Individual ambidexterity_summative
Controls:		
gender	0.41 (0.31)	0.14 (0.09)
age	0.01 (0.03)	0.00 (0.01)
university	0.57 (0.43)	0.17 (0.12)
tenureposition	-0.02 (0.02)	-0.00 (0.01)
manager	0.66 (0.47)	0.21 (0.14)
weakties_isc_	7.40 (3.43)**	2.49 (0.94)**
weakties2_isc_	-8.83 (4.38)*	-2.85 (1.26)**
strongties_isc_	2.88 (1.20)**	0.81 (0.34)**
_cons	8.47 (1.70)***	5.78 (0.46)***
N	484.00	484.00
F	3.64	4.51
r2	0.05***	0.05***
r2_a	0.03***	0.04***
rmse	4.15	1.24
Standard errors in parentheses		
* p<0.10, ** p<0.05, *** p<.01		

The effect of non-linearity and decreasing marginal returns is also confirmed by developing regression with individual ambidexterity continuum, for which, in baseline models, weak ties is significant as seen above. With respect to this result, partitioning the variable by quartile, no information is added with respect to the data found with the analyses reported in the text. With respect to these analyses, it is possible to affirm that the hypothesis of the relationship between internal social capital and individual ambidexterity has only a minor confirmation. A limited number (and proportion) of weak ties with colleagues have a positive effect, while too many knowledge-based weak ties reduce the balance exploitative and explorative activities.

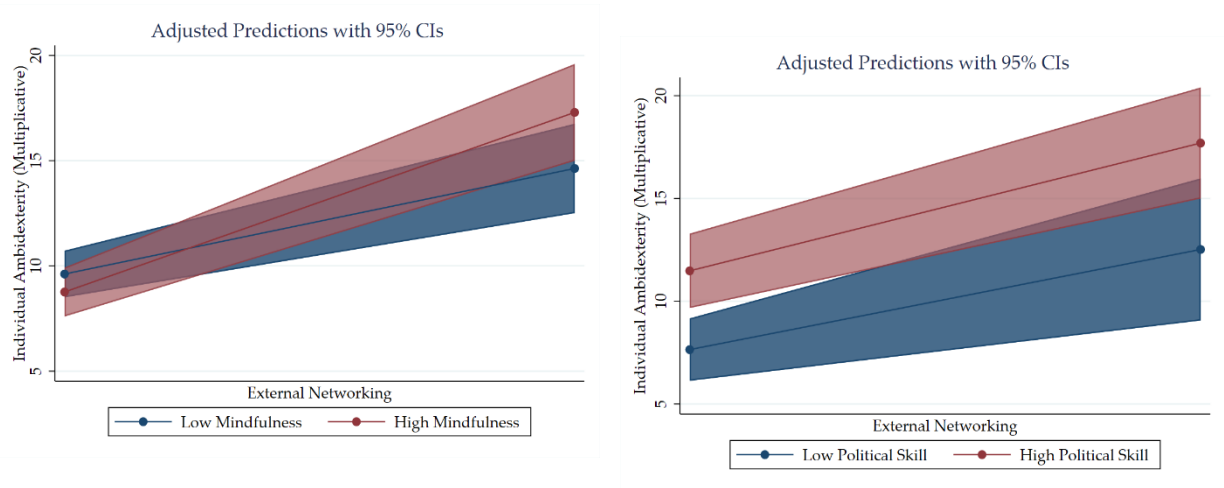
#### Focus 4: interactions between cognitive capabilities and social capital.

The analyses carried out so far have not shown a significance with respect to the moderation hypotheses in general models. This section delves into this analysis to understand if under certain conditions there may be significant moderating effects of cognitive capabilities. To better understand the nature of these relationships, graphical analyses have been developed on the slope (Aiken & West, 1991). The procedure adopted is the same as for innovative work behavior. Variables are mean centered (Aiken & West, 1991), the intervening variables are set to one standard deviation above (high level) or below the mean that is centered in 0 (e.g. Pieterse et al., 2009), when the range for the intervening variable is higher, it is set to two standard deviations above (high level) and below (low level) (Grosser et al., 2018). The independent variables is set from the minimum to the maximum level (Grosser et al., 2018). The first assessment concerns the effect of mindfulness moderation with respect to the relationship between external networking and individual ambidexterity. The graph and table below allow us to refine the answer to hypothesis H 6.3, which is not confirmed for the whole sample, but is partially supported as a high level of

mindfulness reinforces the effect on ambidexterity for those public servants who on average they have a low level of external networking. For individuals who have a high level of external networking, mindfulness has no effect. These results confirm findings for innovation. Political skill does not moderate the relation between external networking and individual ambidexterity, so the hypothesis 10.4 is not supported.

After analysing the interconnections between external social capital and cognitive skills, the slope analysis focuses on the interaction on the high and low levels of internal social capital, measured in terms of the proportion of weak and strong ties on the total of the possible knowledge exchange relationships with in colleagues in the organization they belong to. The mindfulness effect appears graphically as significant in the interaction with internal strong ties. From an OLS model that includes only strong ties, mindfulness and interaction term (table below), the term of interaction is significant, but, in some cases, it could strengthen the effect of internal links to the organization or reduce it (the interval of 95% confidence includes 0, therefore, there are negative and positive values. By testing through Hierarchical Linear Modelling<sup>190</sup>, the interaction term and overall the model appear significant (the 95% confidence interval includes only positive values). OLS shows a model that is not significant overall by dividing the sample between subjects with a low level and a high level of strong ties, even if the relationship appears significantly positive. These analyses lead to the conclusion that some effect of mindfulness moderation on strong ties however, this is only a minor confirmation of the hypotheses and difficult to generalize more studies can deepen H 6.1a.

Figure 58: Interactions plot of mindfulness (+/- 1 s.d.) political skill (+/- 2 s.d.) with external networking predicting individual ambidexterity (H 6.3).



<sup>190</sup> The methodological explanation of multilevel models is left to a later section.

Table 70: external networking, mindfulness and interaction with individual ambidexterity (multiplicative) (below and above the mean refer to the level of external networking).

	Below the mean	Above the mean
C_mindfulnessmean	1.65 (0.56)***	-0.12 (0.39)
C_externalnetworkingmean	1.68 (0.67)**	1.01 (0.40)**
c.C_mindfulnessmean#c.C_externalnetworking	2.29 (0.70)***	0.46 (0.47)
_cons	11.43 (0.52)***	11.56 (0.41)***
N	296.00	255.00
F	4.95	3.08
r2	0.06***	0.05**
r2_a	0.05***	0.04**
rmse	4.29	3.86
Standard errors in parentheses		
* p<0.10, ** p<0.05, *** p<.01		

As for weak ties, the slope appears as a negative interaction, while the regressions confirm what was found in the baseline models, so that H 6.1b is not significant. Significant moderation phenomena do not emerge, therefore, the slope analyses confirm that the hypothesis H 10.1 is not supported empirically. Political skill has no interaction effect and directly affects the intercept with direct effect on individual ambidexterity. Significant moderation phenomena do not emerge, therefore, the slope analyzes confirm that the hypothesis H 10.1 is not supported empirically. Political skill has no interaction effect and directly affects the intercept with direct effect on individual ambidexterity.

Table 71: internal strong ties, mindfulness and interaction with individual ambidexterity (multiplicative) (below and above the mean refer to the level of strong ties).

	Ambidexterity(m)_OLS	Ambidexterity(m)_HLM	Below the mean	Above the mean
main				
C_mindfulnessmean	0.08 (0.16)	0.09 (0.21)	1.16 (0.65)*	-0.70 (0.45)
C_strongties_isc_	2.70 (1.08)**	2.78 (0.91)***	1.70 (4.12)	1.74 (1.85)
c.C_mindfulnessmean#c.~s	2.07 (1.04)*	2.09 (0.99)**	7.53 (4.35)*	4.58 (2.02)**
_cons	11.24 (0.24)***	11.20 (0.25)***	10.98 (0.55)***	11.51 (0.56)***
lns1_1_1				
_cons		-0.09 (0.35)		
lnsig_e				
_cons		1.40 (0.03)***		
N	484.00	484.00	295.00	189.00
F	3.11		1.32	1.79
r2	0.03**		0.01	0.04
r2_a	0.02**		0.00	0.03
rmse	4.17		4.09	4.27
Standard errors in parentheses				
* p<0.10, ** p<0.05, *** p<.01				

Figure 59: Interactions plot of mindfulness (+/- 1 s.d.) (H 6.1a) political skill (+/- 2 s.d.) (H 10.1a) with strong ties (internal social capital) predicting individual ambidexterity (multiplicative).

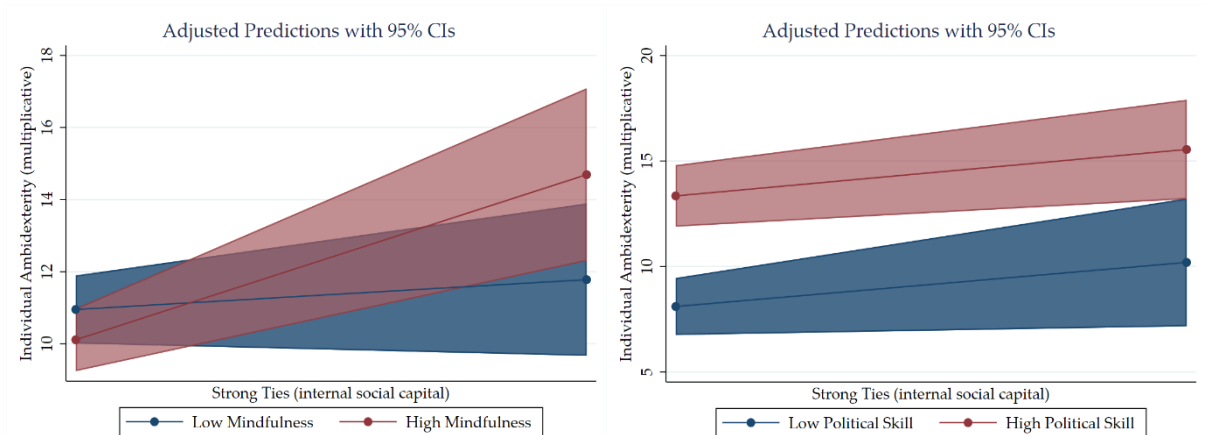
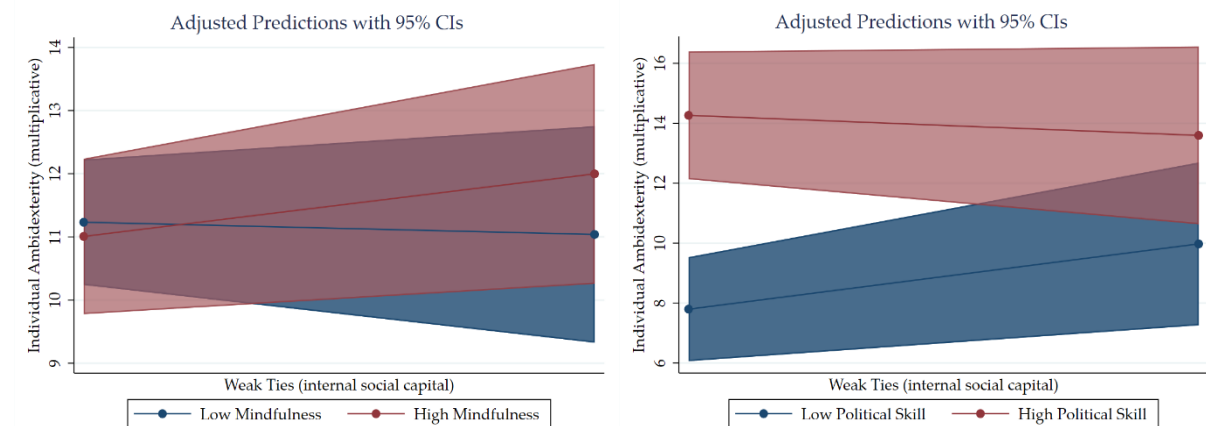


Figure 60: Interactions plot of mindfulness (+/- 1 s.d.) (H 6.1b) political skill (+/- 2 s.d.) (H 10.1b) with strong ties (internal social capital) predicting innovative work behaviour.



### Focus 5: interactions between different forms of social capital.

This step concerns hypothesis H 2.7, for which strong ties (a) and weak ties (b) should be moderators in the relationship between external networking and individual ambidexterity. The analyzes are carried out in the database reduced to 484 individual observations to include the dimensions of internal social capital. The reflections concern the same concepts expressed in the previous section in which a similar hypothesis with outcome innovative work behavior was analyzed. The method used is the same. The regressions include only the variables involved in this hypothesis, excluding cognitive capabilities and control variables and mean-centered to reduce and eliminate the multicollinearity problem (Aiken & West, 1991). Slope analyzes and regressions are reported, which are developed both for ambidexterity (multiplicative and summative) and for individual exploitation and exploration. The analyzes are carried out with OLS and cluster variance for each organization as in baseline models. The tables below show that strong ties and weak ties do not significantly moderate the relationship between external networking and individual ambidexterity. Only one significant aspect emerges: having many strong links and a high value in

external relations with all stakeholders in network governance has a negative impact on exploration. This result is consistent with a theoretical approach whereby having only strong relationships may not allow access to new knowledge useful for exploitative at work activities.

Figure 61: Interactions plot of strong ties (+/- 1 s.d.) (H 2.7a) and weak ties (+/- 1 s.d.) (H 2.7b) with external networking predicting individual ambidexterity.

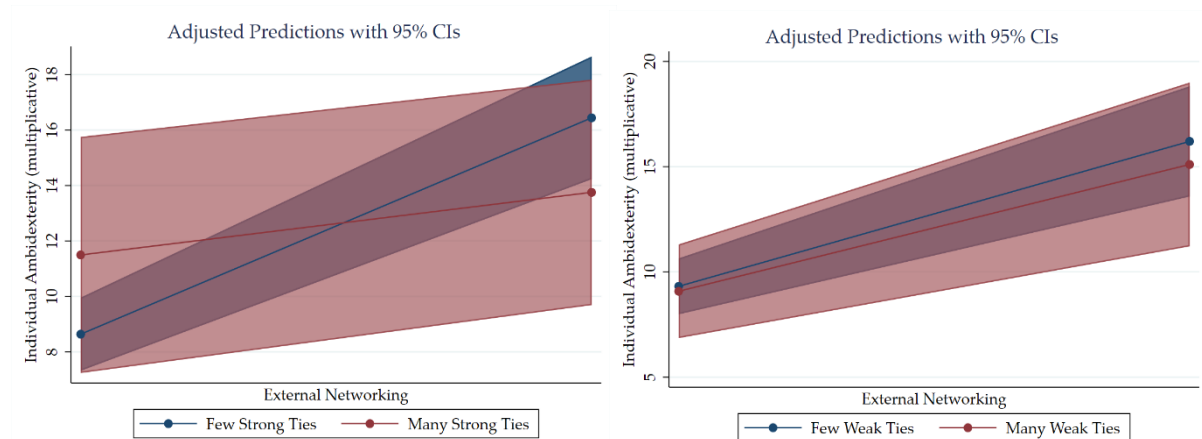


Table 72: interaction between strong ties and external networking with ambidexterity.

	Individual Ambidexterity(m)	Individual Ambidexterity(s)	Exploitation	Exploration
C_strongties_isc_	1.16 (1.39)	0.31 (0.38)	0.15 (0.19)	0.15 (0.25)
C_externalnetworkingmean	1.25 (0.25)***	0.38 (0.08)***	0.09 (0.04)**	0.28 (0.05)***
c.C_strongties_isc_#c.C_externalnetworking	-1.10 (0.90)	-0.33 (0.27)	-0.00 (0.16)	-0.33 (0.15)**
_cons	11.33 (0.23)***	6.71 (0.06)***	3.71 (0.03)***	3.01 (0.04)***
N	484.00	484.00	484.00	484.00
F	12.19	10.11	3.39	14.53
r2	0.08***	0.08***	0.02**	0.10***
r2_a	0.08***	0.08***	0.01**	0.10***
rmse	4.06	1.22	0.72	0.79

Standard errors in parentheses  
 \* p<0.10, \*\* p<0.05, \*\*\* p<0.01

Table 73: interaction between strong ties and external networking with ambidexterity.

	Individual Ambidexterity(m)	Individual Ambidexterity(s)	Exploitation	Exploration
C_weakties_isc_	-0.54 (0.73)	-0.03 (0.21)	0.07 (0.16)	-0.10 (0.21)
C_externalnetworkingmean	1.30 (0.22)***	0.38 (0.07)***	0.11 (0.04)**	0.28 (0.05)***
c.C_weakties_isc_#c.C_externalnetworkingme	-0.18 (0.87)	-0.07 (0.28)	-0.07 (0.18)	-0.00 (0.19)
_cons	11.26 (0.23)***	6.69 (0.06)***	3.71 (0.04)***	2.98 (0.04)***
N	484.00	484.00	484.00	484.00
F	11.65	10.54	2.77	12.30
r2	0.08***	0.08***	0.02*	0.09***
r2_a	0.07***	0.07***	0.01*	0.09***
rmse	4.07	1.22	0.72	0.79

Standard errors in parentheses  
 \* p<0.10, \*\* p<0.05, \*\*\* p<0.01

### 3. MICROFOUNDATION OF DYNAMIC CAPABILITIES: HIERARCHICAL LINEAR MODELLING

Previous data are tested with OLS with robust clustering for each municipality. To check the validity of this method, the analysis is conducted also with Hierarchical Linear Modelling (HLM), which is widely used in empirical literature in cases where data are nested (Hox, 2010). In the case where the knowledge workers are dependent and nested in local governments. This second methodology is based on the ordinary least square (OLS), but regression considers the hierarchical multilevel structure of the data. Usually, this analysis is adopted for the study of nested students in classrooms nested in schools. Given that the assumption of independence underlying the standard OLS regressions is violated, HLM can be a useful method to validate the results. Here a mixed-effects model is adopted with a distribution assumed as normal Gaussian, heteroskedasticity and correlations within the level of municipalities. There is a methodological debate on the use of Maximum Likelihood (ML) or residual / restricted maximum likelihood (REML), which are the most popular models and the choice often depends on personal preferences (StataCorp LLC, 2019), as each presents advantages and disadvantages. Both have the same results for fixed effects but differ in mixed-effects (Albright & Marinova, 2015). Although REML provides unbiased estimates, ML estimation is more feature-rich and it is better for unbalanced data, as in the case of this research for which the number of respondents for each organization is different. At the end of the section, all the baseline models for perceived innovation and individual ambidexterity are shown. Attached are state outputs as an example for models 4a for both outcome variables. Most of the results are consistent with what was found through standard OLS regression analyses. Political skill is an always significant dimension in the micro-foundation of individual dynamic capabilities. It is the only variable that always maintains significance despite the presence of several intervening variables. The contribution of political skills as social cognitive capabilities confirms the expectations written in the research hypotheses with respect to the direct effect on outcome variables. Mindfulness has a lower level of significance. The hypothesis of direct effect with perceived personal innovation is a minor confirmation, since, according to the HLM analysis as per OLS regression standard, the significant direct effect is for the entire sample, while when weak and strong ties come into play in the reduced sample, the effect wears off. Mindfulness does not have a significant impact compared to individual ambidexterity. This figure is not consistent with the theoretical expectations relating to the attention-based view of the firm. However, further research could evaluate this relationship with a different way of measuring mindfulness that is multifacet and work-oriented rather than a general trait useful in every

situation of daily life. HLM analyzes confirm that strong ties have a positive and significant impact on perceived innovation and ambidexterity. In this second case, the positive effect is present only in model 3b, while with the presence of external networking, the effect appears to disappear. To evaluate this situation, a further model was tested with the presence of cognitive capabilities and social capital, without external networking. In this "closed" externally model, testing with OLS regression and HLM (figures with the output of Stata below) strong ties continue to have a positive effect on individual ambidexterity. Even with the awareness of the need to test further hypotheses on the interrelation between internal and social capital with respect to the developed analyzes that can broaden the debate about the space-time dynamics of social capital. In this work, it is evident that strong ties have a strong added value in a world closed to the outside, while the inclusion of a characteristic dimension of external relations in Network Governance reduces the effect of knowledge-based strong ties with colleagues and individual ambidexterity. The feedback is that this relationship is partially confirmed within a "close" world. As for weak ties, they do not appear as significant for ambidexterity, while for innovation, unlike OLS regression, they are significant only in model 6 which includes all variables. The potential effect of negative marginal returns in the same "close" world is confirmed: weak ties have a positive non-linear impact on individual ambidexterity and the squared values have a significant negative impact on the outcome showing diminishing returns. Also for weak ties, this effect is confirmed only when the external networking variable is not considered. It is possible to conclude that from an internal knowledge management perspective it is desirable to encourage the exchange of knowledge and the presence of strong relationships. Weak relationships can be positive but in a limited number. Too many weak ties, in fact, can damage the ability to balance exploitation with exploration at work. Also for weak ties, the argument of having to deepen the theory and practice with respect to the spatio-temporal dynamics of social capital and the assumptions of interrelationships concerning relational behaviour towards external stakeholders is valid. For external networking, the results do not change and this dimension seems to have a positive effect on individual dynamic capabilities. Coefficients are always positive and very significant except in model 6 for innovative work behaviour, when other moderating variables are included. As far as moderation effects are concerned, HLM results are consistent with general OLS regressions and different from expectations on research hypotheses. It is possible to conclude that hierarchical linear modelling strengthens the validity and robustness of the data obtained with OLS regressions. Since the differences are limited, the comparison is maintained on baseline models while the previous focus on single variables is maintained with OLS regressions and cluster option for the variance.



Finally, on the basis of the empty model (only outcome variable and organizational grouping), the value of the intraclass correlation coefficient (ICC) was calculated (Raudenbush & Bryk, 2002). ICC identifies the amount of variance in individual dynamic capabilities (dependent variable) that occurs at level-2 (local government) versus level-1 (knowledge worker). The ICC for innovative work behaviour is 0.0507005 and for individual ambidexterity (multiplicative) is 0.051442. These results mean that 5.07% of perceived personal innovation and 5.14% of the variability of individual ambidexterity of total variability exists at the municipal level. In conclusion, the HLM analyses allow strengthening the responses to the research hypothesis of the thesis with a second methodology, which increases the validity of the empirical work in a sample of individual observations nested in local governments.

Table 74: Output of Stata on a "close" world model of microfoundation of ambidexterity.

Mixed-effects ML regression		Number of obs = 484				
Group variable: orgid		Number of groups = 44				
		Obs per group:				
		min =	1			
		avg =	11.0			
		max =	47			
		Wald chi2(10) =	74.02			
Log likelihood = -1347.2254		Prob > chi2 =	0.0000			
ambidexteritym	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
gender	.5480305	.3839937	1.43	0.154	-.2045833	1.300644
age	.0063519	.0262537	0.24	0.809	-.0451044	.0578082
university	.424579	.4085864	1.04	0.299	-.3762356	1.225394
tenureposition	-.0164983	.0210053	-0.79	0.432	-.057668	.0246714
manager	.5919234	.4009698	1.48	0.140	-.1939629	1.37781
mindfulnessmean	.1366397	.1965983	0.70	0.487	-.248686	.5219654
politicalskillmean	1.341811	.1952417	6.87	0.000	.9591441	1.724478
weakties_isc_	6.450027	3.059142	2.11	0.035	.4542194	12.44583
weakties2_isc_	-6.951261	3.973432	-1.75	0.080	-14.73905	.8365223
strongties_isc_	2.371726	.8663133	2.74	0.006	.6737833	4.069669
_cons	1.765411	2.019899	0.87	0.382	-2.193519	5.724341
Random-effects Parameters		Estimate	Std. Err.	[95% Conf. Interval]		
orgid: Identity						
var(_cons)		.4155598	.4102932	.0600094	2.877713	
var(Residual)		14.97997	1.003071	13.13754	17.0808	
LR test vs. linear model: <u>chibar2(01) = 1.72</u>		Prob >= chibar2 = 0.0948				

Table 75: Multilevel Hierarchical Linear Modelling for perceived innovation and individual ambidexterity.

Individual Ambidexterity _ Multiplicative (HLM)									
	model_1	model_2	model_3a	model_3b	model_3c	model_4a	model_4b	model_5	model_6
ambidexteritymean									
CONTROLS:									
gender	-0.019 (0.38)	0.171 (0.37)	0.369 (0.37)	0.466 (0.40)	0.738* (0.40)	0.445 (0.36)	0.744* (0.38)	0.451 (0.36)	0.723* (0.39)
age	0.011 (0.03)	0.010 (0.03)	0.018 (0.03)	0.003 (0.03)	0.006 (0.03)	0.016 (0.03)	0.007 (0.03)	0.014 (0.03)	0.007 (0.03)
university	0.520 (0.41)	0.395 (0.39)	0.487 (0.39)	0.475 (0.43)	0.349 (0.42)	0.388 (0.38)	0.285 (0.40)	0.367 (0.38)	0.261 (0.40)
tenureposition	-0.014 (0.02)	-0.016 (0.02)	-0.024 (0.02)	-0.016 (0.02)	-0.020 (0.02)	-0.024 (0.02)	-0.021 (0.02)	-0.023 (0.02)	-0.019 (0.02)
manager	0.772* (0.40)	0.785** (0.38)	0.173 (0.40)	0.687* (0.42)	0.273 (0.41)	0.315 (0.38)	0.394 (0.40)	0.332 (0.38)	0.457 (0.40)
MAIN EFFECTS:									
mindfulnessmean		0.152 (0.19)				0.135 (0.19)	0.089 (0.19)	0.143 (0.19)	0.077 (0.20)
politicalskillmean		1.327*** (0.18)				1.097*** (0.18)	1.170*** (0.20)	1.082*** (0.18)	1.187*** (0.20)
externalnetworkingmean			1.357*** (0.20)		1.182*** (0.23)	1.064*** (0.20)	0.831*** (0.23)	1.030*** (0.20)	0.774*** (0.23)
weakties_isc_				1.111 (1.05)	0.033 (1.04)		0.597 (1.00)		0.666 (1.02)
strongties_isc_				3.045*** (0.92)	1.260 (0.95)		1.219 (0.92)		1.210 (0.93)
INTERACTIONS:									
mindfulness_externalnetw								0.281 (0.21)	0.010 (0.23)
politicalskill_extnetw								0.039 (0.18)	0.187 (0.22)
politicalskill_weakties									-0.354 (1.00)
politicalskill_strongties									-0.012 (0.95)
mindfulness_weakties									0.062 (1.07)
mindfulness_strongties									1.317 (0.97)
_cons	10.416*** (1.36)	3.464* (1.84)	6.705*** (1.41)	9.277*** (1.48)	7.040*** (1.50)	1.726 (1.82)	1.956 (1.96)	1.881 (1.83)	1.959 (1.96)
lns1_1_1									
_cons	-0.062 (0.35)	-0.287 (0.41)	-0.234 (0.41)	-0.190 (0.40)	-0.329 (0.45)	-0.425 (0.47)	-0.415 (0.47)	-0.415 (0.47)	-0.454 (0.49)
lnsig_e									
_cons	1.427*** (0.03)	1.385*** (0.03)	1.391*** (0.03)	1.400*** (0.03)	1.375*** (0.03)	1.363*** (0.03)	1.342*** (0.03)	1.361*** (0.03)	1.340*** (0.03)
N	551.000	551.000	551.000	484.000	484.000	551.000	484.000	551.000	484.000
Standard errors in parentheses * p<0.10, ** p<0.05, *** p<0.01									

Innovative Work Behaviour (HLM)									
	model_1	model_2	model_3a	model_3b	model_3c	model_4a	model_4b	model_5	model_6
innovativeworkbehaviourmean									
CONTROLS:									
gender	-0.080 (0.07)	-0.036 (0.07)	-0.027 (0.07)	-0.044 (0.08)	-0.008 (0.08)	-0.006 (0.07)	-0.003 (0.07)	-0.007 (0.07)	0.003 (0.07)
age	0.002 (0.01)	0.002 (0.00)	0.003 (0.01)	0.000 (0.01)	0.000 (0.01)	0.003 (0.00)	0.000 (0.00)	0.003 (0.00)	0.000 (0.00)
university	0.082 (0.08)	0.055 (0.07)	0.077 (0.08)	0.048 (0.08)	0.031 (0.08)	0.053 (0.07)	0.019 (0.08)	0.052 (0.07)	0.017 (0.08)
tenureposition	-0.007* (0.00)	-0.008** (0.00)	-0.009** (0.00)	-0.007* (0.00)	-0.008* (0.00)	-0.009** (0.00)	-0.008** (0.00)	-0.009** (0.00)	-0.008** (0.00)
manager	0.216*** (0.08)	0.218*** (0.07)	0.133* (0.08)	0.209*** (0.08)	0.155* (0.08)	0.166** (0.07)	0.180** (0.08)	0.166** (0.07)	0.188** (0.08)
MAIN EFFECTS:									
mindfulnessmean		0.059* (0.04)				0.058* (0.04)	0.045 (0.04)	0.061* (0.04)	0.042 (0.04)
politicalskillmean		0.292*** (0.03)				0.266*** (0.03)	0.255*** (0.04)	0.262*** (0.03)	0.258*** (0.04)
externalnetworkingmean			0.188*** (0.04)		0.153*** (0.04)	0.117*** (0.04)	0.075* (0.04)	0.113*** (0.04)	0.070 (0.04)
weakties_isc_				0.307 (0.20)	0.174 (0.20)		0.307 (0.19)		0.333* (0.19)
strongties_isc_				0.620*** (0.17)	0.392** (0.18)		0.388** (0.17)		0.382** (0.17)
INTERACTIONS:									
mindfulness_externalnetw								0.042 (0.04)	0.023 (0.04)
politicalskill_extnetw								-0.015 (0.03)	0.018 (0.04)
politicalskill_weakties									0.081 (0.19)
politicalskill_strongties									-0.012 (0.18)
mindfulness_weakties									-0.180 (0.20)
mindfulness_strongties									0.026 (0.18)
_cons	2.981*** (0.26)	1.326*** (0.34)	2.470*** (0.27)	2.788*** (0.28)	2.499*** (0.29)	1.133*** (0.34)	1.255*** (0.37)	1.159*** (0.34)	1.249*** (0.37)
lns1_1_1									
_cons	-1.708*** (0.30)	-2.002*** (0.35)	-1.820*** (0.34)	-2.018*** (0.47)	-2.122*** (0.52)	-2.085*** (0.40)	-2.307*** (0.62)	-2.044*** (0.38)	-2.271*** (0.60)
lnsig_e									
_cons	-0.239*** (0.03)	-0.300*** (0.03)	-0.258*** (0.03)	-0.264*** (0.03)	-0.274*** (0.03)	-0.306*** (0.03)	-0.318*** (0.03)	-0.308*** (0.03)	-0.320*** (0.03)
N	551.000	551.000	551.000	484.000	484.000	551.000	484.000	551.000	484.000
Standard errors in parentheses * p<0.10, ** p<0.05, *** p<0.01									

#### 4. SOCIAL CAPITAL AND POLITICAL SKILL : MICROFOUNDATION.

After analyzing the micro-foundation of individual dynamic capabilities, it is relevant to study the micro-foundation of internal and external social capital, to be able to estimate the hypothesized mediation effects. The micro-foundation models of social capital are analyzed in the table in the page at the end of this section, according to the measurement methods identified. From the data, it emerges that, among the demographic control variables, gender appears to have a significant negative effect. On average, women seem to have less external social capital. Conversely, tenure in position has a significant positive effect and the dummy manager has a very significant and positive effect with a determining coefficient. As can be expected theoretically and practically, it is more likely that employees with managerial positions can build a network of external relations with all the stakeholders of the Network Governance. As regards the variables of interest, mindfulness is not significant compared to what has been hypothesized, therefore, H 4.2, is not supported. Political skill is positively associated with all the various ways in which external social capital is calculated, in line with what is theoretically assumed in H 8.2 which is confirmed empirically. Thanks to these results, the hypothesized mediation of external networking with respect to the relationship between political skill and perceived individual dynamic capabilities is assessed in the next section. As regards the micro-foundation of internal social capital, two models were tested with OLS regression and Hierarchical Linear Modeling for internal weak ties and internal strong ties. For the control variables, it emerges that, in both estimation modes, women and graduates tend to have fewer weak ties while managers have more strong ties within the organization. As far as strong ties are concerned, mindfulness does not have a significant effect and only political skill has a positive and statistically valid effect. Neither mindfulness nor political skill has a significant effect on internal weak ties unlike what has been assumed. In summary, H 8.1 is partially confirmed. Political skilled public servants are more adept at creating a dense network of relationships within the organization and frequently exchanging knowledge with colleagues. According to the report based on the total number of ties, the result does not change and the political skill coefficient is around 1.5, i.e. an increase in a level of political skill affects the increase in around 1.5 strong ties in the organization, consistently with the 2.4% average increase in strong relationships compared to all possible total. However, compared to what has been assumed, political skill does not affect the proportion of weak links in the organization. The hypothesized model does not have sufficient predictive ability concerning the proportion of weak bonds in local governments (and the data is confirmed by testing the total number of weak ties). Hypothesis H 4.1 is not supported by empirical data. Mindfulness does not appear as a significantly antecedent dimension of strong ties or weak ties.

Furthermore, mindfulness does not have a significant relationship even with political skills, therefore, the hypothesis H 11.1 for which mindfulness would be an antecedent of social cognitive capabilities, and the possible presence of a sequential mediation model is lacking. The image below shows the output of Stata (regression OLS and cluster for local governments), including only mindfulness and control variables. The analysis reveals that, unlike what is theoretically, empirically hypothesized, mindfulness is not an element of intra-psychological micro-foundation of political skill, which is considered a cognitive dimension of social effectiveness. In the next section the phenomenon of mediation is explained and analyzed statistically. Considering that mindfulness is not significantly an antecedent of political skill and social capital, the hypotheses of simple mediation and sequential mediation concerning this dimension are not supported empirically for lack of assumptions. Likewise, political skill is not an antecedent of weak ties, therefore, this dimension cannot be a mediator with respect to individual dynamic capabilities.

Table 76: The microfoundation of political skill. Regression OLS about the relation between mindfulness and political skill with the inclusion of control variables.

Linear regression		Number of obs	=	551		
		F(6, 49)	=	0.81		
		Prob > F	=	0.5689		
		R-squared	=	0.0082		
		Root MSE	=	.96051		
(Std. Err. adjusted for 50 clusters in orgid)						
politicalskil~n		Robust Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
gender		-.142348	.0831812	-1.71	0.093	-.3095069 .0248109
age		.0000791	.0062512	0.01	0.990	-.012483 .0126413
university		.1169822	.0915705	1.28	0.207	-.0670358 .3010001
tenureposition		.0021585	.0051748	0.42	0.678	-.0082406 .0125575
manager		-.0047788	.0777747	-0.06	0.951	-.1610729 .1515152
mindfulnessmean		.0013668	.0466693	0.03	0.977	-.0924188 .0951523
_cons		4.556614	.4082074	11.16	0.000	3.73629 5.376937

Table 77: the microfoundation of external social capital<sup>191</sup>.

Dimensions of external social capital									
	EN_m	EN_m(HLM)	EN_s	distal_pri~w	str	proximal	distal	prox_str	distal_pub_w
main									
CONTROLS:									
gender	-0.264*** (0.07)	-0.260*** (0.08)	-0.284*** (0.07)	-0.399* (0.23)	-0.161 (0.11)	-0.131 (0.09)	-0.308*** (0.07)	-0.221*** (0.08)	-0.099 (0.12)
age	-0.006 (0.01)	-0.006 (0.01)	-0.006 (0.01)	-0.000 (0.02)	-0.005 (0.01)	-0.005 (0.01)	-0.007 (0.01)	-0.008 (0.01)	-0.017** (0.01)
university	0.002 (0.09)	0.005 (0.08)	0.016 (0.10)	0.234 (0.23)	0.178 (0.14)	0.204* (0.12)	-0.065 (0.09)	-0.067 (0.07)	-0.041 (0.13)
tenureposition	0.008* (0.00)	0.008* (0.00)	0.008* (0.00)	0.018 (0.01)	0.010 (0.01)	0.010** (0.00)	0.008* (0.00)	0.009** (0.00)	0.016** (0.01)
manager	0.440*** (0.09)	0.443*** (0.08)	0.440*** (0.10)	0.785*** (0.17)	0.590*** (0.13)	0.716*** (0.09)	0.348*** (0.10)	0.389*** (0.08)	0.355*** (0.12)
MAIN EFFECTS:									
mindfulnessmean	0.027 (0.04)	0.022 (0.04)	0.036 (0.04)	0.089 (0.11)	0.076 (0.07)	0.060 (0.06)	0.017 (0.04)	-0.025 (0.05)	-0.048 (0.07)
politicalskill~n	0.216*** (0.04)	0.218*** (0.04)	0.212*** (0.05)	0.279** (0.11)	0.281*** (0.07)	0.264*** (0.05)	0.201*** (0.05)	0.187*** (0.04)	0.193*** (0.07)
_cons	1.605*** (0.50)	1.615*** (0.38)	-0.985* (0.50)	1.832 (1.10)	-0.364 (0.81)	1.338** (0.58)	1.694*** (0.51)	0.597 (0.46)	2.163*** (0.67)
lns1_1_1 _cons		-2.406*** (0.83)							
lnsig_e _cons		-0.189*** (0.03)							
N	551.000	551.000	551.000	551.000	551.000	551.000	551.000	551.000	551.000
F	12.971		11.134	6.515	13.095	24.832	8.580	8.967	5.816
r2	0.147***		0.137***	0.069***	0.102***	0.191***	0.108***	0.095***	0.052***
r2_a	0.136***		0.126***	0.057***	0.090***	0.181***	0.096***	0.084***	0.040***
rmse	0.839		0.887	2.231	1.374	1.028	0.903	0.914	1.265
Standard errors in parentheses * p<0.10, ** p<0.05, *** p<0.01									

Table 78: the microfoundation of internal social capital.

Dimensions of internal social capital				
	Internal Strong Ties	Internal Strong Ties (HLM)	Internal Weak Ties	Internal Weak Ties (HLM)
main				
CONTROLS:				
gender	-0.012 (0.02)	-0.000 (0.02)	-0.042** (0.02)	-0.042** (0.02)
age	-0.002 (0.00)	0.001 (0.00)	-0.002** (0.00)	-0.001 (0.00)
university	-0.053** (0.02)	-0.022 (0.02)	-0.046* (0.02)	-0.039** (0.02)
tenureposition	0.004*** (0.00)	0.001 (0.00)	0.001 (0.00)	0.001 (0.00)
manager	0.055** (0.02)	0.041** (0.02)	0.008 (0.02)	0.009 (0.02)
MAIN EFFECTS:				
mindfulnessmean	0.006 (0.01)	-0.005 (0.01)	0.005 (0.01)	-0.002 (0.01)
politicalskillm~n	0.024** (0.01)	0.027*** (0.01)	-0.013 (0.01)	-0.009 (0.01)
_cons	0.178 (0.11)	0.192** (0.09)	0.486*** (0.09)	0.465*** (0.09)
lns1_1_1 _cons		-1.652*** (0.13)		-2.783*** (0.20)
lnsig_e _cons		-1.836*** (0.03)		-1.754*** (0.03)
N	484.000	484.000	484.000	484.000
F	3.493		2.692	
r2	0.063***		0.037**	
r2_a	0.049***		0.023**	
rmse	0.220		0.186	
Standard errors in parentheses * p<0.10, ** p<0.05, *** p<0.01				

<sup>191</sup> Notes about the label of independent variables: EN\_m = external networking mean (OLS regression and HLM); EN\_s = ExternalNetworking\_score; distal\_pri~w = distal private weak ties/external weak ties; strong = external strong ties; proximal = proximal ties; distal = distal ties; prox\_str = proximal public ties; distal\_pub\_w = distal public weak ties.

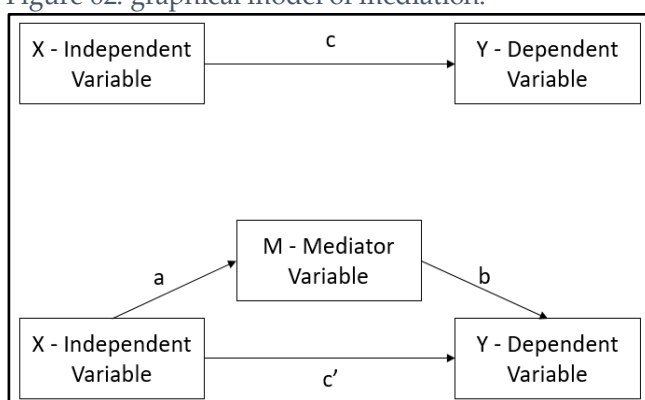
## 5. STRUCTURAL EQUATION MODELLING AND MEDIATION.

This research presents different hypotheses about the role as mediators of different variables. Before carrying out the analyzes according to the third methodology of Structural Equation Modeling (SEM), the problem of mediation in the studies of organizational behaviour and its meaning is introduced. For a better understanding of the results, first the mediation and the methodological terminology that represents it is defined. Similar to moderation, mediation serves to understand how a third variable intervenes in the relationships between two variables. The difference between mediation and moderation is that in the latter the intervening variable can be independent from the X and modifies the effect, instead, in the former, the mediator must be "caused" by X and does not modify the effect but absorbs it. Mediation can be represented as a chain where a first variable affects a second variable, that, in turn influences a third variable. The second variable is intervening and it is the "mediator" M, in the sense that it "mediates" the relationship between the first independent variable X and an outcome variable Y. Graphically, the path *c* is the *total effect* unmediated between variable X and variable Y. The effect between independent variable and mediator is represented by path *a*. Path *b* represents the coefficient between the mediation variable and the outcome. The coefficient *c'* is defined *direct effect* and it represents the unique effect of X on Y after the control for the intervening variable M. In conclusion, the *indirect effect* is defined as the product  $ab = c - c'$ . The size of the *indirect effect* specifies the amount of mediation through the pertinent mediator variable. Baron and Kenny (1986) suggest 4 step passages to have mediation:

- 1) Check that the independent variable X is a predictor of dependent variable Y (the *total effect* "*c*" is significant). If this regression is not significant, maybe, there is not ground for mediation. This step is a little bit controversial in the literature, so Shrout and Bolger (2002) suggest that it is possible to move forward in the analyses if it makes sense and there is a good theoretical background about this hypothetical relation through the use of bootstrapping.
- 2) Check that the independent variable X is a predictor of dependent variable Y (the effect "*a*" is significant). The association between X and M is necessary and it makes sense to the mediation, otherwise M is simply a third variable that may or not may be associated with Y.
- 3) Check that the mediation variable M is a predictor of dependent variable Y (the effect "*b*" is significantly different from zero). The first three steps are sufficient and necessary to settle that the mediation effect is not possible or probable.
- 4) Test a multiple regression analysis with X (*c'*) and M (*b*) as predictors of Y. At this point, it is necessary to test the statistical relevance of coefficient *c'*. If *c'* is statistically equal to zero there a *complete mediation*. If *c'* is not equals to zero and steps 1-3 are established, a *partial mediation* is

recognised. *Complete mediation* means that the effect of an independent variable on an outcome is totally transmitted through a mediator. This circumstance is extremely rare in nature. The second case is partial mediation and independent variable has still a *direct effect*  $c'$  that is not mediated and an *indirect effect* that is transmitted through the intervening variable. Moreover, in this last phase, it is possible to calculate definitely the *total effect* as  $c = c' + ab$ . Mediation models are possible with multiple mediators at the same stage or sequential and these models can be combined in more complex structures. Considering that mindfulness does not have an significant impact on internal social capital and external social capital, the hypotheses of mediation of social capital between mindfulness and dynamic capabilities are not treated statistically in this thesis (H 5.1, H 5.2, H 5.3; H 5.4). Previous analyzes have shown that only political skill is a significant antecedent of social capital and individual dynamic capabilities, while mindfulness has an effect on innovative work behavior but is an insignificant dimension compared to the other hypothesised relationships. For this reason, in compliance with the mediation assumptions that were introduced in the introduction of this section, mediation is evaluated only for political skills. The Structural Equation Modeling methodology however allows to include in the model also the other dimensions that have an effect on the out-like variable without interaction with the other variables. Two analyzes are carried out: a Structural Equation Modeling study in which, in addition to the mediation, the direct effect of the variables tested in the previous models for their direct effect on outcomes variables is included; a SEM mediation study in which only political skills, social capital and individual dynamic capabilities are included. The former is performed with simple Maximum Likelihood and Satorra-Bentler estimator and the attention is on direct effects. The latter is estimated with Maximul Likelihood and bootstrapping with 1000 replication (G. W. Cheung & Lau, 2008). The method of bootstrapping generates bias-corrected confidence intervals and is the best procedure in testing for mediation (G. W. Cheung & Lau, 2008). Preacher and Hayes (2008) indicate that this bootstrap approach has more benefits compared to the classical Soubel's test approach for two methodological reasons: it is a not parametric test and it can be performed without the assumption of normality; it is specific for moderate sample sizes.

Figure 62: graphical model of mediation.





The measuring structure for each construct is the one that has been tested and validated in the introduction related to exploratory and confirmatory factor analyzes. Some method-logical choices. For external networking the estimates are generally calculated on a one-dimensional measurement and a check has also been developed in the measurement with three sub-dimensions (proximal public ties, distal public ties, private ties). With three sub-dimensions, the model is significant and finds convergence with respect to the innovation variable, while the estimate is not obtained due to lack of convergence when ambidexterity is present which is a second-order latent variable. For internal social capital, in particular strong ties, the estimate was carried out only on observed variables (the average of innovation, ambidexterity, political skill), because otherwise there is a problem of measurement convergence by putting together latent variables, second order latent variable and observed variables. Future studies may analyse different ways of measuring internal and external social capital. At the end of the analyzes the goodness fit-indices of the models are calculated. This third mode of analysis confirms that political skill is an antecedent for external networking and innovative work behavior, mindfulness is an antecedent of innovation<sup>192</sup>, but not of ambidexterity. External networking is also an antecedent dimension for both individual dynamic capabilities. The figures below report the estimates in a simplified and exhaustive way while the annexes contain the figures concerning the output of the statistical program.

Table 79: fit-indices after Structural Equation Modelling on different models of microfoundation.

Model	Size	Test	Chi-Squared	Degrees of freedom	RMSEA_SB	CFI_SB	TLI_SB	SRMR	CD
Complete innovative work behaviour	484	ML - Satorra-Bentler Estimator	2995.117	1663	0.042	0.873	0.867	0.062	0.991
Innovative work behaviour (without internal social capital)	551	ML - Satorra-Bentler Estimator	2857.242	1521	0.040	0.888	0.882	0.054	0.991
Innovative work behaviour (without internal social capital; external networking with 3 sub-dimensions) <sup>193</sup>	551	ML - Satorra-Bentler Estimator	2997.132	1518	0.037	0.903	0.898	0.053	0.991

<sup>192</sup> The direct relationship between mindfulness and innovation has a minor level of significance (the 95% confidence interval includes the value of 0) when the model includes weak and strong ties.

<sup>193</sup> This model is included to check the validity of 3 sub-dimensions of external networking. The significance of the hypothesized relations does not change in comparison with the measurement of external networking as unidimensional dimension rather than a latent variable with three sub-dimensions. The output from the SEM builder of Stata is in the annexes.



Complete individual ambidexterity	484	ML - Satorra-Bentler Estimator	3596.624	1930	0.042	0.852	0.846	0.066	0.991
Individual ambidexterity (without internal social capital)	551	ML - Satorra-Bentler Estimator	3467.347	1808	0.041	0.867	0.861	0.060	0.991
Individual ambidexterity (without internal social capital; external networking with 3 sub-dimensions)	551	ML - Satorra-Bentler Estimator	-	-	-	-	-	-	-

Table 80: results of SEM for innovative behaviour (on the left for the complete model and 484 observations and on the right for the model without internal social capital and 551 observations).

Innovative Work Behaviour	Coefficients (standardized)	St.err. (Satorra-Bentler)	z	P> z	[95% Conf. Interval]	
Minfulness	.0782035/.10028	.0411739/.0389894	1.90/2.57	0.058/0.010	-.0024959/.0238622	.1589029/.1766979
Political Skill	.3512282/.3717065	.0443873/.0403272	7.91/9.22	0.000/0.000	.2642307/.2926667	.4382256/.4507463
External Networking	.1000345/.1440188	.0411394/.0389087	2.43/3.70	0.015/0.000	.0194026/.0677591	.1806663/.2202784
Strong ties (internal social capital)	.1003806/-	.0345149/-	2.91/-	0.004/-	.0327326/-	.1680285/-
Weak ties (internal social capital)	.0743954 /-	.0391565/-	1.90/-	0.057/-	-.00235/-	.1511408/-

Table 81: results of SEM for individual ambidexterity (on the left for the complete model and 484 observations and on the right for the model without internal social capital and 551 observations).

Individual ambidexterity	Coefficients (standardized)	St.err. (Satorra-Bentler)	z	P> z	[95% Conf. Interval]	
Minfulness	.0301984 /.0526446	.0577783/ .0552414	0.52/ 0.95	0.601 /0.341	-.0830449/ -.0556265	.1434418/ .1609158
Political Skill	.3514313 /.3300062	.0698992/ .0654901	5.03 /5.04	0.000 /0.000	.2144314 /.2016479	.4884312 /.2016479
External Net-working	.2764439 /.3381199	.0589454 /.0640804	4.69 /5.28	0.000 /0.000	.160913/.2125247	.3919749 /.4637152
Strong ties (internal social capital)	.0463983/-	.046473/-	1.00/-	0.318/-	-.0446872/-	.1374838/-
Weak ties (internal social capital)	.0209161/-	.0534352/-	0.39/-	0.695/-	-.0838149/-	.1256471/-

Figure 63: SEM on microfoundation of innovative behaviour (complete model with 484 observations). Coefficients are standardized and approximated to the second decimal place. Observed variables for latent variables are not reported. (\*\* $P_v < 0.01$ ; \*\* $P_v < 0.05$ ; +  $P_v < 0.10$ , but 95% confidence interval includes the value 0).

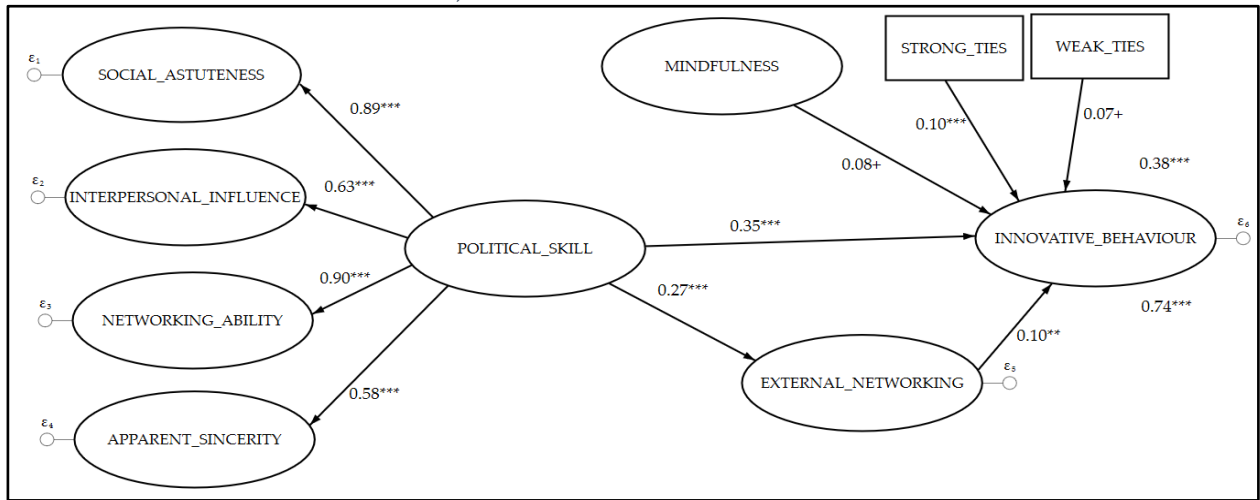


Figure 64: SEM on microfoundation of innovative work behaviour (no internal social capital; 551 observations). Coefficients are standardized and approximated to the second decimal place. Observed variables for latent variables are not reported. (\*\* $P_v < 0.01$ ; \*\* $P_v < 0.05$ ).

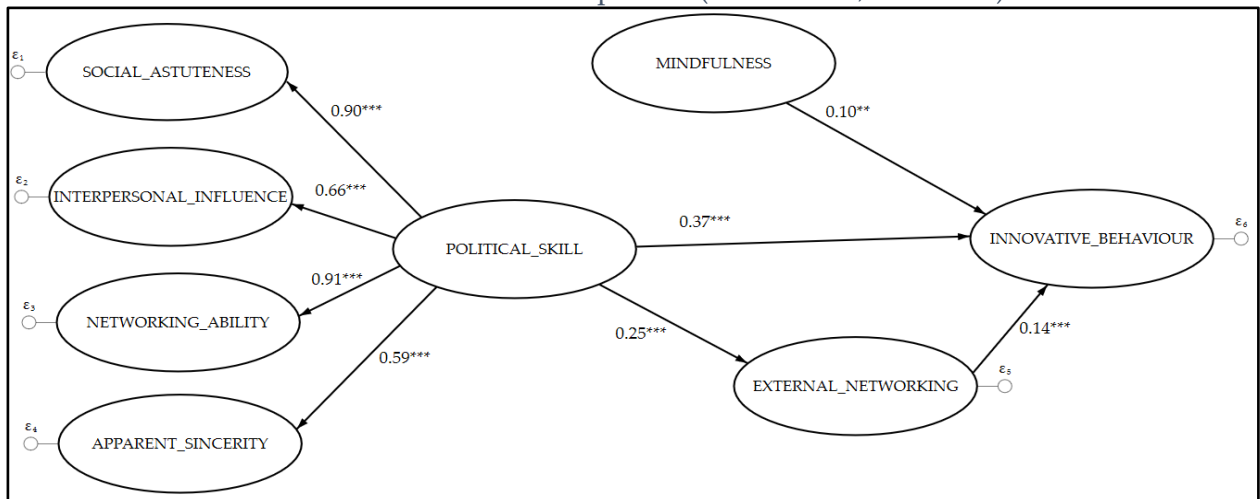


Figure 65: SEM on microfoundation of individual ambidexterity (complete model with 484 observations). Coefficients are standardized and approximated to the second decimal place. Observed variables for latent variables are not reported. (\*\* $P_v < 0.01$ ).

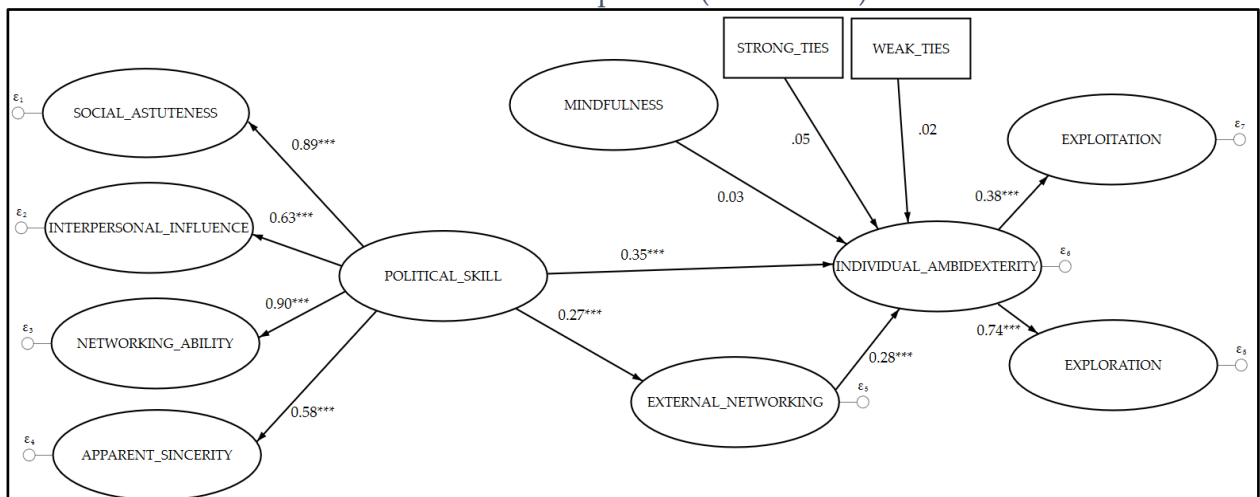
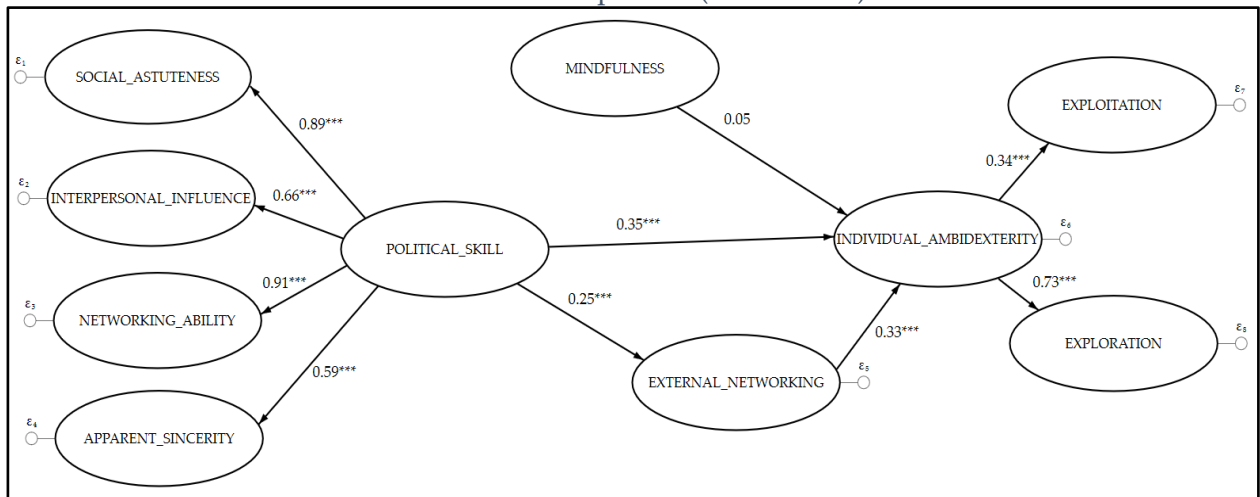


Figure 66: SEM on microfoundation of individual ambidexterity (no internal social capital; 551 observations). Coefficients are standardized and approximated to the second decimal place. Observed variables for latent variables are not reported. (\*\*\*)  $P_v < 0.01$ .



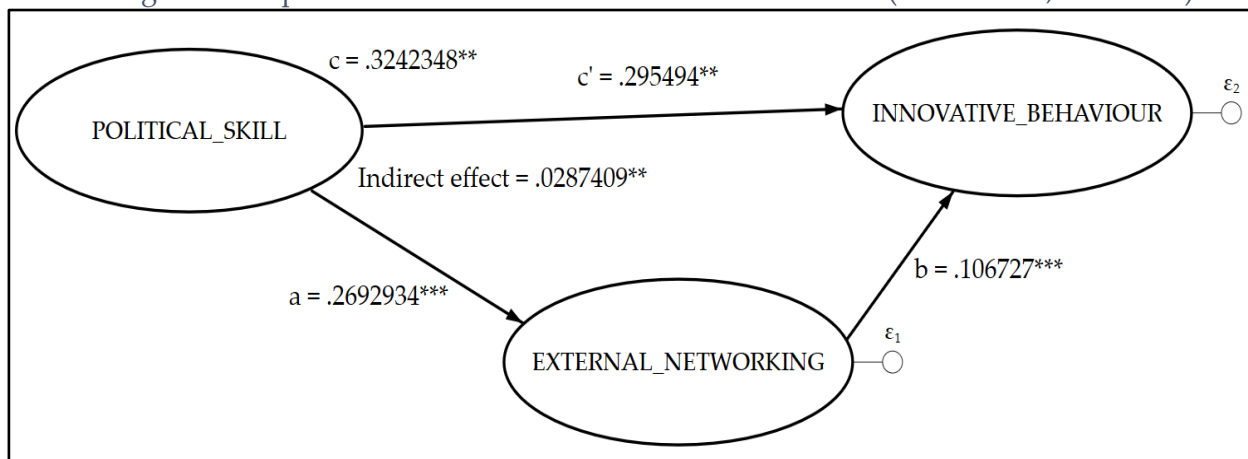
### The mediation effect of external networking.

After the analyzes on the complete model, the focus is actually on the potential mediation of the share capital. The method used was SEM and bootstrapping with 1000 replications based on 50 clusters. The first test concerned hypothesis H 9.3, whereby external networking is assumed as a mediator between political skills and innovative work behavior. The study focused on external networking and perceived innovation measured in a one-dimensional way with a single factor connected to the observed variables. The strength of this analysis is that the fitness indices are all above the acceptability value, while it has a limitation regarding the fact that the bootstrapping actually took place on 868 replications compared to the 1000 set in the analysis<sup>194</sup>. This data is not usually reported in the published papers, because the reference is always to the initial setting and not to the actual calculation, which is reported here for clarity and transparency of display. Future research can replicate this research even on a much higher number of replications (even 5000), considering that the analysis is very time spending, regardless of the capabilities of the statistical software and the PC (the analysis reported here was conducted by Stata in about 36 hours of processing).

<sup>194</sup> Stata reports this note: "One or more parameters could not be estimated in 132 bootstrap replicates; standard-error estimates include only complete replications."



Figure 67: Summary chart of direct, indirect and total effects in the mediation model of external networking between political skills and innovative work behaviour (\*\* $P_v < 0.01$ ; \*\*\* $P_v < 0.05$ ).



The total effect for political skill, .3242348, is the effect it is possible to find if there was no mediator in this model. It is significant with  $P_v < 0.01$  and a  $z$  of 7.52. The direct effect for political skill is .295494 which, while still significant ( $P_v < 0.01$  and  $z = 7.03$ ), is much smaller than the total effect. The indirect effect of political skill that passes through external networking is .0287409 and is also statistically significant ( $P_v < 0.05$  and  $z = 2.17$ ).

These values can be interpreted more easily by computing ratios and proportions:

- proportion of total effect mediated =  $.0287409 / .3242348 = 0.08864$
- ratio of indirect to direct effect =  $.0287409 / .295494 = 0.09726$
- ratio of total to direct effect =  $.3242348 / .295494 = 1.12498$

These data allow to confirm that external networking is a significant mediator between political skill and perceived innovation. The proportion of the total effect of political skill that is mediated by external networking is 8.864%. The hypothesis H 9.4 is supported. External networking is a partial mediator between political skill and innovative work behaviour. The second analysis concerns the estimation of the hypothesis for which external networking is a mediation between political skill and individual ambidexterity. Political skill is measured as a second-order latent variable and external networking as a first-order latent variable as in previous analyses. Individual ambidexterity is calculated as a second-order latent variable with the sub-dimensions individual exploitation and individual exploration. The model includes modifications indices that were found in confirmatory factor analyses of individual variables. The method used is SEM and bootstrapping with an original indication of 1000 replications on 50 clusters to control for nested data. Stata estimated SEM effectively with 690 bootstrap replications<sup>195</sup> (in about 72 hours).

<sup>195</sup> Stata reports this note: "One or more parameters could not be estimated in 310 bootstrap replicates; standard-error estimates include only complete replications."

Table 84: fitness indices for the model of microfoundation of individual ambidexterity with the focus on the mediation effect of external networking on political skill.

Fit statistic	Value	Description
Likelihood ratio		
chi2_ms(1014)	2632.478	model vs. saturated
p > chi2	0.000	
chi2_bs(1081)	12508.068	baseline vs. saturated
p > chi2	0.000	
Population error		
RMSEA	0.054	Root mean squared error of approximation
90% CI, lower bound	0.051	
upper bound	0.056	
pclose	0.006	Probability RMSEA <= 0.05
Information criteria		
AIC	79642.587	Akaike's information criterion
BIC	80336.776	Bayesian information criterion
Baseline comparison		
CFI	0.858	Comparative fit index
TLI	0.849	Tucker-Lewis index
Size of residuals		
SRMR	0.066	Standardized root mean squared residual
CD	0.911	Coefficient of determination

Future researches could replicate this analysis indicating a larger number of replications at the beginning of the estimation to have a larger effective number of replications (up to 5000). Fit-indices tend to be acceptable. Only CFI and TLI are around the acceptable threshold. The use of the bootstrapping methodology however allows to guarantee the validity of the results obtained. The total effect for political skill, .1042047, is the effect it is possible to find if there was no mediator in this model. It is significant with  $P_v < 0.01$  and a  $z$  of 6.65. The direct effect for political skill is .0831374 which, while still significant ( $P_v < 0.01$  and  $z = 2.29$ ), is much smaller than the total effect. The indirect effect of political skill that passes through external networking is .0210673 and is also statistically significant ( $P_v < 0.01$  and  $z = 2.93$ ).

These values can be interpreted more easily by computing ratios and proportions:

- proportion of total effect mediated =  $.0210673 / .1042047 = 0.2022$
- ratio of indirect to direct effect =  $.0210673 / .0831374 = 0.2534$
- ratio of total to direct effect =  $.0831374 / .1042047 = 0.7978$

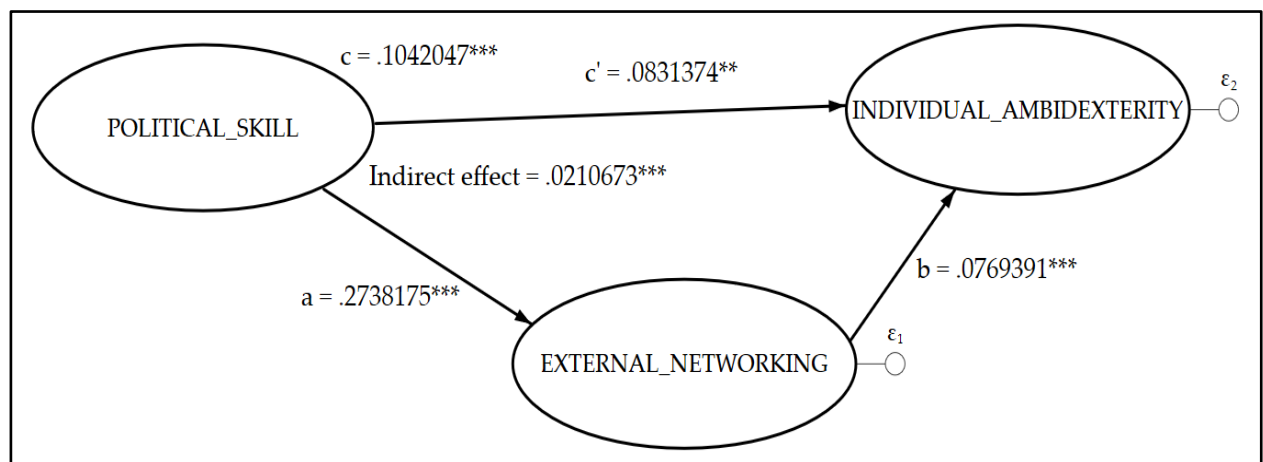
These data allow to confirm that external networking is a significant mediator between political skill and individual ambidexterity. The proportion of the total effect of political skill that is mediated by external networking is 20.22%. The hypothesis H 9.3 is supported. External networking is a partial mediator between political skill and individual ambidexterity. The share of

mediation that external networking manages to express is as high as the outcome variable is individual ambidexterity rather than perceived innovative behaviour. These results confirm the relevance of managing knowledge in relations with public and private stakeholders outside the organization. Social capital and insights in human capital can interact to create dynamic capabilities, as analysed in the first part of the literature review. The mediation mechanism indicates that political skills can positively influence external networking and this dimension influences dynamic capabilities. The mediation phenomenon is partial. Political skill still has a significant effect on ambidexterity and innovation, but this effect is smaller than the total effect in the absence of external networking mediation.

Table 85: political skill, external networking, ambidexterity. Estimates for mediation.

EFFECT	Coefficients (standardized)	St.err. (Bootstrapping with 690 replications and cluster in 50 local governments)	z	P> z	[95% Conf. Interval]	
<b>DIRECT</b>						
External networking <i>Path a (=total effect)</i> Political skill	.2738175	.0712281	3.84	0.000	.1342131	.413422
Individual ambidexterity Political skill <i>Path b (=total effect)</i>	.0831374	.0363087	2.29	0.022	.0119737	.1543011
External networking	.0769391	.0233573	3.29	0.001	.0311597	.1227185
<b>INDIRECT</b>						
Individual ambidexterity Political skill	.0210673	.0071805	2.93	0.003	.0069936	.0351409
<b>TOTAL</b>						
Individual ambidexterity Political skill	.1042047	.0393128	2.65	0.008	.027153	.1812563
External networking (=path b)	.0769391	.0233573	3.29	0.001	.0311597	.1227185

Figure 68: Summary chart of direct, indirect and total effects in the mediation model of external network-ing between political skills and individual ambidexterity (\*\* $P_v < 0.01$ ; \*\* $P_v < 0.05$ ).



### The mediation effect of strong ties representing internal social capital on innovation.

A SEM methodological procedure has been developed which includes the average value of political skill and dynamic capabilities with strong ties. The analysis is conducted with SEM, bootstrapping with 1000 replications and cluster in 44 organizations. The tables below show the calculated estimates. Strong ties is positively associated with innovative work behavior (this methodology confirms H 1.2a) and ambidexterity (H 1.1a). However, it is not significantly a mediator between political skill and innovation and ambidexterity (the data emerges from the calculation of the variance with bootstrapping and cluster orgid). The direct effect is lower than the total effect, but the indirect effect is insignificant neither in terms of p-value nor for the confidence interval that is around zero. The hypotheses H 9.1 and H 9.2 are not supported.

Table 86: political skill, strong ties, innovation. Estimates for mediation.

EFFECT	Coefficients (standardized)	St.err. (Bootstrapping with 1000 replications and cluster in 44 local governments)	z	P> z	[95% Conf. Interval]	
<b>DIRECT</b>						
<b>Strong ties (internal social capital)</b> <i>Path a (=total effect)</i> <b>Political skill</b>	.1028795	.0408726	2.52	0.012	.0227707	.1829884
<b>Innovative behaviour</b> <b>Political skill</b> <i>Path b (=total effect)</i> <b>Strong ties</b>	.2724777 .4606678	.0457721 .1708767	5.95 2.70	0.000 0.007	.1827662 .1257556	.3621893 .79558
<b>INDIRECT</b> <b>Innovative behaviour</b> <b>Political skill</b>	.0115856	.0073554	1.58	0.115	-.0028307	.026002
<b>TOTAL</b> <b>Innovative behaviour</b> <b>Political skill</b> <b>Strong ties (=path b)</b>	.2840634 .4606678	.0449896 .1708767	6.31	0.000	.1958855	.3722413

Figure 69: political skill, strong ties, ambidexterity. Estimates for mediation.

EFFECT	Coefficients (standardized)	St.err. (Bootstrapping)	z	P> z	[95% Conf. Interval]	
<b>DIRECT</b>						
<b>Strong ties (internal social capital)</b> <i>Path a (=total effect)</i> <b>Political skill</b>	.0251497	.0101743	2.47	0.013	.0052084	.0450909
<b>Innovative behaviour</b> <b>Political skill</b> <i>Path b (=total effect)</i> <b>Strong ties</b>	1.373609 2.149223	.9745564 .2201381	2.21 6.24	0.027 0.000	.2391276 .9421465	4.059319 1.805072
<b>INDIRECT</b> <b>Individual ambidexterity</b> <b>Political skill</b>	.0540523	.0402747	1.34	0.180	-.0248848	.1329893
<b>TOTAL</b> <b>Individual ambidexterity</b> <b>Political skill</b> <b>Strong ties (=path b)</b>	1.427662 2.149223	.9745564 .2155687	2.21 6.62	0.027 0.000	.2391276 1.005155	4.059319 1.850168



## 6. COMMON METHOD BIASES: A METHODOLOGICAL ISSUE?

The analyses developed in this chapter did not consider the possible problem of common method biases on the data collected. In this section two control analyses are carried out with respect to the potential greater difficulty of interpretation and generalization of the results in the presence of method biases. Three further analyses were carried out and the data was critically commented on the results obtained previously: response time to the questionnaire and measurement of innovation that is not self-reported. This section focuses on a further check of the results, to validate the validity of the previous analysis by paying attention to common method biases. Usually this part is not analyzed in published papers and the results do not change what has already been written on the support or not of the research hypotheses according to empirical data. This chapter is an added value of transparency, validity and above all methodological value. In particular, in the second part a model with perceived innovation measured as an average of the evaluation given by the respondent colleagues is analysed. An innovative approach to research in the field of behavioural public administration.

### a) Response time to the questionnaire.

The first analysis concerns the inclusion of the time dimension as a control variable. The variable is measured in three different ways, to see if there are any deviations:

- **time-lagged**, a dummy variable that indicates whether the questionnaire was filled in twice (1 = yes) or only once (0 = not).
- **temporal distance**, a continuous variable that has 0 for all the observations that replied at once and as positive value the time elapsing in the response to different sections of the questionnaire.
- **one\_time**, a dummy variable opposed to time-lagged and which allows a different interpretation because the value 1 concerns who answered in one solution, while the value 0 concerns who answered in two solutions. The estimates are on the baseline 4a model for innovative work behaviour and individual ambidexterity and calculated with OLS with cluster option. The estimates show that the time dimension has no effect on the outcome variable. Therefore, from this analysis, it seems that common method bias is not a problem. The addition of this dimension as control does not change the significance of the other independent regressors. These estimates support the analyses carried out in the previous sections so that the time dimension and the common method of answering the first and second part of the questionnaire at the same time are not considered. The academic methodological debate on the use of a time distance has been reported and discussed at length in the construction of the questionnaire.

Table 87: baseline models of microfoundation including the (non significant) impact of response time to the questionnaire.

	Innovation	innovation	innovation	ambidexterity	ambidexterity	ambidexterity
gender	0.004 (0.06)	0.004 (0.06)	0.002 (0.07)	0.447 (0.29)	0.447 (0.29)	0.456 (0.30)
age	0.002 (0.01)	0.002 (0.01)	0.002 (0.01)	0.014 (0.03)	0.014 (0.03)	0.014 (0.03)
university	0.043 (0.08)	0.043 (0.08)	0.044 (0.08)	0.378 (0.38)	0.378 (0.38)	0.377 (0.38)
tenureposition	-0.008** (0.00)	-0.008** (0.00)	-0.008** (0.00)	-0.024 (0.02)	-0.024 (0.02)	-0.023 (0.02)
manager	0.169** (0.08)	0.169** (0.08)	0.174** (0.07)	0.356 (0.40)	0.356 (0.40)	0.360 (0.40)
mindfulnessmean	0.065** (0.03)	0.065** (0.03)	0.066** (0.03)	0.133 (0.17)	0.133 (0.17)	0.132 (0.17)
politicalskillmean	0.265*** (0.04)	0.265*** (0.04)	0.264*** (0.04)	1.108*** (0.19)	1.108*** (0.19)	1.104*** (0.19)
externalnetworkingmean	0.126*** (0.04)	0.125*** (0.04)	0.123*** (0.04)	1.080*** (0.19)	1.080*** (0.19)	1.079*** (0.19)
timelagged	-0.085 (0.07)			0.000 (0.41)		
one_time		0.087 (0.07)			-0.000 (0.42)	
temporaldistance			-0.001 (0.00)			-0.001 (0.00)
_cons	1.187*** (0.41)	1.101*** (0.38)	1.165*** (0.39)	1.731 (2.13)	1.731 (2.15)	1.799 (2.14)
N	551.000	551.000	551.000	551.000	551.000	551.000
F	14.478	14.532	13.796	18.704	18.673	18.339
r2	0.177***	0.177***	0.177***	0.152***	0.152***	0.152***
r2_a	0.163***	0.163***	0.163***	0.138***	0.138***	0.138***
rmse	0.753	0.753	0.753	3.994	3.994	3.994
Standard errors in parentheses * p<0.10, ** p<0.05, *** p<.01						

In addition to this first analysis, a second estimation of baseline models 4a for innovative work behaviour and individual ambidexterity has been developed to support or not the revival of common method biases. The second analysis is carried out with Hierarchical Linear Modelling in the sample of 412 individuals who answered the first part separately from the second part in 43 local governments. The use of a different statistical method and of a sample limited to those who responded with a time-lagged allows reaching more accurate scientific conclusions. This methodological analysis allows strengthening the validation of results according to greater control than common method bias. The table below shows that the time-lagged response has inflated coefficients compared to the baseline 4a model. In particular, the effect of mindfulness is no longer significant in the sample where the questionnaire is administered with temporal lag. Political skill is always positively very significant, however, the co-coefficients are slightly lower when the questionnaire was filled in twice. Temporal separation also affects external networking. This variable loses its significance in the relationship with innovative work behaviour and has a lower coefficient for ambidexterity. For the relationship between external networking and innovative work behaviour a further control has been developed because the result obtained here could

make us reflect on the support of the direct positive relationship hypothesis. External networking has a  $P_v$  exactly equal to 0.10 marked with \* in the table, but the 95% confidence interval -.0141621 .1607666 also has a small negative value. In order to confirm the hypothesis of the thesis, the same model has been tested excluding the control of the dummy variable of the managers. The Stata output below confirms that the hypothesis of a direct positive relationship between external networking and innovative work behaviour is confirmed. However, the beta coefficient of external networking is lower with a lower significance (0.020 rather than 0.000 in the overall sample). Finally, the last analysis concerns the estimate of social capital within the organization only for the sample with a questionnaire response with time separation. The comparison model is the 4.b. In this general analysis, only strong ties have a significant positive effect on innovative work behaviour, while the other effects are not significant (for weak ties the  $P_v$  becomes 0.104, consistently with what found in the quantitative case study with social network analysis). One fact emerges quite clearly: strong ties within the organization capture more relevance for innovation, while external networking is more relevant to implement a balanced behaviour between exploitation and exploration. For internal social capital, a unique effect of common method biases cannot be reported.

Table 88: baseline model 4.a in comparison between complete (on the right-side) and time-lagged sample (on the left-side). Estimations with HLM. ( $P_v < 0.01$  \*\*\*,  $P_v < 0.05$  \*\*,  $P_v \leq 0.10$  \*).

	Innovation_time-lagged	Innovation	Ambidexterity_time-lag~d	Ambidexterity
main				
gender	-0.041 (0.08)	-0.006 (0.07)	0.568 (0.42)	0.445 (0.36)
age	0.000 (0.01)	0.003 (0.00)	0.004 (0.03)	0.016 (0.03)
university	-0.020 (0.08)	0.053 (0.07)	-0.146 (0.43)	0.388 (0.38)
tenureposition	-0.007 (0.00)	-0.009** (0.00)	-0.025 (0.02)	-0.024 (0.02)
manager	0.210** (0.08)	0.166** (0.07)	0.501 (0.43)	0.315 (0.38)
mindfulnessmean	0.052 (0.04)	0.058* (0.04)	0.200 (0.21)	0.135 (0.19)
politicalskillmean	0.195*** (0.04)	0.266*** (0.03)	0.969*** (0.22)	1.097*** (0.18)
externalnetworkingmean	0.073* (0.04)	0.117*** (0.04)	0.778*** (0.23)	1.064*** (0.20)
_cons	1.729*** (0.40)	1.133*** (0.34)	3.325 (2.07)	1.726 (1.82)
lns1_1_1				
_cons	-2.017*** (0.42)	-2.085*** (0.40)	-0.272 (0.42)	-0.425 (0.47)
lnsig_e				
_cons	-0.295*** (0.04)	-0.306*** (0.03)	1.342*** (0.04)	1.363*** (0.03)
N	412.000	551.000	412.000	551.000

The only difference from other results is the coefficient of internal strong ties, which is higher in the presence of temporal separation. To conclude this part, it is possible to state that there are no substantial changes in the coefficients and significance compared to the results found up to this point. Moreover, it is possible to deduce that the deviations derive from the presence of temporal separation, but it is not possible to conclude that if the different effects are simply due to a different sample of statistical analysis or, vice versa, method bias matter.

Table 89: the estimation of innovative work behaviour with Hierarchical Linear Modelling in the sample of time-lagged answers without the control dummy variable manager.

innovativeworkbehaviourmean	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
gender	-.0542141	.0828171	-0.65	0.513	-.2165326	.1081044
age	.0031327	.0053467	0.59	0.558	-.0073465	.013612
university	.0439278	.0797328	0.55	0.582	-.1123456	.2002012
tenureposition	-.0072031	.0044441	-1.62	0.105	-.0159134	.0015071
mindfulnessmean	.0558633	.0417285	1.34	0.181	-.025923	.1376496
politicalskillmean	.1872645	.0433957	4.32	0.000	.1022104	.2723185
externalnetworkingmean	.1013586	.0434918	2.33	0.020	.0161162	.1866011
_cons	1.594892	.4011181	3.98	0.000	.8087152	2.381069

Figure 70: baseline model 4.b in comparison between complete (on the right-side) and time-lagged sample (on the left-side). Estimations with HLM. ( $P_v < 0.01$  \*\*\*,  $P_v < 0.05$  \*\*,  $P_v \leq 0.10$  \*).

	Innovation_time-lagged	Innovation	Ambidexterity_time-lagged	Ambidexterity
main				
gender	-0.036 (0.08)	-0.003 (0.07)	0.572 (0.43)	0.744* (0.38)
age	0.001 (0.01)	0.000 (0.00)	0.005 (0.03)	0.007 (0.03)
university	0.012 (0.08)	0.019 (0.08)	-0.095 (0.44)	0.285 (0.40)
tenureposition	-0.008* (0.00)	-0.008** (0.00)	-0.027 (0.02)	-0.021 (0.02)
manager	0.203** (0.08)	0.180** (0.08)	0.488 (0.43)	0.394 (0.40)
mindfulnessmean	0.056 (0.04)	0.045 (0.04)	0.203 (0.21)	0.089 (0.19)
politicalskillmean	0.197*** (0.04)	0.255*** (0.04)	0.970*** (0.22)	1.170*** (0.20)
externalnetworkingmean	0.038 (0.05)	0.075* (0.04)	0.720*** (0.25)	0.831*** (0.23)
strongties_isc_	0.412** (0.18)	0.388** (0.17)	0.672 (0.98)	1.219 (0.92)
weakties_isc_	0.196 (0.21)	0.307 (0.19)	0.245 (1.11)	0.597 (1.00)
_cons	1.595*** (0.41)	1.255*** (0.37)	3.146 (2.14)	1.956 (1.96)
lns1_1_1				
_cons	-2.330*** (0.74)	-2.307*** (0.62)	-0.288 (0.43)	-0.415 (0.47)
lnsig_e				
_cons	-0.296*** (0.04)	-0.318*** (0.03)	1.342*** (0.04)	1.342*** (0.03)
N	412.000	484.000	412.000	484.000

## **b) Independent and dependent variable with different respondent. A discussion.**

In the previous sections of the analysis, observations on independent and dependent variables are derived from the same source. In the introduction to the methodology of construction of the questionnaire, it has been highlighted how data from the same source can lead to validate research hypotheses when a part of the variance is explained by common methods rather than by the real relationship between two constructs. To overcome this problem, the second part of the questionnaire included a question related to the perception of innovation by all colleagues. The found variance is the average of all colleagues' evaluations. Answers containing at least one colleague with a different evaluation than the others were considered acceptable, while three answers that were always the same for all colleagues were considered unreliable and eliminated. In addition, to reduce the bias of the respondent, only individual assessments derived from at least two colleagues were considered in the analysis, rather than just one assessment. The use of the average in the analysis has clear limits. In particular, the real aspect of the respondent's knowledge and similarity to the evaluated colleague is not considered. The analysis carried out in this thesis on the average is a first approach to the more in-depth and multi-level evaluations that can be made on the available data. For example, future research may analyse the assessment according to the degree of knowledge deriving from the knowledge exchange (and eliminate, for example, those data that derive from a lesser exchange of knowledge than the weak ties that could imply a lack of information with respect to the activity and behaviour that really distinguish the colleague at work, rather than the hearsay or perception perhaps related to an entire department of the local government). Future analysis can deepen the evaluation that is made of colleagues depending on the characteristics of the respondent rater and the rating. Remaining on the analysis of average rated innovativeness as an outcome variable, this section conducts three estimates with reference to baseline models 4.a and 4.b with Hierarchical Linear Modelling. In this situation, this methodology is the most appropriate as it can more accurately capture the issue that the data are nested. However, there is a limit to the use of this method. A more in-depth analysis of this analysis should include a multi-level option covering the rater group as well as the organisation to consider that innovation assessments are nested on practically two different levels in fellow evaluators and in turn within organisations. What emerges from rated innovativeness estimates with Hierarchical Linear Modelling? Gender has a negative effect (in model 4.a which excludes internal social capital). Women are valued worse than men in terms of innovative behaviour at work. In both models, age is considered a dimension that negatively influences innovation.

Table 90: estimates of baseline models 4.a and 4.b with rated innovativeness (by colleagues).

	Rated_innovation(HLM)	Rated_innovation(HLM)
rated_innovativeness		
gender	-0.103* (0.06)	-0.097 (0.06)
age	-0.026*** (0.00)	-0.026*** (0.00)
university	0.060 (0.07)	0.084 (0.07)
tenureposition	0.003 (0.00)	0.002 (0.00)
manager	0.278*** (0.07)	0.272*** (0.07)
mindfulnessmean	-0.018 (0.03)	-0.012 (0.03)
politicalskillmean	0.067** (0.03)	0.065** (0.03)
externalnetworkingmean	-0.073** (0.03)	-0.125*** (0.04)
strongties_isc_		0.641*** (0.18)
weakties_isc_		0.369** (0.17)
_cons	5.086*** (0.32)	4.896*** (0.32)
lnsl_1_1		
_cons	-0.703*** (0.15)	-0.784*** (0.16)
lnsig_e		
_cons	-0.526*** (0.03)	-0.538*** (0.03)
N	467.000	467.000
Standard errors in parentheses * p<0.10, ** p<0.05, *** p<.01		

Older individuals are seen as less innovative by colleagues, unlike analyses on self-reported innovation, so this figure was not significant. Managers are seen as more innovative than those who do not hold managerial roles. These are the estimates for control variables. The estimates present different and relevant aspects compared to what emerged in the studies conducted up to this point of the thesis. Mindfulness is not a significant dimension with respect to rated-innovativeness, therefore, in this mode of analysis H 3.2 is not supported unlike previous studies that have led to less support for this hypothesis. This is different from what was found for self-reported innovation, but it is consistent with the relational ineffectiveness of this variable or how this construct was measured, compared to the research hypotheses. The interpretation of this data in terms of refutation or revision of the validation of the hypotheses expressed so far may lead to misunderstandings. Self-rated innovative work behaviour and rated innovativeness have the advantage of having significant measurement differences.

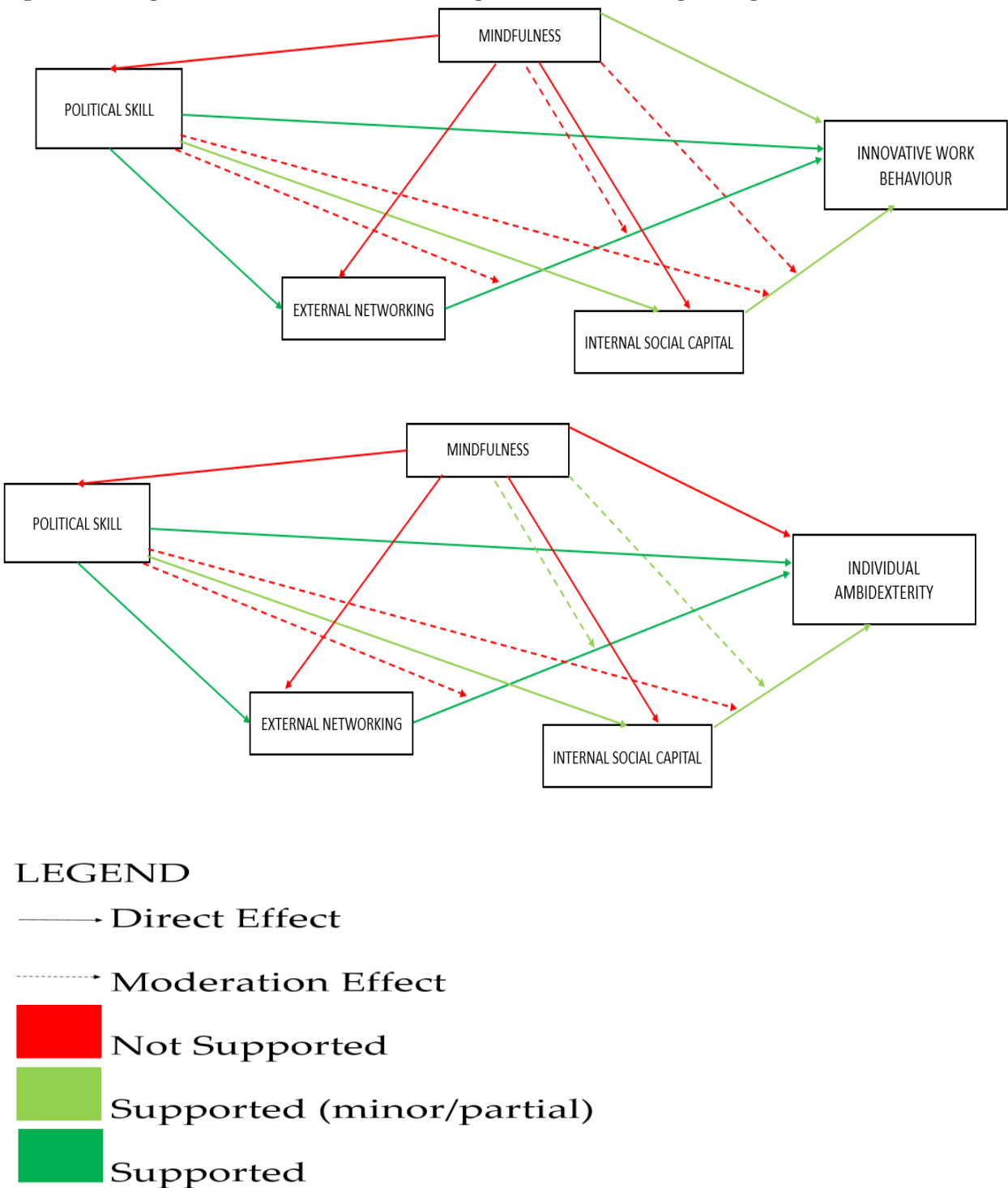
The latter is not only evaluated by an external colleague, but also with an item only rather than a multi-item scale and roster method rather than concentration on oneself. The cancellation of the common method bias due to self-responder is a positive added value in using this way of measuring innovation. However, other people's judgement may be influenced by other non-responder

ent factors. In fact, in addition to the already mentioned similarity, proximity may have a relevance in the evaluation of innovation. It is easier to objectively assess a colleague that is seen working daily rather than one that is rarely encountered at work. According to this interpretation, the role of internal social capital can be assessed. In the absence of a valid counterfactual, strong ties and weak ties have a positive impact on innovation which may be due to preferring a colleague's relationship with a colleague, to knowing more about a colleague's work activity, to a more accurate and objective evaluation of the colleague's innovation or to the fact that more social capital within the organisation allows for an improvement in innovative behaviour as assumed. In summary, strong and weak ties have a positive impact on the perception of innovative behaviour assessed by colleagues, consistent with H 1.2. Political skill is positively associated with rated innovativeness consistent with the H 7.2 hypothesis. This construct is very significant in the microfoundation model. In this last analysis of validity, however, it is necessary to underline that the relation between political skill and rated innovation could have a certain variance explained not by the real relation between the two variables. The confirmation of the hypothesis H 7.2 can be effectively due to the fact that the more innovative public servants or the greater relational abilities lead the colleague to give a better evaluation. In the absence of a counterfactual, nothing else can be added and this research concludes by supporting the hypothesis developed in the literature review. Finally, external networking still shows to be significantly correlated with innovation, but this direction is the opposite of what has been found so far. External networking presents a negative coefficient in the opposite direction of the H 2.2 hypothesis. In the next section on the results discussion the possible interpretation of this significant unexpected result is discussed. Considering the mode of measurement of rated innovativeness and the lack of data on the nature of the evaluator, it is possible to anticipate that this result results from a lack of information. Further analysis of the data collected or other empirical studies may find a solution to these problems.

In conclusion, the latter analysis is an introductory analysis that can be deepened methodologically. Using the average rated innovation is a simplified approach, but it does not allow to capture all the information content of the available data. Considering that for the self-reported data different measurements and measurement models have been used to certify the validity of the estimates obtained, this section is considered for its unique methodological content in the construction of the questionnaire and as a drive for the comparison of results between self-reported and rated. For these reasons the results in this part are not considered in the support or less of hypotheses, even if they are included in the part of discussion.

# E. DISCUSSION AND IMPLICATIONS

Figure 71: simplified model of the relationships tested in this empirical part<sup>196</sup>.



<sup>196</sup> This simplified model includes individual ambidexterity and innovative work behaviour when they are measured with self-assessment in the questionnaire. This model does not include mediation and other secondary effects.



## 1. DISCUSSION ABOUT EMPIRICAL RESULTS.

### a) Mindfulness.

For this dimension and for all other hypotheses, the results of the analyses are summarised in SUMMARY LIST **OF HYPOTHESES AND EMPIRICAL ESTIMATES**

*Table 99* in the annexes. Mindfulness has a significant positive effect on perceived innovative work behaviour. However, the impact of this construct in microfoundation appears limited in empirical results compared to theoretical and conceptual expectations. The impact on innovation is not confirmed when the outcome is rated rather than self-evaluated, even if this analysis is a first approach and statistically more precise studies would be needed.. A minor support for the positive direct relationship with innovation is maintained. Mindfulness has no effect on ambidexterity, but above all it is not an element of microfoundation of social capital, neither inside nor outside the organization. The theoretical hypotheses analyzed and the hypothesis proposals developed are not confirmed by empirical data. Mindfulness measured with MAAS does not appear to have an effect on relationships. The problem is to understand if the hypotheses are not confused because the measurement modality of the scale is not sufficient to grasp the relational aspects in op-pure work, more coherently, with the development of this scale, it is a msuration above all of the personal intra-psychic aspect of mindfulness. In fact, these results are consistent with the recent development of a new mindfulness scale that is linked to the inter-personal aspect of this construct, since the measurement methods adopted so far at work have not given significant results on the relational aspect (Pratscher et al., 2019). Future research will be able to test again the relationships hypothesized in this model through a scale based on the relational aspect of trait mindfulness (Pratscher et al., 2019), adapt and modify the MAAS scale to work activities as suggested and implemented by Dane and Brummel (2014) in the catering sector, use a multi-dimensional scale useful for both meditators and non-meditators (Baer et al., 2006, 2008), use a multi-dimensional scale related to mindfulness rather than trait (e.g. Lau et al., 2006).

### b) Political skill

The results that emerge from the statistical analyzes confirm the relevance of political skill (Ferris et al., 2005, 2007) in the logic of a political-relational vision of the organization (Mintzberg, 1983, 1985). The direct effect on innovation and ambidexterity is congruent with the research hypotheses. The empirical result is consistent with the theoretical expectation of micro-foundations in which social skills, as language, communication and social cognition have a positive effect by

means of being able to align the strategy over time and above all to counteract the resistance to change within organizations (Helfat & Peteraf, 2015). Attention and social dimensions are different aspects within the field of cognitive capabilities. Empirical research until now confirm the positive relevance for both of them in work environment. There is the possibility to enhance attention and social skills with practice, experience and learning. this is a potential way to improve individual and organizational performance in public sector through strategic modern human resources policies, which can have a positive impact by working on individual differences.

### **c) External networking.**

Social capital from outside the organization has a positive effect on the individual outcome. Public servants in local governments who are better connected can access ideas and knowledge consistent with expectations (Obstfeld, 2005). The results of the empirical analysis are consistent with the idea that the best-connected people can do better and have a return in terms of competitive advantage (Burt, 2000). The results seem to confirm what is already extensively studied in the literature of social network analysis, however, this thesis provides further knowledge of the phenomenon related to different contextual situations connected to networks inside and outside local governments, combining both types of networks in a large number of organizations. The development of knowledge networks outside the public organization can bring benefits in terms of innovative behaviour in local government. Developing strong relationships with the closest and weakest stakeholders, even the most remote, especially private ones, can also provide added value and be an element of microfoundation of innovation in municipalities. Collaboration and exchange of knowledge between the public and private sectors strengthen above all the promotion of ideas. Without an external network, it becomes difficult to promote ideas within the organisation and in its own work. In the Network Governance perspective, the public employee must have stable relationships with the various stakeholders at different intervals in order to obtain the knowledge and collaboration necessary to create, promote and implement new ideas at work. Without knowledge management that includes external relationships, the public employee will hardly have access to those resources necessary to innovate. The development of theoretical knowledge management models and empirical data confirms the need to train people working in local governments to have relationships with external parties with the right frequency, to have technological means to manage these relationships in the most streamlined, efficient and effective way possible. In addition, the data confirm that keeping the person in the same position and having a bureaucratic role disconnected from external relations can lead him/her to never innovate with damage to the organization as to the work of the individual public employee.

External networking is also an antecedent of individual ambidexterity. This result is consistent with the qualitative argumentations of Palm and Lilja (2017) for which the relationship with user's needs and different stakeholders depending on the circumstances can benefit, balancing a simplification of internal processes with the stimulus towards explorative processes for external users. Coherently with this perspective, external networking is positively correlated with exploration and allows a balance between exploration and exploitation. External relations allow access to knowledge that counterbalances op-postal drives. Having a clearer panorama of network governance, the public employee can understand more consciously what are the improvements to be implemented in the service and how to make the work they are doing more efficiently. These results are consistent with what emerges from the research of Barrutia and Echebarria (2019) for which the collaborations es-terne with a potential different role of different stakeholders' impact on organizational ambidexterity of the municipalities included in the network management of public services in Spain. Moreover, these results meet the idea that stakeholder focus is more important in the public sector due to the nature of this type of organization, although this hypothesis has not been confirmed previously in the literature on the level of organizational ambidexterity (E. Smith & Umans, 2015). An evaluation is necessary regarding the comparison of the results obtained with innovation. When innovative behavior is self-reported, external networking has a positive impact, while, as the outcome is rated by colleagues, this dimension has the opposite and negative effect. The interpretation of this controversial result can be complex. In the case of a common respondent between the regressor and the dependent variable, the positive relationship appears to be consistent with the theory of personal resource management. In the case of a different respondent, the negative effect could be due to factors other than those that can be explained in the model: a problem of institutional legitimacy for relations external to the organization, a problem of lack of similarity, so those who have few relationships it could evaluate more negatively those who have many (this can be tested according to a statistical-methodological analysis), a problem of envy or generally negative ties towards those who have more external relations. Colleague evaluation appears to be a higher interpretative and methodological problem than using self-reported data. The literature on common method biases indicates that these can increase, decrease or have no effect on the coefficients as it emerged in the review on this issue, while phenomena of the opposite results are difficult to find in the literature. Probably a result to be kept in strong consideration is what was found in the reduced sample that completed the questionnaire with time-lag. In this case, external networking has less significance on innovative work behavior so that  $Pv$ -Value is exactly equal to 0.10. In the model without internal social capital, the external coefficient is 0.117 in the overall sample and 0.073 when the data is collected with

time-lag. In summary, common method may matter relatively to external networking. Future research could intersect these results with the different nature of external relations.

#### **d) Internal social capital – strong and weak ties.**

Relationships within the organization also may have an effect on individual dynamic capabilities. This effect is so significant in the various forms in which individual dynamic capabilities can be measured. Having relationships means accessing relevant resources that allow you to change your own perception of innovative behavior and the perception that other colleagues have of our behavior. The results are tentatively consistent with the literature of the microfoundation that considers the detection of networks as a crucial element for development over time. However, as far as individual ambidexterity is concerned, internal social capital does not appear as a significant element. For example, these analyses do not confirm the qualitative perspective that emerged in the interview conducted by Palm and Lilja (2017), so the dialogue between coworkers allows to enhance the knowledge and awareness of the various processes that may be explorative or exploitative in nature so as to facilitate their implementation in ordinary daily processes. The role of internal social capital on ambidextrous behaviour remains ambiguous, so much so that the number of weak links has no effect even on sub-dimensions of exploitation and exploration. Strong ties have effect in a "close" world, so the effect appears to fade when the model includes external networking. Palm and Lilja (2017) write about the role of ambassadors within the organization, but, perhaps, the dimension of strong and weak ties can not completely capture the social meaning of this role, how they could carry out measures of centrality. Moreover, in this perspective it is necessary to pay attention that the obligation to share knowledge can have harmful effects on ambidextrous behaviour as well as providing extrinsic motivational tools (Caniëls et al., 2017). Practices should be weighed so as to highlight the intrinsic motivation to share knowledge, otherwise there is a risk that employees remain committed to the status quo and the effect is especially negative towards explorative behaviours (Caniëls et al., 2017). In fact, an intrinsic culture of knowledge sharing within the organization appears as a positive enabler for individuals' ambidexterity (Ajayi et al., 2017). Possibly these results should be discussed in terms of comparison in situations where the supervisor in the internal network has ambidextrous leader behavior (Tuan, 2017). The results obtained, however, allow a greater understanding of the link that exists between social-relational components, individual psychology and outcomes relevant to work (Tasselli, 2015; Tasselli et al., 2015). Compared to the debate on the value of weak and strong links, the various empirical analyses carried out in the thesis continue to show that, on the one hand, links are significant for dynamic capabilities, however, the result present here that actually

gives more value to strong links than to weak ones is not always confirmed in the literature. Within the contextual limits of local governance, however, it appears that the strength of strong links at least within the organization is highly significant (Krackhardt et al., 2003). Spending time for knowledge exchange on job related-issues gives a strong individual added value because it seems that having strong links allows to reach information, knowledge, collaborations, brainstorming that leads to a constructive exchange of views that can improve the perception of dynamic capabilities in local governments. This result is also validated by the lack of decreasing marginal effects. The opportunities provided by internal weak ties are more subtle, dynamic and potentially not always unilateral. As far as the strength of the ties with the outside of the organization is concerned, the result is dependent on the nature of the stakeholders involved. The investment of time and energy for knowledge exchange must be weighted according to the effects that the relationship has on the organizational outcome. Relationships are often within established working hours where the public can access the public offices of municipalities. To make this step more efficient, potentially an increase in the use of technologies also for smart working can allow efficient distance relationships in terms of results on the quality of the public employee's work and less impact on concentration and the ability to have positive behaviours at work. Already the first theoretical studies on microfoundation give value to the share capital as a means to improve the organizational outcome (Adner & Helfat, 2003). After almost two decades, the impact on individual innovation and ambidexterity in public organizations is confirmed here, so much so that in the logic of microfoundation individual behavior is added to innovation and ambidexterity at the collective level in a multilevel sense (Mom et al., 2019). The methodological approach sees different ways of measuring social capital in the case study and in the survey for several organizations: this thesis focuses on some measures of internal social capital, while future research could consider diverse values having a substantial amount of data available on complete networks. In fact, strong and weak ties are efficient and effective measures of social capital that have been recognized in the literature for a long time, however, in-depth studies can be carried out with regard to measures of centrality, which are only approached in the case study, and triadic relationships instead of dyadic ones. Future research should also focus on the dynamics of networks. The social capital is assessed here in a static way while the temporal dynamism could affect even more the individual dynamic capabilities especially in the microfoundation of the organizational level. The research here is a snapshot of social capital, however, the relationships are not static and immutable, so a filmic view may be relevant in the interpretation of the results. In this case, relational data must be collected at different time steps after months or years to understand the evolution between network and innovative or ambidextrous behaviour.

Table 91: external networking, internal strong ties and different phases of innovation with Hierarchical Linear Modelling.

	Idea_generation	Idea_generation_TL	Idea_promotion	Idea_promotion_TL	Idea_realization	Idea_realization_TL
main						
gender	0.307 (0.23)	0.134 (0.26)	-0.087 (0.24)	-0.090 (0.27)	-0.331 (0.25)	-0.437 (0.28)
age	0.001 (0.02)	-0.001 (0.02)	-0.014 (0.02)	-0.009 (0.02)	0.011 (0.02)	0.013 (0.02)
university	0.164 (0.24)	0.141 (0.26)	-0.271 (0.25)	-0.289 (0.28)	0.150 (0.26)	0.165 (0.29)
tenureposition	-0.029** (0.01)	-0.031** (0.01)	-0.018 (0.01)	-0.020 (0.01)	-0.023* (0.01)	-0.022 (0.02)
manager	0.473** (0.24)	0.513** (0.26)	0.737*** (0.25)	0.801*** (0.28)	0.389 (0.26)	0.502* (0.29)
mindfulnessmean	0.089 (0.12)	0.132 (0.13)	0.150 (0.12)	0.171 (0.14)	0.165 (0.13)	0.198 (0.14)
politicalskillmean	0.634*** (0.12)	0.438*** (0.13)	0.841*** (0.13)	0.694*** (0.14)	0.763*** (0.13)	0.591*** (0.15)
externalnetworkingmean	0.290** (0.13)	0.206 (0.15)	0.278** (0.14)	0.138 (0.16)	0.243* (0.14)	0.066 (0.16)
strongties_isc_	0.884* (0.53)	0.944* (0.56)	1.356** (0.55)	1.468** (0.60)	0.805 (0.59)	1.005 (0.63)
_cons	5.280*** (1.15)	6.349*** (1.25)	3.965*** (1.20)	4.680*** (1.32)	3.284*** (1.24)	4.208*** (1.37)
lns1_1_1						
_cons	-1.213** (0.60)	-1.330* (0.80)	-1.272 (0.84)	-1.222 (0.88)	-0.806** (0.41)	-0.789* (0.46)
lnsig_e						
_cons	0.838*** (0.03)	0.848*** (0.04)	0.884*** (0.03)	0.903*** (0.04)	0.912*** (0.03)	0.934*** (0.04)
N	484.000	412.000	484.000	412.000	484.000	412.000
Standard errors in parentheses * p<0.10, ** p<0.05, *** p<0.01						

The result obtained in this thesis is already a static approach of a dynamic system in itself and can be generalized to the present time. In summary, the positive effects of relations inside and outside the local governments confirm what suggested by Zandberg and Morales (2017) that the knowledge network inside and outside the organization has a positive impact on innovation. It is necessary to write an annotation. Intersecting the various results obtained from different estimates, a relevant datum emerges: external networking appears more significant to balance ambidextrous relationships, while strong ties play a greater role for innovative behavior at work in local governments. Indeed, the external networking coefficient is higher and more significant towards innovation in an "open" world, in which the model excludes internal social capital. likewise, strong ties have a significant effect towards ambidexterity only in a "close" world where external links to the organization are absent. Future research may investigate cross-mediation and moderation effects between these two dimensions of social capital beyond the hypotheses that emerged in this thesis. However these results appear consistent with a theoretical perspective. External relations allow access to knowledge and information which facilitates the balance between exploitation and exploration. Relations with external stakeholders add new lifeblood compared to relations with colleagues. The relationship between administrators and politicians

is significant and is considered external because certain stakeholders can act sometimes and depending on the role in the organization but are considered to be the representatives of the citizens and democratically elected. This report is an example of stimulus for the balancing of short-term interests and towards efficiency and long-term towards exploratory research. The same phenomenon can also be relevant in other relationships depending on whether it is towards public, private, distant, close and with more or less frequent contacts. A balance of relations outside the organization also leads to a balance of exploitative and explorative activities. At the same time, knowledge-ties within the local government favor innovation as a whole and in the various phases, in which the different forms of social capital return to interact. External networking allows greater access to new ideas and in the implementation phase of innovation projects, while the strong ties coefficient is more relevant for internal consensus research and to promote innovation in the organization. The research hypotheses and empirical analyzes did not focus on the interaction between forms of social capital, in particular internal and external at the same time, and phases of innovation. To reinforce the discussion presented and to support the conclusions, a further analysis of the effects of the forms of social capital on the innovation phases is developed. The statistical analysis was developed by Hierarchical Linear Modeling on the sample of 484 respondents in comparison with those who responded with a temporal separation. In the latter case, only strong ties have a positive effect, while in the former one both external networking and strong ties are positively connected with the innovation phases. In the sample of all respondents, external networking has a positive and significant impact in all three phases. This effect disappears if the questionnaires with time-lag are evaluated. Strong ties are effective in the idea generation and idea promotion stages, but are not significant for idea realization. Future research can deepen these estimates with attention to the sample, the method of measuring internal and external social capital and common method biases. In general, these results confirm what is written in the discussion, so that internal social capital is more relevant than external relations on innovative behavior.

#### **e) Moderation effects.**

In the introduction and elaboration of the hypothesis, the thesis focused on the potential moderating effect of cognitive abilities compared to the exploitation of social capital to improve dynamic capabilities at work. Empirical results show that in a static network system, this effect is poorly addressed. The empirical results allow to evaluate a theoretical and practical representation of networks on cognitive capabilities in the public contest as mentioned in the introduction. However, this result, consistent with expectations, cannot be generalized in the phenomena of

interaction between psychological individual dimensions with relationships and remains within the interpretative framework of static internal and external networks. Moreover, the thesis focuses on knowledge-based networks and covers gaps in research, while future studies will have to replicate these analyses with different forms of social capital inside and outside the organization. For example, the results obtained here should be compared with knowledge networks where the information content of knowledge is more identified rather than generic on work-related knowledge and with networks of different natures, such as friendship, trust or leadership. The analysis of social capital becomes more complex compared to negative dimensions such as knowledge hiding and distrust compared to colleagues. Data collection was very difficult compared to rated innovation with a rather sustained loss of answers between the two parts of the questionnaire. The knowledge exchange has a positive effect and has good positioning in terms of links with internal colleagues and external stakeholders also. The next debate should be about a deepening of these results as opposed to negative aspects of the network. Having many and frequent knowledge ties has a positive impact on innovation and ambidexterity, while the impact that weak and strong knowledge hiding ties could have is still to be carefully assessed. Having a central position in avoiding knowledge sharing can hypothetically lead to harmful effects compared to dynamic capabilities. If explicitly asking questions about network avoiding or knowledge hiding can be complex, future insights on the data obtained with the questionnaire could define differently strong and weak ties in negative terms by calculating the data in non-positive terms and based on the number that each ego indicates, but based on the rating of the others. It is a spurious measurement but it may indicate the presence of many colleagues who do not exchange knowledge with focal public servants. Being excluded from many relationships can cause a loss of access to the resources needed to engage in innovative and ambidextrous work behaviors as well as being perceived as non-innovative. The different values of significance assumed by the various antecedents considered leads to connect these results with the debate on the definition of human capital dealt with in the introduction to the research question. If on the one hand, the dimensions treated are generally VRIN (valuable, rare, imperfectly imitable, non-substitutable) (Barney, 1991; Wernerfelt, 1984) precisely because of their intrinsic presence at the micro-individual level, on the other hand, the research confirms how a terminological separation between relational and intra-individual aspects must be present concerning classical interpretation (Barney, 1991; G. S. Becker, 1964). Therefore, the results confirm the need to define human capital including cognition and abilities (Ployhart & Moliterno, 2011), which are the insights represented by mindfulness and political skill.



#### f) **Mediation effects.**

Estimates show that social capital can be a dimension of mediation between cognitive capabilities and individual dynamic capabilities. In particular, this research confirms that there is a phenomenon of mediation between political skill and individual dynamic capabilities through external networking. The mediation effect is not complete but partial. There are hardly any phenomena of total mediation in nature and in the social behavioral sciences. External networking manages to mediate over 8% of the relationship with innovative work behavior and over 20% in the relationship with individual ambidexterity. In essence, political skill increases the ability to establish good knowledge exchange relationships with stakeholders in Network Governance, and, in turn, these relationships allow to increase individual dynamic capabilities at work. Future research can examine these estimates from a longitudinal perspective with data collected in several steps over time to understand the evolution of relational skills, networks with external stakeholders and individual outcome.

## **2. MICROFOUNDATION: A MULTIDISCIPLINARY PERSPECTIVE. THEORETICAL IMPLICATIONS.**

Studying the microfoundation of dynamic capabilities involves a fair need for flexibility with respect to the organizational levels you want to deepen, the academic disciplines that intersect with corporate organizational studies and the strategic time of analysis. As regards the first point, studying the micro behavior of individuals is different from focusing on groups (units, departments, etc.), companies or networks of companies that represent a meso-level or even the macro-level of society and the market. Although it is increasingly recognized that psychology can affect the economy, as evidenced by the recent Nobel prize to **Richard Thaler**, it is necessary to be careful not to fall into the trap of making overly simplistic and reductionist assumptions about macro trends, starting from analysis and empirical data at the micro-level. Actually, the risk is to commit the "Fallacy of the wrong level" or, for economists, "Fallacy of composition" (Raadschelders, 2011, p. 920). Micro (individuals or groups), meso (organization and networking between organizations) and macro (society or market) trends and phenomena are, however, interrelated and sometimes overlap with positive or negative effects on each other. The individual and the groups have a social role within the mesolevel, i.e. in the organizations in which they work and interact with other individuals, in their own groups and with other working groups in intra-or-

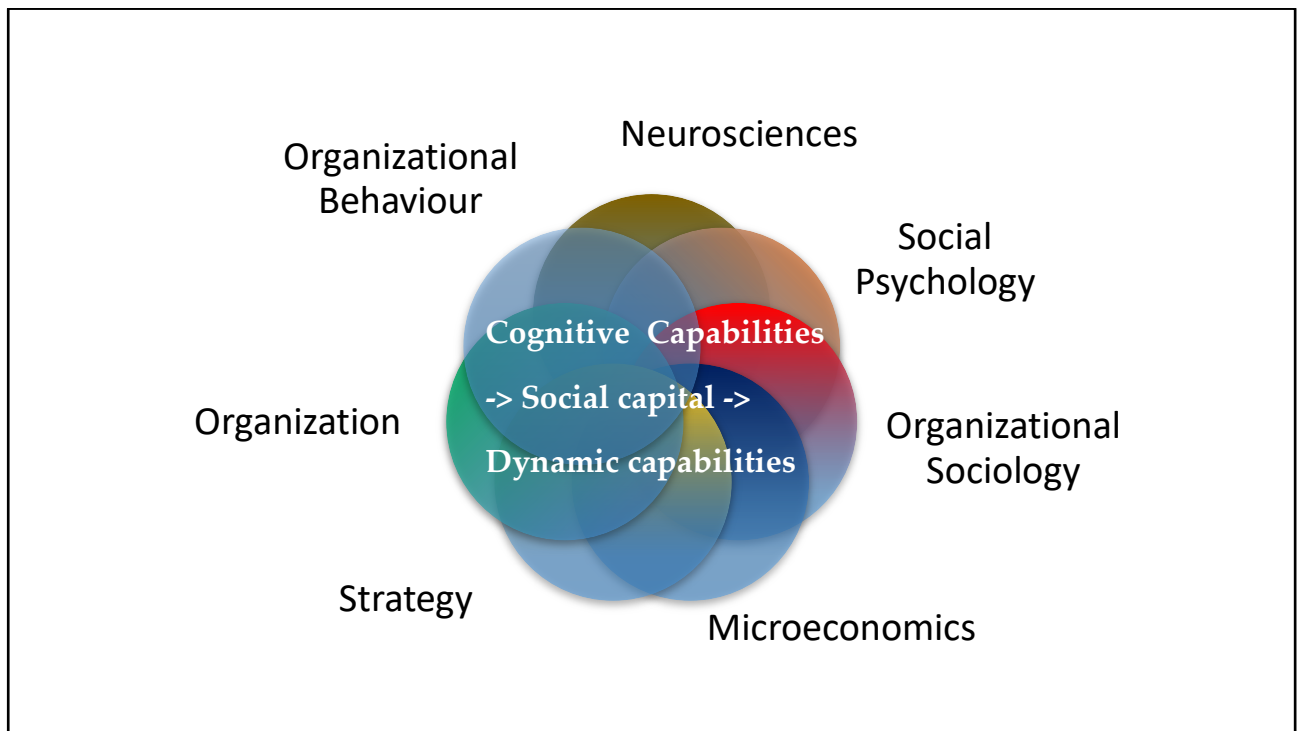
ganizational networks and in networks between organizations where informal relationships between representatives of the various organizations have informal and not only formal relationships (lunch between two managers can be decisive for the closure of the contract between two multinationals). Social capital, understood as a social structure that creates advantage for certain individuals or groups in pursuing their aims (Burt, 2000), shapes the individual and at the same time individual attitudes, knowledge, beliefs and behaviours shape the structure with a preeminence that alternates in reality and the authors' theoretical ideas<sup>197</sup>. The choice of a partner in a network and social influence alternate and influence each other. The same type of reasoning applies to the level of the individual organization, where the corporate unitary nature is constantly confronted with the multiplicity of internal stakeholders (individuals) and external stakeholders (other corporate manifestations and individual) and is an atomistic part of the market and society. The reasoning on the level of analysis is even stronger when the focus is on knowledge (resource) and dynamic capacities in terms of ambidexterity (exploitation and exploration of resources) on innovation (new knowledge, new practices, new routines). Today, in fact, we are in a post-industrial "knowledge economy" (Drucker, 1969; Graham et al., 2005; Powell & Snellman, 2004), in which, as we will see in Chapter I.C.1, knowledge is the source of power and is considered as the most important production factor for individuals, companies and countries (Stewart, 2007, p. 5). In this context, the theory of the knowledge-based company was formed (Grant, 1996) and scholars started talking about "knowledge-worker" (Drucker, 1969, 1999), because, it is recognized that knowledge it resides in individuals (Grant, 1996; Nonaka, 1991, 1994). The knowledge of people is therefore interrelated with the knowledge of the groups they belong to and of the companies and with the overall knowledge of a society in which the rhythm of technical and scientific progress is combined with rapid obsolescence (Powell & Snellman, 2004, p. 199). The economic performance of individuals, organizations and entire nations increasingly depends on knowledge (Phelps et al., 2012). At the same time, innovation is linked to new and basically improved ways of working and is, therefore, a complex and multilevel phenomenon (Anderson et al., 2014). As this thesis will hypothesize in chapter I.C, the dynamic (and individual) capabilities of the organization are influenced by social capital (e.g. Ambrosini & Bowman,

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<sup>197</sup> This punctual and structural definition of social capital ("friends, colleagues, and more general contacts through whom you receive opportunities to use your financial capital and human capital" (Burt, 1992, p. 9)) distinguishes itself in that it focuses on the network and interpersonal relationships compared to other definitions that indiscriminately maintain a role for shared norms and values (for example Fukuyama (1997), cited also by Kwon and Adler (2000, p. 20): "Social capital can be defined simply as the existence of a certain set of informal values or norms shared among members of a group that permit the cooperation among them"). with a view to a research perspective based on the philosophy of positivist science, this thesis leans towards Burt's perspective, as an alternative vision means giving weighted weight to human values and involves less detachment of the researcher from his work.

2009; Blyler & Coff, 2003; Mom et al., 2007). Therefore, research is needed that combines constructs with top-down and bottom-up processes (Foss, 2007). A microfoundation (and multi-level) approach is linked with the need to combine different research disciplines to contextualize the role of the subject unit of analysis. As can be seen in Figure 72, the organizational behaviour of individuals in organizations is in line with the perspective of individual and work psychology.

Figure 72: some scientific disciplines that allow an integrated study of the microfoundation of dynamic capabilities in organizations. To these is added public administration for the specific field of research that are local governments.



Actually, it can be placed at the top, because it is the branch of organizational studies that are most concerned with the microfoundation of individual and organizational dynamic capabilities. Moreover, when studying innovation, the role of strategy is inevitably present, for the planning of the company or the network in changing practices and routines, but also related to the strategic and tactical thinking of individuals who think, decide and implement the company strategy. In this logic, it is precisely the meeting between strategy and organization that is relevant, as the focus can be precisely on the decision-making processes and how a decision-making process leads to certain choices for change. The strategic dynamic capabilities of the organization must be combined with the dynamic capabilities of the individuals who make up the company. In this sense, the link with the economic sciences, in particular, with microeconomics, is also important. On the one hand, in fact, aspects of game theory, which links costs, opportunities, benefits and risk calculation, are decisive in social dilemmas and in the related individual choices to share or invest in innovative organizational behaviour (for example, in the choice between exploiting the

resources available or taking risky actions to explore new resources and knowledge) and on the other hand, the industrial economy influences the innovative behaviour of managers and entrepreneurs, inserted in a logic of relationship with the innovation choices of other companies. Moreover, the inter-individual role of knowledge sharing is linked to organizational sociology, which studies the functioning and change of the structure created by individuals and organizations in which they are inserted and of which they are influenced and influential. Knowledge sharing is connected also to social psychology, which focuses on social interaction between individuals and groups and how this network interaction influences psychological processes, cognitions, attitudes and behaviors (as in microeconomics, for example, there are social psychology approaches that are linked to ideas of social exchange theory and cost-benefit in relationships (Cropanzano & Mitchell, 2005; Homans, 1961)). Therefore, knowledge and innovation management draws on interdisciplinary ideas, concepts and research methods, useful to understand how the organization works and tries to predict how people act and will act, even driven by external changes. It is also relevant to note that these disciplines find fertile ground in different areas of business economics, from the study of private global companies with a strong innovation drive. In these cases, elements of knowledge exchange between groups of different nationalities that have very different cognitive and behavioural approaches and where, in the organizational structure, the research and development function is crucial) to that of less innovative companies or perceived as totally non-innovative (such as public administration). It is also necessary to take into account that in this analysis the technological aspect is kept out. The focus of the thesis is on the human side (Easterby-Smith & Prieto, 2008), otherwise in the Venn diagram it was necessary add the disciplinary fields related to information and computer systems ("Knowledge management system" (e.g. Alavi & Leidner, 2001; Maier, 2007)). Another field of research that is developing is neurosciences. Neuroscientific studies have already tried to study brain interactions between mechanisms related to attention and emotions with decision-making skills and orientation towards exploitation or exploration, but there is still a gap in the research of organizational behavior and micro-foundation (Laureiro-Martínez et al., 2015). The effects on the brain of the recognition of emotions (Berthoz et al., 2002) may also strengthen knowledge related to individual interpretation and subjective responses during interpersonal relationships at work.

In summary, the answer to the research question could have touched many different disciplinary areas among those that emerge in Figure 72. The research work focused on the elements of organizational behavior. Organization science and strategy are affected by the study of dynamic capabilities. Mindfulness and political skills are variables that can refer to aspects of social psychology. In particular, political skill allows to draw simultaneously from management and from the

field of social cognitive capabilities. Organizational sociology is used for the study of social network analysis. Microeconomic aspects are not developed, although future research can analyze aspects of reward and costs for the development of knowledge networks inside and outside the public organization. Finally, neuroscience could be used to answer the same research question and the same hypotheses in very innovative ways and compare the results.

The issue of multidisciplinary is particularly interesting in the evolution of the perspective of Network Governance in the field of public administration. In this thesis, the terms Network Governance are used to indicate just how the network factor is peculiar to the form of governance of the public sector that has developed more recently. In fact, there are different forms of social coordination and governance modes, such as networks, hierarchies and markets that can be dominant in different policy phases (Lowndes & Skelcher, 1998; Williamson, 1976). In this perspective, governance presupposes network action and participatory governance (Donato, 2010), relational and polycentric control (Anselmi et al., 2013; Badia, 2012; Mancini, 1999), relationship with other interdependent nodes (Soda, 1998). In the network, nodes seek mutual benefits and the rewards (benefits) may be higher than the contributions (costs) requested (Martone, 2002; Simon, 1947). In governance networks of public interest, the planning of institutional structures and direct government tools (schools), exchange of information and skills, control, collaboration (co-financing and partnership in European planning), coordination (tourism), influence, owners and clients (public services) must consider public and private actors, autonomous and variable institutions increasingly dispersed and multiple decision-making levels (Borgonovi et al., 2006; Longo, 2005). In this paradigm and in a progressive phase of outsourcing and privatization of public services, the functioning of public administration is linked to multiple dynamics.

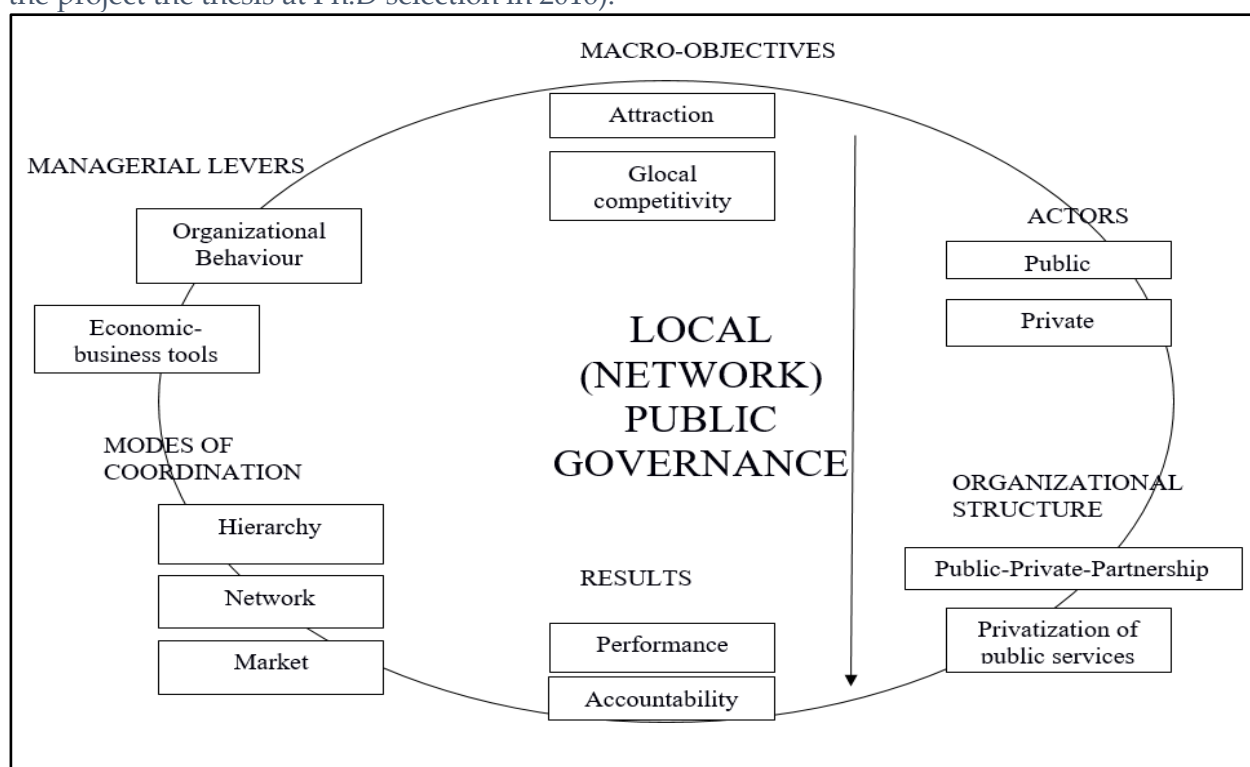
1) Economic-business (in Italian *"Economico-Aziendale"*). These include the financial aspect (restrictions through the stability pact and spending review) which must have the same attention as the operating and income system, so in every type of company (Giannessi, 1969), accounting harmonization and the use of more widespread and prudent, as in private companies, of the indexes of the financial statements, the relationship with the private sector to ease bureaucratic constraints and access the capital market (Mackintosh, 1992).

2) Cultural-relational. They depend on the network, on the behavior of individual nodes and individuals looking for forms of collaboration, exchange, distribution of power and responsibilities, trust, leadership, loyalty, motivation (Vangen & Huxham, 2003).

3) Strategic. The decisions of public organizations and companies owned by the public must have a corporate organizational approach, linking the decision-making process from the internal dimension to the environmental system and correlating objectives with results in a defined time horizon (Anselmi, 2006; Ciampi, 2004; Coda, 1988). In this complexity, there is the possibility to

deepen the investigation on behaviors of individuals, groups and organizations within network governance. It is interesting to improve knowledge about what are the variables that determine the social capital of individuals, organizations and institutional networks (Bertolini & Bravo, 2001; Perrone, 2001; Putnam et al., 1994), Future researches may help to understand which organizational elements facilitate or destroy the collaboration between different individuals and institutions and what are the determinants and effects on the performance and results of the collaboration. In this perspective, various organizational dimensions are crucial: communication, culture, trust, organizational citizenship, leadership, motivation, learning, conflict, team-working, individual perception and thought, happiness, needs, power, empowerment (Frederiksen & Johnson, 1981; Kreitner & Kinicki, 2004; Tosi H. & Pilati, 2008). This idea means to mix behavioural and contingent factor to explain social capital and dynamic capabilities in local governments. These multidisciplinary managerial variables (economic, psychological, sociological) are often studied at an organizational-corporate level in the private sector of companies, being crucial for problem solving, decision-making, empowerment, integration of differences, finance and behavioral marketing, change and, especially, for the development of human resources, innovation and organizational culture (Cavaliere, 2013). Therefore, they can also be analyzed empirically in public administration and in the public-private differential relationship (Denhardt et al., 2018; Vasu et al., 2017)<sup>198</sup>, seen both from the public and private point of view in a comparative way.

Figure 73: Model of local Network Governance (re-elaboration from literature presented within the project the thesis at Ph.D selection in 2016).



<sup>198</sup> These references are added in a revision of the research project before the beginning of the thesis.

In a complex environment hinged on multiple socio-political pressures and varied by interdependent stakeholders, individual, group and organizational behaviors of employees, managers and politicians may be decisive in the processes of “corporatization”, participation in public local development policies, privatization and in the functioning of the paradigm of governance networks. Behaviours and individual roles becomes an “invisible” *trait d’union* between objectives and results, financial, control and accountability instruments and their inter-organizational application, measurable efficiency and effectiveness. All this theoretical and practical complexity can be simplified in the strategic model of local network governance, which was presented for at the admission to the Ph.D. It summarizes the most relevant variables that may be relevant in Network Governance at the local level. In the context of this thesis, the research was concentrated only on some of these aspects. In particular, managerial levers, organizational behaviour, in which psychosocial, attitudinal and the result of learning processes coexist. Relations between public servants in municipalities and private actors are theoretically levers for coordination. Innovation and ambidexterity capabilities are performance levers at individual and organizational level. In this thesis, the definition of each construct is be written accurately even if the focus was on some aspects and other ones are not considered (macro-objectives, accountability, structural organization). In fact, the literature in strategic management, organization science, political science, organizational behaviour, social networks and so on are incredibly massive. Indeed, it is necessary to build strong theoretical basis and to find their interconnections, the real possible applications on local governments and, above all, the gap inside the wind of new borders of international research. There was a strong challenge to focus and try to avoid getting lost in the knowledge resources on the web. The thesis responds to some gaps in multidisciplinary and multilevel research presented in a summary way in the model shown at the beginning of the doctorate and developed during the preparation of the thesis. There is still much work to be done to be able to understand in a multilevel and multidisciplinary way the microfoundation of dynamic capabilities in local governments.

### **3. MANAGERIAL AND PRACTICAL IMPLICATIONS.**

The managerial implications that emerge from this thesis are summarized schematically:

- Develop a culture of knowledge exchange within and outside the organization. Implement a knowledge management model that is efficient and effective in promoting the exchange of knowledge between colleagues, managers and subordinates, administrators and external politicians and stakeholders.

- Invest in staff training. It is not a waste to invest in the cognitive and relational skills of public servants. After the 2007 economic crisis, many local governments have been forced to cut training resources. Returning to invest in this field means doing it with transparency and with the aim of improving those individual characteristics that can positively affect individual and organizational performance and dynamic capabilities.
- For the implementation of the two previous points, the micro, meso and macro levels must be managerially allies. If the creation of public value passes to make the public sector more efficient, effective and innovative, it seems necessary and advisable to invest in the management of knowledge and human resources to encourage long-term development.
- Change recruitment rules in the public sector. Knowledge of the current laws at the time of the competition is by no means a guarantee that the future employee or public manager will also have cognitive and relational skills and will be ambidextrous and innovative in the short and long term. The rules of engagement, change of position, career development and dismissal should be more flexible in the public sector. These new standards should be microfounded and scientifically proven.
- Develop relational and motivational spaces that are similar to those in the most innovative multinational companies. The criticism of public servants in local government is that they work little, spend a lot of time talking about issues not related to work, are not very productive. This street criticism contrasts with the use of research and the scientific method, which can help find those managerial and organizational strategies to improve dynamic capabilities in local governments.

#### **4. METHODOLOGICAL IMPLICATIONS.**

The methodological implications that emerge from this thesis are summarized schematically:

- the construction of the questionnaire must be attentive to the problem of common method biases. The estimates can actually change in the presence of forms of separation.
- Measurement of dimensions combines exploratory and confirmatory factor analyzes. Minfulness, innovation and ambidexterity show no substantial differences compared to literature. The political skill structure is slightly different from the studies that validated the scale. This change stems from the likely different perception due to the linguistic change. External networking was measured with a scale built from scratch on the basis of the theoretical and empirical studies published to date and a comparison with a working group made up of scholars and practitioners from the public sector and, in particular, from local governments. The external networking scale



developed in this thesis can be a useful tool for future international research. Rather than using scales that subjectively adapt to the context in which the data is collected, this scale can collect more information resulting from the detailed analysis of all previous studies in local governments.

- The thesis used three statistical methodologies, OLS regression with cluster option, Hierarchical Linear Modeling and SEM. using more statistical methods allows for greater support for the estimates and results obtained. Indeed, the different methods can correct differently situations where it is difficult to estimate and arise from different statistical calculation philosophies. OLS and HLM are calculated on average values of the variables, while SEM uses the actual factorial structure deriving from the original items and from exploratory and confirmatory factor analyzes. The estimates focused on the individual level. Using more in-depth multilevel methodologies, it is possible to more accurately evaluate the micro-foundation of rated innovation based on the characteristics of the respondent and his relationship with the assessed colleague. moreover, multilevel methodologies can include organizational dimensions, therefore, the microfoundation model can be tested with organizational innovation and organizational ambidexterity as outcome variables.

- A further methodological implication regards internal social capital. The collected data allow to calculate strong and weak ties, but not to have more precise data on centrality measures. They would need more data on each individual organization or use statistical-probabilistic calculation methods for imputing missings for those networks where the number of answers is sufficient to be able to reconstruct the entire scale. Methodologically, the strategic choice involves a real trade-off between focusing on one or two organizations and obtaining around 80-100% of response rate that allows you to develop more detailed social network analyzes or expand the sample in many organizations to include the effect of data nested in organizations. In the thesis, both strategies were applied. With a simplification and with data collected only by ego, the network was built in the case study of a local government. In addition, 44 municipalities have made it possible to obtain internal relational data and this sample size is necessary and sufficient for multilevel studies that include the nested data effect.

- The last methodological implication concerns the fact that data are collected only once. The estimates made are a photograph of the current situation and not a video that lasts over time. The study carried out is a correlation and association between variables and causal links between variables cannot be supported. Future research can deepen the data collection in longitudinal terms with methodologies that embrace time-series of the micro-foundation variables.

## **F. FUTURE RESEARCHES, LIMITS AND CONCLUSIONS.**

### **1. FUTURE RESEARCHES: "A BEHAVIORAL MICROFOUNDATION OF PUBLIC ADMINISTRATION: DO COGNITIVE CAPABILITIES AND SOCIAL CAPITAL IMPACT ON DYNAMIC CAPABILITIES IN LOCAL GOVERNMENTS?" MULTILEVEL ANALYSES. MACHIAVELLIANISM AND POLITICS-ADMINISTRATION SHARED LEADERSHIP. THRIVING AND IMPROVISATION. LIMITS AND METHOLOGICAL ATTENTION.**

#### **a) Future researches on multilevel hypotheses.**

This work has developed in two directions. In the theoretical and review part of the literature, variables of dynamic capabilities at the individual and collective level of local governments have been analyzed. The hypotheses that emerged deductively concern the phenomenon of microfoundation based on the individual and the organizational level. In the empirical part, the work focused on the analysis of the relationships between variables at the individual level while taking into account that public servants' observations are included in municipalities and therefore nested. The survey allowed to obtain data at the individual level, but also at the organizational level, on the adoption of innovation in local government and on exploitative and explorative activities of the organization as a whole. Twenty-two mayors and fifty-five employees (mainly managers and town clerks) answered the questions on the organizational level so that it is possible to do multi-level analysis with a sufficiently valid sample of 47 municipalities (or 45 if we consider those municipalities where the respondents at the individual level are at least two) (Hox, 2010; Maas & Hox, 2005). Future research can focus on finding the most suitable statistical model and analyse whether the average of individual cognitive capabilities has an effect on organizational dynamic capabilities. As far as social capital is concerned, future research can evaluate external networking as the average value of the relationships that take place at the institutional level and on this point, for completeness, a question has been added to the mayors with respect to the 16 external networking stakeholders (clearly for administrators of this commune, the first item, the mayor means other administrators who may be assessors or municipal councillors who in a broad sense represent the citizens who democratically voted for them and therefore their interests outside the organization). As far as internal share capital is concerned, it is possible to strengthen the analysis on this dimension by attempting to reconstruct the entire intra-organizational knowledge-networks through ERGM probabilistic methods and to reconstruct the organizational density on the basis of available report data. In this way it is possible to obtain a further element

of microfoundation which is the organizational share capital, understood and measured as the density of knowledge exchange relationships within the local government. Finally, another potential multi-level analysis is the concerning innovativeness measured on the basis of an application filled in by colleagues. The thesis stopped at a first approach based on the average value of rated innovative work behaviour. Future research can take up this dimension and deepen the construction of the variable on the basis of a measurement structure more complex than the average and that draws information on the characteristics of the rater. The rated innovativeness value should be imputed in a weighted way with respect to the individual characteristics of the respondent (human capital, demographics, cognitive skills). In addition, the relationship between rater and rated colleague should be assessed, since being a strong tie, a weak tie or a non-knowledgeable person has significant differences in the assessment, so that in the introductory analysis only the dimensions of internal share capital appear significant, and can lead to a significant bias in the assessment of individual performance. For example, in social psychology, interpersonal similarity can lead to a higher level of attraction with another person and, consequently, to a spurious upward or downward shift in the assessment of the individual dynamic capabilities of the colleague. One focus could be on the assessment that women and men make of colleagues of the same or different sexes. At the method-logical level, future research could analyse the data collected here with the Cross-Classified Multilevel Modelling methodology that has already been used by Wu et al. (2014) to evaluate innovative behaviour in *Journal of Management*. As far as data collection is concerned and in order to have a higher quality of data on rated innovation, the work done in this thesis teaches the need to obtain data from organizations that are committed to research, because the response rate on this question was much lower than expected so that about 100 civil servants answered the first part but not the second and some justified this behavior because they were not interested in answering the question on the performance of colleagues. Some then decided to answer the second part, without the question about the evaluation of the innovation of the other municipal employees. Considering the best practices in the construction of the survey, future re-searches that want to focus on rated innovation (to date there are only two published articles) should focus on Cross-Classified Multilevel Modelling studies at the individual level on a small number of organizations very committed to the survey, so as to have more information on internal social capital and hierarchical relationships at work, so as to separate the rating of peer colleagues from that of superiors, supervisors or subjects who are at a hierarchical step of the lower local government. In addition, the questions may have more than one single item, although the generic question on innovation leaves ample freedom of interpretation to the individual, and validated in this sense. Perhaps three items could include the three stages of innovation (idea generation, idea promotion and idea realization). In addition, questions

of similarity could be added to basic demographic questions on human capital, such as political ideology, cultural orientations, scope of studies. The limits of others' assessments remain. First of all, similarly to self-evaluation, rated innovation is a perception of innovation and, depending on the type of work, it also becomes difficult to assess this dimension. All the more so in the public sector where innovation in itself is considered a black box. This examination concerns innovative work behaviour, while the evaluation of individual ambidexterity is more complex. Potentially, it would be possible to develop a questionnaire to be administered to colleagues or supervisor with respect to exploitative and explorative activities. However, the assessment of the ambidexterity of others is more difficult than other performance dimensions, because it includes intention as well as behaviour, short to long term activity, which only the respondent can know about his/her own behaviour. Future research could consider a comparison of the micro-funding of individual ambidexterity rated by peers or supervisors *versus* self-evaluation with its limits..

#### **b) Future researches on Machiavellianism and Politics-Administration Shared Leadership.**

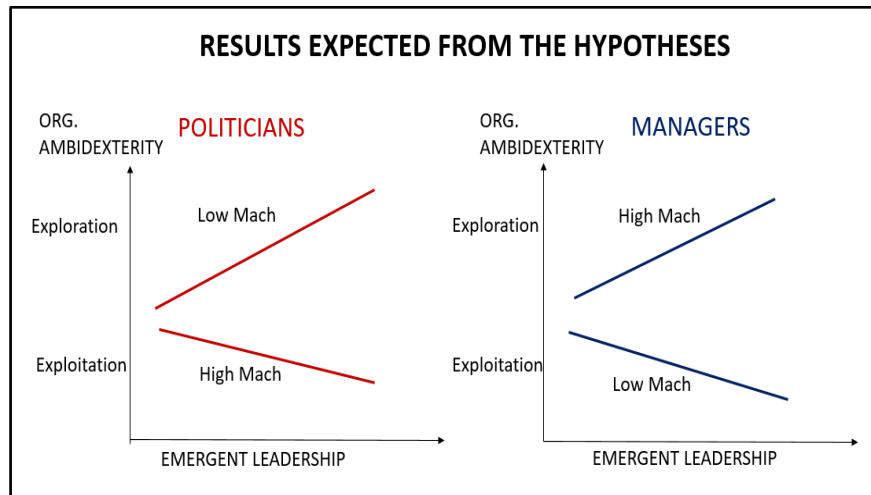
The repetition of the title of the the thesis is not casual, because from this great research question can emerge various theoretical and empirical aspects that have not been dealt with in this work, but that can be deepened in future academic research. Three aspects can be deepened to improve the knowledge about behavioural public administration in the specific case of municipalities: the relations between politicians and public servants, the potential shared leadership that can emerge between them and the socio-cognitive and "political" role of Machiavellianism. At the moment, the empirical evidence of individual differences related to the dichotomy between politicians and professional public servants in the literature has not yet given significant results compared to the hypotheses that emerged in the literature (Ebinger et al., 2019). Moreover, it is interesting to investigate how this dichotomy influences both internal relations with other colleagues and external relations with other stakeholders and how it is influenced by exogenous-contingent or endogenous-behavioural factors and how the latter can then moderate the relationship with individual and organizational outcomes (Shaw & Eichbaum, 2020). For example, how social cognitive capabilities (political skill, emotional intelligence) influence politicization of public servants and reciprocal relations with elected politicians. Moreover, the level of politicization and in general the relations between politics and administration may be influenced by the perception of leadership (who is the public leader? Who is more powerful in the network?) and this path may have an impact on the equilibrium between exploration and exploitation. This potential research on the

microfoundation of dynamic capabilities is even more relevant if carried out through international empirical research in which the purple zone of the dichotomy between elected politicians and public servants is more or less present (Alford et al., 2017). With respect to this perspective, in this thesis, there is a lack of a social capital perspective concerning shared leadership and emergent leadership as elements of microfoundation of dynamic capabilities. In this thesis, the focus has been on social capital inherent in knowledge networks, while the issue of leadership among employees and potentially between administration/management and politics has not been explored in depth. About social capital dimensions, future researches could investigate the distribution of leadership and mutual recognition and their influence on individual and organizational outcomes. **Shared leadership** can be defined “a dynamic, interactive influence process among individuals in groups for which the objective is to lead one another to the achievement of group or organizational goals or both. This influence process often involves peer, or lateral, influence and at other times involves upward or downward hierarchical influence” (Pearce & Conger, 2003b, p. 1). The features of shared leadership are mutual influence, shared responsibility and reciprocal leading toward goal achievement and these properties are emerging in team groups (D. Wang et al., 2014, p. 181). Shared leadership should not be confused with team working, because in the first case influence and responsibility are distributed among the members (Carson et al., 2007), while in the second case reference is made to a process of cooperation to team members limited to turning an input into an output (D. Wang et al., 2014). Although their analysis is necessarily complementary, shared leadership differs from traditional vertical leadership (D. Wang et al., 2014). In fact, in the former case there is a simultaneous process of mutual influence and that involves “peer, lateral, upward or downward influences of team members” (Pearce & Conger, 2003a, p. 286), while in the latter the relational paradigm is more limited and it is “a downward influence on subordinates by an appointed or elected leader” (Pearce & Conger, 2003a, p. 286). Several authors stress the importance of studying shared leadership for their effect on group results (Carson et al., 2007; Denis et al., 2012; D. Wang et al., 2014; Yammarino et al., 2012). In particular, Wang states that research should focus on complex theoretical and practical working contexts (2014), as it can be the public leadership group composed of elected politicians and management in local authorities. Including the dimension of Machiavellianism in future research is crucial, because the tacticism of Machs can be a key resource for promoting innovation and change in the organization (Belschak et al., 2015), even if until now there has not been enough attention in the field of public administration, although the prince of Nicolo Machiavelli was in fact a public leader. In the microfoundation model of public administration, Mach falls within the cognitive capabilities aspects.

Besides belonging to the social cognition dimension, Mach has a strong connection with the cognitive process of attention, which in this thesis is represented by mindfulness. According to Christie & Geis research (1970), Machs, in fact, tend to be less distracted by emotional and social issues, but they manage to keep their attention firmly focused on the achievement of goals that maximize their own benefit. Some elements of the book written by Christie & Geis (1970) have been examined in order to arrive at hypotheses for future research that simultaneously contemplate dimensions of social cognition, social capital and dynamic capabilities, for which no empirical answer has yet been given in this thesis and in the literature. There are distinctions between High Machs and Low Machs: the former are guided by self-defined goals and try to reach them with logic, coolness, detachment and ability to read perceived possibilities, essentially without considering their own and others' emotional states, while the latter are less guided by personal goals, are more susceptible to emotional involvement and react more on the basis of non-cognitive reactions (Christie & Geis, 1970, p. 350). The coping behaviour of Machs consists of tactics that are shaped according to contextual situations, which can be strongly structured or "loosely structured". They are characterized by a different perception of the social role of the participants (predefined or ambiguous), the clarity of the meaning of the objectives to be achieved and the related rewards (pay-off) and the possibility to improvise. In the theoretical perspective and from the results of experiments, in highly structured situations the limits are understood by both High and Low Mach; the former will try to innovate the system until the system itself blocks their initiative and, at that point, the enthusiasm drops so much that the performance is superficial. Until the moment the pressure of the structure becomes too strong, Machs undertake to modify and innovate the existing structure, but, when the pressure becomes too strong, their rational knowledge does not work and they tend to lose enthusiasm and tend to be superficial in the performances (Christie & Geis, 1970, p. 352). Otherwise, the Mach low and medium revolutions begin because they are morally indignant at the failure of the existing system, until a certain organizational chaos is reached and at that point High Machs try to impose a structure or to exploit its (Christie & Geis, 1970, p. 352). High Machs will tend to have advantages and take advantage of the situation when the social structure is more ambiguous and there is the possibility of improvising and building a new structure in the logic of a balance and social exchange, already specified by Machiavelli which describes the prescriptions for the prince in a historical period of great disorder. In this model High Machs thrive in the conditions in flow managing to establish a new order: when a social system is unbalanced, it is likely that the high Machs analyze the situation and reset the social structure (Christie & Geis, 1970, p. 352). According to Christie & Geis' interpretation, there is no intelligence differential related to Mach, but high Mach tend to win in relatively unstructured and emotionally complex situations where there is strong latitude for improvisation and there

are face-to-face relationships. According to the authors (Christie & Geis, 1970, p. 357), extremely low Mach is never positive for administrators and leaders, because in any organization there are difficult decisions to make and the inability to depersonalize choices and relationships means losing sight of the cognitive aspect, while High Mach is positive for the organization when there is a situation of change or stability with the need to attract resources to the outside. In fact, in these situations high Mach will have more freedom and the Mach objectives tend to coincide with those of the organization, while in stable and limited situations High Mach may have negative behaviors that turn inward and, therefore, damage the organization with problems of disaffection and lack of morality (Christie & Geis, 1970). An operating system is kept at the optimum level when there is an average Mach level, that is, "one who is concerned with others but does not get too sucked into interpersonal" (p. 357). According to this model, therefore, we come to the hypothesis that Mach has a U-shaped relationship with respect to Organizational Ambidexterity, whereby the maximum balance is reached for an average Machiavellianism level. The other relevant question, however, is how conditions affect Mach and consequently higher or lower performance, rather than how Mach affects performance in certain contingent situations (Christie & Geis, 1970, p. 356). In particular, let's see how Org. Psy Cap may interact in the relationship between Mach and Org. Ambidexterity. Outside the laboratory context, this assessment of political choices can be deepened on the basis of the strategies and choices of public leaders, whether they are politicians or managers, who look more at the short term (re-election) rather than status (and therefore a longer-term perspective). Machs and, in general, Mach, can be decisive in the ambidextrous, exploitation and exploration skills of the organization. Very Mach political leaders could tend to accumulate resources for their own profit and to do so without "wasting time" in emotional involvement in values. On the one hand, this bargaining ability can lead to seeking more external resources for the benefit of the organization, but, on the other, Machs who have different roles will tend to bring more resources for their own purposes or points of view, breaking the balance of an ambidextrous organization. Both aspects are viewed negatively by the Public Choice paradigm. In the first case, there is a tendency to magnify the role of the public sector in the economy and in society. In the second, public leaders will seek greater investments for their field (eg. politicians will try to implement innovations for short-term results, while managers will seek resources for their office, to increase power within the organization).

Figure 74: possible future research about microfoundation in local governments.



In the context of **relations between politics and management**, concerning the formal division defined by law, there may be implicit role ambiguities and complementarities and crucial informal relationships. Although Machiavelli minimizes the importance of legitimate authority, in strongly codified social rules individuals exercise a different social role with a differential of authority and when placed in a position of power, the High Machs are more manipulative than the Low, but the Machs exercise this tactic only if the rules of society do not give such a rigid structure that it takes away any opportunity for innovative behavior and does not give the possibility to change situations to one's advantage (Christie & Geis, 1970, p. 343). In this sense, it can be assumed that Machs exploit shared leadership situations to impose their perspective: this could "break" ambidextrous balance (because there are different perspectives), but it could have a positive result on the final innovation adopted. Following assumptions of this theoretical introduction, future researches could investigate if Machiavellism moderate negatively the relationship between shared leadership and organizational ambidexterity. A high level of diffused participant's machiavellism could transform the positive effect of social capital inherent to the shared leadership to a dark side. Moreover, focusing on emerging leaders, we investigate the impact of leaders' inter-individual differences on organizational ambidexterity. Social capital and machiavellism impact on organizational capability to be ambidextrous or, otherwise, they push for drifts towards exploration and exploitation, reducing ambidextrous capabilities. In particular, we take in consideration that a different distribution of leadership can have an impact on exploitative and explorative choices. Focusing on individual emergent leadership, it is possible to assume that there is not a positive or negative correlation between emerging leadership and organizational ambidexterity. Considering a substantial absence of spoil-system in a democratic context, we assume that a greater level of recognized emerging leadership for management part of the network



push more on exploration, contrariwise a greater level of recognized leadership for elected politicians is propulsive for exploitation. The latter, in fact, look more in the short run because they think more to the short-term consensus and the purpose to be elected again; the former look more in the long run, since there is no strong spoil system in Italy compared to the United States. On the other hand, thus, we expect that high Machiavellian public managers push towards exploration and high Machiavellian politicians push towards exploitation. Results expected from these hypotheses are shown in the graph below. At the same time, we persist to consider external networking as an antecedent of emergent leadership as a mediator between shared/emerging leadership and organizational and individual ambidexterity.

### **c) Future researches on other individual dynamic capabilities that are not considered: thriving at work and improvisation capability.**

Generally speaking, in literature, there are dimensions that in a certain sense can be considered as interconnected individual dynamic capabilities. Four individual behaviours at work connected to change, creation and innovation can be considered dynamic capabilities: individual ambidexterity (exploitation and exploration), thriving at work (learning and vitality), employee improvisation and, finally, work innovative behavior (that include a path from creation to implementation of innovation at work<sup>199</sup>). Four individual dynamic capabilities can be taken in consideration, of which two dimensions, individual ambidexterity, which, as explained in the relative chapter, includes the sustainability of an exploratory action ("exploration") with one of exploitation ("exploitation") and "Thriving" at work, which indicates the experience of simultaneously having two psychological states that are the sense of learning and vitality (Carmeli & Spreitzer, 2009; Spreitzer et al., 2005; Wallace et al., 2016), are antecedents "close" innovative behaviors (and second-order dynamic capabilities), while two other constructs, "innovative behavior at work" and "improvisation capability", can be considered innovative behaviors in the strict sense (and first-order dynamic capabilities). To arrive at this basic assumption of this work, it is necessary to consider a fundamental step that allows a conceptual connection between the dimensions examined and the clusters of activities recognized as dynamic managerial capabilities (Teece, 2012, p. 1396): "sensing", ie the identification and evaluation of opportunities; "seizing" that is, the mobilization of resources to direct an opportunity and capture the value in doing so; "transforming", understood as a continuous renewal. In this sense, the sub-dimensions of vitality and "exploitation"

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<sup>199</sup> The academic debate on the inclusion or non-inclusion of creativity within the construct of innovative work behaviour is conducted in the dedicated chapter from page 104.

can be included in the "seizing" cluster, both for the sense of psychological energy that is activated thanks to the mobilization and for the activity of exploitation and efficiency vice versa, the resources available to the sub-dimensions; at the same time, the sub-dimensions of learning and exploration can be compared to "sensing" activities, both because the new opportunities and, above all, their evaluation allow to learn and therefore implement the psychological sensation of improvement cognitive knowledge is to go and look for new opportunities while taking risks. Finally, the "transforming" cluster activity is linked to improvisation and innovative work behavior. Of the four dynamic capabilities mentioned, only two, individual ambidexterity and innovative work behaviour, are taken into consideration in this thesis and are described in separate chapters. Thriving at work and improvisation, on the other hand, are elements of analysis for future research, because there is still a gap. These two constructs are analysed in brief.

**Thriving at work** is defined as a psychological state in which the individual experiences the joint experience of a sense of learning (grow and improve in what one does at work) and a sense of vitality (feeling energized and alive at work) (Spreitzer et al., 2005). This construct distinguishes itself from flowering to work, resilience, subjective well-being, flow condition, self-actualization (Spreitzer et al., 2005). The work is profitable and done with pleasure.

This individual experience is considered a dynamic ability, as it includes learning, which is a second-order cognitive dynamic ability (Zollo & Winter, 2002), and energy, which is indispensable for unfolding dynamic capabilities (Pablo et al., 2007b). The two dimensions reflect a cognitive (learning) and an affective (vitality) aspect of people. Both elements are connected with individual growth and feeling in a phase of well-being, progress and momentum in the workplace (Carmeli & Spreitzer, 2009). It has an adaptive and signaling function with respect to improving individual progress (Porath et al., 2012). It also allows individuals to adjust their work environment and promote personal development (Wallace et al., 2016). It is an individual dynamic ability represented precisely by the cognitive role of the directional signaling that the psychological state provides. Among the numerous positive effects for the organization of the individual dimension of thriving at work, there is a positive correlation with the other dynamic capacity analyzed here for innovative behaviors (Carmeli & Spreitzer, 2009; Wallace et al., 2016). This process is explained in three ways (Carmeli & Spreitzer, 2009): the individuals who are learning are in an ideal position to recognize and implement opportunities for improvement; if they are more vital it means that they have the energy to investigate and implement new processes; "Thriving" brings with positive emotions and a streak of pleasantness and positivity.

**Improvisation capability** is the ability to be innovative at the moment and a key concept for the organization (M. Crossan, 1998), for groups (Vera et al., 2016) and in the relationship between

leader and subordinate (Nisula, 2015). Improvisation concerns different levels where it applies (Hadida et al., 2015): the individual, interpersonal, i.e. between two or more people, or organizational, between many people. Many management activities are recognized as spontaneous in nature (Mintzberg, 1973), all the more so if these actions are interpreted in a theoretical paradigm of chaos for which it is possible to know the dynamics of systems, but it is practically impossible to implement the forecast horizon (M. Crossan, 1998). In Latin etymology "*Improvisus*" means unexpected, something that we are faced with in unpredictable situations and that comes to light when there are no predetermined rules, recipes or when there were breaks and problems in the correct procedures (Montuori, 2003). Creativity in improvisation is an intersection between order and disorder and provides that in organization and management studies there is more attention to intrapsychic and relational subjectivity, emotions, time, aesthetics and social creativity (Montuori, 2003). The improvisation ability of the employee at work, therefore, is defined as "the ability of an individual to face complex and unexpected situations in a creative, entrepreneurial, contextual and professional way" (Nisula & Kianto, 2016, p. 2). Improvisation is a "chosen and spontaneous" activity in real time and, in fact, it has some overlaps with innovative behaviour at work, but unlike this "it represents a more dynamic behaviour that is necessary in facing paradoxes and complex and unexpected conditions" (Nisula & Kianto, 2016, p. 3). Some concepts close to improvisation at individual level are spontaneity, "bricolage", intuition (Hadida et al., 2015). A fundamental difference with innovative behaviour is that the three phases of creativity/ idea generation, idea promotion and implementation are carried out simultaneously (it is formulation and implementation at the same time (Perky, 1991)) and this fact implements the even more dynamic nature of improvisation. The first studies have concerned metaphors, such as improvisation in theatre (M. Crossan, 1998; M. Crossan et al., 2005; Vera & Crossan, 2004), in the American Revolution (Vera & Rodriguez-Lopez, 2007) and jazz-man (M. Crossan et al., 2005; Magni et al., 2010; Montuori, 2003; Weick, 1998): "in jazz improvisation, a commonly shared goal is to create within a musical and social context, which requires both control and spontaneity, constraints and possibilities, innovation and tradition, guidance and support" (Montuori, 2003, p. 239). Although metaphors continue to be used at an organised level to make sense of improvisation in a complex context such as business (Hadida et al., 2015), in recent years psychometric scales tested on improvisation have been used and built (Magni et al., 2009, e.g. 2010; A. Meyer et al., 1998; Vera & Crossan, 2005) that measure precisely the ability to respond to unexpected events, identify opportunities in this context and seek new approaches in real time. It is an extemporaneous individual dynamic capability that facilitates individuals to make adjustments in their work processes and in the development and implementation of new useful ideas in a short or even very short period of time (M. Crossan et al., 2005). Moreover, improvisation capability is also seen as an

antecedent of reconce the balance between exploitation and exploration (M. M. Crossan & Hurst, 2006). Thus, improvisation capability is a dynamic cognitive capability and behaviour that represents the ability to orient and act under conditions of time pressure and complexity. Moreover, according to the reasoning of organizational strategy, it is considered that innovation can derive from a deliberate strategy or an emerging strategy (Mintzberg, 1978; Mintzberg & Waters, 1985): in the former case, the strategy is more analytical, planned, controlled, future-oriented and top-down and can be more closely linked to the concept of innovative behaviour; in the second case, instead, the strategy is more spontaneously intuitive, evolving, bottom-up, "on the moment", in progress and is more representative of the capacity of improvisation (M. Crossan, 1998), even if the bottom-up dimension maintains a certain overlap with the innovative behaviour, especially in the first phase of the creation of new ideas (the phase of consensus research on ideas could be bottom-up or top-down depending on the role held within the company by the innovator). Finally, concerning knowledge sharing, it is evident that the increased availability of real-time communication and information improves the management and coordination of linear (future planning) and cyclical (the path-dependency of routines) time through improvisation (M. Crossan et al., 2005, p. 141), thus also influencing deliberate planning, with a psychological adaptation to circumstances (Gardner & Rogoff, 1990). Individual improvisation is an individual dynamic capacity precisely because it occurs when employees take into account emerging information (resources) and review their routines and practices to find new solutions to an emerging problem (Hadida et al., 2015). As seen, thriving at work is empirically recognized as an explanatory variable of innovative behavior and improvisation has elements of overlap with the latter as well as it can be a potential antecedent of ambidexterity. Therefore, the choice to speak directly about innovative at work behaviour even if the number of studies on it is higher than the other two variables derives from the fact that this is a general performance variable and therefore more directly connected to the objective I set myself to connect individual resources with dynamic capabilities. Finally, the choice has fallen towards individual ambidexterity, due to the element of innovativeness that this dimension has at the individual level and in public administration, in the sense that the line of research is still in an exploratory phase. Future research may focus on individual dynamic capabilities of thriving at work and improvisation capability with a microfoundation model that evaluates the joint effect of cognitive capabilities and social capital, as has been developed in this thesis

## 2. LIMITS AND METHODOLOGICAL ATTENTION.

Every research has its limits. This thesis tried to follow a positivist approach by justifying each passage in a deductive way concerning literature. The choices of methodology and method have been selected based on what emerged in the articles published on the topics of innovative work behaviour and individual ambidexterity and reported in the tables that include the research of the last ten years and beyond. The same work has been developed specifically for external networking which is the dimension of social capital theoretically and practically inherent to the research subject that is local governments. Below are listed some of the limits that emerged in the research, considering that at each limit can be made changes or are themselves future research opportunities. Particular emphasis is given to methodological attention.

- Dynamic capabilities are also considered at the individual level. This is a strength of this thesis from an interpretative, theoretical and conceptual point of view within the behavioural micro-foundation of public administration. However, this micro-individual emphasis can be considered a limitation. Until now, routines are similar to organizational rather than individual activities. Choices to introduce new ideas at work, implement exploitative or explorative activities could derive from meso-organizational or additive indications coming from the macro level. If there are processes of reform and change of the public sector at the global, European, national or regional level, in addition to the drives of modernization and innovation that often derive from crises (such as the economic crisis started in 2007 or the very serious one due to the coronavirus), the individual could be considered by those who do not approach behaviorally as an automatic mechanism for the overall machine of the municipal organization. It is like in macroeconomics when the recent debate concerns the effectiveness of economic policies according to the individual's micro-founded reactions. In a meso or macro approach, the individual reaction is only a consequence of the choice at the highest level without counting the behaviour and expectations of citizens and businesses. If taxes are reduced, a classic Keynesian approach leads to an assessment of an increase in individual consumption, while a macro-economic micro-funding approach focuses on understanding the reactions of citizens and businesses, who may decide to save money while waiting to pay more taxes in the future. The debate in economic science should be more sustained in management. The limits of a meso-institutional model should be more confronted with the limits of a microfoundation model based on individual characteristics. This debate is lacking in this work, where the approach is enthusiastically directed to behavioural microfoundation. However, future research should theoretically and methodologically intersect these conflicting points of view. In practice, an interpretation to overcome this limit is present: a meso-

macro approach has always justified not innovative behaviours at the individual level in the perception and reality of public organizations. A microfoundation approach, on the other hand, is the first step to give individuals concrete responsibility.

- The thesis follows a positivist approach and the data collected are from a survey and are based on individual perceptions rather than objective elements of evaluation of individual dynamic capabilities, as well as of social capital inside and outside the organization or perception of cognitive capabilities. While following the good practices of research based on methodological concepts of organizational behavior and psychology applied to management, the thesis lacks the use of mixed methods. However, the answer to this limitation is not qualitative research based on interviews, interpretative case studies and so on. That is not science. It's subjective, it's journalism, it's blogging, it is fluff, which should not even be evaluated for the purpose of doctoral theses, publications and so on. The qualitative research, the socio-constructivist interventionism of the researcher, the methodological approach that wants to sell scientificity citing fantasies of validity. Applause to the presentations of papers and Ph.D. research to those who have interpreted ten or twenty interviews. Here it is. The thesis does not descend to this infinitely low level at which most of the academic world unfortunately falls. What is the alternative and what is really missing to have an approach with more methods? These hypotheses of microfoundation could be tested through experiments. In social psychology the use of experiments has led over time to strengthen and validate the discipline, gaining access to confirmations and conclusions much stronger than the data obtained with surveys. What can be done to overcome the limits of this thesis concerning the choice of using data obtained from a questionnaire? Experiment with hypotheses in real-life situations in the context of working in local governments. these experiments could be strengthened by the use of neuroscience-related methodologies. Research costs may be higher, but the results could be equally relevant for scientific purposes. In this way, it is possible to have more objective data on relationships, cognitive abilities and individual dynamic capabilities. As far as the perceived dimension of innovation and individual ambidexterity is concerned, there was criticism during the end-of-year report and the presentation of the research at the Nice laboratory. However, as mentioned in the introduction to the thesis, the criticism that using perceived data does not mean studying behavioural public administration and not even microfoundation of dynamic capabilities, it is a scientifically and epistemologically invalid assessment. One professor asked to change the title repeatedly because in his opinion the research and the title are disconnected because behavioural would be based only on observed data. This idea is a minority and past perspective of psychological studies that have nothing to do with the modern evolution of behavioural studies. According to the logic of criticism, practically all studies published on top journals would be deleted because individual innovation can be seen only because I observe it.

This would mean restricting the field of research to hyper-innovative sectors and measuring innovation only where there are patents in research and development departments. For everything else, it would not be possible to study innovation, as if the mainstream academic world was to be thrown away or it would still fall into qualitative interpretations. Now, that is not science. The limits to studies must be expressed with knowledge and preparation on the subject. Hence, the title is not to be overturned as it has been proposed and is not a limit of this thesis, but it is a strong point. The title illustrates in terms of research question what are the keywords actually treated in this work.

- The data collected have only one temporal reference point and, generally, the analyses were carried out including all the subjects who answered the questionnaire. Only a short check was carried out to understand the effects of common method biases. Future studies should be longitudinal in thought and nature. In particular, relational and individual dynamic capabilities data should be longitudinal and collected several times over time. As argued in the section on analysis and results, networks develop in dynamic terms, relationships can change over time. Cognitive skills can change thanks to training and time intervening on individual personality traits, however, it is on relationships that time could have the greatest impact, as tasks change and people with whom one is obliged to exchange knowledge at work, knowledge management changes, positive proactive approach to knowledge exchange changes, colleagues and stakeholders outside the organization change. Future studies could analyse the hypothesis of microfoundation over a longitudinal time horizon rather than an instant picture of the situation at the moment of filling in the questionnaire. Data collected over a horizon of three years or better still 5 years (duration of the office of mayor and, therefore, also the real-time horizon of the municipal employee) in repeated steps over time can clarify more clearly what is the nature of causality between variables. The hypotheses of this thesis go in a direction that starts with cognitive capabilities and leads to individual dynamic capabilities through social capital. The answer to the hypotheses is a positive association, while nothing can be said about causality between variables. Only longitudinal studies, for example, allow us to understand whether political skill is an antecedent to the formation of positive and constructive relationships inside and outside the organization or are the relationships that form and improve the values of social effectiveness constructs. In summary, hypotheses of causality can only be estimated with a longitudinal research design that considers the timing of the work in the organization. The time in a municipality is different from that of other activities in the public or private service sector or innovation, research and development departments in private organizations that gravitate towards the production of innovative goods. The design of longitudinal research is very complex, even more so if carried out

in conjunction with an experimental analysis in local government (e.g. introduction of a new model of knowledge management in relationships within and outside the public organization).

- Another conceptual and methodological limit is still related to the behavioural approach rather than contingency. Such a second perspective might criticize the theoretical and empirical approach of this work. Most of the studies that have dealt with external networking, for example, have approached contingency, drawing social capital as an element caused by phenomena not controllable by individuals but external to them. The organization, size of the organization, external Network Governance phenomena are not factors considered in this model. The variance of outcome due to the presence in an organization is measured only in terms of correction for nested data (cluster option, Hierarchical Linear Modelling) and no in-depth studies have been made on hypotheses and empirical on the effects that the meso-organizational level may have in influencing directly social capital or in moderating the relationship between cognitive capabilities or social capital and individual dynamic capabilities. The limit of this thesis is that microfoundation and contingent perspective do not compete in the explanation of phenomena, while future research should always consider both organizational philosophies.

- As far as literature reviews are concerned, a reading may lead to some criticism of the limits of the study carried out. The literature review was based on a positivist philosophy, so the focus was bibliometric and the reference sources were the top journals at a global level in public administration, management, psychology, organizational behaviour and so on. Books were not considered, as well as readings from minor journals. At first reading, one of the two reviewers pointed out this issue, so a too bibliometric, positivist and top journals focused approach could be biased, as some sources, unfortunately, tend to have a commercial approach and follow certain lines of research rather than others that are marginalized. For example, recent literature is full of articles dealing, even sometimes together, with emotional intelligence and public service motivation. Fashionable topics in management and specifically public administration. Although the limit involves a narrow view of everything that is published and of the ongoing elaboration of knowledge in the academic world, with reflection and reasoning it is possible to go beyond the drawbacks of dealing with topics just because they are fashionable. Theoretical, epistemological, methodological and methodological choices are combined with the elaboration of conceptual and practical paradigms that have been dealt with in the work, such as the comparison between New Public Management and Network Governance. A bibliometric comparison, but reasoned and based on a scientific methodology of analysis that goes beyond the ideological choice that sometimes distinguishes authors who study the public sector.

- As far as statistical analysis is concerned, some limitations emerge. The attempt was to respond as well as possible and validate the data with 3 methodologies, OLS with cluster, HLM and SEM.



Using three methods increases the confidence that the results are meaningful and valid, however, it can be a greater dispersion of results and more difficult to read them. Should an academic paper be prepared on the basis of this work, more systematicity and focus on narrower research objectives will be needed. However, the analyses carried out are an opportunity, as they open up the possibility of deepening the assumptions made in this work and others that may emerge. From a methodological point of view, some observations should be made. Apart from a brief check in the analysis of the common method bias, the substantial part of the statistical analysis includes in the sample of the observations all the respondents, regardless of the time frame in which they responded to the survey. Cross-sectional data (one-off questionnaire filling in) and time-lagged data are studied together in the core part of the statistical analysis. The limit of the the thesis is to have focused a lot of attention on common method biases and then to have placed less attention on this issue. For potential publications, the core analyses should take more account of common method biases and perhaps develop methodological insights into these crucial aspects that can reduce trade-offs in the broad academic debate. Furthermore, an exploratory factor analysis has been made, however, the decision on which measurement structure to adopt remains open according to the needs of the researcher. External networking has been studied from the point of view of scale with a comparison with a team of experts, but future studies may go beyond the measurement limit and structure. With the analysis performed, it is not possible to generalize the scale for local governments internationally. Future studies may adopt this scale and deepen the statistical analysis of the instrument. Especially the deepening should concern the measurement mode, including elements of theory with the everyday practice of working in a municipal organization. As far as internal social capital is concerned, the measurement concerned weak and strong ties. As written above, it would be appropriate to strengthen the measurement of internal social capital through probabilistic methods of network existence and to compare the data provided by focal individuals with the evaluation given by colleagues. The limitation of the targeting adopted in this research is that it is based only on the perception of strength of the ties given by the focal individual and a match with alters has not been developed, due to lack of data on complete networks. Moreover, the division between weak ties and strong ties is based on a theoretical conceptuality and derived from previous empirical studies, however, an in-depth examination of the structure of these data might be desirable. Considering that, compared to the academic debate that has been going on for some decades, on the goodness of strong ties, these appear as positive stimulators without negative marginal returns for individual dynamic capabilities. On a purely statistical analysis level, the work is rigorous on acceptability thresholds, however, some margins of flexibility are left. In particular, CFI and TLI, among the fit-indices, are considered valid with an acceptability around 0.87, while, in the literature, greater sustainability is for values above

0.90. Satorra-Bentler estimator and modification indices are used to improve fit-indices, however, from a more stringent statistical analysis perspective, the use of the latter is not recommended. Furthermore, composite reliability and fit-indices are considered necessary and sufficient elements to have discriminant and convergent validity. A more stringent analysis includes the AVE indicator  $> 0.5$  as a threshold value to determine convergent validity. The last criticality concerns the use of bootstrapping. First of all, this should also be used for the complete model, because it is a way to reinforce validity with respect to the presence of critical elements of non-compliance with the assumptions for the statistical calculation. For the mediation analysis, the analysis was based on 1000 replications as argued in the methodological literature, but the actual number of replications is less than this quota. Future research can simply replicate the mediation analyses by setting a higher number of replications at the base, for example, 5000, to obtain a sufficient number of replications based on initial expectations. For analyses where there are only observed variables, there are no replications problems. However, due to the presence of internal capital as observed variables, the model fails to find convergence. Thus, mediation has been tested on the average values of political skill, external networking and dynamic capabilities rather than their complete structural conformation as latent variables. With respect to these limits, however, the research adopts all the methodological expedients to minimize the problems. The models are checked with more methodologies and more methods of measurement. These steps confirm the efficiency and validity of the estimates made, which confirm or not the research hypotheses.

- A further limitation concerns the local perspective of the available data. The results cannot be generalized to the whole public sector and globally. The limit of this research is to have obtained data only in Italy and in the municipalities, rather than in other local governments, which, in other countries, are classified differently. In the stipulation of the joint-Ph.D, the perspective would have been to research at the level of France and Italy. However, this initial intention was not successful due to the difficulties inherent in the construction of this survey. To overcome this limitation, future research may develop the microfoundation model of dynamic capabilities on local governments in several countries. However, it is possible to assert that a certain generalization is possible for those realities that have a similar organizational and public employment structure. For example, these data are not generalizable in countries where the civil servant is paid for merit and it is easy to dismiss and change jobs. For this reason, for example, the literature review on external networking does not include articles about school managers' reports. It is not only a sectoral problem (local governments versus schools), but also a question of how to recruit and work. Managers of schools in Italy are public employees with open-ended contracts and are hardly ever fired, while managers of American schools studied and valued in the literature have

a different mode of engagement and a different decision-making role, which approaches the private and New Public Management perspective, even if external networking is conceptually a construct of Network Governance. Within this limit, the debate between behavioural and contingency perspectives is still present. According to the former, even with the awareness of potential differences, the data can be considered theoretically more generalizable, because the focus is individual rather than organizational and cultural, although there may be the assumption that certain macro and meso dimensions can moderate the results obtained. For a contingency perspective, vice versa, the cultural, organizational, environmental aspects have a greater impact, therefore the ability to generalize is lower. In conclusion, it would still be interesting to study the hypotheses of microfoundation based on social capital and cognitive capabilities at an international level and not having done so in the thesis is certainly a limit beyond the perspectives of approach to research. In order to be able to research local governments in several countries, it is necessary to have a large research group that has the appropriate knowledge to know how to contact and involve employees, managers and mayors in different countries. Compared to the resources available, however, the sample of this research is large and valid, compared to many articles published in top journals that have a smaller database. The sample is not comparable to those funded and promoted by the government, as often happens in research in the United States, which is characterized by a fruitful collaboration between government and universities in data collection.

- The final limitation concerns the different quality of the different chapters of the thesis. The parts of the work were not written at the same time. The Ph.D. allowed to study, reflect on good research practices, increase knowledge and skills to do research and write it. Probably a reader may find this limit difficult to overcome and may wonder why everything is not made homogeneous in terms of quality. As Prof. Huron has repeated several times, the doctoral thesis is "an exercise in style" and therefore also represents the intellectual and cognitive evolution of the researcher. If an article can be developed based on the doctoral thesis, it must be homogeneous from beginning to end. All the elements included in the thesis are useful to answer the research question

### 3. CONCLUSIONS.

The doctorate path has been long and with ups and downs. The initial high expectations to be able to publish on interesting and innovative topics, to be able to implement a real international collaboration between universities, to be able to stay in the university have not been fully realized in these four years. Since the writing of the research project, however, the years of doctoral studies have allowed to deepen innumerable topics, to make difficult decisions, to learn how to do research and to continue with determination even when everything seems lost. Compared to the enthusiasm of the initial project what remains and where the research has gone further. The thesis manages to give strong defining imprinting of the dimensions related to public administration that were only hinted at in the paper written in 2016. One chapter of the thesis deals in depth with the evolution of the paradigms of the public sector, linking this practical and conceptual evolution to the attempt to explain contemporary phenomena that characterize public organizations and those who work daily in and with them. New Public Management and Network Governance are studied in university books, but this thesis explores in depth the link they have with the characteristics of individual qualities and, above all, with the relational phenomenon that distinguishes both paradigms in different ways. In this perspective, the chapter on external networking and the knowledge management model has been developed. The latter was the first research work during the first year of the Ph.D. A mixture of practical concepts, classical management elements and an enthusiastic approach to the study of knowledge management. The chapter on the model has not been modified since its presentation at the 2017 conferences in Nice and Ancona. It has been included in the thesis for consistency with the topics covered on knowledge networks. As pointed out by a reviewer at the first reading of the thesis, the model can be an interesting opportunity for theoretical and practical in-depth study in the public sector. For linearity with the path of the doctorate, the paper has been included here in full form and integrates well with the rest of the work. The paper was also submitted to a specialist public management magazine. It was appreciated at conferences and in response to the submission, however, it has not yet been published. For external networking a more in-depth research work was done: a systematic review of the literature on papers that empirically addressed the topic in local governments, an analysis of the scales adopted in the literature and the development of a scale. The latter includes previous good practices but the research focuses on the effort to have a scale to be adopted in local governments in a widespread and international way, compared to previous work that always has different items related to different stakeholders. To achieve this goal, a working group composed of professors of organizational behaviour, public administration and practitioners were involved. Subsequently, an exploratory and confirmatory factorial

analysis was developed for the scale to validate the measurement structure. Depending on the information cut to be given to the research, external net-working can be measured in one-dimensional terms, as it emerged from the first empirical ap-project on the subject, or as a latent second-order variable. The factorial analysis and the theoretical-practical approach compared to previous researches allow measuring this construct through two sub-dimensions linked to the value of distance (proximal and distal ties) or three sub-dimensions that collect information about the difference between the strength of the ties and the public or private nature of the stakeholders still together with the concept of distance. The thesis carefully investigated the effects of external net-working on perceived innovation and ambidexterity. Networking has a positive impact and this can conceptually extend to the idea that the microfoundation of the Network Governance paradigm is a positive and stimulative way to improve public organizations starting from the individual capacity to innovate and be ambidextrous. The external relations analysed concern the exchange of knowledge rather than market and contract-based relations, while dynamic capabilities can be interpreted rather as a boost to efficiency in the short term and innovation in the long term and, therefore, could be closer to the New Public Management logic, which foresees the application of concepts born in the private sector for public administration. For the individual level, therefore, this thesis leads to conclusions that do not put Network Governance in opposition to New Public Management. If the latter focuses on outcomes variables and the former on the relational evolution of society, the two paradigms can coexist and can be linked. Future research may deepen outcome variables may be linked to the Networking Governance paradigm as well as the perception of increasing individual and organizational outcome rather than output. Alongside external networking, other social capital measures concern relationships within the organization. In my Master's thesis, I applied social network analysis for the first time, so in my Ph.D., I wanted to strengthen the knowledge of this methodology and apply it to studies of organizational behaviour in the public sector. The approach to internal social capital was more empirical and practical rather than theoretical. A review of the literature on the subject would make limited sense and is rather a work in itself. The thesis focused on knowledge networks in the organization and no other positive or negative forms of social capital, influencing individuals and organizations, was covered. In the summer of 2007, during my visit to Milton-Keynes in England at The Open University, I spent two weeks at Essex Summer School, where I had access to relevant and interesting knowledge about social network analysis. Thanks to this course, I have been able to apply this scientific method of data collection and analysis on two occasions. The quantitative case study included in the thesis concerns a work done for the doctoral path for the organization module. Although within the limit of collecting data from a single interlocutor on

the entire organizational network, the methodological effort has been considerable. The data collected, in fact, made it possible to apply the most current methods of network analysis and estimate the effects that various forms of social capital have on innovative behavior at work. In the survey, this methodology was adopted for the construction of the questionnaire with respect to the use of the roster method concerning knowledge networks and rated innovation. In the empirical analyses it was possible to use the concepts of strong and weak ties, while other more complex measures of centrality have not been developed, due to the lack of a sufficient number of answers for each network. Articles that publish social network analysis research usually focus on obtaining complete data on one or two intra-organizational networks of sizes around 50-60 respondents, limiting missing data to a minimum. The choice of this thesis was to obtain data on as many organizations as possible rather than a concentration on one or two local governments. In order to obtain a higher response rate, in fact, the questionnaires would have had to be delivered by hand. It should be noted that the responses to the first part that includes internal knowledge networks are higher than the answers that include innovation, for which some responses on this variable have also been eliminated because they are unreliable (same value for all colleagues). The analysis of the micro-foundation of the share capital was carried out on a sample of 484 respondents to have homogeneity in the samples used in this work. However, an in-depth comparison could be made on the larger sample of respondents who completed the first part of the questionnaire 566 respondents. In summary, the thesis analyzes the internal and external social capital of public employees in a vast and innovative way, because it manages to include both constructs in the empirical analysis, measuring through the methodological choices validated in literature rather than non-validated simplifications (for example asking in a simplified way if the focal public servant has good knowledge exchange relationships with colleagues and external stakeholders). The case study and survey analysis allow you to deepen your knowledge of the effects of social capital inside and outside the organization. Empirical results support the positive effect of strong ties more than weak ties. Strong ties have a positive effect on innovation and also on individual ambidexterity in a "close" word, that is when external ties are not considered. Unlike what is written in the academic debate on the potential negative marginal effect for non-linearity of strong ties and external networking, they are weak ties that have a non-linearity in the impact on ambidexterity and only a minor confirmation for perceived innovation. While maintaining a value, weak ties are not the ones that have the greatest impact compared to what has emerged over time in the literature. It is the strong bonds that have the strongest effect. Studying internal and external relations has always been an idea since the writing of the project to enter the doctorate and it was also an element of discussion at the admission interview: how will the capital stock be calculated? The thesis gives an exhaustive answer on the subject. However,

the initial project and the model that had been proposed lacked some elements. The initial model put together microelements with meso and macro dimensions in a correct multi-level perspective but difficult to test empirically. The research work was to refine the research demand and to focus on those prior and outcome dimensions for which there was a gap in the research. On the train back from Nice, after the Airmap interview, various models were written on the program sheets of the event and the reflection of that moment did not stop with that trip but lasted for two years until the moment when it was strictly urgent to conclude the drafting of the questionnaire. Choosing to study mindfulness and political skills was a long and troubled path of research and selection of cognitive capabilities that could be more interesting and on which there was still room for development. In addition to the gap in the literature, the research involves the limit of development of the questionnaire in terms of the number of questions. Beyond the empirical results found, for which political skill is a strong precedent for individual dynamic capabilities, while, the significativity of mindfulness effects is lower than expected although it has an impact on innovative behaviour, the research developed in finding the most relevant dimensions and in which there was a gap in the literature in the logic of microfoundation. Theoretically and empirically, hypotheses of direct and indirect relationships of cognitive capabilities were analyzed. Studying mindfulness allowed to deepen the theme of attention based-view of the organization in an intra-psychological and individual perspective. Mindfulness can be a significant antecedent and an added value for the microfoundation of dynamic capabilities. Future research will have to develop the construct measurement modality to make it more suitable for work situations and relationships. This argument has been highlighted in the text. Future research may also focus on other aspects of attention such as mind-wandering or attention control, which are different constructs than mindfulness. Future research related to an experimental perspective could be based on the administration of a mindfulness meditation course versus a generic course and see if this has effects on mindfulness and outcome in the short and long term. The results of this thesis are the first approach to go in this direction also in public administration. Political skill falls within the constructs of social effectiveness. It has been selected to represent social cognitive capabilities for two reasons. First, previous research shows empirically that political skill has greater explanatory power than other constructs, such as emotional intelligence, although these are better known by practitioners and in the general public. Secondly, political skill was born as a valid construct to confront the phenomena of politics in organizations. Political skill therefore can only be a significant dimension in local governments which are purely political organizations in which the strong relationship between administrators and politicians is evident. The results confirm these at-Tese. Political skill allows public servants to survive and prosper within the purple decision-making area present in municipalities.

Until now, this construct had not been studied concretely in the public sector, while, this research opens relevant scenarios of in-depth study concerning the relationship with other elements of microfoundation and other variables outcome of the performance of public employees, management but also the political side within the local government. In these real-life and work situations in the public sector, the theme of comparing social efficiency constructs can still be explored in depth. The positive effects of political skills on innovative work behaviour and individual ambidexterity are direct or partially mediated by social capital. Political skill does not seem to affect the moderation of the effects of existing internal and external relations, but these hypotheses should be tested again from a longitudinal and dynamic perspective. Finally, the thesis focused on dynamic capabilities. The added value of this research is a theoretical, literature review and empirical. From a theoretical point of view, dynamic capabilities are applied to local governments and in particular to civil servants. Both of these steps are not taken for granted. The literature has always emphasized dynamic capabilities at an organizational level and in private sectors, perhaps the most innovative ones. The conceptual added value is to lower the level of dynamic capabilities also for individuals assuming that they can modify the routines at work. Then bringing the concept of dynamic capabilities to the public sector has only been approached by some authors mentioned in the thesis, but there is still a lot of work to be done in research on ambidexterity especially in public administration and innovation continues to be considered a black box. Between innovation and ambidexterity, the greatest added value of the thesis concerns this second construct. In fact, literature reviews show that research on innovative work behaviour is numerous, while research on individual ambidexterity is few, especially at the individual level and not only at the top management level. However, for both variables, a microfoundation model has been empirically tested for which there is a gap in the literature. In addition to field research, the systematic and structural reviews of the literature in the tables on innovation and ambidexterity provide a clear view of the research that has already been done in the last decade. The tables allow to identify, by exclusion, which are the gaps that the acceding world will be able to develop in the coming years. Those who approach ambidexterity and innovation for the first time can find in the reviews of this thesis a valid reference point based on the top journals that have a greater impact in the scientific world.

Moreover, the doctoral thesis has provided a wide space for the methodology of questionnaire construction. That section can be read and used in compendium with the survey construction methodology books, which will be increasingly adopted in management and public administration research and have already been widely used in psychology and organizational behavior studies. Finally, it must be underlined that the hypotheses have been tested through three different methodologies. The estimates derived from OLS, HLM and SEM allow to support the results



with more confidence and validity and to respond to the research hypothesis and demand. Bibliographic literature review, hypothetical-theoretical and method-logical studies are consistently and congruently linked to answering the research question. This path ends. I would like to thank again Prof. Luca Anselmi, Prof. David Huron and Prof. Federico Niccolini who have supported and supported me during these years of doctorate. All three professors played a fundamental role in the realization of this doctoral thesis.

# III. APPENDIX.

## 1. MOST INFLUENTIAL ARTICLES FOR PUBLIC ADMINISTRATION PARADIGMS.

Most influential articles within New Public Management and Network Governance	NPM versus NG (versus Other theories)	Journal (Rank in AJC2018)	Typology	Count of citations in Google Scholar – July/August 2019
A public management for all seasons? (Hood, 1991)	NPM	Public Administration: an international quarterly	Theoretical	11951
From old public administration to new public management (Dunleavy & Hood, 1994)	NPM	Public money and management (3)	Theoretical	1651
The "Reinventing Government" Exercise: Misinterpreting the Problem, Misjudging the Consequences (Moe, 1994)	NPM/NG	Public administration review (4*)	Theoretical	665
The "new public management" in the 1980s: Variations on a theme (Hood, 1995)	NPM	Accounting, Organization and Society (-)	Theoretical	4760
Justification by works or by faith? Evaluating the new public management (Pollitt, 1995)	NPM	Evaluation (2)	Comparative Analysis	710
Synthesizing the implementation literature: The ambiguity-conflict model of policy implementation (Matland, 1995)	NG	Journal of public administration: research and theory (4)	Theoretical	1635
The new governance: governing without government (Rhodes, 1996b)	NG	Political studies (2)	Theoretical	5948
A general theory of network governance: Exchange conditions and social mechanisms (C. Jones et al., 1997) <sup>200</sup>	NG	Academy of management review (4*)	Theoretical	3337
The global revolution in public management: Driving themes, missing links (Kettl, 1997)	NPM	Journal of Policy Analysis and Management (3)	Theoretical	795
Public governance in The Netherlands: an alternative to Anglo-American 'managerialism' (Kickert, 1997)	NG	Public administration: an international quarterly (4)	Theoretical	570
Governance without government? Rethinking public administration (Peters & Pierre, 1998)	NG	Journal of public administration: research and theory (4)	Comparative Analysis	1712
The new public management: Challenging the boundaries of the management vs. administration debate (Kaboolian, 1998)	NPM	Public administration review (4*)	Theoretical	534
Administrative leadership, neo-managerialism, and the public management movement (Terry, 1998)	NG	Public administration review (4*)	Theoretical	690
The dynamics of multi-organizational partnerships: an analysis of changing modes of governance (Lowndes & Skelcher, 1998)	NG	Public administration: an international quarterly	Empirical	1139
Galloping Elephants: Developing Elements of a Theory of Effective Government Organizations (Rainey & Steinbauer, 1999)	NG	Journal of public administration: research and theory (4)	Theoretical	1260
Accounting and the new public management: instruments of substantive efficiency or a rationalising modernity? (Lapsley, 1999)	NPM	Financial accountability and management (3)	Theoretical	501
Modeling the impact of public management: Implications of structural context (O'Toole & Meier, 1999)	NG	Journal of public administration: research and theory (4)	Theoretical	582
Running government like a business: Implications for public administration theory and practice (Box, 1999)	NPM	American review of public administration (3)	Theoretical	546
Research on Policy Implementation: Assessment and Prospects (O'Toole, 2000)	NG	Journal of public administration: research and theory (4)	Theoretical	760

<sup>200</sup> This article has been included because it is the conceptual paradigmatic basis for explaining network governance with respect to social network theory and transaction cost theory and, although the authors have made clear reference in the definition to the profit and non-profit sector (C. Jones et al., 1997), without mentioning public sector, the model is applicable and has been studied from then on in public administration so much that it is mentioned in other top articles on the subject (i.e. Milward & Provan, 2000).

Studying governance and public management: Challenges and prospects (Lynn et al., 2000)	NG	Journal of public administration: research and theory (4)	Theoretical	503
Governing the Hollow State (Milward & Provan, 2000)	NG	Journal of public administration: research and theory (4)	Literature Review	1240
The Challenge of Collaborative Governance (Huxham et al., 2000)	NG	Public management review (3)	Action research	530
The new public service: Serving rather than steering (Denhardt & Denhardt, 2000)	(NPS)	Public administration review (4*)	Theoretical	2172
The transformation of governance: Globalization, devolution, and the role of government (Kettl, 2000)	NPM	Public administration review (4*)	Theoretical	697
Origin and theoretical basis of new public management (Gruening, 2001)	NPM	International public management journal (2)	Theoretical	1012
Managerial strategies and behavior in networks: A model with evidence from US public education (Meier & O'Toole, 2001)	NG	Journal of public administration: research and theory (4)	Empirical	537
Big questions in public network management research (Agranoff & McGuire, 2001)	NG	Journal of public administration: research and theory (4)	Theoretical	1423
Do Networks Really Work? A Framework for Evaluating Public-Sector Organizational Networks (Provan & Milward, 2001)	NG	Public Administration Review (4*)	Theoretical	1820
The diminishing publicness of public service under the current mode of governance (Haque, 2001)	NG	Public Administration Review (4*)	Comparative Analysis	548
Public-value failure: When efficient markets may not do (Bozeman, 2002)	(PV)	Public Administration Review (4*)	Theoretical	596
Dealing with wicked problems in networks: Analyzing an environmental debate from a network perspective (van Bueren et al., 2003)	NG	Journal of public administration: research and theory (4)	Theoretical	510
Dark networks as problems (Raab & Milward, 2003)	NG	Journal of public administration: research and theory (4)	Case Studies	621
Sources of public service improvement: A critical review and research agenda (Boyne, 2003)	NPM/NG	Journal of public administration: research and theory (4)	Literature Review	771
Transaction costs and institutional explanations for government service production decisions (T. L. Brown & Potoski, 2003)	NG	Journal of public administration: research and theory (4)	Empirical	559
The mythology of privatization in contracting for social services (Slyke, 2003)	NPM	Public Administration Review (4*)	Empirical	617
Privatization and its reverse: Explaining the dynamics of the government contracting process (Hefetz & Warner, 2004)	NG	Journal of public administration: research and theory (4)	Empirical	608
Public participation and collaborative governance (Newman et al., 2004)	NG	Journal of social policy (3)	Empirical	503
The middle aging of new public management: into the age of paradox? (Hood, 2004)	NPM	Journal of public administration: research and theory (4)	Theoretical	1071
The marketization of the nonprofit sector: civil society at risk? (Eikenberry & Kluver, 2004)	NPM	Public Administration Review (4*)	Theoretical	1164
Linking citizen satisfaction with e-government and trust in government (Welch et al., 2005)	NPM	Journal of public administration: research and theory (4)	Empirical	1018
Goal ambiguity and organizational performance in US federal agencies (Chun & Rainey, 2005)	NPM/NG	Journal of public administration: research and theory (4)	Empirical	510
Theorizing the micro-politics of resistance: New public management and managerial identities in the UK public services (Thomas & Davies, 2005)	NPM	Organization studies (4*)	Empirical	765
The new governance: Practices and processes for stakeholder and citizen participation in the work of government (Bingham et al., 2005)	NPM	Public Administration Review (4*)	Comparative Analysis	1068
Performance management in practice: A comparative study of executive agencies (Pollitt, 2006)	NPM	Journal of public administration: research and theory (4)	Comparative Analysis	502
New public management is dead—long live digital-era governance (Dunleavy et al., 2006)	NG	Journal of public administration: research and theory (4)	Theoretical	2042
Maybe It Is Time to Rediscover Bureaucracy (Olsen, 2006)	(BU)	Journal of public administration: research and theory (4)	Theoretical	866
Metagovernance: The changing role of politicians in processes of democratic governance (Sørensen, 2006)	NPM	American review of public administration (3)	Empirical	615

Public Value Management: A New Narrative for Networked Governance? (Stoker, 2006)	NPM/(PV)	American review of public administration (3)	Theoretical	1283
The design and implementation of Cross-Sector collaborations: Propositions from the literature (Bryson et al., 2006)	NG	Public Administration Review (4*)	Theoretical	2057
Collaborative public management: Assessing what we know and how we know it (McGuire, 2006)	NG	Public Administration Review (4*)	Literature Review	1085
Varieties of participation in complex governance (Fung, 2006)	NG	Public Administration Review (4*)	Theoretical	1834
Gaming in targetworld: The targets approach to managing British public services (Christopher & Hood, 2006)	NG	Public Administration Review (4*)	Comparative Analysis	582
The whole-of-government approach to public sector reform (Christensen & Lægreid, 2007)	NG	Public Administration Review (4*)	Theoretical	1072
Beyond engagement and participation: User and community coproduction of public services (Bovaird, 2007)	NG	Public Administration Review (4*)	Theoretical	1523
Public-private partnerships: an international performance review (Hodge & Greve, 2007)	NG	Public Administration Review (4*)	Literature Review	1191
Agents or stewards: Using theory to understand the government-nonprofit social service contracting relationship (Van Slyke, 2007)	NG	Journal of public administration: research and theory (4)	Theoretical	773
From new public management to public value: Paradigmatic change and managerial implications. (O'Flynn, 2007)	(PV)	Australian journal of public administration (2)	Theoretical	882
Street-Level bureaucracy and public accountability (Hupe & Hill, 2007)	NPM	Public Administration (4)	Theoretical	
Modes of network governance: Structure, management, and effectiveness (Provan & Kenis, 2008)	NG	Journal of public administration: research and theory (4)	Theoretical	2994
Collaborative governance in theory and practice (Ansell & Gash, 2008)	NG	Journal of public administration: research and theory (4)	Meta-Analysis	3755
Wicked problems, knowledge challenges, and collaborative capacity builders in network settings (E. P. Weber & Khademian, 2008)	NG	Public Administration Review (4*)	Theoretical	928
Models of e-government: Are they correct? An empirical assessment (D. Coursey & Norris, 2008)	NG	Public Administration Review (4*)	Empirical	680
Characteristics of innovation and innovation adoption in public organizations: Assessing the role of managers (Damanpour & Schneider, 2009)	NG	Journal of public administration: research and theory (4)	Empirical	677
New public management in public sector organizations: the dark sides of managerialistic 'enlightenment' (Diefenbach, 2009)	NG	Public Administration (4)	Meta-Analysis	652
Making governance networks effective and democratic through metagovernance	NG	Public Administration (4)	Theoretical	819
Pay for performance in the public sector—Benefits and (hidden) costs (Weibel et al., 2010)	NPM	Journal of public administration: research and theory (4)	Meta-Analysis	501
The big question for performance management: Why do managers use performance information? (Moynihan & Pandey, 2010)	NG	Journal of public administration: research and theory (4)	Empirical	527
An integrative framework for collaborative governance (Emerson et al., 2012)	NG	Journal of public administration: research and theory (4)	Theoretical	1290
A new theory for public service management? Toward a (public) service-dominant approach (S. P. Osborne et al., 2013)	NG	American review of public administration (3)	Theoretical	607
Public value governance: Moving beyond traditional public administration and the new public management (Bryson et al., 2014)	(PV)	Public Administration Review (4*)	Theoretical	507

## 2. DATABASE FOR THE EXPLORATIVE ANALYSIS: KNOWLEDGE NETWORKS AND INNOVATIVE WORK BEHAVIOUR (IN A MUNICIPALITY; DATA FROM A PUBLIC SERVANT) AND ESTIMATIONS.

ID Em- ployee	WeakTies	StrongTies	Closeness	Betweenness	nBetweenness	Innovative work behaviour
1	17	18	0,692307710647583	8,724864006	0,446741611	4
2	13	5	0,583333313465118	3,408277512	0,174514979	3
3	10	4	0,562500000000000	0,333677322	0,017085373	3
4	47	5	0,851351380348206	54,82566452	2,807253599	4
5	25	15	0,732558131217957	17,28248978	0,88	4
6	30	14	0,768292665481567	26,34962654	1,349187255	5
7	33	8	0,741176486015320	17,98348618	0,920813382	3
8	36	6	0,750000000000000	24,77967262	1,268800497	3
9	21	12	0,677419364452362	15,90711021	0,81449616	2
10	19	8	0,636363625526428	11,98321724	0,613579988	4
11	26	18	0,768292665481567	27,84380341	1,425693989	5
12	7	8	0,567567586898804	0,500379145	0,025621053	2
13	29	14	0,759036123752593	30,26154327	1,549490213	5
14	25	7	0,670212745666504	12,21032047	0,625208437	2
15	18	12	0,656250000000000	11,34261036	0,580778837	4
16	23	2	0,623762369155884	5,205265045	0,26652661	4
17	53	4	0,913043498992920	79,22836304	4,056752205	4
18	22	12	0,684782624244690	11,40071774	0,583754122	6
19	28	10	0,715909063816071	18,06556129	0,925015926	4
20	20	19	0,724137902259827	15,63051224	0,80033344	6
21	13	18	0,663157880306244	7,173595428	0,367311597	6
22	18	7	0,623762369155884	3,869818211	0,198147371	3
23	14	9	0,611650466918945	3,597783804	0,184218317	4
24	11	10	0,60000023841858	4,235219002	0,216857105	4
25	20	4	0,617647051811218	3,32738328	0,170372933	4
26	16	9	0,623762369155884	5,820669651	0,29803735	5
27	16	19	0,692307710647583	16,27801704	0,833487809	5
28	49	6	0,887323915958405	67,30237579	3,446102142	3
29	34	9	0,759036123752593	24,63158798	1,261218071	6
30	20	5	0,623762369155884	3,492652893	0,178835273	4
31	24	8	0,670212745666504	7,707154274	0,394631565	4
32	28	16	0,768292665481567	32,94667435	1,686977744	3
33	9	8	0,577981650829315	2,577767849	0,131990165	4
34	23	6	0,649484515190125	10,29876423	0,527330458	3
35	11	32	0,759036123752593	30,62127495	1,567909598	4
36	10	10	0,594339609146118	2,176643133	0,111451268	4
37	7	10	0,577981650829315	0,823425174	0,042162068	4
38	4	14	0,583333313465118	1,049462199	0,053735901	6
39	62	1	1,000000000000000	112,7990112	5,775679111	3
40	21	4	0,623762369155884	4,225942135	0,216382071	4
41	11	3	0,562500000000000	1,190476298	0,060956288	4
42	31	15	0,787500023841858	32	1,663258195	4
43	32	4	0,699999988079071	14,82772541	0,75922811	4
44	34	19	0,863013684749603	54,64369583	2,79793644	4
45	13	4	0,577981650829315	2,840713739	0,145453855	4
46	21	5	0,629999995231628	4,912953854	0,251559347	4
47	25	4	0,649484515190125	7,719990253	0,395288795	5
48	14	4	0,583333313465118	2,119072199	0,108503439	4
49	11	5	0,572727262973785	1,86211884	0,095346585	4
50	31	2	0,677419364452362	10,63236618	0,544412017	3
51	1	61	0,984375000000000	104,6340103	5,357604027	5
52	17	6	0,611650466918945	5,994361401	0,306930959	4
53	11	10	0,60000023841858	3,522331953	0,180354938	5
54	11	4	0,567567586898804	1,011083722	0,051770799	4
55	24	5	0,649484515190125	9,978315353	0,510922432	5
56	19	5	0,617647051811218	4,365308762	0,223518118	3
57	9	10	0,588785052299500	2,679534912	0,137200966	3
58	24	4	0,642857134342194	5,99532795	0,306980461	3
59	7	9	0,572727262973785	0,714696765	0,036594816	5
60	30	4	0,684782624244690	10,5805378	0,54175818	4
61	28	5	0,677419364452362	8,630078316	0,441888273	4
62	11	10	0,60000023841858	2,943129301	0,150697872	4
63	12	4	0,572727262973785	1,72339499	0,08824347	4
64	9	4	0,557522118091583	1,772954226	0,09078107	4

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. nestreg: regress Innovativeness (Gender PublicWorks UrbanPlanning) (WeakTies) (StrongTies) (Betweenness), cluster (Idi)
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Block 1: Gender PublicWorks UrbanPlanning

(Std. Err. adjusted for 64 clusters in Idi)

## Block 2: WeakTies

(Std. Err. adjusted for 64 clusters in Idi)

### Block 3: StrongTies

(Std. Err. adjusted for 64 clusters in Idi)

## Block 4: Betweenness

(Std. Err. adjusted for 64 clusters in Idi)

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### 3. STEPS FOR EXTERNAL NETWORKING SCALE.

Table 93: Steps for the adaptation of external networking scale.

Initial proposal from literature review	Proposal after a confrontation with a municipal middle manager	Proposal after a confrontation with Italian top scholar in public management	Proposal from a top manager CFO in an Italian municipality	Proposal from a local administrator in a municipality	Proposal from a knowledge worker in a municipality	Scale in this thesis (English version)
1) Elected Members "in this municipality" (Consiglieri comunali)	Municipal councilors and members of the municipal executive committee in this municipality (Consiglieri comunali e membri della giunta in questo Comune)	Municipal councilors and members of the municipal executive committee in this municipality (Consiglieri comunali e membri della giunta in questo Comune)	X (confirmation)	X (confirmation)	X (confirmation)	Local Administrators in this municipality
2) User group representatives (Rappresentanti di un gruppo di utenti)	Service users (Utenti del servizio)	A representative of a citizens' group (Un rappresentante di un gruppo di cittadini)	X (confirmation)	X (confirmation)	X (confirmation)	Representatives of a citizen's group
3) Trade unions representatives (Rappresentanti sindacali)	=	Trade union representatives (not internal to the organization) (Rappresentanti sindacali (non interni all'organizzazione))	X (confirmation)	X (confirmation)	X (confirmation)	Trade union representatives (external to the organization)
4) Local business leaders (Leader di imprese locali)	Leaders of local Private firms (Leaders di imprese private locali)	Business organizations (Imprese)	X (confirmation)	X (confirmation)	X (confirmation)	Local business leaders
5) Voluntary sector actors (Attori del settore del volontariato)	3) Voluntary sector actors (Attori del settore del volontariato)	4) Third sector organizations (Enti del terzo settore)	X (confirmation)	Excluded	X (confirmation)	Voluntary sector actors
6) Members of the Parliament or the Regional council	7) Elected or appointed politicians from another municipality, Members of the Parliament, Regional councillors, members of the Regional executive committee (Politici eletti o nominati in un altro Comune, parlamentari, consiglieri regionali, membri della giunta regionale)	8) Elected or appointed politicians from another municipality, Members of the Parliament, Regional councillors, members of the Regional executive committee (Politici eletti o nominati in un altro Comune, parlamentari, consiglieri regionali, membri della giunta regionale)	Excluded	Mainly the political part	Excluded	-
7) Employees in other municipalities (Impiegati in altri Comuni) (- It includes 9)	Employees in other municipalities (Impiegati in altri Comuni)	Employees in other municipalities and in other public service organizations (Impiegati in altri Comuni e in altre aziende di servizi pubblici)	Managers in other municipalities (Manager in altri comuni)	X (confirmation)	X (confirmation)	Employees in other municipalities
8) Elected or appointed politician in other municipalities (Politici eletti o nominati in altri Comuni)	x (included in another item)	x (included in another item)	(Excluded)	Mainly the political part	X (confirmation)	Local Administrators in other municipalities
10) Central government officials (Dipendenti del governo centrale) (It includes 11/13)	Employees in central government or in branches of central government departments (Dipendenti del governo centrale e di	Employees in central government (included decentralized offices and regulatory authorities) (Dipendenti del governo centrale (inclusi	X (confirmation)	X (confirmation)	X (confirmation) (Different translation: Dipendenti dei ministeri centrali)	Other State employees

	<i>branchie di dipartimenti del governo centrale)</i>	<i>uffici decentrati e enti regolatori))</i>				
12) An officer from the EU (Excluded)	-	-	-	-	-	-
14) Employees in regional government ( <i>Dipendenti della Regione</i> )	Employees in regional government ( <i>Dipendenti della Regione</i> )	Employees in regional government ( <i>Dipendenti della Regione</i> )	X (confirmation)	X (confirmation)	X (confirmation)	Employees in regional government
15) A representative from a business association ( <i>Un rappresentante di associazione di categoria</i> )	6) Representatives from a business association ( <i>Rappresentanti di associazioni di categoria</i> )	7) Representatives from a business association ( <i>Rappresentanti di associazioni di categoria</i> )	X (confirmation)	X (confirmation)	X (confirmation)	Representatives from a business association
16/19) Police/Military organisations ( <i>polizia/organizzazioni militari</i> ) (Excluded)	-	-	-	Representatives of law enforcement (To be included)	X (confirmation)	Representatives of law enforcement
17) County Administrative Board ( <i>Giunta provinciale</i> ) (Excluded)	-	-	-	-	-	-
18) County Councils ( <i>Consiglio provinciale</i> ) (Excluded)	-	-	-	-	-	-
20) Religious organizations ( <i>Organizzazioni religiose</i> ) (Excluded)	-	-	-	-	Representatives of religious organizations (To be included)	Representatives of religious organizations
21) Regional associations ( <i>associazioni regionali</i> ) (Excluded)	-	-	Regional associations ( <i>Associazioni regionali</i> ) (To be included)	-	-	-
22) Neighborhood associations ( <i>associazioni di vicinato</i> ) (Excluded)	-	-	-	-	(Included in 2)	-
23) Financers ( <i>finanziatori</i> ) (Excluded)	-	-	-	-	-	-
24) (Private) Service organizations ( <i>aziende private di servizi</i> )	Employees in private Service organizations, freelance professionals and specialists ( <i>Impiegati in aziende private di servizi, liberi professionisti e specialist</i> )	Consultants and professional categories ( <i>Consulenti e categorie professionali</i> )	X (confirmation)	X (confirmation)	Freelance professionals	Freelance professionals
25) Political clubs or political party committees ( <i>partiti politici</i> ) (Excluded)	-	-	-	-	(Included in 5)	-
26) Members of the press ( <i>Rappresentanti della stampa</i> ) (Excluded)	Members of the press ( <i>Rappresentanti della stampa</i> )	Representatives of the media (press, online newspapers, TV, Radio) ( <i>Rappresentanti dei media (stampa, giornali online, tv, radio)</i> )	Members of the press ( <i>Rappresentanti della stampa</i> )	Only the political part (To be excluded for public servants)	Representatives of the media (press, online newspapers, TV, Radio)	-
27) The professional organization Municipalities (Denmark) ( <i>Organizzazione professionale dei Comuni</i> )	-	-	-	-	-	-
28) An officer from the national association of municipalities ( <i>Un rappresentante dell'Associazione Nazionale Comuni Italiani</i> ) (Excluded)	-	-	An officer from the national association of municipalities ( <i>Rappresentanti di ANCI</i> )	-	-	-



			(To be included)			
29) Other public agencies (Altre agenzie pubbliche)	Employees in other public service organizations (not municipalities) (Impiegati in altre aziende di servizi pubblici)	x (to be included in another item)	X (confirmation)	Public schools (To be included)	Public schools (To be included)	- Employees in local public schools  - Employees in public healthcare

#### 4. OLS REGRESSIONS ABOUT PERCEIVED INNOVATIVE WORK BEHAVIOUR. COMPLETE DETAILS OF BASELINE MODELS.

Table 94: OLS regressions about perceived innovative work behaviour. Complete details of baseline models.

Innovative Work Behaviour									
	model_1	model_2	model_3a	model_3b	model_3c	model_4a	model_4b	model_5	model_6
CONTROLS:									
gender	-0.090 (0.06)	-0.039 (0.06)	-0.031 (0.07)	-0.045 (0.07)	-0.008 (0.07)	-0.007 (0.07)	-0.002 (0.06)	-0.007 (0.06)	0.004 (0.06)
age	0.001 (0.01)	0.001 (0.01)	0.003 (0.01)	-0.000 (0.01)	0.000 (0.01)	0.002 (0.01)	0.000 (0.01)	0.002 (0.01)	0.000 (0.01)
university	0.076 (0.10)	0.045 (0.09)	0.070 (0.09)	0.049 (0.09)	0.030 (0.08)	0.045 (0.08)	0.019 (0.07)	0.043 (0.08)	0.019 (0.07)
tenureposition	-0.007* (0.00)	-0.007** (0.00)	-0.008** (0.00)	-0.008** (0.00)	-0.008** (0.00)	-0.008** (0.00)	-0.008** (0.00)	-0.008** (0.00)	-0.008** (0.00)
manager	0.226** (0.08)	0.224*** (0.08)	0.139* (0.08)	0.219** (0.09)	0.163* (0.08)	0.170** (0.08)	0.184** (0.08)	0.169** (0.08)	0.189** (0.08)
MAIN EFFECTS:									
mindfulnessmean		0.072** (0.03)				0.068** (0.03)	0.049 (0.03)	0.071** (0.03)	0.047 (0.03)
politicalskillmean		0.295*** (0.04)				0.268*** (0.04)	0.257*** (0.04)	0.265*** (0.04)	0.260*** (0.04)
externalnetworkingmean			0.198*** (0.05)		0.156*** (0.05)	0.124*** (0.04)	0.076* (0.04)	0.122*** (0.04)	0.073 (0.04)
weakties_isc_				0.348** (0.16)	0.218 (0.17)		0.350** (0.15)		0.375** (0.15)
strongties_isc_				0.618*** (0.19)	0.399* (0.20)		0.402** (0.18)		0.398** (0.17)
INTERACTIONS:									
mindfulness_externalnetw								0.033 (0.03)	
politicalskill_extnetw								-0.016 (0.03)	
politicalskill_weakties									0.071 (0.20)
politicalskill_strongties									0.020 (0.17)
mindfulness_weakties									-0.184 (0.17)
mindfulness_strongties									0.033 (0.17)
_cons	3.017*** (0.30)	1.293*** (0.36)	2.476*** (0.32)	2.794*** (0.30)	2.498*** (0.32)	1.094*** (0.38)	1.227*** (0.38)	1.112*** (0.38)	1.206*** (0.40)
N	551.000	551.000	551.000	484.000	484.000	551.000	484.000	551.000	484.000
F	2.749	15.329	5.768	5.712	6.516	14.014	10.364	12.397	14.152
r2	0.036**	0.159***	0.078***	0.064***	0.088***	0.175***	0.168***	0.176***	0.170***
r2_a	0.027**	0.148***	0.068***	0.050***	0.072***	0.163***	0.151***	0.161***	0.145***
rmse	0.812	0.759	0.794	0.786	0.776	0.753	0.743	0.754	0.745
Standard errors in parentheses * p<0.10, ** p<0.05, *** p<0.01									

## 5. OLS REGRESSIONS ABOUT INDIVIDUAL AMBIDEXTERITY (MULTIPLICATIVE). COMPLETE DETAILS OF BASELINE MODELS.

Table 95: OLS regressions about individual ambidexterity (multiplicative). Complete details of baseline models.

Individual Ambidexterity _ Multiplicative									
	model_1	model_2	model_3a	model_3b	model_3c	model_4a	model_4b	model_5	model_6
CONTROLS:									
gender	-0.049 (0.33)	0.163 (0.31)	0.363 (0.31)	0.439 (0.30)	0.724** (0.28)	0.447 (0.29)	0.735** (0.30)	0.452 (0.29)	0.705** (0.29)
age	0.008 (0.03)	0.007 (0.03)	0.016 (0.03)	0.003 (0.03)	0.005 (0.03)	0.014 (0.03)	0.005 (0.03)	0.012 (0.03)	0.006 (0.03)
university	0.528 (0.42)	0.380 (0.40)	0.492 (0.38)	0.494 (0.44)	0.347 (0.40)	0.378 (0.38)	0.284 (0.40)	0.353 (0.38)	0.262 (0.40)
tenureposition	-0.012 (0.02)	-0.015 (0.02)	-0.024 (0.02)	-0.018 (0.02)	-0.021 (0.02)	-0.024 (0.02)	-0.022 (0.02)	-0.023 (0.02)	-0.021 (0.02)
manager	0.832* (0.44)	0.831* (0.42)	0.224 (0.42)	0.781* (0.45)	0.352 (0.44)	0.356 (0.40)	0.455 (0.42)	0.376 (0.41)	0.517 (0.41)
MAIN EFFECTS:									
mindfulnessmean		0.163 (0.16)				0.133 (0.17)	0.085 (0.18)	0.141 (0.17)	0.072 (0.16)
politicalskillmean		1.341*** (0.18)				1.108*** (0.19)	1.180*** (0.21)	1.095*** (0.19)	1.200*** (0.23)
externalnetworkingmean			1.381*** (0.19)		1.202*** (0.24)	1.080*** (0.19)	0.839*** (0.23)	1.048*** (0.19)	0.781*** (0.23)
weakties_isc_				1.006 (0.69)	0.004 (0.66)		0.626 (0.71)		0.695 (0.66)
strongties_isc_				2.918** (1.15)	1.227 (1.29)		1.247 (1.15)		1.262 (1.12)
INTERACTIONS:									
mindfulness_externalnetw								0.273 (0.30)	-0.007 (0.28)
politicalskill_extnetw								0.058 (0.20)	0.221 (0.25)
politicalskill_weakties									-0.520 (1.24)
politicalskill_strongties									-0.093 (0.94)
mindfulness_weakties									0.016 (1.21)
mindfulness_strongties									1.293 (1.09)
_cons	10.451*** (1.33)	3.465* (2.04)	6.671*** (1.39)	9.406*** (1.59)	7.113*** (1.54)	1.731 (2.15)	2.009 (2.35)	1.878 (2.14)	1.995 (2.38)
N	551.000	551.000	551.000	484.000	484.000	551.000	484.000	551.000	484.000
F	1.789	11.557	10.805	2.927	7.240	20.281	14.717	17.545	14.702
r2	0.018	0.108***	0.094***	0.042**	0.094***	0.152***	0.154***	0.155***	0.160***
r2_a	0.009	0.097***	0.084***	0.028**	0.079***	0.139***	0.136***	0.139***	0.131***
rmse	4.282	4.089	4.117	4.166	4.055	3.991	3.926	3.992	3.938
Standard errors in parentheses * p<0.10, ** p<0.05, *** p<.01									

## 6. OLS REGRESSIONS ABOUT INDIVIDUAL AMBIDEXTERITY (SUMMATIVE-CONTINUUM). COMPLETE DETAILS OF BASELINE MODELS.

Table 96: OLS regressions about individual ambidexterity (summative-continuum). Complete details of baseline models.

Individual Ambidexterity _ Continuum									
	model_1	model_2	model_3a	model_3b	model_3c	model_4a	model_4b	model_5	model_6
CONTROLS:									
gender	0.004 (0.09)	0.062 (0.09)	0.124 (0.09)	0.149* (0.08)	0.234*** (0.08)	0.146* (0.08)	0.233** (0.09)	0.144* (0.08)	0.230*** (0.08)
age	0.003 (0.01)	0.002 (0.01)	0.005 (0.01)	0.001 (0.01)	0.001 (0.01)	0.004 (0.01)	0.001 (0.01)	0.004 (0.01)	0.001 (0.01)
university	0.142 (0.12)	0.096 (0.12)	0.131 (0.11)	0.143 (0.13)	0.100 (0.12)	0.096 (0.11)	0.077 (0.12)	0.089 (0.12)	0.071 (0.12)
tenureposition	-0.002 (0.01)	-0.003 (0.01)	-0.006 (0.01)	-0.004 (0.01)	-0.005 (0.01)	-0.006 (0.01)	-0.005 (0.01)	-0.005 (0.01)	-0.005 (0.01)
manager	0.256** (0.13)	0.257** (0.12)	0.079 (0.12)	0.252* (0.13)	0.125 (0.13)	0.119 (0.11)	0.159 (0.12)	0.119 (0.12)	0.166 (0.12)
MAIN EFFECTS:									
mindfulnessmean		0.018 (0.05)				0.009 (0.05)	-0.010 (0.05)	0.017 (0.05)	-0.007 (0.05)
politicalskillmean		0.396*** (0.06)				0.328*** (0.06)	0.358*** (0.07)	0.319*** (0.06)	0.353*** (0.07)
externalnetworkingmean			0.403*** (0.06)		0.356*** (0.07)	0.315*** (0.06)	0.247*** (0.07)	0.307*** (0.05)	0.236*** (0.07)
weakties_isc_				0.427** (0.20)	0.131 (0.19)		0.323 (0.20)		0.353* (0.19)
strongties_isc_				0.825** (0.33)	0.325 (0.36)		0.333 (0.31)		0.324 (0.31)
INTERACTIONS:									
mindfulness_externalnetw								0.099 (0.08)	0.033 (0.09)
politicalskill_extnetw								-0.031 (0.07)	-0.003 (0.09)
politicalskill_weakties									0.016 (0.44)
politicalskill_strongties									0.091 (0.30)
mindfulness_weakties									0.064 (0.40)
mindfulness_strongties									0.330 (0.32)
_cons	6.426*** (0.38)	4.524*** (0.61)	5.322*** (0.40)	6.084*** (0.45)	5.406*** (0.44)	4.018*** (0.65)	4.047*** (0.73)	4.073*** (0.64)	4.062*** (0.73)
N	551.000	551.000	551.000	484.000	484.000	551.000	484.000	551.000	484.000
F	1.901	7.552	9.274	3.455	6.529	12.003	9.594	13.718	16.309
r <sup>2</sup>	0.018	0.107***	0.092***	0.042***	0.092***	0.150***	0.154***	0.154***	0.158***
r <sup>2</sup> _a	0.009	0.095***	0.082***	0.028***	0.077***	0.137***	0.136***	0.138***	0.129***
rmse	1.263	1.206	1.215	1.250	1.218	1.178	1.178	1.177	1.183
Standard errors in parentheses * p<0.10, ** p<0.05, *** p<0.01									

Figure 75: Output of Stata about baseline model 4a for individual ambidexterity (Multiplicative) as example of multilevel analysis with Hierarchical Linear Modelling (HLM).

```
. mixed ambidexterityym gender age university tenureposition manager mindfulnessmean politicalskillmean externalnetworkingmean|| orgid:
```

Performing EM optimization:

Performing gradient-based optimization:

Iteration 0: log likelihood = -1539.0217  
Iteration 1: log likelihood = -1538.9421  
Iteration 2: log likelihood = -1538.9421

Computing standard errors:

Mixed-effects ML regression  
Group variable: orgid

Number of obs = 551  
Number of groups = 50

Obs per group:  
min = 1  
avg = 11.0  
max = 47

Wald chi2(8) = 96.13  
Prob > chi2 = 0.0000

Log likelihood = -1538.9421

ambidexterityym	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
gender	.4446674	.3630161	1.22	0.221	-.2668311	1.156166
age	.0158601	.0252155	0.63	0.529	-.0335614	.0652816
university	.3878105	.382619	1.01	0.311	-.3621089	1.13773
tenureposition	-.0236878	.0198627	-1.19	0.233	-.0626181	.0152424
manager	.3152116	.3835427	0.82	0.411	-.4365183	1.066942
mindfulnessmean	.1349712	.1878334	0.72	0.472	-.2331755	.5031179
politicalskillmean	1.097089	.1823115	6.02	0.000	.7397651	1.454413
externalnetworkingmean	1.064098	.2021367	5.26	0.000	.6679175	1.460279
_cons	1.725653	1.824278	0.95	0.344	-1.849867	5.301172

Random-effects Parameters	Estimate	Std. Err.	[95% Conf. Interval]	
orgid: Identity				
var(_cons)	.4277337	.4025293	.0676284	2.705314
var(Residual)	15.26242	.9601861	13.49189	17.2653

LR test vs. linear model: chibar2(01) = 1.84 Prob >= chibar2 = 0.0874

Figure 76: Output of Stata about baseline model 4a for perceived innovative work behaviour as example of multilevel analysis with Hierarchical Linear Modelling (HLM).

```
. mixed innovativeworkbehaviourmean gender age university tenureposition manager mindfulnessmean politicalskillmean externalnetworkingmean|| orgid:
```

Performing EM optimization:

Performing gradient-based optimization:

Iteration 0: log likelihood = -619.37136  
Iteration 1: log likelihood = -619.32028  
Iteration 2: log likelihood = -619.32026

Computing standard errors:

Mixed-effects ML regression  
Group variable: orgid

Number of obs = 551  
Number of groups = 50

Obs per group:  
min = 1  
avg = 11.0  
max = 47

Wald chi2(8) = 112.95  
Prob > chi2 = 0.0000

Log likelihood = -619.32026

innovativeworkbehaviourmean	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
gender	-.0064118	.0684028	-0.09	0.925	-.1404788	.1276552
age	.0027153	.0047514	0.57	0.568	-.0065973	.012028
university	.0532263	.0721026	0.74	0.460	-.0880922	.1945448
tenureposition	-.0086174	.0037428	-2.30	0.021	-.0159531	-.0012817
manager	.1662127	.0722736	2.30	0.021	.0245589	.3078664
mindfulnessmean	.0583127	.0353964	1.65	0.099	-.0110628	.1276883
politicalskillmean	.2663923	.0343548	7.75	0.000	.1990581	.3337264
externalnetworkingmean	.1172065	.0380887	3.08	0.002	.042554	.191859
_cons	1.132754	.3437756	3.30	0.001	.4589659	1.806541

Random-effects Parameters	Estimate	Std. Err.	[95% Conf. Interval]	
orgid: Identity				
var(_cons)	.0154418	.0122036	.003281	.0726771
var(Residual)	.5417566	.0336867	.4795965	.6119732

LR test vs. linear model: chibar2(01) = 3.02 Prob >= chibar2 = 0.0410

## 7. STRUCTURAL EQUATIONAL MODELLING: GRAPHICAL MODELS FROM THE BUILDER OF STATA.

Figure 77: complete model of microfoundation of innovative work behaviour with SEM (484 observations). Estimations and original graphical output from SEM builder of Stata.

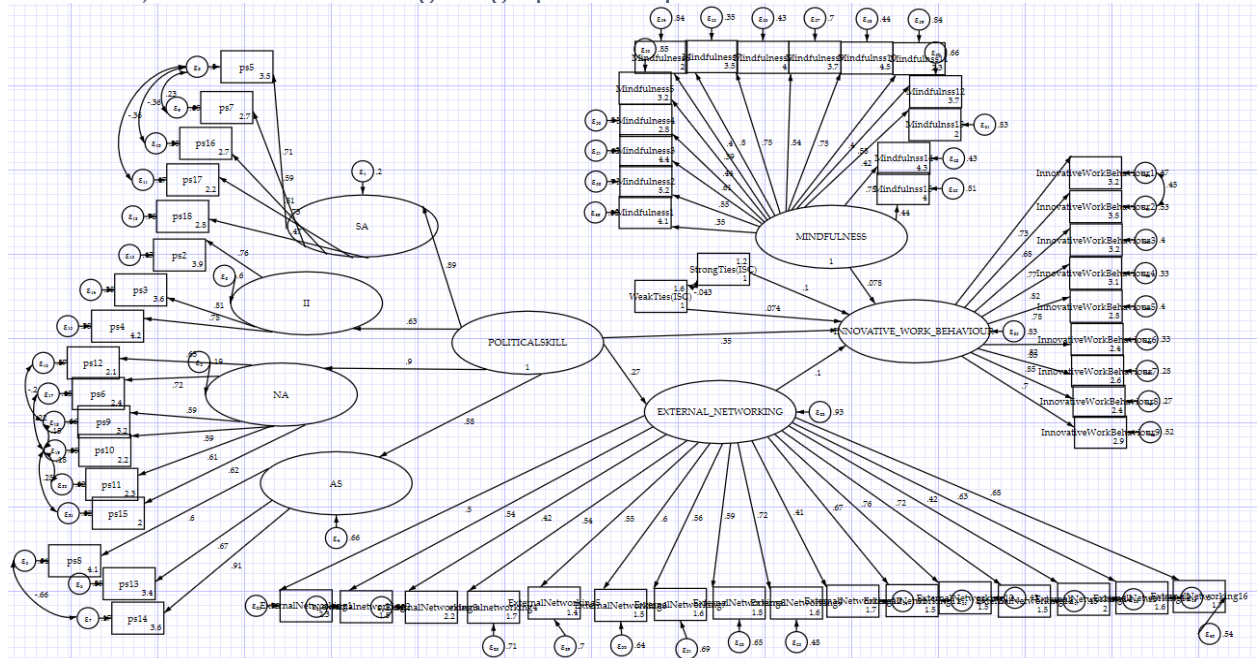


Figure 78: model of microfoundation of innovative work behaviour with SEM (no internal social capital; 551 observations). Estimations and original graphical output from SEM builder of Stata.

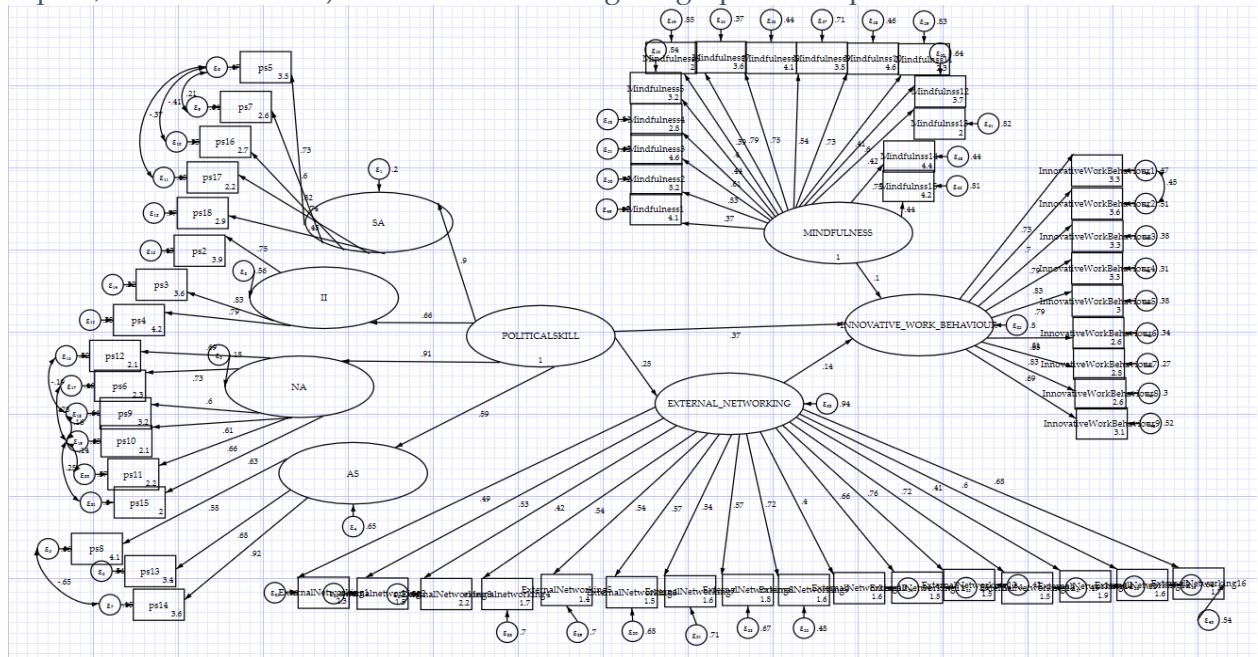


Figure 79: complete model of microfoundation of individual ambidexterity with SEM (484 observations). Estimations and original graphical output from SEM builder of Stata.

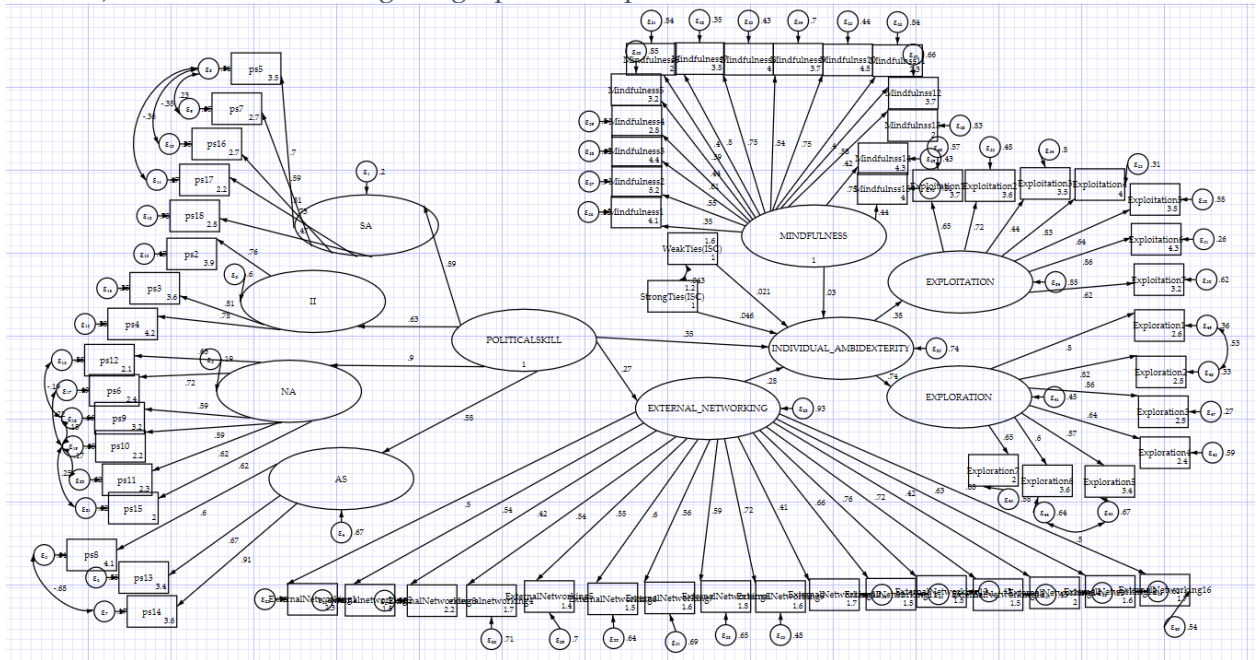


Figure 80: model of microfoundation of individual ambidexterity with SEM (no internal social capital; 551 observations). Estimations and original graphical output from SEM builder of Stata.

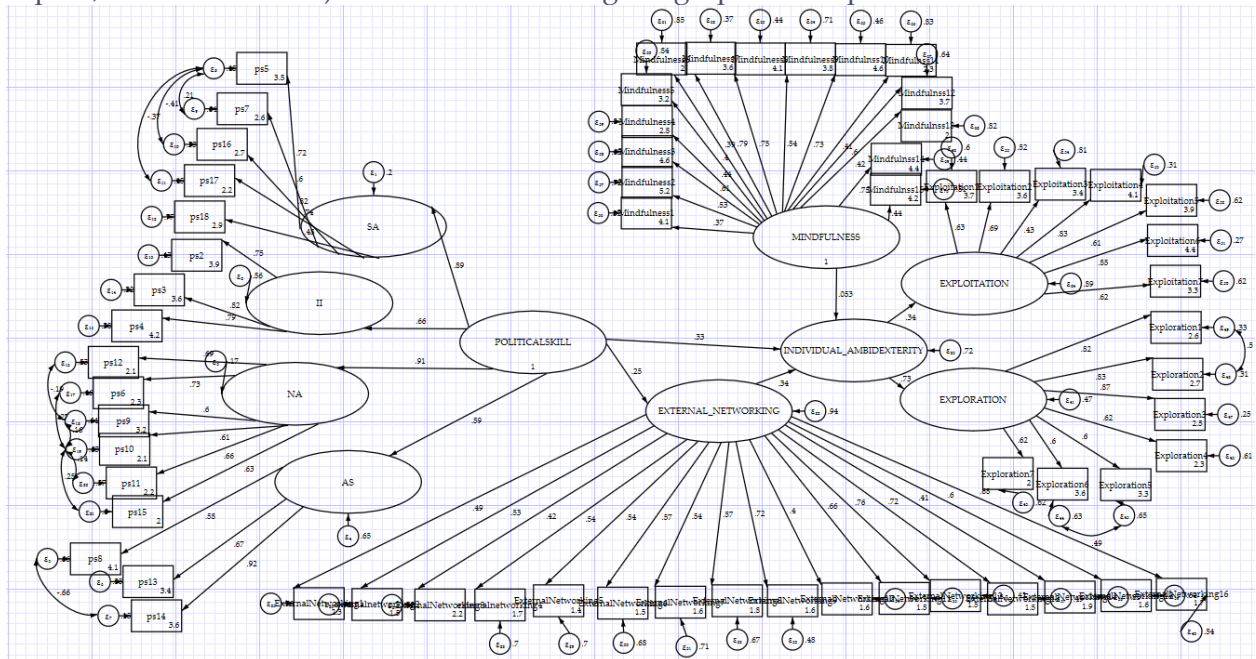
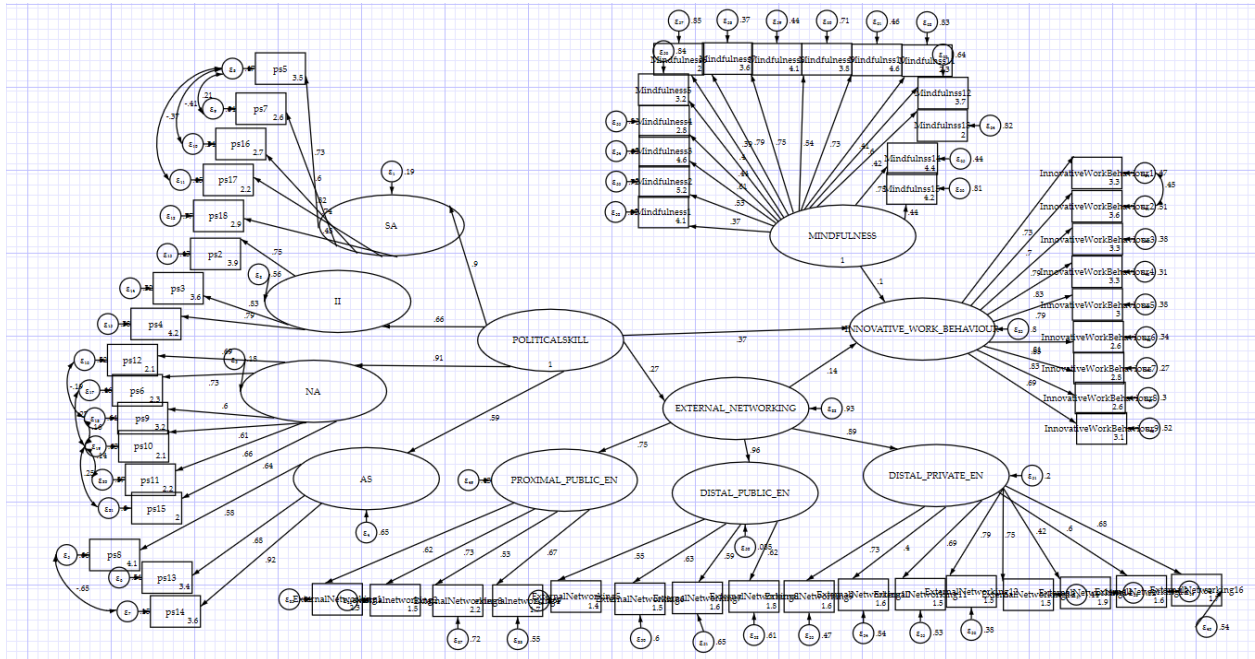




Table 97: model of microfoundation of innovative behaviour with SEM (no internal social capital; 551 observations; external networking measured as second-order latent variable and 3 sub-dimensions). Estimations and original graphical output from SEM builder of Stata. Below the details about estimations.



	Standardized	Satorra-Bentler					
		Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
Structural							
SOCIALASTUTENESS	POLITICALSKILL	.8978485	.0194459	46.17	0.000	.8597353	.9359617
INTERPERSONALINFLUENCE	POLITICALSKILL	.6600943	.0305777	21.59	0.000	.6001631	.7200255
NETWORKINGABILITY	POLITICALSKILL	.9057323	.0171896	52.69	0.000	.8720412	.9394233
APPARENTSINCERITY	POLITICALSKILL	.5911568	.0385082	15.35	0.000	.5156821	.6666315
EXTERNAL_NETWORKING	POLITICALSKILL	.266855	.0473265	5.64	0.000	.1740967	.3596133
INNOVATIVE_WORK_BEHAVIOUR	EXTERNAL_NETWORKING	.1434913	.0406187	3.53	0.000	.0638802	.2231024
	POLITICALSKILL	.3689686	.0408391	9.03	0.000	.2889255	.4490116
	MINDFULNESS	.1004535	.0389717	2.58	0.010	.0240705	.1768366
PROXIMAL_PUBLIC_EN	EXTERNAL_NETWORKING	.7521101	.0333283	22.57	0.000	.6867879	.8174323
DISTAL_PUBLIC_EN	EXTERNAL_NETWORKING	.9567512	.0297073	32.21	0.000	.898526	1.014976
DISTAL_PRIVATE_EN	EXTERNAL_NETWORKING	.8942045	.0271072	32.99	0.000	.8410754	.9473335

Figure 81: mediation test of external networking between political skill and innovative behaviour with SEM and bootstrapping. Output of estimations and original paths from SEM builder of Stata.

Structural equation model  
Estimation method = ml  
Log likelihood = -35515.457

Number of obs = 551  
Replications = 868

(Replications based on 50 clusters in orgid)

	Standardized	Observed Coef.	Bootstrap Std. Err.	z	P> z	Normal-based [95% Conf. Interval]	
Structural	SOCIALASTUTENESS						
	POLITICALSKILL	.8964962	.024524	36.56	0.000	.84843	.9445624
	INTERPERSONALINFLUENCE						
	POLITICALSKILL	.6623346	.0424869	15.59	0.000	.5790618	.7456073
	NETWORKINGABILITY						
	POLITICALSKILL	.9044597	.0241807	37.40	0.000	.8570665	.951853
Structural	APPARENTSINCERITY						
	POLITICALSKILL	.5915094	.0373595	15.83	0.000	.5182861	.6647328
	EXTERNALNETWORKING						
	POLITICALSKILL	.2467892	.0498994	4.95	0.000	.1489882	.3445902
	INNOVATION						
	EXTERNALNETWORKING POLITICALSKILL	.1471588 .3733887	.0478815 .045483	3.07 8.21	0.002 0.000	.0533127 .2842437	.241005 .4625337
Measurement	politicalskill15						
	SOCIALASTUTENESS _cons	.7282307 3.542172	.0497744 .1003727	14.63 35.29	0.000 0.000	.6306747 3.345445	.8257866 3.738899
	politicalskill17						
	SOCIALASTUTENESS _cons	.59953 2.622043	.0407419 .0771918	14.72 33.97	0.000 0.000	.5196774 2.47075	.6793826 2.773336
	politicalskill16						
	SOCIALASTUTENESS _cons	.8160629 2.664556	.0263149 .0635931	31.01 41.90	0.000 0.000	.7644867 2.539916	.8676391 2.789196
	politicalskill17						
	SOCIALASTUTENESS _cons	.7395619 2.162868	.0286955 .0567705	25.77 38.10	0.000 0.000	.6833198 2.0516	.795804 2.274136
	politicalskill18						
	SOCIALASTUTENESS _cons	.4825456 2.903967	.0326684 .1098203	14.77 26.44	0.000 0.000	.4185167 2.688723	.5465746 3.119211
	politicalskill12						
	INTERPERSONALINFLUENCE _cons	.7547125 3.910086	.0307226 .1427434	24.57 27.39	0.000 0.000	.6944973 3.630314	.8149277 4.189858
	politicalskill13						
	INTERPERSONALINFLUENCE _cons	.8257767 3.624123	.0288765 .1251622	28.60 28.96	0.000 0.000	.7691798 3.378809	.8823736 3.869436
	politicalskill14						
	INTERPERSONALINFLUENCE _cons	.7852507 4.177968	.0190838 .1950725	41.15 21.42	0.000 0.000	.7478471 3.795633	.8226542 4.560304
	politicalskill112						
	NETWORKINGABILITY _cons	.6902625 2.082667	.0292672 .0532716	23.58 39.10	0.000 0.000	.6329 1.978256	.7476251 2.187077
	politicalskill16						
	NETWORKINGABILITY _cons	.734646 2.33143	.0342478 .0751667	21.45 31.02	0.000 0.000	.6675216 2.184106	.8017704 2.478754
	politicalskill19						
	NETWORKINGABILITY _cons	.5986662 3.177718	.0367518 .0987901	16.29 32.17	0.000 0.000	.5266339 2.984093	.6706985 3.371343
	politicalskill110						
	NETWORKINGABILITY _cons	.6109448 2.136258	.0315166 .0626002	19.38 34.13	0.000 0.000	.5491733 2.013564	.6727163 2.258952
	politicalskill111						
	NETWORKINGABILITY _cons	.6560652 2.220281	.0324144 .0663549	20.24 33.46	0.000 0.000	.5925342 2.090227	.7195961 2.350334
	politicalskill115						
	NETWORKINGABILITY _cons	.6344309 2.015887	.0358679 .0615826	17.69 32.73	0.000 0.000	.5641312 1.895187	.7047306 2.136587
	politicalskill18						
	APPARENTSINCERITY _cons	.579604 4.141143	.0643152 .1990543	9.01 20.80	0.000 0.000	.4535485 3.751004	.7056595 4.531282
	politicalskill113						
	APPARENTSINCERITY _cons	.6752621 3.404347	.0404147 .1693254	16.71 20.11	0.000 0.000	.5960508 3.072476	.7544735 3.736219
	politicalskill114						
	APPARENTSINCERITY _cons	.9221962 3.627837	.0310899 .1605803	29.66 22.59	0.000 0.000	.8612611 3.313105	.9831314 3.942568



politicians_en	EXTERNALNETWORKING _cons	.4852146 2.338092	.0313204 .1436231	15.49 16.28	0.000 0.000	.4238278 2.056596	.5466014 2.619588
externalnetworking2	EXTERNALNETWORKING _cons	.5276301 1.514804	.0436114 .0423862	12.10 35.74	0.000 0.000	.4421534 1.431729	.6131069 1.597879
externalnetworking3	EXTERNALNETWORKING _cons	.4224794 2.191506	.0532741 .0636838	7.93 34.41	0.000 0.000	.318064 2.066688	.5268948 2.316324
externalnetworking4	EXTERNALNETWORKING _cons	.5435499 1.687431	.0419997 .0395912	12.94 42.62	0.000 0.000	.461232 1.609834	.6258679 1.765028
externalnetworking5	EXTERNALNETWORKING _cons	.5430657 1.41218	.0398917 .0292248	13.61 48.32	0.000 0.000	.4648793 1.3549	.621252 1.469459
externalnetworking6	EXTERNALNETWORKING _cons	.5688338 1.513262	.0522893 .0444437	10.88 34.05	0.000 0.000	.4663486 1.426154	.671319 1.60037
externalnetworking7	EXTERNALNETWORKING _cons	.539162 1.645212	.0428568 .0423125	12.58 38.88	0.000 0.000	.4551642 1.562282	.6231598 1.728143
externalnetworking8	EXTERNALNETWORKING _cons	.5711945 1.795199	.0406699 .0569103	14.04 31.54	0.000 0.000	.491483 1.683657	.650906 1.906741
externalnetworking9	EXTERNALNETWORKING _cons	.7186652 1.562513	.0235372 .0339528	30.53 46.02	0.000 0.000	.6725332 1.495967	.7647971 1.629059
externalnetworking10	EXTERNALNETWORKING _cons	.3978355 1.608813	.0446885 .056723	8.90 28.36	0.000 0.000	.3102476 1.497637	.4854235 1.719988
externalnetworking11	EXTERNALNETWORKING _cons	.6626831 1.517832	.038592 .0397064	17.17 38.23	0.000 0.000	.5870441 1.440009	.738322 1.595655
externalnetworking12	EXTERNALNETWORKING _cons	.7615994 1.476138	.0205053 .0340203	37.14 43.39	0.000 0.000	.7214098 1.40946	.8017891 1.542817
externalnetworking13	EXTERNALNETWORKING _cons	.7168379 1.529523	.0291241 .0402191	24.61 38.03	0.000 0.000	.6597557 1.450695	.77392 1.608351
externalnetworking14	EXTERNALNETWORKING _cons	.4096001 1.949288	.0471304 .0450334	8.69 43.29	0.000 0.000	.3172262 1.861024	.5019741 2.037551
externalnetworking15	EXTERNALNETWORKING _cons	.6001323 1.602108	.0390693 .0459458	15.36 34.87	0.000 0.000	.523558 1.512056	.6767067 1.69216
externalnetworking16	EXTERNALNETWORKING _cons	.6799622 1.677436	.026598 .0372539	25.56 45.03	0.000 0.000	.6278312 1.60442	.7320933 1.750453
innovativeworkbehaviour1	INNOVATION _cons	.7267446 3.346058	.0270267 .0949406	26.89 35.24	0.000 0.000	.6737732 3.159978	.7797161 3.532138
innovativeworkbehaviour2	INNOVATION _cons	.6985082 3.57119	.0330822 .1325244	21.11 26.95	0.000 0.000	.6336682 3.311447	.7633481 3.830933
innovativeworkbehaviour3	INNOVATION _cons	.7861813 3.284499	.0221695 .1067868	35.46 30.76	0.000 0.000	.7427298 3.075201	.8296328 3.493797
innovativeworkbehaviour4	INNOVATION _cons	.8324442 3.268129	.0183866 .0874381	45.27 37.38	0.000 0.000	.7964072 3.096754	.8684812 3.439505
innovativeworkbehaviour5	INNOVATION _cons	.7880835 2.954074	.0238567 .086146	33.03 34.29	0.000 0.000	.7413252 2.785231	.8348417 3.122917
innovativeworkbehaviour6	INNOVATION _cons	.8145555 2.56781	.021065 .0752896	38.67 34.11	0.000 0.000	.7732688 2.420245	.8558422 2.715375
innovativeworkbehaviour7	INNOVATION _cons	.853511 2.764054	.0144864 .0854439	58.92 32.35	0.000 0.000	.8251182 2.596587	.8819038 2.931521
innovativeworkbehaviour8	INNOVATION _cons	.8353271 2.599924	.0169801 .0689908	49.19 37.69	0.000 0.000	.8020468 2.464705	.8686075 2.735144
innovativeworkbehaviour9	INNOVATION _cons	.6953038 3.049647	.0328436 .1255743	21.17 24.29	0.000 0.000	.6309316 2.803525	.759676 3.295768

TOTAL

var(e.politicalskill15)	.4696801	.0724944	.3470727	.6356
var(e.politicalskill17)	.6405637	.048852	.551628	.743838
var(e.politicalskill16)	.3340413	.0429492	.2596316	.4297767
var(e.politicalskill17)	.4530482	.0424442	.3770499	.5443646
var(e.politicalskill18)	.7671497	.031528	.7077792	.8315004
var(e.politicalskill12)	.430409	.0463735	.3484741	.5316089
var(e.politicalskill13)	.3180928	.0476911	.2371017	.4267495
var(e.politicalskill14)	.3833814	.0299711	.328918	.4468629
var(e.politicalskill12)	.5235376	.0404041	.4500454	.6090311
var(e.politicalskill16)	.4602952	.05032	.37152	.5702834
var(e.politicalskill19)	.6415988	.0440042	.5608978	.733911
var(e.politicalskill10)	.6267464	.0385099	.5556363	.7069573
var(e.politicalskill11)	.5695785	.0425319	.4920307	.6593484
var(e.politicalskill15)	.5974974	.0455113	.5146359	.6937005
var(e.politicalskill18)	.6640592	.0745547	.5328947	.8275081
var(e.politicalskill13)	.5440211	.054581	.4469054	.6622407
var(e.politicalskill14)	.1495541	.057342	.0705392	.3170779
var(e.politicians_en)	.7645668	.0303942	.7072569	.8265205
var(e.externalnetworking2)	.7216064	.0460214	.6368159	.8176866
var(e.externalnetworking3)	.8215112	.0450144	.7378569	.9146497
var(e.externalnetworking4)	.7045535	.0456579	.6205155	.7999728
var(e.externalnetworking5)	.7050797	.0433276	.6250738	.7953259
var(e.externalnetworking6)	.6764281	.0594879	.5693293	.8036738
var(e.externalnetworking7)	.7093043	.0462135	.6242723	.8059186
var(e.externalnetworking8)	.6737369	.0464608	.5885611	.7712392
var(e.externalnetworking9)	.4835204	.0338307	.421559	.5545889
var(e.externalnetworking10)	.8417269	.0355574	.7748427	.9143844
var(e.externalnetworking11)	.5608512	.0511485	.4690506	.6706186
var(e.externalnetworking12)	.4199663	.0312337	.363002	.4858697
var(e.externalnetworking13)	.4861435	.0417545	.4108236	.5752724
var(e.externalnetworking14)	.8322277	.0386093	.7598934	.9114476
var(e.externalnetworking15)	.6398412	.0468935	.5542277	.7386796
var(e.externalnetworking16)	.5376513	.0361712	.4712322	.6134321
var(e.innovativeworkbehaviour1)	.4718422	.0392831	.4008024	.5554735
var(e.innovativeworkbehaviour2)	.5120864	.0462164	.4290632	.6111744
var(e.innovativeworkbehaviour3)	.381919	.0348586	.3193598	.4567328
var(e.innovativeworkbehaviour4)	.3070367	.0306116	.2525372	.3732975
var(e.innovativeworkbehaviour5)	.3789244	.0376021	.3119497	.4602784
var(e.innovativeworkbehaviour6)	.3364994	.0343173	.2755345	.4109533
var(e.innovativeworkbehaviour7)	.271519	.0247286	.2271314	.3245811
var(e.innovativeworkbehaviour8)	.3022286	.0283678	.2514432	.3632713
var(e.innovativeworkbehaviour9)	.5165526	.0456725	.4343633	.6142937
var(e.SOCIALASTUTENESS)	.1962946	.0439714	.1265415	.3044973
var(e.INTERPERSONALINFLUENCE)	.5613129	.0562811	.4611665	.683207
var(e.NETWORKINGABILITY)	.1819526	.0437409	.1135879	.2914638
var(e.APPARENTSINCERITY)	.6501166	.044197	.5690151	.7427775
var(e.EXTERNALNETWORKING)	.9390951	.0246293	.8920424	.9886298
var(e.INNOVATION)	.8118043	.0390779	.7387151	.8921249
var(POLITICALSKILL)	1	.	.	.
cov(e.politicalskill15,e.politicalskill17)	.2090099	.0707075	2.96	0.003
cov(e.politicalskill15,e.politicalskill16)	-.4159402	.1115419	-3.73	0.000
cov(e.politicalskill15,e.politicalskill17)	-.378246	.0925413	-4.09	0.000
cov(e.politicalskill12,e.politicalskill19)	-.1918479	.043981	-4.36	0.000
cov(e.politicalskill16,e.politicalskill10)	.2747813	.0527913	5.21	0.000
cov(e.politicalskill19,e.politicalskill10)	.1630471	.049792	3.27	0.001
cov(e.politicalskill10,e.politicalskill11)	.1419974	.0593627	2.39	0.017
cov(e.politicalskill10,e.politicalskill15)	.2515266	.0351962	7.15	0.000
cov(e.politicalskill18,e.politicalskill14)	-.6549975	.2851533	-2.30	0.022
cov(e.innovativeworkbehaviour1,e.innovativeworkbehaviour2)	.4469568	.0576523	7.75	0.000

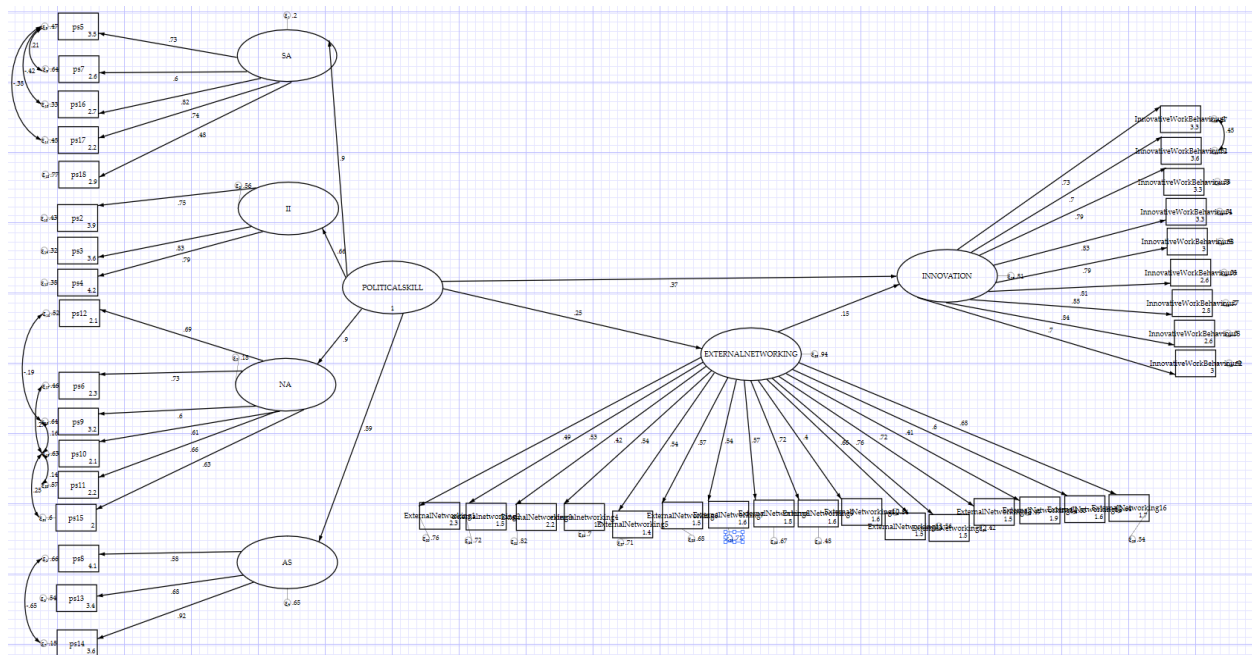


Table 98: mediation test of external networking between political skill and innovative behaviour with SEM and bootstrapping. Output of estimations and original paths from SEM builder of Stata.

Structural equation model  
Estimation method = ml  
Log likelihood = -39660.293

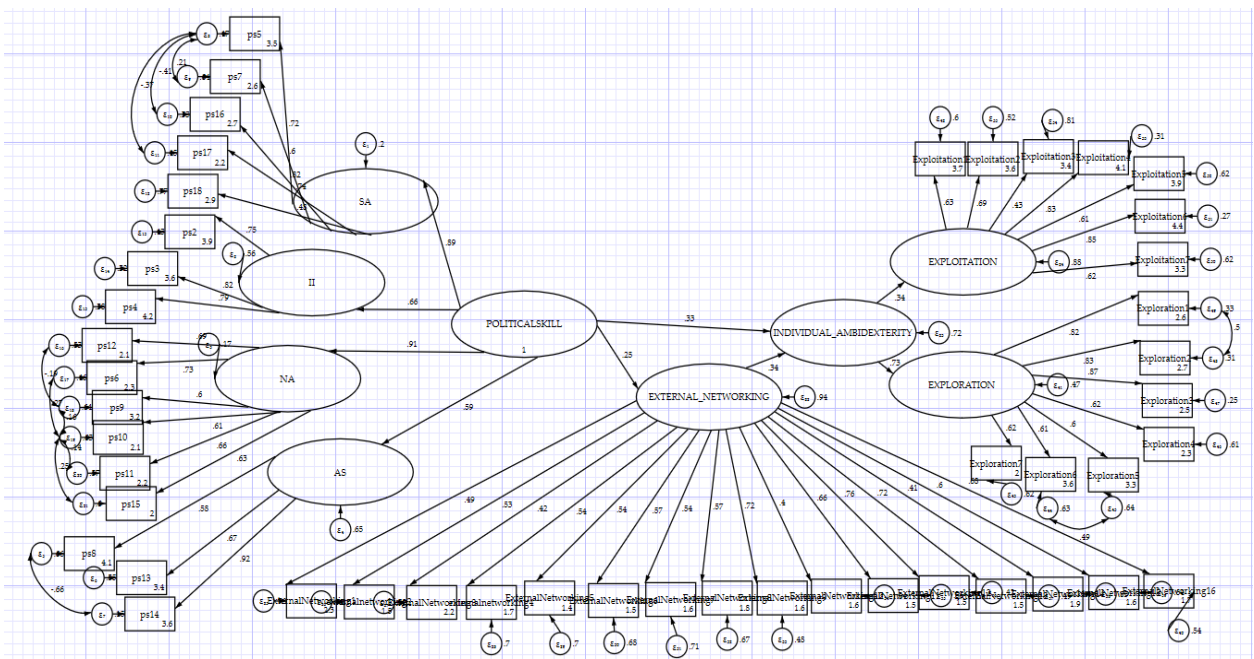
Number of obs = 551  
Replications = 690

(Replications based on 50 clusters in orgid)						
	Standardized	Observed Coef.	Bootstrap Std. Err.	z	P> z	Normal-based [95% Conf. Interval]
Structural	SOCIALASTUTENESS					
	POLITICALSKILL	.8930071	.0255646	34.93	0.000	.8429015 .9431127
	INTERPERSONALINFLUENCE					
	POLITICALSKILL	.6636977	.0435033	15.26	0.000	.5784328 .7489626
	NETWORKINGABILITY					
	POLITICALSKILL	.9086254	.0242395	37.49	0.000	.8611169 .9561339
	APPARENTSINCERITY					
	POLITICALSKILL	.5909892	.037957	15.57	0.000	.5165948 .6653835
	EXTERNAL_NETWORKING					
	POLITICALSKILL	.2474806	.0473604	5.23	0.000	.154656 .3403052
Measurement	INDIVIDUAL_AMBIDEXTERITY					
	EXTERNAL_NETWORKING	.3400771	.0801704	4.24	0.000	.1829461 .4972081
	POLITICALSKILL	.332129	.1104134	3.01	0.003	.1157227 .5485353
	EXPLOITATION					
	INDIVIDUAL_AMBIDEXTERITY	.3406658	.0758131	4.49	0.000	.1920749 .4892567
	EXPLORATION					
	INDIVIDUAL_AMBIDEXTERITY	.7277666	.1321615	5.51	0.000	.4687349 .9867983
	politicalskill15					
	SOCIALASTUTENESS	.7246175	.0499612	14.50	0.000	.6266954 .8225396
	_cons	3.541654	.0964151	36.73	0.000	3.352684 3.730624
	politicalskill17					
	SOCIALASTUTENESS	.5987116	.0393664	15.21	0.000	.5215548 .6758684
	_cons	2.622043	.0751092	34.91	0.000	2.474832 2.769254
	politicalskill116					
	SOCIALASTUTENESS	.816725	.0257604	31.70	0.000	.7662355 .8672145
	_cons	2.664556	.0632443	42.13	0.000	2.540599 2.788512
	politicalskill117					
	SOCIALASTUTENESS	.7391191	.027835	26.55	0.000	.6845634 .7936747
	_cons	2.162868	.0573706	37.70	0.000	2.050424 2.275312
	politicalskill118					
	SOCIALASTUTENESS	.4830162	.0312139	15.47	0.000	.4218382 .5441943
	_cons	2.903967	.1112897	26.09	0.000	2.685843 3.122091
	politicalskill12					
	INTERPERSONALINFLUENCE	.7548308	.0317733	23.76	0.000	.6925563 .8171054
	_cons	3.910086	.1423629	27.47	0.000	3.63106 4.189112
	politicalskill13					
	INTERPERSONALINFLUENCE	.824459	.0284144	29.02	0.000	.7687679 .8801501
	_cons	3.624123	.12453	29.10	0.000	3.380048 3.868197
	politicalskill14					
	INTERPERSONALINFLUENCE	.7866126	.0189964	41.41	0.000	.7493802 .8238449
	_cons	4.177968	.1956108	21.36	0.000	3.794578 4.561358
	politicalskill112					
	NETWORKINGABILITY	.6888523	.0280706	24.54	0.000	.6338349 .7438697
	_cons	2.082667	.0546661	38.10	0.000	1.975523 2.18981
	politicalskill16					
	NETWORKINGABILITY	.733388	.0343319	21.36	0.000	.6660988 .8006773
	_cons	2.33143	.0744291	31.32	0.000	2.185552 2.477308
	politicalskill19					
	NETWORKINGABILITY	.6012424	.0364984	16.47	0.000	.5297069 .6727779
	_cons	3.177805	.0971776	32.70	0.000	2.98734 3.368269
	politicalskill110					
	NETWORKINGABILITY	.611648	.0306313	19.97	0.000	.5516117 .6716843
	_cons	2.13612	.0631372	33.83	0.000	2.012373 2.259866
	politicalskill111					
	NETWORKINGABILITY	.6578698	.0316398	20.79	0.000	.5958569 .7198826
	_cons	2.220281	.0683541	32.48	0.000	2.086309 2.354252
	politicalskill115					
	NETWORKINGABILITY	.6336621	.0339474	18.67	0.000	.5671264 .7001979
	_cons	2.015887	.0638212	31.59	0.000	1.8908 2.140974
	politicalskill18					
	APPARENTSINCERITY	.5798781	.0650618	8.91	0.000	.4523593 .7073969
	_cons	4.141143	.1985282	20.86	0.000	3.752035 4.530251
	politicalskill113					
	APPARENTSINCERITY	.674407	.0409367	16.47	0.000	.5941724 .7546415
	_cons	3.404347	.1721166	19.78	0.000	3.067005 3.74169
	politicalskill114					
	APPARENTSINCERITY	.9235712	.0307396	30.05	0.000	.8633228 .9838197
	_cons	3.627837	.1649199	22.00	0.000	3.3046 3.951074

politicians_en	EXTERNAL_NETWORKING _cons	.4877126 2.338092	.032195 .1383164	15.15 16.90	0.000 0.000	.4246116 2.066997	.5508137 2.609187
externalnetworking2	EXTERNAL_NETWORKING _cons	.5296381 1.514804	.0429438 .0415294	12.33 36.48	0.000 0.000	.4454698 1.433408	.6138063 1.5962
externalnetworking3	EXTERNAL_NETWORKING _cons	.4247086 2.191506	.0527894 .063941	8.05 34.27	0.000 0.000	.3212433 2.066184	.5281738 2.316828
externalnetworking4	EXTERNAL_NETWORKING _cons	.5439438 1.687431	.040535 .038437	13.42 43.90	0.000 0.000	.4644967 1.612096	.6233909 1.762766
externalnetworking5	EXTERNAL_NETWORKING _cons	.5434545 1.41218	.039661 .029037	13.70 48.63	0.000 0.000	.4657205 1.355268	.6211886 1.469091
externalnetworking6	EXTERNAL_NETWORKING _cons	.5676962 1.513262	.0520757 .0431973	10.90 35.03	0.000 0.000	.4656298 1.428596	.6697626 1.597927
externalnetworking7	EXTERNAL_NETWORKING _cons	.5367083 1.645212	.0447177 .0424848	12.00 38.72	0.000 0.000	.4490632 1.561944	.6243533 1.728481
externalnetworking8	EXTERNAL_NETWORKING _cons	.5718455 1.795199	.0410929 .0555671	13.92 32.31	0.000 0.000	.4913049 1.686289	.6523861 1.904108
externalnetworking9	EXTERNAL_NETWORKING _cons	.7184209 1.562513	.0229117 .0332366	31.36 47.01	0.000 0.000	.6735148 1.497371	.7633271 1.627655
externalnetworking10	EXTERNAL_NETWORKING _cons	.3985218 1.608813	.0436309 .0570623	9.13 28.19	0.000 0.000	.3130069 1.496972	.4840367 1.720653
externalnetworking11	EXTERNAL_NETWORKING _cons	.661087 1.517832	.036054 .038728	18.34 39.19	0.000 0.000	.5904224 1.441926	.7317515 1.593737
externalnetworking12	EXTERNAL_NETWORKING _cons	.7621 1.476138	.0203126 .0339847	37.52 43.44	0.000 0.000	.7222881 1.409529	.801912 1.542747
externalnetworking13	EXTERNAL_NETWORKING _cons	.7174181 1.529523	.0290852 .0389278	24.67 39.29	0.000 0.000	.660412 1.453225	.7744241 1.60582
externalnetworking14	EXTERNAL_NETWORKING _cons	.4094874 1.949288	.0453447 .045481	9.03 42.86	0.000 0.000	.3206135 1.860146	.4983614 2.038429
externalnetworking15	EXTERNAL_NETWORKING _cons	.5988263 1.602108	.0397555 .0463975	15.06 34.53	0.000 0.000	.520907 1.511171	.6767457 1.693045
externalnetworking16	EXTERNAL_NETWORKING _cons	.6789483 1.677436	.0264857 .0371809	25.63 45.12	0.000 0.000	.6270372 1.604563	.7308594 1.750309
exploitation1	EXPLOITATION _cons	.6316436 3.733821	.0249138 .1278462	25.35 29.21	0.000 0.000	.5828134 3.483247	.6804739 3.984395
exploitation7	EXPLOITATION _cons	.6165586 3.269343	.037763 .1305127	16.33 25.05	0.000 0.000	.5425445 3.013543	.6905728 3.525143
exploitation6	EXPLOITATION _cons	.8549284 4.429288	.017133 .1489914	49.90 29.73	0.000 0.000	.8213484 4.13727	.8885084 4.721305
exploitation5	EXPLOITATION _cons	.6132007 3.8819	.0338023 .1449416	18.14 26.78	0.000 0.000	.5469493 3.597819	.679452 4.16598
exploitation4	EXPLOITATION _cons	.8296187 4.141478	.0263119 .1405863	31.53 29.46	0.000 0.000	.7780483 3.865934	.881189 4.417022
exploitation3	EXPLOITATION _cons	.4304861 3.386908	.0505033 .1064567	8.52 31.81	0.000 0.000	.3315014 3.178257	.5294707 3.595559
exploitation2	EXPLOITATION _cons	.6941218 3.625683	.0419503 .1177207	16.55 30.80	0.000 0.000	.6119008 3.394955	.7763428 3.856411
exploration7	EXPLORATION _cons	.6189761 1.996493	.040228 .0762278	15.39 26.19	0.000 0.000	.5401307 1.847089	.6978216 2.145897
exploration6	EXPLORATION _cons	.6051139 3.56837	.0401868 .1391732	15.06 25.64	0.000 0.000	.5263492 3.295595	.6838786 3.841144
exploration5	EXPLORATION _cons	.5962791 3.26639	.0454289 .1622178	13.13 20.14	0.000 0.000	.5072401 2.948449	.6853182 3.584331
exploration4	EXPLORATION _cons	.6214477 2.258163	.0518752 .0961362	11.98 23.49	0.000 0.000	.5197742 2.06974	.7231213 2.446587
exploration3	EXPLORATION _cons	.8680266 2.532682	.0209444 .1332793	41.44 19.00	0.000 0.000	.8269764 2.271459	.9090768 2.793904
exploration2	EXPLORATION _cons	.830201 2.704021	.027493 .1442701	30.20 18.74	0.000 0.000	.7763158 2.421257	.8840861 2.986785
exploration1	EXPLORATION _cons	.8174586 2.551446	.0302256 .1350159	27.05 18.90	0.000 0.000	.7582175 2.28682	.8766997 2.816072



var(e.politicalskill15)	.4749295	.0724055	.3522565	.6403232
var(e.politicalskill17)	.6415444	.0471383	.5554994	.7409175
var(e.politicalskill16)	.3329603	.0420784	.2599086	.4265445
var(e.politicalskill17)	.453703	.0411468	.3798178	.5419609
var(e.politicalskill18)	.7666953	.0301536	.7098157	.8281328
var(e.politicalskill12)	.4302304	.0479669	.3457798	.5353067
var(e.politicalskill13)	.3202674	.046853	.2404294	.4266166
var(e.politicalskill14)	.3812407	.0298857	.3269438	.4445549
var(e.politicalskill12)	.5254825	.038673	.4548978	.6070195
var(e.politicalskill16)	.462142	.0503572	.3732712	.5721718
var(e.politicalskill19)	.6385076	.0438887	.5580299	.7305915
var(e.politicalskill10)	.6258867	.0374712	.5565897	.7038113
var(e.politicalskill11)	.5672074	.0416297	.4912116	.6549605
var(e.politicalskill15)	.5984723	.0430224	.5198208	.6890241
var(e.politicalskill18)	.6637414	.0754558	.5311683	.8294031
var(e.politicalskill13)	.5451752	.0552161	.4470183	.6648856
var(e.politicalskill14)	.1470162	.0567804	.0689629	.3134114
var(e.politicians_en)	.7621364	.0314038	.7030059	.8262404
var(e.externalnetworking2)	.7194835	.0454893	.6356289	.8144005
var(e.externalnetworking3)	.8196226	.0448402	.7362853	.9123926
var(e.externalnetworking4)	.7041251	.0440975	.6227896	.796083
var(e.externalnetworking5)	.7046572	.0431079	.6250361	.7944209
var(e.externalnetworking6)	.677721	.0591263	.571202	.804184
var(e.externalnetworking7)	.7119442	.0480007	.6238157	.812523
var(e.externalnetworking8)	.6729927	.0469976	.586905	.7717078
var(e.externalnetworking9)	.4838714	.0329205	.4234653	.5528942
var(e.externalnetworking10)	.8411804	.0347757	.7757095	.912177
var(e.externalnetworking11)	.562964	.0476697	.4768745	.6645951
var(e.externalnetworking12)	.4192035	.0309604	.3627097	.4844966
var(e.externalnetworking13)	.4853113	.0417326	.4100383	.5744026
var(e.externalnetworking14)	.8323201	.0371362	.7626263	.9083829
var(e.externalnetworking15)	.641407	.0476133	.5545578	.7418577
var(e.externalnetworking16)	.5390292	.0359649	.4729539	.6143358
var(e.exploitation1)	.6010263	.0314733	.5423997	.6659897
var(e.exploitation7)	.6198554	.0465662	.5349886	.718185
var(e.exploitation6)	.2690974	.0292949	.2173926	.3330998
var(e.exploitation5)	.6239849	.0414552	.5478018	.710763
var(e.exploitation4)	.3117329	.0436577	.2369044	.4101965
var(e.exploitation3)	.8146818	.043482	.7337648	.9045219
var(e.exploitation2)	.5181949	.0582372	.4157489	.6458849
var(e.exploration7)	.6168685	.0498003	.5265921	.7226215
var(e.exploration6)	.6338372	.0486352	.5453356	.7367015
var(e.exploration5)	.6444512	.0541766	.5465535	.7598841
var(e.exploration4)	.6138027	.0644755	.499593	.7541214
var(e.exploration3)	.2465299	.0363606	.1846402	.3291643
var(e.exploration2)	.3107664	.0456493	.2330229	.4144474
var(e.exploration1)	.3317614	.0494164	.2477639	.4442358
var(e.SOCIALASTUTENESS)	.2025383	.0456587	.1302023	.3150615
var(e.INTERPERSONALINFLUENCE)	.5595053	.0577461	.4570381	.6849456
var(e.NETWORKINGABILITY)	.1743999	.0440492	.1063049	.286114
var(e.APPARENTSINCERITY)	.6507318	.0448644	.5684816	.7448824
var(e.EXTERNAL_NETWORKING)	.9387533	.0234415	.893915	.9858408
var(e.INDIVIDUAL_AMBIDEXTERITY)	.7181323	.119503	.5182719	.9950646
var(e.EXPLOITATION)	.8839468	.0516539	.7882895	.9912119
var(e.EXPLORATION)	.4703558	.1923654	.2110102	1.048455
var(POLITICALSKILL)	1	.	.	.
cov(e.politicalskill15,e.politicalskill17)	.2140394	.0724204	2.96	0.003
cov(e.politicalskill15,e.politicalskill16)	-.4086834	.1145077	-3.57	0.000
cov(e.politicalskill15,e.politicalskill17)	-.3696659	.0886938	-4.17	0.000
cov(e.politicalskill12,e.politicalskill10)	-.1933117	.0437233	-4.42	0.000
cov(e.politicalskill16,e.politicalskill10)	.2744571	.0524335	5.23	0.000
cov(e.politicalskill19,e.politicalskill10)	.1618002	.0512987	3.15	0.002
cov(e.politicalskill10,e.politicalskill11)	.1411138	.0568144	2.48	0.013
cov(e.politicalskill19,e.politicalskill15)	.2511409	.0354142	7.09	0.000
cov(e.politicalskill18,e.politicalskill14)	-.6641468	.2971096	-2.24	0.025
cov(e.exploration6,e.exploration5)	.4863263	.0462064	10.53	0.000
cov(e.exploration2,e.exploration1)	.4970424	.0640235	7.76	0.000



## 8. SUMMARY LIST OF HYPOTHESES AND EMPIRICAL ESTIMATES

Table 99: summary list of research hypotheses, empirical analysis in the thesis, results in brief.

<i>Number of the hypothesis</i>	<i>Formulation of the Hypothesis</i>	<i>Is this hypothesis studied empirically in this thesis?</i>	<i>Is this hypothesis supported empirically?</i>
<b>H 1.1</b>	<i>Internal Social Capital (i.e. Individual social capital from internal knowledge networks) has a positive impact on Individual Ambidexterity. In particular, Hp 1.1.a Strong Ties in internal knowledge network and Hp 1.1.b Weak Ties in internal knowledge network have a positive impact on individual ambidexterity.</i>	Yes	Partially supported for strong ties (in a “close” world model without external networking). Not supported for weak ties for non linear effects (weak ties are statistically significant in a “close” world model without external networking when squared dimension is included)
<b>H 1.2</b>	<i>Internal Social Capital (i.e. Individual social capital from internal knowledge networks) has a positive impact on Innovative Work Behaviour. In particular, Hp 1.2.a Strong Ties in internal knowledge network and Hp 1.2.b Weak Ties in internal knowledge network have a positive impact on innovative work behaviour.</i>	Yes	Supported for strong ties. Minor confirmation for weak ties (not generalizable to all networks, as emerged in the case study and estimating with Hierarchical Linear Modelling for which the Pv becomes 0.104). Supported for rated innovation.
<b>H 2.1</b>	<i>External networking has a positive effect on Individual Ambidexterity.</i>	Yes	Supported
<b>H 2.2</b>	<i>External Networking has a positive effect on Innovative Work Behaviour.</i>	Yes	Supported (A note: partitioning external stakeholder by distance, nature and frequency of relation, this evidence is less relevant for distal public stakeholders including cognitive capabilities in the microfoundation model. Otherwise, Public distal weak ties maintain the significance for the idea realization phase ). For rated innovation, the effect is significant but negative.
<b>H 2.3</b>	<i>The effect between External Networking and Individual Ambidexterity presents diminishing returns.</i>	Yes	Not supported
<b>H 2.4</b>	<i>The effect between External Networking and Innovative Work Behaviour presents diminishing returns.</i>	Yes	Partially supported
<b>H 2.5</b>	<i>External Strong Ties have a (nonlinear) positive effect on individual exploitation with diminishing returns.</i>	Yes	Not supported (note: strong ties do not have effect on exploitation)
<b>H 2.6</b>	<i>External Weak Ties have a (nonlinear) positive effect on individual exploration with diminishing returns.</i>	Yes	Partially supported. The direct effect is positive for weak ties = distal private weak ties and in addition for distal public weak ties. The effect is linear and it does not present diminishing returns.
<b>H 2.7</b>	<i>Internal social capital (a) strong ties; b) weak ties) moderates the relation between External networking and</i>	Yes	Not supported (only strong ties moderate negatively the relation

	<i>individual Dynamic Capabilities: individual ambidexterity.</i>		of external networking with exploration)
<b>H 2.8</b>	<i>Internal social capital (a) strong ties; b) weak ties) moderates the relation between External networking and individual Dynamic Capabilities: innovative work behaviour.</i>	Yes	Not supported (only strong ties moderate negatively the relation of external networking with idea generation)
<b>H 2.9</b>	<i>Administrators-Politicians relations have a positive impact on Individual Ambidexterity.</i>	Yes	Yes supported
<b>H 2.10</b>	<i>Administrators-Politicians relations have a positive impact on Innovative Work Behaviour.</i>	Yes	Yes Supported
<b>H 2.11</b>	<i>The effect between Administrators-Politicians relations and Individual Ambidexterity presents diminishing returns.</i>	Yes	Not supported
<b>H 2.12</b>	<i>The effect between Administrators-Politicians relations and Innovative Work Behaviour presents diminishing returns.</i>	Yes	Not supported
<b>H 3.1</b>	<i>Mindfulness is positively related to individual ambidexterity.</i>	Yes	Not supported
<b>H 3.2</b>	<i>Mindfulness is positively related to innovative work behaviour.</i>	Yes	Yes supported (minor). Not supported for rated innovation.
<b>H 3.3</b>	<i>The effect between mindfulness and individual ambidexterity is linear and do not present diminishing returns.</i>	Not	-
<b>H 3.4</b>	<i>The effect between mindfulness and innovative work behaviour is linear and do not present diminishing returns.</i>	Yes	Not supported. Opposite. The effect is not linear.
<b>H 4.1</b>	<i>Mindfulness is positively related to internal social capital.</i>	Yes	Not supported
<b>H 4.2</b>	<i>Mindfulness is positively related to external networking overall factor (a) and in particular both to external strong ties (b) as well on external weak ties (c).</i>	Yes	Not Supported
<b>H 5.1</b>	<i>Internal social capital mediates the relation between mindfulness and individual ambidexterity.</i>	Not	-
<b>H 5.2</b>	<i>Internal social capital mediates the relation between mindfulness and innovative work behaviour.</i>	Not	-
<b>H 5.3</b>	<i>External networking mediates the relation between mindfulness and individual ambidexterity.</i>	Not	-
<b>H 5.4</b>	<i>External networking mediates the relation between mindfulness and innovative work behaviour.</i>	Not	-
<b>H 6.1</b>	<i>Mindfulness moderates the relation between internal social capital and individual ambidexterity, both for strong ties (a) and weak ties (b).</i>	Yes	These hypotheses are not confirmed in a model with all the microfoundation variables. Minor supported for H 6.1a, only in a reduced model including the variables with hypotheses and with Hierarchical Linear Modeling (with OLS and cluster errors, the IC passes the negative values).
<b>H 6.2</b>	<i>Mindfulness moderates the relation between internal social capital and innovative work behaviour, both for strong ties (a) and weak ties (b).</i>	Yes	Not supported
<b>H 6.3</b>	<i>Mindfulness moderates the relation between external networking and individual ambidexterity.</i>	Yes	Partially supported (low level of external networking)
<b>H 6.4</b>	<i>Mindfulness moderates the relation between external networking and innovative work behaviour.</i>	Yes	Partially supported (low level of external networking)
<b>H 7.1</b>	<i>Political skill is positively related to individual ambidexterity.</i>	Yes	Supported

<b>H 7.2</b>	<i>Political skill is positively related to innovative work behaviour.</i>	Yes	Supported. Supported also for rated innovation.
<b>H 7.3</b>	<i>The effect between political skill and individual ambidexterity is linear and do not present diminishing returns.</i>	Yes	Supported
<b>H 7.4</b>	<i>The effect between political skill and innovative work behaviour is linear and do not present diminishing returns.</i>	Yes	Supported
<b>H 8.1</b>	<i>Political skill is positively related to internal social capital.</i>	Yes	Partially supported. The relation is significant for internal strong ties and it is not significant for internal weak ties.
<b>H 8.2</b>	<i>Political skill is positively related to external networking overall factor (a) and in particular both to external strong ties (b) as well on external weak ties (c).</i>	Yes	Supported
<b>H 9.1</b>	<i>Internal Social capital mediates the relation between political skill and individual ambidexterity.</i>	Yes (in a "close" world without external networking)	Not supported
<b>H 9.2</b>	<i>Internal Social capital mediates the relation between political skill and innovative work behaviour.</i>	Yes (for strong ties)	Not supported
<b>H 9.3</b>	<i>External networking mediates the relation between political skill and individual ambidexterity.</i>	Yes	Supported. Partial mediation: 20.22%
<b>H 9.4</b>	<i>External networking mediates the relation between political skill and innovative work behaviour.</i>	Yes	Supported. Partial mediation: 8.864%
<b>H 10.1</b>	<i>Political skill moderates the relation between internal social capital and individual ambidexterity, both for strong ties (a) and weak ties (b).</i>	Yes	Not supported
<b>H 10.2</b>	<i>Political skill moderates the relation between internal social capital and innovative work behaviour, both for strong ties (a) and weak ties (b).</i>	Yes	Not supported
<b>H 10.3</b>	<i>Political skill moderates the relation between external networking and individual ambidexterity.</i>	Yes	Not supported
<b>H 10.4</b>	<i>Political skill moderates the relation between external networking and innovative work behaviour.</i>	Yes	Not supported
<b>H 11.1</b>	<i>Mindfulness is positively related to social cognitive capabilities, in particular to Political Skill.</i>	Yes	Not supported
<b>H 12.1</b>	<i>Political skill mediates the relation between mindfulness and individual social capital, in particular internal social capital (a) and external networking (b).</i>	Not	-
<b>H 12.2</b>	<i>Political skill mediates the relationships between mindfulness and dynamic capabilities, in particular, individual ambidexterity (a) and innovative work behaviour (b).</i>	Not	-
<b>H 12.3</b>	<i>There will be a sequential mediation from mindfulness to dynamic capabilities, in particular individual ambidexterity and innovative work behaviour, through political skill and internal social capital (knowledge networks).</i>	Not	-
<b>H 12.4</b>	<i>There will be a sequential mediation from mindfulness to dynamic capabilities, in particular individual ambidexterity and innovative work behaviour through political skill and external networking.</i>	Not	-
<b>H M 1.1</b>	<i>Internal Social Capital has a positive impact on Organizational Ambidexterity.</i>	Not	-
<b>H M 1.2</b>	<i>Internal Social Capital has a positive impact on Organizational Innovation.</i>	Not	-



<b>H M 2.1</b>	<i>External Networking has a positive effect on Organizational Ambidexterity</i>	Not	-
<b>H M 2.2</b>	<i>External Networking has a positive effect on Organizational Innovation.</i>	Not	-
<b>H M 2.3</b>	<i>The effect between External Networking and Organizational Ambidexterity presents diminishing returns.</i>	Not	-
<b>H M 2.4</b>	<i>The effect between External Networking and Organizational Innovation presents diminishing returns.</i>	Not	-
<b>H M 2.5</b>	<i>External Strong Ties have a (nonlinear) positive effect on organizational exploitation with diminishing returns.</i>	Not	-
<b>H M 2.6</b>	<i>External Weak Ties have a (nonlinear) positive effect on organizational exploration with diminishing returns.</i>	Not	-
<b>H M 2.7</b>	<i>Organizational Social capital (as organizational dimension of internal knowledge network) moderates the relation between External networking and organizational ambidexterity</i>	Not	-
<b>H M 2.8</b>	<i>Organizational Social capital (as organizational dimension of internal knowledge network) moderates the relation between External Networking) Organizational Innovation.</i>	Not	-
<b>H M 2.9</b>	<i>Administrators-Politicians relations have a positive impact on Organizational Ambidexterity.</i>	Not	-
<b>H M 2.10</b>	<i>Administrators-Politicians relations have a positive impact on Organizational Innovation.</i>	Not	-
<b>H M 2.11</b>	<i>The effect between Administrators-Politicians relations and Organizational Ambidexterity presents diminishing returns.</i>	Not	-
<b>H M 2.12</b>	<i>The effect between Administrators-Politicians relations and Organizational Innovation presents diminishing returns.</i>	Not	-
<b>H M 3.1</b>	<i>Mindfulness is positively related to organizational ambidexterity.</i>	Not	-
<b>H M 3.2</b>	<i>Mindfulness is positively related to organizational innovation.</i>	Not	-
<b>H M 3.3</b>	<i>The effect between mindfulness and organizational ambidexterity is linear and do not present diminishing returns.</i>	Not	-
<b>H M 3.4</b>	<i>The effect between mindfulness and organizational innovation is linear and do not present diminishing returns.</i>	Not	-
<b>H M 4.1</b>	<i>Mindfulness is positively related to organizational social capital.</i>	Not	-
<b>H M 5.1</b>	<i>Organizational social capital mediates the relation between mindfulness and organizational ambidexterity.</i>	Not	-
<b>H M 5.2</b>	<i>Organizational social capital mediates the relation between mindfulness and organizational innovation.</i>	Not	-
<b>H M 5.3</b>	<i>External networking mediates the relation between mindfulness and organizational innovation.</i>	Not	-
<b>H M 5.4</b>	<i>External networking mediates the relation between mindfulness and organizational ambidexterity.</i>	Not	-
<b>H M 6.1</b>	<i>Mindfulness moderates the relation between organizational social capital and organizational ambidexterity.</i>	Not	-
<b>H M 6.2</b>	<i>Mindfulness moderates the relation between organizational social capital and organizational innovation.</i>	Not	-

<b>H M 6.3</b>	<i>Mindfulness moderates the relation between external networking and organizational ambidexterity.</i>	Not	-
<b>H M 6.4</b>	<i>Mindfulness moderates the relation between external networking and organizational innovation.</i>	Not	-
<b>H M 7.1</b>	<i>Political skill is positively related to organizational ambidexterity.</i>	Not	-
<b>H M 7.2</b>	<i>Political skill is positively related to organizational innovation.</i>	Not	-
<b>H M 7.3</b>	<i>The effect between political skill and organizational ambidexterity is linear and do not present diminishing returns.</i>	Not	-
<b>H M 7.4</b>	<i>The effect between political skill and organizational innovation is linear and do not present diminishing returns.</i>	Not	-
<b>H M 8.1</b>	<i>Political skill is positively related to organizational social capital.</i>	Not	-
<b>H M 9.1</b>	<i>Organizational social capital mediates the relation between political skill and organizational ambidexterity.</i>	Not	-
<b>H M 9.2</b>	<i>Organizational social capital mediates the relation between political skill and organizational innovation.</i>	Not	-
<b>H M 9.3</b>	<i>External networking mediates the relation between political skill and organizational ambidexterity.</i>	Not	-
<b>H M 9.4</b>	<i>External networking mediates the relation between political skill and organizational innovation.</i>	Not	-
<b>H M 10.1</b>	<i>Political skill moderates the relation between organizational social capital and organizational ambidexterity.</i>	Not	-
<b>H M 10.2</b>	<i>Political skill moderates the relation between organizational social capital and organizational innovation.</i>	Not	-
<b>H M 10.3</b>	<i>Political skill moderates the relation between external networking capital and organizational ambidexterity.</i>	Not	-
<b>H M 10.4</b>	<i>Political skill moderates the relation between external networking capital and organizational innovation.</i>	Not	-
<b>H M 11.1</b>	<i>Political skill mediates the relation between mindfulness and individual organizational social capital.</i>	Not	-
<b>H M 11.2</b>	<i>Political skill mediates the relationships between mindfulness and organizational dynamic capabilities, in particular, organizational ambidexterity and innovation adoption.</i>	Not	-
<b>H M 11.3</b>	<i>There will be a multilevel sequential mediation from mindfulness to dynamic capabilities, in particular organizational ambidexterity and innovation adoption, through political skill and social capital.</i>	Not	-
<b>H M 11.4</b>	<i>There will be a multilevel sequential mediation from mindfulness to dynamic capabilities through political skill and social capital.</i>	Not	-

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