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Food supply procurement : the influence of politics on food supply chains and the governance of local public food services

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UNIVERSITY PARIS I PANTHÉON SORBONNE
TRU of Economics
Laboratory of attachment: CES – INRA SADAPT

PhD Dissertation
For the title of Doctor in Economics
Presented and publicly supported
the 22nd of December 2017 by
Yoan ROBIN

FOOD SUPPLY PROCUREMENT

*The Influence of Politics on Food Supply Chains and the
Governance of Local Public Food Services*

Under the direction of

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Mr. RAYNAUD Emmanuel, Research Director, INRA

Membre du Jury

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UNIVERSITE PARIS I PANTHÉON SORBONNE
UFR d'Economie

Laboratoire de rattachement : CES – INRA SADAPT

THÈSE

Pour l'obtention du titre de Docteur en Economie

Présentée et soutenue publiquement

le 22 Décembre 2017 par

Yoan ROBIN

APPROVISIONNEMENT ALIMENTAIRE

*L'influence de la politique sur les chaînes d'approvisionnement
alimentaire et la gouvernance des services publics locaux de
restauration.*

Sous la direction de

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L'Université Paris 1 Panthéon-Sorbonne n'entend donner aucune approbation ni improbation aux opinions émises dans les thèses; ces opinions doivent être considérées comme propres à leur auteur.

FOREWORD

This PhD dissertation, entitled “Food Supply Procurement: The Influence of Citizens’ Ideology on Food Supply Chains and the Governance of Local Public Food Services”, brings together three essays in the field of Food Procurement. Each essay corresponds to one chapter. The links between the chapters and the underlying logic of the whole dissertation are exposed in the general introduction, in which we also provide a review of related literature, and define the research questions we address. Nevertheless, chapters can be read separately and each has its references attached. This implies the presence of redundant information across chapters.

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1 CONTEXTE

1.1 LES DEFIS QUE DOIVENT RELEVER LES SYSTEMES ALIMENTAIRES

Les systèmes alimentaires sont désormais au centre de nombreux enjeux interconnectés. La nutrition et la santé, la sécurité alimentaire, l'environnement, les déchets alimentaires, le gaspillage, et les questions socio-économiques sont des problèmes importants auxquels les autorités publiques tentent d'apporter des solutions diverses : droit, planification, gestion, etc. Les cantines scolaires françaises sont l'objet de nombreuses controverses en raison de l'implication d'enfants (qui représentent une population sensible) et de l'utilisation de l'argent public.

NUTRITION ET SANTE

Si la dénutrition n'est désormais plus un problème majeur dans les pays développés, l'obésité est devenue une problématique commune dans ces pays. En 2015, 2,2 milliards de personnes étaient en surpoids dans le monde, dont 107,7 millions d'enfants et 603,7 millions d'adultes, entraînant 4 millions de décès prématurés (The GBD, 2015 ; Obesity Collaborators, 2017). En 2008, la France comptait 18% d'adultes obèses, 19% et 11% d'obèses âgés de 11 ans respectivement garçons et filles (Currie *et al.*, 2013). La France a longtemps résisté à l'épidémie d'obésité mais, aujourd'hui, elle tend à s'aligner sur les autres pays avancés, notamment en raison d'une augmentation vertigineuse du surpoids des enfants (Obesity Task Force). En effet, les études médicales font ressortir le risque accru pour un enfant en surpoids de continuer à l'être à l'âge adulte : de 20 à 50%, et de 50 à 70% pour un adolescent en surpoids. Les autorités publiques sont par conséquent appelées à agir sur ce sujet.

Le Plan National Nutrition Santé (PNNS) (2001) a conduit à la création d'un guide adressé aux responsables de la restauration collective sur la taille des portions alimentaires et la fréquence des ingrédients. Il existe d'ailleurs une controverse intéressante dans le secteur de la restauration collective française au sujet de ce guide. Alors que de nombreux organismes publics

municipaux et responsables de la restauration scolaire ont affirmé lors de nos entretiens que le respect de ce guide était obligatoire, le ministère des Finances nous a confirmé que ce guide n'était qu'une illustration des bonnes pratiques et des bons comportements alimentaires et il n'était en aucun cas obligatoire. Il est important de souligner, que faire référence à ce guide est une protection pour les organismes publics envers la population, et permet de justifier la taille des portions, souvent qualifiées de petites par le grand public.

Enfin, de nombreuses autres études scientifiques démontrent que les quantités de nutriments dans les fruits et légumes chutent constamment depuis les années 1950¹. Par exemple, les pommes de terre ont perdu la moitié de leur teneur en fer et en vitamine C. L'origine de ce phénomène doit être recherchée dans plusieurs causes telles que l'appauvrissement du sol, les préférences données à la qualité observable (forme, couleur, taille, etc.), ou encore la maturation dans le processus de livraison. Les solutions sont donc de privilégier les aliments biologiques, de maturation sur le terrain, de réduire la distance entre production et consommation, et d'éviter les intermédiaires pour gagner du temps.

SECURITE ALIMENTAIRE

De nombreux scandales alimentaires liés à un manque de transparence dans le processus de transformation et de distribution ont eu lieu ces vingt dernières années dans le monde². Ces scandales légitiment les demandes de plus de transparence de la part des consommateurs, que ce soit pour la consommation humaine ou animale.

En France, la DGCCRF (Direction Générale de la Concurrence, de la Consommation et du Contrôle des Fraudes) a constaté en 2009 que 62% des fruits et 30% des légumes étaient pollués au-delà de la Limite Maximale de Résidus (LMR). De même, une étude a démontré la présence de bêta-bloquants, d'anti-inflammatoires, d'hormones et d'antibiotiques dans le lait destiné à la consommation humaine (Azzouz et al., 2011). Ce ne sont là que des exemples de ce qui pourrait être mentionné, mais ils imprègnent les esprits et créent de la défiance envers l'ensemble du système alimentaire. Ce défi conduit à une demande plus élevée de la réglementation des États et du secteur alimentaire lui-même impacté dans ses bénéfices.

¹ Le site web Bastamag référence environ 15 études sur le sujet.

² A titre d'exemples: la vache folle, l'encéphalite du mouton, les lasagnes à la viande de cheval, les vers dans les cantines scolaires à Marseille, les tartelettes à Ikea, etc.

ENVIRONNEMENT

En 2004, l'agriculture générait 13,5% des gaz à effet de serre (GES) dans le monde, alors que la déforestation et la modification de l'utilisation des sols représentaient 17,4% (RAC France & FNH, 2010). Mis ensemble, ils sont la première cause de GES dans le monde, sans même prendre en compte les GES liés au transport alimentaire. En Europe, la part de l'agriculture dans le total des GES n'est que de 9%, et 21% en France (*ibid.*)³. En ce qui concerne le transport des aliments, Heller et Keoleian (2000) estiment que l'utilisation de carburant diesel représente 25% de l'énergie totale consommée dans les systèmes alimentaires des États-Unis d'Amérique. Weber et Matthews (2008) estiment que le coût du carbone du transport de nourriture représente 11% du total des GES dans les systèmes alimentaires américains. Wakeland *et al.* (2012) estiment la part des émissions de carbone due au transport de marchandises dans le système alimentaire américain à 6% des émissions globales du secteur alimentaire aux États-Unis. Cependant, ces auteurs trouvent que minimiser le gaspillage alimentaire et composter (par rapport au transport vers un centre de recyclage) le gaspillage alimentaire inévitable aurait un impact plus important sur les émissions de GES que le passage d'un fournisseur éloigné à un fournisseur local. En effet, ils trouvent que les gros camions et les bateaux sont plus efficaces par tonne de transport de nourriture lorsqu'ils sont pleins que de petits camions locaux pour la plupart vides.

En raison de l'importance de l'agriculture dans le total des GES, les scientifiques tentent d'apporter des solutions. Premièrement, une plus grande utilisation des légumineuses réduit le besoin d'engrais, car ces cultures fertilisent les sols avec de l'azote, ce qui réduit considérablement l'utilisation d'engrais et, par conséquent, de GES (Baranger *et al.*, 2008). Deuxièmement, les consommateurs bio consomment plus de légumineuses et moins de viande, contribuant ainsi à la réduction des GES⁴, la principale contribution à la réduction des GES agricoles étant possible grâce à une diminution de la viande (notamment bœuf et ruminants). L'Organisation des Nations Unies pour l'Alimentation et l'Agriculture (FAO) a estimé en 2009

³ En France, la part est plus élevée car la France est un important producteur de viande bovine, qui est l'une des premières causes de GES, et parce que les émissions totales en France sont plus faibles que dans les autres pays en raison d'une utilisation importante de l'énergie nucléaire. Le secteur de l'énergie ne représente que 13% des GES pour 59% en Europe (CITEPA, 2009; Eurostat, 2009).

⁴ Lors de la 12e édition de la FENS European Nutrition Conference à Berlin en 2015, Emmanuelle Kesse-Guyot a présenté les premiers résultats de BioNutriNet «Profils de consommateurs d'aliments biologiques issus de la cohorte Nutrinet en France».

qu'un changement global vers l'agriculture biologique et l'élevage bovin réduirait les émissions totales de GES de 40% en 2030, avec des quantités inchangées⁵.

PERTES ET GASPILLAGE ALIMENTAIRE

Une distinction est faite entre les gaspillages et les pertes, car la première notion à une dimension morale. Les pertes sont plus neutres et font référence aux préoccupations des gestionnaires en matière de rentabilité. En effet, ce qui est perdu ne peut jamais être vendu, ce qui implique des coûts cachés pour les consommateurs et les producteurs. L'Organisation des Nations Unies pour l'Alimentation et l'Agriculture (FAO) a estimé en 2011 un gaspillage d'un tiers de la production alimentaire mondiale, soit 1,3 milliard de tonnes par an. Une autre étude évalue les déchets à la moitié de la production alimentaire mondiale (FAO, SIWI, IWMI, 2008). Dans l'Union européenne, on estime que 89 milliards de tonnes de nourriture sont perdues chaque année une fois la nourriture récoltée ou abattue (BIO, 2010) pour un coût de 143 milliards d'euros (FUSIONS, 2016) : 42% par les ménages, 39% par l'industrie alimentaire, 14% par la restauration, et 5% par les grossistes et les détaillants alimentaires. En outre, la FAO estime que si «déchets et pertes alimentaires» était un pays, ce serait le troisième plus grand émetteur de GES derrière les États-Unis et la Chine, avec 3,3 milliards de tonnes de CO₂ produites chaque année. Aux États-Unis, les déchets et pertes alimentaires représentent 112,9 millions de tonnes de CO₂ (Venkat, 2011).

L'Agence française De l'Environnement et de la Maîtrise de l'Energie (ADEME) a évalué les pertes totales pour la France à 10 millions de tonnes de nourriture, soit 16 milliards d'euros ce qui représente un tiers du budget national consacré aux intérêts de la dette et 3% des rejets de GES. La restauration collective est l'un des principaux gaspilleurs. En effet, les déchets sont de 130g par personne et par repas en restauration collective. La restauration collective ne représente que 15% des repas mais 42% des déchets pour les ménages (INCOME Consulting, 2016). Il y a donc l'espace pour une amélioration dans la restauration collective.

Enfin, le gaspillage et les pertes de nourriture ne sont pas seulement de la nourriture, de l'argent ou des GES. Ils représentent également une autre ressource rare: l'eau. En effet, à l'échelle

⁵Agriculture à faibles émissions de gaz à effet de serre - Potentiel d'atténuation et d'adaptation des systèmes d'exploitation agricole durable, FAO, avril 2009.

mondiale, 250 km³ d'eau sont gaspillés dans les aliments non consommés, soit plus de 3,6 fois la consommation d'eau aux États-Unis d'Amérique (FAO, 2016).

SOCIO-ECONOMIE

Toutes les préoccupations que nous avons soulignées précédemment ont également des impacts socio-économiques. En effet, les problèmes d'obésité et de nutrition affectent les personnes différemment selon leur sexe, leur niveau d'éducation (OMS, 2014, Eurostat, 2009) et leur revenu (INSERM, 2013). Un rapport français du Sénat conclut à un risque trois fois plus grand pour l'enfant d'un travailleur non qualifié d'être obèse que pour l'enfant d'un cadre supérieur (Saunier, 2003). Une étude menée dans l'Union européenne a estimé que 26% de l'obésité chez les hommes et 50% de l'obésité chez les femmes peuvent être attribués aux inégalités de statut éducatif (EUROTHINE, 2007). Une grande partie de la mortalité prématurée et de la perte d'années de vie en bonne santé observée dans les groupes socio-économiques inférieurs peut s'expliquer par des maladies associées à l'obésité⁶ (Robertson *et al.*, 2013). Ensuite, le cercle vicieux entre en action avec les femmes pauvres et peu scolarisées moins enclines à allaiter, ce qui augmente l'obésité chez le nourrisson puis chez le futur adulte (OMS, 2014). En outre, dans les familles pauvres et faiblement éduquées, les enfants sont moins exposés à la diversité alimentaire, ce qui entraîne de mauvaises habitudes alimentaires et des carences ou un surpoids. L'OMS recommande par conséquent d'aider ces enfants à découvrir de nouveaux ingrédients, en particulier des fruits et des légumes.

En outre, un rapport français du ministère de l'Environnement dénonce que les politiques publiques environnementales sont souvent, sinon toujours, dissociées des politiques publiques sociales (Diebolt *et al.*, 2005). Le rapport dénonce notamment le fait que les populations les plus pauvres disposent de moins de moyens pour éviter les quartiers dégradés par l'environnement que les plus riches, en particulier lorsqu'ils sont confrontés à la pollution des transports (air, bruit et odeurs).

PREOCCUPATIONS POUR LES CANTINES SCOLAIRES

La qualité est très importante et prend plusieurs dimensions pour la restauration collective, et encore plus pour la restauration scolaire. Les enfants sont particulièrement concernés par la

⁶ Par exemple, le quintile le plus démuné en Europe avait 1,9 fois plus de risques de mourir d'une maladie coronarienne que le quintile le plus riche en 1992. Ce risque est passé à 2,5 en 2003.

qualité de la nourriture. Les jeunes et les adolescents ont des besoins nutritionnels particuliers qui doivent être pris en compte dans la préparation de leurs repas. De plus, c'est entre 2 et 6 ans que certaines de nos habitudes et rejets alimentaires futurs apparaissent (Lafraire *et al.*, 2016). Ainsi, on peut essayer d'augmenter la sensibilité positive au gaspillage, à la nourriture bio, à la nourriture cuisinée à la maison, aux fruits, ou aux légumes par exemple. À cet âge, les enfants peuvent adopter de bonnes ou de mauvaises habitudes alimentaires. Thaler et Sunstein (2008) soutiennent, par exemple, que l'on peut essayer d'influencer les comportements alimentaires avec des incitations à manger plus sainement. Ils montrent que la disposition des aliments dans une cafétéria peut inciter les consommateurs à adopter des comportements alimentaires bons ou mauvais. Il y a alors une place pour que les politiques publiques enseignent de bonnes habitudes alimentaires, conduisant à une diminution de l'obésité et du surpoids. Cela a conduit à diverses initiatives publiques dans divers pays telles que la loi américaine «Healthy, Hunger-Free Kids Act 2010» à l'initiative de Michelle Obama⁷, ou encore le Programme National Nutrition et Santé (PNNS)⁸ en 2001 en France.

En outre, la viande est également devenue un enjeu pour la restauration collective, et en particulier pour les cantines scolaires. Certains établissements ou organismes publics tentent de réduire l'importance de la viande dans les cantines scolaires pour des raisons écologiques (la viande est un contributeur principal des GES), mais aussi afin d'enseigner aux enfants un nouveau type de consommation sans produits animaux⁹. L'introduction de repas sans viande leur permet de réduire le coût des repas, de réduire l'empreinte carbone et d'éduquer les enfants à de nouveaux goûts et modes de consommation. En outre, les repas sans viande sont également une manière assumée de résoudre la question des repas confessionnels, en particulier pour les enfants musulmans et juifs¹⁰.

De plus, un repas à préparer en restauration collective nécessite environ 20 litres d'eau¹¹. Dans un contexte d'exploitation excessive des ressources en eau, la gestion de l'eau est devenue une question importante dans certaines régions, et pas seulement en France. Dans la Région Rhône-

⁷ En supprimant les aliments gras et sodas des écoles et en encourageant à boire de l'eau et à manger des fruits et légumes, ce programme vise à réduire l'obésité - mais aussi le cholestérol, le diabète, etc. - pour les jeunes et donc pour les futurs adultes

⁸ Programme National Nutrition Santé (PNNS).

⁹ C'est le cas par exemple pour les cantines du 2^{ème} arrondissement de Paris, à Grenoble ou Lyon.

¹⁰ Voir la tribune en faveur des repas sans viande dans *Le Monde*, 26/03/2015: *Le Repas végétarien, le plus laïc de tous*. Ou encore le cas de Perpignan dans *Libération*, 23/06/2015: *Dans les cantines de Perpignan, des plats végétariens pour éviter le porc*.

¹¹ Etude SIEE 2007 pour le Conseil Général de l'Hérault, SMEGREG, Agence de l'eau Adour Garonne.

Alpes, les 20 millions de repas produits annuellement pour 277 lycées ont produit 60 000 tonnes de carbone équivalent, soit 3 kg par repas, et représentent 10% du total des déchets de la région. L'utilisation de légumes surgelés multiplie par 60 l'impact sur l'empreinte carbone par rapport aux légumes frais¹², et la restauration collective et les supermarchés sont responsables de 1,5 million de tonnes de déchets fermentescibles en France en 2005¹³.

En conclusion, nous soulignons que la réglementation de la restauration collective peut avoir des impacts importants et variés. Il y a d'abord des aspects d'assainissement à régler: pourvoir aux besoins nutritionnels quotidiens, garantir une nourriture de bonne qualité ou enseigner de bonnes habitudes alimentaires. Il existe également des aspects socio-économiques à régler : structurer le secteur biologique, lutter contre la discrimination alimentaire ou contrôler le bon usage des finances publiques. Enfin, il existe des aspects environnementaux à régler : minimiser l'empreinte environnementale en matière de gaz à effet de serre, d'utilisation de l'eau, de déchets fermentescibles et d'énergie. Si les Etats ont pris en compte l'importance de la nourriture pour les différents niveaux de la société, les citoyens s'organisent souvent pour alerter les autorités publiques à ce sujet, en particulier ceux que l'on appelle les «consom'acteurs».

1.2 CONSOM'ACTEURS: DES INITIATIVES CITOYENNES AUX ETATS

Comme dans d'autres domaines, la nourriture est l'objet des lanceurs d'alerte. Jamie Oliver, un célèbre chef britannique connu pour ses émissions de télévision, dénonce ainsi la piètre qualité nutritionnelle des cantines scolaires anglaises. Les hamburgers, les frites, les pizzas, les plats surgelés semblent être le repas quotidien des élèves à l'école. En 2005, le ministre britannique de l'Éducation a investi 280 000 000 £ sur les repas scolaires après la campagne de Jamie Oliver sur la mauvaise qualité de la nourriture à l'école. Les cantines scolaires sont souvent soumises à la pression du public dans de nombreux pays. Aux États-Unis, les parents s'indignent tellement de la qualité des repas de leurs enfants qu'ils ont créé des sites Web (<https://www.dosomething.org> ; <http://fedup.dosomething.org> ; www.fedup.com) montrant des photos des repas de leurs enfants, cette tendance s'est répandue dans plusieurs pays anglophones (Nouvelle-Zélande, Australie, États-Unis) qui partagent le même problème avec les cantines scolaires.

¹² Impact carbone de la restauration collective dans les lycées de Rhône-Alpes, ADEME.

¹³ www.arpe-mip.com/files/GUIDE_RESTAURATION_ET_DD/GUIDE_RESTO_ET_DD_web.pdf

Après le même débat en France sur les cantines scolaires, le gouvernement français a donné un cadre à la qualité nutritionnelle des cantines scolaires à travers le PNNS en 2001. Le dernier rapport de l'Agence Bio (Agence Bio, CSA Research, 2017) montre une volonté collective favorable à la cuisine locale. 82% des Français pensent qu'il est important de développer l'alimentation et l'agriculture biologiques pour la santé (66%), l'environnement (58%) et pour le goût (56%). Ils veulent aussi manger de la nourriture biologique à l'extérieur de la maison : de 54% dans les distributeurs automatiques, à 89% dans les cantines scolaires, ce qui augmente la demande pour les aliments biologiques. Le Grenelle de l'Environnement a répondu en 2008 à cette demande de nourriture bio et saisonnière avec l'objectif officiel de 20% de nourriture saisonnière et bio à l'école¹⁴. Le ministère de l'Agriculture a modifié la loi pour introduire la possibilité pour une autorité publique de favoriser les ventes directes du producteur¹⁵. Les objectifs, loin d'être atteints, ont encore été réaffirmés en 2016 avec une nouvelle loi «Manger Local» pour promouvoir la nourriture locale.

D'autre part, la société civile n'a pas attendu les autorités publiques ou les initiatives privées. L'approche de la Fondation Nicolas Hulot créée en 2016 implique les consommateurs, les producteurs et les cuisiniers en restauration collective afin d'améliorer la «qualité» et l'écologie de la nourriture. Le label "Mon Restau Responsable" est attribué aux cantines engagées dans un processus environnemental: réduire les déchets, économiser l'énergie et l'eau, intégrer les consommateurs dans les décisions, etc.

A travers des exemples, nous avons donc montré que les questions alimentaires sont de première importance pour la société civile car elles concernent les consommateurs, pour les entreprises privées car elles concernent les producteurs et les vendeurs, et pour les pouvoirs publics puisqu'elles impliquent la confiance de ces différents acteurs qui peut être gagnée grâce aux certifications.

¹⁴ Article 48 loi du 3 Aout, 2009 "Grenelle 1" et article 230-1 et 230-5 du code rural et de la pêche maritime.

¹⁵ Comme l'Union Européenne interdit de favoriser les producteurs locaux sur les marchés publics, une manière est de favoriser les ventes directes en espérant des producteurs proches. Cependant, direct et local ne sont pas synonymes, même si parfois ils sont considérés comme identiques.

2 LA RESTAURATION COLLECTIVE

2.1 UN ETAT DE L'ART

La CLASSIFICATION NACE

Dans la classification NACE, la restauration collective est comprise dans les «activités de restauration et de services de boissons», divisée en trois sous-catégories: «Restaurants et restauration mobile», «Restauration d'événements et autres activités de restauration» et «Activités de services de boissons».

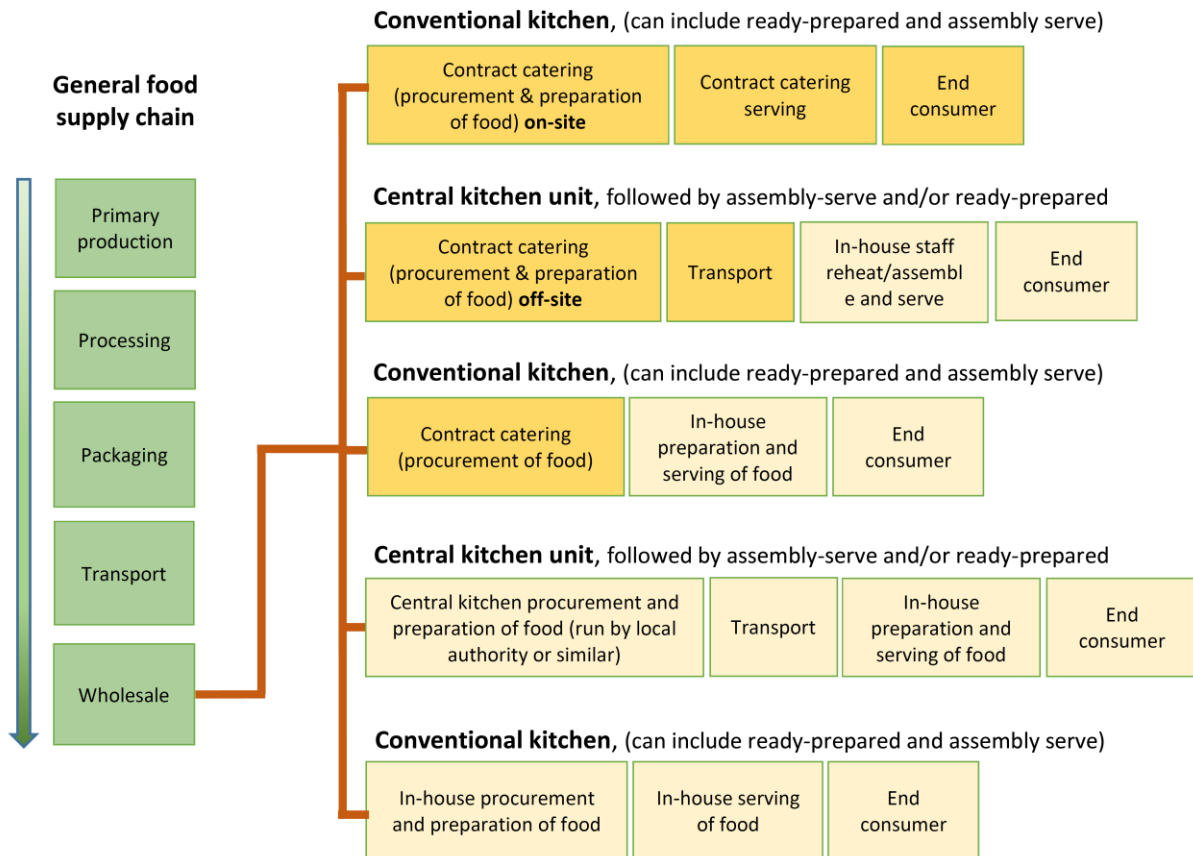
Dans l'UE-28 de 2012, les «activités de services alimentaires et de boissons» représentent un chiffre d'affaires de 353,8 milliards d'euros, soit 8 millions de personnes employées dans plus de 1,5 million d'entreprises. La catégorie principale est «Activités de restauration et de restauration mobile» avec un chiffre d'affaires de 217,6 milliards d'euros, soit près de cinq millions de personnes employées dans 877 300 entreprises. Les «activités de service de boissons» suivent avec 84,3 milliards d'euros de chiffre d'affaires, plus de deux millions de personnes employées dans 592 400 entreprises. La «restauration événementielle et autres activités de restauration» est la dernière avec 52 milliards d'euros de chiffre d'affaires, plus d'un million de personnes employées dans 74 100 entreprises. La progression est importante pour chacune des catégories par rapport à 2008 (de 3,2% à 23,3%), sauf pour les «activités de service de boissons» avec moins d'entreprises (-8,1%), un moindre chiffre d'affaires (-8,9%), mais plus de personnes employées (24,1%) (Eurostat Structural Business Statistics, 2012). La France, l'Italie et le Royaume-Uni sont les principaux consommateurs des «activités de restauration et de services de boissons».

LA RESTAURATION COLLECTIVE

GIRA Foodservice (2014) évalue le marché de la restauration collective de l'UE-28 à 82 milliards d'euros en 2013, sur la base des données de l'UE-15, qui représentent 88% du marché total de la restauration collective de l'UE-28. Cela comprend les dépenses des organisations publiques et privées dans le commerce et l'industrie, l'éducation, la santé et le bien-être, et

d'autres services. Le rapport a également estimé le pourcentage de repas fournis aux institutions publiques à 55% du total des repas du marché de la restauration collective¹⁶.

FIGURE 1: UNE CHAÎNE D'APPROVISIONNEMENT GÉNÉRALE ET LES DIFFÉRENTES FORMES DE CHAÎNE D'APPROVISIONNEMENT DU SERVICE DE RESTAURATION



Source: JRC Technical Reports, 2015.

Note: La couleur orange (sombre) montre les étapes réalisées par les entreprises de restauration et la couleur rose (claire) montre celles réalisées par les pouvoirs publics.

L'organisation de la chaîne d'approvisionnement alimentaire pour la restauration collective est représentée sur la figure 1. La chaîne d'approvisionnement alimentaire générale comprend les

¹⁶ En supposant que les coûts publics et privés soient égaux, la restauration collective des organismes publics est estimée à environ 45 milliards d'euros.

différentes étapes allant de la production primaire à la vente en gros. Il convient de noter que la chaîne d'approvisionnement alimentaire générale peut être intégrée par une seule entreprise (vente directe) ou désintégrée par une chaîne d'entreprises pour chaque étape. Pour la nourriture à consommer en restauration collective, elle doit être achetée directement par une centrale d'achat interne ou conventionnelle (deux dernières chaînes sur la figure 1) en passant par des appels d'offres, ou par une entreprise privée qui procure des aliments et/ou repas à une restauration collective (les trois premières chaînes de la figure 1). Comme le montre la figure 1, la portée de l'externalisation du service de traiteur à une entreprise de restauration commence par l'achat exclusif de nourriture et peut s'étendre à la cuisson et au service des repas, ainsi qu'au transport si nécessaire. Sauf indication contraire, nous allons maintenant considérer comme « en régie » les trois dernières chaînes et comme « externalisation » les deux premières chaînes en partant du haut de la figure 1¹⁷. Il convient de noter que les deux modes de gouvernance doivent passer par des appels d'offres. Un approvisionnement en régie et la préparation des aliments nécessitent des appels d'offres pour l'approvisionnement alimentaire. De même, l'externalisation nécessite que le gestionnaire public fasse des appels d'offres pour les repas.

GIRA Foodservice (2014) donne une estimation de la répartition des repas fournis aux services alimentaires publics et privés en 2013, par volume de repas fourni. Les entreprises et industries françaises sont les clients des entreprises privées pour 85% des repas. Les 15% restants sont des administrations publiques. En revanche, l'éducation a principalement des consommateurs publics (77% en France). Dans le secteur de la santé en France, les institutions publiques représentent 52% du repas.

Dans ce secteur de la restauration, le marché est fortement concentré dans le monde entier. Par exemple, la part de marché des quatre premiers traiteurs sous contrat en France en 2013 est de 82% (GIRA FoodService, 2014). Les plus grandes entreprises de restauration sont Compass (Royaume-Uni), Sodexo (FR) et Elior (FR). Le chiffre d'affaires de Compass au Japon et en Europe s'élève à 7,1 milliards d'euros en 2014. Le chiffre d'affaires de Sodexo dans le monde s'élève à 18 milliards d'euros et celui d'Elior à 5,3 milliards d'euros (JRC Technical Reports, 2015).

¹⁷ « en régie » réfère donc à la partie culinaire du service de restauration.

Enfin, les coûts moyens des repas varient selon les secteurs (FoodServiceEurope, 2014). Le commerce et l'industrie ont les plats les plus chers avec une moyenne de 7,48 € par repas en France, suivis du secteur Santé et Bien-être (4,62 €), puis du secteur éducatif (4,47 €), pour une moyenne de 4,78 € par repas tous secteurs confondus . Il convient de noter que le secteur de la santé et du bien-être n'est pas homogène en termes de coûts. La restauration pour les personnes âgées augmente le coût moyen par rapport à la restauration à l'hôpital, souvent moins coûteux. De plus, l'éducation a souvent le coût moyen le plus faible (4,47 € en France). Une explication possible est l'importance des subventions reçues de la part du service public provenant (principalement) des finances publiques locales, avec une conséquence directe sur l'atténuation des coûts. Quelques centimes peuvent ne pas être très importants pour un repas, mais la France sert 1 223 000 000 de repas par an dans le secteur de l'éducation (Gira FoodService, 2014).

La restauration collective représente un secteur économique important en France. En 2004, ce secteur a contribué pour 10 milliards d'euros à l'économie française¹⁸. En 2011, la restauration collective en régie concerne 68% de la restauration collective totale en France¹⁹. Cependant, alors que la part de la restauration en régie est élevée pour l'économie du «care» (64% de la restauration scolaire et 73% de la restauration sociale), elle n'est que de 26% pour la restauration dans les entreprises. Par ailleurs, compte tenu de la taille du secteur, la restauration collective a un impact économique sur l'économie française et pas seulement sur les finances sociales. La restauration collective en France en 2011 représente 2 milliards de repas, 42 000 restaurants, 230 000 travailleurs et 11 milliards de chiffre d'affaires²⁰. Compte tenu des enjeux socio-économiques mis en évidence, étant donné que la restauration scolaire est une préoccupation dans la plupart des programmes électoraux depuis 2002, nous nous attendons à ce que des facteurs politiques influence le service de la restauration collective.

2.2 LA RESTAURATION SCOLAIRE

En France, six millions d'enfants mangent chaque année dans une cantine scolaire²¹. 60% des enfants à l'école primaire mangent à l'école au moins une fois par semaine. Il existe alors en

¹⁸ "La restauration des usagers du service public scolaire ou à caractère social en Alsace", Rapport public de la Cour des Comptes, 2005, pp. 653-672.

¹⁹ Restauration collective et développement durable, ARPE Midi-Pyrénées, l'agence régionale du développement durable, 2012.

²⁰ Restauration collective et développement durable, ARPE Midi-Pyrénées, l'agence régionale du développement durable, 2012.

²¹ "La restauration des usagers du service public scolaire ou à caractère social en Alsace", Rapport public de la Cour des Comptes, 2005, pp. 653-672

France une marge de manœuvre pour que les politiques publiques orientent la consommation alimentaire vers des comportements plus sains. La restauration scolaire est organisée par différents niveaux gouvernementaux selon le niveau des écoles publiques (voir Figure 2)²². Les établissements scolaires privés organisent leur service de cantine scolaire à leur guise, sans aucune intervention du pouvoir politique. Dans cette thèse, nous nous concentrons donc sur les écoles publiques afin d'étudier les choix politiques à l'origine des choix de gouvernance des cantines scolaires.

FIGURE 2: L'ORGANISATION DE LA RESTAURATION SCOLAIRE PUBLIQUE



Sources: Code de l'Education, articles R. 531-52 et R. 531-53.

Dans le cas de la restauration collective publique, les clients sont autorisés à sélectionner le partenaire privé avec une notation multi-dimensionnelle (article 53 du Code des marchés publics). Par exemple, dans le 14^{ème} arrondissement de Paris, le prix représente 35% du score total, la qualité (organoleptique, chimie, etc.) pour 25%, les rations pour 20%, le conditionnement pour 15%, et 5% pour le respect des délais²³. Les critères utilisés pour commander les différents appels d'offre varient d'un client à l'autre et sont nécessaires pour sélectionner l'offre la plus avantageuse en termes de coût et de qualité. Il existe donc une certaine marge de manœuvre pour les maires pour favoriser une offre plutôt qu'une autre sur des critères non vérifiables par le citoyen. Les critères organoleptiques, par exemple, sont assez vagues pour avantager un fournisseur local de carottes plutôt qu'un fournisseur international, au détriment du prix. Cela permet également une contestation politique car il n'y a pas de critères clairs et objectifs vérifiables par la population. Cependant, cette marge de manœuvre est moins pertinente pour l'externalisation car les ingrédients peuvent changer au cours de la

²² En France, il y a quatre niveaux administratifs. Du plus petit au plus grand: 36 000 communes, 101 départements et 27 régions. Ces chiffres sont sujets à de futures évolutions puisque le gouvernement français veut ramener le nombre de Régions à 13 et supprimer les départements au profit des Régions.

²³ Un résumé pour le public est disponible : http://www.cde14.fr/wp-content/uploads/2017/06/lettre_des_ecoles_2017_JUIN_WEB.pdf

mise en œuvre du contrat sans que la municipalité en soit informée. Nous définissons maintenant les coûts et les dimensions de la qualité pour les cantines scolaires, afin de les relier aux questions de transparence et, par conséquent, aux questions organisationnelles (section 3).

LES COÛTS

Les coûts de production sont difficiles à mesurer dans le cas des cantines scolaires. Il faut essayer de distinguer le coût des matières premières, les coûts d'investissement (bâtiment, équipement), les coûts humains (main-d'œuvre et formation) et les coûts de fonctionnement²⁴ (tableau 1).

TABLE 1: COÛTS ET GOUVERNANCE

	Coût des matières premières	Coûts d'investissement	Coûts humains	Coûts de fonctionnement
En régie	Facilement disponible, peut être augmenté avec le petit déjeuner ou le goûter de l'après-midi.	Cela dépend de la comptabilité. Les investissements croisés (rénovation du réfectoire, qui peut aussi être une salle des fêtes) sont difficiles à imputer.	Disponible, peut être augmenté avec des activités externalisées	Disponible.
Délégation	Coût total (pour la municipalité) disponible. Les différentes catégories de dépenses doivent être exigées par la municipalité et contrôlées pour leur véracité.			
	Disponible, si c'est dans le contrat.	Dépend de la comptabilité, disponible à la municipalité.	Dépend de la comptabilité, disponible à la municipalité.	Disponible si c'est dans le contrat.

²⁴ Realisab, 2014

Disponible si
c'est dans le
contrat, peut
être augmenté
par des activités
externes.
Difficile voire
impossible
d'obtenir des
coûts de
formation.

Les coûts des matières premières alimentaires (environ 25% du coût total) sont faciles à calculer dans le cas d'une régie. Le gestionnaire public sait exactement ce que paie la municipalité puisque c'est elle qui commande. Cependant, les coûts de la nourriture ne peuvent pas être différenciés dans le cas d'une gouvernance déléguée. Les matières premières et leur coût sont inconnus de la municipalité dans le cas d'une gouvernance déléguée. Cela n'empêche pas la municipalité de créer une clause dans le contrat pour connaître le coût des matières premières, afin d'essayer d'évaluer les marges de l'entreprise privée.

Les coûts d'investissement (environ 10% du coût total) sont moins faciles à calculer. Le problème réside dans l'amortissement des investissements. Selon la façon dont ils sont amortis, les investissements peuvent faire monter ou baisser les coûts annuels. De plus, dans le cas d'une gouvernance déléguée avec un marché public, les coûts d'investissement sont inconnus pour les installations et équipements de cuisson. En outre, il est difficile de distinguer le coût d'investissement correspondant aux repas préparés pour une municipalité donnée, du coût d'investissement consacré aux repas préparés pour d'autres clients.

Les coûts humains ne sont pas faciles à calculer. Les municipalités ne peuvent pas déléguer le service de table de la nourriture et la surveillance des enfants. Quel que soit le choix de la gouvernance, ces services doivent être fournis par les fonctionnaires. De plus, certaines municipalités créent des activités de loisir pendant l'heure du déjeuner qui ne sont pas séparées du coût des cantines scolaires. Ensuite, certaines municipalités peuvent avoir un coût de main d'œuvre plus élevé parce qu'elles offrent plus de services pour les enfants.

Les coûts opérationnels et de fonctionnement sont tous les biens consommés autres que la nourriture. C'est l'électricité, la collecte des déchets, les contrôles sanitaires, etc. Il est impossible d'obtenir des coûts d'exploitation et de fonctionnement homogènes d'un mode de

gouvernance à l'autre et d'une municipalité à l'autre. Chaque municipalité a sa propre comptabilité, ce qui fait qu'il est difficile pour les chercheurs de faire des comparaisons.

LA QUALITE

La qualité dans les cantines scolaires a plusieurs dimensions. Comme elle peut concerner l'ensemble du processus de la matière première à la cuisson, nous nous devons d'isoler les dimensions qui nous intéressent. Les dimensions pertinentes peuvent concerner certaines caractéristiques de la «fonction de production» utilisée pour l'approvisionnement des ingrédients tels que le pourcentage de produits biologiques locaux consommés par les enfants. D'autres critères de qualité peuvent être intéressants à observer mais ne concernent pas l'approvisionnement alimentaire. La qualité peut également concerner la transformation des déchets en compost ou la qualité organoleptique des repas. Par exemple, les cuisines centrales impliquent de refroidir puis de réchauffer la nourriture ce qui semble diminuer le goût²⁵. Dans la thèse, nous nous concentrons sur les caractéristiques de l'offre : les ventes directes, les aliments biologiques et la nourriture locale. Ce sont les caractéristiques sur lesquelles les gouvernements se sont concentrés au cours des dix dernières années et pour lesquelles de nombreuses recommandations sur la gouvernance ont été faites.

Le critère des circuits courts est autorisé par la loi depuis 2011²⁶. Un circuit court est défini par le nombre d'intermédiaires qui doivent correspondre au *maximum* aux critères définis par le ministère de l'Agriculture. Dans le cas d'une gouvernance déléguée, ce critère est plus difficile à mettre en œuvre. En effet, il faut d'abord beaucoup de contrôles pour vérifier le nombre d'intermédiaires, et ensuite que ces contrôles se répètent à travers le temps car l'entreprise peut changer ses fournisseurs assez régulièrement.

Le critère biologique est également possible parmi d'autres critères techniques tels que les labels²⁷. Une municipalité peut ainsi demander autant de nourriture biologique qu'elle le souhaite. Cependant, lorsque la municipalité travaille avec des grossistes ou une entreprise privée dans le cas d'une délégation, des éléments anecdotiques suggèrent que les partenaires

²⁵ La restauration des usagers du service public scolaire ou à caractère social en Alsace, Cour des Comptes, Annual Public Report, February 2006.

²⁶ Article 53, Code des Marchés Publics.

²⁷ Article 6, Code des Marchés Publics.

essaient souvent de minimiser la part des aliments biologiques pour augmenter leurs bénéfices (Capital, 2005: Arte, 2016).

Enfin, le critère du « local » est le plus compliqué à appliquer, même s'il est très médiatisé dans les débats sur la restauration collective. Le droit public des contrats interdit les critères basés sur l'origine géographique des produits, de sorte que les gestionnaires des cantines publiques doivent être inventifs pour augmenter la proportion de la nourriture locale dans leurs achats. Demander une chaîne d'approvisionnement courte n'empêche pas les producteurs étrangers de remporter l'appel d'offre car ils peuvent satisfaire ce critère. De plus, un gestionnaire public ne peut pas demander spécifiquement un produit avec une appellation d'origine protégée. Il peut spécifier dans l'appel d'offre tous les critères de la spécification technique, mais pas le « local ». Un moyen facile d'introduire la nourriture locale est néanmoins d'organiser des repas thématiques autour de la nourriture locale. Ces repas thématiques étant ponctuels et souvent inférieurs à 15 000 euros, ils ne nécessitent pas d'appels d'offre compétitifs. Si c'est le moyen le plus facile, il n'est pas suffisant pour organiser durablement la production locale. De plus, il n'est possible que si le gestionnaire public contrôle l'approvisionnement de la nourriture, ce qui n'est le cas que pour la gouvernance en régie. Cela peut donc n'être qu'une première étape pour mieux connaître le marché local et être connu des fournisseurs locaux. En effet, pour augmenter la part de la nourriture locale, le plus important est de connaître la demande locale afin de préparer les appels d'offre et les lots en fonction de l'offre locale disponible. Le dernier problème avec le critère du local est qu'il n'est pas homogène. Pour certaines personnes, cela peut signifier le département ou moins de 200 km, mais cela peut aussi signifier le pays, ou même l'Union européenne. Le critère du local est ainsi très difficile à mesurer et à vérifier.

En conclusion, la qualité est multidimensionnelle et est plus ou moins facile à contractualiser. De plus, certains critères peuvent avoir l'effet inverse de ce que l'on en attend et peuvent parfois se contredire si la municipalité ne s'en occupe pas avec attention. Enfin, un critère peut être inutile s'il n'y a pas de contrôle ni de sanction.

3 LES INTERACTIONS ENTRE LES FACTEURS IDEOLOGIQUES ET POLITIQUES DANS L'APPROVISIONNEMENT ET LES RESEAUX AGRO-ALIMENTAIRES

3.1 MOTIVATIONS: LES ENJEUX POLITIQUES INFLUENCENT LA RESTAURATION COLLECTIVE ET LES RESEAUX AGRO-ALIMENTAIRES

Différents acteurs (citoyens, parents, diététiciens pour n'en nommer que quelques-uns) participent souvent au débat public concernant la gouvernance de la restauration collective, en particulier pour les cantines scolaires. À Paris par exemple, la maire a souhaité en 2016 réformer le système des cantines scolaires en ne faisant de Paris qu'un seul marché unifié de 22 millions de repas par an, comparé aux 20 marchés actuels (un pour chaque arrondissement). L'objectif était d'externaliser le marché de la cantine scolaire à un partenaire privé pour exploiter efficacement la concurrence²⁸, réaliser des économies d'échelle, et niveler (vers le haut) la qualité de la nourriture pour chaque élève parisien (la composition des repas est actuellement choisie par le maire de chaque arrondissement)²⁹. Cependant, cette réforme a rencontré de nombreuses contestations de la part des parents, qui s'inquiètent de la qualité future de la nourriture³⁰. Les manifestants se sont même organisés avec un site internet «Sauve ma cantine»³¹ pour dénoncer les contradictions du projet. L'une des questions principales était: "Comment un fournisseur d'aliments biologiques local sera en mesure de participer à un appel d'offre pour un si grand volume?". Cette question met en évidence les préoccupations des parents face à une baisse de qualité des services externalisés. Ces inquiétudes ont amené la maire de Paris à reconsidérer et à reporter sa réforme. Un autre exemple vient de la ville de Saint-Etienne, où le maire de gauche (élu en 2008) a réussi à atteindre en 2014 (quelques mois avant l'élection municipale de 2014) des repas 100% bio dans les cantines scolaires, et a été

²⁸ Les entreprises sont en concurrence pour le marché, et le gagnant obtient le marché pendant au moins un an, jusqu'à sept ans (en fonction des investissements). Pendant cette période, il n'y a plus de concurrence puisque le gagnant de l'appel d'offre est le seul fournisseur.

²⁹ Les détails du projet peuvent être trouvés sur le site web de la municipalité : <https://www.paris.fr/restaurationscolaire>.

³⁰ Syndicat des parents d'élèves: <http://www.fcpe75.org/sur-le-projet-de-reforme-pour-2018/>

³¹ <http://sauvemacantine.fr/>

battu quelques mois plus tard³². Une fois élu, le nouveau maire - qui a gagné contre le gaspillage d'argent public, et pour revitaliser et valoriser l'identité locale et le terroir³³ - a modifié la politique d'achat alimentaire de la commune pour plus de nourriture locale et conséquemment moins d'aliments biologiques³⁴.

Comme indiqué dans les sections précédentes, les achats publics de denrées alimentaires représentent une part importante du secteur alimentaire et sont motivés par de nouvelles préoccupations concernant la qualité des aliments (local, produits biologiques, circuits courts, etc.) et les finances publiques. Les traiteurs contractuels, en tant que spécialistes, soutiennent qu'ils peuvent fournir un service plus rentable et plus sûr que les traiteurs en régie³⁵ (Rapports techniques du CCR, 2015). Ils soutiennent qu'étant donné la taille de leurs organisations, ils peuvent bénéficier d'un plus grand pouvoir d'achat vis-à-vis des fournisseurs de produits alimentaires qu'un seul client. Ils sont également en mesure d'atténuer les coûts de main-d'œuvre avec les travailleurs temporaires et d'adapter la main-d'œuvre à la demande plus rapidement et plus efficacement que leurs clients (Arte, 2016).

Nous résumons les coûts et les qualités de la restauration collective dans le tableau 1. Nous décrivons leur niveau de transparence aux citoyens, en fonction du choix de gouvernance. Pour un service en régie, les coûts et la qualité de la nourriture sont connus comme le client public est en charge des commandes de produits alimentaires. Dans ce cas, la municipalité peut soit acheter à travers des chaînes d'approvisionnement directes à un producteur identifié, ce qui préserve la traçabilité de la nourriture³⁶, soit acheter par l'intermédiaire de grossistes. Dans cette dernière situation, la qualité des produits est moins accessible aux yeux des citoyens, mais ces derniers peuvent toujours avoir accès à des données publiques fiables sur la qualité et

³² Article de presse : http://www.lexpress.fr/education/a-saint-etienne-la-cantine-scolaire-mise-tout-sur-le-bien-manger_1718348.html

Site web de la ville de Saint-Etienne: <https://www.saint-etienne.fr/saint%C3%A9-vous/famille/restauration-scolaire/bio-cantines-scolaires/cantines-scolaires-saint-%C3%A9tienne-10>

³³ Programme municipal : <https://issuu.com/perdriau/docs/perdriau2014mespropositions>

³⁴ La région de Saint-Etienne ne produit pas toutes les denrées alimentaires nécessaires à la restauration collective (fromage, porc, bœuf, aliments transformés, etc.).

³⁵ Nous avons également rencontré cette croyance dans nos entretiens avec les gestionnaires de la restauration publique et la politique. Ils ont également souligné que l'externalisation consistait à déléguer la responsabilité de la sécurité de la nourriture au partenaire privé.

³⁶ Le marché de l'alimentation d'une restauration collective publique peut être divisé en plusieurs lots. Si la taille et la portée de ces lots sont suffisamment délimitées, un seul producteur peut participer à l'appel d'offre. La municipalité devra alors acheter la nourriture comprise dans le lot gagné par le producteur seulement à ce producteur. Par exemple, si un producteur biologique local a gagné beaucoup de «fromage de chèvre», tout le fromage de chèvre servi par le service de restauration collective public proviendra de ce producteur. Les citoyens doivent par conséquent vérifier l'origine et la qualité du fromage de chèvre une seule fois, puisque le producteur restera le même pendant l'exécution du contrat.

l'approvisionnement de la nourriture à travers des indices donnés par la municipalité et contrôlés par des tiers tels que l'opposition politique³⁷. Pourtant, les investissements et les coûts de main-d'œuvre sont difficiles à obtenir pour un citoyen. En effet, la comptabilité de l'organisation publique différencie rarement les coûts dédiés au service de restauration des coûts dédiés à d'autres finalités tels que les coûts d'appel d'offre au bureau des approvisionnements ou les investissements dans les infrastructures. De même, la comptabilité différencie rarement les coûts d'investissement et de fonctionnement du service de restauration des autres postes de coûts. Ainsi, pour une régie, la qualité est transparente pour un citoyen, mais les coûts totaux sont vagues. Au contraire, une facture d'une entreprise de restauration est transparente sur les coûts totaux, ils sont donc connus des citoyens, même si les différents éléments de coût ne peuvent pas être facilement distingués. Ceci permet à l'entreprise de restauration d'induire le client en erreur sur la qualité de la nourriture et sur les investissements réalisés, ce qui rend difficile pour un citoyen de contrôler la qualité du service³⁸. Ainsi, pour un service de restauration externalisé, les coûts totaux sont connus des citoyens, mais ils doivent faire confiance à la société de restauration pour la qualité de la nourriture et des installations de cuisine.

TABLE 2: ACCESSIBILITE DES COUTS ET DE LA QUALITE AUX CITOYENS SELON LE CHOIX DE GOUVERNANCE DU SERVICE PUBLIC DE RESTAURATION

	En régie	Externalisé
Coûts alimentaires	Disponible	Ne peuvent pas être distingués par le client.
Coûts d'investissement	Depend de la comptabilité	Peuvent être demandés dans

³⁷ Souvent, la municipalité allote le marché alimentaire de manière à mettre en avant certains critères de qualité. La municipalité se concentre ainsi sur certains éléments clés pour allouer (légumes et laitiers en général), et achète les autres produits aux grossistes.

³⁸ Des exemples de ces fraudes sur la qualité de la nourriture sont décrits dans les documentaires suivants: France 5, Les Casseroles de la Restauration collective, 2016; Capital: Qualité et prix faut-il consommer local?, 2015; Capitale: que cachent les cuisines des cantines?, 2015; Arte: Le Business de la Restauration Collective, 2016. Il en va du poids du pain qui tend à diminuer au fil du temps, aux légumes surgelés vendue comme légumes frais, en passant par les produits non biologiques tenant lieu de produits biologiques.

Coûts humains	Difficilement accessibles car les travailleurs sont souvent affectés à différents services	le contrat, mais nécessite des contrôles répétés et coûteux. Les coûts totaux sont néanmoins connus.
Coûts de fonctionnement	Disponible	
Bio, labels	Disponible	Supposé être connus et décidés par le client, mais avec de nombreux changements connus ou des fraudes du partenaire privé. Nécessité un contrôle de qualité coûteux et répété.
Efficacité des ressources	Disponible	

De leur côté, les responsables publics de la restauration collective soulignent également le problème auquel ils sont confrontés en matière de coûts et de qualité. Dans la période actuelle d'économies publique, les maires sont plus attachés à l'atténuation des coûts (Baroin, Laignel, 2015). Par ailleurs, la faible part de l'alimentation biologique et locale dans la restauration collective s'explique également par un décalage entre les besoins en restauration collective et les réseaux locaux de distribution de la production. Tout d'abord, les volumes de cultures et de bovins nécessaires pour 100% d'aliments biologiques locaux dans la restauration collective ne sont toujours pas atteints, même si les surfaces nécessaires pour une telle production sont très faibles³⁹. Mais le principal problème rencontré réside dans les besoins d'assainissement et d'hygiène de la restauration collective⁴⁰. Les services de restauration collective travaillent souvent, sinon toujours, avec des aliments transformés tels que des carottes râpées, de la viande précuite ou simplement des pommes de terre lavées et épluchées. Pourtant, ces filières manquent pour les produits biologiques et, donc, même si la demande locale existe, l'offre locale n'est pas organisée pour participer à un appel d'offre public avec des exigences très

³⁹Interview de Bérénice Bois des Fermiers du Rhône et de la Loire (ARDAB) à Bastamag: "Des cantines scolaires avec des repas 100% bio et locaux, c'est possible?"; JT Fr2, 09/12/2017; SOS Cantine, Les chefs contre-attaquent, M6, 09/06/2017

⁴⁰ Ibidem

élevées en matière de contrôle sanitaire. Par conséquent, afin d'améliorer la qualité et de limiter les coûts, certaines municipalités créent des partenariats à moyen ou long terme avec des producteurs et/ou des vendeurs locaux. Ils sont alors en mesure de faire correspondre la demande et l'offre locale. Par exemple, le 5ème arrondissement de Paris a créé un partenariat avec une coopérative laitière qui a conduit à des investissements spéciaux de la coopérative pour la transformation et la vente de produits laitiers. La coopérative a également saisi l'opportunité de livrer et vendre des produits laitiers dans l'arrondissement. La gouvernance externalisée des cantines scolaires ne permettant pas au gestionnaire public de prendre en charge l'offre, ce type de partenariat n'existe donc que pour la gouvernance en régie.

La restauration collective publique est soumise à des préoccupations de qualité et de coût de la part des parents et des contribuables. L'incertitude sur la qualité et les coûts peut être réduite avec un changement de gouvernance : le système en régie réduit l'incertitude sur la qualité, alors que l'externalisation atténue l'incertitude sur les coûts. Nous attendons donc des changements dans la gouvernance et la complétude des contrats en fonction de l'objet de la contestation politique (coût ou qualité). De plus, nous supposons des différences dans la réputation d'un organisme public et d'un gestionnaire de restauration collective privé, puisque l'organisme public est sujet à des préoccupations de réélection. Nous nous attendons donc à des différences de gouvernance et de complétude de contrat pour un même service en fonction du statut (public ou privé) du service de restauration collective. Enfin, les cantines scolaires peuvent interagir directement avec les producteurs locaux, en particulier pour la gouvernance en régie. Nous attendons donc des interactions entre les magasins d'alimentation et le type de gouvernance de la cantine scolaire. Dans la section suivante, nous développons la façon dont nous traitons ces questions.

3.2 CADRE ANALYTIQUE : LES METHODES POUR TESTER L'INFLUENCE DE LA POLITIQUE SUR LA RESTAURATION COLLECTIVE ET LES RESEAUX AGRO-ALIMENTAIRES

Depuis les articles de Coase (1937), Williamson (1985) et Grossman et Hart (1986), la question de la nature et des limites de l'entreprise fait aujourd'hui partie intégrante de l'analyse économique. L'organisation interne des entreprises ainsi que la façon dont elles régissent leurs relations en amont et en aval ont d'importantes implications en termes d'efficacité (voir le récent manuel de Gibbons et Roberts, 2013). Cette littérature a mis en évidence le rôle clé des

caractéristiques transactionnelles et des contraintes institutionnelles et réglementaires sur les choix organisationnels. Elle a depuis été corroborée par des études empiriques qui confirment l'importance des variables identifiées par la littérature économique (Lafontaine et Slade, 2007). Ensuite, cette réflexion s'est étendue au-delà de la question de l'intégration verticale pour s'appliquer aux relations inter-firmes plus généralement afin de comprendre la diversité des modes de coordination observés (Lafontaine et Slade, 2012, Ménard, 2012).

Alors que l'économie organisationnelle se concentrait à l'origine uniquement sur les relations des entreprises privées, une littérature plus récente a utilisé cette théorie pour analyser les différents modes de gouvernance pour l'approvisionnement des services publics. L'analyse des Partenariats Public Privé (PPP) s'est donc développée au cours des vingt dernières années (Saussier *et al.*, 2009, 2015). Parmi les sujets d'intérêt, l'analyse des PPP a abordé les problèmes du compromis entre le «faire ou faire-faire» (Hart *et al.*, 1997, Levin et Tadelis, 2010), de la conception de contrats pour des services externalisés (Desrieux et De Brux 2012, Moszoro et Spiller, 2012). Il a également été étudié l'impact de ces choix sur le prix final payé par les consommateurs (Saussier *et al.*, 2006). Les études empiriques ont ainsi mis en évidence des variables explicatives clés pour comprendre les choix opérés par l'organisme public en charge d'un service public : caractéristiques du service, niveau de l'administration (municipalités principalement), variables idéologiques et politiques (Sundell et Lapuente, 2011, Picazo-Tadeo *et al.*, 2012, Beuve *et al.*, 2015).

Dans cette thèse, nous visons d'abord à étudier l'importance des facteurs politiques et idéologiques sur la gouvernance de l'approvisionnement des services publics locaux. Le service particulier que nous analysons est la fourniture de repas dans les cantines scolaires municipales françaises. Dans notre contexte, la gouvernance des services publics est faite de deux décisions séquentielles : d'une part, le choix des modes d'organisation, à savoir la production interne ou la délégation à une entreprise privée ; deuxièmement, la conception du contrat entre la municipalité et les partenaires privés une fois que l'autorité publique locale a décidé d'externaliser le marché⁴¹. Nous nous sommes intéressés aux déterminants de ces choix. Nous soutenons que, compte tenu de l'arbitrage entre la transparence des coûts et la transparence de

⁴¹ En cas de gouvernance en régie, l'organisme public doit également choisir le niveau d'allotissement des contrats alimentaires. Le gestionnaire choisira les différentes tailles de lots en fonction de sa politique d'approvisionnement, de l'offre sur le marché et de l'augmentation de la concurrence pour le marché alimentaire. En raison d'un manque de données, nous n'étudions pas l'allotissement, mais nous discutons de sa nature et de ses implications dans le chapitre de conclusion.

la qualité, la sensibilité des citoyens aux finances publiques et aux enjeux environnementaux influencera les choix organisationnels d'un organisme public. Pour ce faire, nous étudions d'abord les déterminants du choix de fabrication ou d'achat pour les cantines scolaires communales en Île-de-France (chapitre 1) en mettant l'accent sur les variables politiques tout en contrôlant des autres facteurs identifiés dans la littérature. Ensuite, nous étudions la conception des contrats de restauration pour mettre en évidence les différences de conception contractuelle selon la nature du client (public ou privé), et montrons que les marchés publics sont plus complets et spécifiés que les contrats privés (chapitre 2). Nous essayons alors de relier ces différences aux facteurs politiques dans le but d'améliorer l'efficacité des contrats et ainsi d'aider à la conception des politiques publiques. Enfin, nous soulignons l'importance de la transparence pour un service public efficace.

Du côté de l'offre, la littérature s'est concentrée sur le secteur des services et de la production alimentaires. Des influences réciproques ont été mises en évidence entre la gouvernance des structures alimentaires sur le marché et la régulation (Hobbs et Young, 2000, Ménard et Klein, 2004). Les gestionnaires de ces structures cherchent à accroître l'efficacité de l'organisation, compte tenu des problèmes de coordination dans le secteur. Ces problèmes sont la périssabilité (Masten, 2000), la traçabilité de la qualité le long de la chaîne d'approvisionnement (Goodhue *et al.*, 2003, Raynaud *et al.*, 2005), ou encore la stratégie commerciale (Raynaud *et al.*, 2009). Une partie de cette littérature a également étudié l'émergence de relations plus directes entre les consommateurs et les producteurs (Cembalo *et al.*, 2011; Pascucci, 2010). Même s'il existe des travaux en sociologie ou en géographie sur le développement des chaînes d'approvisionnement directes en restauration collective (Le Velly et Bréchet, 2012 ; Morgan et Sonnino, 2008), ce sujet n'a pas été beaucoup étudié dans le domaine de l'économie. Pourtant, des études économiques montrent que la mise en place de chaînes d'approvisionnement alimentaire directes dans la restauration collective créent des problématiques organisationnelles inconnues des chaînes d'approvisionnement alimentaire «standards» (Traversac, 2010). Cependant, à notre connaissance, aucune étude n'a été faite pour concilier les problèmes économiques avec les contraintes sociologiques et géographiques dans la disponibilité des réseaux alternatifs agroalimentaires. Le deuxième objectif principal de la thèse est donc d'étudier la disponibilité de réseaux alternatifs agroalimentaires en fonction de la sociologie de la population et de leurs interactions avec la gouvernance et la politique de la restauration collective (chapitre 3).

3.3 DONNEES

Pour mener ces études, il a fallu trouver des variables rendant compte des caractéristiques de la restauration collective, des commerces locaux, du niveau administratif, ainsi que des variables idéologiques et politiques. Premièrement, les caractéristiques du service sont les données les plus difficiles à obtenir, car il n'existe à notre connaissance aucune donnée agrégée sur le mode de gouvernance des cantines scolaires et les contrats ne sont pas accessibles au public. Pour savoir si une municipalité fournit le service de cantine scolaire ou l'externalise (chapitre 1), nous avons dû constituer une base de données originale sur la décision du «faire ou faire-faire» par les municipalités pour les cantines des écoles primaires. Nous avons utilisé la base de données Equipements Permanents (INSEE) pour savoir si une commune avait ou non une cantine scolaire, après quoi nous avons vérifié manuellement sur le site internet de chaque commune de la région Île-de-France⁴² le mode de gouvernance⁴³. Le mode de gouvernance n'est pas souvent disponible sur le site de la municipalité, mais on peut le déduire des marchés publics ou des menus. En effet, chaque municipalité a désormais l'obligation de résumer publiquement les marchés annuels, et les menus incluant souvent le nom du partenaire privé dans le cas d'un service de cantine scolaire délégué. Nous avons complété les informations manquantes par des appels téléphoniques aux municipalités. Nous avons ainsi obtenu l'information sur le mode de gouvernance de 712 communes sur 900.

Nous avons également collecté des informations sur les magasins d'alimentation grâce à la même base de données (Equipements Permanents, INSEE) et l'avons enrichie en ajoutant les filières alternatives et la planification écologique municipale à travers divers sites : La Ruche Qui Dit Oui !, Agenda 21, Ventes à la ferme, etc. Concernant les contrats nécessaires pour le chapitre 2, nous avons rassemblé les contrats de l'une des principales entreprises de restauration privée en France, pour l'année 2015⁴⁴. Nous avons ensuite procédé à une lecture automatique afin de collecter des mots spécifiques relevant des champs thématiques pertinents pour notre étude (sanitaire, approvisionnement, etc.). Enfin, nous avons recueilli d'autres données par le biais de sources institutionnelles. Nous avons obtenu des variables socio-économiques et

⁴² Notre reconnaissance va notamment à Catherine Pasquier (INRA) qui nous a aidé dans la collecte des données.

⁴³ Nous avons également utilisé un questionnaire en ligne sur le sujet, mais avec seulement une centaine de réponses.

⁴⁴ Nous remercions l'Institut Paul Bocuse, et en particulier Agnès Giboreau à qui nous devons l'accès aux contrats. Nous remercions également Christel Hanicotte, Marie Batut-Dajean, Marine Rampnoux et Zaya Hadjaz pour l'aide fournie sur les contrats.

démographiques relatives aux communes grâce à l'Institut national de la statistique et de l'économie (INSEE). Les données politiques ont été obtenues sur le site Web du ministère de l'Intérieur. Les données financières agrégées ont été gracieusement fournies par Buso, Marty et Tra (2017).

3.4 RESUME DES RESULTATS

TABLE 3: RESULTATS RESUMES DES TROIS CHAPITRES – PART 1

<i>Chapitre</i>	<i>Méthodologie et données</i>	<i>Résultats principaux</i>
<ul style="list-style-type: none"> • Chapitre 1. Les Politiques du Faire ou Faire-faire dans l'Approvisionnement Alimentaire Public: Aperçu de la Restauration Scolaire Française. • Question de Recherche. Est-ce que la contestation politique influence le choix du Faire ou Faire-faire des services publics locaux ? Un signal envers la qualité ou le coût du service peut-il influencer la contestation politique et donc le choix du Faire ou Faire-faire ? 	<ul style="list-style-type: none"> • Analyse économétrique (Logit avec des variables de contestation politique et de signal de la qualité). • 712 modes de gouvernance des cantines scolaires municipales dans la région Française Île-de-France. • 391 municipalités avec les données politiques de 2008 et 600 avec celles de 2014. • Source: Base de données originale collectée par les auteurs, Ministère de l'Intérieur, INSEE. 	<ul style="list-style-type: none"> • Le choix du Faire ou Faire-faire pour les cantines scolaires municipales est perméable à la contestation politique. En particulier, la propension à Faire diminue avec la force de l'opposition politique, en conséquence d'une plus grande pression faite sur le coût du service. • Le rôle de l'opposition politique dans le choix du Faire ou Faire-faire peut être atténué par des signaux donnés de l'intérêt de la municipalité envers les questions de coût et de qualité.
<ul style="list-style-type: none"> • Chapitre 2. Les Contrats Publics d'Approvisionnement Alimentaire et la Contestation Politique : Aperçu de la Restauration Collective en France. • Question de Recherche. Est-ce que la contestation politique augmente la rigidité des contrats ? Conséquemment, les contrats publics sont-ils plus rigides que les contrats privés ? Et des clauses sont-elles plus sujettes à la rigidité que d'autres du fait d'une concentration de l'attention politique ? 	<ul style="list-style-type: none"> • Création de dictionnaires de rigidité, et extraction de mots des contrats à l'aide d'un logiciel de lecture et d'analyse algorithmique. • Analyse économétrique (MCO). • Comparaison de la rigidité de 496 contrats publics et privés. • Focus sur 242 contrats publics, et 96 contrats municipaux. • Source: Base de données originale collectée par les auteurs, Ministère de l'Intérieur, INSEE. 	<ul style="list-style-type: none"> • Les contrats publics sont plus rigides que les contrats privés. • La contestation politique augmente la rigidité des contrats publics, en particulier concernant les clauses "sensibles".

TABLE 4: RESULTATS RESUMES DES TROIS CHAPITRES – PART 2

<i>Chapitre</i>	<i>Méthodologie et données</i>	<i>Résultats principaux</i>
<ul style="list-style-type: none"> • Chapitre 3. Sur la Disponibilité Géographique des Points de Vente au Détail Bio et Alternatifs. • Question de Recherche. Est-ce que les politiques influence la disponibilité des circuits-courts alimentaires et des magasins bio ? Si oui, est-ce qu'ils influencent les circuits-courts et les magasins bio de la même manière ? 	<ul style="list-style-type: none"> • Création d'une disponibilité étendue des magasins dans la région française Île-de-France. • Analyse économétrique (Tobit et Logit). • Comparaison des coefficients pour les circuits-courts et les magasins bio. • Source: Base de données originale collectée par les auteurs, Ministère de l'Intérieur, INSEE. 	<ul style="list-style-type: none"> • La disponibilité des magasins bio est favorisée par un climat politique municipal favorable. • La gestion en régie des cantines scolaires municipals décroît la disponibilité des circuits-courts alimentaires.

GENERAL INTRODUCTION

1 CONTEXT

1.1 FOOD SYSTEMS FACE SEVERAL INTERLOCKED CHALLENGES

The food system is the center of much attention, with regard to the stakes at hold. Nutrition and Health, Food Safety, Environment, Food Waste and Losses, and Socio-Economics issues are important matters to which the public authorities try to implement diverse solutions (law, planning, management, etc.). French school canteens are the focus of the attention due to children involvement and the use public money.

NUTRITION AND HEALTH

If nutrients deficiencies are not a main issue anymore in developed countries, obesity has now become a largely shared problem in those countries⁴⁵. In 2015, 2.2 billion people were overweight in the world, including 107.7 million children and 603.7 million adults were obese in the world leading to 4 million premature deaths (The GBD 2015 Obesity Collaborators, Afshin *et al.*, 2017). In 2008, France has 18% of its adult population obese, as well as 19% and 11% of obese 11-year old respectively boys and girls (Currie *et al.*, 2009). France has long resisted to the epidemic of obesity but is now challenging the worse European countries, especially due to a skyrocketing increase in child overweight (Obesity Task Force). Since medical studies range the additional risk for an overweight child to be an overweight adult from 20 to 50%, and from 50 to 70% for an overweight teenager, public authorities are meant to act on this matter.

The National Plan Nutrition and Health (hereafter NPNH) (2001) has led to the creation of a guide for size of food portions and frequency of ingredients addressed to the managers of institutional catering. There is an interesting controversy in the French scholar's catering sector concerning this guide. Whereas many municipal public bodies and managers in charge with the

⁴⁵ In 1954, the French President of the Council pass a bill to make mandatory for schools to serve the children a glass of sugared milk once a day (Bohling, 2014). By doing so, Pierre Mendès France wanted to fight with both malnutrition and alcoholism. The sugar in the milk for children helped the northern farmers of France to switch from alcohol beet to sugar beet, and diminished the habit to give alcohol to children, sugar being expensive and scarce.

school catering claimed during our interviews that this guide is mandatory, the ministry of Finances maintained to us that this guide is only an illustration of good food behaviors and is not mandatory. However, making reference to this guide is a protection for public bodies toward the population to justify the size of portions, often described as small.

Finally, many other scientific studies demonstrate that the quantities of nutrients in fruits and vegetables drop constantly since the 1950's⁴⁶. For instance, potatoes have lost half their iron and vitamin C content. The origin of this phenomenon has to be found in several causes such as the soil depletion, preferences given to observable quality (shape, color, size, etc.), or still the maturation in the delivery process. The solutions are to favor organic food, maturation in the field, reduce the distance between production and consumption, and avoid intermediaries to gain time.

FOOD SAFETY

Many food scandals linked to a lack of transparency in the transformation and distribution process happened the late twenty years in the world⁴⁷. Those legitimate the demands for more transparency from the consumers, whether it is for human or animal consumption.

In France, the DGCCRF (Directorate General for Competition Policy, Consumer Affairs and Fraud Control) found in 2009 that 62% of fruits samples and 30% of vegetables samples were polluted beyond the legal Maximum Residue Limit (MRL). On the same way, a study demonstrated the presence of beta blockers, anti-inflammatories, hormones, and antibiotics in milk aimed at human consumption (Azzouz et al., 2011). Those are only examples of what could be mentioned but they stretch minds and create defiance toward the entire food system. This defiance leads to a higher demand for regulation from the States and the food sector itself affected in its benefits.

ENVIRONMENT

In 2004, farming accounted for 13.5% of worldwide greenhouse gas (GHG), while deforestation and change in the use of soils accounted for 17.4% (RAC France & FNH, 2010). Put together, they are the first cause of GHG in the world, without even taking into account the

⁴⁶ The website Bastamag references about fifteen studies on that particular matter.

⁴⁷ Just to name a few, Mad Cow disease, Encephalitis in sheep, Horse Lasagna, worms in Marseille's school canteens, Ikea tartlet, etc.

GHG linked to food transportation. In Europe, the part of agriculture in the total GHG is only 9%, being 21% in France⁴⁸ (*ibid.*). Concerning food transportation, Heller and Keoleian (2000) estimate that diesel fuel use accounts for 25% of the total energy consumed within the United States of America food system. Weber and Matthews (2008) estimate the carbon cost of food transportation to be 11% of total GHG in the U.S. food system. Wakeland *et al.* (2012) measure the part of carbon emissions due to freight transport in the U.S. food system to 6% of the overall emissions of food sector in the U.S. However, the authors find that minimizing food waste and composting (versus transportation to a recycle center) the unavoidable food waste would have a greater impact on GHG emissions than switching from a distant to a local supplier. Indeed, they find large trucks and boats to be more efficient by ton of food transportation when they are full than mostly empty local small trucks.

As a consequence of the importance of agriculture in total GHG, scientists try to offer solutions. First, a larger use of legumes decreases the need for fertilizers since those crops fertilize the soils with azote, which drastically reduces the use of fertilizers and, thus, GHG (Baranger *et al.*, 2008). Second, organic consumers consume more legumes and less meat, thus contributing to the reduction in GHG⁴⁹, the main contribution in the reduction of agricultural GHG is possible thanks to a decrease in meat (especially beef and ruminants). The Food and Agriculture Organization (FAO) of the United Nations estimated in 2009 that a global change toward organic agriculture and cattle farming would decrease total emission of GHG by 40% in 2030, with unchanged quantities⁵⁰.

FOOD WASTE AND LOSSES

A distinction is made between waste and losses, as the first one hints a moral view. Losses is more neutral and refers to manager's concerns for profitability. Indeed, what is lost may never be sold, implying hidden costs for the consumers and producers. The Food and Agriculture Organization (FAO) of the United Nations estimated in 2011 to a waste of one-third of the world food production, being 1.3 billion tons a year. Another study evaluates the waste to half

⁴⁸ In France the part is higher because France is a major producer of beef, which is one of the first causes of GHG, and because total emissions in France are lower than in other countries due to a large use of nuclear power. The energy sector is only 13% of GHG for 59% for Europe (CITEPA, 2009; Eurostat, 2009).

⁴⁹ During the 12th FENS European Nutrition Conference in Berlin, 2015, Emmanuelle Kesse-Guyot presented the first results of BioNutriNet "**Organic food consumer's profiles from the large Nutrinet cohort follow-up in France**", Kesse-Guyot (2015).

⁵⁰ Low greenhouse gas agriculture - mitigation and adaptation potential of sustainable farming systems, FAO, April 2009.

of the world food production (FAO, SIWI, IWMI, 2008). In the European Union, 89 billion tons of food is estimated to be lost every year once the food is harvested or slaughtered (BIO, 2010) for a cost of 143 billion euros (FUSIONS, 2016): 42% by households, 39% by the food industry, 14% by catering, and 5% by wholesalers and food retailers. Besides, the FAO estimates that if 'Food Waste and Losses' was a country, it would be the third biggest emitters of GHG behind the USA and China, with 3.3 billion tons of CO₂ produced each year. In the USA, Food Waste and Losses are 112,9 million tons of CO₂ (Venkat, 2011).

The French Agency for the Environment and Energy Management (ADEME) evaluated total losses for France to 10 million tons of food, 16 billion euros being one-third of the national budget devoted to pay the interests of the debt, and 3% of the national GHG rejections. Institutional catering is one of the major wasters. Indeed, waste are 130g per person per meal in institutional catering. Institutional catering is only 15% of the meals but 42% of the waste for households (INCOME Consulting, 2016). There is consequently room for improvement in institutional catering.

Finally, food waste and losses are not only food, money, or GHG. They also represent another scarce resource: water. Indeed, at the world scale it is 250 km³ of water wasted in unconsumed food, being more than 3.6 times the water consumption in the United States of America (FAO, 2016).

SOCIO-ECONOMICS

All the concerns we highlighted previously have also socio-economics impacts. Indeed, obesity and nutrition issues affect people differently according to their gender, educational level (WHO, 2014; Eurostat, 2009) and income (INSERM, 2013). A French report from the Senate concluded in a risk three times larger for a child of a non-qualified worker to be obese than the child of an executive manager (Saunier, 2003). A study in the European Union estimated that 26% of obesity in men and 50% of obesity in women can be attributed to inequalities in educational status (EUROTHINE, 2007). Much of the premature mortality and loss of healthy years seen in lower socioeconomic groups can be explained by diseases associated with obesity⁵¹ (Robertson *et al.*, 2013). Then the vicious circle enters in action with poor and low-educational women more unlikely to breastfeed, which increases obesity on the infant and then on the future

⁵¹ For instance, the most deprived quintile in Europe had 1.9 times more risk to die from heart coronary disease than the most affluent quintile in 1992. It increased to 2.5 in 2003.

adult (WHO, 2014). Besides, in poor and low-educated families children are less exposed to food variety, thus leading to bad food habits and lacks or overweight. The WHO consequently recommends to help those children in discovering new ingredients, especially fruits and vegetables.

Moreover, a French report for the Minister of the Environment denounced that the environmental public policies are often, if not always, dissociated from social public policies (Diebolt *et al.*, 2005). The report denounces that the poorest population have smaller means to avoid environmentally degraded neighborhood than richer people, in particular when facing transportation pollution (air, noise, and smells).

CONCERNS FOR SCHOOL CANTEENS

Quality is very important and take several dimensions for institutional catering, and even more for scholar catering. Children are particularly subject to the quality of food. The young and the teenagers have special nutritional needs that have to be taken into account for the preparation of their meals. Furthermore, it is between 4 and 6 that the future food habits are created (Lafraire *et al.*, 2016). Thus, one can try to increase the positive sensitivity to wasting, organic food, home-cooked food, fruits, or vegetables for instance. At this age children can swing to either good or bad food habits. Thaler and Sunstein (2008) argue, for instance, that one may try to influence food's behaviors with nudges toward healthier eating. They show that the layout of food items in a cafeteria may indulge consumers into either good or bad food's behaviors. There is then a place for public policies to teach good food habits, leading to a decrease in obesity and overweight. This has led to various public initiatives in various countries such as the American "Healthy, Hunger-Free Kids Act of 2010" at the initiative of Michelle Obama⁵², or the 2001 National Program Nutrition and Health (NPNH⁵³) in France.

Furthermore, meat has also become a stake for institutional catering, and in particular for school canteens. Some establishments or public bodies attempt to reduce the importance of meat in meals at school canteens for ecological reasons (meat is a main contributor of GHG), but also to teach children new type of consumption without animal products.⁵⁴ The integration of meat-free meals allows them to decrease the cost of the meals, decrease the carbon footprint, and

⁵² By removing fat food and soda from schools and encouraging to drink water and to eat fruits and vegetables, this program aims at reducing obesity – but also cholesterol, diabetes, etc. – for the young and thus for the future adults.

⁵³ Programme National Nutrition Santé (PNNS), in French.

⁵⁴ That is the case for instance of the school canteens in the 2nd arrondissement of Paris, in Grenoble or Lyon.

educate the children to new tastes and form of consumption. Besides, meat-free meals are also an assumed way of solving the issue of confessional meals, in particular for Muslims and Jews children⁵⁵.

In addition, a meal to prepare in institutional catering necessitate about 20 liters of water⁵⁶. In a context of excessive exploitation of water stocks, to run water has become an important matter in some regions, not only in France. Moreover, in the French *Région* "Rhône-Alpes", the 20 million meals produced annually for 277 high-schools produced 60,000 tons of equivalent carbon, being 3 kg per meal, and is responsible for 10% of total waste in the region. The use of frozen vegetables multiply by 60 the impact on carbon footprint compared with fresh vegetables⁵⁷. Furthermore, institutional catering and supermarkets are responsible for 1.5 million of tons of fermentable waste in France in 2005⁵⁸.

To conclude, we highlight that to regulate institutional catering can have great and diverse impacts. There are first sanitation reasons to regulate: to provide daily nutritional needs, to guarantee good quality food, or to teach good food habits. There are also socio-economic reasons to regulate: to structure the organic sector, to fight against food discrimination, or to control for the good use of public finances. Finally, there are environmental reasons: to minimize environmental footprint in regard to greenhouse gas, water use, fermentable waste, and energy. If the States have taken into account the importance of food for different levels of the society, citizens often organize to alert the public authorities on this matter especially what is called the "consum'actors".

1.2 CONSUM'ACTORS: FROM CITIZENS' INITIATIVES TO THE STATES

Like in other fields, food is subject to whistleblowers. Jamie Olliver, a famous British chief known for its TV-shows, denounced that way the poor nutritional quality of English school canteens. Hamburgers, French fries, pizza, frozen food seems to be the daily meal of pupil at school. In 2005, the British Minister of Education invests £280,000,000 on school meals after

⁵⁵ See a tribune in favor of free-meat meals, in *Le Monde*, 03/26/2015: *Le Repas végétarien, le plus laïc de tous*. Or the case of Perpignan, in *Libération*, 23/06/2015: *Dans les cantines de Perpignan, des plats végétariens pour éviter le porc*.

⁵⁶ Etude SIEE 2007 pour le Conseil Général de l'Hérault, SMEGREG, Agence de l'eau Adour Garonne.

⁵⁷ Impact carbone de la restauration collective dans les lycées de Rhône-Alpes, Ademe.

⁵⁸ www.arpe-mip.com/files/GUIDE_RESTAURATION_ET_DD/GUIDE_RESTO_ET_DD_web.pdf

Jamie Olliver's campaign on bad quality of the food at school. School canteens are often subject to public pressure in many countries. In the United States of America, the parents were so fed up with the quality of their children's meals that they created websites (<https://www.dosomething.org> ; <http://fedup.dosomething.org> ; www.fedup.com) to take pictures of their children's meals that spread to several English-speaking countries (New-Zealand, Australia, USA) that share the same problem with school canteens.

After the same debate in France on school canteens, the French government gave a frame to nutritional quality in school canteens through the PNNS in 2001. The last report of the Agence Bio (Agence Bio, CSA Research, 2017) shows a desire for organic and local food. 82% of the French think it is important to develop organic food and agriculture for the health (66%), the environment (58%), and the taste (56%). They also want to eat organic food out of home: from 54% in vending machine, to 89% in school canteens which get the higher demand for organic food. The *Grenelle de l'Environnement* in 2008 responded to that demand for more organic food and seasonal food with the official target of 20% of seasonal and of organic food at school⁵⁹. The Ministry of Agriculture modified the law to introduce the possibility to favor direct sales from the producer to a public authority⁶⁰. The objectives, far from being reached, have yet been reaffirmed in 2016 with a new law "Manger Local" (translation: "Eat Local") to promote local food.

On the other hand, the civil society did not wait for public authorities or private initiatives. The Nicolas Hulot's Foundation's approach created in 2016 implicates consumers, producers, and cooks in institutional catering in order to improve the "quality" and ecology of the food. The label "*Mon Restau Responsable*" is awarded to institutional catering canteens engaged in an environmental process: reduce waste, energy and water savings, include consumers in the decisions, etc.

Through examples, we have shown that food matters are important to the civil society as they are the consumers, to private firms as they are the producers and sellers, and to public authorities to match both of the previous ones and create trust thanks to certifications.

⁵⁹ Article 48 law of the 3rd of August, 2009 "Grenelle 1" and article 230-1 and 230-5 of the Fishing and Rural Code.

⁶⁰ As the European Union forbids to favor local producers in public markets, a way is to favor direct sales hoping for close producers. However, direct and local are not the same, even if sometimes they are considered as identical.

2 INSTITUTIONAL CATERING

2.1 AN OVERVIEW

THE NACE CLASSIFICATION

In the NACE classification, institutional catering is included in ‘Food and Beverage Service activities’, within three sub-categories: ‘Restaurants and mobile food service activities’, ‘Event catering and other food service activities’, and ‘Beverage service activities’.

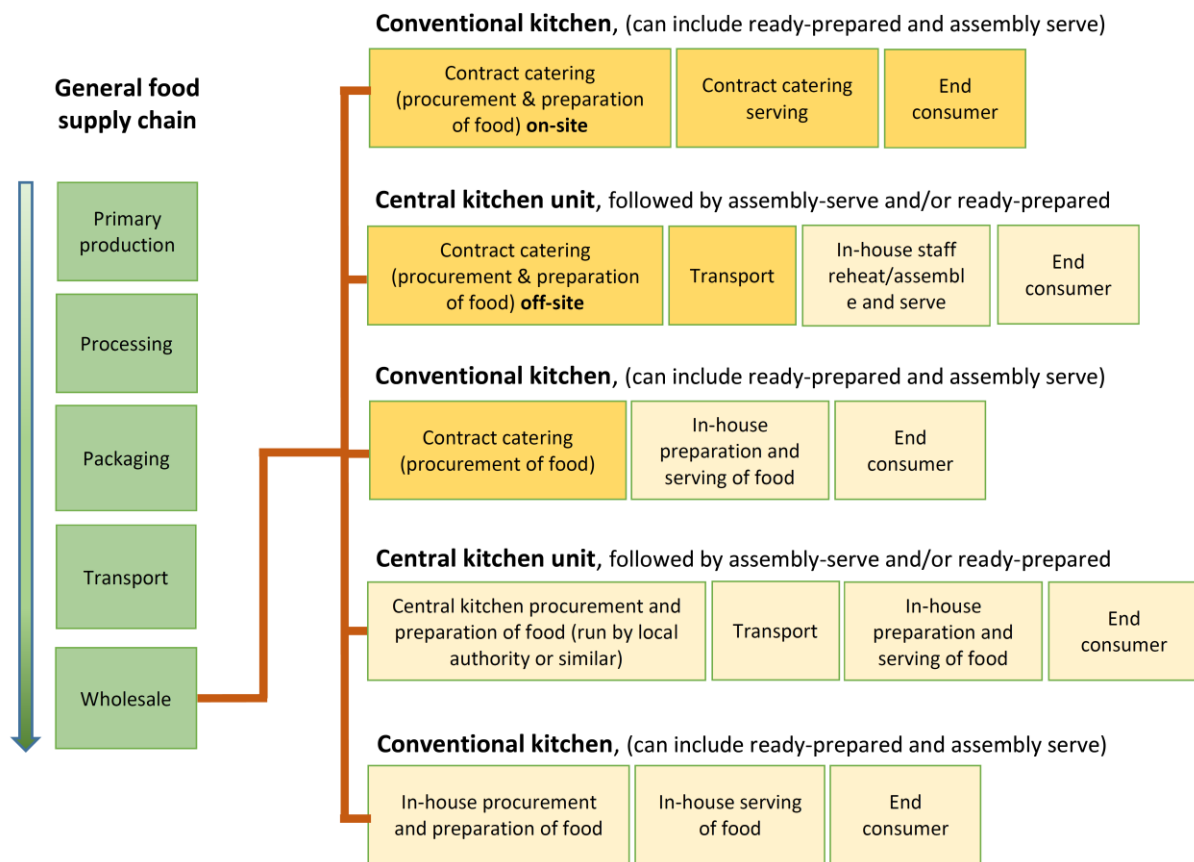
In the 2012 EU-28, ‘Food and Beverage service activities’ account for €353.8 billion in turnover, 8 million persons employed in more than 1.5 million enterprises (Table 2). The main category in each is ‘Restaurants and mobile food service activities’ with €217.6 billion in turnover, almost five million persons employed in 877,300 enterprises. ‘Beverage serving activities’ follow with €84.3 billion in turnover, more than two million persons employed in 592,400 enterprises. ‘Event catering and other food service activities’ is last with €52 billion in turnover, more than one million persons employed in 74,100 enterprises. The progression is important for each categories compared with 2008 (from 3.2% to 23.3%), but for ‘Beverage serving activities’ with less enterprises (-8.1%), smaller turnover (-8.9%), and yet an increase in the number of persons employed (24.1%) (Eurostat Structural Business Statistics, 2012). France, Italy, and the United Kingdom are the main consumers of ‘Food and beverage service activities’.

INSTITUTIONAL CATERING

GIRA Foodservice (2014) values the institutional catering market of EU-28 to €82 billion in 2013, based on the data of EU-15, which represents 88 % of the EU-28 total institutional catering market. This comprises the expenditures of both public and private organizations in Business and Industries, Educational, Health and Welfare, and other services. The report also estimated the percentage of meals provided to public institutions to 55 % from the total meals of the institutional catering market⁶¹.

⁶¹ Assuming private and public costs equal, the institutional catering to public organizations is estimated to about €45 billion euros.

FIGURE 1: A GENERAL FOOD SUPPLY CHAIN AND DIFFERENT FORMS OF CATERING SERVICE SUPPLY CHAINS



Source: JRC Technical Reports (Sjögren et al., 2015).

Note: The orange (dark) color shows those stages carried out by the catering service companies and the pink (light) color the ones carried out by the public authorities.

The organization of food supply chain for institutional catering is represented on Figure 1. The general food supply chain includes the different steps from the primary production to the wholesale. It has to be noted that the general food supply chain can be integrated by a sole firm (direct sale) or disintegrated through a chain of firms for each step. For the food to be consumed in institutional catering, it has to be bought directly by an in-house procurement central or conventional kitchen (last two boxes chains on Figure 1) through public auctions, or by a private company that procures food and/or meals to an institutional catering (first three boxes chains on Figure 1). As shown on Figure 1, the scope of the externalization of the catering service to a catering company begin with the sole procurement of food and can extend to cooking and serving of meals, and transportation if needed. Unless specified otherwise, we will now consider

in-house to refer to the last three boxes chains and externalization to refer to the first two boxes chains on Figure 1⁶². It has to be noted that both organization modes need to go through public auctions. An in-house procurement and preparation of food necessitates public auctions for food supply. Similarly, externalization necessitate for the public manager to do public auction for the meals.

GIRA Foodservice (2014) gives an estimation of the breakdown of meals provided to public and private foodservice in 2013, per volume of meals provided. French Businesses and Industries are private firms' clients to 85% of the meals. The 15% left being Public Administrations. Education, on the other hand, has mainly public consumers (77% in France). In the French health sector, public institutions represent 52% of the meal.

In this catering sector, the market is highly concentrated worldwide. For instance, the market share per financial value of the top four contract caterers in France in 2013 is 82% (GIRA FoodService, 2014). The largest catering companies are Compass (UK), Sodexo (FR), and Elior (FR). Compass' revenues in Japan and Europe were €7.1 billion in 2014. Sodexo's in the world were €18 billion, and Elior's were €5.3 billion (JRC Technical Reports, Sjögren *et al.*, 2015).

Finally, the average meal costs vary by sector (FoodServiceEurope, 2014). Business and Industries are the most costly meals with a mean of €7.48 per meal in France, followed by the Health and Welfare sector (€4.62), then Educational sector (€4.47), for a mean of €4.78 per meal all sectors included. It has to be noted that Health and Welfare sector is not homogeneous in term of costs. Catering for the elderlies increases the average cost compared with catering at the hospital, often less costly. Moreover, Education has often the smallest average cost, (€4.47 in France). One possible explanation is the large subsidies received by this public service from (mostly) local public finances, with a direct consequence on cost mitigation. A few cents might not be a lot for a meal, but France serves 1,223,000,000 meals a year in Education sector (Gira FoodService, 2014).

Institutional catering represents an important economic sector in France. In 2004, this sector contributed for €10 billion to the French economy⁶³. In 2011, institutional catering in-house

⁶² In-house refers thus to the cooking part of the catering service.

⁶³ "La restauration des usagers du service public scolaire ou à caractère social en Alsace", Report of the *Cour des Comptes*, 2005, pp. 653-672.

concerns 68% of total institutional catering in France⁶⁴. However, whereas the part of in-house catering is high for the economy of “care” (64% of scholar catering, and 73% of social catering), it is of only 26% for catering in enterprises. Moreover, considering the size of the sector, institutional catering has an economic impact on the French economy and not only on social finances. Institutional catering in-house in France in 2011 represents 2 billion meals, 42 000 restaurants, 230 000 workers, and 11 billion of turnover⁶⁵. Given the socio-economics stakes highlighted, given that scholar catering is a concern in most of the electoral programs since 2002, we expect political factors to influence the institutional catering service.

2.2 SCHOLAR’S CATERING

In France, each year six millions of children eat in a school canteen⁶⁶. 60% of children in primary school eat at school at least once a week. There is then a room in France for public policies to orientate food consumption toward healthier behaviors. Scholar catering is organized by different governmental level according to the level of public schools (see Figure 1)⁶⁷. Private scholar establishment organized their school canteen service as they please, with no intervention of the political power. In this thesis, we thus focus on public schools and not private ones in order to study the political choices behind the choices of governance for school canteens.

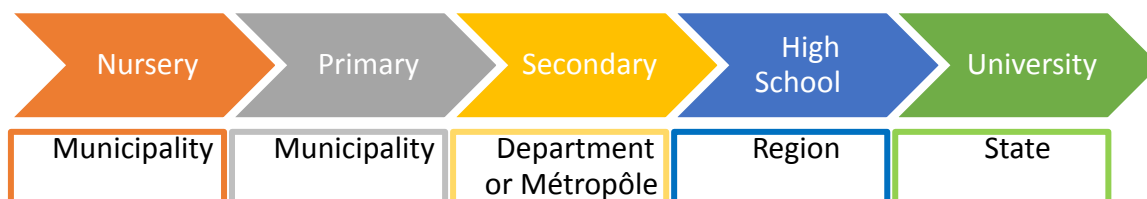
⁶⁴ Restauration collective et développement durable, ARPE Midi-Pyrénées, l'agence régionale du développement durable, 2012.

⁶⁵ Restauration collective et développement durable, ARPE Midi-Pyrénées, l'agence régionale du développement durable, 2012.

⁶⁶ "La restauration des usagers du service public scolaire ou à caractère social en Alsace", Rapport public de la Cour des Comptes, 2005, pp. 653-672

⁶⁷ In France there are four administrative levels. From the smallest to the largest: 36 000 municipalities, 101 *Départements*, and 27 *Régions*. Those numbers are subject to future evolutions since the French government wants to reduce the number of *Régions* to 13 and delete the *Départements* to the benefits of *Régions*.

FIGURE 2: ORGANIZATION OF PUBLIC SCHOLAR CATERING



Sources: French Code of Education, articles R. 531-52 and R. 531-53.

In the case of public institutional catering, the clients are authorized to select the private partner with a multi-dimension scoring (art. 53 of the *Code des Marchés Publics*). For instance, in the 14th arrondissement of Paris, the price accounts for 35% of the total score, quality (organoleptic, chemic, etc.) for 25%, standing by the rations for 20%, standing by the conditioning for 15%, and 5% for standing by the periods⁶⁸. The criterion used to order the different offers vary from one client to another and are necessary to select the most advantageous offer regarding to both cost and quality. There, thus, exists some room for mayors to favor one offer rather than another on criteria non verifiable by citizens. The organoleptic criteria for instance is vague enough to advantage a local supplier of carrots rather than an internationalized one, to the detriment of the price. This also allows political contestation as there are no clear and objectives criteria verifiable by the population. However, this room for maneuver is less relevant for externalization as ingredients may change during the implementation of the contract without the municipality to be informed about it. We now define the costs and quality's dimensions for school canteens, in order to link them to transparencies issues and consequently to organizational issues (section 3).

COSTS

Production costs are difficult to measure in the case of school canteens. One have to try to distinguish food cost (cost of raw materials), investment costs (building, equipment), human costs (labor and training), and functioning costs⁶⁹ (Table 1).

⁶⁸ A summary to the public is available at: http://www.cde14.fr/wp-content/uploads/2017/06/lettre_des_ecoles_2017_JUIN_WEB.pdf

⁶⁹ Realisab, 2014

TABLE 1: COSTS AND GOVERNANCE

	Food costs	Investment costs	Human costs	Operational and running costs
In-house	Easily available, can be increased with breakfast or afternoon tea.	Depends on the accounting. Crossed investments (renovation of the refectory, which may also be a village hall) are difficult to split.	Available, can be increased by external activities.	Available.
Delegated governance	Total cost (for the municipality) available. The different categories of spending have to be demanded by the municipality, and controlled for their veracity.			
	Available, if it is in the contract.	Depends on the accounting, available to the municipality.	Available if it is in the contract, can be increased by external activities. Difficult nay impossible to get training costs.	Available, if it is in the contract.

Food costs (about 25% of total cost) are easy to calculate in the case of an in-house governance. The public manager knows exactly what the municipality pays for since she is the one to make the orders. However, food costs cannot be differentiated in the case of a delegated governance.

The raw materials and their cost are unknown to the municipality in the case of a delegated governance. This does not prevent the municipality to create a clause in the contract to know the cost of the raw materials, in order to try to assess the margins of the private firm.

Investments costs (about 10% of total cost) are less easy to calculate. The problem lays in the amortization of the investments. Depending on how they are amortized, the investments can make the annual cost goes up or down. Moreover, in the case of a delegated governance with a public market, the investment costs are unknown for the cooking facilities and equipment. In addition, it is hard nay impossible to distinguish the investment cost corresponding for the food cooked for a given municipality from the investment cost dedicated to the food for other clients.

Human costs are also not easy to calculate. Municipalities cannot delegate the table service of the food and the watching of the children, then whatever the choice of governance those services have to be provided by public employees. Moreover, some municipalities create recreational activities during lunch time that are not separated from the cost of the school canteens. Then, some municipalities can have a higher human cost because they provide more services for the children.

Operational and running costs are all the consumed goods other than food. It is electricity, garbage collection, sanitarian controls, etc. It is impossible to get homogeneous operational and running costs from one mode of governance to another, and from one municipality to another. Each municipality has its own accounting which makes it hard for the researchers to do comparisons.

QUALITY

Quality in school canteens has several dimensions. It can concern the whole process from raw material to cooking so we have to isolate the dimensions we are interested in. Relevant dimensions may concern some characteristics of the “production function” used for procuring the ingredients such as the percentage of local, organic products consumed by the children. Others quality criteria can be interesting to observe but does not concern the food supply. Quality can also concern the transformation of waste into compost or the organoleptic quality of the meals. For example, central kitchens impose to cool down and then heat the food again

which seems to decrease the taste⁷⁰. In the thesis, we will focus on the characteristics of the supply: direct sales, organic food, and local food. They are the characteristics on which the governments have focused the last ten years, and for which numerous recommendations on the governance have been made.

The short food supply chain criteria is allowed by the law since 2011⁷¹. A short food supply chain is defined by the number of intermediaries that must be one at the most to fit the criteria defined by the Ministry of Agriculture. In the case of a delegated governance, this criteria is more complicated to put into action. Indeed, it necessitates first a lot of controls to check the number of intermediaries, and second that those controls are repeated through time because the firm can change its supplier overtime.

The organic criteria is also possible among other technical criteria such as labels⁷². A municipality can thus ask for organic food as much as it wants. However, when the municipality works with wholesalers or a private firm in the case of a delegation, anecdotal evidence suggest that partners often try to minimize the part of organic food to increase their benefits (Capital, 2005a, 2005b; Arte, 2016; France 5, 2016).

Finally, the local criteria is the most complicated to apply, even though it is much publicized in the institutional catering debates. Public contract law prohibits the criterion based on the geographical origin of the products so the public canteen managers have to be inventive to increase the proportion of local food in their procurements. To ask for short food supply chain do not prevent foreigner producers to win the auction, as they respect this criteria. Moreover, a public manager cannot specifically ask for a product with a Protected Denomination of Origin. She can ask in the auction every criteria in the technical specification, but the local one. One easy way to introduce local food is to organize thematic meals around local food. Since those thematic meals are punctual and are often less than €15,000, they do not necessitate a competitive auction. If this way is the easiest one, it is not enough to organize the local production and make it durable. Furthermore, it is possible when the public manager controls the procurement of the food, which is only in the case for in-house governance. It can be a first step to better know the local market and to be known by the local suppliers. Indeed, to increase the part of local food the most important is to know the local demand in order to prepare the

⁷⁰ La restauration des usagers du service public scolaire ou à caractère social en Alsace, Cour des Comptes, Annual Public Report, February 2006.

⁷¹ Article 53, Code des Marchés Publics.

⁷² Article 6, Code des Marchés Publics.

auction and the lots according to the local supply available. The last problem with the local criteria is that it is not homogeneous. For some people it can mean the department or less than 200km, but it can also mean the country, or even the European Union. A local criteria is then very difficult to measure and verify.

To conclude, quality is multi-dimensional and is more or less easy to contract. Moreover, some criteria can have the opposite effect of what is wanted and some criteria are opposed to others if the municipality does not deal with the criteria altogether. Finally, a criteria can be useless if there are no control and punishments.

3 INTERACTIONS BETWEEN POLITICAL AND IDEOLOGICAL FACTORS IN FOOD PROCUREMENT AND AGRI-FOOD NETWORKS

3.1 MOTIVATIONS: POLITICAL ISSUES INFLUENCE INSTITUTIONAL CATERING AND AGRI-FOOD NETWORKS

Stakeholders (citizens, parents, dieticians to name a few) often participate in the public debate concerning the governance of institutional catering, especially for school canteens. In Paris for instance, the mayor wanted in 2016 to reform the school canteens system by making of Paris only one unified market of 22 million meals per year, compared with the 20 markets nowadays (one for each *arrondissement*). The goal was to externalize the school canteen market to a private partner to exploit efficiently the possible competition for the market⁷³ and economies of scale, and to standardize (upward) the quality of the food for every Parisian pupil (the composition of meals are currently chosen by the mayor of each *arrondissement*)⁷⁴. However, this reform encountered many contestations from the parents, who worry about the future quality of the food⁷⁵. Protesters even organized with a website “Save my canteen”⁷⁶ to denounce the contradictions in the project. One of the main question was: “How a local organic food supplier will be able to participate in an auction for such a big volume?”. This question highlights the concerns of the parents toward a drop in quality for externalized services.

⁷³ The firms compete for the market, and the winner is awarded the market for at least one year, up to seven years (depending on the investments). During this period of time there is no more competition, as the winner of the auction is the only supplier.

⁷⁴ Details of the project can be found on the municipality’s website: <https://www.paris.fr/restaurationscolaire>.

⁷⁵ Syndicate of parents: <http://www.fcpe75.org/sur-le-projet-de-reforme-pour-2018/>

⁷⁶ <http://sauvemacantine.fr/>

Concerns that made the mayor of Paris reconsider and postpone her reform. Another example comes from the city of Saint-Etienne, where the left mayor (elected on the run in 2008) managed to reach in 2014 (a few months before the 2014 municipal election) 100% organic meals in the school canteens, and has been beaten a few months later⁷⁷. Once elected, the new mayor – who won on a fight against public money waste, and to revitalize and valorize the local identity and the terroir⁷⁸ – changed the food procurement policy of the municipality for more local food and consequently less organic food⁷⁹.

As shown in the previous sections, public food procurement accounts for a large amount of money in the food sector, and is driven by new concerns on food quality (waste, organic, short supply chain, etc.) and public finances. Contract caterers, as specialists, contend that they can provide a more cost-effective and safer service than in-house caterers⁸⁰ (JRC Technical Reports, Sjögren *et al.*, 2015). They argue that given the size of their organizations, they can benefit from a larger buying power *vis-à-vis* the food suppliers than a single client. They are also able to mitigate labor costs with temporary workers and adapt their labor force to the demand faster and more cost-efficiently than their clients (Arte, 2016).

We sum-up the costs and qualities for public institutional catering in Table 1. We describe their level of transparency to citizens, depending on the choice of governance. For an in-house service, the food costs and quality are known as the public client is in charge with food orders. In that case the municipality can either buy through direct chains to an identified producer, which preserves traceability of the food⁸¹, or buy through wholesalers. In that latter situation, the quality of the products is less obvious to citizens, but they still can have access to reliable public data about quality and supply of the food through indexes given by the municipality and

⁷⁷ Press article: http://www.lexpress.fr/education/a-saint-etienne-la-cantine-scolaire-mise-tout-sur-le-bien-manger_1718348.html

Saint-Etienne's website: <https://www.saint-etienne.fr/saint%C3%A9-vous/famille/restauration-scolaire/bio-cantines-scolaires/cantines-scolaires-saint-%C3%A9tienne-10>

⁷⁸ Municipal program available at: <https://issuu.com/perdriau/docs/perdriau2014mespropositions>

⁷⁹ Saint-Etienne's area does not produce every organic food products necessary to institutional catering (cheese, pork, beef, processed food, etc.).

⁸⁰ We have also experienced this believe in our interviews with public catering managers and politics. They also pointed out that to externalize is to delegate the safety responsibility of the food to the private caterer.

⁸¹ The market for the food supply of a public institutional catering can be divided into many lots. If the size and scope of those lots are well delimited enough, a single producer is able to participate in the auction. The municipality will then have to buy the food comprised in the lot won by the producer only to that producer. For instance, if a local organic producer won a lot "goat cheese", all the goat cheese served by the public institutional catering will come from this producer. The citizens consequently need to check the origin and quality of the goat cheese only once, and it will remain the same during the enforcement of the contract.

controlled by third-parties such as the political opposition⁸². Yet, investments and labor costs are difficult to get for a citizen. Indeed, the accounting of the public organization rarely differentiates those costs dedicated to the catering service from costs dedicated to other purpose such as auction costs for the supplies office, or investments in infrastructures. Identically, the accounting rarely differentiates investment and functioning costs for the catering service from other cost item. Thus, for an in-house service, the quality is transparent to a citizen, but the total costs are vague. On the other hand, a bill from a catering firm is transparent on the total costs, so known to the citizens, even if the different cost item cannot be easily distinguished. That leads to a possibility for the caterer to mislead the client on the quality of the food and on the investments made, making it hard for a citizen to control the quality of the service⁸³. Thus, for an externalized catering service, the total costs are known to the citizens, but they need to trust the catering company for the quality of the food and of the cooking facilities.

⁸² Often, the municipality allots the food market to highlight some quality criteria. The municipality focuses on some key components to allot (vegetables and dairy products), and other to buy to wholesalers.

⁸³ Examples of those frauds on the quality of the food are described in the following documentaries: France 5, *Les casseroles de la Restauration Collective*, 2016; Capital : *Qualité et prix faut-il consommer local ?*, (2015a) ; Capital : *que cachent les cuisines des cantines ?*, (2015b) ; Arte : *Le business de la Restauration Collective*, 2016. It goes from the weight of the bread that tends to diminish over time, to the frozen food sold as fresh vegetables, by way of non-organic products instead of organic ones.

TABLE 2: COSTS AND QUALITY AVAILABLE TO CITIZENS ACCORDING TO THE CHOICE OF GOVERNANCE OF A PUBLIC CATERING SERVICE.

	In-house	Externalized
Food costs	Available.	Cannot be distinguished by the client. Can be asked in the contract, but necessitate costly and repeated control. The total costs are yet known.
Investment costs	Depends on the accounting.	
Human costs	Difficult as the workers often work for several services.	
Operational and running costs	Available.	
Organic, labels	Available.	
Resource efficiency	Available.	Supposed to be known and decided by the client, but with many known changes or frauds from the caterer. Necessitate costly and repeated quality control.

On their side, public managers of institutional catering also point out the issue they face concerning costs and quality. In the current period of public money savings, mayors are more attached to mitigate costs (Baroin, Laignel, 2015). Besides, the low part of organic and local food in institutional catering is also explained by a mismatch between the needs in institutional catering and the local production distribution networks. First, the crops and cattle needed for 100% local organic food in institutional catering are still not large enough, even though the surfaces needed are very low⁸⁴. Yet, the main problem encountered remains in the processing and hygienic needs of institutional catering⁸⁵. Institutional catering services often, if not always, work with processed food such as rasped carrots, pre-cooked meat, or simply washed and peeled

⁸⁴ Interview of Bérénice Bois from the Organic Farmers from the Rhône and Loire (ARDAB) in Bastamag: “Des cantines scolaires avec des repas 100% bio et locaux, c’est possible ?” ; JT Fr2, 09/12/2017; SOS Cantine, Les chefs contre-attaquent, M6, 09/06/2017

⁸⁵ Ibidem

potatoes. Yet, those industries are missing for organic products and, thus, even if the local demand exists, the local offer is not organized to participate in a public auction with very high demands sanitarian controls. Consequently, in order to increase quality and contain costs, some municipalities create medium or long terms partnerships with local producers and/or food sellers. They are then able to match the demand and the local supply. For instance, the 5th arrondissement of Paris created a partnership with a dairy cooperative which led to special investments from the cooperative toward dairy transformation and sales. The cooperative also seized the opportunity to deliver and sale dairy products in the arrondissement. Since externalized governance for school canteens do not allow the public manager to take charge of the supply, this type of partnership only exists for in-house governance.

Public institutional catering is submitted to quality and cost concerns from the parents and the tax-payers. The uncertainty on quality and costs can be reduced with a change in the governance: in-house reduces uncertainty for quality, when externalization mitigates the one toward costs. We, thus, expect changes in governance and contract completeness depending on the focus of the political contestation (cost or quality). Moreover, we assume differences in the reputation of a public body and of a private institutional catering manager, as the public body is subject to re-election concerns. We, thus, expect differences in the governance and contract completeness for a same service depending on the status (public or private) of the institutional catering service. Finally, school canteens may directly interact with local food suppliers, especially for in-house governance. We, thus, expect interactions between food shops and school canteen governance. In the next section, we develop how we handle these questions.

3.2 ANALYTICAL FRAMEWORKS: THE METHODS TO TEST THE INFLUENCE OF POLITICS ON INSTITUTIONAL CATERING AND AGRI-FOOD NETWORKS.

Since the seminal contribution of scholars such as Coase (1937), Williamson (1985) and Grossman and Hart (1986), the question of the nature and boundaries of the firm is nowadays an integral part of economic analysis. Internal organization of firms as well as the way they govern their upstream and downstream relations have significant efficiency implications (see the recent handbook by Gibbons and Roberts, 2013). This literature highlighted the key role of transactional characteristics, and institutional and regulatory constraints on the organizational choices. It has since been corroborated with empirical studies that confirm the importance of

the variables identified by the economic literature (Lafontaine and Slade, 2007). Then, this thought has spread beyond the question of vertical integration to apply to more generally inter-firms' relations to understand the diversity of the observed coordination modes (Lafontaine and Slade, 2013; Ménard, 2013).

Whereas the organizational economics has originally focused on private firms' relations only, a more recent literature has used this theory to analyze the different modes of governance for the procurement of public services. The analysis of Public Private Partnerships (PPP) has consequently developed in the last twenty years (Saussier *et al.*, 2009, Chong *et al.*, 2015). Among other subjects of focus, the analysis of PPP has addressed the issues of the make-or-buy tradeoff (Hart *et al.*, 1997; Levin and Tadelis, 2010), of the design of contracts for externalized services (De Brux and Desrieux, 2014; Moszoro and Spiller, 2012). It has also studied the impact of those choices on the final price paid by the consumers (Chong *et al.*, 2006). The empirical studies have, thus, highlighted key explanatory variables to understand the choices made by the public body in charge of a public service: characteristics of the service, of the administration level (municipalities mainly); ideological and political variables (Sundell and Lapuente, 2012; Picazo-Tadeo *et al.*, 2012; Beuve *et al.*, 2016).

In this thesis, we first aim at studying the importance of political and ideological factors on the governance of the provision of local public services. The particular service we analyze is the provision of meals in French municipal school canteens. In our context, the governance of public services is made of two sequential decisions: first, the choice of organizational modes, namely in-house production or delegation to a private firm; second the design of the contract between the municipality and the private caterers once the local public authority has decided to externalize the procurement⁸⁶. We are interested in the drivers of these choices. We argue that, given the trade-off between transparency on costs and transparency on quality, citizen's sensitivity to public finances and to environmental issues will influence the organizational choices made by a public body. To do so, we first study the determinants of the make-or-buy choice for municipal school canteens in the French region *Île-de-France* (Chapter 1), with a focus on political variables while controlling for other factors identified in the literature. Then, we study the design of catering contracts to highlight the differences in contractual design

⁸⁶ In case of in-house governance, the public body must also choose the level of allotment of the food contracts. The manager will choose different lots' sizes according to its supply policy, the offer on the market, and to increase the competition for the food market. Because of a lack of data we do not study the allotment, but we discuss it and the implications in the conclusive chapter.

according to the nature of the client (public or private), and show that public contracts are more complete and specified than private contracts (Chapter 2). We attempt to link these differences to political factors to understand how to improve contract efficiency to help design public policies, and highlight the importance of transparency for an efficient public service.

On the supply side, the literature has focused on the food service and production sector. It has highlighted interactions between the governance of food structures in the market and the regulation (Hobbs and Young, 2000; Ménard and Klein, 2004), one influencing the other. The managers of those structures are looking to increase the efficiency of the organization, in view of coordination issues in the sector. Those issues are perishability (Masten, 2000), traceability of the quality along the supply chain (Goodhue *et al.*, 2003; Raynaud *et al.*, 2005), or again the commercial strategy (Raynaud *et al.*, 2009). A part of this literature also has investigated the emergence of more direct relations between consumers and producers (Cembalo *et al.*, 2013; Pascucci, 2010). Even if there are existing works in sociology or geography on the development of direct supply chains in institutional catering (Le Velly and Bréchet, 2011; Morgan and Sonnino, 2008), it has not been much investigated in the field of economics. Yet, economic studies show that the implementation of direct food supply chains in institutional catering engenders organizational issues unknown to “standards” food supply chains (Traversac, 2010). Still, to our knowledge no study has been done to conciliate economic issues with sociology and geography constraints in the availability of Alternative Agri-Food Networks. The second main objective of the thesis is, thus, to study the availability of Alternative Agri-Food Networks depending on the sociology of the population, and their interactions with institutional catering governance and politics (Chapter 3).

3.3 DATA

To conduct those studies, we need to find some variables accounting for characteristics of institutional catering, local shops, of the administration level, as well as ideological and political variables. First, the characteristics of the service are the hardest data to get, since there is to our knowledge no aggregated data on the mode of governance of school canteens, and the contracts are not publicly available. To know whether a municipality provides the school canteen service in-house or externalizes it (Chapter 1), we had to build an original dataset on the “make or buy” decision by municipalities for the primary schools’ canteens. We used the database *Equipements Permanents* (INSEE) to know whether or not a municipality had a school canteen,

after which we checked manually on every municipality's website in the region *Île-de-France*⁸⁷ for the mode of governance⁸⁸. The mode of governance is not often available on the municipality website, but we can infer it thanks to the public markets or thanks to the menus. Indeed, every municipality is now in the obligation to publicly summarize the annual markets (see examples in appendix), and menus often include the name of the private caterer in case of a delegated school canteen service (see an example in appendix). We completed the missing information with phone calls to the municipalities. We, thus, obtained the information on the mode of governance for 712 municipalities, out of 900.

We also gathered information on food shops thanks to the same database (*Equipements Permanents*, INSEE) and inflated it with alternative food supply chains and ecological municipal planning through diverse websites: La Ruche Qui Dit Oui!, Agenda 21, Ventes à la ferme, etc.

Concerning the contracts needed for Chapter 2, we gathered the contracts of one main private caterer in France, for the year 2015⁸⁹. We, then, conducted an automatic reading to collect specific words accounting for relevant thematic to our study (sanitary, supply, etc.).

Finally, we gathered other data through institutional sources. We obtained socio-economics and demographics variables relative to the municipalities thanks to the French National Institute for Statistics and Economics Studies (INSEE). Political data were obtained through the Home Office Department's website. Aggregated financial data were kindly provided by Buso, Marty, and Tra (2017).

⁸⁷ We are much grateful to Catherine Pasquier (INRA) who helped us in the data collection.

⁸⁸ We also used an online questionnaire on the subject, but with only one hundred responses.

⁸⁹ We would like to thank the Institut Paul Bocuse, and in particular Agnès Giboreau who managed to get us access to the contracts. We are also grateful to Christel Hanicotte, Marie Batut-Dajean, Marine Rampnoux and Zaya Hadjaz for the help provided with the contracts.

3.4 SUMMARIZED RESULTS

TABLE 3: SUMMARIZED RESULTS OF THE THREE CHAPTERS – PART 1

<i>Chapter</i>	<i>Methodology and data</i>	<i>Main results</i>
<ul style="list-style-type: none"> • Chapter 1. The Politics of Make-Or-Buy in Public Food Procurement: Insights from Institutional Catering in the French School System. • Research Question. Does political contestation influence the Make-or-Buy choice for local public services? Can signal toward price and quality modify the impact of political contestation on the Make-or-Buy choice? 	<ul style="list-style-type: none"> • Econometric analysis (Logit with political contestation variables and signal toward quality). • 712 mode of governance for public school canteens in the French region <i>Île-de-France</i>. • 391 municipalities with 2008 political data, 600 with 2014 political data. • Source: Original database manually coded by the authors, French Home Office, INSEE. 	<ul style="list-style-type: none"> • The Make-or-Buy choice for municipal school canteens is permeable to political contestation. In particular, the propensity to Make decreases with the strength of the political opposition as a consequence of a higher pressure made on cost transparency. • The role of the political opposition in the Make-or-Buy can be mitigated with signals of interest by the municipality toward cost and quality issues.
<ul style="list-style-type: none"> • Chapter 2. Public Contracts in Food Procurement and Political Contestability: Insights from French Institutional Catering. • Research Question. Does political contestation increase the rigidity of contracts? As a consequence, are public contracts more rigid than private contracts? And are some clauses in the public contracts more rigid than others due to a political focus on it? 	<ul style="list-style-type: none"> • Creation of a dictionary for rigidity, and extraction of words in the contracts with an algorithmic textual analysis software. • Econometric analysis (OLS estimations). • Comparison of 496 public and private contracts' rigidity. • Focus on 242 public contracts, and 96 municipal contracts. • Source: Original database manually coded by the authors, French Home Office, INSEE. 	<ul style="list-style-type: none"> • Public contracts are more rigid than private ones. • Political contestation increases the rigidity of public contracts, in particular the rigidity of “touchy” clauses.

TABLE 4: SUMMARIZED RESULTS OF THE THREE CHAPTERS – PART 2

<i>Chapter</i>	<i>Methodology and data</i>	<i>Main results</i>
<ul style="list-style-type: none"> • Chapter 3. On the Geographical Availability of Organic and Alternative Retail Food Stores. • Research Question. Do politics influence the availability of SFSC and Organic shops? If yes, do they impact similarly the availability of SFSC and Organic shops? 	<ul style="list-style-type: none"> • Creation of an extended availability of shops in the French region <i>Île-de-France</i>. • Econometrics analysis (Tobit and Logit estimations). • Comparisons of coefficients for SFSC and Organic shops. • Source: Original database manually coded by the authors, French Home Office, INSEE. 	<ul style="list-style-type: none"> • Organic shops' availability is favored by a friendly political municipal atmosphere. • In-house governance for municipal school canteens decreases the availability of SFSC.

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7 ANNEX

ANNEX 1: MENU OF THE MUNICIPALITY BRÉANÇON FOR THE WEEK 37 IN 2015, THE PRIVATE CATERER IS SAGERE:

Semaine N° 37
Menu Scolaire 5 jours

Nom:

SAGERE

Menu au choix
Du 07 septembre 2015 au 11 septembre 2015
Retour des commandes souhaité pour le 03 juillet 2015

Tél. : 03 44 07 30 80 ou 00 86
Fax : 03 44 07 30 87 ou 98 80
Rue Benjamin Delessert 60510 Bresles

		Lundi	Qté	Mardi	Qté	Mercredi	Qté	Jeudi	Qté	Vendredi	Qté	
Entrées	1	Salade de riz nantaise		Menu de la rentrée		Carottes râpées à l'orange	X	Tomate au maïs	X	Concombre à l'estragon	X	
	2	Betteraves aux noix	X			Poireaux Mimosa		Céleri aux pommes et miel		Oeuf dur sauce bearnaise		
	3	Pâté de campagne cornichon*				Galantine aux olives*		Rosette beurre*		Rillettes cornichon*		
Plats garnis	Plats	1	Tranchettes de poulet à l'ananas				Boeuf braisé mironton		Tagliatelles Carbonara*	X	Filet de hoki sauce corail	X
		2	Gibelette de porc à la diable*		X		Saucisse de Francfort*	X	Rôti de dinde sauce charcutière		Cordon bleu	
Plats garnis	Accomp.	1	Pommes sautées		X		Purée				Riz Pilaf	X
		2	Duo de carottes				Chou-fleur aux fines herbes	X	Julienne de légumes		Ratatouille	
<i>Consulter nos produits à la carte</i>												
Produits laitiers	1	Port-Salut	X				Milanette	X	Camembert	X	Petit moulé ail et fines herbes	X
	2	Yaourt nature					Yaourt nature		Yaourt nature		Yaourt nature	
	3	Yaourt sucré					Yaourt sucré		Yaourt sucré	X	Yaourt sucré	
	4	Yaourt aromatisé					Yaourt aromatisé		Yaourt aromatisé		Yaourt aromatisé	
	5	Petit suisse sucré					Laitage au chocolat				Laitage saveur vanille	
Desserts	1	Pomme bicolore					Ananas frais		Banane		Nectarine	
	2	Liégeois saveur vanille caramel	X				Tarte normande	X	Yaourt aux fruits		Chou praliné	X
Repas		Total lundi:		Total mardi:		Total mercredi:		Total jeudi:		Total vendredi:		

* Contient du porc

Produit élaboré dans notre atelier Pâtisserie

Toutes nos crudités sont élaborées à partir de légumes frais

Menu conseillé suivant le GEMRCN

Nouvelle recette

ANNEX 2: EXTRACT FROM THE 2011 ANNUAL REPORT ON MUNICIPAL AUCTIONS FOR THE MUNICIPALITY OF ANNET-SUR-MARNE (EXTERNALIZATION):

MARCHES DONT LE MONTANT EST EGAL OU SUPERIEUR A 193 000 € HT

Objet du marché	Marché alloti ou non	Date du marché	Attributaires	Code Postal
Fourniture et livraison en liaison froide des repas scolaires, gestion du service de la restauration scolaire : cantines écoles Lefort et Vasarely (marché de fournitures et services, à bons de commande, de 1 an reconductible 3 fois, passé en procédure allégée article 30) (Marché unique de fournitures et services ayant fait l'objet d'une seule procédure cf marché de service ci-dessous)	NON	22/08/2011	Société AVENANCE enseignement	94260

ANNEX 3: EXTRACT FROM THE 2009 ANNUAL REPORT ON MUNICIPAL AUCTIONS FOR THE MUNICIPALITY OF CACHAN (IN-HOUSE):

Fourniture de denrées alimentaires et d'ingrédients pour la restauration scolaire et la crèche municipale	<p>POMONA PASSION FROID ZI du Moulin Vert 91385 Chilly-Mazarin</p> <p>ETS LUCIEN SAS 130, rue des 40 mines ZAC du Ther - BP 70795 60000 Allonne cedex</p> <p>ETS LUCIEN SAS 130, rue des 40 mines ZAC du Ther - BP 70795 60000 Allonne cedex</p> <p>LA NORMANDIE A PARIS Zone Industrielle de la Poudrette 36, allée de Luxembourg 93320 Les Pavillons Sous Bois</p> <p>POMONA PASSION FROID ZI du Moulin Vert 91385 Chilly-Mazarin</p> <p>UNION PRIMEURS LAURANCE ZI les Eglantiers 13, rue des Cerisiers - CE 2 82291028 Evry</p> <p>POMONA EPISAVEURS ZA des grands marais Chemin des marais Garosud BP 140 94046 Créteil cedex</p> <p>FRESCA 29, rue Hélène Boucher ZA de la Butte au berger 91380 Chilly-Mazarin</p>	15/11/2009	AO	3 ans	<p>LOT N° 1 : Maximum HT : 330 000 Maximum TTC : 348 150</p> <p>Lot n°2 : Maximum HT : 270 000 Maximum TTC : 284 850</p> <p>Lot n° 3 : Maximum HT : 150 000 Maximum TTC : 158 250</p> <p>Lot n° 4 : Maximum HT : 240 000 Maximum TTC : 253 200</p> <p>Lot n° 5 : Maximum HT : 270 000 Maximum TTC : 284 850</p> <p>Lot n° 6 : Maximum HT : 480 000 Maximum TTC : 506 400</p> <p>Lot n° 7 : Maximum HT : 315 000 Maximum TTC : 332 775</p> <p>Lot n° 8 : Maximum HT : 270 000 Maximum TTC : 284 850</p>
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CHAPTER 1

THE POLITICS OF MAKE-OR-BUY IN PUBLIC FOOD PROCUREMENT: INSIGHTS FROM INSTITUTIONAL CATERING IN THE FRENCH SCHOOL SYSTEM⁹⁰

⁹⁰ A preliminary version of this paper has been presented at the JRSS, Paris La Défense, 2016. We thank the participants for their comments. We also thank Céline Bignebat, Marian Moszoro, and Carine Staropoli for their useful comments. Catherine Pasquier provided valuable research assistance. A special thanks to Tra Tran-Phuong for the access to data on municipal debt.

ABSTRACT

We study the impact of political contestation on the make or buy choice for municipal public school canteen using an original dataset on the French region *Île-de-France*. We find that political contestation influences this choice. We also find that mayors can mitigate this influence by signaling their concerns for quality to their citizens. We finally offer some indications to adapt the law in consequence.

Keywords: Political Oversight, Make or Buy, Governance, School Canteens

JEL Classification: D23, D72, D73, H59, L33

1 INTRODUCTION

The city of New York provides around 250 million meals and snack per year that are served in schools, homeless, senior centers, child care centers, afterschool programs and so on. This is probably the largest public food buyer in the U.S. In Paris, more than 22 million meals are provided each year to the various public schools, 20 million for the elementary schools. Cities, departments, regions, and states provide canteens services for children, the elderly, the sick, the army, and a lot of other publics. Institutional catering to social purpose in France is much democratized and consequently represents a large part of the eating out. In 2004, institutional catering was of 10 billion euros, representing 300 000 jobs with an average annual growth of 4%. School canteens also concern directly 60% of children⁹¹ and indirectly their parents, for about one billion meals served each year in France. Municipal school canteens expenses represent half of institutional catering, being about 5 billion euros and 2.3% of the annual expenses of French municipalities.⁹²

The governance of French municipal school canteens can be categorized in two main types: direct (“make”) and delegated governance (“buy”) (to be described and contrasted after). Using data on the make-or-buy decision for municipal school canteens in France, we explore whether political considerations play a role in governance decisions. If today’s politicians have the desire to demonstrate probity to the voting public in order to improve their chances of reelection, we would expect mayors in more contested municipalities to use more transparent type of governance for public services. We will argue that direct governance improves transparency on the quality of meals while delegated governance enhance costs transparency. Thus, depending on the domain of transparency desired by the citizens in a given jurisdiction, we should observe different kind of governance.

Under direct governance, the municipality provides the service itself. It is in charge of both meal preparation and food procurement. Municipal facilities and public employees are involved in the production of daily meals. Under delegated management, the city contracts out with a private partner for the provision of daily meals. The private firm is also responsible for the procurement of raw ingredients given the contractual provisions of the agreement with the

⁹¹ « La restauration des usagers du service public scolaire ou à caractère social en Alsace », Rapport Public de la Cour des Comptes, 2005, pp. 653-672.

⁹² With 180 days of school a year (<http://eduscol.education.fr>), 60% of the 6 760 600 pupils (<http://www.education.gouv.fr>), for a cost per meal between 6 and 8 €, municipal school canteens for the 5 to 10 years old accounts for 2 to 2.6% of the 220 billion spent each year by municipalities (<http://www.collectivites-locales.gouv.fr>).

municipality. These two types of governance imply different levels of transparency on cost and quality. Delegated governance necessitate to contract with a private partner for both the preparation of the meal and the procurement of raw material⁹³. The sustainability of the procurement is then in the hand of the private contractor. It is her task to furnish the quality of the food asked in the contract by the municipality. However she is not attached to any particular suppliers and can switch from a supplier to another without the approval of the municipality supposedly as long as the quality of the final services remains the same. *The transparency on quality for the parents and other stakeholders is thus relatively lower in the case of delegated management* as they have to believe the firm's reports on quality but cannot verify by themselves the origin of products and the alleged quality. On the other hand, the municipality gets a fixed price per meal and do not handle with cost variations. The other costs from the municipality related to the school canteen service for delegated governance are limited to service of meals, potentially the re-heat of meals, and the contracting costs. *The transparency on costs is thus relatively higher in the case of delegated management.*

On the contrary, direct governance necessitate to contract only for food procurement as the municipal employee would cook the ingredients. In that case the municipality tenders for the food and chooses directly the suppliers. It is then committed in an exclusive relation with those suppliers for four years unless there is an important breach in the contract. The power to decide over the ingredients and their type is stronger for direct governance at the condition that it has been anticipated in the contracts. The traceability of products is higher as the food supply contracts are publicly available. Anyone, including kids' parents, can go to the city council and ask to see these contracts. *The transparency on quality for the parents is thus relatively higher in the case of direct governance.* However, the total cost of providing meals is difficult to delimitate and measure. They encompass the food costs, the cooking costs, the delivery costs in case of a central kitchen or central delivery point, contracting costs, and the implementation costs. Food costs vary from one meal to another according to the raw materials used, the season, the market price, etc. Implementation costs are higher than in delegated governance. Indeed, rather than ordering only once a week, or even once a month the meals to one private partner

⁹³ If nothing prevent a municipality from doing one auction for the food supply and one for the cooking of the meals, we have not observed this organization on the field. Indeed, catering companies have more efficient way to procure the food to be cooked, and the public body may already control the ingredients and the supply chain through one auction accounting for both supply and cooking.

in the case of a delegation, the municipality has to check the current prices of raw materials⁹⁴ to choose the cheapest best alternative, that respects nutritional requirements. Given the perishable characteristic of raw materials, orders are made several times a week, and sometimes every day. Moreover, the employees dedicated to ordering are often multi-task in the municipality. The labor costs dedicated to multi-contracting for food are often badly delimited and included in the total costs of the contract. This is one of the main reason for which it is hardly possible to compare delegated and in-house efficiency. Cooking and delivery costs are also not very well delimited as those employees work only 180 days a year (being the number of school days) full-time for school canteens. For the rest of the year it is up to the municipality to manage to give them other tasks. *The transparency on costs is thus relatively lower in the case of direct management.*

Therefore, tradeoffs emerge between transparency for quality and transparency for costs when the municipality choose between in-house and delegated management. A public body might choose to produce a service in-house in presence of sensitive citizens toward the quality of the food to increase quality transparency, but to the detriment of costs transparency. This aims at preventing challenge on his governance of the service that could endanger his re-election or the re-election of his majority. As described by Goldsmith and Eggers (2005), “*when something goes wrong in a public sector network, it tends to end up on the front page of the newspaper, instantly transforming a management issue into a political problem*” (p. 122). For instance, the mayor of Paris postponed a reform on the governance of school canteens after some parents created a website to contest the reform. They fear that this reform would end with the externalization of the municipal catering service to the detriment of the quality of the food⁹⁵. As a consequence, we consider delegated governance to be relatively more transparent contract for costs, potentially leading to suspicion toward quality, and direct governance as a relatively more transparent contract for quality that increases potential challenges about prices.

Since the seminal contribution of scholars such as Coase (1937), Williamson (1985) and Grossman and Hart (1986), the question of the nature and boundaries of the firm is nowadays an integral part of economic analysis. Internal organization of firms as well as the way they

⁹⁴ Prices for raw materials are contracted for one to four years, and before the crops, and by consequence the market price. Prices are, thus, defined with a formula including international market price, and can vary from one day to another.

⁹⁵ <http://sauvemacantine.fr/>

govern their upstream and downstream relations have significant efficiency implications (see Gibbons and Roberts, 2013, for a recent survey of both theoretical and empirical analysis). This literature highlighted the key role of transactional characteristics, and institutional and regulatory constraints on the organizational choices. It has since been corroborated with empirical studies that confirm the importance of the variables identified by the economic literature (Lafontaine and Slade, 2007). Then, this thought has spread beyond the question of vertical integration to apply to more generally inter-firms' relations to understand the diversity of the observed coordination modes (Lafontaine and Slade, 2013; Ménard, 2013).

Whereas the organizational economics has originally focused on private firms' relations, a recent literature has used this framework to analyze the different modes of governance of public services. The analysis of Public Private Partnerships (PPP) has consequently developed in the last twenty years (Saussier *et al.*, 2009). Among other subjects of focus, the analysis of PPP has addressed the issues of the make-or-buy tradeoff (Hart *et al.*, 1997; Levin and Tadelis, 2010), and of the design of contracts for externalized services (Desrieux and De Brux, 2012; Moszoro and Spiller, 2012). It has also studied the impact of those choices on the final price paid by the consumers (Chong *et al.*, 2006). The empirical studies have, thus, highlighted key explanatory variables to understand the choices made by the public body in charge of a public service: characteristics of the service, of the administration level (municipalities mainly); ideological and political variables (Sundell and Lapuente, 2011; González-Gómez *et al.*, 2011; Picazo-Tadeo *et al.*, 2012; Beuve *et al.*, 2015).

We offer empirical evidence for a complementary explanation: the impact of political contestation on governance's choices. Based on recent theoretical work about the threats imposed by third-parties and political opponents on public officials (Spiller, 2009; Moszoro and Spiller, 2014), we conjecture on several reasons why elected officials select delegated governance when elections are close and the part of families in the city is high, and why signals toward quality may favor delegated governance. First, by choosing delegated governance, city officials signal "probity" (*i.e.*, transparency to supply meals for school canteens), and limit speculation on the discretionary use of public monies. Second, legal commitment toward quality signals that the municipality will be careful about the quality of the food. As a consequence, pressure to organize the service in-house becomes lower in presence of commitment toward

quality such as Agenda 21⁹⁶. We use municipal school canteens to test this hypothesis as this service is relatively highly subject to scrutiny from third parties.

This article proceeds as follows. We begin this topic with a discussion of the relevant literature and proposed contributions (section 2). We continue with a description of institutional settings for French school canteens (section 3). We, then, describe the theoretical framework and the hypothesis to be tested (section 4). A description of the data and proposed empirical test follows (section 5), and the results of this estimation exercise (section 6). Finally we provide some concluding remarks and limitations (section 7).

2 RELEVANT LITERATURE AND PROPOSED CONTRIBUTIONS

This study relates to two streams of research on the governance of local public services. One focuses on efficiency arguments to explain the governance decisions while the other emphasis political and ideological factors. In the first research stream, cost reduction is at the core of the provided explanation, being production costs or transaction costs. One common view is that the size of the firm is economically determined to exploit gain of productivity. Economies of scales have been at the center of this analysis, and have been shown along with transaction costs to influence the choice of governance of public services by local governments (Bel and Fageda, 2007; Bel and Fageda, 2009). When a service is to be procured in a suboptimal jurisdiction, which is often the case with small municipalities, the exploitation of economies of scale requires the aggregation of the service (Donahue, 1989). This goal can be attained by either privatizing public services to a larger private firm that would attain the optimal size. An alternative is to aggregate the public demand of several local governments through larger public entities. Thus, small municipalities delegate the school canteen service *en masse*. Moreover, the choice to delegate a public service also depends on the complexity of the transaction (Crocker and Masten, 1996 pp. 6): “*As the exchange setting becomes increasingly complex or the negotiation of future duties more costly and problematic, the parties may elect to bear the organizational costs of effecting exchange through internal administration.*”

⁹⁶ A local Agenda 21 represents a plan to develop the city to more sustainable consumption and development. This plan is decided through participatory democracy, with any inhabitants willing to participate. If an Agenda 21 may not be about school canteens only, it is very unlikely that this subject would be avoid as food and agriculture are two main dimensions of those agenda.

Another substantial body of literature on the governance of public services has focused on political and ideological factors (Bel and Fageda, 2007; Bel and Fageda, 2009). The existing empirical literature shows that the political color of the mayors drives the choice made by public bodies as to public services (Levin and Tadelis, 2010; Gonzalez Gomez et al., 2011). Moreover, studies have shown a positive influence of unemployment, poverty, strength of public unions on the propensity of municipalities to procure internally public services (Dubin and Navarro, 1988; Chandler and Feuille, 1994; Lopez-de-Silanes et al., 1997). They validate the existence of political choices for the governance of public services, made to please a given electorate. However, those impacts tend to be less significant overtime.

These studies are part of the literature exploring the determinants of the governance of public services on the basis of economic and political considerations. There has, however, been less focus on the tools to measure political considerations and pressure groups. Those are almost always proxied by variables such as the political color of the mayor, the size of public bodies, unemployment and inequalities. In our case, voters have to arbitrate between prices and quality. Institutional catering in public school is a highly subsidized public service. Consequently, the main effect from voters who are not parents should be to favor delegation to a private partner in order to have a strong transparency on prices.

Spiller (2009) and Moszoro and Spiller (2012, 2014) have recently proposed a theory of feature of public contracts in the presence of competitive political market. According to their theory, the feature of a public contract is determined by the political hazards perceived by the official. Political hazards may come from two different players involved indirectly in a public contract between the public authorities and a private firm: political opponents and the voting public. The voting public and political opponents are implicated in any transactions made by the public authorities as it affects public monies and social welfare. Political opponents are also interested in discrediting the public authority so as to retrieve votes for the next election. Political opponents participate in the public auditing of political incumbent. They scrutinize transactions made by the political incumbent to discredit her results, on true or false basis. This may politically cost to the official in power either because she losses some votes, or because she has to defend herself and her choices. In some cases, incumbents may be vulnerable to losing office so it is in their interest to mitigate *ex ante* the possible attacks on their results, whether on the price of the service procured or/and on its quality. This framework implies that the more contested the political environment is, the more the political incumbent will try to prevent their mandates from being attacked and gossiped on governance choices and misuse of public funds.

This theory has received some empirical supports in setting such as the choice of political bond in the U.S. (Aneja et al., 2015), the design of public procurement contracts in the car parking sector in France, (Beuve et al., 2015) as well as American public contracts (Moszoro *et al.*, 2016).

We contribute to the literature by highlighting the determinants of the make-or-buy choice for a public service never studied before, municipal school canteens, despite its relevance for various stakeholders. This empirical setting allows us to study both the impact of pressure groups and of political contestation beyond the ideology of the public body in charge of the management of the service. We also contribute to the literature on the governance of public services by empirically testing the change in governance's choices related to cities' commitment towards sustainability and environment-friendly practices. Finally, we highlight the determinants of the important municipal service in France that is the school canteen service.

3 INSTITUTIONAL SETTINGS: FRENCH GOVERNANCE OF SCHOOL CANTEENS

French school canteens are both young and old. It begins in 1844 with the creation of the first canteen for the young (IRCEN⁹⁷). The necessity of school canteens becomes higher with Jules Ferry's laws that make instruction mandatory in France in 1880. However, no law leads the lunch time and its supervision is let to private associations. At the end of World War II, French children are among the worst fed and suffer from several vitamin deficiencies. The urge to feed correctly the children increases the local initiative towards school canteens. The baby boom consecutive to the end of the war accelerates school canteens policies. In 1970 and until the early 80's the local initiatives are progressively integrated to municipal competencies. The market gets bigger and viable, so private firms structured themselves to compete for the market. In the early 2000's, nutrition comes back in the debate to fight against obesity with several nutritional recommendations from the government. In 2007, the *Grenelle de l'Environnement* adds new objectives for school canteens. They now have to provide organic and seasonal food for 20% of the components of a meal each before 2012. Those objectives are far from being reached but contribute to the generalization of organic food since the part of institutional catering restaurants proposing organic food moved from 4% in 2006 to 58% in 2016 (Agence

⁹⁷ Historique de la restauration scolaire, www.ircen.com/_media/historique.pdf

Bio, Key Numbers⁹⁸). Institutional catering is also a big market. In 2012, institutional catering in France is 3 billion meals, 73000 restaurants, a revenue of 17 billion, an average of 4% of annual growth for the private firms involved in this sector since 2000 (Ministry of Agriculture⁹⁹, 2014). The market structure of this market is really concentrated with a share of more than 80% for the three biggest companies (Néorestaurantion, April 2013).

There are two ways for French municipalities to provide school canteens services: in-house provision with private suppliers procuring the ingredients, and delegated provision and supply to a private firm. In the case of in-house governance, the citizens have a direct access to information about the quality of raw materials and of the cooking process, but not to costs. On the contrary, externalization offers more transparent costs to the detriment of the traceability of the food and of the transformation process¹⁰⁰. The delegated governance is, then, less transparent than the in-house governance in view of quality but more transparent considering prices. The municipality may still ask for quality and traceability indicators, but the cost of controlling quality would increase as those controls would have to be done for each meal¹⁰¹. Moreover, in that case the scrutinizers will have to trust both the municipality and the private firm that relays the information on quality.

In this article, we are interested only in public school as they are the one that may be the more subject to political contestation. In France, public school gather 83.2% of the pupils¹⁰², the rest being at a private school. The mayor and its municipal council choose the governance of the school canteen. The mayor and its board are elected through a two-round proportional list system with a bonus to the first list at the second round in order to get a strong political majority (list voting system in Figure 1). Thus, every list with more than 10% can go to the second round or can pull out. Those with more than 5% can merge with those over 10%. The first list at the second round gets 50% of the board, the leftovers being proportionally distributed. For cities with a population below 1000 inhabitants in 2014, or 3,500 in 2008, the voting system is different (split voting system in Figure 1). The voters have all the candidates on a ballot paper

⁹⁸ <http://www.agencebio.org/la-bio-en-restauration-collective-les-chiffres>

⁹⁹ <http://agriculture.gouv.fr/guide-de-la-restauration-collective-favoriser-proximite-et-qualite>

¹⁰⁰ If a municipality with in-house governance choose to buy the food to only one supplier instead of a bunch of producers, the quality transparency would be equivalent between the two governance modes. However, after collecting data from more than hundred municipalities, we never encounter this situation. While we cannot discard this possibility, we are relatively confident that this situation would not impact on our empirical results.

¹⁰¹ Indeed, recent TV documentaries has shown how a private partner could change for instance the weight of bread to do savings without the municipality knowing it (Capital, 2015a, 2015b), or how private firms do savings on quality (Arte, 2016).

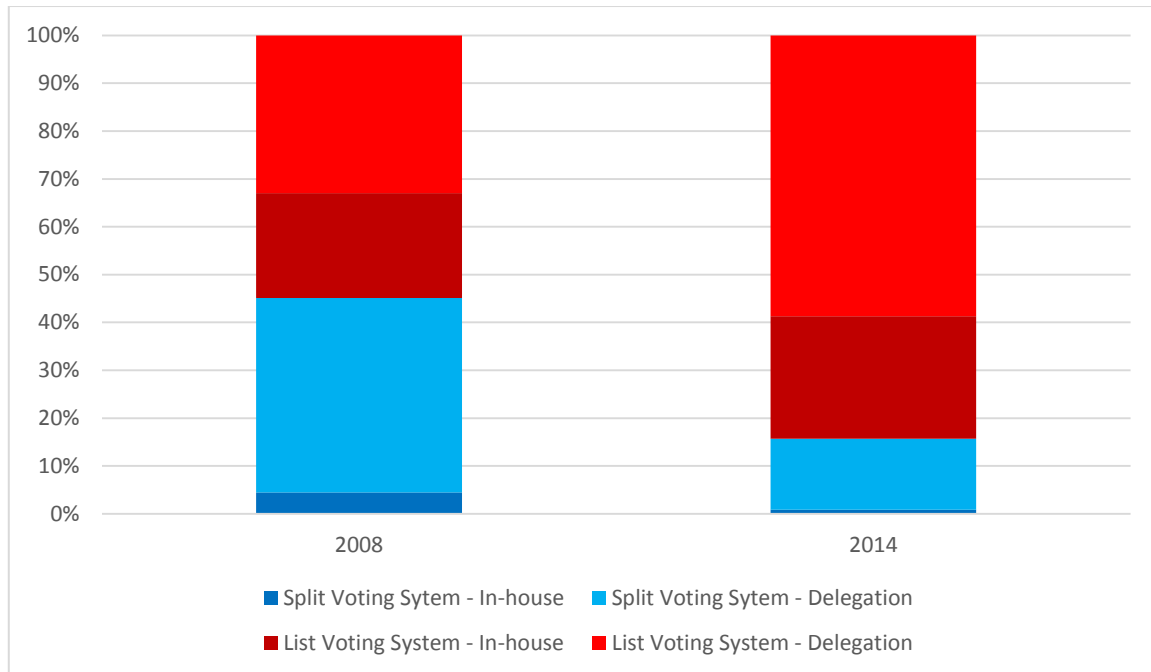
¹⁰² <http://www.education.gouv.fr/cid57111/l-education-nationale-en-chiffres.html>

and can cross out the unwanted names. The board is composed with those with the more votes. Given the voting system, there are scarcely ever second rounds for those municipalities¹⁰³.

Figure 1 shows the part of our municipalities according to the different voting systems and their governance for school canteens. In-house governance is underrepresented in municipalities with split voting system. One potential explanation is related to economies of scale. A study undertaken in Northern Ireland (DE & DFP, 2012) highlighted that the scale of production is a key factor in the cost per meal. They found out that more meals per kitchen can divide by two the cost per meal. According to one stakeholder, cost has been the most important driver of centralization across Europe in subsectors such as hospitals and schools (Sjögren *et al.*, 2015). Municipalities with split voting system, which are also the smallest municipalities, are consequently very unlikely to internalize the school canteen service. Thus, we will consider in section 5 only the municipalities with list voting system as we want to observe the impact of political contestation on the choice of governance of school canteens. Furthermore, split voting system relies probably less on political competition among parties than list voting system and more on the personality of the candidates. Indeed, there is often as many candidates in split voting system than the one needed on the council board. Chances to be elected are consequently very high. Moreover, given the scarcity of candidates, they are often of different party affiliations, if any.

¹⁰³ We have the data on that matter only for the election 2014. That year, none of the municipalities with a Split Voting System needed a second round.

FIGURE 1: THE PART OF THE DIFFERENT VOTING SYSTEM IN THE FRENCH REGION ÎLE-DE-FRANCE AND THEIR GOUVERNANCE FOR SCHOOL CANTEENS



Sources: French Home Office and data of the Authors

Besides, the school canteens service is highly subsidized through municipal taxes. Many cities have differentiated prices according to the household's revenues. For instance, in Paris prices go from €0.13 for the low-income families to €7 per meal. Some municipalities, such as Versailles, have a more expensive price for out-of-town pupils. Yet, a municipality cannot charge a meal at a price higher than its costs. Thus, rich and out-of-town parents do not pay their meals more than what it costs. That is, cost transparency is important to set prices and to prove the good use of public denies to local taxpayer. Finally, a survey by the French Federation of Medium-Sized Municipalities' Mayor (2009) informs us on the very diverse costs for the school canteen service, supposedly from €2.80 to €13.70 per meal¹⁰⁴. It is more likely that those two extreme municipalities do not calculate the costs on the same basis. This study informs us on the distribution of costs per meal: 50% for wages, 32% for food, and 18% for other expenses

¹⁰⁴ This study is too small to be able to compare costs depending on the make-or-buy choice.

(facilities, deliveries, etc.). We also learn that parents pay on average about 36% of the real cost of the meal, the rest being subsidized through local taxes.

In sum, in-house governance is more transparent for quality, and delegated governance more transparent for prices. We do not argue about the effective quality or price, we only need to know about this arbitrage, which is influenced by the citizens.

4 THEORITICAL FRAMEWORK

4.1 GOVERNANCE FEATURES UNDER POLITICAL CONTESTABILITY AND POLITICAL GROUPS' PRESSURE

Spiller (2009) identified the risk of political contestation by various pressure groups as the key difference between public and purely private contracts. This makes the public authority cautious to mitigate political hazards when faced with potential contestation. Based on this framework, we argue that farsighted public bodies will factor these possible contestation of their choices and/or probity. More particularly in our case, the mayor do a trade-off between political risks due to contestation over quality or costs. Therefore, we assume that when political contestation is high in the municipality, the mayor will choose delegated governance in order not to be contested about the misuse of public denies to the detriment of more transparency on quality. To do so, we also assume that contestation is mainly on costs given the context of scarce public money, and given that the school canteen service benefits indirectly to a small part of the voters and is highly subsidized.

Another implication of Spiller's framework (see also Moszoro and Spiller, 2012) is that political contestability can be mitigated by the trust in the probity of the elected public body. Brown *et al.* (2007) show how trust between contracting parties can influence the contract completeness in the public sector. Thus, signals may also influence the make-or-buy decision. If the mayor desires to keep the two objectives of high quality and low costs, she will eventually need to show other way to prove her good faith toward quality to keep the delegated governance. For instance, she can signal her concerns about the sustainability of the food procured and its quality by relying on available instruments. One example of such instruments is the policy called

Agenda 21¹⁰⁵. We sum-up the resulting choices of governance from the trade-off between transparency on costs and transparency on quality in the Matrix 1.

MATRIX 1: THE MAKE-OR-BUY CHOICE ACCORDING TO THE DESIRED TYPE OF TRANSPARENCY

		Quality transparency	
		High	Low
Costs transparency	High	Delegated (resp. In-house) with signals on quality (resp. costs)	Delegated
	Low	In-house	Economic choices only

4.2 EMPIRICAL HYPOTHESES

We argue that the choice of governance of public services impacts the transparency on prices/costs and quality of the school canteen service and thus, the challenges on price and quality the elected bodies may face. As a consequence whether a service should be procured in-house or externalized depends not only on the characteristics of the assets involved, public finances, or ideology, but also on the potential local contestation on price and quality, and on the trust toward the mayor. Then, a municipality would favor internalization when potential challenges on quality rise, and externalization when costs challenges become louder.

In the model and the matrix presented in the previous section, the likelihood for a political opponent to challenge the mayor’s choices will decrease with the level of transparency of the feature of the public service. When the risk for a political challenge threatens the probability of reelection, the mayor will organize the service on a different way so that the contestations would decrease thanks to a rise in transparency. Then, contested cities, that is to say cities where the mayor has been elected on the edge, will adapt their governance features to such a risk. As the

¹⁰⁵ An Agenda 21 is a chart voted by the municipality that engages it in an environmental saving process and more broadly on ways to enhance the sustainability of a given territory. It engages the administration, the citizens, and the majority in place

school canteen service is highly subsidized, we assume that the main risk of contestation is toward the cost of the service. Indeed, the cost for school canteens is born by every citizen, but the quality of the meals benefits only to taxpayers with kids at school. As a consequence, we have the following hypothesis:

Hypothesis 1 Elected officials are more likely to externalize the school canteens service in politically contested municipalities in order to increase cost transparency and mitigate political challenge on their probity.

Moreover, the cost borne by citizens increases with the part of children eating at school over the population. Indeed, let's assume city A with 100 households whose 25 pupils eat at school for a meal cost of €8 and a participation of the parents of €5. Then, the parents would pay €5.75 per day with school canteen and the non-parents would be subsidized €0.75 per day¹⁰⁶. Let's now take the city B with the same characteristics but the number of children is now 75. So, the parents would pay €7.25 per day with school canteen, while the non-parents would be subsidized €2.25 per day¹⁰⁷. Thus, the financial pressure is higher when the part of children is higher due to the subsidized environment of the school canteen service. We test the following hypothesis taking into account this financial pressure:

Hypothesis 2 Elected officials are more likely to externalize the school canteens service when the financial pressure on citizens is high, that is when the part of parents in the population is high and when the debt per inhabitant is high as well.

However, there still exist some pressure on the quality of the school canteen service, and notably the quality of the food that is more transparent in the in-house governance. Knowing the financial pressure, the mayor would attempt to develop transparency on quality along with signals to prove she is taking quality into account. She can decide to engage in a local agricultural transition toward more sustainable practices, or signal that she feels concerned about sustainable food. As a consequence, those acts would answer to a part of the pressure for quality transparency, leading to less internalization of the school canteen service:

Hypothesis 3 Signals toward quality diminish the need for the elected body to internalize the school canteen service, leading to more delegated governance.

¹⁰⁶ Parents would pay $€5 + 25 \times €3 / 100 = €5.75$. So each citizen pay €0.75 per day of school canteen through taxes.

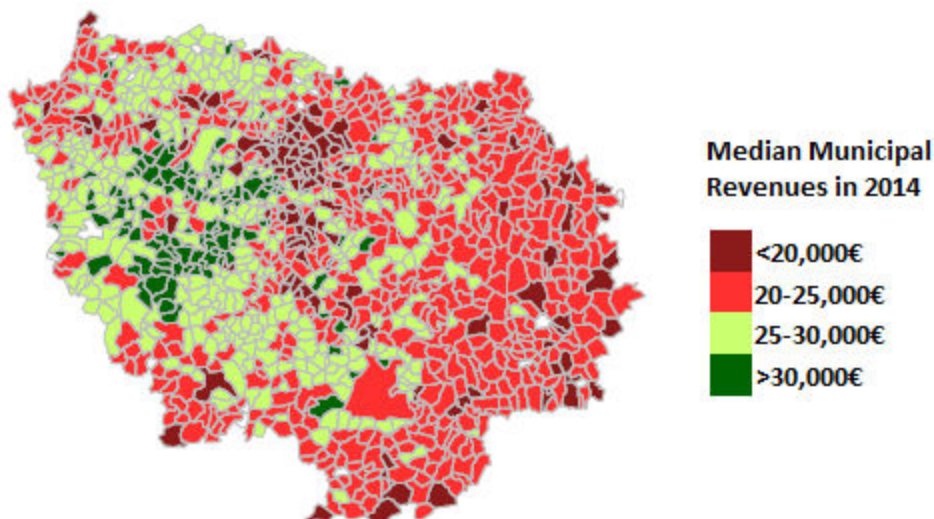
¹⁰⁷ Parents would pay $€5 + 75 \times €3 / 100 = €7.25$. So each citizen pay €2.25 per day of school canteen through taxes.

5 DATA AND EMPIRICAL METHODOLOGY

5.1 DATA DESCRIPTION

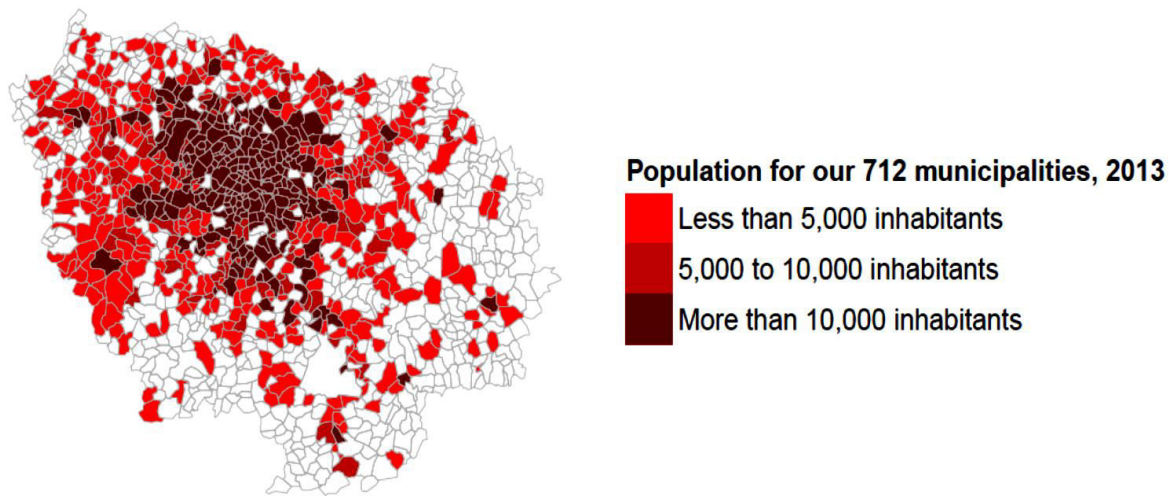
To carry out this study, we built a dataset of the governance of public school canteens at the municipal level (namely for pre-school and elementary schools) for the Paris area (region *Île-de-France*). To build our set of explanatory variables, we also gather results for the 2014 elections at the national and municipal level as well as economic and demographic characteristics at the municipality level. We choose this region for several reasons. First, this is the largest region in France in terms of population (12 million inhabitants, being almost 20% of the French population); second, it is a very diverse area on many factors that are relevant for our study. Cities have very heterogeneous size from very small (the smallest is 121 inhabitants) to very large (Paris has more than two millions inhabitants) (see Map 2). While the region concentrates 30% of the national GDP, rich cities coexist, sometimes side by side, with relatively poor one (see Map 1). Finally, the political color of municipalities vary a lot with almost all the political spectrum represented. Municipalities' characteristics are thus very heterogeneous in every aspect we are interested in. In this section we describe the dataset used in our empirical analysis.

MAP 1: THE REPARTITION OF THE ANNUAL REVENUES IN THE REGION *ÎLE-DE-FRANCE* IN 2014



Sources: INSEE

MAP 2: THE REPARTITION OF THE POPULATION IN THE REGION ÎLE-DE-FRANCE IN 2013



Sources: INSEE

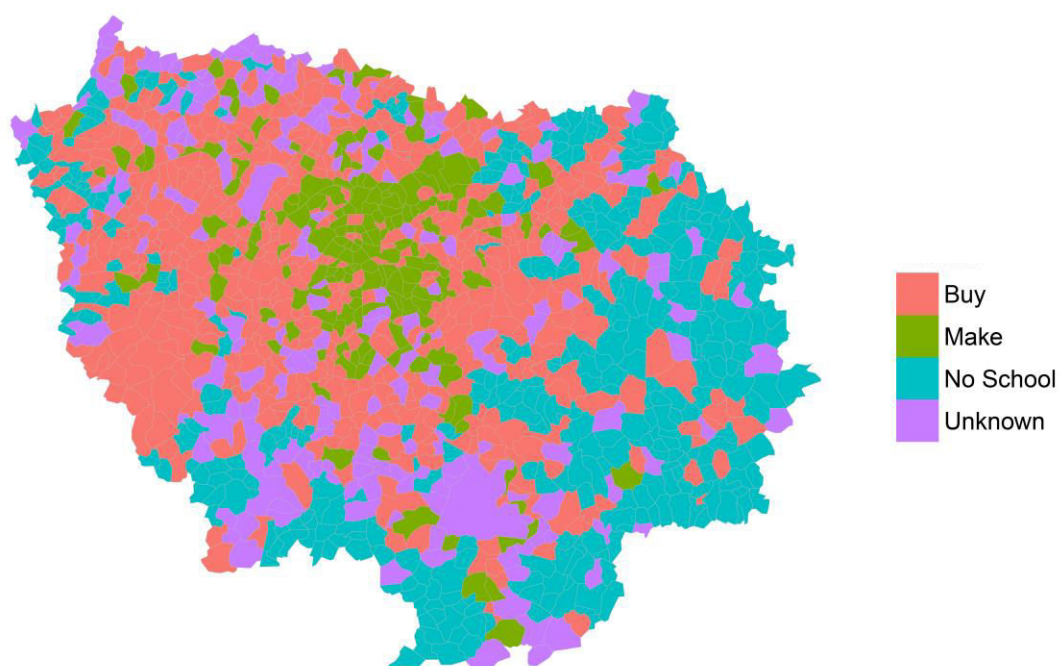
We first collected the mode of governance of municipal school canteens as there are no aggregated data about it. We identified the cities with at least a school thanks to the database *Base Permanente des Equipements 2012 de l'INSEE* that informs us about the number of school canteens in a municipality, if any. 923 cities in the Paris area have at least one school. We rely on several sources of information. First, we checked the municipalities' website to see if the information about the canteen's governance were available. When the information was not available on the web, we call the municipalities. We were able to gather information for 712 cities (77% of the cities with at least one public school), giving us 188 school canteens in-house and 524 externalized (Map 3). The missing observations are mainly very small municipalities (Table 1), to which we add the municipalities with no dedicated standard, no internet website to have the information needed, or do not wish to answer any interview attempt.

TABLE 1: DESCRIPTIVE STATISTICS OF THE POPULATION IN 2013

	N	Mean	St. Dev.	Min	Max	p25	p50	p75	p90
Population missing observations	of 211	3,193	5,895	173	33,498	607	979	2,596	7,958
Population of our sample	712	15,291	26,976	131	236,715	1,476	4,737	8,860	40,012

We gathered under the ‘in-house’ label the municipalities that produce their own meals with municipal or intercommunal employees¹⁰⁸. We also gathered under ‘externalization’ the cities that buy their food or do a public private partnership, meaning that the private partner exploit the city’s facilities to cook the meals, as we cannot distinguish between those two cases. It is not an important matter as a PPP is used when the mayor wants to externalize the service but still has facilities to be exploited.

MAP 3: THE REPARTITION OF THE MAKE-OR-BUY CHOICE IN THE REGION ÎLE-DE-FRANCE IN 2015-2016



Sources: Collected by the authors

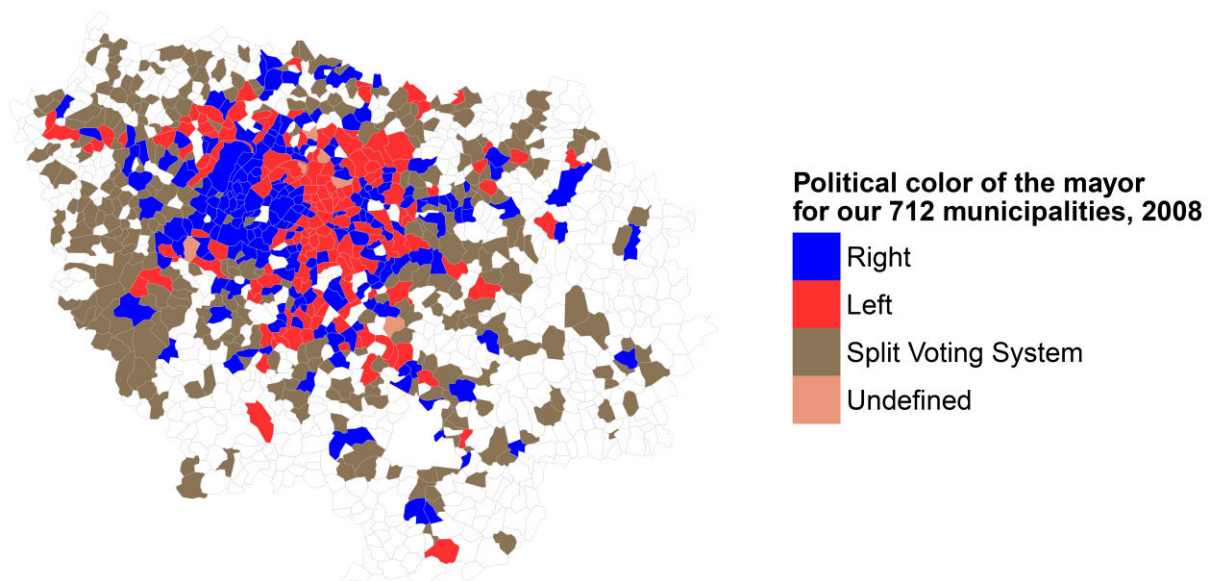
The electoral base used in this paper comes from the French Home Office. We have the votes share per candidate and political label for the first and second rounds of 2008 and 2014 municipal election. For 2008, we only have the results for the municipalities with more than 3,500 inhabitants, that is to say 391 observations out of 712 cities. We aggregate the left labels to obtain the ideological share of the left at the municipal election¹⁰⁹. We also generated a

¹⁰⁸ Some municipalities gather in Intercommunal Syndicate to provide the School canteen service together, expecting scale economies and a higher bargaining power. However, they can leave when they desire to and are not bound on the long-run to those other municipalities.

¹⁰⁹ The French Home Office classifies the candidates, which gave us the possibility to gather left candidates together (LEXG LCOM LUG LSOC LVEC LDVG LGC).

dummy for the municipalities with a voting system by elimination, which are the municipalities with less than 3,500 inhabitants in 2008 and 1,000 inhabitants in 2014. We also have the results for every municipality at the 2014 presidential election. Those databases help us to take into account the ideological drivers in the choice of the mode of governance for school canteens. We used this dataset to build our political contestability variables.

MAP 4: THE REPARTITION OF THE POLITICAL COLOR OF MAYORS IN THE REGION ÎLE-DE-FRANCE IN 2008 FOR OUR 712 MUNICIPALITIES



Sources: French Home Office

We also use the database *Population et Aire* of the INSEE so we could have the Population. We build from it the variable *Complexity_i* that is the number of school canteens in the municipality divided by its area. We expect the complexity of the service to increase the likelihood of outsourcing the school canteen service. Indeed, when the density of school increases, municipalities shall prefer to delegate rather than to face with the complex organization and deliveries to each school in a small area. Furthermore, dense municipalities have most often a high traffic, which highly impacts the cost of delivery. It is less expensive and complex for each school to be delivered once a day for meals, rather than to be delivered several times for ingredients to cook. In the event that municipalities build a central delivery

<http://www.cevipof.com/rtefiles/File/ELECTIONS%20MUNICIPALES/Nuances%20Explications%202001%20et%202008.pdf>

point to overwhelm this over pricing from furnishers, the food will eventually have to go to the canteens, either delivered by a private or by the municipality itself, with the complexity it implies. To delegate is consequently a cheaper and less complex way to deal with high density of school.

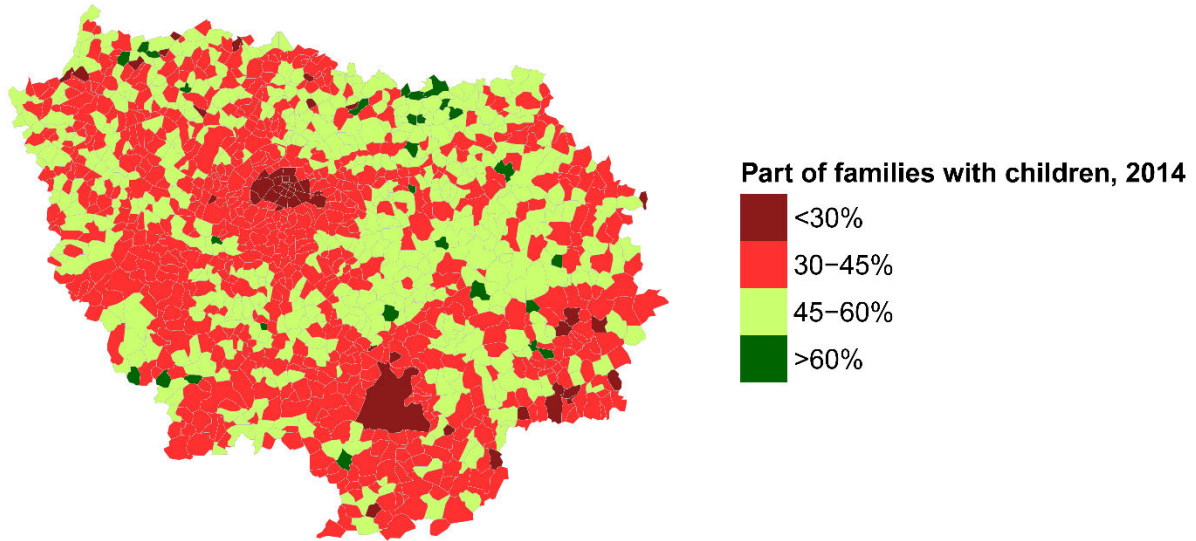
Moreover, we used our data on governance modes to construct a Local *Preferences* variable to account for the influence of the neighboring municipalities¹¹⁰ on the choice of a mayor to ‘Make’ or ‘Buy’ the school canteen service. This variable accounts for the percentage of in-house governance for school canteens in neighboring cities. It is expected to influence positively the propensity of the mayor to ‘Make’ the school canteen service as a result of mimetic pressure (Chong, Huet, and Saussier, 2006, and Plunket, Huet, and Saussier, 2008):

$$Preferences_i = \begin{cases} \frac{Number\ of\ 'Make'\ in\ the\ Area - 1}{Number\ of\ municipalities\ with\ school\ canteens\ in\ the\ Area} & \text{if } 'Make' = 1 \\ \frac{Number\ of\ 'Make'\ in\ the\ Area}{Number\ of\ municipalities\ with\ school\ canteens\ in\ the\ Area} & \text{if } 'Make' = 0 \end{cases}$$

Finally, we get unemployment data through the dataset *Chômage 2011* from the INSEE to account for a tendency to ‘Make’ when the population suffers from unemployment (Estache, Guasch, Iimi, and Trujillo, 2009). We use financial data from Buso, Marty, and Tra (2017), to account for the financial pressure on public services. We also got the dataset for the part of families in the municipal population through *Familles* from the INSEE, and we collected data for the presence of an Agenda 21 at the municipal level to account for signals toward the quality of the food.

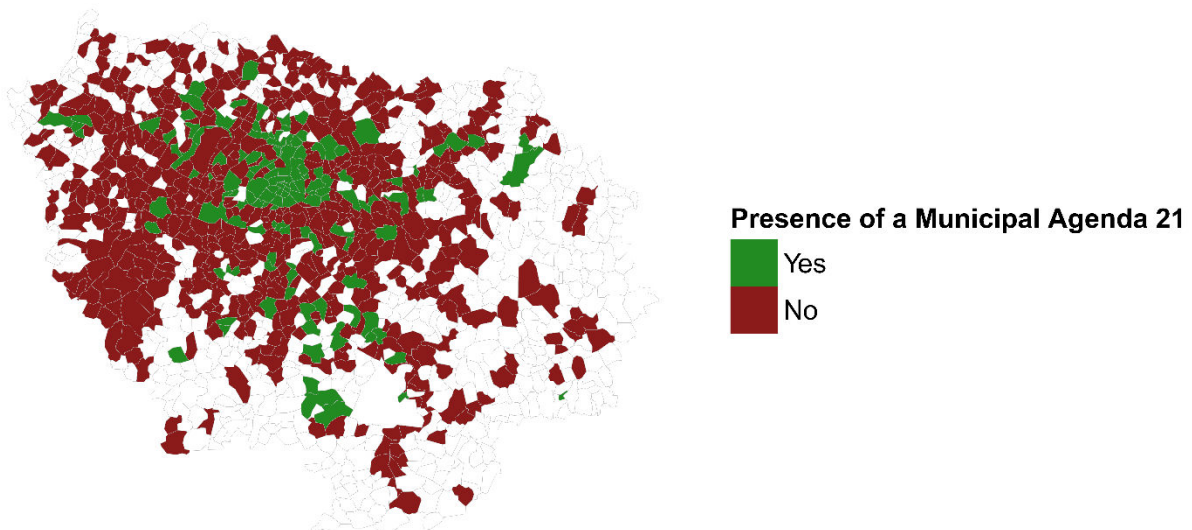
¹¹⁰ We choose the Arrondissement administrative level (between Municipalities and Departments), that is the perimeter of a subprefecture. We choose this level due to existence of chosen relationships between municipalities of the same arrondissement. There are only five Departments gathering a lot of municipalities, which favors the existence of chosen relationships less than in the 25 Arrondissements of the Region *Île-de-France*.

MAP 5: THE PART OF FAMILIES BY MUNICIPALITIES IN THE REGION ÎLE-DE-FRANCE IN 2014



Sources: INSEE

MAP 6: THE PRESENCE OF A MUNICIPAL AGENDA 21 IN THE REGION ÎLE-DE-FRANCE FOR OUR 712 MUNICIPALITIES



Sources: Agenda 21's website

5.2 EMPIRICAL STRATEGY

Our goal in this article is to highlight the impact of political hazards toward transparency on the governance of municipal public school canteens. To test this idea, we use the two following logit model:

$$P('Make = 1') = \beta_0 PC_i + \beta_1 X_i + \varepsilon_i$$

$$P('Make = 1') = \beta_0 SQ_i + \beta_1 X_i + \varepsilon_i$$

Where i represents a municipality, PC_i a set of variables that measure the exposition of the elected mayor to political hazards, SQ_i stands for “Signaling Quality”, X is a set of control variables common to our two equations, and $P('Make_i'=1)$ is the probability for a municipality to choose the ‘Make’ mode of governance instead of the ‘Buy’ one.

To estimate the coefficient on PC , we use a set of variables that captures the different hypothesis of 3.2. They refer to different ways to measure political contestability. We define “political” Herfindahl-Hirschman Index HHI as follows:

$$HHI_{i,t,L,J} = \begin{cases} A_{i,t}^2 + B_{i,t}^2 + C_{i,t}^2 + D_{i,t}^2 + \dots & \text{for one - vote elections and with opposition} \\ 0 & \text{else} \end{cases}$$

Where $A_{i,t,L,J}$ is the vote share of the first candidate at the municipal election i at time t for round L , when the election has lasted J rounds, $B_{i,t,L,J}$ is the vote share of the second candidate, etc. The Herfindahl-Hirschman Index is a common used index to account for the concentration of the political offer (Aneja *et al.*, 2015; Spiller and Moszoro, 2012). The larger it is, the more the political power is concentrated. We should then observe a positive sign of its coefficient as it indicates that the mayor should not be threatened by lack of transparency.

Another way to control for political contestability and concentration is to include a dummy variable for the round of election. If a candidate is elected at the first round, it means that he does not face a large and credible contestation. Citizens trust him enough to give him the majority alone without the need to merge with other lists.

Concerning the signals toward quality that the mayor may implement in presence of a lack of transparency for quality, we created one dummy variable for the presence of a municipal Agenda 21. We, thus, assume the Agenda 21 to be a signal toward quality *vis-à-vis* the population most concerned by the subject of food quality or more broadly sustainable

development. Thus, if the mayor implements an Agenda 21, she may be less pressured to manage the school canteen service in-house as this signals her commitment toward quality. As a consequence we anticipate a negative sign of this dummy variable on the propensity to ‘Make’ the school canteen service:

$$Agenda21_i = \begin{cases} 1 & \text{if there is a municipal Agenda21} \\ 0 & \text{else} \end{cases}$$

Finally, we measured the percentage of families in the municipality i that have at least one children, $Families_i$. As the part of families, which is a proxy for the financial burden transferred on citizens through taxes, increases in the municipality, so does the taxes related to school canteens and the pressure to make the costs of the service more transparent. Thus, we should observe a negative impact of this variable on the propensity to internalize the school canteen service. We also have a variable controlling for the level of debts by inhabitants in the municipality to account for tax burden.

6 RESULTS

6.1 DESCRIPTIVE STATISTICS

Our sample counts 712 municipalities in the French region *Île-de-France*. The municipalities with in-house governance for school canteens account for 26.4% in 2015-2016. Moreover, 19.5% of the municipalities have enforced an Agenda 21. Table 2 gives descriptive statistics of our control variables, based on our 712 observations.

In order to focus on political contestability, we keep only the municipalities with a list voting system. Thus, we keep 391 municipalities in 2008 and 600 in 2014. For the 2008-sample, 40% of those municipalities have an in-house governance for school canteens, and 30% for the 2014-sample. Besides, 60.9% of mayors were elected at the first round in 2008, and 65.8% in 2014. 42.2% of mayors elected in 2008 were left mayors, and 27.3% in 2014. Moreover, 33% of the municipalities of the 2008-sample have enforced an Agenda 21, and 23% for the 2014-sample. Table 3 gives descriptive statistics of our continue variables by subsample.

TABLE 2: DESCRIPTIVE STATISTICS ON OUR 712 OBSERVATIONS

	N	Mean	Std. Dev.	Min.	Max.
<i>Part of Families</i>	712	.727	.0933	.335	.899
<i>Score of the left parties at the 2012 Presidential Election</i>	712	.415	.101	.139	.721
<i>Unemployment Rate</i>	712	6.187	1.337	3.600	8.400
<i>Debt by Inhabitants</i>	712	1.937	9.570	-.0424	151.9
<i>Number of Service Firms</i>	712	1,354	4,210	7	58,063
<i>Preferences</i>	712	.251	.194	0	.889
<i>Complexity</i>	712	1.300	1.890	.022	12.54
<i>Log Pop</i>	712	8.563	1.517	4.875	12.37

TABLE 3: DESCRIPTIVE STATISTICS BY SUBSAMPLES

	N	Mean	Std. Dev.	Min.	Max.
<i>Part of Families</i>	391	.6820534	.0963532	.3347886	.8695567
	600	.71617	.0957941	.3347886	.8992377
<i>HHI 2nd round, 2008</i>	391	.1593528	.2131145	0	.6246191
<i>HHI 2nd round, 2014</i>	391	.1851416	.2160214	0	.5536827
	600	.1441381	.2048728	0	.5536827
<i>Score of the left parties at the 2012 Presidential Election</i>	391	.4619962	.1063017	.1390098	.721134
	600	.428363	.1025721	.1390098	.721134
<i>Unemployment Rate</i>	391	6.343734	1.205673	3.6	8.4
	600	6.201667	1.282395	3.6	8.4
<i>Debt by Inhabitants</i>	391	3.151503	12.78434	0	151.8824
	600	2.22937	10.39646	0	151.8824
<i>Number of Service Firms</i>	391	2390.125	5470.37	75	58,063
	600	1599.53	4545.057	23	58,063
<i>Preferences</i>	391	.3336767	.2156716	.0344828	.8888889
	600	.2732522	.1999146	0	.8888889
<i>Complexity</i>	391	2.196061	2.162346	.0237023	12.54181
	600	1.513471	1.986504	.02151	12.54181
<i>Log Pop</i>	391	9.714684	.9452714	8.222553	12.37461
	600	8.961737	1.301381	6.864848	12.37461

6.2 EMPIRICAL MODEL

We first estimate the probability for a municipality to ‘Make’ rather than ‘Buy’ with only the control variables (Table 4, column 1). We can observe that the ideology seems to drive the make-or-buy choice, with more in-house governance in municipalities with a larger share of left vote in the 2012 presidential election. Similarly, a left mayor is more prone to internalize the school canteen service than a right mayor (Table 4, columns 2 to 5). Moreover, mayors seem to favor in-house governance when the unemployment rate is relatively higher. On the contrary, debt by inhabitants have no impact on the make-or-buy choice for school canteens. We assume that it does not reflect properly the tax-burden by household. It, thus, appears to have a negative impact on the propensity to internalize the school canteen service, once controlled for the part of families in the municipality (Table 4, columns 3 and 5). We can also observe a mimetic effect, with mayors favoring the mode of governance of neighboring cities, as well as a higher delegation when the service is more complex to deliver. Mayors are also dependent on the local economic context and consequently favor in-house governance when service firms are numerous in the city. We assume that the number of service firms to reflect the capacity of the mayor to hire skilled workers. Finally, the larger the population is, the more mayors use in-house governance. However, this effect is not stable on the next estimations based on 391 observations (over 3,500 inhabitants). This is certainly due to the overrepresentation of externalization in small size municipalities, because of the full impact of exploitation of economies of scale through delegation.

Then, we select the 391 observations for which we have a list voting system in 2008. Indeed, besides that we only have detailed political data on those municipalities, we assume them to be more subject to political contestation (see sections 2.2 and 3). We run four regressions to test our hypotheses (section 3.2). We can observe that the larger the part of families is in the municipality, the less the mayor would use in-house governance. Besides, when controlling for families, the debt by inhabitants has now a negative impact on the propensity to internalize the school canteen service. This is coherent with hypotheses 2: the larger the tax-burden is, the more the mayor will favor cost transparency, and consequently externalization of the service.

On the contrary, we do not have significant effect of political concentration on the make-or-buy choice. Finally, the dummy for the presence of an Agenda 21 in the municipality is of the expected sign, but with not enough significance to conclude.

TABLE 4: ODDS RATIO OF DETERMINANTS OF THE GOVERNANCE OF SCHOOL CANTEENS - 2008

<i>'Make'=1</i>	(1) Logit	(2) Logit	(3) Logit	(4) Logit	(5) Logit
<i>Agenda 21</i>			0.681 (0.161)		0.662+ (0.138)
<i>Part of Families</i>			0.0106** (0.0385)		0.00797** (0.0293)
<i>HHI 2nd round, 2008</i>				0.328 (0.488)	0.309 (0.467)
<i>Elected 1st round, 2008</i>				0.500 (0.312)	0.453 (0.251)
<i>Left Mayor in 2008</i>		1.591* (0.0915)	1.665* (0.0679)	1.634* (0.0769)	1.726* (0.0529)
<i>Score of the left parties at the 2012 Presidential Election</i>	158.9*** (0.000169)	56.00** (0.0187)	128.7*** (0.00587)	47.62** (0.0249)	113.2*** (0.00769)
<i>Unemployment Rate</i>	1.124+ (0.145)	1.274** (0.0167)	1.290** (0.0126)	1.281** (0.0153)	1.302** (0.0105)
<i>Debt by Inhabitants</i>	0.988 (0.255)	0.985 (0.163)	0.978* (0.0604)	0.984 (0.159)	0.977* (0.0529)
<i>Number of Service Firms</i>	1.000* (0.0916)	1.000* (0.0827)	1.000* (0.0871)	1.000* (0.0864)	1.000* (0.0930)
<i>Preferences</i>	14.30*** (0.000104)	12.73*** (0.000558)	10.56*** (0.00173)	12.21*** (0.000759)	9.746*** (0.00283)
<i>Complexity</i>	0.777*** (0.00450)	0.812** (0.0270)	0.748*** (0.00560)	0.820** (0.0366)	0.754*** (0.00731)
<i>Log Pop</i>	1.547*** (8.92e-05)	1.249 (0.280)	1.144 (0.528)	1.226 (0.323)	1.111 (0.625)
<i>Observations</i>	712	391	391	391	391
<i>Pseudo R-squared</i>	0.209	0.150	0.162	0.153	0.166

*Odds ratio, pval in parentheses; *** p<0.01, ** p<0.05, * p<0.10, + p<0.15*

We, then, run the same regressions for the 2014 municipal election (Table 5). The sample is now larger (600 observations) due to a change in the threshold from 3,500 to 1,000 inhabitants for the voting system. We obtain similar results for Agenda 21, but the impact of families has become largely less significant. So is the impact of debt by inhabitants. Moreover, the political color of the mayor elected in 2014 has no longer an impact on the choice of governance of the school canteen service. This is coherent with the timing of the governance of school canteens.

The change in governance (from in-house to private or private to in-house) takes time to prepare and implement as the topics of investments, facilities and labor force are delicate to handle.

On the contrary, the political concentration of the municipal majority diminishes the risks of political contestation and leads to more in-house governance. This also stands true for a mayor elected as soon as the first round.

TABLE 5: ODDS RATIO OF DETERMINANTS OF THE GOVERNANCE OF SCHOOL CANTEENS - 2014

<i>'Make'=1</i>	(1) Logit	(2) Logit	(3) Logit	(4) Logit	(5) Logit
<i>Agenda 21</i>			0.715 (0.203)		0.675+ (0.142)
<i>Families</i>			0.0586+ (0.132)		0.0469+ (0.105)
<i>HHI 2nd round, 2014</i>				445.9** (0.0102)	634.0*** (0.00671)
<i>Elected 1st round, 2014</i>				11.61** (0.0174)	13.13** (0.0127)
<i>Left Mayor in 2014</i>		1.374 (0.212)	1.376 (0.211)	1.398 (0.195)	1.396 (0.199)
<i>Score of the left parties at the 2012 Presidential Election</i>	158.9*** (0.000169)	67.20*** (0.00657)	114.3*** (0.00278)	49.89** (0.0125)	87.95*** (0.00515)
<i>Unemployment Rate</i>	1.124+ (0.145)	1.152* (0.0935)	1.160* (0.0794)	1.139+ (0.126)	1.146+ (0.111)
<i>Debt by Inhabitants</i>	0.988 (0.255)	0.987 (0.237)	0.984+ (0.143)	0.985 (0.170)	0.981* (0.0954)
<i>Number of Service Firms</i>	1.000* (0.0916)	1.000+ (0.102)	1.000+ (0.103)	1.000 (0.151)	1.000+ (0.148)
<i>Preferences</i>	14.30*** (0.000104)	15.10*** (9.99e-05)	13.29*** (0.000235)	18.45*** (3.66e-05)	16.44*** (8.00e-05)
<i>Complexity</i>	0.777*** (0.00450)	0.784*** (0.00729)	0.749*** (0.00307)	0.774*** (0.00498)	0.735*** (0.00191)
<i>Log Pop</i>	1.547*** (8.92e-05)	1.495*** (0.00271)	1.425** (0.0136)	1.505*** (0.00299)	1.429** (0.0152)
<i>Observations</i>	712	600	600	600	600
<i>Pseudo R-squared</i>	0.209	0.183	0.188	0.192	0.199

Odds ratio, pval in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$, + $p < 0.15$

Finally, we replicate the models of Table 5 but with the observations of Table 4 (Table 6). Indeed, some municipalities have tested for the first time the list voting system and we expect the political environment to be not mature enough to be able to observe properly political effects on the governance of the school canteen service. We observe the same positive impact of political concentration on the propensity for the mayor to favor in-house. However, the impacts of families and signals for quality on the make-or-buy choice are more significant: the mayor favors cost-transparency (that is delegation) when the financial burden is higher in the municipality (Part of Families), and when she has already signaled her interest for quality concerns (Agenda 21).

TABLE 6: ODDS RATIO OF DETERMINANTS OF THE GOVERNANCE OF SCHOOL CANTEENS - 2014

<i>'Make'=1</i>	(1) Logit	(2) Logit	(3) Logit	(4) Logit	(5) Logit
<i>Agenda 21</i>			0.676 (0.153)		0.630* (0.0998)
<i>Families</i>			0.0145* (0.0519)		0.00910** (0.0327)
<i>HHI 2nd round, 2014</i>				710.4*** (0.00860)	1,306*** (0.00452)
<i>Elected 1st round, 2014</i>				12.19** (0.0210)	15.22** (0.0127)
<i>Left Mayor in 2014</i>		1.515 (0.151)	1.528+ (0.146)	1.559+ (0.134)	1.570+ (0.133)
<i>Score of the left parties at the 2012 Presidential Election</i>	158.9*** (0.000169)	73.32** (0.0111)	177.6*** (0.00316)	46.01** (0.0261)	118.5*** (0.00735)
<i>Unemployment Rate</i>	1.124+ (0.145)	1.265** (0.0197)	1.280** (0.0152)	1.245** (0.0320)	1.257** (0.0266)
<i>Debt by Inhabitants</i>	0.988 (0.255)	0.985 (0.182)	0.979* (0.0764)	0.982+ (0.127)	0.975** (0.0456)
<i>Number of Service Firms</i>	1.000* (0.0916)	1.000* (0.0713)	1.000* (0.0728)	1.000+ (0.115)	1.000+ (0.112)
<i>Preferences</i>	14.30*** (0.000104)	11.63*** (0.000801)	9.622*** (0.00242)	14.16*** (0.000349)	11.94*** (0.000993)
<i>Complexity</i>	0.777*** (0.00450)	0.804** (0.0210)	0.745*** (0.00518)	0.798** (0.0193)	0.734*** (0.00398)
<i>Log Pop</i>	1.547*** (8.92e-05)	1.247 (0.282)	1.148 (0.519)	1.244 (0.297)	1.130 (0.575)
<i>Observations</i>	712	391	391	391	391
<i>Pseudo R-squared</i>	0.209	0.148	0.160	0.164	0.178

Odds ratio, pval in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$, + $p < 0.15$

7 CONCLUDING REMARKS

In this article we investigated for the first time the make or buy choice for the municipal school canteen service in France. We assumed in-house governance to be more transparent toward quality and externalization more transparent toward costs. Based on this assumption, we found that political contestability influences the make or buy choice. When the municipal majority is strong, either elected at the first round or with a large score, mayors are less exposed to political contestation on costs. They are, consequently, more prone to internalize the school canteen service to increase transparency on quality. This result is corroborated with the finding that higher debt by inhabitants implies a lesser use of internalization. Moreover, when the part of families is high in the municipality, that is when municipal taxes for school canteens are less shared between the inhabitants, mayors also have a larger use of externalization. Besides, mayors can increase trust on quality with signals, and thus mitigate political risks from contestation. This lead to a lesser use of internalization to the benefit of externalization. We did not find relevant signals for costs, and expect future researches to investigate this field.

However, we found political contestation to have an impact on the make or buy choice only in 2014 and not in 2008. Given the year of our data collection (2015-2016) and the long timing to shift from one governance mode to another, we expect the 2008 mayor to be at the origin of the mode of governance in 2015-2016. Then several explanation for this phenomenon have to be investigated. First, in 2008 the quality concerns for the food procurement where at their beginning, with the *Grenelle de l'Environnement* law in the late 2007. The trade-off between cost and quality transparency might not have been as strong as seven years later, hence the non-significant impact of political contestation on the make or buy choice. Second, the mayor elected in 2008 has changed the mode of governance according to the expected results of the 2014 elections. Consequently, the 2014 elections are proxies for the anticipated political contestation when the mayor had to choose between in-house and externalization. Future researches shall investigate this phenomenon. Moreover, in this article we only considered the make or buy choice. Yet, there exists several way to make or to buy, which imply different level of cost and quality transparency. In particular, for in-house governance the municipality still has to buy the food through public auctions. The way to allot the food market may have an important impact on the transparency on quality and costs, and would deserve deeper research in that way.

These findings allow us to highlight key determinants in the make or buy choice, which shall be taken into account by the law makers. Transparency and trust seems to be key factors regarding the governance of public services. As a consequence, European Directives toward transparency of public auctions and public services should be reinforced and adapt to each stake in public services. Similarly, to include the citizens in the decisions and advertise on public indicators for quality and costs should decrease the space for political contestation, and thus mitigate costs of governance linked to non-economic justifications.

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12 ANNEX

ANNEX 1: CORRELATION MATRIX FOR THE 2008 SUBSAMPLE (391 OBSERVATIONS)

		1	2	3	4	5	6	7	8
1	'Make'=1	1.00							
2	Agenda 21	.06	1.00						
3	Part of Families	-.25	-.33	1.00					
4	HHI 2 nd round, 2008	.10	.20	-.22	1.00				
5	Elected 1 st round, 2008	-.12	-.17	.15	-.93	1.00			
6	HHI 2 nd round, 2014	.18	.16	-.19	.29	-.29	1.00		
7	Elected 1 st round, 2014	-.15	-.13	.15	-.26	.28	-.97	1.00	
8	Left Mayor, 2008	.20	.04	-.01	-.02	.02	.23	-.21	1.00
9	Left Mayor, 2014	.22	.06	-.08	-.04	.03	.15	-.15	.70
	<i>Score of the left parties at</i>								
10	<i>the 2012 Presidential</i>	.30	.18	-.21	.06	-.08	.20	-.17	.52
	<i>Election</i>								
11	Unemployment Rate	.22	.16	-.19	-.03	.02	.06	-.04	.04
12	Debt by Inhabitants	.07	.25	-.52	.22	-.17	.14	-.10	.04
13	Number of Service Firms	.22	.34	-.63	.26	-.21	.21	-.16	.06
14	Preferences	.33	.27	-.57	.23	-.21	.18	-.15	.11
15	Complexity	.24	.35	-.73	.19	-.15	.22	-.18	.20
16	Log Pop	.29	.36	-.66	.23	-.21	.26	-.23	.15
		9	10	11	12	13	14	15	16
10	<i>Score of the left parties at</i>								
	<i>the 2012 Presidential</i>								
	<i>Election</i>	.54	1.00						
11	Unemployment Rate	.09	.22	1.00					
12	Debt by Inhabitants	.04	.02	.08	1.00				
13	Number of Service Firms	.07	.04	.13	.54	1.00			
14	Preferences	.19	.37	.30	.36	.47	1.00		
15	Complexity	.26	.49	.26	.33	.53	.62	1.00	
16	Log Pop	.17	.46	.22	.19	.56	.52	.71	1.00

ANNEX 2: CORRELATION MATRIX FOR THE 2014 SUBSAMPLE (600 OBSERVATIONS)

		1	2	3	4	5	6	7	8
1	'Make'=1	1.00							
2	Agenda 21	.14	1.00						
3	Part of Families	-.31	-.40	1.00					
4	HHI 2 nd round, 2008	.19	.30	-.36	1.00				
5	Elected 1 st round, 2008	.09	.06	-.19	-.45	1.00			
6	HHI 2 nd round, 2014	.19	.21	-.26	.33	-.03	1.00		
7	Elected 1 st round, 2014	-.17	-.18	.24	-.31	.02	-.98	1.00	
8	Left Mayor, 2008	.28	.17	-.23	.16	.28	.30	-.28	1.00
9	Left Mayor, 2014	.21	.12	-.14	.03	.11	.18	-.17	.60
10	Score of the left parties at the 2012 Presidential Election	.35	.29	-.37	.23	.21	.25	-.24	.59
11	Unemployment Rate	.18	.16	-.19	.04	.10	.10	-.09	.09
12	Debt by Inhabitants	.10	.26	-.47	.25	-.06	.15	-.12	.09
13	Number of Service Firms	.25	.37	-.62	.33	-.02	.24	-.20	.16
14	Preferences	.38	.34	-.60	.35	.10	.24	-.23	.27
15	Complexity	.31	.43	-.75	.34	.17	.30	-.27	.37
16	Log Pop	.38	.44	-.71	.44	.37	.35	-.34	.43
		9	10	11	12	13	14	15	16
10	Score of the left parties at the 2012 Presidential Election	.52	1.00						
11	Unemployment Rate	.10	.21	1.00					
12	Debt by Inhabitants	.05	.07	.08	1.00				
13	Number of Service Firms	.10	.14	.13	.55	1.00			
14	Preferences	.20	.46	.28	.36	.50	1.00		
15	Complexity	.27	.57	.24	.35	.57	.67	1.00	
16	Log Pop	.23	.59	.23	.21	.51	.60	.74	1.00

CHAPTER 2

PUBLIC CONTRACTS IN FOOD PROCUREMENT AND POLITICAL CONTESTABILITY: *INSIGHTS FROM FRENCH INSTITUTIONAL CATERING*

ABSTRACT

We study the impact of the very nature of public contract using a large number of contracts from one worldwide French company in the service sector. With the help of a data reading software, we collect textual data that account for contract rigidity. We find that public-to-private contracts are more rigid than private-to-private contract. We link this excessive rigidity to a contestable political environment with an analysis of public-to-private contracts.

Keywords: Political Oversight, Third Party Opportunism, Specification, Rigidity, Institutional Catering, School Canteens

JEL Classification: D23, D72, D73, D78, H57

1 INTRODUCTION

In this chapter, we study the impact of the very nature of public contract, characterized by public scrutiny, using a large number of contracts from one worldwide French company in the service sector. Indeed, as described by Goldsmith and Eggers (2005), “*when something goes wrong in a public sector network, it tends to end up on the front page of the newspaper, instantly transforming a management issue into a political problem*” (p. 122). Public contracts, unlike private ones, are paid by public funds and consequently are subject to public scrutiny and open to challenge by third-parties. The literature distinguishes three types of third-parties: political opponents of the elected officials, pressure groups or citizens/voters who may question the right use of public money, and rival firms ousted from the public market (Spiller, 2009; Moszoro and Spiller, 2012, 2014).

This inherent difference between private and public contract prevents the possibility to use relational contracting for public-to-private contracts as a way to “*help circumvent difficulties in formal contracting*” (Baker *et al.*, 2002, p.3). The authors explain: “*a formal contract must be specified ex ante in terms that can be verified ex post by the third-parties, whereas a relational contract can be based on outcomes that are observed by only the contracting parties ex post, and also on outcomes that are prohibitively costly to specify ex ante*” (Baker *et al.*, 2002, p.3). Relational contracts, thus, involve discretion over what has to be done in *ex ante* unspecified circumstances. Although efficient in the private sector, this discretionary power by the parties is thus a potential source of third-party opportunism (TPO hereafter).

Third parties may or decide to challenge a contract signed by a public agent to question its probity and consequently damage its reputation. Challenges may either be “honest” (contestation based on facts) or purely opportunistic and motivated by a will to undermine an elected public agent (fake rumors, demonstration, etc.). To prevent themselves from the occurrence of this opportunistic behavior, farsighted public agents in charge with the contracting process will design the contract to reduce imprecisions in the interpretation of the contract or too vague provisions, in order to diminish both the impact of potential TPO and their incentive to act opportunistically (Spiller, 2009; Moszoro and Spiller, 2012, 2014). As they increase the specificity and rigidity of the contracts, the public agents diminish their own *ex post* discretionary power to adapt to changes to the benefits of a higher trust in the contracts. They arbitrate between the higher cost to specify the terms of the contract and the benefits they get by making contestations less likely.

As Laffont and Tirole (1993) and Moszoro and Spiller (2012, p.6) we refer to contract specificity as “*ex ante* complexity of subject, completeness of clauses, technical provisions, and processing costs”, and contract rigidity as “*ex post* enforcement, penalties, hardness, and intolerance to adaptation of contracts”. Both normally correlates as the more the specific a contract is, the more the variations from the contracts will be punishable in the short (fines) or long (non-renewal of the contract) run. We will then use specificity and rigidity hereinafter as interchangeable, unless specified otherwise. We assume contract specificity to be mainly a way to increase the confidence in the public-private relationship, and thus to secure both the contract and the elected body position. As we will describe in the next section, when the public agent want to increase the specificity of a contract he has to arbitrate between the positive effect on potential TPO, and the negative effect on contracting costs.

From this, we derived two testable hypotheses. First, public-to-private contracts are more rigid than private-to-private contracts for the same service. Second, comparing public contracts only, we expect the level of contract rigidity to be explained by political considerations. More precisely, public contracts should be more rigid in more politically contested environments, in order to secure the contract and the elected body’s probity.

To test these hypotheses, we collected 498 contracts from one of the main institutional catering French company. They are all the contracts signed by this company for the year 2015¹¹¹ dedicated to food procurement in scholar and health establishments. 252 of these contracts are public-to-private contracts and 246 are private-to-private ones. We used algorithmic data reading and textual analysis to measure the level of rigidity of a contract, and collected basic information about the contracts (client, price, volume, etc.). We also collected political data on the 2014 local elections from the French Home Office. Then, we regressed the level of rigidity of the contracts on our variables measuring political contestability as well as a set of control variables highlighted by economic literature. We find out that private contracts are less rigid than public ones, and we explain this difference of rigidity thanks to political contestation and the risk of challenge of the contract for public contracts. We also find empirical evidences that the design of public contracts are influenced by the concentration of the political power and its opposition.

¹¹¹ We also have the amendments for this year, but since we do not have several years we cannot link them to previous contracts.

We think the institutional catering service, and especially scholar catering, is a nice setting to study the impact of TPO on public contract design for several reasons. Institutional catering is very well developed in France and primary schools' catering represents almost 3% of total municipal's expenses¹¹². Since it is a service largely financed by public subsidies and to the benefits of only a part of the population, we expect this service to be particularly subject to scrutiny by third-parties. In addition, food policy, of which public food procurement is one part, has gained increasing interests in the political agenda. For instance, in the last presidential elections, all the candidates had specific programs related to institutional catering. Finally, public food procurement can have economic, social and health impacts. Focusing only on health issue, school food policy can improve child nutrition, help kids to learn healthy habits, reduce or prevent child obesity and so on. Because of their potential impact on many relevant social issues, various stakeholders such as parental associations, taxpayers or political opponents may be sensitive to school food procurement. .

The chapter is organized as follow. In section 2, we present the economic literature on contractual issues. In section 3, we develop our hypotheses based on the economic model of Moszoro and Spiller (2012). In section 4, we present the data and the empirical strategy. We present the results in section 5, and offer limitations and prospective researches in section 6.

2 CONTRACTUAL DESIGN IN PUBLIC CONTRACTS

The economics of contract has been booming over the last thirty years. The fact that many (if not most) of the market transactions between private firms do not take place in arms' length spot market but are governed by long or short-term formal contracts is nowadays well established in economics. Theoretical as well as empirical analysis focused on various issues such as the design of contract (see for Bolton and Dewatripont, 2005, for the theory side and Lafontaine and Slade, 2013, for a recent survey of empirical works), the effect of contracts on outcomes such as price, sales or firm survival, the extent of vertical integration (Tadelis and Williamson, 2013). Most of this literature assumes, that private parties seek to design contracts

¹¹² With 180 days of school a year (<http://eduscol.education.fr>), 60% of the 6 760 600 pupils (<http://www.education.gouv.fr>), for a cost per meal between 6 and 8 €, municipal school canteens for the 5 to 10 years old accounts for 2 to 2.6% of the 220 billion spent each year by municipalities (<http://www.collectivites-locales.gouv.fr>). To be noted that we use the budget for every French municipality, whether they have schools, and thus scholar catering, or not. The part of expenses for municipalities with scholar catering is consequently much higher.

in order to maximize the value of trade, the implicit assumption being that inefficient contractual relations will be kick out thanks to competitive pressure and selection.

In contrast, contracts between public and private parties is often seen as rigid, highly bureaucratic and inefficient (Spiller, 2009). Contracting decision with public partners is probably more political as public agents may be less concerned with efficiency of the relation and more about others dimensions of social welfare or strictly political considerations. For instance, the empirical literature on the choice between internalizing versus outsourcing the provision of public services emphasize the role of political factors (Bel and Fageda, 2007, Sundell et al., 2012). Political considerations are often considered by economists as a way to account for the ideology or opportunism of the public agents. In the first case, ideological factors are supposed to partly explain the decisions of public agents to organize the provision of public services. To put it sharply, left-oriented political actors should favor in-house procurement while more right-wings party should prefer delegation (Bel and Fageda, 2007; Dubin and Navarro, 1988; González-Gómez *et al.*, 2011; Sundell *et al.*, 2012). In the second case, it is claimed that political agents can act opportunistically *vis-à-vis* private firms. For instance, in sectors with large investments such as network industries (water, electricity, and telecommunication), private firms fear opportunistic renegotiations by the government or administrative expropriations that would reduce the expected returns on these investments. Some regulatory procedures are thus seen as a way for the public party to credibly commit not to expropriate private investments (Levy and Spiller, 1994). Some also focus on political cycle such as Le Squeren and Moore (2015) whose paper suggests a political cycle of governmental renegotiation of public-private contracts, with a higher rate of renegotiations before elections. A more recent literature explains some features of public contracts as a way to prevent opportunistic behavior by third-parties, namely parties that are not directly part of the contractual negotiation process but who may have a stake in the contract implementation. (Spiller, 2009; Moszoro and Spiller, 2012, 2014).

Due to the use of public money, public-to-private contracts differ from private-to-private contracts as they are subject to public scrutiny by citizens, media, or political opposition (Ring and Perry, 1985; Spiller, 2009). Not all of these scrutinizers have an interest in the good execution of the contract. Some political opponents – elected bodies or citizens – may create contestations about the probity or efficiency of the contract, either to obtain what they consider to be a better contract, or to diminish the trust in the public agent in office by questioning or

contesting the unspecified part of the contract and more generally the probity of the public agents in office.

Examples of third party opportunism are many. Many laws in every countries have been modified under the pressure of citizens or lobbies. Some infrastructure projects are doomed or delayed due to local contestation such as Notre-Dame-des-Landes' airport in France, XXL Keystone in the USA. More specifically on public contracts, Beuve *et al.* (2016) illustrate this with the renegotiation of a public car park in Saint-Etienne, France, that led to a great contestation at the city council with political opponents declaring that the contract was “either a gift or poorly negotiated”. Finally, and more directly related to our empirical analysis, the French institutional catering sector faces the same contestations and public scrutiny, if not more. Food and more broadly French gastronomic culture carries in France important social and cultural values as most people see it as part of the national identity (UNESCO, 2010). With respect to kids feeding, school lunch makes a substantial contribution to children's nutritional intakes. In addition, school lunches provide a good opportunity to learn healthy food habits at a young age that might have positive health effects in the long run. For instance, in a recent documentary, Michael Moore (2016) contrasts the quality of meal in French and US schools and stresses the good food habits developed in French school canteens.¹¹³ Some powerful third-parties such as parental associations also try to influence public school catering. For instance, in Paris, the mayor recently tried to restructure the school catering service. Unsatisfied with the proposal, some citizens created a website to oppose this reform that, according to them would lead to more uncertainty on several dimensions of the quality of the food, the price¹¹⁴. The reform has finally be postponed. More broadly, the defiance toward the food industry accused to “cook horses for beef” increases the scrutiny of the citizens with regard to food. This is especially true when it comes to kids meals¹¹⁵.

Since elected bodies may face defiance and contestation, they have to adapt the contract design in order to mitigate this potential contestation and increase the trust toward their decisions. Public body will respond to this threat by asking for additional contractual specifications during the negotiations with private suppliers. The goal is to reduce the set of unspecified or mis-

¹¹³ At the same time, many documentaries show on French channels focused on school and hospital catering to show that the objectives of some contracts were not always fulfilled on diverse goal such as the quality of supply, the taste, the weight of bread, the diversity of the diet, the room for “home-made meals”, the costs and origins of ingredients, etc. (France 5, 2016; Capital, 2015, 2015; Arte, 2016).

¹¹⁴ <http://sauvemacantine.fr>

¹¹⁵ For instance, for the Frenches schools are the first place where to increase the proportion of organic food (Agence Bio, 2016).

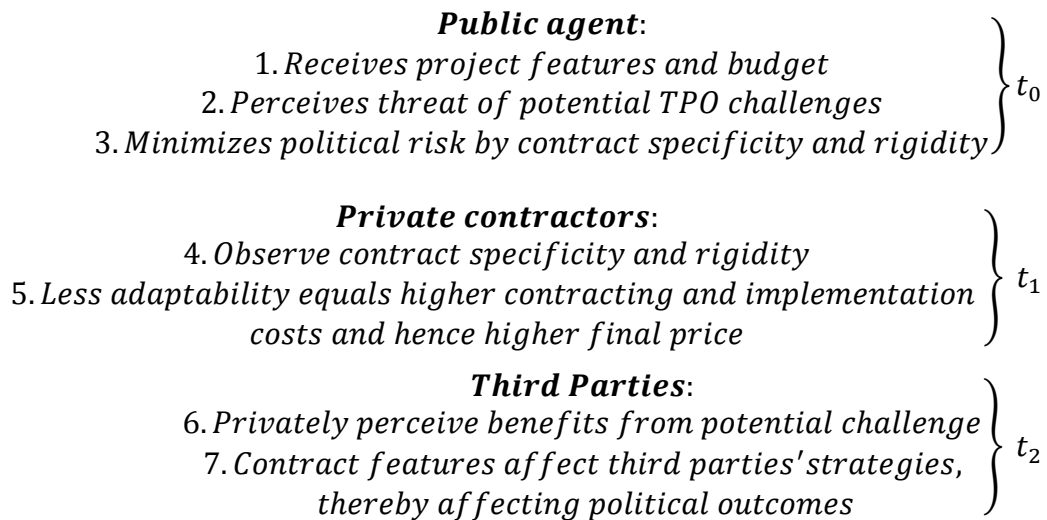
specified contractual terms that opportunistic third parties might use in order to challenge the probity of the public actors in charge¹¹⁶.

3 THEORETICAL ANALYSIS

3.1 PUBLIC CONTRACT RIGIDITY: THE MODEL

To analyze the potential impact of third parties on the design of public-private contracts, we rely on the model of Moszoro and Spiller (2012). Their model assume a three steps procedure for public contracts (Figure 1). First, the Public agent chooses the level of contract rigidity, anticipating the threat of potential TPO challenges. In response to that level of rigidity, the private contractors adapts his auction price. The price increases with the level of rigidity, as it means more implementation and negotiation costs. Indeed, contracts are negotiated to know if the private partner can comply with the wishes of the public agent, and to define the price accordingly. Moreover, for each extra level of specificity in the contract, there are additional control and implementation costs to assess compliance with the contractual provisions. Finally, third parties perceive expected potential benefits from a challenge and decide or not to challenge the contract. If they challenge the contract, there will be a negative political impact on the Public agent's probity or reputation that threatens her re-election.

¹¹⁶ During some interviews with manager of the private suppliers, they even declared that some municipalities were blacklisted due to the extreme degree of completeness of the contract they ask for, leading to financial losses for the private operator.

FIGURE 1: TIMING OF THE MODEL

Source: Moszoro and Spiller, 2012, pp. 6

This model implies a trade-off for the public body in charge with public contracting between the risks of third-party opportunism and contracting costs (that encompasses writing, implementation, negotiation, and adaptation costs). On the one hand, she can reduce the level of specificity to rely more on informal adaptations when unexpected events or misinterpretations occurs. This diminishes consequently the contracting costs and smoothes the public-private relationship. On the other hand, when the level of specificity diminishes, third parties are more able to question the good faith of contracts as the elected body has more discretionary power in the contractual implementation. Thus, the risk of third-party opportunism increases with less rigid contracts. Public agents have to choose the optimal level of rigidity, R , by arbitrating between contracting costs K (that increases with R) and political costs P (that decreases with R) to minimize total expected costs:

$$\min_R P(R) + K(R)$$

Political costs, P , are the costs T_0 supported by the public agent if a challenge by third parties succeeds, such as not being reelected in the next elections or even legal expenses in case of trials. Political costs have to be weighted by the likelihood of a challenge by third-parties to

happen, ρ , and the likelihood of this challenge to succeed, τ , that both decrease when rigidity increases. Political costs are thus:

$$P(R) = T_0\rho(R)\tau(R)$$

On their side, third-parties observe their randomly normally distributed overall benefits, \widetilde{T}_0 , from challenging the contract, and compared it with litigation costs, c , to decide to act opportunistically or not. Litigation costs increase necessarily with R as the more detailed a contract is, the more difficult it is to prove that something is going wrong with its implementation without the political body to know it and fix it before the challenge. The overall benefits are, however, weighted by the likelihood of this challenge to succeed τ , and by a political structure parameter, $\zeta \in]0, 1]$, that accounts for political opposition atomization. Indeed, if the political opposition is fragmented, then benefits from a challenge can go to any of the political competitors, not necessarily to the challenger who will bear the litigation costs. Then, $\zeta = 1$ for symmetrical Bertrand duopolies (one's losses, the other one's gains), $\zeta < 1$ for oligopolies, and $\zeta \approx 0$ for "perfect political competition" with no incentives for a third party to challenge the contract at all. The likelihood of a challenge by third parties is thus:

$$\rho = \Pr[\widetilde{T}_0\zeta\tau(R) > c(R)]$$

Consequently, the equilibrium is:

$$R^* = \arg \min_R T_0\rho(R)\tau(R) + K(R) \quad [1]$$

$$\rho^* = \Pr[\widetilde{T}_0\zeta\tau(R^*) > c(R^*)] \quad [2]$$

Any deviation from the equilibrium makes the public agents worse off:

1. If $R < R^*$, then $\tau(R) > \tau(R^*)$, $c(R) < c(R^*)$, therefore $\rho > \rho^*$ and $T_0\rho(R)\tau(R) - T_0\rho(R^*)\tau(R^*) > K(R^*) - K(R)$, meaning that the gains in contracting costs are offset by the increase in political costs;
2. If $R > R^*$, then $\tau(R) < \tau(R^*)$, $c(R) > c(R^*)$, therefore $\rho < \rho^*$ and $T_0\rho(R)\tau(R) - T_0\rho(R^*)\tau(R^*) < K(R^*) - K(R)$, meaning that the gains in political costs are offset by the increase in contracting costs.

3.2 PUBLIC CONTRACT RIGIDITY: THE HYPOTHESES

We argue that the model described above respect the timing of public contracting for institutional catering. First, the public body makes an auction to provide meals and adapts the

clauses thanks to observations of the political opponents and citizen's demands. Then, private contractors observe the required targets of the municipality, and hence adapt their auction price. One firm wins the public auction, and the contract is implemented. Finally, parents, tax-payers, and political opponents observe the implementation of the contract, and decide to contest it or not depending on their expected gain.

We showed that the level of rigidity of a contract depends on a trade-off between political and contracting costs (equation [1]). Therefore, in the absence of political costs, which we assume to be the case for private-to-private contracts, the optimal level of rigidity should be lower. We can then state the following hypothesis:

Hypothesis 1 The optimal level of rigidity is lower in the absence of political costs. Thus, public-to-private contracts are more rigid than private-to-private contracts.

Moreover, third-parties decide to challenge a contract or not depending on expected benefits from contestation. These benefits depend on the overall benefits \tilde{T}_0 that the political opponents may expect and on the number of political opponents (ζ). When overall benefits from contestation, \tilde{T}_0 , are high, then the likelihood of a challenge, ρ , is high as well. Consequently, the optimal level of rigidity should be high too. In the same way, when potential benefits from a challenge are not shared (high political contestable market, ζ), then the likelihood of a challenge increases since all the benefits goes to the challenger. Thus, we can test the two following hypotheses:

Hypothesis 2 When the benefits from a challenge are high (high \tilde{T}_0), the optimal level of rigidity is high too. Therefore, the impact of political challenge differs depending on the type of clauses in the public contracts. The rigidity is higher on more “touchy” clauses.

Concretely, clauses that accounts for health and environmental issues shall be more rigid for public than private contracts, while others more practical shall be as rigid whatever the nature of the client.

Hypothesis 3 In contestable political markets (high ζ), the optimal level of rigidity is higher than in lower contestable political markets. Therefore, when the political opposition is highly atomized, the risks of a challenge decrease, and so does the level of rigidity.

4 EMPIRICAL ANALYSIS

4.1 SECTOR AND CONTRACT CHARACTERISTICS

For the year considered, our company has signed 500 contracts with French institutional clients in the educational and health sectors. 255 (51%) are made with private clients, and 245 (49%) are made with public clients. The contracts are distributed in 396 cities. 325 cities have only one contract, 52 have two contracts, eight have three contracts, the same number of cities has four contracts, and three cities have five. We do not find any differences in the descriptive statistics between cities with only one contract and those with several contracts (Annex 1). There is 631 clients since a contract can be made with several institutional clients. For instance, a contract may gather several public entities in a municipality (Nursery, School, Middle School, Home Retirement, and Home Delivery) in order to benefits from a greater bargaining power, economies of scale, and thus a lower price. The public entities gathered in a contract are not necessarily managed at the same political level (Municipality, Department, Region, and State). 74 contracts are multi-clients ranged from 2 (62%) to 5 (4%) clients, with a mean of 2.53 clients per contract. 59 of those multi-clients contracts are in public sector (80%) and 15 in the private one (20%). We also notice that schools are in 86% of those contracts. Moreover, all the public multi-clients' contracts are made with a municipality. That is normal as they are the only one to manage several institutional catering such as the nursery, the school, the home retirement, the home delivery, and holiday's facilities.

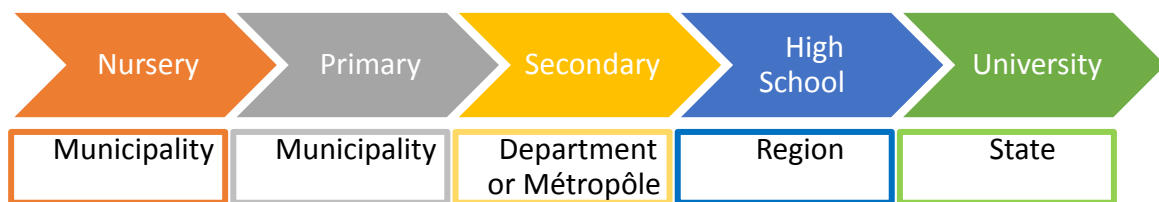
For the whole sample, the educational sector is composed of 77 nursery (15.4% of total contracts¹¹⁷), 172 schools (34.4%), 30 middle schools (6%), 34 high schools (6.8%), and 143 holidays facilities (28.6%), being 456 clients (74.4% of total clients). The health sector is composed of 61 retirement houses (12.2% of total contracts), 55 home delivery institutions (11%), and 18 hospitals (3.6%), being 134 clients (21.9% of total clients). Finally, we have 23 other clients (4.6% of total contracts, and 3.8% of total clients).

In France, education is compulsory from the age of 6 to 16 but a large majority of children starts school before the minimum age (and over 50 % of 18-21 are still in fulltime education). There are four different types of schools (or layers of the educational system) taken by age of pupils before going to higher education. Each types of public school is under the responsibility of a

¹¹⁷ As we have 613 clients for 500 contracts, the sum of the percent of clients over total contracts will be more than 100%.

particular layer of the public administration:¹¹⁸ (i) kindergarten (or pre-school – *école maternelle*) takes pupils from the age of 2 (or 3) to six; (ii) primary schools (*école primaire*) from the age of 6 to 11; (iii) middle school (*collège*) normally for pupils aged 11-15; (iv) high school (*lycée*) which covers the last three years of secondary education (up to 18 years old). The first two layers are under the responsibility of the municipalities and denominated by school, middle schools are managed at the department level while high school are managed at the regional level (Figure 2).¹¹⁹ In 2014-2015, there was 12.775.400 children attending the school system (17% in private schools, the rest in the public system) in 63.600 schools at all layers (Ministry of Education). The annual budget of the Ministry of Education was 146 billion Euros in 2014, the largest ministry budget.

FIGURE 2: ORGANIZATION OF PUBLIC SCHOLAR CATERING



Sources: French Code of Education, articles R. 531-52 and R. 531-53.

For the public schools that fall under their jurisdiction, municipalities are compelled to provide a lunch for pupils attending their schools. Thus, 63% of children before 10 eat at school at least once a week, as well as 69% of the teens (ANSES, 2006-2007), for an annual turnover of 17 billion euros and 3 billion meals served (DRAAF Rhône-Alpes, 2012). The turnover benefits lately from the aging population and strong French natality, as it increases the demand.

The provision of meals by public schools under the responsibility of municipalities is organized in two different ways: in-house procurement and contracting-out. In the “in-house” situation meals are prepared in facilities owned by the city (even if the procurement of raw ingredients is through public markets) while in the outsourcing scenario, the municipality delegates to a

¹¹⁸ Beyond the national state, there are three layers of public administration: cities, departments and regions. Each of this layer has particular competences that do not overlap. There are elections for each of this layer.

¹¹⁹ Here, we speak only of public schools. Parents can choose to send their children to private schools as well. The private system also covers the four stages.

private contract the task of preparing the meals. According to the IGD (2015), at the national level and based on a survey of cities of a size above 40,000 inhabitants 65% is in-house, 26% delegated, and the rest (9%) is a mixed of both. However those numbers are only on few major cities, and the author notes that the percentage of contracting-out increases for smaller cities. We have showed in chapter 1 that in the “Paris area” (*i.e.* Paris and its suburbs) the delegation represents 65% of the school catering service. About half of the meals are provided internally for hospitals and elderlies’ facilities (Gira FoodService, 2014). Public hospitals are managed by the State, while public elderlies’ facilities are managed by municipalities.

In France, food is an important matter, especially for the children. That is why there have been several legal rules to regulate various dimensions of the quality of the meals provided to kids the last 20 years, in particular about conception, certification, diet, organic and local supply, and sustainable development, some of the topics we focus on in this chapter (see 4.3 Table 1). In 2001, the French government decides to regulate the food portions served to the children, as well as the total nutrients in a meal, or the maximum frequency of fried products a year (circular 200-118). This process was included in a more global fight against increasing child overweight that strikes France¹²⁰. Since that circular, there have been other rules to regulate the environmental quality of the supply, as well as the quantity of organic food served (Grenelle I and II, 2008-2009, Law “Manger local”, 2016). Furthermore, the quality of the food and the supply was part of the 2017 debate for French presidency¹²¹, as a response to the desire for more “sustainable” food (Agence Bio, 2016). Still, the client cannot observe the characteristics of the ingredients. She has to trust the delivery coupons, which are sometimes wrong or vague¹²². Controls over meals’ quality have then to be frequent, unexpected, and on every item and dimension.

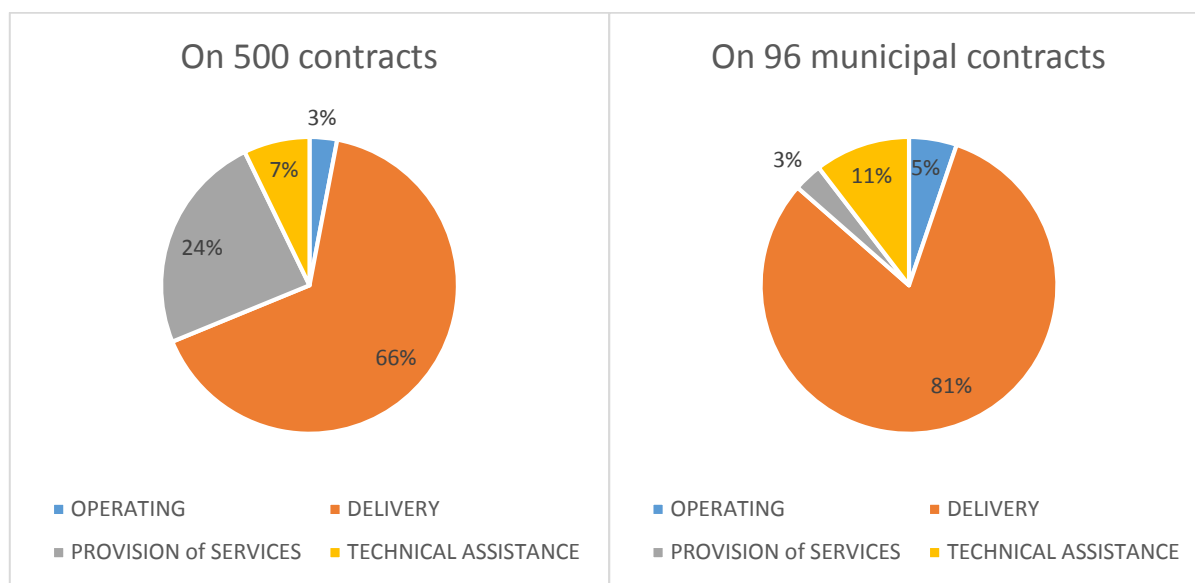
The sector is characterized by the existence of four main contractual arrangements once the city has decided to contract out the provision of the service: “delivery”, “operating”, “provision of services”, and “technical assistance” contracts. To tackle the issue of the impact of political contestation on public contracts, we select a sample with 96 municipal contracts. Figure 3 shows the repartition of the type of contracts in our whole sample and the municipal subsample.

¹²⁰ From 5% in 1980, to 16% in 2010, and 12% in 1996 (PNNS).

¹²¹ The ecologic party is for 100% organic food at school, the challenger Emmanuel Macron asked for 50% of organic food, and the extreme-right Marine Le Pen wants to increase the part of local food.

¹²² The origin of the product is sometimes the place where is located the wholesaler and not the production. Frozen vegetables are used instead of fresh vegetables. Quantities of salt and additives are unknown. And many other examples are given concerning issues about non-observable quality. Several TV reports show examples of misbehaviors by private providers.

FIGURE 3: REPARTITION OF THE TYPE OF CONTRACT IN OUR SAMPLES



Delivery Contracts: Some client have all the facilities to re-heat and serve the meals. They only buy the meals to be served and choose its composition. The client bears the demand risk as she ordered and pay the meals before knowing the quantity finally needed. The contract’s duration is generally one year renewable three times for public customer or unlimited duration for private contracts.

Operating Contracts: When the catering facilities are already built and requires investments to renovate and maintain, operating contracts are used. The company is the one to exploit the facilities, cook and eventually re-heat the meals for the users. These contracts are no necessarily longer than delivery contracts (an average of 3.8 years in our dataset), but can go up to 7 years in our dataset. Unlike delivery contracts, the operator bears the demand risk and is remunerated with user fees.

Provision of Services Contracts: Those contracts are used for punctual demand such as holidays child care for client that have no facilities. The service is delivered all-inclusive. Unlike delivery contracts, the client does not choose the meals, which only need to meet the legal standards.

Technical Assistance Contracts: Those contracts are made to help the client to move upmarket, or improve the quality of its supply and meals. They may be used to “rent” a chief, or the service of an expert in supply.

4.2 POLITICAL DATA

We also gathered political data from the municipal elections in March 2014 (sources: French Home Ministry) to build our set of political explanatory factors. The contracts have then all been signed and contracted by the new 2014 municipal majority. Elections at the municipal level take place usually every six years¹²³. French electoral law disentangles two voting systems depending on the size of the municipalities. For cities above 1,000 inhabitants (89.2% in our sample), the voting system is a list system. After the first round, if a list got at least 50% of the vote and 25% of the potential voters then this winning list gets 50% of the seats and the rest is shared proportionally with all the candidates above 5%. If no list reaches the 50% threshold in the first round, then there is a second round. The lists above 10% in the first round can maintain to the second one. The lists above 5% can merge with another list above 10% for the second round. After the second turn, the first list gets 50% of the seats and the rest is shared proportionally with all the candidates above 5%, including the majority list. Under 1,000 inhabitants (54 in our sample), the voting system is a split voting system. A voter chooses to vote for or against every candidate at the city council. Then, the candidate with the more votes is elected at the city council, the second one as well, and so on until all the seats are assigned to someone. The city council elects a mayor among the city councilors. Then, the elected city council decides of local taxes, organization of public services, including the governance of municipal canteens, the price of the meals, the frequency of the meals, the composition of the meals, etc.

4.3 EMPIRICAL STRATEGY

DEPENDENT VARIABLES

Our dependent variables accounts for the level of rigidity of a contract. However, there exists several dimensions of rigidity (Battigalli and Maggi, 2002; Schwartz and Watson, 2012; Beuve *et al.*, 2016). With the help of the lawyers of the firm that provides the data, we selected rigidity dimensions that are relevant to the institutional catering context, and we built “dictionaries”

¹²³ Municipal election in 2008 were organized seven years after the 2001 municipal election in order not to be the same year than the 2007 presidential election. Moreover, if a mayor dies or quit then new municipal election will be organized. However, the new mayor will be elected only to the next national day of municipal election and not for six years.

(Table 1). Then, we machine-read the contracts to count the level of rigidity for each contract and category, looking for the words and their derivation (see Table 1)¹²⁴.

Our theoretical framework suggests that each type of rigidity decreases the room for a challenge by third parties, as the words to account for rigidity specify a little bit more the respective obligations of the contracting parties, and thus, make it harder for third parties to take advantage of the “shadow area” of the contract. Then, the higher the number of words accounting for rigidity there are, the lower is the expected benefits from a challenge by third parties.

Arbitration clauses are meant to arbitrate litigations by letting first the court aside. Certification clauses regulate the contractor to verify that he has the sanitarian certification to cook, deliver, and do any other task demanded in the contract¹²⁵. Evaluation clauses control the right delivery of the service. Litigation clauses indicates the cases for legal suits. Penalties describe the sanctions toward the contractor if she does not fulfill her contractual requirements. Termination clauses frame termination of the contract before the contracted initial term. Contingencies clauses anticipate potential unpredicted event and how to handle them in the contract. Conception clauses describe service features. Sustainable Development account for clauses dedicated to environmental protection. Organic and local clauses stand for the quality of the food and the supply. Finally, health clauses stand for hygienic and dietary rules¹²⁶.

¹²⁴ For instance, we looked for ‘termination’, but also for ‘terminate’, ‘terminated’, etc.

¹²⁵ There exists many certifications needed to work in institutional catering. For instance, to be certified that the firm can cook organic food, or that it can deliver hot meals, and cold meals, and can conserve them, or is authorized to compost them, etc. Certifications may also be about job conditions, the weight of plates, the energy used, etc.

¹²⁶ If hygienic standards are necessary to cook for institutional catering, the client may add controls from a specialized and independent firm and ask for additional controls (such as to keep a blank sample in case of intestinal flu) in the contract.

TABLE 1: CONTRACT RIGIDITY CATEGORIES

Clauses	Dictionary	Occurrences
Arbitration	guarantee, intervention, resolution, mediation, settlement, clause, given that, whereas, warranty, contradictory, justification, responsibility	5,231
Certification	certification, rule, regulation, permit	2,037
Evaluation	control, commitment, obligation, quality ¹²⁷ , specification, responsibility, inspection, report, safety, GEMRCN, certify, lab, process	5,302
Litigation	court, dispute, indictment, jury, lawsuit, litigation, pleading, prosecution, trial	9,918
Penalties	Damage, fine, compensation, allowance, penalty, sanction	2,059
Termination	abuse, rupture, end, termination, unilateral, cessation	4,588
Contingencies	contingent, if, provided that, subject to, in case, whenever, whether	16,775
Conception	waiting, event, program, project, menu commission, menu, delivery, maintenance, service's rules	11,144
Sustainable Development	sustainable development, carbon footprint, label, season, waste, recycling, conditioning, Grenelle, environment, wrapping, sustainability, supply mode	3,811
Organic	organic, certified organic	794
Local	local food, local products, proximity, kilometers, short supply chain	483
Health	salubrious, microbiologic, analysis, salt, texture, fat level, temperature, cold, hygiene, blank sample, cold delivery, hot delivery	7,400
Total number of words categorized in the contracts		69,542

Due to differences in the topic they encompass, we expect clauses to be more or less subject to public scrutiny and contestation. We assume that sensitive or “touchy” clauses concern the quality of the food in its several dimensions: Conception, Certification, Health, Organic, Local,

¹²⁷ We take off the expression with our words but unlinked to our matter, such as “in quality of”.

and Sustainable Development. Conception, Certification, and Health gathers concerns about the sanitarian issues in institutional catering. Local and Sustainable Development are concerns about the environment and the economy. While Organic is crosswise.

As Beuve *et al.* (2016), we use the normalized frequencies of word categories (i.e., z -values) to measure the degree of difference between contracts:

$$zClauses = \frac{Clauses - \mu}{\sigma}$$

with μ the mean and σ the standard deviation of the count of *Clauses* words across all contracts. This gives us a global rigidity measure:

$$\begin{aligned} zRigidity &= \sum zClauses \\ &= zArbitration + zCertification + zEvaluation + zLitigation \\ &\quad + zPenalties + zTermination + zContingencies + zConception \\ &\quad + zSustainable + zOrganic + zLocal + zHealth \end{aligned}$$

PUBLIC VERSUS PRIVATE CONTRACTS

We created a dummy variable *Private_i* that equals 1 for private-to-private contracts, and 0 for public-to-private contracts.

POLITICAL CONTESTABILITY

To account for political contestability, and its atomization, we define different variables that refers to the concentration of the local political market. First, we define the Herfindahl-Hirschman Index *HHI* as follows:

$$HHI_i = A_i^2 + B_i^2 + C_i^2 + D_i^2 + \dots$$

Where A_i is the vote share of the first candidate at the municipal election i in 2014¹²⁸, B_i is the vote share of the second candidate, etc. The Herfindahl-Hirschman Index accounts for the concentration of the political supply. The larger it is, the more the political power is concentrated. We should then observe a negative sign of its coefficient on rigidity. Indeed, let's take two cities 1 and 2, for which we have the following electoral results: $A_1 = .8$, $B_1 = .1$, $C_1 = .05$, $D_1 = .05$, and $A_2 = .5$, $B_2 = .3$, $C_2 = .1$, $D_2 = .1$. We calculate $HHI_1 = 1.15$ and $HHI_2 = .36$.

¹²⁸ We will consider *HHI* calculated on the round of election, and *HHI 2nd round* calculated on the second round if any.

Then, the more concentrated the political power is, the largest the HHI is, and the lowest the risk of political contestation will be, and consequently the lowest the rigidity of the contract will be as well.

With the same variables, we also define the Residual Herfindahl-Hirschman Index:

$$ResidualHHI_{i,t} = \frac{B_{i,t}^2 + C_{i,t}^2 + D_{i,t}^2 + \dots}{1 - A_{i,t}^2}$$

Unlike the HHI, the ResidualHHI measure the concentration of the political opposition. We shall then observe a positive impact on the rigidity. Let's take our two cities 1 and 2 above, and the city 3 which have the following results: $A_3 = .5$, $B_3 = .4$, $C_3 = .05$, $D_3 = .05$. We calculate $ResidualHHI_1 = .04$, $ResidualHHI_2 = .147$ and $ResidualHHI_3 = .22$. We see that the more concentrated the political opposition is (city 3), the largest the ResidualHHI will be, and the highest the rigidity is expected to be.

In order to measure the strength of the political opposition, we also add the variables $NumberList_{i,t}$ and $SquareNumberList_{i,t}$ to take into account the number of lists in competition and a supposedly non-linear effect of the number of lists on rigidity. Indeed, large number of lists may increase the strength of the opposition, but will eventually make it inaudible.

Finally, we expect a difference in rigidity between mayor elected with a large margin and mayor elected on the edge. The last one will be more subject to challenges and will, thus, increase the level of rigidity of contracts. We then introduce the variables $Margin_i$ and $Margin_i^2$ for the difference between the winning list and the runner-up party, and a potential non-linear effect. Indeed, the mayor will be concerned if the margin of victory is low, but less if she is elected hands down.

CONTROL VARIABLES

We expressed the variables we are interested in testing, but some other variables need to be taken into account as they may also influence the rigidity of contracts. First, if the final goods (the meals) served are pretty homogeneous products, the contracts differ in their level of investment, depending on the existing facilities. Consequently the service with more investments might be more rigid as the investments made by the supplier need to be secured in order to avoid or mitigate hold up issues. Then, we create the following dummies from the highest level of investment to the lowest: $OPERATING_i$ (mean of $zRigidity = 20.17$),

DELIVERY_i (mean of *zRigidity* = -0.61), *PROVISIONofSERVICES_i* (mean of *zRigidity* = -1.39), and *TECHNICALASSISTANCE_i* (mean of *zRigidity* = 1.84).

Second, the users of the catering service do not all have the same demands. For instance school canteens and retirement homes have different requirements over a range of issues such as environmental concerns, health, sanitary precautions or quality of the delivered product. Parental associations may push towards the procurement of more pesticide-free or organic products, etc. whereas retirement homes are more careful about the texture of the food, and quantities of salt or fat. These differences imply different kind of investments on the supply chain, the cooking facilities, which means different ways to monitor the contract, and thus, different level of rigidities. Indeed, a school will ask for specific needs toward organic food for instance, making the level of rigidity on this subject higher. On the contrary, a hospital will insist on differentiated meals for their patients with different diseases, but will care less about organic food as patients eat only few days at the hospital and are not to be retained customers. We have then the following variables: *NURSERY_i*, *SCHOOL_i*, *HIGHSCHOOL_i*, *RETIREMENT_i*, *HOSPITAL_i*, *HOLLIDAYS_i*, and *HOMEDELIVERY_i*. We also control for interactions with a variable that stands for the number of different users of the service, *USERS_i*.

As highlighted in the model, we expect rigidity to increase with the potential benefits from political contestation. Those benefits from political contestation depend on the number of citizens concerned by the service and on the level of public expenses engaged in the contract. We, thus, expect that the larger the size of the contract (measured as number of meals) and the lengthier it lasts, the higher the expected gain from political contestation are. To tackle this issue, we introduce variables to control for the number of meals per day *MEALS_i*, and the duration of the contract *DURATION_i*. We also add the variable *POPULATION_i*, for the numbers of inhabitants in the city, to control for political benefits for a party at the national level. Indeed, larger cities are more scrutinized at the national level when election comes, as they are considered as a political laboratory or showcase.

We also control for the political color of the mayor. Indeed, left mayors are less prone to externalize the school canteen service (see chapter 1), so if they contract out a catering service they might also increase the specificity of the contract to balance the negative impact on their voters. Then, we add two dummies for the left, *LEFT_i*, and the right parties, *RIGHT_i*.

In order to control for a signal from the municipality on environmental issues, and quality and supply of the food, we add the dummy variable *AGENDA21_i* for the presence of an Agenda 21

in the municipality¹²⁹. We expect a negative effect of this variable on rigidity of public contracts. However, it might also impact positively the clauses about environmental issues if it accounts more for the sensitivity of the citizen for environmental issues than for a signal of the mayor's commitment toward environmentally-friendly practices.

Finally, rigidity can change because of previous business relations with a given city. This might lead to the development of trust among the parties, better knowledge of the local needs for the private firms through learning-by-doing. If partners renew a contract, we expect them to trust each other more than for the first contract signed. Then, they might diminish the rigidity of the contract. We control for the renewal of the contract, with the dummy *RENEWAL_i*.

IDENTIFICATION STRATEGY

To test our hypotheses we need to use different models. First, we want to compare the level of rigidity of public-to-private and private-to-private contracts with the following models (Hypothesis 1):

$$zClauses_i = Private_i + X_i + \varepsilon_t$$

$$zRigidity_i = Private_i + X_i + \varepsilon_t$$

With *zClauses_i* and *zRigidity_i*, being the variables of rigidity described in section 4.3.1., *Private_i* being the dummy variable for private-to-private contracts (section 4.3.2.), *X_i* being the set of control variables describe in section 4.3.4., and ε_t the error term.

To test the impact of political contestability on the rigidity of contracts (Hypothesis 3), we use the following models on the subsample of public-to-private contracts:

$$zClauses_i = PC_i + X_i + v_t$$

$$zRigidity_i = PC_i + X_i + v_t$$

With *zClauses_i* and *zRigidity_i*, being the variables of rigidity described in section 4.3.1., *PC_i* being a set of variables for political contestability (section 4.3.3.), *X_i* being the set of control variables describe in section 4.3.4., and *v* the error term.

Finally, to test if “*touchy*” clauses are more subject to political contestability, and thus to rigidity (Hypothesis 2), we compare the level of rigidity induced by private contracts for each

¹²⁹ An Agenda 21 is a chart voted by the municipality that engages it in an environmental saving process. It engages the administration, the citizens, and the majority in place.

of our 13 categories of rigidity. If our hypothesis is true, we should observe larger level of rigidity for the following categories: Certification, Conception, Sustainable Development, Organic, Local and Health as they are very important categories for public power due to sanitarian scandals and the political will to increase the quality of the food and raw materials.

5 RESULTS

5.1 DESCRIPTIVE STATISTICS

The duration of the contracts is limited by law for public contracts, but not for private contracts. We, thus, have 31% contracts with unlimited duration (all of them are private contracts), and a mean of 1 year and a half for contracts with a limited duration, ranged from a few days to almost 14 years. Besides, 33.8% of total contracts are renewed contracts. Finally, the numbers of inhabitants and of meals expected in the contracts are given in Table 2, along with *zRigidity* (statistics for *zClauses* are in Annex 9.1 Table 1). It has to be noted that two contracts do not have the number of meals, and two other contracts are in cities with unknown population due to administrative reform. We, then, take them off the regressions and use the 496 remaining observations.

TABLE 2: DESCRIPTIVE STATISTICS – ALL OBSERVATIONS

	Mean	Std. Dev.	Min.	Max.	N
<i>zRigidity</i>	3.28e-08	8.798729	-9.363912	66.42826	500
MEALS	264.6888	781.7262	2	11750	498
Population	39038.1	70548.39	6	458298	498

In order to focus on political contestation, we only keep contracts which have a municipality as client. We, then, select municipalities with more than 1,000 inhabitants for which we have a list voting system. We have consequently 96 contracts. They encompass institutional catering for nurseries (31.25%), schools (81.25%), middle-schools (4.17%), high-schools (2%), retirement homes (2%), holiday’s centers (33.3%), and home deliveries (19.79%). Since we have contracts with several customers, we have a mean of 1.74 customers per contract (from one to five). The duration of the contracts is limited by law, so we have a mean of 2.83 years per contract, ranged from a few days to seven years. Besides, 51% of total contracts are renewed contracts. Finally,

the numbers of inhabitants and of meals expected in the contracts are given in Table 3, along with *zRigidity* (statistics for *zClauses* are in Annex 9.1 Table 2).

TABLE 3: DESCRIPTIVE STATISTICS – POLITICAL SUBSAMPLE (96 OBSERVATIONS)

	Mean	Std. Dev.	Min.	Max.	N
<i>zRigidity</i>	2.19e-08	8.522353	-9.151251	38.38649	96
MEALS	556.8854	1052.308	14	6601	96
Population	16018.75	37035.98	1010	342295	96

Furthermore, we have the political data for the political subsample summed-up in Table 4. In those municipalities, 55% of mayors were elected at the first round in 2014 with a mean of 2.75 lists, ranged from two to six lists. In the municipalities with a second round, there were a mean of 2.98 lists at the second round, from two to four. Finally, 15.6% of the municipalities of our subsample have an Agenda 21 in force.

TABLE 4: POLITICAL CONTESTATION – POLITICAL SUBSAMPLE (96 OBSERVATIONS)

	Mean	Std. Dev.	Min.	Max.	N
HHI	.4507318	.0856475	.312096	.6624942	96
HHI 2 nd round, 2014	.4018006	.0651091	.312096	.5894303	43
Margin	.1994657	.1601798	.0012361	.614228	96
Square Margin	.0651769	.0877598	1.53e-06	.3772761	96
ResidualHHI 2 nd round, 2014	.0980035	.1131629	0	.3212121	96
Number of List elected 1 st round, 2014	2.735849	1.002899	2	6	53
Number of List 2 nd round, 2014	2.976744	.5558508	2	4	43

5.2 EMPIRICAL MODEL

TOTAL RIGIDITY

We first estimate the difference in rigidity between private and public contracts. Results are given in Table 1. Our first model (1) confirms our hypothesis: private contracts are less rigid than public contracts. The level of rigidity seems also to increase with the size of the market (number of meals), but surprisingly its duration and the size of the population have no influence on rigidity. The level of rigidity depends also on the type of contracts. As anticipated, operating contracts are largely the more rigid contracts as they need to foresee large investments. We can also notice that rigidity depends on the type of clients. The level of rigidity seems to decrease in the school sector according to the age of the children at school, then reaches its highest level for the aging population. There is no economical explanation for that phenomenon, except maybe that citizens vote more for municipal election than for other territorial elections, so the benefits from political contestation are potentially higher in municipalities than in departments or regions. Besides, the elderly are the more constant voters, which implies a higher political risk on contracts, and consequently a higher rigidity. We could speculate about the existence of a “*democratic scale*”: the closer the center of decision is on this scale, the more rigid the contract is. Indeed, it is more difficult to publicly contest the President of the Region than the Mayor of the city. For instance, a demonstration is often in front of the Head Office of the political power. It is more costly and difficult to gather people from the whole region, especially in large ones, than from the municipality. Finally, when the number of clients increases, the level of rigidity also increases as the market becomes bigger and more important for the client.

We then estimate the same model on public contracts (2). In order to have the rigidity calculated on only those sub-samples, we repeat this estimation in model (3), for which we have $E(zRigidity; Private=0) = 0$. We obtain similar results with two noticeable changes. First, the longer the contract is, the more the contract is rigid. Second, the “*democratic scale*” does not stand out. If coefficients are of the right sign, they are not significant. Similar estimations have been run for private contracts only (see Annex 9.3). However, the variables explain only 4% to 6% of the variation in rigidity.

Finally, we regress on the population studied for political contestation (4) that is the public and municipal clients. We find similar results, with some variations for the client, which is normal as we do not have Hospitals and Other Clients anymore.

TABLE 5: PUBLIC VERSUS PRIVATE RIGIDITY

<i>zRigidity</i>	(1) OLS	(2) OLS Private=0	(3) OLS (Private=0; Rigidity Public only)	(4) OLS (Private=0; on Municipality=1)
<i>Private</i>	-2.079** (.0394)	<i>None</i>	<i>None</i>	<i>None</i>
<i>Meals</i>	.00270*** (9.26e-11)	.00697*** (.000)	.006*** (.000)	0.00474*** (0)
<i>Population</i>	-2.81e-07 (.952)	6.24e-06 (.665)	4.45e-6 (.704)	1.61e-05 (0.450)
<i>Duration</i>	.326 (.181)	.861** (.0151)	.687** (.017)	0.310 (0.467)
<i>Unlimited Duration</i>	-.146 (.886)	<i>None</i>	<i>None</i>	<i>None</i>
<i>Renewal</i>	.652 (.328)	.202 (.828)	.148 (.845)	-0.227 (0.844)
<i>Operating</i>	13.99*** (.000)	11.28*** (3.78e-07)	9.477*** (.000)	12.41*** (1.66e-05)
<i>Provision of Services</i>	.715 (.419)	.783 (.750)	.836 (.675)	-0.761 (0.811)
<i>Other Contract</i>	.440 (.726)	1.923 (.239)	1.558 (.241)	1.863 (0.321)
<i>Number of Users</i>	3.492*** (.03e-05)	1.939* (.0949)	1.661* (.079)	-1.716 (0.511)
<i>Nursery</i>	1.574+ (.131)	1.719 (.263)	1.329 (.287)	0.694 (0.658)
<i>School</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
<i>Middle School</i>	-2.770+ (.100)	.0140 (.996)	.118 (.959)	8.902* (0.0966)
<i>High School</i>	-2.627* (.0697)	-3.068 (.156)	-2.517 (.152)	-8.060 (0.245)
<i>Holidays</i>	1.068 (.325)	-.134 (.937)	-.219 (.873)	2.218 (0.522)
<i>Retirement Home</i>	4.617*** (.000115)	7.727*** (.00105)	6.291*** (.001)	5.637 (0.339)
<i>Home Delivery</i>	4.230*** (.000280)	5.117*** (.000188)	4.075*** (.000)	6.247** (0.0439)
<i>Hospital</i>	1.834 (.297)	-5.599 (.280)	-4.443 (.292)	<i>None</i>

<i>Other Clients</i>	.424 (.789)	4.411+ (.124)	3.539+ (.129)	<i>None</i>
<i>Observation</i>	496	242	242	96
<i>Adjusted R-squared</i>	.458	.606	.6023	0.631

*Note: Home delivery increases zRigidity by 4.230 with a p-value of (.000280), for model 1. P-val in parentheses, *** p<0.01, ** p<0.05, * p<0.10, + p<0.15*

RIGIDITY BY CATEGORY

We show in Annex (9.4) the results of the regressions by categories of rigidity. We find similar results than with the total rigidity. Private contracts are less rigid than public ones for the following categories (*** p<0.01, ** p<0.05, * p<0.10, + p<0.15): Arbitration*, Organic+, Conception**, Certification+, Evaluation***, Local+, Health***, and Litigation**. On the contrary, Termination*** is positively influenced by private contracts, but this has to be balanced in regard with the large negative sign of the variable *Unlimited Duration*, which only concerns private contracts. Public and private contracts do not seem to differ in the following dimensions: Sustainable, Contingencies, and Penalties. We find similar results for other variables.

When we focus on Public contracts (Annex 9.5), we find that the rigidity in each category increases with the number of meals but for Local and Organic clauses. This might be explained due to sequential choice for Organic and Local clauses. First, the mayor decide to implement or not local and organic procurement. Then, she decides the number of clauses if any. Those clauses are thus marked out on the left, and our model does not capture this sequential choice. This is the difference between mandatory clauses such as Termination and optional clauses such as Organic and Local. Still, the Certification clause becomes more rigid with the number of meals, which is coherent with quality being a more sensitive issue when the size of the market increases.

Similarly, as expected we find that clauses meant to control the private partner and adapt the contract to unpredicted events (Arbitration, Conception, Evaluation, Contingencies, Penalties, and Termination) get more rigid as the contract last longer. On the contrary, clauses that define a goal for quality (Organic, Local, Certification, Sustainable, and Health) are not driven by duration effect.

Finally, the public catering contracts for the elders are the more rigid (compared with other clients) on the following quality clauses: Arbitration, Conception, Sustainable, Contingencies,

Local, and Health, and on the Termination clauses in case of non-respect of the contract. This might be due to the great implication of the elders in (local and national) elections, and then the largest concerns from the public authorities.

RIGIDITY AND POLITICAL CONTESTATION

We have highlighted that public contracts are, all other things being equal, more rigid than private contracts (Hypothesis 1). We, now, attempt to explain this difference in rigidity by the existence of political contestation and risk for public contracts. We expect this over rigidity in public contracts to vary according to the level of political risk (Hypotheses 2 and 3). To tackle this issue, we select 96 contracts, which are all the contracts that have a municipality as client (Nursery, School, Middle-School, High-School, Retirement House, Home delivery), for which the municipality has more than 1,000 inhabitants so the mayor is elected on a list in 2014¹³⁰. Usually, Middle-School and High-School are not managed by municipalities, but sometimes the catering service is delegated to the municipality so as to benefit from scale economies. We notice also that our sample has no switch in management. We do the same regression than in (4) but the $zRigidity$ variable is calculated only on that sample so as $E(zRigidity; Private = 0; Client = Municipality; Pop < 1000) = 0$. There is no major change except that the duration of the contract is no longer a significant variable, and there are some variations in the coefficients of the variables *Client* due to the absence of Hospitals and Other Clients.

As we expected, our models seems to confirm that the more concentrated the political power in a municipality is, the less rigid the contract will be (Table 6). The models (5) and (6) show that the largest the HHI is, meaning the more concentrated the political power is, the lowest the rigidity will be. We found those results with the HHI calculated only for the second turn, and with the HHI calculated for the round of election, such as $HHI = HHI_{2^{nd} \text{ round}} + HHI_{1^{st} \text{ round}}$ when elected at the 1st round. In equation (6), we also find that being elected at the 1st round implies less rigidity in the contract, which is coherent with a strong political power being less concern about political opposition. We reinforce those results with the introduction of the margin of the winner (7). First, a higher margin increases rigidity, but with a negative non-linear effect. Then, the higher the margin is, the less the rigidity of the contract will be.

¹³⁰ We select those contract in order to study the political contestability at the municipal level, which seems the most pertinent scale as it is the public political power the closest to the citizens.

However, whatever the equations¹³¹ we find a negative sign of the Residual HHI (8) when we expect a positive one. Residual HHI normally accounts for the power of the opposition, the largest it is, the more concentrated the political opposition is, and the more rigid the contract should be in order to decrease the potential gain from a challenge. However, Residual HHI might account for two other effects. First, a more concentrated opposition might reflect a lack of emulation in the opposition. Indeed, when there are several political oppositions, they fight for the 1st place and attack the majority. However, when there is only one opposition, it will avoid overacting on every subject in order not to seem to be a systematic opposition but a constructive one. Consequently, rigidity decreases along with the risk of political contestation. Second, a more concentrated opposition might be the result of instable political alliances among various constituencies of the opposition because of internal divergences. In that case, the different parties in the opposition will fight against each other to be the main opposition, instead of attacking the majority in place. Thus, the contestation power of the opposition decreases along with the rigidity of the contract.

We also notice that the variable *Agenda 21* has no effect on rigidity on our model. It might not be a good indicator since it can be interpreted as a proxy for signaling probity (decreases rigidity) or for citizen's sensitivity to environmental issues (increases rigidity). On the contrary, the number of meals in the contract increases its rigidity. That is coherent with the assumption that the public body increases rigidity of the contract when the expected benefits from political contestation becomes larger.

¹³¹ We tried to add control variables for the number of lists, only for the 1st or the 2nd round of election or for both. We always obtain the same results.

TABLE 6: IMPACT OF POLITICAL CONTESTABILITY ON RIGIDITY

<i>zRigidity</i>	(5) OLS Private=0	(6) OLS Private=0	(7) OLS Private=0	(8) OLS Private=0	(9) OLS Private=0
<i>HHI</i>	-15.47* (0.0842)				
<i>HHI 2nd round, 2014</i>		-32.20** (0.0237)			
<i>Margin</i>			24.43** (0.0403)		
<i>Square Margin</i>			-42.75** (0.0474)		
<i>ResidualHHI 2nd round, 2014</i>				-64.80*** (0.00273)	
<i>Number of Lists elected 1st round, 2014</i>					0.968 (0.342)
<i>Number of Lists 2nd round, 2014</i>					3.747* (0.0552)
<i>Elected 1st round, 2014</i>	0.400 (0.766)	-1.980 (0.479)	-1.327 (0.333)	-3.461 (0.182)	7.343 (0.223)
<i>Elected 2nd round, 2014</i>	-	11.85+ (0.104)	-	11.925** (0.039)	-
<i>Agenda 21</i>	1.214 (0.485)	1.793 (0.283)	1.389 (0.422)	1.880 (0.248)	1.645 (0.348)
<i>Meals</i>	0.00455* ** (1.27e-10)	0.00484* ** (0)	0.00466* ** (0)	0.00511* ** (0)	0.00460* ** (3.75e-09)
<i>Population</i>	4.57e-06 (0.836)	1.17e-07 (0.996)	1.15e-05 (0.588)	-1.08e-05 (0.625)	-1.02e-05 (0.678)
<i>Duration</i>	0.0996 (0.823)	0.117 (0.787)	0.150 (0.740)	0.250 (0.552)	0.146 (0.739)
<i>Renewal</i>	0.0367 (0.975)	-0.461 (0.685)	0.0319 (0.978)	-0.238 (0.829)	-0.328 (0.779)
<i>Operating</i>	12.99*** (8.06e-06)	13.77*** (2.82e-06)	11.61*** (6.91e-05)	10.66*** (0.000127)	12.98*** (8.10e-06)
<i>Provision of Services</i>	1.038 (0.754)	-0.654 (0.836)	1.273 (0.708)	-0.433 (0.888)	-0.193 (0.952)
<i>Other Contract</i>	1.649 (0.377)	1.274 (0.492)	2.173 (0.246)	1.431 (0.426)	1.574 (0.400)
<i>Users</i>	-2.115	-3.272	-1.019	-2.055	-2.145

	(0.417)	(0.218)	(0.699)	(0.411)	(0.431)
<i>Nursery</i>	-0.0504	0.580	0.404	0.597	-0.586
	(0.975)	(0.707)	(0.797)	(0.691)	(0.739)
<i>School</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>	<i>Reference</i>
<i>Middle School</i>	9.465*	10.26*	7.748+	9.109*	8.387+
	(0.0759)	(0.0525)	(0.147)	(0.0754)	(0.116)
<i>High School</i>	-5.788	-3.148	-9.301	-6.440	-3.002
	(0.412)	(0.660)	(0.181)	(0.334)	(0.686)
<i>Holidays</i>	2.780	4.582	1.088	2.935	3.139
	(0.420)	(0.197)	(0.758)	(0.376)	(0.391)
<i>Retirement Home</i>	8.709	9.903+	5.945	7.775	8.002
	(0.155)	(0.104)	(0.340)	(0.175)	(0.211)
<i>Home Delivery</i>	6.113**	6.918**	5.884*	4.905+	5.393*
	(0.0492)	(0.0258)	(0.0587)	(0.102)	(0.0875)
<i>Observations</i>	96	96	96	96	96
<i>Adjusted R-squared</i>	0.637	0.643	0.639	0.660	0.638
		Elected 2 nd round > Elected 1 st round **		Elected 2 nd round > Elected 1 st round ***	
		(.020)		(.002)	

Note: Home delivery increases zRigidity by 6.113 with a p-value of (.0492), in model (5).

P-val in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$, + $p < 0.15$

RIGIDITY BY CATEGORY AND POLITICAL CONTESTATION

We run the same models for political contestation on each clauses of rigidity (Annexes 9.6, 9.7, 9.8, and 9.9) and we summed-up the results in Table 7. The effects are similar than the one observed on zRigidity for Certification, Sustainable, Contingencies, Local, Health, and Termination. We observe also effects of some political contestation variables, but not all, on Evaluation, Litigation, and Conception. We have no effect for the Arbitration, Organic, and Penalties clauses.

TABLE 7: POLITICAL CONTESTATION BY CLAUSES OF RIGIDITY

	<i>Model with no Political variables: Adj. R²</i>	(1)		(2)			(3)		(4)		
		<i>HHI 2nd round, 2014</i>	<i>Adj. R²</i>	<i>Margin</i>	<i>Square Margin</i>	<i>Adj. R²</i>	<i>Residual HHI 2nd round, 2014</i>	<i>Adj. R²</i>	<i>Number of Lists elected 1st round, 2014</i>	<i>Number of Lists of Lists 2nd round, 2014</i>	<i>Adj. R²</i>
(1) <i>zArbitration</i>	.51	-2.424 (0.215)	.51	1.948 (0.236)	-3.109 (0.300)	.50	-4.075 (0.175)	.51	0.193 (0.186)	0.115 (0.666)	.50
(2) <i>zOrganic</i>	.10	-0.840 (0.752)	.08	1.518 (0.497)	-3.405 (0.404)	.07	-3.686 (0.367)	.08	0.227 (0.245)	0.567+ (0.115)	.10
(3) <i>zConception</i>	.57	-2.947+ (0.106)	.58	2.215+ (0.147)	-2.739 (0.325)	.57	-5.967** (0.0324)	.58	0.105 (0.440)	0.360+ (0.150)	.57
(4) <i>zCertification</i>	.41	-2.621 (0.220)	.41	3.585** (0.0437)	-5.464* (0.0912)	.42	-8.396*** (0.00931)	.48	0.127 (0.416)	0.510* (0.0792)	.42
(5) <i>zSustainable</i>	.56	-4.476** (0.0137)	.59	2.021 (0.191)	-4.018 (0.155)	.56	-6.067** (0.0305)	.57	0.0283 (0.833)	0.526** (0.0354)	.57
(6) <i>zEvaluation</i>	.33	-2.126 (0.347)	.34	1.618 (0.389)	-4.446 (0.197)	.34	-1.275 (0.714)	.31	0.0310 (0.854)	-0.0941 (0.762)	.32
(7) <i>zContingen.</i>	.52	-3.009+ (0.114)	.53	3.276** (0.0393)	-5.191* (0.0730)	.54	-8.178*** (0.00445)	.56	0.101 (0.476)	0.274 (0.294)	.52
(8) <i>zLocal</i>	.16	-4.566* (0.0718)	.18	-0.585 (0.786)	0.349 (0.929)	.13	-3.553 (0.366)	.15	0.0718 (0.702)	0.572+ (0.100)	.16
(9) <i>zPenalties</i>	.38	-1.591 (0.468)	.37	-.105 (0.954)	1.331 (0.692)	.37	-4.808 (0.152)	.38	-.0224 (0.891)	0.246 (0.412)	.37
(10) <i>zHealth</i>	.55	-3.732** (0.0410)	.58	3.016** (0.0496)	-4.861* (0.0825)	.57	-8.949*** (0.00114)	.60	-0.103 (0.441)	0.522** (0.0356)	.58
(11) <i>zLitigation</i>	.49	-3.761* (0.0576)	.50	1.486 (0.376)	-2.531 (0.410)	.48	-4.659+ (0.128)	.49	-0.101 (0.494)	0.271 (0.320)	.48
(12) <i>zTerminat.</i>	.56	-0.0669 (0.971)	.55	3.298** (0.0321)	-5.585** (0.0466)	.57	-5.561** (0.0488)	.57	0.0599 (0.665)	-0.0968 (0.704)	.55

Note: For the model (1), an increase of HHI by one decreases zLocal by 4.566, with a p-value of .0718. The model has an adjusted R square of 19%.

6 CONCLUSION

In this chapter, we investigated the specific nature of public contracts *vis-à-vis* private ones. Public contracts are quite often qualified as inefficient because they are rigid, rely on administrative procedures, and are difficult to adapt to unforeseen contingencies. We gathered all the contracts signed in 2015 in France by one of the largest catering company, one year after the municipal election in 2014. We selected with algorithmic textual analysis key-words in the contracts to calculate the rigidity. We highlighted evidences of a higher level of rigidity for public contracts with respect to public ones. Building on Spiller (2008) and Moszoro and Spiller

(2016), we argue that this additional formalization of public contracts does not result from an inefficient design. Public contracts are more rigid because the public parties have to factor political risks in the contractual design. These risks come from the action engaged by (potentially) opportunistic third parties. Public contracts involve money coming out of taxpayers and are subject to both important media exposure and scrutiny from third parties. When contracts are subject to more contestation and political scrutiny, the majority increases the specifications of the contract (that is the rigidity) to mitigate the risk for an opportunistic challenge of the contract by third parties. Consequently, we have shown that “touchy” issues are more particularly concerned by risk of opportunism, and, thus, lead to more rigidity in the contractual design. Following Spiller (2009) and Spiller and Moszoro (2012, 2014), we think that this specificity can be extended to other choices, such as the choice for municipal bonds (Aneja, Moszoro and Spiller, 2015) or the Make-or-Buy choice (see chapter 1) for instance.

In this chapter, we also found that the *Residual HHI* that accounts for the concentration of the opposition has an unexpected negative influence on the rigidity of the contract. We argue that it might be because instead of accounting for the concentration of the opposition, in our case it reflects the instable municipal majority made of several political alliances. This remains to investigate and, according to us, this possible effect shall be verified in future researches.

Finally, we tried to control for the out-of-contracts signals given by the political body for “touchy” matters, but with no observable effect on rigidity. We do not conclude that signals cannot reduce rigidity, but the variable we use (*Agenda 21*) might not be a good proxy. We expect further researches to investigate this effect through better proxies.

Due to the methodology, we can formulate some limitations. First, since the contracts we rely on are just the year after municipal elections, they might be less subject to third-party opportunism, in particular by political opponents, as the political risks for the next election are farer and that there will be another contract before the next election. Those contracts might, thus, be less sensitive to political considerations than, for instance, the same contracts that would be signed just before the end of the political mandate. We, then, would like to confirm and strengthen those results through the same analysis at the end of the political cycle. Second, our contracts are all from the same company operating in only one sector of activity. As a consequence, we should be cautious in generalizing our results as they may be sector (and even firm)-specific. However most of our results are convergent with previous studies in different sectors (Beuve et al., 2016) as well as in different institutional contexts (Moszoro et al., 2016) suggesting that our results go beyond the particular sector and country we look at. Third, the

algorithmic textual analysis is in its early stage of development. While it allows to obtain and quickly analyze a large set of written documents, the quality of the interpretation is probably lesser than with human expertise as it does not take into account legal nuances. However, we try as much as we can to reduce ambiguity in the interpretation of the written contracts. We did so by selecting contractual provisions whose wording have a uniform meaning and do not suffer from too much alternative interpretations. For instance, when the word termination appears in the contract, this mostly refers on the conditions under which each party can end the contractual relation, not the fact that the parties agreed that none of us will terminate the contract whatever the external conditions are. Similarly, when the words “organic”, or “local” appears in the contracts, that means that the buyers have special requirements about these issues, not that he wants to discard them. Yet, those two clauses seem to be not enough used in contracts to study them adequately.

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11 ANNEX

ANNEX 1: RIGIDITY BY CLAUSES – ALL OBSERVATIONS

	N	Mean	Std. Dev.	Min	Max
<i>zArbitration</i>	500	2.16e-10	1	-.9884575	8.554097
<i>zOrganic</i>	500	5.62e-09	1	-.3310037	11.13323
<i>zConception</i>	500	-1.80e-09	1	-.9287401	8.780361
<i>zCertification</i>	500	-1.01e-09	1	-.8840869	10.40028
<i>zSustainable</i>	500	3.02e-09	1	-.6078266	8.563002
<i>zEvaluation</i>	500	-3.87e-09	1	-.4278005	6.470906
<i>zContingencies</i>	500	7.51e-09	1	-1.385124	6.004956
<i>zLocal</i>	500	6.65e-09	1	-.2590207	10.19834
<i>zPenalties</i>	500	-4.47e-10	1	-.8550552	17.00185
<i>zHealth</i>	500	-9.61e-10	1	-.724949	9.512506
<i>zLitigation</i>	500	-1.39e-09	1	-.5495838	9.374681

ANNEX 2: RIGIDITY BY CLAUSES – 96 OBSERVATIONS

	N	Mean	Std. Dev.	Min	Max
<i>zArbitration</i>	96	-3.76e-09	1	-1.055749	4.994216
<i>zOrganic</i>	96	1.90e-09	1	-.4991252	5.790567
<i>zConception</i>	96	2.12e-09	1	-.9551101	4.869701
<i>zCertification</i>	96	2.21e-09	1	-.8027809	6.32797
<i>zSustainable</i>	96	8.15e-09	1	-.7305723	4.203544
<i>zEvaluation</i>	96	-1.24e-09	1	-.7410185	4.0052
<i>zContingencies</i>	96	-9.31e-10	1	-1.173828	3.41796
<i>zLocal</i>	96	1.86e-09	1	-.4441203	5.690492
<i>zPenalties</i>	96	3.26e-09	1	-.6377056	8.730439
<i>zHealth</i>	96	-3.00e-09	1	-.9486239	5.180611
<i>zLitigation</i>	96	-2.57e-10	1	-.7175083	6.085534

ANNEX 3: CORRELATION MATRIX

		1	2	3	4	5	6	7	8
1	<i>Private</i>	1.00							
2	<i>Meals</i>	-.07	1.00						
3	<i>Unlimited Duration</i>	.66	-.03	1.00					
4	<i>Renewal</i>	-.26	.15	-.30	1.00				
5	<i>Operating</i>	-.18	.16	-.12	.10	1.00			
6	<i>Provision of Services</i>	.47	.07	.28	-.01	-.10	1.00		
7	<i>Other Contract</i>	-.10	.00	-.05	.08	-.05	-.16	1.00	
8	<i>Users</i>	-.25	.33	-.16	.13	.24	-.06	.01	1.00
9	<i>Nursery</i>	.01	.01	.09	-.06	.09	-.23	-.08	.22
10	<i>Middle School</i>	.08	.15	.10	.03	-.04	.23	-.01	.27
11	<i>High School</i>	-.01	.12	.01	.03	.23	.15	-.04	.13
12	<i>Holidays</i>	.07	.06	-.22	.03	.02	.08	-.02	.31
13	<i>Retirement Home</i>	.23	-.01	.27	-.07	-.03	.22	.16	-.02
14	<i>Home Delivery</i>	-.33	.08	-.21	.15	.09	-.18	-.05	.39
15	<i>Hospital</i>	.15	-.02	.15	-.02	-.03	.14	.07	-.07
16	<i>Other Client</i>	.06	.14	.08	-.02	.07	.01	.01	-.02
17	<i>Population</i>	.27	.01	.26	-.09	.03	.02	.07	-.04
		9	10	11	12	13	14	15	16
9	<i>Nursery</i>	1.00							
10	<i>Middle School</i>	-.08	1.00						
11	<i>High School</i>	-.12	.33	1.00					
12	<i>Holidays</i>	-.12	-.14	-.17	1.00				
13	<i>Retirement Home</i>	-.11	-.09	-.10	-.20	1.00			
14	<i>Home Delivery</i>	.01	-.06	-.09	-.01	-.07	1.00		
15	<i>Hospital</i>	-.08	-.05	-.05	-.12	-.07	-.07	1.00	
16	<i>Other Client</i>	-.07	-.06	-.06	-.12	-.08	-.05	-.04	1.00
17	<i>Population</i>	.03	.10	.17	-.04	.09	-.12	.03	.12

ANNEX 4: PUBLIC VERSUS PRIVATE RIGIDITY

	(1)	(2)	(3)	(4)	(5)
	OLS	OLS	OLS	OLS	OLS
		(Private=0)	(Private=1)	(Private=0; Rigidity on Public only)	(Private=1; Rigidity on Private only)
Private	-2.080** (.039)	None	All	None	All
Meals	.003*** (.000)	.007*** (.000)	2.85e-4 (.445)	.006*** (.000)	4.48e-4 (.448)
Population	-2.81e-7 (.952)	6.24e-6 (.665)	-4.03e-6 (.268)	4.45e-6 (.704)	-6.27e-6 (.277)
Duration	.326 (.181)	.861** (.015)	-.420+ (.117)	.687** (.017)	-.684+ (.108)
Unlimited	-.146 (.886)	None	-.785 (.355)	None	-1.180 (.380)
Renewal	.652 (.328)	.202 (.828)	1.201+ (.123)	.148 (.845)	1.755 (.155)
Operating	13.994*** (.000)	11.282*** (.000)	None	9.477*** (.000)	None
Delivery	Reference	Reference	Reference	Reference	Reference
Provision Of	.715 (.419)	.783 (.750)	.995 (.176)	.836 (.675)	.168 (.885)
Services					
Other Contract	.440 (.726)	1.923 (.239)	-2.381+ (.137)	1.558 (.241)	-4.241* (.095)
Number Of	3.492*** (.000)	1.940* (.095)	1.484 (.363)	1.661* (.079)	2.515 (.331)
Users					
Nursery	1.574+ (.131)	1.720 (.263)	.399 (.736)	1.329 (.287)	.894 (.633)
School	Reference	Reference	Reference	Reference	Reference
Middle School	-2.770* (.100)	.014 (.996)	-2.668 (.170)	.118 (.959)	-4.683+ (.129)

High School	-2.627*	-3.068	-.903	-2.517	-1.544
	(.070)	(.156)	(.593)	(.152)	(.565)
Holidays	1.068	-.134	-.320	-.219	-.933
	(.325)	(.937)	(.786)	(.873)	(.617)
Retirement	4.617***	7.727***	2.844**	6.291***	3.962**
	(.000)	(.001)	(.019)	(.001)	(.038)
Home Delivery	4.230***	5.117***	-2.837	4.075***	-5.772
	(.000)	(.000)	(.403)	(.000)	(.283)
Hospital	1.834	-5.599	1.556	-4.443	2.437
	(.297)	(.280)	(.309)	(.292)	(.315)
Other Client	.424	4.411 ⁺	-1.417	3.539 ⁺	-2.783
	(.789)	(.124)	(.356)	(.129)	(.253)
Adjusted R-Squared	.4581	.6059	.0680	.6023	.0447
N	496	242	254	242	254

*Note: Private contracts are less rigid than public contracts, with a p-value equals .039. *** for p-values < .01; ** for p-values < .05; * for p-values < .10; ⁺ for p-values < .15.*

ANNEX 5: PUBLIC VERSUS PRIVATE RIGIDITY-CLAUSES – PART 1

	(1) OLS zArbitration	(2) OLS zOrganic	(3) OLS zConcepti on	(4) OLS zCertifica tion	(5) OLS zSustaina ble	(6) OLS zEvaluati on
<i>Private</i>	-0.218* (0.0596)	-0.222+ (0.112)	-0.238** (0.0477)	-0.189+ (0.143)	-0.160 (0.203)	-0.595*** (5.14e-06)
<i>Meals</i>	0.000273*** (1.01e-08)	6.28e-05 (0.268)	0.000383*** (0)	0.000247*** (2.97e-06)	0.000244*** (2.19e-06)	0.000229*** (1.48e-05)
<i>Population</i>	1.19e-07 (0.826)	-2.18e-09 (0.997)	8.22e-08 (0.883)	-3.86e-07 (0.521)	-1.96e-07 (0.738)	1.13e-07 (0.852)
<i>Duration</i>	0.0423+ (0.131)	0.00742 (0.826)	0.0485* (0.0947)	-0.0147 (0.636)	0.0116 (0.703)	0.103*** (0.00105)
<i>Unlimited Duration</i>	-0.0292 (0.802)	-0.00926 (0.948)	0.0170 (0.888)	-0.0586 (0.651)	0.00436 (0.973)	0.167 (0.201)
<i>Renewal</i>	0.0802 (0.295)	-0.0203 (0.826)	-0.00131 (0.987)	0.156* (0.0674)	0.0723 (0.385)	0.0819 (0.337)
<i>Operating</i>	1.741*** (0)	0.166 (0.524)	0.128 (0.566)	1.598*** (7.70e-11)	1.356*** (1.36e-08)	1.279*** (1.66e-07)
<i>Provision of Services</i>	0.129 (0.203)	0.0325 (0.791)	-0.616*** (9.43e-09)	0.315*** (0.00557)	0.00690 (0.950)	-0.0537 (0.636)
<i>Other Contract Users</i>	0.212+ (0.142)	0.351** (0.0440)	-0.560*** (0.000196)	-0.0461 (0.774)	-0.0285 (0.855)	0.405** (0.0120)
<i>Nursery</i>	0.374*** (9.97e-05)	0.531*** (4.95e-06)	0.229** (0.0210)	0.270** (0.0111)	0.392*** (0.000173)	0.00113 (0.992)
<i>Middle School</i>	0.226* (0.0596)	0.190 (0.188)	0.267** (0.0319)	0.175 (0.190)	0.0331 (0.799)	0.135 (0.313)
<i>High School</i>	-0.352* (0.0691)	-0.568** (0.0153)	-0.0554 (0.782)	-0.255 (0.236)	-0.290 (0.168)	0.119 (0.582)
<i>Holidays</i>	-0.309* (0.0631)	-0.218 (0.278)	-0.177 (0.304)	-0.181 (0.328)	-0.357** (0.0489)	-0.0312 (0.866)
<i>Retirement Home</i>	0.206* (0.0992)	-0.155 (0.303)	0.188+ (0.147)	0.154 (0.266)	0.0838 (0.536)	0.205+ (0.140)
<i>Home Delivery</i>	0.424*** (0.00200)	-0.0593 (0.719)	0.459*** (0.00126)	0.383** (0.0121)	0.501*** (0.000786)	0.170 (0.264)
	0.452*** (0.000726)	0.366** (0.0228)	0.585*** (2.61e-)	0.564*** (0.000152)	0.404*** (0.00536)	0.0210 (0.887)

			05))		
<i>Hospital</i>	0.269	-0.115	0.152	0.141	-0.0464	0.0264
	(0.183)	(0.636)	(0.469)	(0.531)	(0.833)	(0.907)
<i>Other Client</i>	0.0816	-0.0939	-0.0352	0.0378	-0.0786	0.547***
	(0.654)	(0.669)	(0.852)	(0.852)	(0.692)	(0.00734)
Observations	496	496	496	496	496	496
Adjusted R-squared	0.449	0.201	0.405	0.318	0.326	0.315

*p*val in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$, + $p < 0.15$

ANNEX 6: PUBLIC VERSUS PRIVATE RIGIDITY-CLAUSES – PART 2

	(7) OLS zContingen.	(8) OLS zLocal	(9) OLS zPenalties	(10) OLS zHealth	(11) OLS zLitigation	(12) OLS zTermination
<i>Private</i>	-0.0872 (0.480)	-0.233+ (0.101)	0.0739 (0.599)	-0.359*** (0.00414)	-0.267** (0.0288)	0.416*** (0.000721)
<i>Meals</i>	0.000237*** (2.69e-06)	-2.22e-05 (0.699)	0.000453*** (0)	0.000337*** (7.29e-11)	0.000103** (0.0373)	0.000158*** (0.00154)
<i>Population</i>	6.29e-08 (0.913)	-4.93e-07 (0.456)	7.29e-07 (0.266)	1.18e-07 (0.839)	-1.31e-07 (0.817)	-2.95e-07 (0.605)
<i>Duration</i>	0.0774*** (0.00955)	-0.0107 (0.754)	0.0430 (0.205)	0.0161 (0.592)	-0.00298 (0.919)	0.00511 (0.863)
<i>Unlimited Duration</i>	0.0931 (0.453)	0.0228 (0.873)	-0.0508 (0.719)	0.0413 (0.742)	-0.0505 (0.680)	-0.292** (0.0179)
<i>Renewal</i>	-0.00836 (0.918)	0.0723 (0.441)	0.0285 (0.759)	0.0148 (0.858)	0.0794 (0.324)	0.0964 (0.234)
<i>Operating</i>	1.228*** (1.41e-07)	0.878*** (0.000960)	0.422+ (0.108)	0.293 (0.207)	2.755*** (0)	2.150*** (0)
<i>Provision of Services</i>	0.357*** (0.00105)	0.324*** (0.00949)	-0.261** (0.0351)	-0.386*** (0.000468)	0.258** (0.0162)	0.608*** (2.60e-08)
<i>Other Contract</i>	0.251+ (0.102)	-0.102 (0.562)	-0.187 (0.284)	-0.573*** (0.000249)	0.145 (0.340)	0.573*** (0.000184)
<i>Users</i>	0.419*** (4.29e-05)	0.258** (0.0276)	0.0135 (0.907)	0.359*** (0.000512)	0.326*** (0.00121)	0.320*** (0.00158)
<i>Nursery</i>	0.161 (0.206)	-0.0794 (0.588)	0.100 (0.490)	0.208+ (0.107)	-0.0505 (0.688)	0.211* (0.0956)
<i>Middle School</i>	-0.278 (0.178)	-0.115 (0.627)	-0.254 (0.280)	-0.237 (0.256)	-0.240 (0.238)	-0.244 (0.233)
<i>High School</i>	-0.164 (0.355)	-0.352* (0.0843)	-0.0846 (0.675)	-0.201 (0.261)	-0.422** (0.0161)	-0.131 (0.456)
<i>Holidays</i>	0.000235 (0.999)	-0.176 (0.249)	0.255* (0.0912)	0.213+ (0.113)	0.0603 (0.645)	0.0327 (0.804)
<i>Retirement Home</i>	0.473*** (0.00122)	0.366** (0.0289)	0.343** (0.0387)	0.703*** (2.34e-06)	0.327** (0.0230)	0.527*** (0.000282)
<i>Home Delivery</i>	0.611*** (1.91e-05)	-0.0207 (0.899)	0.367** (0.0233)	0.316** (0.0277)	0.224+ (0.110)	0.343** (0.0149)
<i>Hospital</i>	0.406* (0.0593)	0.123 (0.618)	0.269 (0.272)	0.320+ (0.142)	-0.0290 (0.891)	0.318+ (0.136)
<i>Other Client</i>	0.0522 (0.788)	-0.0502 (0.822)	0.0218 (0.921)	-0.194 (0.323)	0.0471 (0.806)	0.0884 (0.646)
<i>Observations</i>	496	496	496	496	496	496
<i>Adjusted R-squared</i>	0.375	0.0713	0.186	0.358	0.393	0.385

*pval in parentheses, *** p<0.01, ** p<0.05, * p<0.10, + p<0.15*

ANNEX 7: PUBLIC RIGIDITY-CLAUSES

	(1) OLS zArbitration	(2) OLS zOrganic	(3) OLS zConception	(4) OLS zCertification	(5) OLS zSustainable	(6) OLS zEvaluation
<i>Meals</i>	0.000693*** (0)	0.000148 (0.270)	0.00103*** (0)	0.000523*** (6.80e-07)	0.000666*** (0)	0.000706*** (3.43e-09)
<i>Population</i>	1.66e-06 (0.346)	6.38e-07 (0.810)	6.36e-07 (0.737)	-5.30e-07 (0.794)	1.81e-07 (0.919)	-1.27e-06 (0.576)
<i>Duration</i>	0.112*** (0.00959)	0.0180 (0.782)	0.0929** (0.0452)	0.0270 (0.586)	0.0305 (0.484)	0.171*** (0.00231)
<i>Renewal</i>	0.0355 (0.754)	-0.0290 (0.866)	-0.0689 (0.573)	0.182 (0.164)	0.00304 (0.979)	0.0979 (0.505)
<i>Operating</i>	1.438*** (1.12e-07)	0.0416 (0.917)	-0.161 (0.569)	1.350*** (1.31e-05)	1.226*** (7.19e-06)	0.930*** (0.00675)
<i>Provision of Services</i>	-0.0109 (0.971)	-0.0477 (0.916)	-0.436 (0.177)	-0.150 (0.664)	0.143 (0.638)	0.110 (0.776)
<i>Other Contract</i>	0.385* (0.0537)	0.521* (0.0842)	-0.546** (0.0113)	0.190 (0.408)	0.205 (0.311)	0.555** (0.0319)
<i>Users</i>	0.149 (0.292)	0.620*** (0.00396)	-0.0775 (0.610)	0.173 (0.288)	0.280* (0.0515)	-0.236 (0.198)
<i>Nursery</i>	0.368** (0.0492)	0.103 (0.716)	0.391* (0.0530)	0.175 (0.417)	-0.0357 (0.851)	0.209 (0.389)
<i>Middle School</i>	-0.140 (0.684)	-0.824+ (0.113)	0.284 (0.442)	0.236 (0.552)	-0.0275 (0.937)	0.628 (0.158)
<i>High School</i>	-0.375 (0.154)	-0.235 (0.553)	-0.336 (0.236)	-0.0307 (0.919)	-0.529** (0.0485)	0.106 (0.755)
<i>Holidays</i>	0.215 (0.295)	-0.404 (0.195)	0.150 (0.498)	0.0922 (0.698)	-0.0824 (0.693)	0.184 (0.490)
<i>Retirement Home</i>	0.573** (0.0443)	0.295 (0.492)	0.744** (0.0156)	0.272 (0.406)	0.867*** (0.00290)	0.451 (0.221)
<i>Home Delivery</i>	0.573*** (0.000570)	0.319 (0.201)	0.733*** (4.81e-05)	0.668*** (0.000507)	0.457*** (0.00667)	0.141 (0.507)
<i>Hospital</i>	-0.308 (0.626)	-0.695 (0.467)	-0.745 (0.274)	-0.0396 (0.957)	-0.475 (0.459)	-0.686 (0.402)
<i>Other Client</i>	0.525+ (0.133)	-0.0478 (0.928)	0.343 (0.361)	0.522 (0.195)	0.0286 (0.936)	1.653*** (0.000309)
<i>Observations</i>	242	242	242	242	242	242
<i>Adjusted R-squared</i>	0.558	0.133	0.494	0.378	0.476	0.304

*pval in parentheses, *** p<0.01, ** p<0.05, * p<0.10, + p<0.15*

ANNEX 8: PUBLIC RIGIDITY-CLAUSES

	(7) OLS zContingen.	(8) OLS zLocal	(9) OLS zPenalties	(10) OLS zHealth	(11) OLS zLitigation	(12) OLS zTermination
<i>Meals</i>	0.000546*** (5.11e-08)	5.26e-06 (0.959)	0.00117*** (0)	0.000853*** (0)	0.000295*** (0.00203)	0.000330*** (4.34e-05)
<i>Population</i>	5.46e-07 (0.776)	-1.52e-06 (0.453)	2.72e-06 (0.220)	2.04e-06 (0.305)	1.78e-06 (0.343)	-6.34e-07 (0.686)
<i>Duration</i>	0.144*** (0.00235)	0.00989 (0.841)	0.101* (0.0632)	0.0348 (0.474)	0.0191 (0.676)	0.101*** (0.00849)
<i>Renewal</i>	0.0418 (0.736)	-0.0742 (0.569)	0.0747 (0.601)	-0.0351 (0.784)	-0.0539 (0.655)	0.0278 (0.784)
<i>Operating</i>	0.995*** (0.000632)	0.919*** (0.00266)	0.0340 (0.918)	0.106 (0.722)	2.659*** (0)	1.746*** (0)
<i>Provision of Services</i>	0.747** (0.0231)	0.840** (0.0153)	-0.388 (0.303)	-0.358 (0.290)	0.190 (0.550)	0.143 (0.592)
<i>Other Contract</i>	0.421* (0.0541)	-0.0747 (0.744)	-0.0550 (0.826)	-0.486** (0.0316)	0.370* (0.0816)	0.438** (0.0142)
<i>Users</i>	0.264* (0.0873)	0.383** (0.0191)	-0.371** (0.0378)	0.141 (0.379)	0.332** (0.0282)	0.282** (0.0261)
<i>Nursery</i>	0.228 (0.264)	-0.226 (0.293)	0.164 (0.485)	0.170 (0.421)	-0.146 (0.463)	0.319* (0.0566)
<i>Middle School</i>	-0.105 (0.779)	0.312 (0.431)	-0.155 (0.720)	-0.0957 (0.805)	-0.171 (0.640)	0.0714 (0.816)
<i>High School</i>	-0.164 (0.568)	-0.399 (0.188)	-0.173 (0.601)	-0.402 (0.177)	-0.668** (0.0178)	0.137 (0.558)
<i>Holidays</i>	-0.0585 (0.795)	-0.472** (0.0469)	0.353 (0.173)	0.136 (0.559)	-0.129 (0.555)	-0.119 (0.518)
<i>Retirement Home</i>	0.875*** (0.00519)	0.620* (0.0587)	0.440 (0.219)	1.640*** (6.80e-07)	0.416 (0.170)	0.535** (0.0358)
<i>Home Delivery</i>	0.719*** (8.54e-05)	-0.0734 (0.698)	0.557*** (0.00755)	0.394** (0.0352)	0.224 (0.202)	0.406*** (0.00611)
<i>Hospital</i>	-0.479 (0.487)	-0.123 (0.866)	-0.578 (0.467)	-0.549 (0.442)	-0.620 (0.357)	-0.302 (0.592)
<i>Other Client</i>	0.396 (0.300)	-0.156 (0.699)	0.359 (0.415)	-0.370 (0.349)	0.259 (0.487)	0.899*** (0.00422)
<i>Observations</i>	242	242	242	242	242	242
<i>Adjusted R-squared</i>	0.476	0.0995	0.387	0.457	0.458	0.538

*pval in parentheses, *** p<0.01, ** p<0.05, * p<0.10, + p<0.15*

**ANNEX 9: IMPACT OF POLITICAL CONTESTABILITY ON RIGIDITY BY
CATEGORY – PART 1**

	(1)	(2)	(3)	(4)	(5)	(6)
	zArbitration	zOrganic	zConception	zCertification	zSustainable	zEvaluation
<i>HHI 2nd round, 2014</i>	-2.424 (0.215)	-0.840 (0.752)	-2.947+ (0.106)	-2.621 (0.220)	-4.476** (0.0137)	-2.126 (0.347)
<i>Elected 1st round, 2014</i>	-1.063 (0.194)	-0.233 (0.835)	-1.221+ (0.110)	-0.946 (0.289)	-1.832** (0.0158)	-1.039 (0.272)
<i>Agenda 21</i>	0.165 (0.476)	-0.116 (0.713)	0.142 (0.511)	0.131 (0.604)	0.297 (0.164)	0.423+ (0.117)
<i>Meals</i>	0.000376*** (3.38e-05)	8.80e-05 (0.454)	0.000624*** (0)	0.000371*** (0.000151)	0.000587*** (7.78e-11)	0.000417*** (6.51e-05)
<i>Population</i>	5.55e-07 (0.855)	1.78e-08 (0.997)	2.33e-06 (0.413)	-3.25e-06 (0.330)	-3.09e-06 (0.270)	-2.92e-06 (0.408)
<i>Duration</i>	0.0645 (0.288)	-0.0215 (0.795)	0.0376 (0.505)	-0.0103 (0.876)	-0.0586 (0.291)	0.0771 (0.273)
<i>Renewal</i>	-0.00135 (0.993)	-0.0476 (0.826)	-0.109 (0.462)	0.267+ (0.126)	0.0329 (0.820)	-0.277+ (0.134)
<i>Operating</i>	1.504*** (0.000163)	0.181 (0.729)	0.757** (0.0350)	1.396*** (0.00118)	1.402*** (0.000125)	1.391*** (0.00220)
<i>Provision of Services</i>	-0.352 (0.427)	-0.138 (0.819)	-0.0717 (0.862)	-0.0562 (0.907)	0.214 (0.597)	0.380 (0.459)
<i>Other Contract</i>	0.213 (0.410)	0.682* (0.0568)	-0.234 (0.331)	-0.0276 (0.922)	0.311 (0.191)	0.452+ (0.133)
<i>Users</i>	-0.271 (0.472)	-0.402 (0.436)	-0.693* (0.0505)	0.0499 (0.903)	-0.215 (0.532)	-0.509 (0.244)
<i>Nursery</i>	0.171 (0.441)	0.107 (0.724)	0.317+ (0.127)	0.138 (0.570)	0.0141 (0.945)	0.0141 (0.956)
<i>Middle School</i>	0.452 (0.536)	0.0990 (0.921)	1.830*** (0.00845)	0.362 (0.650)	-0.0181 (0.978)	1.243+ (0.144)
<i>High School</i>	-0.152 (0.882)	0.601 (0.669)	-1.318 (0.170)	0.519 (0.643)	1.311 (0.165)	-0.145 (0.903)
<i>Holidays</i>	0.601 (0.230)	0.320 (0.640)	0.881* (0.0603)	-0.00519 (0.992)	0.197 (0.665)	0.692 (0.232)
<i>Retirement Home</i>	1.746** (0.0404)	2.364** (0.0425)	1.643** (0.0381)	-1.141 (0.216)	-0.654 (0.395)	2.390** (0.0159)
<i>Home Delivery</i>	0.574 (0.190)	1.105* (0.0663)	0.908** (0.0272)	0.753+ (0.116)	0.951** (0.0189)	-0.0693 (0.891)
<i>Observations</i>	96	96	96	96	96	96
<i>Adjusted R-squared</i>	0.505	0.0724	0.572	0.410	0.586	0.337

*pval in parentheses, *** p<0.01, ** p<0.05, * p<0.10, + p<0.15*

**ANNEX 10: IMPACT OF POLITICAL CONTESTABILITY ON RIGIDITY BY
CATEGORY – PART 2**

	(7) zContingen.	(8) zLocal	(9) zPenalties	(10) zHealth	(11) zLitigation	(12) zTermination
<i>HHI 2nd round, 2014</i>	-3.009+ (0.114)	-4.566* (0.0718)	-1.591 (0.468)	-3.732** (0.0410)	-3.761* (0.0576)	-0.0669 (0.971)
<i>Elected 1st round, 2014</i>	-1.379* (0.0837)	-2.130** (0.0451)	-0.578 (0.529)	-1.763** (0.0214)	-1.649** (0.0468)	-0.113 (0.884)
<i>Agenda 21</i>	0.265 (0.241)	0.125 (0.676)	0.250 (0.338)	0.247 (0.251)	-0.104 (0.654)	-0.0299 (0.892)
<i>Meals</i>	0.000388*** (1.15e-05)	9.86e-05 (0.373)	0.000595*** (2.55e-08)	0.000659*** (0)	0.000161* (0.0646)	0.000318*** (0.000199)
<i>Population</i>	-2.07e-06 (0.486)	-2.73e-06 (0.489)	3.60e-06 (0.295)	8.43e-07 (0.765)	3.08e-06 (0.317)	2.17e-06 (0.456)
<i>Duration</i>	0.0384 (0.513)	-0.00372 (0.962)	0.0152 (0.823)	-0.0517 (0.357)	-0.0259 (0.670)	0.0177 (0.759)
<i>Renewal</i>	0.00612 (0.968)	0.104 (0.612)	0.0319 (0.858)	-0.0698 (0.634)	-0.225 (0.160)	-0.0448 (0.767)
<i>Operating</i>	1.210*** (0.00152)	0.106 (0.829)	0.215 (0.616)	0.158 (0.654)	3.186*** (0)	2.156*** (7.15e-08)
<i>Provision of Services</i>	-0.487 (0.259)	-0.248 (0.664)	-0.297 (0.550)	-0.180 (0.660)	0.0382 (0.932)	0.153 (0.718)
<i>Other Contract</i>	0.127 (0.612)	-0.0572 (0.864)	0.0450 (0.877)	-0.286 (0.234)	0.109 (0.675)	0.146 (0.554)
<i>Users</i>	0.0688 (0.850)	0.322 (0.507)	-0.477 (0.261)	-0.174 (0.617)	-0.594+ (0.119)	0.242 (0.501)
<i>Nursery</i>	-0.0634 (0.768)	-0.623** (0.0320)	0.0560 (0.823)	-0.00533 (0.979)	-0.178 (0.425)	0.180 (0.396)
<i>Middle School</i>	0.587 (0.408)	2.257** (0.0185)	0.826 (0.316)	0.412 (0.543)	0.944 (0.201)	0.722 (0.302)
<i>High School</i>	-0.414 (0.677)	-3.011** (0.0252)	-1.195 (0.302)	-0.581 (0.541)	-0.217 (0.833)	-0.507 (0.605)
<i>Holidays</i>	0.0833 (0.863)	-0.743 (0.250)	0.651 (0.247)	0.494 (0.286)	0.915* (0.0710)	-0.181 (0.703)
<i>Retirement Home</i>	0.899 (0.272)	-0.700 (0.519)	1.016 (0.284)	0.255 (0.743)	2.226*** (0.00995)	-0.178 (0.825)
<i>Home Delivery</i>	0.563 (0.185)	-0.101 (0.857)	0.286 (0.559)	0.365 (0.366)	0.711+ (0.107)	0.130 (0.753)
<i>Observations</i>	96	96	96	96	96	96
<i>Adjusted R-squared</i>	0.534	0.177	0.374	0.576	0.499	0.549

*pval in parentheses, *** p<0.01, ** p<0.05, * p<0.10, + p<0.15*

**IANNEX 11: MPACT OF POLITICAL CONTESTABILITY ON RIGIDITY BY
CATEGORY – PART 1**

	(1)	(2)	(3)	(4)	(5)	(6)
	zArbitration	zOrganic	zConception	zCertification	zSustainable	zEvaluation
<i>Margin</i>	1.948 (0.236)	1.518 (0.497)	2.215+ (0.147)	3.585** (0.0437)	2.021 (0.191)	1.618 (0.389)
<i>Square Margin</i>	-3.109 (0.300)	-3.405 (0.404)	-2.739 (0.325)	-5.464* (0.0912)	-4.018 (0.155)	-4.446 (0.197)
<i>Elected 1st round, 2014</i>	-0.143 (0.453)	0.124 (0.633)	-0.153 (0.387)	-0.0242 (0.906)	-0.0183 (0.919)	-0.0978 (0.654)
<i>Agenda 21</i>	0.139 (0.560)	-0.174 (0.593)	0.142 (0.520)	0.0924 (0.718)	0.240 (0.285)	0.331 (0.228)
<i>Meals</i>	0.000365*** (5.91e-05)	8.36e-05 (0.477)	0.000611*** (0)	0.000357*** (0.000221)	0.000571*** (5.47e-10)	0.000410*** (7.91e-05)
<i>Population</i>	1.39e-06 (0.637)	2.78e-07 (0.945)	3.27e-06 (0.232)	-2.65e-06 (0.401)	-1.17e-06 (0.670)	-1.95e-06 (0.562)
<i>Duration</i>	0.0715 (0.255)	-0.0341 (0.689)	0.0575 (0.323)	-0.00148 (0.982)	-0.0542 (0.357)	0.0573 (0.424)
<i>Renewal</i>	0.0302 (0.852)	-0.0138 (0.950)	-0.0835 (0.577)	0.312* (0.0737)	0.0871 (0.565)	-0.223 (0.230)
<i>Operating</i>	1.320*** (0.000905)	0.150 (0.775)	0.488 (0.173)	1.124*** (0.00753)	1.174*** (0.00159)	1.355*** (0.00272)
<i>Provision of Services</i>	-0.226 (0.636)	0.0677 (0.917)	-0.0200 (0.964)	0.134 (0.793)	0.450 (0.317)	0.703 (0.201)
<i>Other Contract</i>	0.285 (0.273)	0.694* (0.0526)	-0.129 (0.592)	0.0769 (0.782)	0.402+ (0.101)	0.468+ (0.118)
<i>Users</i>	-0.0928 (0.804)	-0.376 (0.462)	-0.432 (0.215)	0.302 (0.453)	0.0188 (0.957)	-0.470 (0.274)
<i>Nursery</i>	0.157 (0.489)	0.127 (0.680)	0.276 (0.191)	0.103 (0.672)	0.0253 (0.905)	0.0618 (0.812)
<i>Middle School</i>	0.249 (0.736)	0.0503 (0.960)	1.538** (0.0270)	0.0489 (0.951)	-0.259 (0.708)	1.194 (0.160)
<i>High School</i>	-0.619 (0.534)	0.541 (0.690)	-1.987** (0.0336)	-0.0719 (0.946)	0.611 (0.513)	-0.302 (0.791)
<i>Holidays</i>	0.321 (0.518)	0.262 (0.699)	0.481 (0.298)	-0.409 (0.442)	-0.167 (0.720)	0.611 (0.284)
<i>Retirement Home</i>	1.373+ (0.114)	2.443** (0.0399)	0.997 (0.214)	-1.675* (0.0724)	-1.074 (0.186)	2.533** (0.0118)
<i>Home Delivery</i>	0.495 (0.260)	1.124* (0.0626)	0.773* (0.0597)	0.649 (0.169)	0.854** (0.0405)	-0.0431 (0.931)
<i>Observations</i>	96	96	96	96	96	96
<i>Adjusted R-squared</i>	0.498	0.0685	0.569	0.424	0.558	0.342

*pval in parentheses, *** p<0.01, ** p<0.05, * p<0.10, + p<0.15*

**ANNEX 12: IMPACT OF POLITICAL CONTESTABILITY ON RIGIDITY BY
CATEGORY – PART 2**

	(7) zContingen.	(8) zLocal	(9) zPenalties	(10) zHealth	(11) zLitigation	(12) zTermination
<i>Margin</i>	3.276** (0.0393)	-0.585 (0.786)	-0.105 (0.954)	3.016** (0.0496)	1.486 (0.376)	3.298** (0.0321)
<i>Square Margin</i>	-5.191* (0.0730)	0.349 (0.929)	1.331 (0.692)	-4.861* (0.0825)	-2.531 (0.410)	-5.585** (0.0466)
<i>Elected 1st round, 2014</i>	-0.271+ (0.140)	-0.198 (0.431)	-0.00406 (0.985)	-0.344* (0.0543)	-0.153 (0.435)	-0.185 (0.296)
<i>Agenda 21</i>	0.222 (0.333)	0.112 (0.721)	0.296 (0.271)	0.205 (0.355)	-0.130 (0.596)	-0.0871 (0.693)
<i>Meals</i>	0.000373*** (2.04e-05)	8.70e-05 (0.442)	0.000589*** (3.64e-08)	0.000642*** (0)	0.000147* (0.0977)	0.000312*** (0.000186)
<i>Population</i>	-1.19e-06 (0.672)	-3.31e-07 (0.932)	4.25e-06 (0.199)	2.13e-06 (0.435)	4.66e-06+ (0.123)	1.66e-06 (0.542)
<i>Duration</i>	0.0463 (0.441)	0.00805 (0.922)	0.0383 (0.585)	-0.0416 (0.473)	-0.0148 (0.817)	0.00825 (0.887)
<i>Renewal</i>	0.0533 (0.730)	0.129 (0.542)	0.0217 (0.905)	-0.0204 (0.891)	-0.189 (0.253)	-0.00683 (0.963)
<i>Operating</i>	0.947** (0.0116)	-0.0400 (0.937)	0.0705 (0.870)	-0.122 (0.731)	2.970*** (6.29e-11)	2.049*** (1.46e-07)
<i>Provision of Services</i>	-0.286 (0.532)	-0.184 (0.769)	-0.429 (0.424)	0.0203 (0.963)	0.165 (0.735)	0.378 (0.394)
<i>Other Contract</i>	0.229 (0.358)	0.00576 (0.987)	0.102 (0.727)	-0.176 (0.466)	0.196 (0.462)	0.185 (0.443)
<i>Users</i>	0.317 (0.377)	0.497 (0.314)	-0.330 (0.432)	0.0974 (0.779)	-0.372 (0.333)	0.323 (0.353)
<i>Nursery</i>	-0.0889 (0.682)	-0.599** (0.0470)	0.0202 (0.937)	-0.0258 (0.902)	-0.184 (0.430)	0.165 (0.431)
<i>Middle School</i>	0.288 (0.684)	2.133** (0.0303)	0.687 (0.408)	0.102 (0.882)	0.719 (0.343)	0.570 (0.405)
<i>High School</i>	-1.029 (0.281)	-3.660*** (0.00624)	-1.608 (0.152)	-1.293 (0.163)	-0.866 (0.396)	-0.592 (0.521)
<i>Holidays</i>	-0.314 (0.510)	-0.991+ (0.131)	0.442 (0.428)	0.0663 (0.885)	0.577 (0.259)	-0.336 (0.466)
<i>Retirement Home</i>	0.388 (0.638)	-1.066 (0.347)	0.542 (0.575)	-0.308 (0.700)	1.756** (0.0492)	-0.253 (0.751)
<i>Home Delivery</i>	0.460 (0.275)	-0.199 (0.729)	0.182 (0.711)	0.247 (0.544)	0.605 (0.180)	0.130 (0.749)
<i>Observations</i>	96	96	96	96	96	96
<i>Adjusted R-squared</i>	0.539	0.133	0.368	0.569	0.474	0.570

*pval in parentheses, *** p<0.01, ** p<0.05, * p<0.10, + p<0.15*

**ANNEX 13: IMPACT OF POLITICAL CONTESTABILITY ON RIGIDITY BY
CATEGORY – PART 1**

		(1)	(2)	(3)	(4)	(5)	(6)
		zArbitration	zOrganic	zConception	zCertification	zSustainable	zEvaluation
<i>ResidualHHI</i>	<i>2nd</i>	-4.075	-3.686	-5.967**	-8.396***	-6.067**	-1.275
<i>round, 2014</i>		(0.175)	(0.367)	(0.0324)	(0.00931)	(0.0305)	(0.714)
<i>Elected 1st</i>	<i>round,</i>	-0.626*	0.279	-0.0768	-0.675*	-0.438	-0.105
<i>2014</i>		(0.1000)	(0.588)	(0.825)	(0.0934)	(0.212)	(0.811)
<i>Elected 2nd</i>	<i>round,</i>	0.373	1.006	1.296*	1.108	0.942	0.354
<i>2014</i>		(0.646)	(0.365)	(0.0856)	(0.199)	(0.212)	(0.708)
<i>Agenda 21</i>		0.171	-0.112	0.150	0.142	0.305	0.425+
		(0.460)	(0.723)	(0.482)	(0.562)	(0.156)	(0.117)
<i>Meals</i>		0.000391***	0.000106	0.000649***	0.000410***	0.000608***	0.000418***
		(2.19e-05)	(0.373)	(0)	(2.53e-05)	(5.73e-11)	(8.66e-05)
<i>Population</i>		5.76e-08	-1.09e-06	1.31e-06	-5.43e-06+	-3.41e-06	-2.41e-06
		(0.985)	(0.800)	(0.652)	(0.105)	(0.243)	(0.510)
<i>Duration</i>		0.0744	-0.0182	0.0495	0.000182	-0.0402	0.0859
		(0.216)	(0.824)	(0.369)	(0.998)	(0.468)	(0.220)
<i>Renewal</i>		0.0150	-0.0395	-0.0876	0.289*	0.0617	-0.265
		(0.924)	(0.855)	(0.547)	(0.0864)	(0.673)	(0.152)
<i>Operating</i>		1.290***	0.0486	0.472	1.062***	1.044***	1.262***
		(0.000974)	(0.925)	(0.177)	(0.00922)	(0.00362)	(0.00516)
<i>Provision of Services</i>		-0.337	-0.133	-0.0532	-0.0399	0.242	0.394
		(0.446)	(0.825)	(0.896)	(0.932)	(0.553)	(0.445)
<i>Other Contract</i>		0.231	0.673*	-0.219	-0.0350	0.353+	0.484+
		(0.368)	(0.0572)	(0.354)	(0.897)	(0.138)	(0.108)
<i>Users</i>		-0.173	-0.381	-0.579*	0.134	-0.0256	-0.411
		(0.635)	(0.443)	(0.0862)	(0.727)	(0.939)	(0.333)
<i>Nursery</i>		0.171	0.107	0.317+	0.137	0.0142	0.0145
		(0.441)	(0.724)	(0.123)	(0.560)	(0.945)	(0.955)
<i>Middle School</i>		0.361	0.0737	1.722**	0.274	-0.191	1.157
		(0.618)	(0.941)	(0.0114)	(0.720)	(0.776)	(0.173)
<i>High School</i>		-0.430	0.571	-1.627*	0.335	0.754	-0.456
		(0.660)	(0.669)	(0.0733)	(0.746)	(0.405)	(0.689)
<i>Holidays</i>		0.467	0.296	0.728+	-0.111	-0.0655	0.551
		(0.330)	(0.651)	(0.101)	(0.827)	(0.882)	(0.324)
<i>Retirement Home</i>		1.565*	2.360**	1.449*	-1.234	-1.026	2.172**
		(0.0563)	(0.0355)	(0.0548)	(0.152)	(0.173)	(0.0237)
<i>Home Delivery</i>		0.433	1.017*	0.720*	0.532	0.717*	-0.152
		(0.319)	(0.0888)	(0.0742)	(0.248)	(0.0766)	(0.763)
<i>Observations</i>		96	96	96	96	96	96
<i>Adjusted R-squared</i>		0.505	0.0815	0.581	0.447	0.568	0.310

*pval in parentheses, *** p<0.01, ** p<0.05, * p<0.10, + p<0.15*

**ANNEX 14: IMPACT OF POLITICAL CONTESTABILITY ON RIGIDITY BY
CATEGORY – PART 2**

		(7) zContingen.	(8) zLocal	(9) zPenalties	(10) zHealth	(11) zLitigation	(12) zTermination
<i>ResidualHHI</i>	<i>2nd</i>	-8.178***	-3.553	-4.808	-8.949***	-4.659+	-5.561**
		(0.00445)	(0.366)	(0.152)	(0.00114)	(0.128)	(0.0488)
<i>Elected</i>	<i>1st</i>	-0.869**	-0.581	-0.0173	-0.432	0.183	-0.815**
		(0.0159)	(0.243)	(0.967)	(0.200)	(0.634)	(0.0227)
<i>Elected</i>	<i>2nd</i>	1.139+	0.488	1.003	1.839**	1.351+	0.535
		(0.137)	(0.647)	(0.270)	(0.0126)	(0.104)	(0.480)
<i>Agenda 21</i>		0.275	0.130	0.256	0.259	-0.0976	-0.0232
		(0.206)	(0.668)	(0.321)	(0.211)	(0.678)	(0.914)
<i>Meals</i>		0.000425***	0.000105	0.000617***	0.000697***	0.000176**	0.000349***
		(1.37e-06)	(0.358)	(1.14e-08)	(0)	(0.0492)	(4.57e-05)
<i>Population</i>		-3.97e-06	-1.97e-06	2.40e-06	-1.02e-06	2.99e-06	-8.00e-08
		(0.181)	(0.633)	(0.495)	(0.715)	(0.350)	(0.978)
<i>Duration</i>		0.0505	0.0151	0.0216	-0.0366	-0.0105	0.0177
		(0.369)	(0.847)	(0.746)	(0.492)	(0.863)	(0.751)
<i>Renewal</i>		0.0298	0.130	0.0449	-0.0418	-0.202	-0.0386
		(0.841)	(0.530)	(0.799)	(0.766)	(0.211)	(0.793)
<i>Operating</i>		0.865**	-0.192	0.0199	-0.240	2.897***	2.011***
		(0.0165)	(0.699)	(0.962)	(0.476)	(6.21e-11)	(1.81e-07)
<i>Provision of Services</i>		-0.468	-0.219	-0.288	-0.157	0.0620	0.153
		(0.260)	(0.705)	(0.560)	(0.690)	(0.890)	(0.711)
<i>Other Contract</i>		0.129	0.00432	0.0424	-0.276	0.148	0.110
		(0.593)	(0.990)	(0.882)	(0.228)	(0.570)	(0.645)
<i>Users</i>		0.174	0.530	-0.425	-0.0376	-0.432	0.215
		(0.610)	(0.268)	(0.296)	(0.907)	(0.244)	(0.527)
<i>Nursery</i>		-0.0643	-0.623**	0.0554	-0.00614	-0.178	0.179
		(0.757)	(0.0348)	(0.823)	(0.975)	(0.430)	(0.387)
<i>Middle School</i>		0.483	2.074**	0.772	0.279	0.798	0.735
		(0.478)	(0.0316)	(0.341)	(0.665)	(0.280)	(0.279)
<i>High School</i>		-0.669	-3.656***	-1.315	-0.931	-0.698	-0.355
		(0.466)	(0.00544)	(0.230)	(0.286)	(0.483)	(0.697)
<i>Holidays</i>		-0.0524	-1.037+	0.584	0.314	0.689	-0.130
		(0.907)	(0.101)	(0.275)	(0.462)	(0.159)	(0.770)
<i>Retirement Home</i>		0.755	-1.147	0.952	0.0454	1.902**	-0.0426
		(0.322)	(0.283)	(0.294)	(0.950)	(0.0231)	(0.955)
<i>Home Delivery</i>		0.334	-0.293	0.157	0.102	0.523	0.0317
		(0.412)	(0.607)	(0.746)	(0.791)	(0.238)	(0.938)
<i>Observations</i>		96	96	96	96	96	96
<i>Adjusted R-squared</i>		0.558	0.150	0.380	0.602	0.491	0.572

*pval in parentheses, *** p<0.01, ** p<0.05, * p<0.10, + p<0.15*

**ANNEX 15: IMPACT OF POLITICAL CONTESTABILITY ON RIGIDITY BY
CATEGORY – PART 1**

	(1) zArbitration	(2) zOrganic	(3) zConception	(4) zCertification	(5) zSustainable	(6) zEvaluation
<i>Number of Lists elected 1st round, 2014</i>	0.193 (0.186)	0.227 (0.245)	0.105 (0.440)	0.127 (0.416)	0.0283 (0.833)	0.0310 (0.854)
<i>Number of Lists 2nd round, 2014</i>	0.115 (0.666)	0.567+ (0.115)	0.360+ (0.150)	0.510* (0.0792)	0.526** (0.0354)	-0.0941 (0.762)
<i>Elected 1st round, 2014</i>	-0.272 (0.744)	1.104 (0.324)	0.723 (0.352)	1.230 (0.174)	1.422* (0.0678)	-0.522 (0.591)
<i>Agenda 21</i>	0.0876 (0.716)	-0.191 (0.554)	0.112 (0.618)	0.0974 (0.708)	0.307 (0.171)	0.406 (0.150)
<i>Meals</i>	0.000316*** (0.00147)	4.22e-05 (0.743)	0.000600*** (2.87e-09)	0.000348*** (0.00122)	0.000588*** (4.07e-09)	0.000398*** (0.000637)
<i>Population</i>	4.34e-07 (0.898)	-3.72e-06 (0.414)	1.25e-06 (0.692)	-5.47e-06+ (0.138)	-4.19e-06 (0.184)	-1.42e-06 (0.720)
<i>Duration</i>	0.0741 (0.225)	-0.0318 (0.697)	0.0405 (0.476)	-0.0130 (0.843)	-0.0556 (0.324)	0.0893 (0.209)
<i>Renewal</i>	0.0376 (0.816)	-0.0364 (0.866)	-0.0963 (0.523)	0.273+ (0.120)	0.0302 (0.840)	-0.256 (0.176)
<i>Operating</i>	1.404*** (0.000342)	0.240 (0.634)	0.689* (0.0523)	1.370*** (0.00112)	1.302*** (0.000337)	1.274*** (0.00461)
<i>Provision of Services</i>	-0.235 (0.602)	-0.0406 (0.947)	-0.0165 (0.969)	0.000505 (0.999)	0.226 (0.589)	0.417 (0.429)
<i>Other Contract</i>	0.260 (0.316)	0.653* (0.0628)	-0.210 (0.385)	-0.0241 (0.931)	0.340 (0.158)	0.504* (0.0971)
<i>Users</i>	-0.0809 (0.831)	-0.403 (0.429)	-0.594* (0.0960)	0.101 (0.805)	-0.129 (0.714)	-0.360 (0.416)
<i>Nursery</i>	0.0365 (0.882)	-0.110 (0.737)	0.204 (0.372)	-0.00993 (0.970)	-0.0734 (0.746)	0.00825 (0.977)
<i>Middle School</i>	0.253 (0.730)	-0.0437 (0.965)	1.657** (0.0173)	0.194 (0.807)	-0.214 (0.753)	1.136 (0.186)
<i>High School</i>	-0.315 (0.765)	1.356 (0.339)	-1.249 (0.206)	0.865 (0.448)	1.339 (0.173)	-0.617 (0.616)
<i>Holidays</i>	0.326 (0.520)	0.344 (0.613)	0.753+ (0.114)	-0.0575 (0.916)	0.0975 (0.835)	0.470 (0.427)
<i>Retirement Home</i>	1.231 (0.165)	2.411** (0.0441)	1.458* (0.0789)	-1.184 (0.216)	-0.725 (0.375)	1.994* (0.0549)
<i>Home Delivery</i>	0.419 (0.340)	0.971+ (0.101)	0.771* (0.0620)	0.612 (0.198)	0.799* (0.0516)	-0.141 (0.782)
<i>Observations</i>	96	96	96	96	96	96
<i>Adjusted R-squared</i>	0.501	0.100	0.565	0.417	0.572	0.322

*pval in parentheses, *** p<0.01, ** p<0.05, * p<0.10, + p<0.15*

**ANNEX 16: IMPACT OF POLITICAL CONTESTABILITY ON RIGIDITY BY
CATEGORY – PART 2**

	(7) zContingen.	(8) zLocal	(9) zPenalties	(10) zHealth	(11) zLitigation	(12) zTermination
<i>Number of Lists elected 1st round, 2014</i>	0.101 (0.476)	0.0718 (0.702)	-0.0224 (0.891)	-0.103 (0.441)	-0.101 (0.494)	0.0599 (0.665)
<i>Number of Lists 2nd round, 2014</i>	0.274 (0.294)	0.572+ (0.100)	0.246 (0.412)	0.522** (0.0356)	0.271 (0.320)	-0.0968 (0.704)
<i>Elected 1st round, 2014</i>	0.356 (0.662)	1.171 (0.279)	0.837 (0.373)	1.533** (0.0479)	0.942 (0.269)	-0.525 (0.509)
<i>Agenda 21</i>	0.233 (0.324)	0.118 (0.705)	0.270 (0.320)	0.313 (0.160)	-0.0487 (0.843)	-0.0595 (0.795)
<i>Meals</i>	0.000361*** (0.000241)	8.84e-05 (0.479)	0.000607*** (2.78e-07)	0.000701*** (0)	0.000192* (0.0536)	0.000296*** (0.00177)
<i>Population</i>	-2.58e-06 (0.437)	-4.20e-06 (0.340)	2.95e-06 (0.440)	-1.88e-07 (0.952)	3.58e-06 (0.302)	2.61e-06 (0.421)
<i>Duration</i>	0.0441 (0.459)	-0.00111 (0.989)	0.0139 (0.838)	-0.0538 (0.337)	-0.0202 (0.745)	0.0219 (0.706)
<i>Renewal</i>	0.0230 (0.884)	0.106 (0.611)	0.0219 (0.904)	-0.0988 (0.506)	-0.240+ (0.149)	-0.0286 (0.853)
<i>Operating</i>	1.121*** (0.00305)	0.00812 (0.987)	0.193 (0.648)	0.0997 (0.773)	3.077*** (0)	2.130*** (7.17e-08)
<i>Provision of Services</i>	-0.428 (0.334)	-0.214 (0.714)	-0.315 (0.535)	-0.247 (0.553)	-0.0117 (0.980)	0.193 (0.655)
<i>Other Contract</i>	0.161 (0.524)	-0.0279 (0.934)	0.0468 (0.872)	-0.279 (0.243)	0.143 (0.588)	0.162 (0.512)
<i>Users</i>	0.193 (0.602)	0.423 (0.390)	-0.481 (0.261)	-0.194 (0.579)	-0.538 (0.167)	0.305 (0.400)
<i>Nursery</i>	-0.163 (0.498)	-0.744** (0.0212)	0.0370 (0.893)	-0.0109 (0.961)	-0.151 (0.546)	0.156 (0.504)
<i>Middle School</i>	0.412 (0.566)	2.036** (0.0345)	0.774 (0.349)	0.315 (0.641)	0.841 (0.263)	0.687 (0.327)
<i>High School</i>	-0.479 (0.643)	-2.916** (0.0354)	-1.112 (0.350)	-0.484 (0.618)	-0.483 (0.654)	-0.634 (0.529)
<i>Holidays</i>	-0.0865 (0.861)	-0.862 (0.191)	0.669 (0.242)	0.551 (0.239)	0.851+ (0.103)	-0.279 (0.564)
<i>Retirement Home</i>	0.630 (0.466)	-0.814 (0.476)	1.105 (0.267)	0.500 (0.538)	2.223** (0.0153)	-0.385 (0.647)
<i>Home Delivery</i>	0.427 (0.320)	-0.275 (0.628)	0.245 (0.620)	0.291 (0.472)	0.641 (0.154)	0.105 (0.802)
<i>Observations</i>	96	96	96	96	96	96
<i>Adjusted R-squared</i>	0.522	0.161	0.367	0.577	0.480	0.545

*pval in parentheses, *** p<0.01, ** p<0.05, * p<0.10, + p<0.15*

CHAPTER 3

ON THE GEOGRAPHICAL AVAILABILITY OF ORGANIC AND ALTERNATIVE RETAIL FOOD STORES

ABSTRACT

We study the impact of political variables and governance of local public catering services on the availability of Short Food Supply Chains (SFSC) and Organic shops. We find that the presence of an Agenda 21 and left voters increase the availability of Organic shops. We also find that in-house local school canteens decrease the presence of SFSC. We offer explanations and open a path for future researches to drive public policies.

Keywords: Food Stores; Supermarkets; Socioeconomic factors; Short Food Supply Chain; France; Retail.

JEL Classification: D21, D4, L1, L81, R1, R3

1 INTRODUCTION

The drawbacks of industrialization and globalization in the food system have been widely discussed in the recent literature (Sonnino and Marsden, 2006). Detachment between the place of production and consumption, over-utilization of natural resources, ecological and environmental consequences of mass production, just to name a few, are some of the pathologies attached to globalized and industrial food production. In response to that global agri-food supply chains, Alternative Agri-Food Networks (AAFNs) have emerged worldwide as an alternative future for the agri-food sectors. AAFNs can be defined as a term to “cover new emerging networks of producers, consumers, and other actors that embody alternatives to the more standardized industrial mode of food supply” (Renting *et al.*, 2003). They encompass a large diversity of initiatives such as direct selling, organic or social farming, or yet, urban and suburban agriculture. In this chapter, we will focus on two of these alternative supply chains, Short Food Supply Chains – or direct selling – and Organic Supply Chains, which we consider to be the most relevant focus to study an eventual political impact on food network¹³².

Short Food Supply Chains (SFSC), opposed to Long Food Supply Chains (LFSC), are defined as “a marketing channel of agricultural products processed by direct selling to consumers, or by indirect selling provided that there is at most one intermediary” by the French Ministry of Agriculture. It is also commonly admitted that SFSC induce a small physical distance between the producer and the consumer due to the absence of intermediaries (Martinez *et al.*, 2010; Aubry and Chiffolleau, 2010). On the other hand, organic food is defined by the European Union Council by (Council Regulation (EC) No 834/2007, 2007): “*Organic production is an overall system of farm management and food production that combines best environmental practices, a high level of biodiversity, the preservation of natural resources, the application of high animal welfare standards and a production method in line with the preference of certain consumers for products produced using natural substances and processes.*”

AAFNs are the response from food producers to the global agri-food supply. They advocate the formation of ‘reconnections’ between producers and consumers and attempt to convey the principles and responsibilities of food production (Hinrichs, 2000; Renting *et al.*, 2003; Mount, 2012). If Short Food Supply Chains (SFSC) have always existed through food markets or farm sells, the term has been coined by Marsden (2000) to reflect a fresh interest for it. SFSC can

¹³² Three laws have been voted to promote local food through SFSC and organic food in public institutional catering (Law Grenelle, 2008; Law Eat Local, 2016).

represent an engaged consumption, as well as a way to socialize or to increase the trust in the products. Indeed, the regular food scandals¹³³ heavily damage consumers' confidence in conventional retail food stores (Nomisma, 2009). Thus, we observe lately the emergence of Community Supported Agriculture (CSA) networks of direct and independent sales on the internet or on the farm (Delfosse, Bernard, 2007). These alternative initiatives might be used as a tool for rural development (Fondse *et al.*, 2012) as a way to mitigate the lack of retail food shops in some area, or to develop tourism around the goodwill of local food productions (Marsden *et al.*, 2000; De Roest and Menghi, 2002).

Similarly, there is also a growing interest for organic food. Organic food consumption recently skyrockets in France even if it remains at a relatively low level (Agence Bio, 2017)¹³⁴. The large majority of organic consumers buys organic food in specialized shops rather than in mixed supermarkets, as it diminishes the information costs on organic products (comparisons between different organic brands, products, no need to verify that a product is organic...). Thus, the number of retail organic food store increases as well¹³⁵.

Recent evolutions however suggests that there is no longer clear cut boundaries between conventional and alternative food system (Murdoch and Miele, 1999). For instance, Lockie (2008) distinguishes a starting phase in which organic production was initially part of AAFNs, from a following stage in which their commercialization is mainly performed by large retail chains. This was made possible thanks to certifications allowing the extension of organic food sales beyond face-to-face relationships with consumers (Higgins *et al.*, 2008). Consequently, conventional retail food stores chains create specialized food stores chains to catch this demand.

Organic Food and SFSC were both originally AAFNs, yet, Organic shops are now opened by internationalized store brands. For instance, Naturalia (Organic shops) belongs to the Casino Group, while Carrefour Group has a chain called Organic Carrefour. Moreover, the consumers do not consider SFSC and Organic food as identical. Indeed, organic products are considered as healthier, while SFSC are assimilated to fair prices for both consumers and producers (Kneafsey *et al.*, 2013), and answer to the need for socialization and to the bid for meaning (Marsden *et al.*, 2000).

¹³³ Cow disease, bird flu, e-coli on cucumbers, horse lasagna to name a few.

¹³⁴ **6.736 billion euros** for French households, **+21,7 %** compared to 2015.

¹³⁵ 4,017 retailers in 2016, **+11 %** compared to 2015 (Agence BIO, 2017).

The demand for alternative food systems has also found some echoes in the political arena. Public bodies at various geographical scales attempt to develop Organic and SFSC's availability on their territory. For instance, the French Parliament passed a law in 2008 to achieve 20% of local food and 20% of organic food in public school canteens in 2012 (Law Grenelle). Cities in charge with the management of school canteens have not yet been able to reach those goals, but the Parliament reaffirmed the objectives on local and organic food in 2016 (Law Eat Local). The French Association of Mayors (AMF) pointed out two main reasons for their inability to reach the required target. First, they emphasize the cost of organic food and second, they insist on the unavailability of structured-enough SFSC able to meet the requirements of public markets for instance in term of quantity or processed products (Baroin and Laignel, 2015). Yet, some territories followed the recommendations from the French Ministry of Agriculture (Report, 2014). They created partnerships, including investments for the transformation process, with producers in order to help them to participate in public auctions. Some Departments¹³⁶ also created internet platforms (Agrilocal for instance) for those producers in order to facilitate the match between the local supply and public demand. This has sometimes led as a positive side effect to the development of SFSC and Organic Food shops. For instance, an arrondissement of Paris created a partnership with a dairy producer and invested accordingly to help him to supply the municipal school canteens with processed dairy products. The producer has thereafter seized this opportunity to deliver products also to local inhabitants through SFSC.

Thus, given the differences between SFSC and Organic shops, we attempt to compare in this article the determinants of their geographical availability. In particular, we wonder if political variables influence the availability of SFSC and Organic shops in a geographical area, as a consequence of municipal actions and ideology. This is an important question for public bodies to answer and to give them an analysis grid to improve food system policies.

We contribute to the existing literature by comparing the determinants of the availability of SFSC and Organic shops in the Paris area, as it has never been done to our knowledge. In order to do so, we built an original database on retail food stores (all kinds) in the French region Île-de-France. We chose this region because it is the most populated in France (18% of the population), and it is very diverse in terms of socio-economics and political characteristics. This

¹³⁶ Departments in France are the administrative level between Municipalities and Regions.

diversity is an asset for an econometrics comparisons of the availability of SFSC and Organic shops. We find that....

Our article is organized as follow. First, we discuss the literature on SFSC and Organic consumers, and on the economic rationale behind retail stores' availability, from which we form hypothesis to test (section 2). We, then, present the institutional settings and data in section 3. We give the results in section 4, and finally we conclude and discuss the results in section 5.

2 RELATED LITERATURE AND EMPIRICAL STRATEGY

Our analysis relies on two main literatures. The first one, mostly developed in the field of economic sociology and geography analyzes questions such as consumer's profile. The second literature, mostly in economics has highlighted some key determinants of the spatial localization of retail stores in a geographical area. While this literature goes beyond the question of alternative food chains, some of its insights are relevant to our study. In this section, we first discuss the socio-economic profiles of SFSC and Organic Food consumers. Then, we study the economic rationale behind the choice for retail store to implant, and thus to be available in a geographical area. From this, we finally derive hypothesis to be tested.

2.1 SOCIO-ECONOMIC PROFILE OF SFSC AND ORGANIC FOOD CONSUMERS

While some controversies remains about the consumption of alternative food products, the existing literature has suggested some consistent empirical results. In general, consumers of organic food are female (Davies et al., 1995; Food Marketing Institute, 2001), have children living in the household (Thompson and Kidwell, 1998), and are older (Roddy *et al.*, 1996; Schifferstein and Ophuis, 1998; Cicia *et al.*, 2002). Younger consumers have been found to hold more positive attitudes toward organic food (Magnusson et al., 2001), yet older consumers are more likely to be purchasers. In addition, the arrival of a baby seems to have an impact on the consumption of organic food (Hill and Lynchehaun, 2002)¹³⁷.

In France, a national survey over 54,283 participants on food consumption behavior between 2012 and 2014 allowed to define French consumers' behaviors toward organic products (Baudry *et al.*, 2015). The authors highlighted that women consume more organic food than

¹³⁷ “Parents take a huge interest in the food they buy for their family and increasingly many new parents are buying organic baby food. This is dramatically changing family eating habits” p530.

men. Regular organic consumers are more educated and wealthier than non-consumers. They are also more often farmers and executives, vegetarian or vegan than non-consumers of organic products. Moreover, 81% of the organic consumers declared to buy organic products in specialized organic retail stores.

SFSC also answers to “the recent emergence of an engaged consumption that defends ethical values (...) in opposition with a standard and anonymous commercial system” (Chessel and Cochoy, 2004). Yet, it appears that the characteristics of the consumers are less clear than for organic products (CODIA Project, 2015). The report attempts to explain this due to the importance of traditional food markets in France that is the main location to buy through SFSC (51% of frequentation to buy through SFSC happens to be in food markets). It also concludes that SFSC consumers are overrepresented among women, chief executives and higher intellectual workers, among the higher educated part of the population, and in rural areas. If it does not find any impact of age on SFSC consumption, younger consumer prefer CSA (Community Supported Agriculture) and older consumers tend to favor FM (Food Markets) (in line with Prigent-Simonin *et al.*, 2012). Other articles have highlighted that the typical consumer who purchases from a direct marketing forum is well-educated, female, upper middle class, middle-aged, and resides within a suburban area (Kezis *et al.*, 1998; Gallons *et al.*, 1997; Gandee *et al.*, 2003). Thus, education, gender, income, and proximity to metropolitan areas have been shown in the literature to influence the consumer’s decision to purchase directly from farm establishments.

Finally, the CODIA Project compared Organic and SFSC consumers. It finds that SFSC consumers visit organic shops and convenience stores more often than non-SFSC consumers. This could be explained by a higher appetite for human contact and geographical proximity (Prigent-Simonin *et al.*, 2012). Both profiles however visit supermarket and hypermarket at least once a month for more than 90% of them.

2.2 ECONOMIC RATIONALE BEHIND RETAIL FOOD STORE’S AVAILABILITY

Retail food stores are available in an area depending on the advantages and drawbacks they get from the existing food network (Andrieux *et al.*, 2013; Peiffer-Smadja and Torre, 2017), as well as on the necessity to match the demand (Berning *et al.*, 2013).

The choice to agglomerate for a retail food stores is a result of a trade-off between the advantages and the drawbacks it gets from the existing food network. Agglomerated areas reduce uncertainty on the products due to easier and less costly comparisons on technical characteristics, prices, etc. (Weber, 1972). Thus, agglomerated areas are a signal for low prices (Dudey, 1990) and optimal characteristics for differentiated products (Wolinsky, 1983; Fisher and Harrington, 1996, Konishi, 2005) as the competition is fiercer. Besides, Jones and Simmons (1993) argue that transportation costs (in money and time) determine the consumers' choices. In agglomerated areas, consumers may then favor multi-purpose shopping in order to avoid other transportation costs. Moreover, in agglomerated areas consumers may be indulged in other activities than the one they came for (Dellaert *et al.*, 1998; Popkowski Leszczyc *et al.*, 2004). Then, retail food stores benefits from a higher level of consumption (Lewison and Delozier, 1986). Finally, the agglomeration of same brand units create a spillover effect that may benefits the brand (Kim, Jap, 2015). The new units may beneficiate from clients, as well as the expertise and the organization of the former units.

However, agglomerated area may be harmful to small retail food stores versus large ones. Andrieux *et al.*, (2013) have noticed that, in France, large supermarkets in peripheral areas impacted negatively the number of small retail units in those areas. In line with those results, Berning *et al.* (2013) found that FM agglomerate with grocery stores, whereas more established traditional distribution channels decrease the probability of observing FM. Similarly with a study on the French region *Île-de-France*, Peiffer-Smadja and Torre (2017) confirm that the number of bakeries and butchers' in a municipality is negatively impacted by the number of large stores (20 employees and more), and positively impacted by the number of small stores (4 to 19 employees). They explain this impact by the heavily competitive environment large stores impose on small ones.

Furthermore, retail food stores must be beneficial and thus locate in areas with enough effective demand. American studies on retail food store availability highlight socio-economic determinants of this availability. Rich versus poor, predominantly White versus Black, Latino versus non-Latino zip codes in LA county were found to have more supermarkets per household (Shaffer, 2002). Alwitt and Donley (1997) show that poor versus non-poor neighborhoods in Chicago have fewer supermarkets, but more small grocery stores. Other studies based on multi-states sample found similar results, with low-versus high-income and Black versus White neighborhoods having fewer numbers of available supermarkets but significantly more grocery and convenience stores (Morland *et al.*, 2002a.b; Moore and Diez Roux, 2006). The type of

retail food store available is consequently dependent on the socio-economic characteristics of the neighborhood. Moreover, chain versus non-chain grocery stores have been found more likely to be located in non-poor zip code areas (Chung and Myers, 1999). They came to the conclusion that retail food stores choose to implant in a poor neighborhood when it provides quick services, with no charged multi-purpose purchasing consistent with the population's needs and means. Finally, Berning *et al.* (2013) used an industrial organization model to show that the number of FM in a zip code is driven by demand characteristics such as market size, educational level, and presence of children in households.

2.3 EMPIRICAL STRATEGY

As highlighted above, Organic and SFSC consumers are driven by environmental and ideological motives. They are also often more educated, wealthier and parents. We could consequently supposed that they are more willing to push the municipality to implement an ecological planning through an Agenda 21. Besides, the ideal conducted by SFSC and Organic has been first advertised by ecological parties, then the left parties, and finally every political parties. Yet, the main right political party advocates that SFSC and Organic food are meant to please a wealthy, well-educated part of the society, and voting on the left side of the political chess¹³⁸. Since economic rationale behind availability of SFC and Organic stores lead them to follow the potential demand, we can do the following hypothesis:

Hypotheses 1 SFSC and Organic stores are more available in municipalities where the political climate is favorable. In particular, the part of Left votes and the presence of a municipal Agenda 21 increase the probability to have SFC and Organic stores available.

Moreover, through their actions with the governance of school canteens and the exigence on the supplies, the mayors may influence the local supply. We have highlighted in the introduction that mayors with in-house school canteens may indulge suppliers to develop SFSC or other activities, through public auctions for local food. We also suppose that the mayors who control the supply chain for school canteens are willing to develop local organic supply. Then, we do the following hypothesis:

Hypothesis 2 In-house governance for school canteens is a tool to develop local SFSC and Organic stores, and thus it increases their availability.

¹³⁸ Seminar on Agriculture and Rurality of the French Republican Party, 3rd of February 2016.

To test those hypothesis, we use a Tobit and a Logit estimation model (as there are many observations with 0 retail stores of a given type):

$$y_{i,j} = X_{i,j}\beta_j + \varepsilon_{i,j}$$

With $y_{i,j}$ alternatively being the number of shops j ($j = \{\text{Organic, SFSC}\}$) and the dummy for the presence of shops j in the municipality i . $X_{i,j}$ stands for our set of variables, with coefficients depending on j . Finally, $\varepsilon_{i,j}$ is the term of error. We then compare the effects of our variables by comparing the coefficients of our equations. We conduct this study with and without Paris to control for the high availability of food retails in the capital.

Moreover, the variables accounting for food retails availability are calculated on two geographical areas. Indeed, the number of kilometers to shop depends on the characteristics of the municipality where the consumers live (INSEE, Budget de famille, 2011). In municipalities far from services, mainly rural, the population drives more than 5km to purchase 75% of their food and more than 10km to purchase 33% of it. Based on this, we created an “extended” availability of shops. For each municipality far from services (DATAR - INRA CESAER/ UFC-CNRS ThéMA/ Cemagref DTMA METAFORT, 2011), we extended the availability of food retails to municipalities within 10km, and to 5km for municipalities with few services. Urban municipalities have no extended availability as they mainly purchase their food in the municipality they live in.

Finally, our study does not include Food Markets as SFSC. First, because FM are not always SFSC and it is difficult nay impossible to know if there are any SFSC seller on a FM. Second, because there are no aggregated data for the presence and dates of FM per municipality. Finally, because we deliberately choose to study SFSC available on the internet to select those well-advertised to the largest.

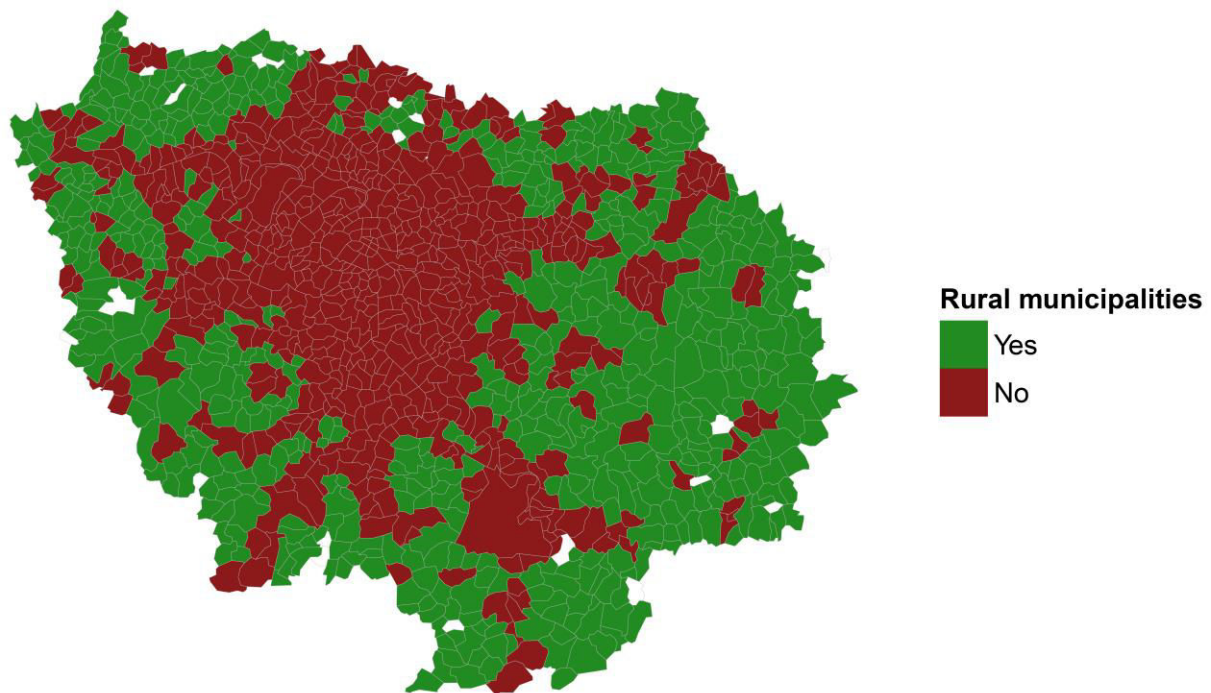
3 INSTITUTIONAL SETTINGS AND DATA DESCRIPTION

The French region *Île-de-France* is the most populated region in France with 12 million inhabitants, being 18% of the total French population. Paris accounts by itself for 2 million inhabitants, corresponding to 18% of the population in the region. There are 14 municipalities far from services, 835 municipalities with an access to services, and 405 urban municipalities¹³⁹ (DATAR - INRA CESAER/ UFC-CNRS ThéMA/ Cemagref DTMA METAFORT, 2011).

¹³⁹ Urban municipalities are defined by the INSEE since 2011 as having more than 10,000 jobs on their territory.

Among those municipalities 603 are considered as rural (data INSEE 2010), which means with a low population density and far from urban areas. They are mainly on the boarder of the region (Map 1).

MAP 1: THE REPARTITION OF RURAL MUNICIPALITIES IN THE REGION ÎLE-DE-FRANCE



Sources: INSEE 2010

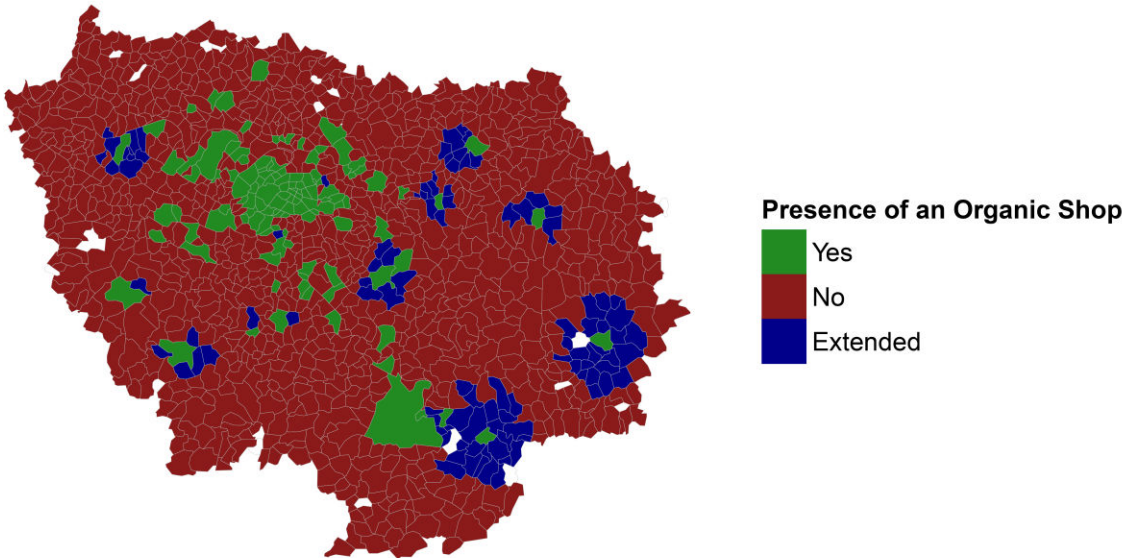
This region also accounts for 42.9% of the total amount of French large stores (above 500 employees) (Lanoe *et al.*, 2010). Moreover, there are 550 markets in this region, from 97 in Paris, to 43 in the department¹⁴⁰ *Essonne* and *Val-d'Oise* (Tuilier, 2013).

Furthermore, we collected data on SFSC and Organic shops over 1,254 municipalities. Organic shops entail seven major brands in the region *Île-de-France* (Biocoop, BioCBon, Carrefour Bio, Naturéo, Les Nouveaux Robinsons, La Vie Claire, Naturalia), while SFSC have been compiled through the website of five SFSC identified in the region *Île-de-France* (AMAP, La Ruche qui dit Oui !, Acheter à la Source, Bienvenue à la ferme, Mon Producteur). Thus, 111 municipalities have at least one specialized organic retail and 103 more municipalities have an extended access

¹⁴⁰ The Department is the administrative level between Municipalities and Regions. The Departments in the Region *Île-de-France* are Paris, Seine-et-Marne, Yvelines, Essonne, Hauts-de-Seine, Seine-Saint-Denis, Val-de-Marne and Val-d'Oise.

(Map 2), 469 have at least one SFSC retail and 560 more municipalities have an extended access (Map 3). Besides, supermarkets are defined as retail stores with more than two-third of the turnover on food. Their area is between 400 and 2,500 square meters. Hypermarkets are above 2,500 square meters, while Convenience Stores are between 120 and 400 square meters, and Groceries are specialized food retail stores of less than 120 square meters¹⁴¹. Butchers and bakeries are independent shops, thus excluding those in hypermarkets, supermarket, convenience stores, and groceries. Descriptive statistics of the number of food retail stores (extended and by municipality) are in Table1 for the whole region and in Table 2 for the region without Paris.

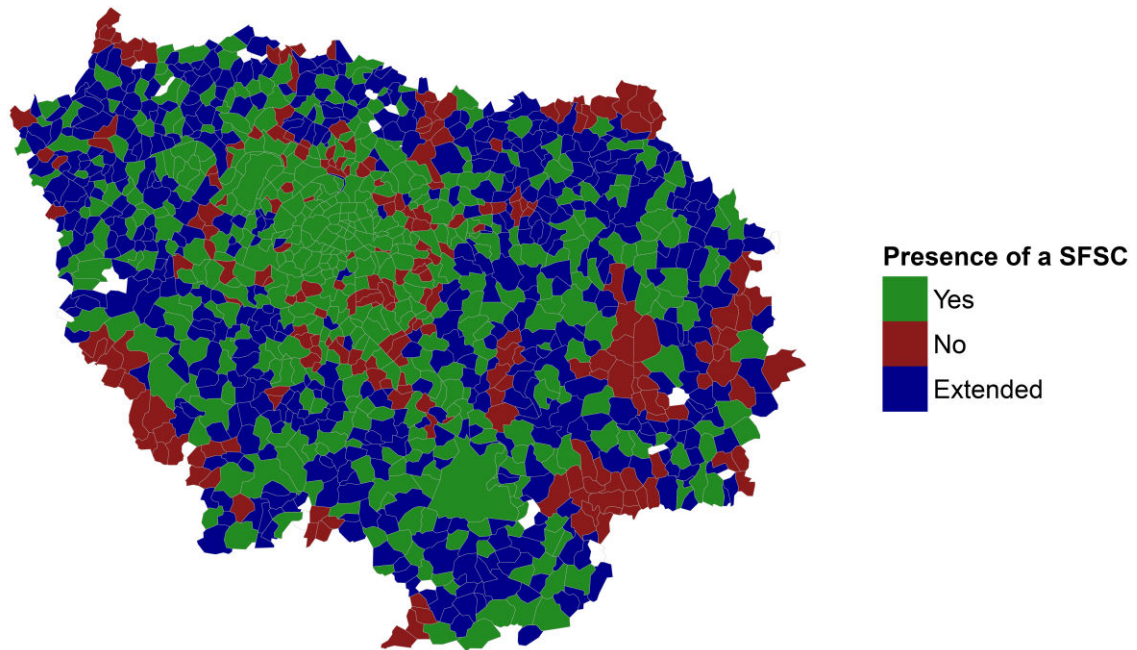
MAP 2: THE REPARTITION OF ORGANIC RETAILS IN THE REGION ÎLE-DE-FRANCE



Sources: websites of the specialized organic retails.

¹⁴¹ Database « Equipements », INSEE.

MAP 3: THE REPARTITION OF SFSC IN THE REGION ÎLE-DE-FRANCE



Sources: websites of the SFSC.

**TABLE 1: THE NUMBER OF FOOD RETAIL STORES IN THE REGION
ÎLE-DE-FRANCE, 2015**

	Number of municipalities	Mean	Standard Deviation	Min	Max
<i>Organic (extended)</i>	214	1.607	1.751	1	15
<i>Organic (municipal)</i>	111	2.081	2.305	1	15
<i>SFSC (extended)</i>	1,029	3.051	2.001	1	14
<i>SFSC (municipal)</i>	469	1.776	1.541	1	14
<i>Hypermarket (extended)</i>	324	1.392	.761	1	4
<i>Hypermarket (municipal)</i>	149	1.282	.570	1	4
<i>Supermarket (extended)</i>	880	3.817	4.666	1	51
<i>Supermarket (municipal)</i>	446	3.897	6.091	1	51
<i>Convenience Store (extended)</i>	517	2.634	4.094	1	35
<i>Convenience Store (municipal)</i>	266	3.560	5.408	1	35
<i>Bakery (extended)</i>	1,173	10.27	15.85	1	166
<i>Bakery (municipal)</i>	694	9.444	19.12	1	166
<i>Butchery (extended)</i>	1,028	5.714	8.575	1	107
<i>Butchery (municipal)</i>	501	6.351	11.32	1	107
<i>Grocery (extended)</i>	1,105	8.567	18.89	1	292
<i>Grocery (municipal)</i>	573	10.20	25.10	1	292

TABLE 2: THE NUMBER OF FOOD RETAIL STORES IN THE REGION ÎLE-DE-FRANCE WITHOUT PARIS, 2015

	Number of municipalities	Mean	Standard Deviation	Min	Max
<i>Organic (extended)</i>	194	1.186	.506	1	3
<i>Organic (municipal)</i>	91	1.286	.583	1	3
<i>SFSC (extended)</i>	1,009	2.990	1.908	1	13
<i>SFSC (municipal)</i>	449	1.584	1.019	1	10
<i>Hypermarket (extended)</i>	315	1.375	.740	1	4
<i>Supermarket (extended)</i>	860	3.329	2.644	1	22
<i>Convenience Store (extended)</i>	497	1.976	1.826	1	19
<i>Bakery (extended)</i>	1,153	8.789	9.932	1	80
<i>Butchery (extended)</i>	1,008	4.935	5.254	1	41
<i>Grocery (extended)</i>	1,085	6.725	9.628	1	104
<i>Hypermarket (municipal)</i>	140	1.236	.474	1	3
<i>Supermarket (municipal)</i>	426	2.915	2.762	1	22
<i>Convenience Store (municipal)</i>	246	2.305	2.189	1	19
<i>Bakery (municipal)</i>	674	6.880	10.04	1	80
<i>Butchery (municipal)</i>	481	4.744	5.900	1	41
<i>Grocery (municipal)</i>	553	6.651	11.28	1	104

Moreover, on the 1,254 municipalities in the region *Île-de-France*, 147 have implemented an Agenda 21, including the 20 arrondissements of Paris. To conduct this study, we also need socio-economic, demographic and political variables for each municipality. We, thus, gathered the percentage of the population by age group and the size of the population. We also gathered

the part of farmers and SPC+ (Higher Socio-Professional Category), as well as the number of unemployed people in the municipality. We also used the part of in-house school canteens for each of the 25 arrondissements in the region¹⁴² with data from chapter 1. Finally, to account for the ideology of the inhabitants, we gathered the political results of the left parties at the 1st round of the 2012 presidential elections, by municipality. Descriptive statistics are summarized in Table 3.

TABLE 3: DESCRIPTIVE STATISTICS OF VARIABLES IN THE REGION ÎLE-DE-FRANCE WITH AND WITHOUT PARIS

	Number of municipalities	Mean	Standard Deviation	Min	Max
<i>In-House School Canteens</i>	1,254	.212	.177	.0345	.889
<i>Without Paris</i>	1,234	.202	.161	.0345	.889
<i>Left, 2012</i>	1,254	.359	.0907	.115	.713
<i>Without Paris</i>	1,234	.358	.0893	.115	.713
<i>Pop. < 15 y.o.</i>	1,254	.205	.0298	.0868	.308
<i>Without Paris</i>	1,234	.206	.0286	.0868	.308
<i>Pop. 15 to 24 y.o.</i>	1,254	.118	.0224	.0432	.402
<i>Without Paris</i>	1,234	.118	.0223	.0432	.402
<i>Pop. 25 to 64 y.o.</i>	1,254	.541	.0308	.343	.666
<i>Without Paris</i>	1,234	.540	.0303	.343	.666
<i>Pop 65 y.o. and more</i>	1,254	.136	.0416	.0282	.522
<i>Without Paris</i>	1,234	.136	.0417	.0282	.522
<i>SPC+</i>	1,254	.177	.0911	0	.512
<i>Without Paris</i>	1,234	.174	.0892	0	.512
<i>Farmers</i>	1,254	.0101	.0219	0	.207
<i>Without Paris</i>	1,234	.0102	.0220	0	.207
<i>Unemployment</i>	1,254	581.4	1,668	5	21,438
<i>Without Paris</i>	1,234	452.7	1,054	5	10,311
<i>Population</i>	1,254	9,293	21,675	98	237,120
<i>Without Paris</i>	1,234	7,637	14,977	98	116,794

¹⁴² Those arrondissement are an administrative level between municipality and departments, corresponding to a subprefecture area. Those arrondissements are different from Paris arrondissements, which are a submunicipal area.

4 RESULTS

4.1 RESULTS OF THE DETERMINANTS OF THE EXTENDED AVAILABILITY OF SFSC AND ORGANIC FOOD SHOPS IN THE FRENCH REGION *ÎLE-DE-FRANCE*

We first estimate the extended availability of SFSC and Organic food shops in the French region *Île-de-France* (Table 4), with (equations 1 and 2) and without (equations 3 and 4) Paris. We found no effect of the variable Agenda 21 on the extended availability of SFSC and Organic food shops. Equation 1 might underline an effect, but this does not stand once we take Paris off the observations. The ideology of the inhabitants, measured as the part of the left votes at the 2012 presidential election, has an influence on the extended availability of SFSC. On the contrary to what we expected, the part of the left votes decreases the extended availability of SFSC, in opposition with hypothesis 1. Similarly, the part of in-house school canteens decreases the extended availability of SFSC, in opposition with hypothesis 2.

Moreover, the extended availability of SFSC and Organic shops are positively influence by the extended availability of supermarkets and bakeries, and of hypermarket and for Organic shops only. Those results are in line with the SFSC and Organic consumers' habits. On the contrary, the extended availability of groceries decrease the extended availability of SFSC and Organic shops. This might be explained by a competitive effect between those shops all specialized in vegetables. SFSC and Organic shops might thus replace groceries, or choose to implant where the supply for groceries is already low. This reminds to study in further researches.

Furthermore, the part of the extended availability of SFSC and Organic shops is positively influenced by the part of the population between 25 and 4 years old, in line with the consumer's profiles. Surprisingly, however, the part of children in the population (less than 15 years old) reduces the extended availability of SFSC and Organic shops. This might be due to a revenue effect. Besides, the part of SPC+ increases the extended availability of SFSC, while the part of farmers decreases it. For Organic shops the similar effect for SPC+ does not hold without Paris. The unemployment also have a different effect on the extended availability of SFSC and Organic shops. It increases the extended availability of SFSC while it decreases the extended availability of Organic shops. This might reflect a revenue effect for Organic shops. Concerning SFSC, however, it might highlight a social inclusive effect (Chiffolleau, 2012), in line with the values of SFSC described above. Similarly, the rural municipalities have a higher extended

availability of SFSC. Finally, the size of the population increases the extended availability of Organic shops and decreases the one of SFSC.

TABLE 4: DETERMINANTS OF THE EXTENDED AVAILABILITY OF SFSC AND ORGANIC FOOD SHOPS IN THE FRENCH REGION ÎLE-DE-FRANCE, WITH AND WITHOUT PARIS (TOBIT)

	(1) Organic Tobit	(2) SFSC Tobit	(3) Organic Tobit	(4) SFSC Tobit
<i>Agenda 21</i>	.311+ (.136)	-.166 (.494)	.243 (.187)	-.0454 (.854)
<i>In-House School Canteens</i>	.0444 (.931)	-1.288** (.0155)	.188 (.689)	-.870+ (.112)
<i>Left, 2012</i>	1.257 (.276)	-2.478** (.0288)	.924 (.385)	-1.823+ (.118)
<i>Hypermarket</i>	.552*** (1.19e-08)	-.0990 (.398)	.572*** (1.11e-10)	-.172 (.161)
<i>Supermarket</i>	.124*** (6.01e-05)	.141*** (.000214)	.124*** (.000189)	.148*** (.000652)
<i>Convenience Store</i>	.0272 (.523)	.0134 (.808)	-.116** (.0310)	.0389 (.590)
<i>Bakery</i>	.0497*** (.000659)	.0610*** (.00118)	.0557*** (.000555)	.0922*** (2.71e-05)
<i>Butchery</i>	.0488* (.0552)	.0334 (.287)	.0397+ (.129)	.00895 (.800)
<i>Grocery</i>	-.0313** (.0114)	-.0344** (.0331)	-.0440*** (.00774)	-.0555*** (.00939)
<i>Pop. < 15 y.o.</i>	-10.85*** (.00225)	-7.118** (.0277)	-5.023+ (.121)	-7.598** (.0201)
<i>Pop. 15 to 24 y.o.</i>	-12.68*** (.00334)	1.224 (.733)	-8.658** (.0285)	1.500 (.679)
<i>Pop 65 y.o. and more</i>	-.576 (.816)	.696 (.769)	1.251 (.572)	.402 (.866)
<i>SPC+</i>	2.648*** (.00420)	1.694** (.0451)	.996 (.232)	1.686** (.0496)
<i>Farmers</i>	-.101 (.984)	-7.574** (.0302)	-.278 (.949)	-7.013** (.0442)
<i>Unemployment</i>	-4.60e-05 (.761)	.000669*** (.00107)	-.000841*** (.000151)	.000565* (.0638)
<i>Population</i>	-5.64e-06 (.575)	-6.96e-05*** (4.52e-07)	6.06e-05*** (2.99e-05)	-7.24e-05*** (.000386)
<i>Rural</i>	-.294+ (.126)	.419** (.0174)	-.116 (.497)	.435** (.0149)
<i>Observations</i>	1,254	1,254	1,234	1,234
<i>Pseudo R-squared</i>	.308	.0383	.260	.0265

*pval in parentheses, *** p<0.01, ** p<0.05, * p<0.10, + p<0.15*

We have studied the extended availability of SFSC and Organic shops measured in number of shops. We now control by measuring their extended availability as a dummy variable (Table 5), with (equations 5 and 6) and without (equations 7 and 8) Paris. We find that the part of left votes at the 2012 presidential election does not influence the extended availability of SFSC anymore. On the contrary, the presence of an Agenda 21 influences positively the extended availability of Organic shops. The negative effect of in-house governance of school canteens is reinforced on SFSC. We find similar results for every other variables.

TABLE 5: DETERMINANTS OF THE EXTENDED AVAILABILITY OF SFSC AND ORGANIC FOOD SHOPS IN THE FRENCH REGION ÎLE-DE-FRANCE, WITH AND WITHOUT PARIS (LOGIT)

	(5) Organic Logit	(6) SFSC Logit	(7) Organic Logit	(8) SFSC Logit
<i>Agenda 21</i>	.697** (.0197)	.267 (.356)	.676** (.0249)	.265 (.360)
<i>In-House School Canteens</i>	-.543 (.504)	-1.262** (.0270)	-.192 (.817)	-1.265** (.0267)
<i>Left, 2012</i>	-.337 (.850)	.374 (.779)	.496 (.790)	.373 (.780)
<i>Hypermarket</i>	1.099*** (0)	-.0329 (.826)	1.148*** (0)	-.0324 (.829)
<i>Supermarket</i>	.173*** (.00119)	.150** (.0111)	.143** (.0138)	.151** (.0109)
<i>Convenience Store</i>	-.0530 (.467)	.110 (.271)	-.225** (.0259)	.108 (.283)
<i>Bakery</i>	.179*** (7.17e-10)	.0581* (.0776)	.238*** (0)	.0576* (.0810)
<i>Butchery</i>	.0163 (.706)	-.00600 (.889)	.0225 (.619)	-.00550 (.898)
<i>Grocery</i>	-.0694*** (.000793)	-.000203 (.994)	-.148*** (4.89e-06)	-.000250 (.993)
<i>Pop. < 15 y.o.</i>	-8.378+ (.111)	-7.984** (.0327)	-5.402 (.321)	-7.961** (.0333)
<i>Pop. 15 to 24 y.o.</i>	-13.25** (.0437)	1.279 (.779)	-12.95* (.0573)	1.282 (.778)
<i>Pop 65 y.o. and more</i>	1.050 (.766)	-1.577 (.569)	1.914 (.596)	-1.569 (.571)
<i>SPC+</i>	2.933** (.0339)	3.152*** (.00269)	1.877 (.196)	3.148*** (.00272)
<i>Farmers</i>	2.633 (.717)	-5.108+ (.138)	2.755 (.709)	-5.117+ (.137)
<i>Unemployment</i>	-.00141***	-.000202	-.00177***	-.000201

	(7.72e-05)	(.655)	(.000135)	(.655)
<i>Population</i>	8.09e-05***	-1.48e-05	.000116***	-1.46e-05
	(.00138)	(.622)	(.000159)	(.626)
<i>Rural</i>	.100	.699***	.188	.699***
	(.728)	(.000934)	(.526)	(.000935)
<i>Observations</i>	1,254	1,254	1,234	1,234
<i>Pseudo R-squared</i>	.430	.0756	.412	.0694
<i>R-squared MZ</i>	.6843	.3363	.5776	.1761

*pval in parentheses, *** p<0.01, ** p<0.05, * p<0.10, + p<0.15*

Finally, the Pseudo R-Squared are low for SFSC equations. However, as underlined by Veall, and Zimmermann (1994), the McFadden Pseudo R-Squared in the tables systematically underestimate the explanation of the model for Tobit and Logit estimations. The MZ R-Squared (McKelvey and Zavoina, 1975) is more adapted to Logit estimations, but there is no consensus on which R-Squared should be used for Tobit estimations. We, thus, consider our variables to explain our models more than the Pseudo R-Squared.

4.2 RESULTS OF THE DETERMINANTS OF THE AVAILABILITY BY MUNICIPALITY OF SFSC AND ORGANIC FOOD SHOPS IN THE FRENCH REGION ÎLE-DE-FRANCE

We now control our results with the same regressions, but the availability of shops is now measured in the municipality (Table 6), with (equations 9 and 10) and without (equations 11 and 12) Paris. We find that the presence of a municipal Agenda 21 and the part of left votes at the 2012 presidential election positively increases the availability of Organic shops. The part of in-house school canteens has no influence on our explained variables. Moreover, the municipal availability of SFSC does not depend on other shops (but supermarkets) and age of the population anymore. The effects are also less strong for Organic shops. Besides, unemployment has now a negative effect on the municipal availability of SFSC, and population a positive one. Other variables have similar effects than with extended availability.

TABLE 6: DETERMINANTS OF THE AVAILABILITY BY MUNICIPALITY OF SFSC AND ORGANIC FOOD SHOPS IN THE FRENCH REGION ÎLE-DE-FRANCE, WITH AND WITHOUT PARIS (TOBIT)

	(9) Organic Tobit	(10) SFSC Tobit	(11) Organic Tobit	(12) SFSC Tobit
<i>Agenda 21</i>	.480** (.0471)	-.0167 (.939)	.461** (.0353)	-.0228 (.916)
<i>In-House School Canteens</i>	-.631 (.318)	.0900 (.852)	-.278 (.649)	.141 (.776)
<i>Left, 2012</i>	5.871*** (.000286)	.928 (.398)	5.057*** (.00195)	1.695+ (.134)
<i>Hypermarket</i>	.635*** (.000184)	.114 (.491)	.716*** (1.74e-05)	.183 (.295)
<i>Supermarket</i>	.0911** (.0270)	-.000316 (.994)	.137** (.0147)	-.0272 (.657)
<i>Convenience Store</i>	.0366 (.469)	.0446 (.415)	-.0410 (.559)	-.0617 (.420)
<i>Bakery</i>	.0768*** (.000473)	.0124 (.588)	.133*** (9.72e-05)	.0506+ (.136)
<i>Butchery</i>	.0538+ (.119)	-.00863 (.808)	-.0128 (.738)	-.0283 (.489)
<i>Grocery</i>	-.0314** (.0406)	.00762 (.644)	-.0170 (.426)	-.0127 (.583)
<i>Pop. < 15 y.o.</i>	-8.605+ (.132)	-1.963 (.544)	-4.722 (.408)	-1.144 (.724)
<i>Pop. 15 to 24 y.o.</i>	-14.91** (.0179)	4.958 (.162)	-8.306 (.185)	4.664 (.192)
<i>Pop 65 y.o. and more</i>	3.193 (.408)	3.265 (.163)	4.244 (.261)	3.151 (.179)
<i>SPC+</i>	7.194*** (1.67e-07)	1.962** (.0171)	5.239*** (7.27e-05)	1.275+ (.126)
<i>Farmers</i>	-93.02** (.0454)	1.560 (.663)	-64.36+ (.116)	1.779 (.614)
<i>Unemployment</i>	-.000205 (.230)	7.75e-05 (.672)	-.00119*** (4.53e-05)	-.000633** (.0285)
<i>Population</i>	-1.07e-05 (.463)	2.44e-05+ (.119)	3.43e-05* (.0989)	7.58e-05*** (.000776)
<i>Rural</i>	-	-.361** (.0362)	-	-.225 (.197)
<i>Observations</i>	1,254	1,254	1,234	1,234
<i>Pseudo R-squared</i>	.428	.124	.381	.0717

*pval in parentheses, *** p<0.01, ** p<0.05, * p<0.10, + p<0.15*

Finally, we control with municipal availability measured as dummy variables for shops (Table 7), with (equations 13 and 14) and without (equations 15 and 16) Paris. Except for a slight

negative effect of the in-house school canteens on the municipal availability of Organic shops, there are no change in the signs of the coefficients.

TABLE 7: DETERMINANTS OF THE AVAILABILITY BY MUNICIPALITY OF SFSC AND ORGANIC FOOD SHOPS IN THE FRENCH REGION ÎLE-DE-FRANCE, WITH AND WITHOUT PARIS (LOGIT)

	(13) Organic Logit	(14) SFSC Logit	(15) Organic Logit	(16) SFSC Logit
<i>Agenda 21</i>	1.044*** (.00223)	.0584 (.803)	1.060*** (.00193)	.0261 (.912)
<i>In-House School Canteens</i>	-1.748+ (.118)	-.303 (.553)	-1.666+ (.140)	-.340 (.511)
<i>Left, 2012</i>	6.671** (.0167)	1.314 (.249)	7.002** (.0135)	1.199 (.298)
<i>Hypermarket</i>	1.126*** (3.42e-05)	.0548 (.785)	1.136*** (3.08e-05)	.0351 (.862)
<i>Supermarket</i>	.331*** (.000974)	.0766 (.303)	.301*** (.00640)	.0585 (.459)
<i>Convenience Store</i>	.0929 (.419)	-.0923 (.312)	.0416 (.769)	-.176* (.0976)
<i>Bakery</i>	.242*** (6.91e-06)	.0513 (.158)	.247*** (8.06e-06)	.0281 (.503)
<i>Butchery</i>	-.0112 (.876)	-.0213 (.667)	-.0133 (.854)	-.00843 (.873)
<i>Grocery</i>	-.0232 (.471)	.00492 (.860)	-.0232 (.488)	-.00406 (.890)
<i>Pop. < 15 y.o.</i>	-7.589 (.465)	-1.049 (.740)	-7.072 (.499)	-.601 (.850)
<i>Pop. 15 to 24 y.o.</i>	-20.79* (.0668)	2.789 (.419)	-21.61* (.0590)	2.951 (.392)
<i>Pop 65 y.o. and more</i>	5.542 (.416)	2.682 (.234)	5.615 (.411)	3.038 (.180)
<i>SPC+</i>	7.279*** (.000670)	1.384* (.0907)	7.200*** (.000790)	1.242+ (.131)
<i>Farmers</i>	-88.06 (.202)	1.910 (.570)	-87.70 (.204)	1.776 (.598)
<i>Unemployment</i>	-.00279*** (9.23e-08)	-.00108*** (.00635)	-.00289*** (2.16e-07)	-.00103** (.0140)
<i>Population</i>	9.37e-05*** (.00586)	.000107*** (.000158)	.000103*** (.00534)	.000124*** (4.79e-05)
<i>Rural</i>	-	-.0371 (.829)	-	-.0370 (.830)
<i>Observations</i>	1,254	1,254	1,234	1,234
<i>Pseudo R-squared</i>	.589	.139	.526	.120
<i>R-squared MZ</i>	.8459	.4111	.7587	.247

4.3 COMPARED DETERMINANTS OF THE EXTENDED AND MUNICIPAL AVAILABILITY OF SFSC AND ORGANIC FOOD SHOPS IN THE FRENCH REGION ÎLE-DE-FRANCE, WITH AND WITHOUT PARIS

We finally compared the determinants of our previous estimations (Table 8). Two interesting effects are to be discussed. First, the presence of an Agenda 21 has a greater positive impact on the municipal availability of Organic shops. Identically, the part of the left votes at the 2012 presidential election influences positively the municipal availability of Organic shops. This is coherent with a municipal political action to develop Organic shops inside the municipality. Moreover, there is no clear impact of those variables on the municipal availability of SFSC. This might be due to the fact that unlike Organic shops, SFSC are still AAFNs so they do not develop through political actions. Second, SFSC seem to be more available in a municipality when unemployment is low, but more available in the extended area when unemployment is high. Similarly, the size of the population has a positive impact on the municipal availability of SFSC, but not for the extended availability. Those two effects may highlight a tendency for SFSC to both answer to the demands of an urban and wealthy population, as well as to the need of a more excluded suburban population. This could reflect the transformation of SFSC from AAFNs to conventional food network, as for Organic shops (Lockie, 2008). Yet, SFSC seems still to play an inclusive role as they are complementary to other shops in a large area but not in the municipality. Their availability seems then to depend more on a will to connect the whole territory than to focus on cities already supplied by conventional food networks.

TABLE 8: COMPARED DETERMINANTS OF THE EXTENDED AND MUNICIPAL AVAILABILITY OF SFSC AND ORGANIC FOOD SHOPS IN THE FRENCH REGION ÎLE-DE-FRANCE, WITH AND WITHOUT PARIS (LOGIT and TOBIT)

<i>Extended (Municipal)</i>	ORGANIC				SFSC			
	With Paris		Without Paris		With Paris		Without Paris	
	Tobit	Logit	Tobit	Logit	Tobit	Logit	Tobit	Logit
<i>Agenda 21</i>	+ (+)	+ (+)	(+)	+ (+)				
<i>In-House School Canteens</i>		(-)		(-)	-	-	-	-
<i>Left, 2012</i>	(+)	(+)	(+)	(+)	-		- (+)	
<i>Hypermarket</i>	+ (+)	+ (+)	+ (+)	+ (+)				
<i>Supermarket</i>	+ (+)	+ (+)	+ (+)	+ (+)	+	+	+	+
<i>Convenience Store</i>			-	-				(-)
<i>Bakery</i>	+ (+)	+ (+)	+ (+)	+ (+)	+	+	+ (+)	+
<i>Butchery</i>	+ (+)		+					
<i>Grocery</i>	- (-)	-	-	-	-	-	-	-
<i>Pop. < 15 y.o.</i>	- (-)	-	-	-	-	-	-	-
<i>Pop. 15 to 24 y.o.</i>	- (-)	- (-)	-	- (-)				
<i>Pop 65 y.o. and more</i>								
<i>SPC+</i>	+ (+)	+ (+)	(+)	(+)	+ (+)	+ (+)	+ (+)	+ (+)

<i>Farmers</i>	(-)	(-)	-	-	-	-	
<i>Unemployment</i>	- (-)	- (-)	- (-)	+	(-)	+ (-)	(-)
<i>Population</i>	+ (+)	+ (+)	- (+)	(+)	- (+)	(+)	(+)
<i>Rural</i>				+ (-)	+	+	+

Note: In black (no parentheses), the sign of the significant coefficients for extended availability. In red (with parentheses), the sign of the significant coefficients for municipal availability.

5 SUMMARY OF RESULTS AND LIMITS

In this chapter we highlighted ideological motives for SFSC and Organic consumption. We assumed those motives to be motivated by socio-economic characteristics of the consumer as identified by the literature (Gandee *et al.*, 2003; Baudry *et al.*, 2015). We, then, tested if the ideology of the citizens may increase the availability of SFSC and Organic shops, as a consequence of the action of the local politics to please the citizens. To do so, we first gathered data on socio-economic, demographic and political characteristics of citizens by municipality. We also gathered geographical information on SFSC and Organic shops, and defined two level of availability for shops: municipal and extended.

We found that an Agenda 21 and a city voting more for left parties have a higher availability of Organic shops. The effect is restricted to the municipal availability, which seems to reflect the influence of the municipal political bodies. Yet, we do not know if the availability of Organic shops in those municipalities is driven by political action, or is the result of a signal given to Organic shops that the consumers are many. Similarly, we cannot tell if those municipalities create the conditions for the availability of Organic shops, or if they attract the demand from a larger geographical area to the detriment of other cities. Those two questions are interesting to better implement an organic food procurement at a larger geographical level. We let them to further researches.

We also found that a larger network of in-house school canteens has no impact on the availability of Organic shops. We propose two explanations for that. First, a municipality may not develop different organic food networks than a private partner. Second, the impacts of school canteens on local supply are still too low to measure with econometrics. On the contrary, a larger network of in-house school canteens seems to decrease the availability of SFSC. This could be explained by a lack in our data for SFSC. Indeed, SFSC are many and not all available

on the internet, and partnerships with farmers may end up with a direct sale to the parents without passing by the internet. As a consequence, this SFSC would not be in our dataset, but would still catch a part of the demand, and thus decrease the need for on internet SFSC. Case studies on partnerships between a municipality and a farmer would be interesting to conduct in order to highlight the impact of those partnerships on local SFSC and Organic shops.

Furthermore, our control variables seem to have highlighted a dual role of SFSC. On the one hand, SFSC seem to favor rich and educated geographical areas. On the other hand, SFSC are more available to unemployed and suburban areas. We expect this to reflect the transformation of SFSC into a more conventional food network.

Finally, our results are limited for two main reasons. First, we did not take into account the border municipalities of the region to calculate the extended availability. However, we controlled for different distances and found similar results. Besides, the border municipalities are mostly rural municipalities, which would not increase shops availability by much. Second, if we are the first to our knowledge to prove an effect of political variables on SFSC and Organic shops availability, we can only offer alternative explanations that remains to be studied to develop recommendations for public policies.

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Database « Equipements », INSEE, available at: <https://www.insee.fr/fr/statistiques/2410933>

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10 ANNEX

ANNEX 1: CORRELATION MATRIX

	1	2	3	4	5	6	7	8	
1	<i>SFSC (municipal)</i>	1.00							
2	<i>Organic (municipal)</i>	.59	1.00						
3	<i>Dummy SFSC (extended)</i>	.24	.07	1.00					
4	<i>Dummy Organic (extended)</i>	.27	.45	.05	1.00				
5	<i>SFSC (extended)</i>	.42	.20	.54	.09	1.00			
6	<i>Dummy SFSC (municipal)</i>	.67	.23	.36	.19	.25	1.00		
7	<i>Organic (extended)</i>	.55	.95	.07	.64	.21	.21	1.00	
8	<i>Dummy Organic (municipal)</i>	.42	.65	.08	.70	.06	.31	.62	1.00
9	<i>Agenda 21</i>	.30	.37	.04	.25	.03	.21	.34	.38
10	<i>In-House</i>	.39	.42	-.02	.23	.01	.26	.38	.39
11	<i>Left, 2012</i>	.26	.19	-.03	.15	-.07	.24	.17	.22
12	<i>Hypermarket (extended)</i>	.15	.16	.05	.47	.08	.08	.29	.20
13	<i>Supermarket (extended)</i>	.57	.76	.12	.45	.28	.23	.78	.47
14	<i>Convenience (extended)</i>	.64	.83	.08	.36	.24	.23	.79	.49
15	<i>Bakery (extended)</i>	.60	.77	.11	.48	.27	.25	.80	.50
16	<i>Butchery (extended)</i>	.60	.74	.09	.43	.26	.22	.76	.45
17	<i>Grocery (extended)</i>	.62	.78	.08	.35	.25	.22	.76	.44
18	<i>Hypermarket (municipal)</i>	.34	.34	.04	.26	.02	.23	.30	.42
19	<i>Supermarket (municipal)</i>	.65	.84	.06	.36	.19	.29	.79	.55
20	<i>Convenience (municipal)</i>	.66	.86	.05	.34	.21	.24	.80	.52
21	<i>Bakery (municipal)</i>	.68	.85	.05	.37	.18	.30	.79	.57
22	<i>Butchery (municipal)</i>	.67	.81	.05	.33	.19	.28	.76	.51
23	<i>Grocery (municipal)</i>	.66	.81	.05	.30	.21	.24	.76	.46
24	<i>Pop. < 15 y.o.</i>	-.17	-.25	-.09	-.13	-.14	-.08	-.24	-.18
25	<i>Pop. 15 to 24 y.o.</i>	.14	.08	.02	.05	.01	.12	.07	.09
26	<i>Pop. 25 to 64 y.o.</i>	.01	.11	.05	-.01	.04	-.08	.10	.00
27	<i>Pop 65 y.o. and more</i>	.04	.05	.02	.08	.07	.05	.06	.08
28	<i>SPC+</i>	.18	.26	.11	.11	.09	.13	.22	.26

29	<i>Farmers</i>	-.11	-.09	-.07	-.10	-.05	-.11	-.09	-.14
30	<i>Unemployment</i>	.66	.74	.04	.31	.17	.29	.69	.48
31	<i>Population</i>	.66	.76	.04	.36	.14	.33	.71	.57
32	<i>Rural</i>	-.24	-.20	.04	-.21	.04	-.25	-.19	-.30
		9	10	11	12	13	14	15	16
9	<i>Agenda 21</i>	1.00							
10	<i>In-House</i>	.37	1.00						
11	<i>Left, 2012</i>	.34	.48	1.00					
12	<i>Hypermarket (extended)</i>	.18	.10	.24	1.00				
13	<i>Supermarket (extended)</i>	.39	.46	.32	.36	1.00			
14	<i>Convenience (extended)</i>	.41	.50	.28	.26	.82	1.00		
15	<i>Bakery (extended)</i>	.43	.52	.37	.44	.90	.88	1.00	
16	<i>Butchery (extended)</i>	.39	.47	.36	.40	.87	.86	.95	1.00
17	<i>Grocery (extended)</i>	.40	.51	.37	.30	.84	.87	.93	.94
18	<i>Hypermarket (municipal)</i>	.31	.34	.38	.58	.40	.37	.43	.39
19	<i>Supermarket (municipal)</i>	.45	.54	.34	.24	.90	.86	.86	.83
20	<i>Convenience (municipal)</i>	.42	.52	.29	.19	.80	.97	.84	.83
21	<i>Bakery (municipal)</i>	.47	.59	.40	.25	.84	.89	.91	.88
22	<i>Butchery (municipal)</i>	.43	.55	.39	.22	.81	.87	.88	.92
23	<i>Grocery (municipal)</i>	.42	.54	.37	.20	.80	.86	.87	.89
24	<i>Pop. < 15 y.o.</i>	-.08	-.17	.11	.04	-.18	-.21	-.17	-.14
25	<i>Pop. 15 to 24 y.o.</i>	.15	.17	.33	.10	.16	.14	.18	.16
26	<i>Pop. 25 to 64 y.o.</i>	-.03	-.02	-.05	-.05	.01	.08	.05	.02
27	<i>Pop 65 y.o. and more</i>	-.01	.04	-.22	-.04	.03	.01	-.01	-.00
28	<i>SPC+</i>	.13	.17	-.12	-.10	.16	.21	.15	.11
29	<i>Farmers</i>	-.15	-.18	-.29	-.11	-.17	-.12	-.17	-.15
30	<i>Unemployment</i>	.45	.56	.50	.26	.78	.83	.85	.87
31	<i>Population</i>	.48	.60	.47	.30	.81	.84	.86	.85
32	<i>Rural</i>	-.31	-.40	-.48	-.22	-.32	-.25	-.31	-.30
		17	18	19	20	21	22	23	24
17	<i>Grocery (extended)</i>	1.00							
18	<i>Hypermarket (municipal)</i>	.37	1.00						
19	<i>Supermarket (municipal)</i>	.85	.46	1.00					
20	<i>Convenience (municipal)</i>	.86	.38	.89	1.00				

21	<i>Bakery (municipal)</i>	.91	.48	.94	.92	1.00			
22	<i>Butchery (municipal)</i>	.92	.44	.91	.90	.96	1.00		
23	<i>Grocery (municipal)</i>	.96	.39	.89	.89	.95	.96	1.00	
24	<i>Pop. < 15 y.o.</i>	-.15	.01	-.19	-.22	-.20	-.16	-.17	1.00
25	<i>Pop. 15 to 24 y.o.</i>	.15	.17	.16	.13	.18	.15	.13	-.09
26	<i>Pop. 25 to 64 y.o.</i>	.08	-.09	.02	.07	.03	.02	.07	-.08
27	<i>Pop 65 y.o. and more</i>	-.03	-.04	.03	.03	.02	.02	-.01	-.60
28	<i>SPC+</i>	.11	.02	.20	.22	.19	.16	.15	-.22
29	<i>Farmers</i>	-.13	-.14	-.15	-.11	-.15	-.14	-.11	.01
30	<i>Unemployment</i>	.90	.50	.88	.86	.94	.95	.94	-.10
31	<i>Population</i>	.85	.57	.92	.87	.95	.93	.89	-.13
32	<i>Rural</i>	-.25	-.31	-.32	-.25	-.32	-.30	-.24	.08
		25	26	27	28	29	30	31	32
25	<i>Pop. 15 to 24 y.o.</i>	1.00							
26	<i>Pop. 25 to 64 y.o.</i>	-.24	1.00						
27	<i>Pop 65 y.o. and more</i>	-.30	-.55	1.00					
28	<i>SPC+</i>	.06	.03	.10	1.00				
29	<i>Farmers</i>	-.16	.11	-.00	-.22	1.00			
30	<i>Unemployment</i>	.17	.03	-.04	.11	-.15	1.00		
31	<i>Population</i>	.20	-.02	-.00	.18	-.18	.96	1.00	
32	<i>Rural</i>	-.27	.23	-.08	-.18	.38	-.32	-.38	1.00

GENERAL CONCLUSION

In this thesis, we first aimed at studying the importance of political and ideological factors on the governance of the provision of local public services. The particular service we analyzed is the provision of meals in French municipal school canteens. In our context, the governance of public services is made of two sequential decisions: first, the choice of organizational modes, namely in-house production or delegation to a private firm; second the design of the contract between the municipality and the private caterers once the local public authority has decided to externalize the procurement. We were interested in the drivers of these choices. We argued that, given the trade-off between transparency on costs and transparency on quality, citizen's sensitivity to public finances and to environmental issues would influence the organizational choices made by a public body. To do so, we first studied the determinants of the make-or-buy choice for municipal school canteens in the French region *Île-de-France* (Chapter 1), with a focus on political variables while controlling for other factors identified in the literature. Then, we studied the design of catering contracts to highlight the differences in contractual design according to the nature of the client (public or private), and showed that public contracts are more complete and specified than private contracts (Chapter 2). We attempted to link these differences to political factors to understand how to improve contract efficiency to help design public policies, and highlight the importance of transparency for an efficient public service.

On the supply side, the literature has focused on the food service and production sector. It has highlighted interactions between the governance of food structures in the market and the regulation (Hobbs and Young, 2000; Ménard and Klein, 2004), one influencing the other. The managers of those structures are looking to increase the efficiency of the organization, in view of coordination issues in the sector. Those issues are perishability (Masten, 2000), traceability of the quality along the supply chain (Goodhue *et al.*, 2003; Raynaud *et al.*, 2005), or again the commercial strategy (Raynaud *et al.*, 2009). A part of this literature also has investigated the emergence of more direct relations between consumers and producers (Cembalo *et al.*, 2013; Pascucci, 2010). Even if there are existing works in sociology or geography on the development of direct supply chains in institutional catering (Le Velly and Bréchet, 2011; Morgan and Sonnino, 2008), it has not been much investigated in the field of economics. Yet, economic studies show that the implementation of direct food supply chains in institutional catering engenders organizational issues unknown to “standards” food supply chains (Traversac, 2010).

Still, to our knowledge no study has been done to conciliate economic issues with sociology and geography constraints in the availability of Alternative Agri-Food Networks. The second main objective of the thesis was, thus, to study the availability of Alternative Agri-Food Networks depending on the sociology of the population, and their interactions with institutional catering governance and politics (Chapter 3).

SUMMARY OF MAIN FINDINGS AND CONTRIBUTIONS

In this thesis, we first found that the political contestation influences the governance of public services, through the Make-or-Buy choice (Chapter 1) and the rigidity of contracts (Chapter 2) (Table 1). This is important to explain the sometimes observed sources of inefficiencies in public services governance. The key-point to decrease the risk of political contestation, and thus increase the part of economic considerations for the choices of governance is transparency. For public policies it implies that the way in which governance trade-offs are achieved and the reasons why they occur should be made much more transparent to all the stakeholders, including citizens (Saussier and Tirole, 2015).

Due to interactions between school canteens and the local food network, we investigated the political determinants of the availability of SFSC and Organic shops. This is important as many consider the public demand to be a way to structure the local supply. We found that politics indeed influence the availability of SFSC and Organic shops (Table 1), but could not tell anything on the implications.

TABLE 1: SUMMARIZED RESULTS OF THE THREE CHAPTERS

<i>Chapter</i>	<i>Methodology and data</i>	<i>Main results</i>
<ul style="list-style-type: none"> • Chapter 1. The Politics of Make-Or-Buy in Public Food Procurement: Insights from Institutional Catering in the French School System. • Research Question. Does political contestation influence the Make-or-Buy choice for local public services? Can signal toward price and quality modify the impact of political contestation on the Make-or-Buy choice? 	<ul style="list-style-type: none"> • Econometric analysis (Logit with political contestation variables and signal toward quality). • 712 mode of governance for public school canteens in the French region <i>Île-de-France</i>. • 391 municipalities with 2008 political data, 600 with 2014 political data. • Source: Original database manually coded by the authors, French Home Office, INSEE. 	<ul style="list-style-type: none"> • The Make-or-Buy choice for municipal school canteens is permeable to political contestation. In particular, the propensity to Make decreases with the strength of the political opposition as a consequence of a higher pressure made on cost transparency. • The role of the political opposition in the Make-or-Buy can be mitigated with signals of interest by the municipality toward cost and quality issues.
<ul style="list-style-type: none"> • Chapter 2. Public Contracts in Food Procurement and Political Contestability: Insights from French Institutional Catering. • Research Question. Does political contestation increase the rigidity of contracts? As a consequence, are public contracts more rigid than private contracts? And are some clauses in the public contracts more rigid than others due to a political focus on it? 	<ul style="list-style-type: none"> • Creation of a dictionary for rigidity, and extraction of words in the contracts with an algorithmic textual analysis software. • Econometric analysis (OLS estimations). • Comparison of 496 public and private contracts' rigidity. • Focus on 242 public contracts, and 96 municipal contracts. • Source: Original database manually coded by the authors, French Home Office, INSEE. 	<ul style="list-style-type: none"> • Public contracts are more rigid than private ones. • Political contestation increases the rigidity of public contracts, in particular the rigidity of "touchy" clauses.
<ul style="list-style-type: none"> • Chapter 3. On the Geographical Availability of Organic and Alternative Retail Food Stores. • Research Question. Do politics influence the availability of SFSC and Organic shops? If yes, do they impact similarly the availability of SFSC and Organic shops? 	<ul style="list-style-type: none"> • Creation of an extended availability of shops in the French region <i>Île-de-France</i>. • Econometrics analysis (Tobit and Logit estimations). • Comparisons of coefficients for SFSC and Organic shops. • Source: Original database manually coded by the authors, French Home Office, INSEE. 	<ul style="list-style-type: none"> • Organic shops' availability is favored by a friendly political municipal atmosphere. • In-house governance for municipal school canteens decreases the availability of SFSC.

LIMITATIONS AND AREAS FOR FUTURE RESEARCHES

Given the methodology we used and the results we got, we can propose some limitations that would need further researches to investigate. Concerning the first chapter, we found that the ideology of the 2008-2014 (not 2014-after) mayor and the political contestability of the 2014 (not 2008) election influence the governance of school canteens. Given the collection of the data (2015-2016), we can ask about how to interpret the coefficients of political contestation. Does political contestation influence the Make-or-Buy choice, or does the Make-or-Buy choice influence political contestation? This remains to study to identify the relationship between the Make-or-Buy choice and the political contestation. Moreover, quality transparency for in-house governance depends on the allotment of the food market. Governmental reports advertise to allot a lot in order to get the local supply and increase transparency with direct sales. An interesting future research would be to investigate the determinants of allotment, on the model of the Chapter 2. We did not conduct this study due to the impossibility to get the detailed food markets for municipalities.

Due to the methodology of the second chapter, we can also formulate some limitations. First, since the contracts we rely on are just the year after municipal elections, they might be less subject to third-party opportunism, in particular by political opponents, as the political risks for the next election are farer and that there will be another contract before the next election. Those contracts might, thus, be less sensitive to political considerations than, for instance, the same contracts that would be signed just before the end of the political mandate. We, then, would like to confirm and strengthen those results through the same analysis at the end of the political cycle. Second, our contracts are all from the same company operating in only one sector of activity. As a consequence, we should be cautious in generalizing our results as they may be sector (and even firm)-specific. However most of our results are convergent with previous studies in different sectors (Beuve et al., 2016) as well as in different institutional contexts (Moszoro et al., 2016) suggesting that our results go beyond the particular sector and country we look at. Third, the algorithmic textual analysis is in its early stage of development. While it allows to obtain and quickly analyze a large set of written documents, the quality of the interpretation is probably lesser than with human expertise as it does not take into account legal nuances. However, we try as much as we can to reduce ambiguity in the interpretation of the written contracts. We did so by selecting contractual provisions whose wording have a uniform meaning and do not suffer from too much alternative interpretations. For instance, when the

word termination appears in the contract, this mostly refers on the conditions under which each party can end the contractual relation, not the fact that the parties agreed that none of us will terminate the contract whatever the external conditions are. Similarly, when the words “organic”, or “local” appears in the contracts, that means that the buyers have special requirements about these issues, not that he wants to discard them. Yet, those two clauses seem to be not enough used in contracts to study them adequately. Finally, we had uncertainties on how to interpret the negative effect of the Residual HHI on the rigidity of our contracts. We argued that it might be because instead of accounting for the concentration of the opposition, in our case it reflects the instable municipal majority made of several political alliances. This remains to investigate and, according to us, this possible effect shall be verified in future researches.

Concerning our third chapter, our results are limited for two main reasons. First, we did not take into account the border municipalities of the region to calculate the extended availability. However, we controlled for different distances and found similar results. Besides, the border municipalities are mostly rural municipalities, which would not increase shops availability by much. Second, if we are the first to our knowledge to prove an effect of political variables on SFSC and Organic shops availability, we can only offer alternative explanations that remains to be studied to develop recommendations for public policies. In particular, are SFSC transforming into conventional agri-food networks? What are the goal that SFSC should achieve (higher quality or inclusive socialization)? Do politics confiscate Organic shops in a geographical area or do they participate in the extension of their availability? These questions would be interesting to study to underline the impact of politics on an extended geographical area.

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RESUME/ABSTRACT

Cette thèse propose une étude empirique des liens entre la sphère politique et la gestion des services publics locaux en France. Lorsqu'elles administrent les services publics, les administrations locales peuvent décider soit de fournir un service en régie, soit d'externaliser sa gestion, et donc de conclure des contrats avec des entités privées. Tout d'abord, ce choix de gouvernance est analysé dans le cas des cantines scolaires françaises et les moteurs politiques de ce choix sont mis en évidence. La contestation politique à l'élection municipale est considérée comme l'un des moteurs du choix organisationnel. Deuxièmement, nous avons analysé les contrats public-privé en cas d'externalisation. Nous avons constaté que ces contrats étaient plus rigides que les contrats privés purs. En outre, cette rigidité excessive peut s'expliquer par le niveau de contestation politique dans la municipalité. Enfin, les déterminants de l'approvisionnement alimentaire local sont étudiés. Nous constatons que la disponibilité des réseaux d'alimentation alternatifs est parfois motivée par des considérations politiques. Cette thèse contribue à ajouter des connaissances à la compréhension de la gestion des services publics locaux, ainsi qu'à la compréhension de la disponibilité des magasins de détail alimentaires.

This dissertation offers an empirical investigation of the links between the political sphere and the management of local public services in France. When they administer public services, local governments can decide either to provide a service in-house, or to externalize its management, and therefore conclude contracts with private entities. First, this choice of governance is analyzed in the case of French school canteens and the political drivers of this choice are highlighted. The political contestation in the municipal election is found to be one of the drivers of the organizational choice. Second, we analyzed public-private contracts in case of externalization. We found those contracts to be more rigid than pure private contracts. Besides, this excessive rigidity can be explained by the level of political contestation in the municipality. Finally, the determinants of the local food supply is studied. We find that the availability of alternative food networks is sometimes driven by political considerations. This dissertation contributes to add knowledge to the understanding of the management of local public services, as well as to the understanding of food retail stores availability.

Mots-clés: Services Publics, Administration Publique, Management Public, Choix Organisationnels, Provision en Régie, Externalisation des services Publics, Contrats Publics, Idéologie, Magasins Alimentaires, Chaînes d'Approvisionnement Alimentaire.

Keywords: Public Services, Public Administration, Public Management, Organizational Choices, In-house Provision, Externalization of Public Services, Public Contracts, Ideology, Food Retail Stores, Food Supply Chains.