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Cultural identity, immigrant assimilation and socioeconomic inequalities

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de la Société (SHOS)**

présentée par

Gabin Langevin

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Centre de Recherche en Economie et Management
Faculté des sciences économiques

**Cultural identity,
immigrant assimilation
and socioeconomic
inequalities**

**Thèse soutenue à Rennes
le 2 décembre 2014**

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L'université de Rennes 1 n'entend donner aucune approbation ni improbation aux opinions émises dans cette thèse. Ces opinions doivent être considérées comme propres à leur auteur.

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GENERAL INTRODUCTION

Ouvriers étrangers. Article de monsieur Collot, commissaire des guerres. *“les dix ans expirés [l’ouvrier étranger] rentrera dans la classe commune; pendant ce tems ii aura fait sept ou huit enfans, s’il s’est trouvé dans l’aisance, car l’aisance a la vertu prolifique, & entre de bonne foi dans les desseins de la nature; l’augmentation de la contribution aux charges & frais publics ne sera plus un motif suffisant pour déterminer cet étranger à retourner dans sa patrie, où, à cette époque, il n’auroit plus d’habitude ni de connoissance, & où il auroit une femme & des enfans à conduire.”*

Encyclopédie – Dirigée par Diderot et d’Alembert (1751-1765)

– 17:805

.1 Motivations

Labor immigration is an old phenomenon in Europe and was already a concern for the Encyclopédie’s thinkers. It illustrates how immigration is at the core of the major societal process of assimilation. Assimilation is an inherent and rarely deliberate consequence of migration. The situation of the *foreign worker* described in the Encyclopédie can be seen as the result of an assimilation process. Already, the author of this article distinguishes both socioeconomic and cultural issues raised by immigrants’ settlement in a host country.

Similarly, scholars have soon decomposed assimilation into two more particular processes (Schnapper, 2007). The first process is named cultural assimilation and corresponds to the adoption of the receiving country’s cultural traits by immigrants and their descendants. For a long time, this type of assimilation has exclusively been the concern of anthropologists, psychologists and sociologists and has led to a huge collection of findings regarding immigrant assimilation. The second process is structural assimilation which deals with the overall participation of immigrants in the socioeconomic institutions of the receiving country. The labor market and its regulation is one of these institutions and of course one of the major economists’ concerns.

Thereafter, we name socioeconomic assimilation this second process which notably regards the convergence of immigrants' educational levels, employment rates and wages toward those of natives.

This early distinction between these two assimilation processes underpins this thesis. Indeed, for a long time in the economic literature, the socioeconomic assimilation of immigrants has been thought independently of cultural assimilation. Even if economists have recognized the importance of cultural aspects on individuals' microeconomic outcomes (see for instance Borjas, 1992, for the issue of ethnic capital), the standard homo economicus model does not or at least hardly allows integrating them. As a result, it also regularly fails to describe many complex microeconomic behaviors. The non-inclusion of cultural aspects in standard microeconomic models is however likelier the consequence of a lack of sufficiently objective and quantifiable concepts on the issue.

Recently, Akerlof and Kranton (2000) have imported the concept of social identity from the psychology literature (Tajfel *et al.*, 1971). This concept specifies that individuals belong to groups – ethnic groups in our concern – and have a psychological attachment to these groups which defines the salience of their – ethnic – identity. According to Akerlof and Kranton, each group has particular behaving norms – prescriptions – which partly drive decisions of its members. That is the reason why they integrate identity – defined as a person's sense of self – in the standard microeconomic utility function and show, for instance, that individuals may not choose the monetary optimum because of the negative identity returns it implies (see also Austen-Smith and Fryer, 2005 and the “acting white” concept).

This thesis is thought as an answer to the seemingly partition of cultural and socioeconomic assimilation processes which bounds the understanding of individuals' behaviors and the analysis of ethnic gaps.

We argue in this thesis that identity theory helps to understand and measure the influence of cultural assimilation on immigrants' socioeconomic outcomes. We defend the idea that ethnic identity is the consequence of ethnic group salience which itself is the result of cultural assimilation. If cultural assimilation is achieved, that is if immigrants adopt the cultural traits of the dominant culture, then the separation between ethnic and native groups is hazier and ethnic identity is less salient. *Cultural identity therefore allows verifying the expectation that cultural assimilation decreases*

socioeconomic ethnic gaps (Chiswick, 1978, Borjas, 1985). Our purpose is to test this expectation by exploring the relations between cultural identity and socioeconomic assimilation.

Our aim is twofold: (i) *How to measure cultural identity? What does it say about cultural assimilation?* We adopt an empirical approach and notably use the standard measure of national identity (“I feel French” dummy). For this purpose, we also develop a composite index which aims to overcome drawbacks of the first measure and compare the information they provide. (ii) *Does cultural identity impact people’s outcomes and behaviors?* We investigate the influence of previous ethnic identity measures on socioeconomic outcomes of immigrants and descendants of immigrants. Then, thanks to empirical economics, we focus our attention on the relationship between group identity and individuals’ behaviors.

As said above, the economic literature does not ignore the potential role of cultural assimilation on the socioeconomic one. For instance, Chiswick’s Immigrant Assimilation Hypothesis (IAH, 1978) is one of the first examples of the consideration of cultural aspects while considering ethnic economic gaps. The IAH indeed states that immigrants acquire destination-relevant human capital, but at a decreasing rate, with duration in the destination. The acquisition of this relevant human capital is seen by Chiswick (1978) or Borjas (1985) as the consequence of an upstream cultural assimilation. In a nutshell, for this early economic literature, cultural assimilation is a way to explain the reduction of socioeconomic ethnic gaps. However, it is still a “black box” and the literature lacks of observable evidence for such a process.

.1.1 Cultural identity at the core of immigrant assimilation

The history of Liberia is a tragic illustration of the importance of cultural identity for a nation. In 1822, under the initiative of the American Colonization Society, the country was created with the aim of becoming the place where former African American slaves would definitely reach freedom¹. This idea has never been more than a utopia and, soon, Liberia became a strongly segregated nation. During the 1960’s, inspired by Marcus

¹ See Durpaire (2006).

Garvey's writings, a second wave of African Americans unsuccessfully started settling in African countries and notably in Liberia. However, those African Americans who identified themselves as Africans in the US figured out that they felt as Americans in Africa. Cultural identities have never matched and two civil wars broke out between 1989 and 2003. This illustration shows the extent to which cultural identity is a complex and deep concept which oversteps the sole belonging to racial groups for instance.

This is the reason why we propose to consider immigration under a slightly different view, that of the identity theory. Identity is about groups. According to its first definition in psychology (Tajfel *et al.*, 1971), social identity requires two minimal conditions to become salient. First, individuals must recognize the existence of groups and be able to situate themselves and others as regard to these groups' belongings. Groups cannot be the abstract creation of the observer but must be identified by the subjects. Second, individuals must feel attached to their groups. The sole belonging to a group is not sufficient to drive its members' behaviors. However, many studies show that this attachment rapidly occurs (see the *minimal group* paradigm, Tajfel and Turner, 1979, for the eldest). Once identity is salient, the behaving norms of the group drive members' decisions. These behaving norms are what Akerlof and Kranton (2000) call the prescriptions. These latter state and demonstrate that socioeconomic outcomes partly result from these identity based behaviors (see for instance Akerlof and Kranton, 2002, about the educational field or Akerlof and Kranton, 2005, about the role of identity in organizations).

Let us now consider the process of immigration within the identity theory. First consider the natives as the majority group, i.e. those who are born in the receiving country and do not have a close migratory history (let say those whom parents are also born in the country²). This majority group, although composed of many overlapping sub-groups, is characterized by specific cultural traits which are the consequences of customs and traditions. Now consider immigrants. It would be abusive to see them as a salient group because of the diversity of their origins. However, we can think that immigrants who come from geographically close origins (regions, countries, subcontinents, continents) form sufficiently homogeneous groups to become salient. In other words, it is possible to gather immigrants into ethnic groups among which a

² In the following of the thesis, we always separately consider first and second generations of immigrants.

certain amount of specific cultural traits are shared. In this plural society, everyone is able to situate herself regarding these groups³ and this belonging is – at least partly – transmitted from a generation to another. We can think to Liberia again. The massive exodus of African Americans wished by the American Colonization Society never happened. However, the early cultural and economic gaps between settlers and natives have persisted for almost two centuries. Culturally different groups have never merged. This cultural separation has even led early economic inequalities to increase.

Ethnic groups exist. Do they matter? The second condition for identity to matter regarding individuals' decisions is the psychological attachment of members to the group. In addition to the *minimal group* paradigm, some authors show that ethnicity is activated with immigration (Phinney and Ong, 2007). In the same vein, according to Battu and Zenou (2010), oppositional identities such as ethnic identities are the consequences of the social exclusion of a group or community from a dominant group. Overall, many evidence suggest that ethnic groups or cultural origins are not meaningless for most of people (see the books of Sen, 2007, and Akerlof and Kranton, 2010). The two conditions stated by Tajfel and Turner (1979) for the identity to become salient are therefore often verified in the case of ethnic groups. According to Akerlof and Kranton, a group has either explicit or implicit prescriptions which partly rule its members' behaviors. The prescriptions are based on a "set of values" which are particular for each group. In the case of ethnic identity, this set of values is notably the legacy of the home country culture. Identity conflicts occur when the prescriptions of ethnic groups do not match those of the majority. In such a case, the stronger the ethnic identity is, the more important the prescriptions of the ethnic group and the less adjusted the immigrant decision to majority's mind.

Early psychology literature supports the relationship between immigration, assimilation and identity. In 1964, Gordon affirms that the heart of the assimilation theory is that, over time and with increasing contact between the "foreigner" and the natives, the foreigner will become more and more like these latter. For him, a "self-image as an unhyphenated American" corresponds to the end of the process "that began with cultural assimilation". This is probably the first time that identity (synonym for

³ Of course, we are aware that the frontiers between groups are not impermeable. Many would claim the belonging to several ethnic groups, or the belonging to both their ethnic group and the majority group.

“self-image”) is considered as an observable result of cultural assimilation. Although assimilation issues seem legitimate it appears difficult for a quantitative discipline as economics to address them. We postulate with this thesis that cultural identity brings, as far as possible, an objective and measurable way to assess immigrants’ cultural assimilation and its impact on socioeconomic assimilation.

.1.2 The role of cultural identity on immigrants’ socioeconomic outcomes

The role of the home culture on immigrants’ socioeconomic outcomes has primarily been considered through the reduction of ethnic gaps with the time since arrival in the receiving country. The seminal hypothesis of this literature – early stated by Chiswick (1978) – is that an immigrant who is culturally well adjusted to the host country culture is likelier to be in the labor market than an immigrant who retains a stronger affiliation with her own culture. As supports of this hypothesis, Chiswick explains that as immigrants invest in human capital in the host country, their economic outcomes increase rapidly and can reach and even exceed the economic outcomes of natives. This cultural assimilation mainly depends on the duration since arrival in the receiving country and many studies show that with time spent in the host country immigrants become more like natives (Borjas, 1985, Borjas *et al.*, 1992, Cohen *et al.*, 1997, Berry, 1997, 2006, Izquierdo *et al.*, 2009, Beenstock *et al.*, 2010, Chiswick and Lofstrom, 2010). As a result, they acquire the host country language and cultural understanding which provide access to information, social networks, and the human capital required to succeed.

Besides ethnic discrimination (Becker, 2010), a potential explanation of the wage ethnic gap is that it reflects the fact that immigrants cannot use all the human capital they have acquired in their country of origin (Izquierdo and Lacuesta, 2009). On the opposite, other studies state that the preservation of the home country’s cultural heritage provides immigrants with valuable and scarce human capital that are looked for on the labor market. Thus, immigrants may have greater employment advantages in the labor market due to knowledge of two languages, possession of ethnic capital, and access to two ethnic networks (Borjas *et al.*, 1992, Berry, 2006, Constant & Zimmermann, 2008, 2011, Constant *et al.*, 2009). Finally, these studies show that a specific ethnic capital

can be a decisive asset on the labor market if the human capital of immigrants is the same as natives or if it allows overcoming an initial gap.

Overall, culture matters for immigrant socioeconomic assimilation. As shown above, the economic literature knows about the explanatory utility of culture while investigating socioeconomic outcomes. However, it faces issues regarding the objectification of what is a culture. Most of the time scholars look for measurable proxies such as time since arrival, language of origin, or fertility rates (see Fernandez, 2010, for a review of this literature). We argue that identity theory provides a more embracing framework of cultural traits.

Based on the identity theory, studies suggest that isolation from the host country's culture may lead immigrants not to invest in specific human and social capital required in the host labor market (Akerlof and Kranton, 2000, Constant and Zimmermann, 2008, Battu and Zenou, 2010). In particular, the "acting white" theory (Austen-Smith and Fryer, 2005) puts forward that the economic benefits of conforming to the majority norms do not compensate the psychological cost of rejecting the minority prescriptions.

Spatial segregation can also be seen as a consequence of identity-based decisions. Selod and Zenou (2006) use the concept of *spatial mismatch* which represents the idea that individuals' decisions under monetary and geographic constraints may lead to segregated equilibrium where ethnic minority groups stay together in far away from job opportunities areas. Ethnic identity is underlying their model since they postulate 3 different groups of workers: whites, conformist black who identify as black, and status-seeker blacks who identify as the white majority and thus wish to live close to white.

.1.3 Research procedure

We adopt a progressive research procedure. First, Chapter one establishes the picture of immigrants and descendants of immigrants' socioeconomic situation in France. Then, Chapter two introduces the concept of cultural identity, discusses its measurability and its main determinants in France. In this chapter, we notably propose a new way to measure cultural identity – called the assimilation index – also used in the next chapter. Chapter three investigates the impact of ethnic identity on unemployment, wages and

political behaviors in France. Finally, Chapter 4 overcomes natural endogeneity issues between identity and economic outcomes by implementing a laboratory experiment.

The three first chapters are based on a French database from 2008⁴. French data are not only interesting as regard to their novelty in the economic literature but also because the French political model of acculturation is different from Anglo-Saxon countries where previous studies took place. Immigrant assimilation of the mainstream identity by immigrants has thus not exactly the same causes and, above all, consequences.

Because of the progressive scheme of the dissertation, we choose to not draw up the literature in an introductory review but rather to introduce relevant concepts and researches at the beginning of each of the following chapters.

.2 Outline

.2.1 Chapter 1 – On the socioeconomic assimilation of immigrants in France

The first Chapter of this dissertation aims to give an overview of the socioeconomic situation of first and second generations of immigrants in France. This chapter is based on the data of the *Trajectoires et Origines* (TeO) survey which provides the most exhaustive set of responses and control variables regarding immigrants microeconomic situation in France. In particular, we investigate lifelong inequalities and their determinants. For this purpose, we first focus on the determinants of the ethnic gap in educational attainment, underlining the central role of family background (e.g. parental education, family income and family structure) as key determinants of education. Then, we consider ethnic gaps on both labor market access and wages' formation. We adopt the Oaxaca-Blinder decomposition which allows disentangling the proportion of the ethnic gap which is due to observable differences in characteristics and the proportion which stills unexplained. While investigating immigrants' employment and wages, we also highlight the paramount role of education over the lifecycle.

⁴ This database is the result of the “Trajectoires et Origines” survey implemented both by INSEE and INED. It will be obviously presented in more details in the first chapter.

This first chapter fits into the strand of literature on ethnic gaps in terms of education (Gang and Zimmerman, 2000; Van Ours and Veenman, 2001; Domingues Dos Santos and Wolff, 2011, and Brinbaum et al., 2012) and labor-market outcomes (Dustmann et al., 2008, and Algan et al., 2010). In particular, our analysis is related to Aeberhardt and Pouget (2010). They notably find that these wage gaps mostly reflect differences in the type of jobs that individuals take up, according to their experience, background and education. Our work differs from theirs since we emphasize the role of education in explaining ethnic labor-market differences. We are also related to Belzil and Poinas (2010), who estimate a dynamic model of schooling choices and early access to permanent employment contracts in France. In their paper, education is found to be the main determinant of permanent-employment differentials. However, in contrast to Belzil and Poinas (2010) we here also focus on the determinants of wages.

To anticipate our findings, we observe that childhood environment is a key determinant of education. Controlling for family background knocks out the negative effect of ethnic origin on education of both generations of immigrants (except Southern European and Turkish first generations). It becomes even positive for some of them. Another important finding is that education plays a prominent role in explaining both the employment and wage gaps between French natives and immigrants. Although we find that these latter are less likely to be employed and receive lower wages than do natives we show nevertheless that education plays a major role in explaining both the employment and wage gaps. Controlling for education the ethnic employment gap is strongly reduced. In the same vein, controlling for both the selection bias and the education level, the ethnic wage gap remains but is less significant and smaller in size.

Overall, our findings potentially challenge the role of discrimination in explaining ethnic labor-market outcomes. Although it cannot be denied that employer discrimination does exist in the French labor market, particularly at the hiring stage as shown by the observed residual ethnic gap, our results suggest that targeting the education gap via family-oriented policies may be at least as efficient as discrimination-oriented policies in reducing ethnic gaps in the labor market.

.2.2 National identity and immigrant assimilation in France

The first chapter follows the economic tradition by emphasizing the existence of ethnic gaps. In this first chapter, we mainly discuss these gaps regarding discriminations. However, identity theory teaches that socioeconomic inequalities may also result from behaviors aiming to conform to ethnic specific prescriptions.

This second chapter aims to explore different measures of ethnic identity. In particular, we use national identity and create an assimilation index to understand the formation of individuals' cultural identity thanks to *TeO* data. Our goal is not to validate or reject measures of the literature but to improve the knowledge of the determinants of first and second generation immigrants' attachment to both home and host cultures. For this purpose, we first present our assimilation index and its construction based on Multiple Correspondence Analysis (MCA) of identity attributes (characteristics which are selected by respondents to define themselves). We also present national identity which is the standard measure of cultural identity in the economic literature (dummy obtained by the consent to "I feel French" assertion). Then, we explore the determinants of cultural identity via these two measures for the French population as a whole, the immigrants and the descendants of immigrants.

This work is closely related with those of Manning and Roy (2010) and Battu and Zenou (2010) which also investigate the determinants of cultural identity in the English case. They notably find significant impacts of origins and durations on the receiving territory. However, they only consider national identity as a measure of cultural identity. Constant and Zimmermann (2008) have the same goal but adopt different methods. Based on Berry's typology of acculturation (1997), they create the ethnosizer which assess cultural identity on two dimensions. Although their methodology has strong theoretical bases, the ethnosizer implies subjective definitions of what should be typically native or immigrant and endogeneity issues rise while focusing on economic outcomes. Bisin *et al.* (2011) propose an index of cultural identity based on factor analysis. However, their European scope limits the availability of potential component variables of their index. The *TeO* survey deeply documents respondents' sense of selves. Thus, as Bisin *et al.* (2011) – with much more information – and without prior assumptions on what characteristic is native or immigrant – contrary to Constant and

Zimmermann (2008), we use multivariate analysis to summarize identity related information into an index of cultural identity.

We show that migration activates the ethnicity of minority ethnic groups. Indeed, immigrants – and to a much lower extent descendants – choose more often identity attributes related to their ethnic traits than do natives. We also highlight the paramount role of duration in the host country for first generations which notably verifies the Immigrant Assimilation Hypothesis. Furthermore, we observe that descendants are culturally more like natives than first generation which is an evidence of assimilation (even if the cross-sectional nature of data makes this result fragile). Finally, we show that the importance of religion in childhood rearing has strong negative impacts on cultural convergence of immigrants toward French identity.

Overall, we show that the measure of identity matters. In particular, some of the economic literature surprisingly observes that assimilation is better for immigrants from poorer and less democratic countries. This result is based on national identity and we have the same unintuitive conclusion if we confine our analysis to this measure. However, the assimilation index exhibits the exact opposite conclusion that assimilation is better for those from wealthier and democratic countries. Of course, we understand that both measures assess different process and that one cannot objectively be preferred to the other. However, we believe that scholars should consider different measures of cultural identity in order to avoid abusive interpretations. Although quite methodological, this stage is essential for further investigations about the influence of ethnic identity on socioeconomic outcomes which are the topics of Chapter 3.

.2.3 Cultural identity, labor-market outcomes and political behaviors

This chapter explores the relationship between ethnic identity, economic outcomes and political behaviors. We aim to extract the relationship and more particularly the causal impact of first and second generation immigrants' cultural identity on their socioeconomic outcomes. We thus address three questions. Does ethnic identity matter on the labor market? Does it matter for political involvement? Is the identity measure neutral in terms of interpretations? We first consider the role of national identity and assimilation index on employment access and then wages by taking selection biases into

account. To do so, we adopt standard models to observe correlations between cultural identity and professional outcomes and then use instrumental procedures to elicit the causal impact of cultural identity. Finally we look at the determining role of identity in voting participation and political self-placement.

Previous empirical studies investigate the impact of national identity on employment (Battu and Zenou, 2010, Casey and Dustmann, 2010, Koczan, 2012). Others do the same work but approach cultural identity by a measure called the ethnosizer (Nekby and Rödin, 2007, Constant and Zimmermann, 2008, 2009, Gorinas, 2014). Overall, most of these studies find significant positive relation between cultural identity and employment. However, most of them do not take endogeneity issues into account. Chapter 3 contributes to the literature by implementing instrumental strategies to overcome overestimation of estimates due to reverse causality. Much fewer studies (Casey and Dustmann, 2010, Constant and Zimmermann, 2009) explore the relation between cultural identity and wages whereas the wage ethnic gap is at the core of the economic literature about immigrant assimilation (Chiswick, 1978, Borjas, 1985). This chapter therefore also focuses on the role of ethnic identity in wage formation taking both selection bias and endogeneity issues into account. Finally, the investigation of cultural identity's influence on political behavior is completely new in the economic literature.

We show that the positive relationship between ethnic identity and employment probability is strong. On the opposite, wages' formation seems only to depend on national identity for the second generation of immigrants. Nevertheless, these results are suspected of reverse causality which is likely to overestimate their importance. We therefore adopt different IV strategies in order to elicit the "true effect" of ethnic identity on economic outcomes. Regarding immigrant employment, our results are consistent with the theoretical and empirical literature. In particular, national identity positively impacts the employment probability of immigrants, while the assimilation index impacts more that of descendants of immigrants. We explain this difference by the fact that national identity is a less major concern for second generations (they almost all feel French), than the characteristics they choose to define themselves and which tells how well they assimilate the host culture. We do not find any robust evidence of a potential impact of ethnic identity on wages' formation.

In addition to labor market outcomes, we investigate the relation between ethnic identity and political behaviors. We find that national identity is strongly related to voting participation. This is also the case for the assimilation index but only at the presidential election level. In both cases, these results verify expectations. The higher the commitment toward the host culture, the higher the involvement in political issues and the higher the will to vote. Finally, the role of cultural identity depends mainly depends on its measure when we consider left/right political self-placement. Results suggest that national identity corresponds to a more right-wing placement, whereas a high assimilation index corresponds to a more left-wing one.

Overall, cultural assimilation appears to be a determinant of economic assimilation at the hiring stage. Cultural assimilation of natives' identity also generates higher political involvements. As already suggested in Chapter 2, we show that identity measurement matters in terms of political self-placement which should encourage scholars interested in such issues to combine several measures of ethnic identity.

.2.4 Group identity and effort provision in a competitive framework

Consistently with the literature, Chapter 3 brings evidence that identity is likely to matter in people's outcomes. Based on these findings, Chapter 4 aims to investigate the provision of efforts and labor participation of individuals in a specific framework where they are matched with in-group (same color) or out-group (other color) members in an environment preserved from endogeneity issues. We develop an experiment aiming not only to investigate the impact of group saliency on individuals' decisions but also to exhibit situations where participants choose pro-group behaviors even if they implies lower economic returns. In particular, we are interested in people's decisions when they have to choose between high payoffs but identity-costly and low payoffs but identity-preserving decisions. We do not explicitly refer to ethnic identity in this experiment but the findings related to these abstract groups can surely be exported to ethnic ones.

From a theoretical point of view, our work is inspired by Akerlof and Kranton (2005) where organizations have to deal with both monetary and identity incentives toward their members to maximize their utility. These members can be insiders if their identity matches that of the organization or outsiders otherwise. Our competitive frame and its

attached behavioral predictions are based on Nalbantian and Schotter (1997). In the experimental literature, Chen and Chen (2011) show that an induced salient group identity, by increasing cooperation between members, can lead the group to reach the high effort equilibrium whereas the low-effort equilibrium is observed in absence of group identity. We keep the process of induced group identity. However, we add a new stage where individuals are matched in work-teams with either a majority or a minority of members of their own identity group. This allows a symmetric analysis of both those whom identity matches work-team's identity (insiders) and those whom identity does not (outsiders) among members of the same identity groups. We also contribute to the literature by implementing a competitive framework which we believe to exacerbate identity conflicts.

We first observe thanks to a quiz game that, when there is no trade-off between monetary and identity returns of effort, individuals strongly increase their performance once they are assigned to salient groups. Second, with a repeated effort game we show that while facing a situation where they have to arbitrate between opposite monetary and identity returns of their choices, insiders tend to increase their effort. This effort raise suggests that monetary losses are compensated by positive identity returns. We also show that the output of a work-team is higher when it is mainly composed of members sharing a common identity than that of identity neutral work-teams (i.e. composed of participants with no previous induced identity).

On the whole, under the *nearly minimal group* paradigm, that is when groups are made salient only by the distribution of colored card inside envelopes, identity influences participants' efforts. Based on this result we can conjecture that natural identities and notably ethnic identity activated and enforced by immigration (Phinney and Ong, 2007), and which are much more salient than induced identities due to experience of behaving norms and peer pressure are likely to impact individuals real-life behaviors and outcomes.

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Chapter 1

ETHNIC GAPS IN EDUCATIONAL ATTAINMENT AND LABOR-MARKET OUTCOMES: EVIDENCE FROM FRANCE

1.1 Introduction

In November 2005, a wave of violence swept through the suburbs of a number of French cities. Faced with this sudden rise in tension, some commentators underlined long-standing assimilation problems, including discrimination against minorities and the lack of job opportunities in the suburbs which are mainly populated by immigrants. The living standards of individuals with immigrant parents in France are on average 14% lower than those of natives with French parents (Lombardo and Pujol, 2011). However, despite the acknowledgment of such tensions linked to immigration, the empirical analysis of ethnic employment and wage gaps in France is surprisingly sparse. A few notable exceptions are the recent contributions of Aeberhardt and Pouget (2010), Aeberhardt *et al.* (2010a,b) and Belzil and Poinas (2010). The French situation is in sharp contrast to the vast literature on racial discrimination and the social integration of immigrants in a number of other countries (see Altonji and Blank, 1999 and Borjas, 1999 for surveys). One likely explanation is that, until recently, information regarding ethnicity was not collected in French survey data.⁵

We here aim to contribute to this small but growing literature on ethnic gaps in France by investigating lifelong ethnic inequalities and their determinants. Although discrimination is often invoked as a possible cause of the racial employment and wage gaps, we conjecture here that the role of discrimination may be probably overestimated and that these ethnic gaps may merely reflect differences in education and early childhood environment. For this purpose, we investigate first the determinants of the ethnic gap in educational attainment, underlining the central role of family background (e.g. parental education, family income and family structure) as key determinants of education. Then, we measure the role played by education over the life cycle in explaining both employment and wages gaps existing between French natives⁶ and immigrants.

⁵The French egalitarian ideal, which rejects any form of categorization into ethnic groups, is often evoked to explain that lack of ethnic information in French survey data.

⁶Note that, for convenience, we consider as natives only those respondents whose parents were both born with French nationality, although from a legal point of view, immigrants' descendants born in France are also French natives as a result of the French *jus solis*.

Our analysis is based on an original dataset, the *Trajectoires et Origines (TeO)* survey, which was carried out jointly by the INED and INSEE in 2008 and 2009 in metropolitan France. While other surveys have considered integration and discrimination in France, to our knowledge this is the only French survey to investigate in detail the situation of both first- and second-generation immigrants on the labor market. The survey contains a large number of socio-demographic and economic variables, such as socio-economic outcomes (education, employment and housing) at the time of the interview (2008), migratory history, ethnic belonging (ties with the home country, religion, languages and ethnic identity) but also previous education – both at school and in the family. These data allow us to disentangle the roles played by ethnic belonging and other variables such as education in explaining the employment and wage gaps between French natives and immigrants.

Our work belongs to the strand of literature on the educational gaps between natives and immigrants (see for instance Gang and Zimmerman, 2000; Van Ours and Veenman, 2001; Domingues Dos Santos and Wolff, 2011, and Brinbaum *et al.*, 2012). In particular, Brinbaum *et al.* (2012) also use *TeO* data to examine differences in education between natives, second-generation immigrants, and immigrants whose education in France began at the primary school level. Our approach differs from theirs as we focus on lifelong ethnic inequalities. This Chapter is also related to existing works on the labor-market outcomes of immigrants (see for instance Dustmann *et al.*, 2008, and Algan *et al.*, 2010). In particular, our analysis is related to the seminal papers of Aeberhardt and Pouget (2010) and Aeberhardt *et al.* (2010a) which also consider the wage gap between second-generation immigrants and French natives. Aeberhardt and Pouget (2010) analyze national-origin wage differentials in France. They find that these wage gaps mostly reflect differences in the type of jobs individuals take up, according to their experience, background and education.⁷ The work we present here differs from this literature in the fact that we emphasize the role of education in explaining ethnic labor-market differences. Our work is also related to that of Belzil and Poinas (2010), who estimate a dynamic model of schooling choices and early access to permanent

⁷Using data from the “*Formation Qualification Professionnelle*” survey, Aeberhardt *et al.* (2010a) investigate the wage and employment gaps between French natives and French workers with at least one African parent. They conclude that the unexplained portion of the employment decomposition is much larger than that of the wage decomposition. Labor market discrimination in France is found to be more frequent at the hiring stage than in earnings. A similar empirical analysis of “*Emploi en Continu*” data confirms these findings (see Aeberhardt *et al.*, 2010b).

employment contracts in France. Using data from the “Generation 98” survey, Belzil and Poinas (2010) investigate the differences between second-generation immigrants and their French-native counterparts in terms of access to permanent employment contracts. Education is found to be the main determinant of permanent-employment differentials. After controlling for education and other observed characteristics, ethnic origin explains less than 6% of this employment gap. However, in contrast to Belzil and Poinas (2010) who only consider permanent employment contracts in the early career, we here also focus on the determinants of wages. Our data enable us to conduct a deeper analysis of the determinants of education gaps between ethnic groups, as they contain a large number of variables with respect to parental background as well as the social and housing environment. The work here is also original in that it extends the analysis to a number of different sub-populations of first and second generation immigrants (North African, Sub-Saharan African, Turkish, Asian, Eastern European, Northern European and Southern European) instead of only focusing on the comparison between French and African natives. This allows us to see whether and why some immigrants are more likely than others to suffer from earnings and employment gaps.

To preview our findings, we show that: *i*) immigrants are on average less likely to experience education success than their French native counterparts and that such education gap seems to be mainly rooted in ethnic differences in family backgrounds. *ii*) immigrants are on average less likely to be employed and receive lower wages than French natives; and *iii*) a large part of the labor-market differences between French natives and immigrants can be attributed to differences in education.

The remainder of the chapter is organized as follows. Section 1.2 presents the *TeO* survey and our analysis sub-sample. Section 1.3 then presents our main findings. Last, Section 1.4 discusses and concludes.

1.2 Data and methodology

1.2.1 The *TeO* survey

Our work is based on data from the cross-section *Trajectoires et Origines* survey. This survey was jointly carried out by INED and INSEE in 2008 and 2009 in

metropolitan France, and covered around 21,000 individuals aged from 18 to 60 years via face-to-face interviews. The *TeO* data include a wide range of variables regarding immigrants' living conditions and social mobility. Both education and labor-market profiles are recorded, allowing the lifecourse to be investigated. The survey also contains additional information about the migratory history, and the family and social context during both childhood and adulthood. The variables can be broadly organized into three main groups: family and social background (parents' statuses, siblings, and marital life); socio-economic outcomes (education, employment, and housing); and migratory history and ethnic belonging (ties to the home country, religion, languages, and ethnic identity).

Following the French Republican egalitarian principle, migrants' offspring is not usually visible in national statistics. This was dealt with in the *TeO* survey by cross-checking with the 2007 French census and local registers to identify immigrants' children (in particular from birth certificates). The *TeO* data thus allow the socio-economic integration of both first and second generation migrants to be analyzed, both of which were on purpose oversampled. Weights are provided to render the sample nationally representative. The whole *TeO* dataset is composed of 3781 individuals from the reference population ("natives", hereafter), 8456 immigrants, and 8161 descendants of immigrants.

1.2.2 Scope of the analysis and sub-populations of interest

We here consider the determinant of educational attainment and its consequences on the labor-market outcomes (in terms of employment and wages) for both second and first generation immigrants⁸ and their French native counterparts. We have two main types of variables of interest. First, as we are interested in the potential life-course effects of early differences (in terms of the family context during childhood, notably), we focus on the determinants of educational success. Second, we consider labor-market outcomes, as given by hourly wages and employment in 2008.

⁸This Chapter is associated to an original paper submitted to Education Economics (Langevin *et al.*, 2014). In this paper we chose to consider only second generations of immigrants since first generations did not face the French educational system which complicates the comparisons of their educational attainments with those of natives. However, in order to ensure the consistency of this manuscript we duplicate the analysis for first generations.

Our final sample thus consists of employees and the unemployed among French natives and both generations of immigrants. We consider neither students nor the retired, and drop individuals with missing values for wages or labor-force status⁹.

As noted above, we contrast different subsamples of first (5251 respondents) and second generation immigrants (5347 respondents) and natives (2667 respondents). To control for heterogeneity in ethnic origin, we separate our final sample into eight subgroups detailed in Table 1. When both parents are immigrants, but from two different areas, we retain the father’s origin.¹⁰

Table 1 – Sub-sample headcount

Highest qualification	French natives	North African	Sub-Saharan	Turkish	Asian	Northern European	Southern European	Eastern European	Total
Natives	2667								2667
Second generations		1462	496	257	292	362	2207	271	5347
First generations		1268	1054	511	672	341	1074	331	5251

1.3 Results

After evaluating the determinants of differences in education between ethnic groups in sub-section 1.3.1, we then investigate the role of education in both employment and wages in sub-section 1.3.2.

1.3.1 Educational achievement gaps between ethnic groups.

In this sub-section, we first present some summary statistics and then show the results of estimations of the determinants of education.

1.3.1.1 Summary statistics

⁹ We also chose to exclude self-employed workers from our data analysis because we could not introduce them in our two-step Heckman procedure to measure wage discrimination. Indeed by definition, self-employed being their “own boss” have no reason to discriminate against themselves at the wage setting step. However we recognize that some individuals may choose self-employment because they are discriminated by employers. Nevertheless, in our dataset it seems that it is not the case since we do not observe significant differences in self-employment rates between natives and second-generation immigrants. Self-employed represent 6.24% of second-generation immigrants, 7.62% of first generations and 6.57% of natives. A similar concern regards the discouraged workers that are not considered here. Although we are able to identify these individuals in the survey, we do not consider them as a part of our population of interest because of the subjective aspect of this status. Furthermore, they only represent 1.18% of inactive second-generations, 5.33% of inactive first generation and 3.95% of inactive native population.

¹⁰ Individuals with parents from two different immigrant groups represent only 0.98% of our second-generation immigrant sample (82 observations).

Table 2 describes the distribution of the highest diploma obtained by the respondent. These figures should be interpreted with caution as the age structure varies widely between groups. Table 2 indicates that second-generation immigrants are on average six years younger than French natives, and have therefore profited from the structural increase in general education. Even so, second-generation immigrants are more likely to have left school without any qualifications and conversely are less likely to have a university degree. This observation does not hold, however, for those of Sub-Saharan African and Asian origin.

Table 2 – *Descendants of immigrants: Summary education statistics (highest qualification)*

Highest qualification	French natives	North African	Sub-Saharan	Turkish	Asian	Northern European	Southern European	Eastern European
(1) No qualifications	11.57%	18.12%	11.78%	21.88%	10.40%	10,61%	17.22%	19.22%
(2) Junior high school	8.19%	8.92%	8.45%	7.89%	8.75%	3,60%	9.12%	9.53%
(3) Vocational high school	40.95%	41.94%	37.94%	50.98%	26.79%	35,16%	42.01%	37.99%
(4) High school	6.07%	5.58%	4.80%	0.90%	8.00%	18,12%	4.61%	4.91%
(5) College	14.06%	12.14%	16.91%	7.04%	15.53%	8,15%	13.99%	16.07%
(6) University	19.16%	13.31%	20.12%	11.31%	30.53%	24,36%	13.05%	12.27%

The average educational attainment is very different for immigrants as regard to the place of their study. Immigrant schooling duration is between 8 and 9 years for those who finish their studies before their arrival in France, whereas those who complete them in France spend between 12 and 13 years at school. The educational attainment of immigrants is thus very heterogeneous and largely depends on their age at arrival in France. This should be kept in mind while considering Table 3. With no surprise, differences of education levels are much more important for first than second generations. Northern European immigrants have a particularly good success at school. On the opposite, Northern African, Turkish and South European immigrants are particularly numerous to have no qualification. Of course, the age structure is different among origins due to different migration waves. Southern European immigration corresponds to the eldest wave and Sub-Saharan wave to the most recent. This is an explanation of such an important – and quite unexpected – educational gap between these two origins.

Table 3 – Immigrants: Summary education statistics (highest qualification)

Highest qualification	French natives	North African	Sub-Saharan	Turkish	Asian	Northern European	Southern European	Eastern European
(1) No qualifications	11.57%	34.39%	23.76%	43.36%	27.85%	6.25%	46.43%	12.85%
(2) Junior high school	8.19%	10.85%	12.56%	11.87%	7.89%	7.66%	6.47%	4.90%
(3) Vocational high school	40.95%	22.42%	19.11%	22.34%	16.86%	20.75%	30.54%	24.06%
(4) High school	6.07%	8.41%	12.88%	10.62%	12.82%	12.28%	4.61%	15.63%
(5) College	14.06%	7.96%	10.19%	4.83%	9.84%	12.24%	4.33%	5.87%
(6) University	19.16%	15.97%	21.51%	6.98%	25.00%	40.81%	7.61%	36.69%

1.3.1.2 The Role of Family Background in Educational Attainment

Table 4 provides a data analysis of the determinants of education. It shows the results of two ordered logit models of highest diploma without and with family background for each of the two subpopulations of immigrants. Following Belzil and Poinas (2010), we use the highest qualification as the attainment variable. Columns (1) and (3) only controls for demographic variables such as ethnic origin, gender and age. Columns (2) and (4) then add several variables related to parental background that may affect child education via various channels.

The first is family income. Much work has shown that family income is an important determinant of child school success (Haveman and Wolfe, 1995; Plug and Vijverberg, 2005).¹¹ Children from poor families have greater difficulty in pursuing their education as their parents face credit constraints in financing their children's education. As our data do not contain information on parental income, we use the occupation of both the father and the mother during the individual's childhood to proxy for the household financial situation.

¹¹Recently, economists have shown that the existence of a positive relationship between parental income and children's school outcomes may be biased if parental ability is ignored. In recent work, Plug and Vijverberg (2005) show however that this bias may be overestimated. They appeal to a sample of adopted children, which offers genetically-unbiased estimates, and find that family income still has a significant effect.

Table 4 (Part I) – Estimating education

Models	Second generations		First generations	
	Diploma ordered logit		Diploma ordered logit	
	(1)	(2)	(3)	(4)
Age	-0.0267*** (-6.65)	0.0301*** (3.26)	-0.0257*** (-6.60)	0.0291*** (3.21)
Female	0.142* (1.88)	0.230*** (2.90)	0.104 (1.40)	0.171** (2.20)
Family background				
Separate room		0.345*** (3.40)		0.355*** (3.63)
Number of siblings		-0.121*** (-5.03)		-0.104*** (-4.96)
Mother's education		0.172*** (6.35)		0.169*** (6.17)
Father's education		0.186*** (7.43)		0.186*** (7.59)
Reared by both parents as a couple		Ref.		Ref.
Reared in alternate custody		-0.852*** (-3.05)		-0.881*** (-3.08)
Reared by mother only		-0.647*** (-4.82)		-0.587*** (-4.61)
Reared by father only		-0.846** (-2.52)		-0.861*** (-2.63)
Reared in another situation		-0.203 (-1.40)		-0.164 (-1.20)
Father's occupation				
Worker		Ref.		Ref.
Entrepreneur		0.464*** (2.61)		0.486*** (2.86)
Intellectual occupation		0.364* (1.90)		0.325* (1.78)
Middle-level occupation		0.640*** (4.35)		0.616*** (4.25)
Mother's occupation				
Worker		Ref.		Ref.
Entrepreneur		0.328 (1.33)		0.332 (1.41)
Intellectual occupation		1.164*** (4.90)		1.126*** (4.89)
Middle-level occupation		0.415** (2.14)		0.397** (2.03)
French native	Ref.	Ref.	Ref.	Ref.
Sub-Saharan Africa	-0.237 (-1.62)	0.661*** (4.06)	-0.371*** (-3.53)	-0.0307 (-0.21)
Asian	0.240 (1.26)	0.822*** (4.27)	-0.184 (-1.17)	-0.0194 (-0.11)
Southern European	-0.428*** (-4.94)	0.288*** (2.66)	-1.413*** (-15.02)	-0.661*** (-6.27)
Northern European	0.443** (2.03)	0.903*** (3.20)	1.049*** (7.78)	0.487*** (2.91)
Eastern European	-0.221 (-0.70)	0.472 (1.33)	0.575*** (4.03)	0.154 (1.02)
North African	-0.617*** (-7.88)	0.498*** (4.28)	-0.889*** (-9.74)	0.00501 (0.04)
Turkish	-1.135*** (-6.40)	0.0583 (0.27)	-1.563*** (-11.70)	-0.698*** (-4.37)

Table 4 (Part II) – *Estimating education*

Models	Second generations		First generations	
	Diploma ordered logit (1)	Diploma ordered logit (2)	Diploma ordered logit (3)	Diploma ordered logit (4)
Mixed origin (French+other)	0.00139 (0.01)	-0.445*** (-3.97)	-	-
Control for siblings' education	No	Yes	No	Yes
Control for school type	No	Yes	No	Yes
Observations	8014	8014	7918	7918

Notes: *** Significant at the 0.01 level, ** at the 0.05 level, * at the 0.10 level. Z values in parentheses.

Beyond these financial aspects, parental education may be also an important determinant of educational attainment: this picks up any intergenerational correlation in education. This correlation may reflect some ability being transferred to children. It may also reflect the transmission of preferences. It can reasonably be argued that highly-educated parents will place greater value on education, and may therefore be more likely to encourage their children to pursue further education. Furthermore, educated parents may also help their offspring in their schoolwork (e.g. by having books around the house) which may reduce the cost of acquiring education (see for instance Ermisch and Francesconi, 2001).

Finally the family structure (e.g. the number of siblings, being in a single-parent family) may also matter in educational attainment. Siblings' role may be unclear since well-educated elder siblings may provide positive externalities on younger ones whereas having more brothers or sisters might also hamper education via the scarcity of resources (both money and time) in larger families (e.g. Blundell *et al.* 1997)¹². Furthermore, some research has shown that being in a single-parent family during childhood has a negative impact on education (e.g. Haveman and Wolfe, 1995).¹³

Immigrant origins – Column (1) of Table 4 shows that women have generally better education outcomes than men. This result is consistent with previous researches on gender gap in education (see for instance, Siahaan *et al.*, 2014). The North African, Southern Europe and Turkish origin variables attract negative and significant

¹² In the estimates, we control for the position of the respondent among siblings and elder siblings' diploma

¹³ We also control for school characteristics (only private, only public or both types of schools during schooling), average unemployment and the growth rate when the respondent was aged 15, parental occupation as well as serious events during schooling (parental death, problems with violence, alcohol, and money). These variables are not displayed in Table 4, but are available upon request from the authors.

coefficients, so that these individuals are less likely to experience education success. Those from Sub-Saharan Africa, Asia and Eastern Europe are not significantly different from French natives. Finally, second-generation immigrants from Northern Europe perform significantly better than all other groups.

Column (2) reports rather different findings. Here the introduction of family background has a sizeable effect on the ethnic-origin coefficients. These latter are now significantly positive (except for Turkey and Eastern Europe, which are not different from French natives). We no longer find a negative effect of origin on education: instead second-generation immigrants are more likely than French natives to obtain better education outcomes. This result is consistent with the existing literature. Card *et al.* (2000) use US data (the 1940 and 1970 Censuses and 1994-1996 Current Population Surveys) and find that second-generation immigrants are more educated than the children of comparable U.S.-born parents. Brinbaum *et al.* (2012) use the same *TeO* data as we do, and obtain a similar result showing that ethnic origin is no longer significant as a predictor of schooling failure when family background is controlled for. This result is also consistent with Dustmann *et al.* (2012), who carry out a comparative analysis across a number of European countries of second-generation immigrants using PISA, European Union Labor Force Survey and European Social Survey data. For example, they find that the test-score gap between children born to immigrants and natives is substantially reduced in most countries when controls for parental characteristics, school and peer quality, and the language spoken in school are introduced.

Columns (3) and (4) exhibit less remarkable results. Nevertheless, whereas many origins have significant and negative effects on educational level (except for Northern European), both intensity and significance of these effects decrease while controlling for family background. Finally, only Southern European and Turkish origins decrease respondents' education after this control.

Family background – First of all it is striking to see how socio-demographics and family background characteristics have similar impacts in terms of relative size and significance on both second and first generations. Therefore the above comments regarding the importance of siblings, parents' education and family structure are also suitable for first generation of immigrants.

Childhood environment thus seems to be a key determinant of education. Parental education and family income are strongly correlated with child education. In addition, having a single parent is associated with worse education outcomes. The negative impact of the number of siblings on education can reflect that having more siblings implies fewer available resources per child. Last, in line with the results of Goux and Maurin (2005), the availability of a separate room for homework is positively associated with education outcomes. This can be seen as additional evidence for the importance of educational resources.

Parents' job occupation can be considered as both a proxy for their wealth and human capital. Once more occupations associated with highest wealth and human capital (entrepreneurs, intellectual or middle-level occupations) are assets for children's educational attainment.

One may reasonably argue that family context may affect schooling success in two different ways. First, family backgrounds may have a more negative impact on immigrant than they would on natives. To investigate this channel, we ran complementary regressions with interactions between respondents' ethnic origin and family background (number of siblings, separate room, family structure and parental education). In these regressions none of these interaction variables are significant or robust to specification changes, suggesting that family background has a similar effect across ethnic groups. The size, structure and wealth of the family are of the same central importance in predicting education outcomes for all ethnic groups.

It might also be conjectured that immigrants are more likely to have unfavorable family backgrounds. To check this we tested whether there are significant differences in the family background between each ethnic groups and French natives. Table 5 reports average differences in the family background. It shows that ethnic-origin groups are significantly different from French natives with respect to their family background. This may explain why ethnic-origin groups have worse educational outcomes than do French natives.

Second generation – We first see that North African, Southern European and Turkish parents are less educated than are French parents and have “no qualification” as the mean educational level for both the father and the mother. Second, descendants of

immigrants from North African, Sub-Saharan African, Eastern Europe and Turkish parents have fewer opportunities to do their homework in a separate room. Notably, the number of Eastern-European descendants who benefited from a separate room is almost 30 percentage points lower than their French counterparts. For the three other ethnic groups, the difference is at least 8 percentage points. Sub-Saharan and North African (respectively Asian and Turkish) second-generation immigrants live in families with on average two siblings (respectively 0.8 siblings) more than French families. Third, Table 5 indicates that Sub-Saharan, Southern and Eastern European origin respondents were brought up less frequently by both parents in a couple. In particular, the percentage of Sub-Saharan individuals reared by both parents in a couple is 14.6 points lower than the figure for French natives. North African, Southern-European and Turkish parents are on average less educated. Finally, Northern-European immigrants are not significantly different from natives, except for the fact that their parents were more often in a couple relationship during their childhood.

First generation – Northern and Eastern European immigrants are specific as regard to their family background. Indeed, compared to natives, their parents are better educated, their siblings are fewer and they do not face more particular family structure. As shown in Table 4, these characteristics are associated with positive returns in education. Thus, they may explain a large part of their better educational attainment. On the opposite, other origins' family characteristics are associated with negative educational returns according to Table 4. One should notably note the very large differences of sibling size of Sub-Saharan and Northern African immigrants compared to the natives'. This has an important impact on respondents' educational level if we follow Parish and Willis (1993) who states that under budget constraint, siblings need to compete for a limited amount of family resources regarding parents' educational investment. Of course, the larger the sibling size, the lower the potential budget share for each children. Furthermore, other characteristics such as parents' education and job occupation suggest that this budget constraint is already more tightened for these immigrants. Of course, these remarks are valid for Southern European, Asian and Turkish ethnic groups even if their quantitative disadvantage seems lesser. Finally, Sub-Saharan, North African and Asian first generations have more often faced single-parent rearing.

Table 5 – Ethnic-origin Differences in Family Background

	Sub-Saharan Africa	North Africa	Northern Europe	Southern Europe	Eastern Europe	Asia	Turkey
<i>Second generations</i>							
Separate room for homework	-0.081***	-0.103***	-0.026	-0.025	-0.298***	-0.003	-0.092*
Number of Siblings	2.446***	2.385***	0.454	0.394**	0.081	0.851***	0.801***
Mother's Education	-0.001	-0.973***	0.407	-0.681***	-0.437	-0.022	-1.168***
Father's Education	-0.112	-1.214***	0.176	-0.993***	-0.641*	0.331	-1.22***
Reared by: Both parents as a couple	-0.146***	0.004	0.062***	0.04***	0.072***	0.005	0.033
Alternate custody	0.015	-0.001	0.000	0.003	-0.008***	0.015	0.005
Mother only	0.145***	0.025*	-0.025	0.006	-0.037*	0.073**	-0.006
Father only	0.003	-0.001	-0.007	-0.008	0.002	0.008	-0.017**
Other	0.051*	-0.031***	-0.034**	-0.017	-	-0.024	-0.017
<i>First generations</i>							
Separate room for homework	-0.186***	-0.219***	0.013	-0.308***	-0.078***	-0.258***	-0.301***
Number of Siblings	4.456***	3.282***	-0.350**	1.202***	-0.586***	1.849***	1.540***
Mother's Education	-0.867***	-1.441***	0.959***	-1.425***	1.157***	-0.577***	-1.533***
Father's Education	-0.093	-1.248***	1.180***	-1.471***	1.055***	-0.074	-1.400***
Reared by: Both parents as a couple	-0.110***	-0.019*	0.016	0.054***	-0.009	-0.032**	0.066***
Alternate custody	0.003	-0.006*	0.002	-0.003	0.002	0.007*	-0.008*
Mother only	0.030***	0.047***	0.021	0.009	0.022	-0.016	0.023
Father only	0.010*	-0.012**	-0.019**	-0.005	0.012	0.005	-0.017**
Other	0.154***	0.007	-0.029	-0.012	-0.011	0.035**	-0.048***

Notes: *** Significant at the 0.01 level, ** at the 0.05 level, * at the 0.10 level. Parental education is a discrete number between 1 and 6 according to the six education levels in the data (see Table 7). The figures should be read as the difference between the average highest educational qualification between natives and that in the ethnic group under consideration. Given that the average highest educational qualification for the father (mother) of French natives is junior high school (no qualifications), the data show for example that the average qualification for father (mother), of North African second-generation immigrants is no qualifications (no qualifications).

With no surprise, differences of family background are even more important for immigrants than they are for descendants. This may be enlighten by Chiswick's IAH (Immigration Assimilation Hypothesis, 1978) specifies that immigrants acquire destination-relevant human capital¹⁴ with duration in the destination. Thus, parents of second generation may have acquired this specific human capital and therefore transmitted it to their offspring (as suggested by Table 4).

1.3.2 Educational Attainment and the ethnic gap in labor-market outcomes

Our previous analyses underlined the main determinants of the ethnic gap in educational attainment. We now go one step further and consider the role played by educational achievement in explaining labor-market outcomes (employment and wages) and gaps between ethnic groups. After presenting some summary statistics, we investigate the determinants of both employment and wages. We first estimate employment regressions, and then appeal to the methods popularized by Oaxaca (1973) and Blinder (1973) to decompose the employment gap into a structural part resulting from differences in observable characteristics and a residual part resulting from differences in the return to these same characteristics. In a second step, we consider the differences in wages across ethnic groups. Following Aeberhardt *et al.* (2010a), we correct for the potential selection bias due to wages only being observed for the employed. This correction is effected via a two-step Heckman procedure.

1.3.2.1 Summary statistics

Table 6 presents the descriptive statistics of employment status and hourly wages among ethnic groups in our sample. It indicates that there are considerable employment and wage differences between second and first generation immigrants and French natives, but also between ethnic groups.

¹⁴Chiswick states that the human capital acquisition rate is however decreasing.

Table 6 – Summary statistics on labor-market outcomes by ethnic group

Origin of parents	Second generation				First generation			
	Employment share	Significantly different from France?	Hourly wage	Significantly different from France?	Employment share	Significantly different from France?	Hourly wage	Significantly different from France?
France	89.43% (0.307)	-	10.926 (8.206)	-	89.43% (0.307)	-	10.926 (8.206)	-
North Africa	74.15% (0.438)	Yes (F=87.47; p=0.000)	9.059 (3.549)	Yes (t=-7.16; p=0.000)	79.29% (0.405)	Yes (F=47.75; p=0.000)	9.492 (5.300)	Yes (t=-4.68; p=0.000)
Sub-Saharan Africa	75.86% (0.428)	Yes (F=23.42; p=0.000)	9.351 (5.175)	Yes (t=-3.24; p=0.001)	79.59% (0.403)	Yes (F=33.47; p=0.000)	9.201 (4.346)	Yes (t=-5.40; p=0.000)
Turkey	67.34% (0.470)	Yes (F=18.78; p=0.000)	9.250 (3.734)	Yes (t=-3.14; p=0.002)	77.34% (0.419)	Yes (F=29.60; p=0.000)	9.113 (3.712)	Yes (t=-5.56; p=0.000)
Asia	83.08% (0.376)	Yes (F=4.78; p=0.029)	10.450 (4.027)	No (t=-1.14; p=0.255)	84.42% (0.363)	Yes (F=6.08; p=0.014)	9.911 (5.604)	Yes (t=-2.24; p=0.025)
Southern Europe	89.33% (0.309)	No (F=0.00; p=0.977)	10.213 (4.442)	Yes (t=-2.18; p=0.030)	93.56% (0.246)	Yes (F=13.59; p=0.000)	10.370 (5.280)	Yes (t=-1.87; p=0.062)
Northern Europe	94.97% (0.219)	Yes (F=15.01; p=0.000)	12.170 (4.852)	Yes (t=2.20; p=0.028)	88.81% (0.316)	No (F=0.06; p=0.803)	14.160 (9.588)	Yes (t=5.07; p=0.000)
Eastern Europe	77.49% (0.418)	No (F=1.43; p=0.231)	10.901 (4.683)	No (t=-0.05; p=0.961)	80.63% (0.396)	Yes (F=12.09; p=0.001)	10.910 (6.445)	No (t=-0.02; p=0.985)

Note: The table shows the weighted means and standard deviations in parentheses. Wald F-tests are computed for employment outcomes and t-test for wages and we consider 10% critical values.

Immigrants from North-African, Sub-Saharan African and Turkish origins are significantly less likely to be in employed and receive lower wages on average than natives. Asians are also less employed but the wage gap with native is either significantly null (second generations) or lower (first generations) than those of previous ethnic groups. Regarding European migrants, situations are heterogeneous. Descendants of Southern European parents are not worse than natives in terms of employment rates but face lower wages. Their first generation counterparts face significantly lower labor-market outcomes compared to Natives. Eastern Europeans' first generation are significantly less employed. Finally, Northern European, following results of subsection 1.3.1. have better labor-market outcomes than natives.

Of course, these employment and wage gaps have many potential explanations that next sub-sections investigate.

1.3.2.2 The determinants of the ethnic employment gap

To provide more formal evidence of an ethnic employment gap, we run employment regressions. Let the employment function for individual i in ethnic group j be given by

$$L_{ij} = 1_{L_{ij}^* > 0} \quad (1)$$

$$L_{ij}^* = H_{ij} \cdot \alpha + \omega_j + \varepsilon_{ij} \quad (2)$$

where L_{ij} is a dummy variable corresponding to employment, L_{ij}^* is the associated latent variable, H_{ij} is a vector of the determinants of employment, and ω_j is a group j fixed effect. Setting ω_{France} equal to 0 fixes natives as the reference group. The error term ε_{ij} is assumed to follow a normal distribution with parameters (0,1). The probability of employment is expressed as

$$Prob(L_{ij} = 1) = Prob(L_{ij}^* > 0) = Prob(\varepsilon_{ij} > -(H_{ij} \cdot \alpha + \omega_j)) = \Phi(H_{ij} \cdot \alpha + \omega_j) \quad (3)$$

where $\Phi(\cdot)$ is the standard normal cumulative distribution function.

Table 7 shows the results from weighted¹⁵ probit estimations of employment. To emphasize the role of education in ethnic employment gaps, we run estimates with and without the education variables.

First, as in education models, influences of socio-demographics and family structure are very similar for first and second generations. Note that the family characteristics are not anymore those of respondents' childhood but the characteristics of her adulthood family. Once controlled for age, potential work experience (defined as the time between current job and the end of studies, Mincer, 1974) has expected positive impacts on employment (each supplementary year of experience leads to a raise of the employment probability of 2.56% for second generations and 2.32% for first). The quadratic potential experience shows that the return rate is however decreasing. Regarding respondents' family structure, to live in a couple is associated with better employment outcomes, whatever the employment status of the spouse.

Column (1) and (3) show the estimated coefficients without controls for education whereas models (2) and (4) control for it. The introduction of education mainly changes the coefficients of origins.

¹⁵ We use the `pweight` command in Stata12 to include weights in our models.

Chapter 1: Ethnic gaps in educational attainment and labor-market outcomes: evidence from France

Table 7 (Part I) – Employment estimates

	Second generation		First generation	
	(1)	(2)	(3)	(4)
Age	-0.00430* (-1.95)	-0.0192*** (-6.34)	-0.00463** (-2.46)	-0.0182*** (-7.27)
Experience	0.0112*** (3.54)	0.0255*** (7.25)	0.0106*** (3.70)	0.0233*** (7.56)
Experience ² /100	-0.0112** (-2.15)	-0.00907** (-2.00)	-0.0116** (-2.39)	-0.00911** (-2.11)
Education				
No qualifications		Ref.		Ref.
Junior high school degree		0.0649*** (6.43)		0.0659*** (6.49)
Vocational high school degree		0.101*** (6.60)		0.0976*** (6.48)
High school degree		0.0845*** (12.24)		0.0838*** (12.00)
College degree		0.106*** (12.35)		0.105*** (12.38)
University degree		0.142*** (13.16)		0.142*** (13.11)
Origin				
French native	Ref.	Ref.	Ref.	Ref.
North African	-0.0971*** (-5.08)	-0.0418*** (-2.76)	-0.0735*** (-3.18)	-0.0155 (-0.90)
Sub-Saharan African	-0.0635** (-2.04)	-0.0229 (-0.94)	-0.0495* (-1.78)	0.00860 (0.46)
Turkish	-0.106** (-2.35)	-0.0456 (-1.33)	-0.119*** (-3.58)	-0.0567** (-2.13)
Asian	-0.0124 (-0.52)	-0.00151 (-0.07)	-0.0405 (-1.49)	-0.0103 (-0.46)
Southern European	0.00724 (0.50)	0.0280*** (2.60)	0.0200 (1.37)	0.0379*** (3.52)
Northern European	0.0574*** (4.05)	0.0494*** (4.03)	0.0256 (1.27)	0.0171 (0.85)
Eastern European	-0.118 (-1.26)	-0.103 (-1.10)	-0.0403 (-1.35)	-0.0384 (-1.30)
Mixed origin (French+other)	-0.0161 (-0.92)	-0.0175 (-1.09)		
Years since arrival			0.00147** (2.23)	0.00150** (2.38)
Family				
At least one child	-0.0304* (-1.76)	-0.0225 (-1.45)	-0.0345** (-2.04)	-0.0241 (-1.57)
Single man	Ref.	Ref.	Ref.	Ref.
Single woman	-0.00233 (-0.13)	-0.0101 (-0.57)	-0.0178 (-0.84)	-0.0243 (-1.20)
Man, working spouse	0.111*** (8.63)	0.0925*** (7.99)	0.104*** (7.56)	0.0859*** (7.02)
Woman, working spouse	0.0724*** (4.69)	0.0541*** (3.83)	0.0616*** (3.71)	0.0447*** (2.94)
Man, non-working spouse	0.0647*** (4.48)	0.0569*** (4.72)	0.0643*** (4.49)	0.0580*** (4.94)
Woman, non-working spouse	0.0140 (0.41)	0.0178 (0.64)	0.00421 (0.12)	0.00749 (0.25)

Table 7 (Part II) – *Employment estimates*

	Second generation		First generation	
	(1)	(2)	(3)	(4)
Controls for city size	Yes	Yes	Yes	Yes
Pseudo R ²	0,0884	0,1711	0,0834	0,1617
Observations	8014	8014	7918	7918

Notes: *** Significant at the 0.01 level, ** at the 0.05 level, * at the 0.10 level. Z values are in parentheses.

Second generation – Column (1) reports that individuals of North African, Sub-Saharan and Turkish origin have a significantly lower probability of employment than natives. By way of contrast, Northern-European descendants perform significantly better than do French natives, with an employment probability which is 5.8 percentage points higher. The insignificant coefficients on the Asian and Southern or Eastern European variables show that there is no employment difference between these groups and French natives. Controlling for education in column (2) renders the coefficients on the Sub-Saharan and Turkish variable insignificant. The employment probability gap for individuals of North-African origin rather than French origin drops from almost 10. to 4. percentage points in column (2), and the Southern European coefficient is now positive and significant.

First generation – The introduction of educational attainment tends to reduce the ethnic employment gap for this first generations too. The negative impact of North and Sub-Saharan Africa disappears and that of Turkish origin is divided by two. Southern European immigrants have a 3.79% percentage point advantage. Finally, each supplementary year spent in France leads to a raise of the employment probability which constitutes a verification of Chiswick’s Immigrant Assimilation Hypothesis (IAH).

To provide further evidence of the extent of the ethnic employment gap, we use the decomposition method introduced by Aeberhardt *et al.* (2010a). This provides estimates for non-linear regressions analogous to those from standard linear decomposition techniques (Oaxaca, 1973, Blinder, 1973, Neuman and Oaxaca, 2004, Bauer and Sinning, 2008). This allows us to decompose the employment gap between two groups into a part resulting from differences in observable characteristics such as education and a residual part. The main attraction of the Aeberhardt *et al.* (2010a) method is that it does not involve the calculation of coefficients for the minority groups. Due to the small cell sizes of immigrant-origin groups, separate regressions may yield inaccurate

coefficient estimates. The decomposition of the employment gap between natives and second-generation immigrants from group j is given by:

$$\begin{aligned}
 E[L_{if}] - E[L_{ij}] &= \underbrace{E_{Hf}[E(L_{if}|Hi)] - E_{Hj}[E(L_{if}|Hi)]}_{\text{Explained part}} \\
 &+ \underbrace{E_{Hj}[E(L_{if}|Hi)] - E_{Hj}[E(L_{ij}|Hi)]}_{\text{Residual gap}}
 \end{aligned} \tag{4}$$

The explained part consists of the difference between French natives' employment and the estimated employment of second-generation immigrants from group j , when both groups have similar returns to characteristics. This part of the employment gap results from differences in characteristics only. On the other hand, the residual gap consists of the part of employment gap attributed to differences in the return to characteristics.

Following Aeberhardt *et al.* (2010a,b), we use simple empirical counterparts to carry out this decomposition.

$$\frac{1}{N_f} \sum_{i \in f} L_i \xrightarrow{a.s} E_{Hf}[E(L_{if}|Hi)] \tag{5}$$

$$\frac{1}{N_j} \sum_{i \in j} L_i \xrightarrow{a.s} E_{Hj}[E(L_{ij}|Hi)] \tag{6}$$

$$\frac{1}{N_j} \sum_{i \in j} \Phi(H_i, \alpha_f) \xrightarrow{a.s} E_{Hj}[E(L_{if}|Hi)] \tag{7}$$

Equations (5) and (6) are the simple arithmetical means of employment levels in groups f and j . Equation (7) implies calculating the coefficients α_f in a previous regression on the French native population only, and applying them to immigrants from group j . Although this method does not lead to an exact decomposition, it has been shown to yield more precise estimates than the usual approach (Aeberhardt *et al.*, 2010a,b).

Table 8 shows the results of the employment-gap decompositions between French natives and immigrants (second and first generations). The procedure is applied with

and without control for education in order to assess its impact on employment access. In the left panel, there are no education controls.¹⁶

Table 8 – *The decomposition of the employment gap between French natives and immigrants*

<i>Second generation</i>						
	No control for education			Controlling for education		
	Raw	Explained	Residual	Raw	Explained	Residual
North African	0.152	0.034 22.56%	0.118 77.44%	0.152	0.089 58.31%	0.064 41.69%
Sub-Saharan African	0.136	0.050 37.03%	0.085 62.97%	0.136	0.096 70.84%	0.039 29.16%
Turkish	0.221	0.078 35.07%	0.144 64.93%	0.221	0.145 65.59%	0.051 34.40%
Asian	0.064	0.037 58.54%	0.026 41.46%	0.064	0.059 91.66%	0.005 8.336%
Southern European	Not signif.			Not signif.		
Northern European	-0.055	-0.001 1.72%	-0.054 98.28%	-0.055	-0.014 24.53%	-0.042 64.89%
Eastern European	Not signif.			Not signif.		
<i>First generation</i>						
	No control for education			Controlling for education		
	Raw	Explained	Residual	Raw	Explained	Residual
North African	0.102	-0.034 -33.33%	0.136 133.33%	0.101	0.034 33.52%	0.067 66.48%
Sub-Saharan African	Not signif.			Not signif.		
Turkish	0.120	-0.036 -29.99%	0.157 129.99%	0.119	0.024 19.93%	0.095 80.07%
Asian	Not signif.			Not signif.		
Southern European	-0.041	-0.057 138.96%	0.016 -38.96%	-0.041	-0.029 70.59%	-0.012 29.41%
Northern European	0.007	-0.045 -686.12%	0.052 786.12%	0.007	-0.026 -363.76%	0.033 463.76%
Eastern European	Not signif.			Not signif.		

With no education controls, second-generation immigrants from North Africa, Sub-Saharan Africa and Turkey face a considerable residual employment gap. However, controlling for education sharply reduces this gap. Again, education is a major determinant of ethnic differences in employment. First generation immigrants' residual shares are even larger and, as for descendants, education control decreases these unexplained part of the employment ethnic gap.

¹⁶ We use the same covariates as in the regressions in Table 5, apart for the ethnic group dummies.

For both second and first generation, there remains nonetheless a substantial residual gap. One of the first explanations which come to mind is discrimination. However, some alternative explanations can also be considered and notably the role of ethnic identity. These residuals gaps do not disappear with observable characteristics and may result from identity-based behaviors aiming to commit toward ethnic group prescriptions. We explore this way in Chapters 2 and 3.

1.3.2.3 Wage differentials between ethnic groups.

After having investigated the employment ethnic gap, we now turn to the ethnic wage gap. Following Aeberhardt *et al.* (2010a,b), we control for selection using the Heckman two-step procedure.¹⁷ We assume that the wage function is given by

$$w_{ij} = X_{ij} \cdot \beta + \delta_j + u_{ij} \quad (8)$$

where w_{ij} is the log hourly wage of individual i belonging to ethnic group j , X_{ij} is a vector of the determinants of market wages (this latter has a coefficient vector β which applies to the whole population) and δ_j is a parameter specific to ethnic group j . Considering French natives as the reference category, we set $\delta_{France} = 0$. As such, δ_j measures the wage gap between group j and *France*, conditional on the other covariates. Last, u_{ij} is an error term which is assumed to follow a normal distribution with parameters $(0, \sigma_u)$. We also assume that $\text{cov}(\varepsilon_{ij}, u_{ij}) = \rho$, for any i, j .

The wage is however only observed for individuals in employment. Let the employment function for individual i in ethnic group j be

$$L_{ij}^* = H_{ij} \cdot \alpha + \omega_j + \varepsilon_{ij}. \quad (9)$$

The presence of possible correlation ρ between the error terms of our two equations implies potential bias. We estimate the wage equation for the employed, which is expressed as

$$w_{ij} | L_{ij}^* > 0 = X_{ij} \cdot \beta + \delta_j + \rho \cdot \sigma_u \cdot \lambda_{ij} \quad (10)$$

$$\lambda_{ij} = \frac{\phi(H_{ij} \cdot \alpha + \omega_j)}{\Phi(H_{ij} \cdot \alpha + \omega_j)} \quad (11)$$

¹⁷ We appeal to maximum-likelihood estimators, which are known to be more efficient than the original two-step procedure (Puhani, 2000).

where $\phi(\cdot)$ is the standard normal density distribution function, $\Phi(\cdot)$ is the standard cumulative normal distribution and λ_{ij} is the inverse Mills ratio. We can thus test for selection bias ($\rho \neq 0$) and correct it.

For the model to be identified, we require selection variables: these affect the probability of employment, but not directly wages. We use standard instruments (Aeberhardt *et al.*, 2010a): marital status (single man, single woman, working or non-working spouse) and the presence of at least one child. These significantly affect the probability of employment (Table 6) and can thus be considered as valid.

Table 9 reports wage-equation estimates using two different econometric methods: models (O) present simple weighted OLS regression results, while models (H) with Heckman correction for selection bias. This table exhibits standard effects on wages of age and gender¹⁸. Males and elder individuals win more. The seniority within the firm has also expected impacts on wages since each supplementary year spent working for the firm yields a raise of the hourly wage of roughly 1 euro¹⁹. Potential experience has a quite surprising negative influence on hourly wage which disappears with inclusion of education in the set of regressors. Its effect is however non-linear, as shown by the negative coefficient on “Experience²/100”.

Second generations – Unsurprisingly, model (O2) indicates that education has an important influence wages. Controlling for education, the ethnic wage gap faced by those from Northern and Sub-Saharan African origins persists but is less significant and smaller in size. Turkish origin attracts a positive coefficient when controlling for education, and Asian and European second-generation immigrants do not significantly differ from French natives in terms of wages. As shown by columns (H3) and (H4), those results are analogous to columns while controlling for selection bias.²⁰

¹⁸ Controlling for occupations allows us to capture specific wage formation process. However, it could lead to underestimate the level of discrimination as the access to a particular occupation may result from discriminatory behaviors.

¹⁹ $Exp(0.008) \cong 1$.

²⁰ That the inverse Mills ratio is insignificant does not necessarily imply that there is no selection bias within each ethnic group. It is due to the selection bias being different with respect to both its extent and nature between natives and second-generation immigrants. When we run regressions for each subgroup, we obtain a Mill's ratio which is significantly positive for natives and significantly negative for second-generation immigrants. This is the reason why we observe an insignificant Mill's ratio in the whole sample estimation.

Chapter 1: Ethnic gaps in educational attainment and labor-market outcomes: evidence from France

Table 9 (Part I) – Wage equation estimates

	<i>Second generation</i>				<i>First generation</i>			
	Weighted OLS		Weighted two-step Heckman		Weighted OLS		Weighted two-step Heckman	
	(O1)	(O2)	(H1)	(H2)	(O3)	(O4)	(H3)	(H4)
Individual								
Age	0.0367*** (6.38)	0.0245*** (3.17)	0.0375*** (6.46)	0.0234*** (3.23)	0.0319*** (6.10)	0.0198*** (2.91)	0.0324*** (6.00)	0.0189*** (2.87)
Female	-0.110*** (-6.89)	-0.114*** (-7.06)	-0.109*** (-6.76)	-0.114*** (-7.12)	-0.111*** (-6.82)	-0.114*** (-6.98)	-0.109*** (-6.45)	-0.115*** (-7.08)
Experience	0.0166*** (-3.02)	-0.00425 (-0.58)	0.0185*** (-2.89)	-0.00269 (-0.39)	-0.0120** (-2.35)	0.000166 (0.03)	-0.0134* (-1.77)	0.00143 (0.22)
Experience ² /100	- (-5.37)	- (-5.36)	- (-3.91)	- (-5.19)	- (-5.74)	- (-5.81)	- (-3.08)	- (-5.62)
Seniority within the firm	0.00836** * (7.37)	0.00850** * (7.72)	0.00835** * (7.35)	0.00851** * (7.75)	0.00815** * (7.31)	0.00837** * (7.74)	0.00813** * (7.26)	0.00838** * (7.77)
Education								
No qualifications		Ref.		Ref.		Ref.		Ref.
Junior high school degree		0.0736** (2.08)		0.0789** (2.16)		0.0586* (1.76)		0.0632* (1.82)
Vocational high school degree		0.0882*** (3.18)		0.0944*** (3.29)		0.0774*** (2.81)		0.0826*** (2.88)
High school degree		0.0825* (1.94)		0.0917** (2.10)		0.0681* (1.66)		0.0755* (1.77)
College degree		0.146*** (3.39)		0.158*** (3.56)		0.142*** (3.31)		0.151*** (3.33)
University degree		0.236*** (4.81)		0.249*** (4.87)		0.237*** (4.96)		0.248*** (4.79)
Origin								
French native	Ref. -	Ref. -	Ref. -	Ref. -	Ref. -	Ref. -	Ref. -	Ref. -
North African	0.0738*** (-4.41)	0.0560*** (-3.35)	-0.0594* (-1.86)	0.0601*** (-3.14)	-0.105*** (-4.74)	0.0817*** (-3.73)	-0.0955** (-2.10)	0.0840*** (-3.69)
Sub-Saharan African	-0.111** (-2.08)	-0.0990* (-1.85)	-0.102* (-1.80)	-0.101* (-1.89)	-0.164*** (-5.56)	-0.134*** (-4.48)	-0.154*** (-3.03)	-0.137*** (-4.40)
Turkish	0.0645 (1.62)	0.0761** (1.97)	0.0840 (1.57)	0.0704* (1.75)	-0.00568 (-0.19)	0.00734 (0.26)	0.0128 (0.15)	0.000702 (0.02)
Asian	-0.0433 (-1.42)	-0.0294 (-0.98)	-0.0436 (-1.42)	-0.0289 (-0.97)	-0.112*** (-3.23)	-0.105*** (-3.03)	-0.106** (-2.34)	-0.107*** (-3.05)
Southern European	-0.00372 (-0.23)	0.00820 (0.48)	-0.00528 (-0.33)	0.00988 (0.59)	0.0477** (2.31)	0.0556*** (2.67)	0.0468** (2.25)	0.0571*** (2.68)
Northern European	0.0334 (0.92)	0.0306 (0.81)	0.0285 (0.79)	0.0323 (0.86)	0.0746* (1.85)	0.0712* (1.75)	0.0777* (1.80)	0.0695* (1.70)
Eastern European	-0.0273 (-0.81)	-0.00965 (-0.29)	-0.0175 (-0.45)	-0.0135 (-0.38)	-0.0443 (-1.20)	-0.0394 (-1.07)	-0.0360 (-0.70)	-0.0428 (-1.12)
Mixed origin (French+other)	0.0305 (1.34)	0.0291 (1.31)	0.0323 (1.41)	0.0284 (1.27)				
Years since arrival					-0.000291 (-0.31)	-0.000118 (-0.13)	-0.000307 (-0.32)	-0.000106 (-0.11)

Table 9 (Part II) – *Wage equation estimates*

	<i>Second generation</i>				<i>First generation</i>			
	Weighted OLS		Weighted two-step Heckman		Weighted OLS		Weighted two-step Heckman	
	(O1)	(O2)	(H1)	(H2)	(O3)	(O4)	(H3)	(H4)
Inverse Mills ratio			-0.2235 (-0.58)	0.091 (0.53)			-0.1747 (-0.24)	0.0790 (0.44)
Controls for city size	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls for occup. category	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls for sector	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6639	6639	8014	8014	6447	6647	7914	7914
R ²	0.418	0.427			0.408	0.418		

Notes: *** Significant at the 0.01 level, ** at the 0.05 level, * at the 0.10 level. T values – columns (1) and (2) – and Z values – columns (3) and (4) – in parentheses.

First generation – Education is a major determinant of their wage formation. Two subgroups of immigrants can be distinguished regarding the impact of their origins on wages. First, a subgroup composed of Northern and Sub-Saharan Africans, and Asians faces significant lower wages than natives. The second subgroup is composed of immigrants from Northern and Southern Europe. These latter also face a significant ethnic wage gap compared to natives but in their favor. These two different ethnic gaps seem rather robust since neither the control for education nor the Heckman correction decrease their size or significance. Another strong implication of this table is the insignificance of the time spent in France. This does not support usual expectations of the literature and notably Chiswick (1978) or Borjas (1985) who have stated and observed that the wage ethnic gap in the U.S. was decreasing with time since arrival in the receiving country. They see the reduction of the wage gap as an evidence for immigrant cultural assimilation. Of course, we cannot conclude that cultural assimilation does not happen or that it has no impact on wages due to the cross-sectional nature of our data (Borjas, 1994). However, this is an incentive for us to examine its impact through other ways and notably thanks to ethnic identity.

To investigate in further details the extent of ethnic wage gap, we resort again to the decomposition methodology proposed by Aeberhardt *et al.* (2010a). This counterfactual approach, inspired by standard decomposition techniques (Oaxaca, 1973, Blinder, 1973), only requires the estimation of wages for French natives. This avoids the

potential problem of small cell sizes by second-generation immigrant groups. We use two simple counterfactuals to decompose the wage gap between French natives f and the second-generation group j :

$$w_j^* = \sum_{i \in j} \left(\frac{\Phi(H_i, \hat{\alpha}_f)}{\sum_i \Phi(H_i, \hat{\alpha}_f)} \right) \left(X_i \cdot \hat{\beta}_f + \hat{\rho}_f \cdot \hat{\sigma}_f \cdot \frac{\phi(H_i, \hat{\alpha}_f)}{\Phi(H_i, \hat{\alpha}_f)} \right) \quad (12)$$

$$w_j^{**} = \sum_{i \in j} \left(\frac{L_i}{\sum_i L_i} \right) \left(X_i \cdot \hat{\beta}_f + \hat{\rho}_f \cdot \hat{\sigma}_f \cdot \frac{\phi(H_i, \hat{\alpha}_f)}{\Phi(H_i, \hat{\alpha}_f)} \right) \quad (13)$$

The first counterfactual w_j^* corresponds to the average wage that an individual from group j could expect if he was selected and paid in the same way as those in the French native group. The second counterfactual w_j^{**} represents the average wage that an employed individual from group j could expect if he was paid in the same way as French natives.

The decomposition of the wage gap between French natives f and second-generation group j is then written as follows

$$\bar{w}_f - \bar{w}_j = \underbrace{\bar{w}_f - w_j^*}_{\text{Explained part}} + \underbrace{w_j^* - w_j^{**}}_{\text{Selectivity}} + \underbrace{w_j^{**} - \bar{w}_j}_{\text{Residual gap}} \quad (14)$$

Table 10 presents the ethnic wage gap decomposition results. The wage gap is expressed here as the difference in the log hourly wage between French natives and immigrants. As noted above, we decompose these gaps into three components. The first corresponds to the proportion explained by differences in observed characteristics between the two groups. The second represents the differences between the two groups in terms of selection. The third shows the residual gap, *i.e.* the proportion of the gap which is neither explained by observed characteristics nor by selection. The table shows each component as a percentage of the initial raw gap. Again, controlling for education reduces the residual part and increases the explained part of the wage gap. Overall, these and previous findings suggest that education differences between ethnic groups are particularly important in explaining employment and wage gaps.

Regarding the two sub-populations of immigrants, it seems that the wage ethnic gap for second generations is much more explained by observable differences than for first generations. Indeed, the unexplained part of the wage gap of descendants from Northern African and – to a lesser extent – Sub-Saharan origins largely decreases after controlling

for education and selection bias. If they were selected as natives on the labor market (that is not likelier selected for low skilled job and pays), their wage differential would decrease from roughly 15 percentage points. However, this decomposition method do not help to understand Turkish descendants wage gap whose job opportunities are very tied with family and local ethnic network.

Table 10 – Wage gap decomposition between French natives and second-generation immigrants

<i>Second generation</i>							
	Raw	No control for education			Controlling for education		
		Explained	Selection	Residual	Explained	Selection	Residual
North African	-0.142	-0.076 53.52%	0.007 -4.93%	-0.074 52.11%	-0.102 71.83%	-0.021 14.79%	-0.019 13.38%
Sub-Saharan African	-0.151	-0.05 33.11%	0.007 -4.64%	-0.107 70.86%	-0.073 48.34%	-0.021 13.91%	-0.056 37.09%
Turkish	-0.127	-0.191 150.39%	0.007 -5.51%	0.059 -46.46%	-0.19 149.61%	0.021 -16.54%	0.057 -44.88%
Asian	not signif.						
South European	not signif.						
North European	not signif.						
East European	not signif.						
<i>First generation</i>							
	Raw	No control for education			Controlling for education		
		Explained	Selection	Residual	Explained	Selection	Residual
North African	-0.129	-0.043 33.33%	0.007 -5.43%	-0.093 72.09%	-0.072 55.81%	-0.021 16.28%	-0.036 27.91%
Sub-Saharan African	-0.15	0.008 -5.33%	0.007 -4.67%	-0.165 110%	-0.029 19.33%	-0.021 14%	-0.1 66.67%
Turkish	not signif.						
Asian	-0.109	0.023 -21.10%	0.007 -6.42%	-0.138 126.61%	0.008 -7.34%	-0.021 19.27%	-0.096 88.07%
South European	-0.034	-0.049 144.12%	0.007 -20.59%	0.009 -26.47%	-0.056 164.71%	-0.021 61.76%	0.043 -126.47%
North European	0.191	0.191 100%	0.007 3.66%	-0.006 -3.14%	0.198 103.66%	-0.021 -10.99%	0.014 7.33%
East European	not signif.						

Note: We can interpret the figures for North African descendants (when controlling for education) as follows. 0.142 is the initial raw wage gap figure between North African-origin and natives. Differences in characteristics explain 71.83% of this gap. Differences in selection explain 14.79% of the gap. Overall, the residual gap represents 13.38% of the raw gap. That is to say, if French natives and North African-origin immigrants shared the same characteristics and faced the same selection, the wage gap would be reduced by roughly 87 percentage points.

The wage gap between natives and first-generation immigrants with Southern European origin is significant but too small to provide accurate interpretation of its decomposition.

First generations wage gap seems to be much more complicated to interpret, even after education control and selection bias correction. The explained (thanks to observable characteristics) and selection parts help to reduce the residual part to an acceptable level only for Northern African and Northern European immigrants. Thus the success of immigrants in terms of wages is much more predictable for second than

first generations. This may be due to the fact that first generation paths of life are less observable and interpretable by the French labor market.

1.4 Discussion and conclusion

Using data from the French *Trajectoires et Origines* survey, we investigate the determinants of the ethnic gaps in education and labor-market outcomes between natives and both second and first generation immigrants. To our knowledge, this dataset is the only one providing accurate information on the life-course of second-generation immigrants in France. We have two main findings.

First, we find that childhood environment is a key determinant of education. Controlling for family background knocks out the negative effect of ethnic origin on education. It becomes even positive suggesting that educational achievement of children of immigrants is the result of the parents' strong value on education (see Siahhaan *et al.* 2014). This result also echoes the explanations found in the sociology of education literature that immigrants believe more than natives that education is a vehicle for social mobility (see for instance, Kao and Tienda, 1995). For that reason, they would invest more into education. Another explanation is that second-generation immigrants may anticipate that they will be discriminated in the future on the job market and hence invest more in education to counteract this potential future discrimination. This sharply contrasts with the idea that second-generation immigrants would under-invest in education because they suffer from discrimination at school²¹ or because they anticipate lower returns on the labor market (see for instance the theoretical setups in Lundberg and Startz, 1983; Keane and Wolpin, 2000).²²

Another important finding is that education plays a prominent role in explaining both the employment and wage gaps between French natives and immigrants. Although we

²¹ There is now a growing literature on discriminatory behavior in education evaluating the impact of teachers' behavior on the gap between natives and ethnic groups. For instance, Dee (2005) finds that the student's odds of being seen as inattentive increases significantly by at least 33 percent when the teacher is not of the same race, and Ouazad (2014) underlines that teachers give better assessments to pupils of their own race. These results suggest that the ethnicity of both the teacher and the pupil matters to know whether ethnic minorities suffer from discrimination. Most of this empirical literature has used US data. The *TeO* survey does not include data that would enable us to address this issue.

²² In these models, negative prior beliefs about members of a particular group may become self-fulfilling in equilibrium (Lundberg and Startz, 1983). This may occur for example if individuals of a particular group under-invest in human capital due to anticipated discriminatory treatment and therefore a lower return to education.

find that these latter are less likely to be employed and receive lower wages than do natives we show nevertheless that education plays a major role in explaining both the employment and wage gaps. Controlling for education makes the ethnic employment gap to be strongly reduced. In the same vein, controlling for both the selection bias and the education level, the ethnic wage gap remains but is less significant and smaller in size.

Altogether our data indicate that childhood environment seems to be a key determinant of life-course success, as it affects education which itself generates labor-force outcomes. Our result on the impact of family background on educational attainment, which in turn is key for labor market integration, is in line with the findings of existing work emphasizing the role of “premarket” factors in adult earnings inequality (see Todd and Wolpin, 2007).

Our findings potentially challenge the role of discrimination in explaining ethnic labor-market outcomes. Although it cannot be denied that employer discrimination does exist in the French labor market, particularly at the hiring stage as shown by the observed residual ethnic gap, our results suggest that targeting the education gap via family-oriented policies may be at least as efficient as discrimination-oriented policies in reducing ethnic gaps in the labor market.²³ Education policies such as early-childhood education, kindergarten, homework assistance, and so on, which act as a counterweight to aspects of family background, may help to attenuate these education gaps. Future research will help to further determine the precise impact of discrimination in determining outcomes on the French labor market.

Beside discrimination, the economic literature also sees labor market inequalities between ethnic groups as the reflection of processing but unachieved cultural assimilation (Chiswick, 1978, 1997, and Borjas, 1985, 1992). Izquierdo and Lacuesta (2009) note that whereas assimilation corresponds to the fact that immigrants adopt the values, culture and traditions with the underlying idea of keeping a cohesive society, it

²³ We should however be cautious in our interpretation of the residual employment gap. Indeed this latter may not necessarily reflect only discrimination, but may also come from unobserved differences in ability, attitudes, or preferences. Unfortunately, one main limitation of this study is that it does not allow us to disentangle these different effects from a pure discrimination effect. This is however a general difficulty in most survey data without accurate information on discrimination at the hiring stage. Recent developments in field and laboratory experiments have shown that the experimental method is a valuable tool for the circumvention of this difficulty (See Riach and Rich, 2002, for an exhaustive survey of field experiments).

is difficult to measure. Economists have therefore adopted a much easier concept by quantifying assimilation in earnings. In particular, they analyze cultural assimilation through the influence of duration in the host country on wages. We agree with Izquierdo and Lacuesta to affirm that this view is restrictive and many other unobservable variables could be mobilized (discrimination for instance). Following Berry and Sam (2006), we believe that ethnic identity is an aspect of immigrants' acculturation. Furthermore, since Akerlof and Kranton (2000) social identity can now be seen as a component of the utility functions. Finally, socioeconomic assimilation (Chiswick, 1978, Borjas, 1985) and cultural assimilation (Akerlof and Kranton, 2000) are two sides of the same coin. One of the main goals of the following chapters is to explore the ethnic gaps described in Chapter 1 with a unified view of these two literatures thanks to the identity theory.

If ethnic groups are meaningful for individuals and if behaving norms (or prescriptions) are attached to them, ethnic identity occurs and is likely to influence immigrants' assimilation. Chapter 2 therefore presents the concept of ethnic identity, its measurement and its determinants. Chapter 3 and 4 investigate the economic consequences of identity through respectively empirical and experimental analyses.

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Chapter 2

NATIONAL IDENTITY AND IMMIGRANTS' ASSIMILATION IN FRANCE.

Note: This chapter is associated to an original paper submitted to Revue d'Economie Politique (Langevin and Vincent, 2014).

2.1 Introduction

Chapter 1 draws the picture of immigrant socioeconomic outcomes in France. It emphasizes the paramount impact of human capital on employment and remuneration and points out the decisive influence of family backgrounds. In that sense it provides evidence of very strong determinism of early childhood environment on future economic outcomes. This first chapter shows that the influence of ethnic origin on educational attainment is driven by family contexts. However, we believe that the role of childhood environment does not only depend on observable variables of family structure and wealth but also on the attachment to the prescriptions of this environment. Indeed, the important question regarding ethnic origin is not its nature but whether it supposes particular behaving norms and to what extent individuals feel attached to these norms. Chapter 2 investigates these questions.

Under the impact of immigration, modern societies become *culturally plural* (Berry, 1997). People of many cultural backgrounds have to live together and immigrants' assimilation is thus a crucial issue. Two models of integration can be pointed out. The multiculturalism model adopted by Anglo-Saxon countries is based on the coexistence of various cultures. On the other hand, the assimilation model adopted in France compels that immigrants perfectly and uniquely integrate the culture of the host country²⁴ (see Bloemraad, 2007).

Ethnic identity – where identity is defined as “a person’ sense of self” (Akerlof and Kranton, 2000) – of immigrants is an expression of their cultural assimilation. Its measurement’s issues have been traditionally addressed by political scientists (Abdelal et al, 2009) and sociologists, notably through Berry’s typology (1997). In particular, this paper proposes a new way to empirically measure cultural assimilation.

Economists have recently paid attention to immigrants' identity since it is likely to impact individuals' behaviors and decisions (Akerlof and Kranton, 2000) and therefore to induce consequences on their socioeconomic assimilation (see for empirical studies, Pendakur and Pendakur, 2005, Constant et al., 2006, Nekby and Rödin, 2007, Manning

²⁴ Schnapper (2007) precises that the French model does not require the separation with the home culture but its confinement in private life.

and Roy, 2010, Battu and Zenou, 2010, Casey and Dustmann, 2010). Moreover, previewing Chapter 3, although estimation of the impact of ethnic identity on the socioeconomic outcomes of immigrants raises econometric issues, the literature stresses a significant and negative influence of ethnic identity (Nekby and Rödén, 2007, Constant and Zimmermann, 2009, Casey and Dustmann, 2010, Battu and Zenou, 2010, Bisin et al., 2011).

In most of these works, the empirical measure of ethnic identity is based on the answer to the question “*Do you think of yourself as [natives' citizenship]?*”, this dummy is referred to as “national identity” thereafter.

This measurement suffers from a number of drawbacks. The first one is that the surveyed individual has to place herself regarding the native's identity – for instance, through questions like “*do you feel French* (or “*British*”, or “*German*”, etc.)” that can only be answered by a simple yes or no. This discrete measure of identity loses the fact that the immigrants' cultural identity may be more or less close to the natives' one. For instance, valuable information would similarly be lost by assessing individuals' incomes as “*rich*” or “*poor*” rather than a continuous distribution.

A second drawback raised by Lee (2009) underlines the subjective interpretation that each respondent may give to the reference category (“*as French*”, “*as British*”, “*as German*”, etc.). Indeed, this latter may not be equally salient and valid across individuals and contexts. Similarly, Citrin and Sears (2009) point out that while answering to a “*Do you feel French?*” question like, it is not clear whether the respondent considers the “*civic*” or “*ethnic*” (say, “*cultural*”) conception of a nation. In other words, some may consider themselves as civically French (i.e. in a legal point of view) with, however, multiple ethnic identities²⁵ (in a cultural point of view). National identity questions cannot report these.

A third one is given by Abdelal et al (2009). It emphasizes the fact that it may be stigmatizing to answer that you do not feel like the natives, particularly when the pollster is a native.

Finally, national identity might not reveal an effective distance in terms of identity but rather a claim for a belonging to a certain identity. All these remarks plead for a

²⁵ Sen (2007) pleads for the consideration of multiple identities.

careful and complementary use of different measures to deeper capture and highlight ethnic identity.

This chapter aims to explore different measures of ethnic identity. In particular, we use national identity and an assimilation index to understand the formation of individuals' ethnic identity. Our goal is not to validate or reject measures of the literature but to improve the knowledge of the determinants of first and second generation immigrants' attachment to both home and host cultures. We believe that it is an important stage for further investigations about the influence of ethnic identity on socioeconomic outcomes which are the topics of Chapter 3.

Therefore, this chapter makes four contributions.

First, we provide a new measure of ethnic identity – the assimilation index- that circumvents drawbacks of existing measures. Its key feature is that it is based on characteristics that individuals choose to define themselves. Precisely, we use the *TeO* survey conducted by INED and INSEE in 2008 which is aimed to inform about the life conditions of immigrants and their descendants in France. To assess cultural identity, we use the following question “*Which of the following features define yourself the most?*” Individuals can choose at most 4 features among the following 14 items : “*my age/generation*”, “*my gender*”, “*my job occupation*”, “*my educational attainment*”, “*my neighborhood or my town*”, “*my health*”, “*my citizenship*”, “*my origins*”, “*my skin color*”, “*my religion*”, “*my hobbies*”, “*my political opinion*”, “*my region of origin*” and “*my family situation*”. We conduct a Multiple Correspondence Analysis (MCA) on these 14 items and we interestingly observe that the first dimension discriminates characteristics chosen by immigrants from those chosen by native respondents. This crucial dimension represents the cultural part of respondents' identity. Note that we do not ask for this immigrants-versus-natives opposition. No information regarding immigration position is included in the MCA. We ex-post observe such an opposition and conclude that the cultural dimension of identity is the most important.

Following this result, we are thus able to build a weighted composite index of these 14 items where the weights are the correlation coefficients between each item and the first dimension. By construction, this index has to capture respondents' ethnic identity. The higher the index is, the closer the self-definition from the *typical* native one. The construction of the composite index follows the methodology provided by Filmer and Pritchett (2001) in a rather different context.

Our index therefore circumvents the difficulties faced by most of the measures of cultural identity. It is continuous and allows obtaining a measure of the cultural distance between immigrants and natives. Furthermore, it overcomes the saliency and validity issues since respondents do not situate themselves regarding a given category but choose characteristics that ex-post locate them on a cultural identity axis thanks to the MCA procedure. By doing so, it also follows Sen's (2007) call for multiple identities consideration, rather than a one-dimensional position. Finally, in a face-to-face interview, respondents are likely to feel less under pressure by defining themselves through multiple characteristics than compared to the dominant group belonging (natives).

Second, considering that the presence and importance of identity questions largely differ among surveys and countries, the assimilation index is not a ready-made tool for further studies. However, its methodology is exportable and interesting results are extracted from MCA. In particular, we find on the one hand that immigrants and, to a lesser extent, descendants of immigrants are likely to define themselves with attributes related to their ethnic group (origins, nationality, religion, skin color). On the other hand, natives choose more individualistic items (job, level of education, hobbies). At the risk of paraphrasing Durkheim (1893), the ethnic part of immigrants' identity could be seen as a mechanical identity, because self-definition is made by homogeneity with other ethnic group members. On the contrary, natives' one would be an organic identity, since it highlights individuals' socio-economic interdependence with others members (for more details about mechanical versus organic integration in France see in Schnapper, 2007). This is also in line with Phinney and Ong (2007)'s observation that ethnic minorities' group members attribute greater importance to their ethnicity than do members of the dominant majority.

Third, we try to clarify the interpretations that can be done thanks to ethnic identity in terms of assimilation. Among the existing measures in the empirical literature, national identity is by far the most used. We discuss and qualify some conclusions implied by this use by running regressions on national identity and on the assimilation index in the meantime. The comparison of the results for both measures enables us to deepen the understanding of national identity and, in particular, to explore its meaning and performance regarding cultural assimilation. This leads us to challenge some conclusions of the economic literature. In particular, Manning and Roy (2010)

investigate national identity determinants in Great-Britain and find that “*the process of assimilation is faster for those from poorer and less democratic countries*”. With our data we have a similar conclusion with national identity. However, this conclusion is completely reversed when we use our assimilation index. Then, our contribution is simple, national identity quite imperfectly assesses the cultural assimilation achievement of immigrants. Furthermore, it seems that when assimilation of an immigrant is high, the claim for national identity remains less necessary. That is the reason why we would recommend combining several measures of cultural identity – as the assimilation index – since interpretations only based on national identity are fragile.

Finally, we give a detailed description of the determinants of ethnic identity. Notably, as found in the literature (Manning and Roy, 2010, Battu and Zenou, 2010, Casey and Dustmann, 2010), time since arrival is crucial. Thus we show that, compared with first generations, second generations claim more often national identity (93.12%, against 63.33%) and assimilate better. Nevertheless, the assimilation index of second generations is much lower than natives' and some determinants as discrimination or religiosity that do no impact first generations are activated for second.

The following section presents the literature. Section 2.3 describes more precisely the identity features and assimilation index achievement after a brief presentation of the survey. We also present the potential measures of identity. In Section 2.4, we introduce the exogenous variables and corresponding descriptive statistics. Ethnic identity's determinants for the whole French population (thanks to representative weights) are presented in Section 2.5. Section 2.6 focuses on a comparison of first and second generations of migrants and presents related determinants. Section 2.7 concludes.

2.2 Literature review

This chapter focuses on the measurement of cultural identity with the aim of improving the understanding of immigrants' integration. It thus belongs to two strands of literature, economics of immigration and economics of identity.

The literature in economics about identity is recent. Akerlof and Kranton (2000), Austen-Smith and Fryer (2005) propose theoretical frameworks – not specifically in

immigration contexts – to explain individuals' socio-economic outcomes through identity. Identity refers to the sense of belonging to a given group. More particularly, ethnic identity is activated when ethnic groups have to cohabit together which is an obvious consequence of immigration. While migrating, an individual might face a trade-off between conforming to the host culture or preserve her own cultural heritage such that it could even lead to adopt oppositional identities (Battu and Zenou, 2010). Consequently, cultural identity may have direct implications on economic outcomes which are explored in Chapter 3 (Pendakur and Pendakur, 2005, Constant et al., 2006, Nekby and Rödin, 2007, Battu and Zenou, 2010, Casey and Dustmann, 2010, Bisin et al., 2011). Empirically, immigrant's assimilation is often approached by the national identity (Manning and Roy, 2010, Casey and Dustmann, 2010, Bisin and al., 2010). None of these studies investigate the case of France which is interesting in two ways. First, France has a specific model of integration which promotes cultural conformity of people (natives and immigrants) toward the *French Republican ideal*. Second, for two centuries, France has experienced a relatively high rate of immigration²⁶. Furthermore, the issue of identity measurement is crucial but poorly documented by the literature. This concern is at the core of this article.

Besides national identity, a few other empirical works have focused on the measurement of cultural identity (Constant et al., 2006, Nekby, 2007) using Berry's typology (1997). Constant et al. (2006) have introduced the ethnosizer for commitment with home or host identity measurement. It allows a ranking of individuals regarding this commitment among four states of acculturation: integration (commitment with both host and home culture), assimilation (commitment with host culture only), separation (commitment with home culture), or marginalization (no commitment with either host or home culture). To compute the ethnosizer they defined *a priori* identity features such as spoken language, religion, societal interaction... They are then able to emphasize different pre-migration – religious cults, origins – and post-migration determinants – age, education, and hours worked. Our methodology is different and less subjective since we do not have to postulate which characteristic should be considered as typically native or immigrant.

²⁶ See Noiriel (2002).

In 2011, Bisin et al. focus on ethnic identities of immigrants in Europe. Thanks to factor analysis, they construct a composite index with three variables that are attachment to religion, attachment to traditions and customs, language spoken at home. They present determinants of identity as origins, age, educational level, gender and years since arrival. Then, they analyze the influence of ethnic identity on educational and economic outcomes. However, their index is based on only three variables. The quality and amount of information given by the *TeO* survey as well as the use of Multiple Correspondence Analysis are assets of our assimilation index.

Our work provides new information about immigrant's identity in France. Furthermore, we confront usual measures to a new one which exhibits immigrants' cultural assimilation based on individuals' self image. Thus, compared with previous studies, we can show that national identity and assimilation of immigrants, although tied, are not equivalent.

2.3 Data, sample and measures of cultural identity

As the previous one, this Chapter is based on the French *Trajectoires et Origines* (*TeO*) cross-sectional survey developed in 2008 by two main French statistical institutes, INSEE and INED. It focuses on integration and discrimination issues and offers a very large set of variables about today's first and second generation of immigrants in France. In particular, one of its main appeals is that it includes an entire part about "*persons' self image*".

Each of the existing measures has its limits: interpretation dilemmas with national identity, endogeneity issues in identity formation explanation with the ethnosizer, lack of information and improper statistical method with the composite index of Bisin et al. (2011). Here, we propose a methodology aiming to circumvent drawbacks of these measures.

Our assimilation index captures the extent to which an individual is close to the host culture since she defines herself as most natives do, that is by using identity features that they are likely to choose.

Construction

Tajfel (1974) explains that individuals identify themselves by features that both translate their belonging to a specific group and distinguish them from other groups. The *TeO* survey offers a large set of variables regarding respondents' identity. One question is particularly interesting in the questionnaire, "*Which of the following features would you choose to define yourself? Please choose at most 4 of them*". Then, 14 features are proposed: "*my age/generation*", "*my gender*", "*my job occupation*", "*my education*", "*my neighborhood or town*", "*my health*", "*my nationality*", "*my origins*", "*my skin color*²⁷", "*my religion*", "*my hobbies*", "*my political opinion*", "*my region of origin*" and "*my family situation*". We call these previous features identity attributes in the sense that they are chosen by respondents to define themselves. In other words, these attributes are 14 endogenous variables corresponding to 14 specific dimensions of a person's identity. The challenge is to find a proper way to summarize this heterogeneous information about individuals' identity in a unique measure.

In a rather different context, Filmer and Pritchett (2001) create a weighted index of individuals' material possessions (washing machine, clock, etc.) able to approach long-run wealth of Indian households. They run a Principal Component Analysis with all individuals possessions as exogenous and assume that the first dimension exhibit respondents' wealth, i.e. their long-run wealth index. Therefore, weights equal correlation coefficients between each possession variable and the first dimension. Bisin et al. (2011) follow this approach with a limited amount of information.

However, PCA in Filmer and Pritchett (2001) and factor analysis in Bisin et al. (2011) are not suitable procedures when exogenous attributes are discrete. That is why we prefer another multivariate procedure, the Multiple Correspondence Analysis (MCA).

MCA helps us to uncover and summarize the ethnic part of individuals' identity that is common to the 14 identity attributes. Indeed, this statistical procedure aims to classify different variables (here the identity attributes) among several axes, the dimensions, such that the first dimension accounts for as much of the variability in the data as possible and, in turn, each succeeding dimension has to get the highest variance as

²⁷ One might think that skin-color is particularly discriminating since it would target particular population. Around 36% of sub-Saharan migrants choose this feature against nearly 10% of French. As regard to the relatively limited gap between the previous proportions we do not think that this feature is biased by restrictiveness.

possible under the constraint that it is uncorrelated with the preceding one. Therefore, each dimension is a weighted linear combination of all the variables entering in the statistical procedure where weights are the corresponding MCA's correlation coefficients.

Obviously, MCA is a blind procedure and interpretation of each dimension that it produces is left to researchers. Here is an important assumption stipulating that the first dimension (i.e. the one that captures the highest possible part of the common information) exhibits cultural identity. Running the MCA – without postulating on what should be immigrants' or natives' characteristics (these information about individuals' origins are not used neither needed to run the MCA) – we obtain the satisfaction of this assumption since immigrants are retrospectively located on negative and natives on positive values of the first dimension. This dimension can be extracted as an indicator thanks to correlation coefficients, this indicator being henceforth our assimilation index.

The index will then have the following form for respondent j :

$$I_{1j} = w_{11} \cdot X_{1j} + w_{12} \cdot X_{2j} + \dots + w_{1Z} \cdot X_{Zj}$$

with I_{1j} being the index (equal to the first dimension) for individual j , w_{1Z} the correlation coefficient between the z th identity attribute and the first component (that is weights) and X_{Zj} the value for the z th attribute. After standardization, its minimum is -3.57 and its maximum 2.13. The higher it is, the closer (resp. the farther) the respondent self-image or identity from the natives' typical one (resp. immigrant's). We interpret moves of the index as improvement or worsening of individual's assimilation since it corresponds to Berry's typology and is positively correlated with the assimilation state of the ethnosizer²⁸.

Results for MCA-based weighting procedure are presented in Table 1. There are 9 identity attributes which increase the assimilation index when chosen: hobbies, job occupation, political view and generation being the four most representative. Conversely, there are 5 attributes that decrease the index with particularly high

²⁸ Thanks to our data, we were able to build the ethnosizer developed by Constant et al. We then observed that assimilation was the state of acculturation which was the most correlated with our index. In the interest of clarity of this chapter and as regard to the ethnosizer's drawbacks presented above, we do not develop the construction of our ethnosizer hereafter. However, further details and results about our "TeO-based" ethnosizer and its relations with our index are available upon request.

coefficients for religion, skin color, nationality and origins. These results are consistent with observations of Phinney and Ong (2007) that ethnic minorities' group members attribute greater importance to their ethnicity than do members of the dominant majority. By construction, the assimilation index does not represent the entire individual identity but only the ethnic dimension of it.

Table 1 – Weights for the assimilation index

Identity attributes	Weights based on MCA
Religion	-4.019
Skin color	-3.852
Nationality	-2.547
Origins	-1.831
Region	-0.394
Gender	0.039
Family	0.498
Health state	0.648
Education	0.831
Town/Neighborhood	0.843
Generation	1.580
Political view	1.725
Job occupation	2.207
Hobbies	2.378

We also want to insist on the fact that these attributes are not dummies which would indicate whether the respondent is a male or a female, is graduated or not, has a religion or not and so forth, but dummies which take 1 if she believes that these attributes actually define herself, 0 otherwise. To say it even simpler, every respondent has a family position but not everyone selects it to define herself. *The assimilation index is not about how respondents actually are but about how they think they are.*

Index performances

Reader used to multivariate analysis knows that the percentage of inertia is crucial to determine the importance of each dimension. Here, the percentage of total inertia explained by the first dimension may seem too low (10.53%). However, Greenacre (2005) points out that, with MCA, it would be *"futile to expect a good approximation of a matrix of zero and ones in a two dimensional map of points"*. He advises to find other ways to assess the quality of the dimensions and notably to look at the correctness of predictions. To do so, we run 14 probit regressions with each of the fourteen identity attributes as endogenous and the assimilation index as the unique regressor. We then check whether or not predicted values of these simple models match actual answers of

respondents. Table 2 gives the percentages of correct predictions for each identity attribute. The assimilation index alone predicts almost 70% of no (zero) and 62% of yes (ones). These relatively high percentages suggest that the first dimension (the index) succeed in summarizing the information that is common to all identity attributes.

Table 2 – Correct predictions of each attribute by the index only

Attributes	Actually not selected	Actually selected	Total
Religion	77.18%	91.14%	84.16%
Skin color	73.16%	89.90%	81.53%
Hobby	71.54%	80.51%	76.03%
Job occupation	78.00%	69.85%	73.93%
Nationality	75.44%	68.48%	71.96%
Generation	70.25%	66.14%	68.20%
Origins	49.38%	80.19%	64.79%
Political view	85.98%	42.72%	64.35%
Neighborhood	58.27%	63.27%	60.77%
Education	58.20%	62.45%	60.32%
Health	82.66%	28.38%	55.52%
Family	56.50%	52.32%	54.41%
Region	68.93%	36.54%	52.73%
Gender	66.14%	35.37%	50.75%
Total	69.40%	61.95%	65.67%

As main works in this literature, we use national identity (“*I feel French*” dummy). Nevertheless, most papers directly regard national identity as an expression of cultural identity and even more abusively of immigrants' assimilation.

Our assimilation index, with its combination of multiple attributes, has the advantage to not directly ask people about which group they belong (which is more or less implicitly what national identity and the ethnosizer do) but about which personal characteristics they identify and then to locate them on an endogenous cultural identity dimension. By doing so, it deepens individuals' identity investigation and enlightens national identity.

2.4 Determinants of cultural identity: descriptive statistics

In this section and the following, we study the determinants of identity, measured by the national identity dummy and the assimilation index. We look at their determinants thanks to probit – for national identity – and OLS regressions – for the index. Endogeneity is obviously a main concern, insofar as we do not clearly distinguish how

far identity explains individual behaviors from how far individual positions influence identity.

Explanatory variables

We focus, as far as possible, on impact of exogenous demographic characteristics presented in the following Table 3. We are aware of the risk of endogeneity of some of the previous variables (education, discrimination, for instance) and we try to minimize it as far as possible. However, we cannot completely avoid it and interpretations must be cautious.

The survey provides representative weights that will be used in every treatment of our study. It also proposes a huge amount of other possible variables and we chose the most relevant ones. Context variables (as unemployment rate in the neighborhood, average level of education, etc.) could be used but, surprisingly, none of them has a significant impact on either national identity or assimilation index and, more importantly, they would raise endogeneity issues.

We notably observe that average time since arrival of first generations is quite high (almost 20.52 years). The highest differences can be observed in religions. While few of the overall population' parents are Muslims (7.44%), this religion was followed by parents of 42% of immigrants and around 24% of descendants. On the contrary, Christian and atheistic represents almost the totality of natives' parents, against less than a half of immigrants' parents and around two thirds of descendants' parents.

Almost 57% of immigrants declare a sense of belonging to their home country

By construction of the sample, second generations are much younger than natives and even more than first generations (descendants are on average 35 years old while immigrants are 40 years old). Such a gap in age is likely to induce differences of identity. This will be controlled as far as possible by using representative weights and performing distinct regressions for first and second generations.

Table 4 provides descriptive statistics regarding the origins of immigrants and descendants of immigrants.

Table 3 – Identity determinants : Weighted means and proportions

	Description	Overall	First Generation	Second Generation
Age	Age of the individual	39.05	40.65	35.35
Gender [male]	Proportion of males	48.87%	47.42%	50.67%
Diploma	Time spent schooling, corrected from the repeated years	11.94	10.36	12.17
Discrimination: origin	Discrimination feeling due to origins	4.13%	16.05%	12.16%
Discrimination: skin color	Discrimination feeling due to skin color	1.95%	7.76%	5.49%
Migrants in neighborhood [$\geq 50\%$]	Proportion of immigrants in living area. 1 when respondents says that at least half of her neighborhood inhabitants are immigrants	21.07%	44.59%	38.05%
Mother diploma	Mother education. 1 if higher than certificate of general education. 0 otherwise	18.4%	17.13%	14.87%
Citizenship				
French by reintegration	Reintegration allows someone who has lost French nationality to become French again	0.27%	1.39%	0.52%
French by acquisition	French by naturalization, by marriage, by declaration at or before legal age	5.11%	38.8%	10.23%
French	French at birth	88.42%	0.04%	87.07%
Foreigner	Without French nationality	6.2%	59.78%	2.19%
Parents' religion				
None	Both parents atheist.	19.42%	5.93%	13.07%
Christian	Both parents Christians or one Christian and the other atheist.	66.41%	42.22%	50.67%
Muslim	Both parents Muslims or one Muslim and the other atheist.	7.44%	41.69%	24.39%
Buddhist	Both parents Buddhists or one Buddhist and the other atheistic.	0.42%	3.21%	1.02%
Mixed	Both parents have different religion.	2.82%	2.77%	6.94%
Religion role in received education		1.15%	1.9%	1.4%
I feel [home country]	Dummy that takes 1 if the respondent says she feels “British”, “Moroccan”, “Chinese”, ...	9.2%	56.93%	27.14%
Years since arrival	Time spent in France.	-	20.52	-
Framing effect control	Dummy. Two questionnaires with different questions orders. (Share of A-orders')	49.84%	50.05%	49.45%

Table 4 – Weighted shares of origins

Origin	Whole sample	1st Generation	2nd Generation
Northern America	0.15%	0.89%	0.60%
South America	0.39%	3.18%	0.72%
Asia	1.00%	7.76%	2.26%
Eastern Europe	1.47%	6.33%	8.19%
Southern Europe	6.30%	19.77%	41.83%
North Europe	1.9%	7.9%	10.46%
North Africa	5.96%	31.20%	27.59%
Sahel	0.61%	4.04%	2.11%
Other Africa	1.34%	10.04%	3.35%
Middle East	0.38%	2.63%	1.18%
Turkey	0.78%	6.28%	1.71%
	100.00%	100.00%	100.00%

Framing effect issue

A well-known issue in surveys is the framing effect. Indeed, while answering a multiple answers question, respondents are likely to choose the first ones. Anticipating this, the fourteen items were written in two different orders (A or B). They were then randomly proposed to respondents. 49.84% of respondents answered a A-order questionnaire, 50.16% answered a B-order questionnaire. Not surprisingly, the comparison of answers among the two series shows that a framing effect occurs. However, in this work, our first interest is not to find the characteristics that people choose to define themselves but if there are differences in these choices between groups. The two series being randomly determined, the difference between each group choice (native, immigrants, and descendants of immigrants) is not impacted. However, the framing effect also influences MCA coefficients. In order, to address this issue, a dummy corresponding to the items' order proposed to each respondent is integrated as regressor in the following estimations. Furthermore, this seemingly bias is used as an asset in Chapter 3. In this Chapter we will investigate the impact of cultural identity on economic outcomes via instrumental methods and this framing dummy has particularly suitable properties as instrument.

Identity measures

TeO survey allows differentiation of respondents as regard to their personal migratory history (that is their parents' or their own origin). In particular, it is possible to know whether an individual belongs to the natives group (that we define as respondents with no migratory history for less than two generations), the first generation

group (immigrants) or the second generation group (descendants of immigrants). Table 5 presents some descriptive statistics for both immigrants and descendants of immigrants and for the whole sample.

Table 5 – Means and standard deviations of cultural identity measures

	Overall	1 st Generations	2 nd Generations
National Identity (“ <i>I feel French</i> ”)	80.98% (0.394)	63.41% (0.482)	91.55% (0.278)
Assimilation Index	0 (1)	-0.2655 (0.987)	0.0948 (0.9753)
N	16927	6617	7032

One could consider the proportion of first generations which agrees with the sentence “I feel French” as low (62.62%) but it is quite similar with the value found by Manning and Roy (2010) or Battu and Zenou (2010) for British national identity and much higher than what Casey and Dustmann (2010) obtain for German national identity among immigrants with very similar questions in both cases.

Interpretations for the assimilation index are more difficult and regressions results will be much more interesting. Concerning relations between national identity and the assimilation index, we observe a positive correlation between both measures²⁹.

2.5 Determinants of cultural identity: whole sample

Our aim is to investigate the importance of each determinant and wonder to what extent national identity is an informative measure of cultural identity thanks to its comparison with the assimilation index. Table 6 aims to present the role of each determinant at the scope of the overall French population. It emphasizes the results of a weighted probit on national identity (marginal effects) and a weighted OLS regression on the assimilation index³⁰ on socioeconomic regressors.

²⁹ In order to observe the relation between both measures, we run a simple OLS regression with the assimilation index as endogenous and national identity as regressor, estimate = 1.744***.

³⁰ The index has been standardized to help the comparison of each coefficient with its standard deviation.

Table 6 (Part I) – *National identity and assimilation index for the whole population*

	National Identity	Index
Origin (ref. French)		
Northern America	-0.159*** (-3.05)	-0.218** (-2.09)
South America	-0.0449** (-2.08)	-0.483*** (-5.42)
Asia	-0.0295* (-1.80)	-0.563*** (-7.95)
Africa	-0.0155 (-1.31)	-0.659*** (-6.53)
Eastern Europe	-0.0641*** (-3.44)	-0.225*** (-2.99)
Northern Europe	-0.109*** (-4.56)	-0.0552 (-0.83)
Southern Europe	-0.0575*** (-3.01)	-0.167*** (-3.49)
North Africa	-0.0242** (-2.00)	-0.243*** (-3.94)
Middle-East	-0.0227 (-1.31)	-0.118 (-1.07)
Sahel	-0.0393** (-2.24)	-0.635*** (-7.48)
Turkey	-0.0868*** (-3.42)	-0.227*** (-3.19)
Mixed	0.0235*** (6.53)	0.157*** (3.26)
Age	-0.000792*** (-3.97)	-0.00663*** (-3.06)
Gender	0.00242 (0.50)	-0.00106 (-0.04)
Diploma	0.00122 (0.81)	0.0979*** (11.98)
Discrimination origin	-0.0177*** (-2.99)	-0.148** (-2.47)
Discrimination skin color	-0.00770 (-1.35)	-0.190*** (-2.58)
Immigrants share in neighborhood	0.00410** (2.55)	0.0303*** (2.60)
Mother diploma	0.00147 (0.25)	0.0979*** (3.00)
Citizenship (ref. foreigner)		
French by reintegration	0.0231*** (5.88)	0.000755 (0.01)
French by acquisition	0.0270*** (9.28)	0.00827 (0.23)
French	0.0880*** (5.22)	0.0138 (0.25)

Table 6 (Part II) – *National identity and assimilation index for the whole population*

	National Identity	Index
Home country national identity	-0.0264*** (-5.56)	-0.275*** (-9.00)
Years since arrival	0.00171*** (7.91)	0.00417** (2.02)
Framing effect control	-0.00669 (-1.38)	0.129*** (5.08)
Parents' religion (ref. none)		
Christian	-0.00865 (-1.06)	0.0656* (1.86)
Muslim	-0.0158 (-1.36)	-0.211*** (-3.67)
Buddhist	-0.0441** (-2.10)	0.0523 (0.67)
Other	-0.0215 (-1.01)	0.0538 (0.78)
Mixed religion	-0.0331 (-1.38)	-0.0515 (-0.57)
Importance of religion in received education	0.00207 (0.75)	-0.0836*** (-5.66)
N	16927	16927
Pseudo and adj. R2 (resp.)	0.3081	0.1773

*Notes: *, ** and *** indicate statistical significance at the 10, 5 and 1 percent level, respectively*

The first remark is that, for this sample, determinants' impacts are quite similar (in terms of signs and significance) for both measures. Of course, these coefficients cannot be directly compared and one must be careful while comparing the role of each determinant.

Not surprisingly, French origin taken as the reference, respondents' origin has globally negative effects on commitment toward natives' identity. However, situations differ among ethnic groups regarding the selected measure of ethnic identity. Northern Europe origin only affects national identity and African origin the assimilation index.

As expected, mixed origin (one parent who is born French and the other born abroad) increases both national identity claim and assimilation. Furthermore, it leads to one of the highest variations among all regressors for both measures of ethnic identity.

Age has significant effects on both identity measures but it is surprisingly negative. This can be explained by the fact that first generations, who are the farthest from natives' identity, are elder than other groups (natives and second generations). There is no impact of gender.

Individuals' diploma is approached by the time she spent schooling corrected for repeated years. While it does not impact national identity, it is largely related with the assimilation index. Of course, this effect is positive and confirms that school is important in terms of acquisition of norms and values.

Discrimination feeling is obviously subjective and may imply endogeneity issues³¹. Interpretations must be cautious. Yet, it seems that skin color³² based discrimination does not impact national identity, contrary to origin discrimination. Regarding the assimilation index, the coefficient associated with origin discrimination is lower (and less significant) than the skin color's one. In any case, the sign is negative and discrimination increases the distance from natives' identity.

During the survey, respondents had to give their own estimation about the proportion of immigrants in their living area. Although there is no way to control for over- or underestimation, this variable is of first interest and could be seen as a perceived segregation indicator. Estimates are significant and suggest the likelier conservation of ethnic identity in segregated areas.

A strong identification with home national identity implies a lower commitment toward identity of natives. This was expectable for the assimilation index since cultural assimilation is a process that does not theoretically accept the preservation of ethnic identities. In a sense, this goes against the hypothesis of multiple identities claiming that ethnic identities are not substitutes but complements.

Pursuant to previous findings, a positive impact of years since arrival can be exhibited on national identity and assimilation. However, it does not impact the assimilation index (it does in the next section when we focus on first generations in particular). In particular, this is an evidence of Chiswick's Immigrant Assimilation Hypothesis (IAH) stating that immigrants acquire destination-relevant human capital (in the sense that they are better adjusted to the receiving country characteristics) with duration in the destination.

Regarding parents' religions, these do not influence respondents' answers about national identity. However – both atheist parents as reference – individuals whom both

³¹ Endogeneity could appear if people with strong ethnic identity react stronger to potential discrimination than those close to natives' identity and thus declare it more often to the pollster.

³² We do not find significant crossed effect of African origin and skin color discrimination.

parents are Christians assimilate better contrary to those whom parents are both Muslims. Finally, the importance of religion during childhood education is a driving determinant of the assimilation index.

2.6 National identity and assimilation: first and second generations

This section investigates the determinants of cultural identity for first and second generations of immigrants (Table 7) and provides innovative information about their situation in France. We are also able to challenge previous conclusions of the literature. Unfortunately, we do not have panel data and immigration structure had changed between first and second generations of the sample, comparisons in terms of intergenerational integration between these two groups are thus fragile.

2.6.1 Differences between second and first generations

The determinants of ethnic identity do not have the same impact on first and second generations. Origins better explain identity of first generations (with positive signs for national identity and negative ones for the index, this result is developed in the next subsection) than second generations. This is an evidence for the process of assimilation since the inertia of home culture decreases among time and generations which is once more confirms the Immigrant Assimilation Hypothesis.

Once more, age of respondents does not importantly influence cultural identity and this influence is only significant for national identity. Years since arrival for immigrants have a quite high impact on national identity since the average immigrant who spent 20 years on the French territory would face a 19% increase of her probability to feel French. Not surprisingly, ethnic identities commitment is a time-costly process. Nevertheless, time since arrival - even though significant - plays a much less important role on the assimilation index compared with other determinants.

Gender only affects first generations and males are closer to natives' identity. And, as in section 2.5, while the diploma is only related with descendants' national identity, it has a large positive influence on the assimilation.

Table 7 (Part I) – Comparison of Identities between First and Second Generations

	National Identity		Assimilation index	
	1st Generations	2nd Generations	1st Generations	2nd Generations
	Marginal effect	Marginal effect	Estimate	Estimate
Origin (ref. Northern Europe)				
Northern America	-0.0319 (-0.42)	-0.0583 (-0.91)	-0.235** (-2.15)	-0.0154 (-0.09)
South America	0.146*** (3.72)	0.0283 (1.46)	-0.513*** (-5.19)	-0.0343 (-0.24)
Asia	0.179*** (5.44)	0.0307*** (3.00)	-0.725*** (-8.81)	-0.00429 (-0.04)
Eastern Europe	0.0675* (1.88)	0.0360*** (4.15)	-0.262*** (-4.01)	-0.110 (-0.81)
Southern Europe	0.0633** (2.01)	0.00628 (0.43)	-0.204*** (-3.58)	-0.0356 (-0.39)
North Africa	0.193*** (5.01)	0.0383*** (2.91)	-0.383*** (-4.88)	-0.0724 (-0.76)
Middle-East	0.183*** (4.49)	0.0199 (1.15)	-0.321*** (-2.78)	0.247 (1.37)
Sahel	0.152*** (4.08)	0.0288*** (2.96)	-0.715*** (-7.05)	-0.395*** (-3.20)
Other Africa	0.218*** (8.49)	0.0357*** (4.79)	-0.752*** (-10.87)	-0.190 (-1.12)
Turkey	0.0331 (0.72)	-0.00283 (-0.13)	-0.336*** (-4.08)	-0.137 (-1.21)
Mixed		0.0389*** (2.69)		0.167*** (3.21)
Age	-0.00261*** (-2.88)	0.00105* (1.75)	-0.000648 (-0.39)	0.000859 (0.30)
Gender	0.0910*** (6.04)	-0.00412 (-0.51)	0.0973*** (3.40)	0.00230 (0.05)
Diploma	-0.000441 (-0.10)	0.00583*** (2.79)	0.0964*** (11.00)	0.0717*** (4.49)
Discrimination origin	-0.0947*** (-4.01)	-0.0288** (-2.05)	-0.0165 (-0.36)	-0.0585 (-1.21)
Discrimination skin color	-0.0325 (-0.95)	-0.0255 (-1.58)	-0.197*** (-2.64)	-0.397*** (-5.15)
Immigrants share in neighborhood	0.0290*** (4.75)	0.00907*** (3.33)	0.0302*** (2.66)	0.0210 (1.31)
Mother diploma	-0.0163 (-0.70)	-0.0133 (-1.14)	0.132*** (3.01)	0.0694 (1.52)
Citizenship (ref. foreigner)				
French by reintegration	0.166*** (3.85)	0.0343** (2.42)	0.129 (1.13)	-0.549** (-2.55)
French by acquisition	0.243*** (15.71)	0.0409*** (6.00)	-0.00217 (-0.06)	-0.0365 (-0.28)
French	-0.0624 (-0.22)	0.0994*** (2.82)	0.471* (1.85)	-0.0502 (-0.46)

Table 7 (Part II)– *Comparison of Identities between First and Second Generations*

	National Identity		Assimilation index	
	1st Generations	2nd Generations	1st Generations	2nd Generations
	Marginal effect	Marginal effect	Estimate	Estimate
Home country national identity	-0.146*** (-9.73)	-0.00403 (-0.56)	-0.264*** (-9.01)	-0.210*** (-4.28)
Years since arrival	0.00971*** (11.58)		0.00570*** (3.67)	
Framing effect control	-0.00224 (-0.15)	0.00740 (1.02)	0.180*** (6.41)	0.118*** (2.90)
Parents' religion (ref. both none)				
Christian	0.0122 (0.36)	-0.0137 (-1.14)	0.0967 (1.63)	0.186** (1.96)
Muslim	0.0257 (0.63)	-0.0543** (-2.25)	0.0144 (0.20)	-0.121 (-1.44)
Buddhist	-0.178*** (-2.99)	-0.00152 (-0.06)	0.195* (1.91)	-0.0919 (-0.78)
Other	-0.0535 (-1.03)	-0.0556* (-1.92)	0.148* (1.76)	-0.0380 (-0.40)
Mixed religion	0.0532 (1.05)	-0.0193 (-0.92)	0.116 (1.19)	0.218* (1.73)
Importance of religion in received education	-0.0180** (-2.28)	-0.00901*** (-2.66)	-0.153*** (-10.86)	-0.135*** (-5.25)
N	6617	7032	6617	7032
Pseudo and adj. R2 (resp.)	0.1766	0.1215	0.1991	0.1995

*Notes: *, ** and *** indicate statistical significance at the 10, 5 and 1 percent level, respectively*

French citizenship³³ and its acquisition type give expectable and positive results regarding national identity of second generations. French citizenship also increases immigrants' assimilation. However, it seems not to have any influence on the assimilation index. French citizenship acquisition by reintegration³⁴ for second generations even has a surprising negative estimate on assimilation.

Some of the parents' religions play a role but it depends on which measure and population we look at. This may suggest a lower importance of religion on ethnic identity than what could have been expected.

Finally, many determinants have expectable and similar coefficients. A mixed origin is an asset to commit toward natives' identity for descendants of immigrants, while

³³ One could wonder why a second generation respondent can be foreigner as regard to the French "jus solis" for citizenship. The reason is that a second generation individual, when she attains legal majority, is given the opportunity to choose to keep either home and host nationalities (usual choice) or only one (scarcer case).

³⁴ This procedure refers to people who have had their French citizenship lost and wants it back.

living in a segregated area (immigrants in neighborhood), a strong identification with home country (I feel [home country]), and a discrimination experience are not.

2.6.2 The seemingly paradox of origins regarding ethnic identity

In section 2.5, regressors' signs and significances generally coincide among cultural identity measures. This is not the case if we focus on first and second generations only. Many determinants impact one but not the other. Some even have opposite signs.

If we look at the origins of descendants of immigrants, we observe that many of them impact national identity but not the assimilation index (Asia, Eastern-Europe, North-Africa, other Africa). Furthermore, their impact is positive. This can be seen as an evidence of the achievement of cultural assimilation since they do not differ from Northern-European regarding the assimilation index and even more often claim for national identity. Let us now focus on Sahel origin. Those whom parents are born in Sahel are likelier to feel French than those from Northern-Europe but they contrarily assimilate worse. This result can look paradoxical.

This paradox is even more striking when we consider the origins of first generations which signs of coefficients significantly differ between measures. The choice of only one measure in order to give conclusions on cultural identity formation is thus likely to imply partially wrong understandings. While almost all groups of origins are likelier to claim national identity than the control (Northern-Europe origins), they assimilate less French typical self-definition (assimilation index). This was not expected but partly consistent with Manning and Roy (2010). Using only British national identity (answer to "What do you consider your national identity to be?"), they indeed conclude that immigrants from poorer and less democratic countries assimilate better. We could agree with them if we would only consider national identity as a measure of cultural identity. However, with the assimilation index, our conclusion is opposite to that of Manning and Roy: cultural assimilation of those from poorer and less democratic countries appears to be lower.

We do not see these remarks as the evidence that one of the measures fails to assess cultural assimilation, but as the justification of their combination in such a study. They do not measure exactly the same process but, taken separately, they are probably not sufficient to give proper information on identity formation and, further, on the influence

of ethnic identity on socioeconomic outcomes. Their combination can even be helpful to understand their working. For instance, we believe that if assimilation of an immigrant is high, the claim for national identity is made less necessary to belong to the society. The national identity claim can be seen less as a proxy for French identity than a way to fulfill an already existing cultural assimilation gap.

2.7 Conclusion

Ethnic identity has become a key element in studies focusing on immigration. Issues and changes resulting from intercultural contacts are indeed a major concern. This chapter aims to investigate the lack of interest given to cultural identity measurement in previous studies and to use these understandings to learn more about immigrants' cultural assimilation in France.

In order to complement usual measures, we build an assimilation index that takes into account the distance to the host culture while having identified its cultural characteristics through a statistical method which does not require prior assumptions on these characteristics. We thus assess and investigate cultural identity through two different channels: a dummy for national identity and a continuous variable for assimilation.

The MCA analysis enables to clearly observe different sets of variables that distinguish immigrants' from French natives' self-image. According to this analysis, 5 typical immigrant features increase the distance with the French identity when chosen: religion, origins, skin color and nationality. On the opposite, the three most representative variables for the natives are hobbies, job and generation.

This chapter also shows that both measures, national identity and assimilation index, bring different – but complementary – information about migrants' identity. However, national identity cannot be substituted to assimilation measures since it does not sufficiently and finely approach cultural identity. We show that it can even lead to paradoxical interpretations. Indeed, individuals possibly identify themselves like French natives do but reject the national identity, whereas others who do not assimilate French

stereotypes claim the national identity. This is even more striking when considering origins of immigrants.

National identity captures an assimilation will or wish, the assimilation index captures, as far as possible, factual assimilation.

Our results qualify Manning and Roy's (2010) conclusion since we find that assimilation of immigrants from poorest countries is lower, even though they are more likely to "feel French". This justifies the plea of political science for a combination of measurements (Sylvan and Metskas, 2009, Abdelal et al., 2009) and, notably, for continuous variables (Lee, 2009).

Thus, we claim that finer measures like the assimilation index would be suitable to analyze the impact of ethnic identity on socioeconomic outcomes.

Identity theory is particularly adapted to the investigation of the French model of assimilation. Indeed, immigrants in France are expected to economically and socially integrate but they also had to assimilate French values and culture which mainly differs from multiculturalism. Our results – notably regarding time since arrival and the comparison of assimilation levels between first and second generations – suggest that assimilation is a long process and that determinants of cultural identity formation cannot be well understood by using national identity as a unique proxy.

As regard to our results about ethnic identity's determinants, some facts can be exhibited. As said before, immigration structure has changed in six decades, thus today's and yesterday's immigrants should not be directly compared. However, inertia of origins decreases for second generations' assimilation. Descendants' national identity rate is very close to that of natives and their assimilation index is much higher than first generations' one.

The natural extension of this Chapter is now to investigate whether the cultural assimilation that we observe through cultural identity impacts socioeconomic integration. In other words, is the early statement of economic literature (Chiswick, 1978, Borjas, 1985) that cultural assimilation improves economic outcomes of immigrants verified by the recent use of identity theory (Akerlof and Kranton, 2000)? This is the issue addressed by the next chapter.

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Chapter 3

CULTURAL IDENTITY, LABOR MARKET OUTCOMES, AND POLITICAL BEHAVIORS

3.1 Introduction

In 2007 in France, a ministry was created with the following label “Ministry of Immigration, Integration, National Identity and Mutually-Supportive Development”. Three years later, a public debate about national identity was launched with around 340 local meetings and 58 000 contributions. Meanwhile, in Great-Britain and Germany, policy makers have declared that multiculturalism had failed to gather people in one society. Why is ethnic diversity such important in the public debate? Is it because it is supposed to be costly for the society in psychological but also in economic terms? Can we measure the economic consequences of cultural assimilation? We believe that economists have to bring objective understandings to this debate and that identity theory is a cornerstone of this goal.

As put forward in Chapter 2, since Akerlof and Kranton (2000) in economics and more generally thanks to the vast and elder psychology literature, the concept of identity brings promising help in understanding people’s decisions. In these works, identity is not only seen as a label assigning a group to individuals, but as an endogenously created part of these individuals’ personality depending on their and others’ actions, their idiosyncratic characteristics, their social group and the prescriptions attached to this latter. They believe that people’s behaviors and, as a consequence, their socioeconomic outcomes are driven by their identity. That is to say that their own perception of who they are influences their perception of how they should behave. Researchers cannot reach to understand microeconomic decisions if they do not consider identity as a driving force.

Though promising, the framework described by Akerlof and Kranton is also hardly verifiable empirically speaking. Indeed, it is a big deal to distinguish to what extent identity is driven by or drives socioeconomic outcomes. Besides obvious endogeneity issues, researchers interested in identity and economics have to face a lack of data and unclear literature about the measurement of identity.

As the previous chapter, we focus on cultural identity i.e. the cultural dimension of people’s sense of self. To make it simple, people belong to many different and overlapping groups, among these groups their ethnic group (that is the one related with

their origin) and the strength of their ties with the prescriptions that are associated to it, may impact their decisions and economic outcomes.

This chapter aims to explore the influence of ethnic identity on central economic issues: employment, wages and political behaviors. Early literature states that an unachieved cultural assimilation is an obstacle on the labor market, whereas commitment toward majority norms and major cultural behaviors is an asset both in terms of unemployment and wages (Chiswick, 1978, Borjas, 1985). We assess cultural assimilation achievement through ethnic identity and many reasons explain that it may, for instance, lead to behaviors decreasing workers' employability (look, clothing, acting ...) and their own selection of jobs appliances (loyalty to peers, Benabou and Tirole, 2011).

We address three questions. Does ethnic identity matter on the labor market? Does it matter for political involvement? Is the identity measure neutral in terms of interpretations?

We use the two measures of ethnic identity presented in Chapter 2. The first measure is the most common in the literature and corresponds to the answer to the following question "Say if you agree with the following proposition: I feel French". We call this measure national identity since it clearly asks respondent to situate themselves vis-à-vis the major cultural group – the French natives. However, it is not certain that this measure fairly reports respondent's identity, that is to say her "sense of self". Indeed, Chapter 2 demonstrates that this measure may lead to an apparent paradox. In Manning and Roy (2010), the use of national identity leads to the conclusion that ethnic identity of immigrants from farther (in economic and geographic terms) cultures is closer from natives' identity than those from closer cultures. Following the recommendations of Chapter 2, we combine national identity and the assimilation index in the investigation of the role of ethnic identity on socioeconomic outcomes.

Our contribution to the literature first relies on the variety of outcomes and behaviors that we consider. Most of studies concentrate only on employment. To our knowledge, only a few studies investigate both employment and wages (Constant and Zimmermann, 2009, Casey and Dustmann, 2010). Furthermore, labor market studies do not always consider endogeneity issues. When they do, the econometric strategy is not often the most suitable regarding the nature of their data or does not discuss the validity of their

instruments. In this Chapter, we adopt different methods as regard to the nature of the response variables and identity measures. We also present for each regression different tests of instruments' validity. In addition to this study about labor market outcomes, we investigate relationship between cultural identity and political behaviors (registration on voters' lists, voter participation, and political self-placement). As far as we know, these explorations are totally innovative in economic, and political, literatures.

To preview our results, we find significant relations between cultural identity and employment of first and second generation of immigrants. More important, we add to this literature the elicitation of a causal impact of cultural identity on job access. Our data also allow investigating the impact of cultural identity on wages' formation. This kind of exploration of wages formation through identity is quite scarce in the literature but we do not find any robust evidence of such an impact. Finally, political behaviors are those which are the most related with cultural identity. First voting participation rises when immigrant cultural identity is close from that of natives. Second, political self-placements are also closely related with cultural identity although we cannot separate the causal affect of this latter. Finally, as chapter 2, chapter 3 shows that scholars' conclusions may depend on the measure they choose to approach identity.

This Chapter is organized as follows. Section 3.2 draws a general overview of the literature about cultural identity, economic outcomes and political behaviors. Section 3.3 presents our econometric strategy. It notably describes the statistical methods that we adopt to overcome endogeneity issues. Section 3.4 presents data and some descriptive statistics. Section 3.5 investigates the causal impact of ethnic identity on, first, employment probability and, second, wages formation. Section 3.6, examines the relations between ethnic identity and some political behaviors. A discussion is provided in Section 3.7. Section 3.8 concludes.

3.2 Culture and identity in economics

3.2.1 Labor-market outcomes

Besides identity theory, many studies have investigated the impact ethnic diversity on economic performances at the macroeconomic level. In 1997, Easterly and Levine

show that ethnic fragmentation leads to lower growth in Africa. Ethnic diversity seems also to decrease public goods provision according Alesina *et al.* (1999). Later, Alesina and La Ferrara (2005) highlight the tradeoff between the benefits of ethnic variety and the costs of heterogeneity of preferences for a plural society. Similarly, Charness *et al.* (2007) study the relations between group memberships and economics.

The process of ethnic fragmentation described by hereinabove studies implies the presence of different ethnic groups on the same territory. Berry (1997) and Sen (2006) notably support the idea that a study with different groups is helpful because of the existence of such groups in reality. Both authors also share the idea that individuals do not share the same attachment to these norms. Individuals' acknowledgement of groups, their objective membership and attachment to them constitutes the original definition of identity (Tajfel *et al.*, 1971).

Cultural and socioeconomic assimilation

A preliminary question for us is: why culture would have any impact on economic outcomes?

The intuition is that the longer is the time spent in the host country, the more like natives immigrants become since they have to face a new culture and to invest in its corresponding social capital. This leads to the acquisition of the host country language and the understanding of its cultural specificities like access to information, integration to social networks, etc. More generally, this raise of human capital is required to succeed in the host country (Chiswick 1978, Borjas 1985, Borjas *et al.* 1992, Chiswick *et al.* 1997, Berry 1997, 2006, Izquierdo *et al.* 2009, Beenstock *et al.* 2010, Chiswick and Lofstrom 2010).

However, the acquisition of host social and human capital to the detriment of those of the home country is not linearly related to better socioeconomic outcomes. Borjas (1991) also demonstrates that maintaining a commitment to the home culture can be advantageous given that it provides immigrant with valuable ethnic capital. The ability to speak two or more languages, to access specific ethnic networks and other features that are related to ethnic capital are valuable assets on the labor market (Borjas *et al.* 1992, Berry 2006, Constant & Zimmermann 2008, Constant *et al.*, 2009, 2011).

On the opposite, the attachment to the home country's cultural norms has to be balanced. Studies put forward that isolation from the host country's culture may bound immigrants' investment in specific human and social capital involved in the labor market of the host country (Akerlof and Kranton 2000, Selod and Zenou 2006, Constant and Zimmermann, 2008, Battu and Zenou, 2010, Bisin *et al.*, 2011).

In the end, the hypothesis made by the economic literature is that the net impact of cultural assimilation is positive on immigrants' employment due to acquisition of suitable social and human capital.

Cultural identity and its relationship with labor market outcomes

If we focus on professional outcomes in this Chapter, we do not forget that cultural identity can influence previous people's lifecourse outcomes such as educational attainment. School is one of the first place where home (country of origin) and host traits (those promoted by host country's schools for instance) may be either complementary and raise educational attainment or controversial and lead to penalties. Furthermore, the potential educational penalties due to ethnic identity will cause further penalties on the labor market. Here, identity can be a driving force of educational attainment for immigrants and descendants of immigrants (Akerlof and Kranton, 2002). In their analysis of "acting white", Austen-Smith and Fryer (2005) show how peer effects can be used to enforce identity saliency and influence effort decisions of minorities' pupils. Oyserman (2013) uses identity theory to show that pupils' behaviors depend on their expectations and aspirations. In particular, the author asserts that the parents' act of saving money now for a later college-bound is a signal for children that current action is needed because college is a goal. This influences children's behaviors since it constitutes a norm that suggests positive or negative identity returns.

As stated since the general introduction of this thesis, we believe that cultural identity is an expression of cultural assimilation. Cultural assimilation is used by Chiswick (1978), Cohen *et al.* (1997) and Chiswick and Lofstrom (2010) to interpret the wage gaps between ethnic groups. They show that as immigrants invest in human capital in the host country, their economic outcomes increase rapidly and can reach and even exceed the economic outcomes of natives. Mason (2004) finds that American from Latin America origins are able to increase annual income and hourly wages by acculturating into a non-Hispanic white racial identity. However, for Mason, self-

identification is not sufficient to overcome penalties associated with skin-color and non-European phenotype.

Battu and Zenou (2010) test and corroborate the model of Battu *et al.* (2007) which examines the relationship between oppositional identities among ethnic groups and employment. Battu and Zenou (2010) with British data suggest that social environment of individuals and attachments to culture of origin have strong associations with identity choice. In particular, non-whites who have preferences that accord with being oppositional do experience an employment penalty. Casey and Dustmann (2010) find evidence of a strong positive association between labor market outcomes of male foreign born individuals and the salience of German identity. Interestingly, for males, the evidence also points at a positive association between home country identity and labor market outcomes. In their study, as in Battu and Zenou (2010), cultural identity is assessed by national identity (I feel “German/ British”).

Pendakur and Pendakur (2005) about Canadian immigration, examine the effects of ethnic identity on the use of informal networks to obtain jobs and on employment itself. They estimate that for European ethnic minorities the strength of minority identity is positively related to the use of informal methods for gaining employment but there is no effect for non-European origin. Cultural identity was measured by the question: “is your ethnic origin very important to you, somewhat important, not very important or not at all important”.

Declarative data about sense of belonging are rather scarce in surveys. Some studies find other ways to approach cultural identity thanks to the ethnosizer created by Constant and Zimmermann (2008) and based on Berry’s theory of acculturation (1997). Constant *et al.* (2009, 2011) with the German Socio-Economic panel for the years 2000-2002 provide positive associations between commitment to the host country, work participation, earnings and housing decisions. On the opposite, with the ethnosizer, Nekby and Rodin (2010) emphasize no significant differences in employment probabilities between those that identify only with majority and those that identify with both the majority culture and the ethnic group. It appears that the sole attachment to the majority is determining employment outcomes.

Thanks to the ethnosizer again, Drydakis (2013) shows that assimilation and integration strategies are associated to lower employment losses contrary to

marginalization and separation strategies. Gorinas (2014) also uses the ethnosizer to measure cultural identity and is interested in the consequences of majority norms adoption on economic outcomes. He finds that first-generation immigrant women with a strong attachment to their home culture are less likely to be in employment. More generally, he shows that economic outcomes more likely depend on openness to majority norms than religiosity. About importance of working norms, Clark (2003) and Shields and Wheatley Price (2005) approximate the strength of the social norm by the regional unemployment rate and show that the well-being gap between the employed and the unemployed in Britain narrows when regional unemployment increases.

A few studies create their own composite index to approach cultural identity. Bisin *et al.* (2011) study the relationship between ethnic identity and labor market outcomes of non-EU immigrants in Europe. They find that being a first generation immigrant leads to a penalty while second generation immigrants have a probability of being employed that is not statistically different from that of natives. However, when they have a strong ethnic identity, second-generation immigrants have a lower chance of finding a job than natives.

The following of this chapter considers the impact of ethnic identity on the labor supply side of the market. However, we do not forget that ethnic identity may also play a role on the demand side. Hogg and Vaughan (2002) explain that individuals are likely to display favoritism when a social group is central to their self-definition and a given comparison is meaningful or the outcome is contestable. This is related to the concept of homophily which may drive employers' decisions toward the hiring of identity-closed workers (Calvo-Armengol and Jackson, 2004, Currarini and Mengel, 2012).

Reverse causality: influence of the labor market on cultural identity

We are also aware that, if ethnic identity deteriorates labor market outcomes, the reverse relation is likely to exist too. The loss of employment leads to penalties which overcome the simple monetary loss. Frey (2008) notice that even if the unemployed could be fully compensated for the income loss, they would be always less satisfied with their lives than otherwise identical employed persons. Hetschko *et al.* (2013) interpret this by using identity theory. Retirement raises the identity utility of the unemployed because it changes the social norms they are supposed to adhere to. The social norm for people of working age prescribes that people should be employed,

whereas the social norm for the retired does not contain such a prescription. Using the German Socio-Economic Panel from 1984 to 2010, authors analyze how reported subjective well-being changes when people enter retirement and distinguish between retirees that were employed or unemployed immediately before retirement. They argue that the only change faced by an unemployed when retiring is a change in norm conformity. This is a nice intuition. Identity depends on groups' membership and their attached prescriptions. By passing from unemployed to retired, a person's group changes and, whereas she did not conformed to working norms as unemployed, she now conforms to retired ones. This study illustrates how labor market statuses cause identity. This double causality implies major endogeneity issues.

As this previous literature, we are wondering to what extent ethnic identity influences individuals' socioeconomic outcomes. Such a question immediately faces endogeneity issues which may lead to a bias in the exploration of causal relations. The main bias is easy to describe, compared to an unemployed, an employed worker sees a rise of its contacts with the majority (the natives). This is likely to increase the adoption of native's norms and identity. If this scenario occurs, then the estimated coefficient measuring the impact of identity on employment is overestimated³⁵.

Some empirical studies recognize this bias but do not try to deal with it. In Gorinas (2014), after being noticed that the estimated coefficients are likely to be overestimated (resp. underestimated) in case of positive (resp. negative) relation between cultural and economic assimilation, readers are informed that these coefficients should be seen as upper or lower bounds of potential causal effects. In Drydakis (2013), endogeneity is not discussed at all. In Bisin et al. (2011) or Battu and Zenou (2010), a two-stage instrumental variable estimation is adopted, even though this strategy, based on Ordinary Least Squares, is not suitable for binary response variables such as employment. In Constant and Zimmermann (2008, 2009) and in studies using the ethnosizer in general, authors do not adopt any econometric strategy to overcome endogeneity.

3.2.2 Political behaviors

³⁵ Another bias may also occur if it exists unobserved variables correlating with both identity and employment.

As seen above, identity may be a driving component of people's behaviors. However, it is also quite obvious that its importance also depends on the nature of the decision that has to be taken. Labor market outcomes are complex and driven by monetary and psychological aspects on both supply and demand sides. In the case of voting decisions, the role of ethnic identity may be even stronger since individuals feel less constrained by direct monetary features.

In their seminal paper in 2000, Akerlof and Kranton consider that social identity is as important in the field of political decisions as it is for education or professional outcomes. However in the economics literature, whereas relations between ethnic identity, educational attainment, and labor market outcomes have been empirically investigated, links between ethnic identity and political behaviors have not.

To our knowledge, the only exception in political economics is the theoretical paper of Lindqvist and Östling (2013) which considers the links between ethnic identity and redistribution. In their model, individuals identify either to their social class or their ethnic group. They predict that redistribution is higher when society is ethnically homogeneous, even though this effect is not necessarily monotonic. However, their concern is still quite different than ours.

Political science on the issue of voting participation and political self-placement is a bit more developed. Kelman (1969) argues that national identity allows members of a group to see their state as legitimate. In 1979, Kinder and Kiewiet, oppose personal and collective grievances. According to them, the voter does not only consider potential leaders from his point of view but also from the society point of view. In other words, the society (or social group) he belongs to has its own preferences (or prescriptions) that the voter takes into account in her voting decision. In 1997, Valenzuela and Scully show that voters from different classes have different values and therefore assess political leaders and parties differently. More recently, Dawson (2003) has explored the role of the *linked fate* concept in black voters' political decisions. *Linked fate* is the recognition that individual life chances are inextricably tied to the race as a whole (Simien, 2005). Dawson notably demonstrates that beliefs in *linked fate* strongly impact political views and voting. For instance, it promoted interest for B. Obama's politics and rejected votes for G. W. Bush.

Finally, the most relevant study for us is Huddy and Khatib (2007). Authors notably focus on the determinants of voter turnout and include national identity as a regressor. Their aim is to find a proper way to measure the role of patriotism on voters' decisions. Indeed, usual measures of patriotism in political science are ideologically biased. They state that, in addition to its grounded nature and clear interpretations (Tajfel and Turner, 1979, Tajfel, 1981), national identity is ideologically neutral. They verify that national identity influences voter turnout. However, they only control for a limited amount of voting determinants and their assumption that national identity is ideologically neutral does not hold as shown in Section 3.6 of this chapter.

Early literature on identity affirms that individuals with strong group identity are most likely to conform to group norms (Turner et al., 1987, Terry, 1999). The underlying hypothesis of the political science literature on identity and voting is that it leads to higher levels of political involvement among strong national identifiers because of their greater adherence to group norms (Huddy and Khatib, 2005). In France, voting is not compulsory in legal terms but it is considered as a moral duty and taught as such to pupils. It is a strong prescription which justifies our interest toward voting behaviors and identity in the meantime.

Note that a natural limit of our work is that we are only able to observe the political demand side. For a study about ethnic political supply by politicians, one can have a look at Chandra (2005) who interestingly shows that ethnic parties that gives a voice to ethnic minorities can stabilize the democratic process as soon as they are encouraged by institutions. De Vries *et al.* (2013) also show that politicians can manipulate voters' decisions thanks to the mobilization of cultural or ethnic issues.

In the following of this chapter we separately consider labor and political issues. Indeed, they do not exactly belong to the same literature and we do not adopt the same econometric procedure for their investigation. Nevertheless, we believe that they both have major consequences on immigrant socioeconomic assimilation.

3.3 Econometric strategy

Endogeneity issues arise when causal relations are double as in the case of cultural and economic assimilation. Panel data are preferable in such situations but also quite rare³⁶. The use of cross-sectional surveys is more common in the literature with inherent endogeneity problems. Some studies (Constant et al., 2006, Nekby and Rödin, 2007, Gorinas, 2014) voluntarily choose to not try to correct for reverse causality. They prefer to recognize that the estimates are likely to be overestimated. This choice is probably due to the lack of potentially valid instruments in surveys but it has the advantage that the researcher knows in what direction her results may be biased. Other studies (Battu and Zenou, 2010, Bisin *et al.*, 2011, Koczan, 2012) choose Instrumental Variable strategies (IV). These strategies are dependent of the availability of valid instruments. Furthermore, the econometrical method should be adapted to the nature of identity and labor market measures. For instance, Two Stages Least Squares (2SLS) are often selected whereas they are not suitable for a binary response such as employment. This challenges these studies' findings.

In this chapter, we adopt both types of approaches. First, we regress labor market outcomes by cultural identity and other controls thanks to standard OLS and Probit models. Second, we take on instrumental procedures in order to elicit the causal impact of cultural identity on employment and wages. The comparison of the results of both methods should inform about their robustness.

3.3.1 Cultural identity and labor market outcomes: correlations

We first voluntarily ignore endogeneity issues between cultural identity and socioeconomic outcomes. Our aim here is simply to explore the association between these two variables when controlling for other covariates. Thus the econometric strategy is exactly the same here as it is in Chapter 1 when we explore the determinants of employment through a probit model, and the determinants of wage earnings through an OLS model with an Heckman correction. In these models, national identity and the assimilation index are introduced as standard regressors. As noticed in Gorinas (2014), the estimates of these regressions should be considered as an upper – if positive – or lower – if negative – bound of the “real” causal relations.

³⁶ The German Socio Economic Panel notably used by Casey and Dustman (2010) is the only existing one to our knowledge and provide a rather limited set of potential covariates.

3.3.2 Endogeneity issues and causal influences on labor-market outcomes

After the exploration of correlations, we aim to elicit the causal influence of cultural identity. The economic literature provides some evidence that double causality happens between cultural and socioeconomic assimilation (see, for instance, Hetschko *et al.*, 2013). In order to deal with the potential reverse causality of labor market on cultural identity, we need to select proper statistical procedures. The usual strategy for cross-sectional sample is the use of instrumental methods. However, we have to face different natures of response variables (employment – binary – and wages – continuous) or endogenous regressors (national identity – binary – and assimilation index – continuous). The next subsections describe how we adapt our estimating methods to the questions we ask and the variables we choose to answer them.

3.3.2.1 Employment: binary choice models

We follow here the methodology documented by Lewebel *et al.* (2012). Our response variable is a dummy which takes 1 if employed and 0 otherwise. We want to test the impact of ethnic identity through two different measures: the continuous assimilation index and the binary national identity. Let us first present the binary employment model at stake and then describe the econometric strategy as regard to the nature of the endogenous regressor.

Let L be the observed dummy dependent variable for employment. Let X be a vector of regressors, β be a vector of coefficients to be estimated and ε an unobserved error term. We also define $I(\cdot)$ to be the indicator function that equals one if its argument is true and zero otherwise. The standard binary choice model is then

$$L = I(X'\beta + \varepsilon \geq 0). \quad (1)$$

Equation (1) means that L is one when $X'\beta + \varepsilon$ is positive and zero otherwise. This model corresponds to a standard *threshold crossing model* since L switches from zero to one when the latent variable $X'\beta + \varepsilon$ crosses zero.

Regarding the employment status, L , the probability that L is one given X equals $E(L|X)$. If $F_{-\varepsilon}$ denote the probability distribution function of $-\varepsilon$ and X is independent of ε , then the probability that L equals one given X is $F_{-\varepsilon}(X'\beta)$, which corresponds to the probability that $-\varepsilon < X'\beta$.

Difficulties arise when one or more regressors are endogenous. In such cases, the probability that L equals one will depend on the conditional distribution of ε given X rather than the marginal distribution of ε . Suppose therefore that ethnic identity which is an element of X is endogenous, this would suggest that it may be correlated with ε . Let X^e denote the vector of endogenous regressors (correlated with ε), and X^0 the vector of all other exogenous regressors (uncorrelated with ε). Let Z be the set of exogenous regressors used as instruments. Note that Z should include all the elements of X^0 . The threshold crossing model is now

$$L = I(X^{e'}\beta_e + X^{0'}\beta_0 + \varepsilon \geq 0). \quad (2)$$

For the model being complete, let $G(X^e, Z, e) = 0$ describe the relationship between X^e and Z , where e is a vector of errors and G is a vector valued function. $G(\cdot) = 0$ solving corresponds to what is generally (and abusively in case of bivariate models) called the first stage equation. In presence of endogeneity, e and ε are not independent. We here assume that the β parameters are identified. This assumption can usually be insured by making exclusion restrictions, that is, the existence of elements of Z that are not in X . These elements are generally called instruments.

Restrictions that are placed on X^e , the model $G(X^e, Z, e)$ and information that are known by researchers about G and e are primary issues at that stage. X^e needs to exhaustively comport all the endogenous regressors. Z must be a set of valid instruments, that is strongly correlated to X^e with no direct influence on L . And finally, it must be known under which model $G(\cdot)$ can be estimated (OLS, Probit, Logit, etc.).

Control functions estimator for a binary outcome (employment) and a continuous endogenous regressor (assimilation index)

Because of the binary nature of L and the continuous nature of X^e , we follow Lewebel *et al.* (2012) and opt here for a control function estimator which is a constrained form of Maximum Likelihood³⁷.

Given a general model $L = M(X, \beta, \varepsilon)$, the control function method can be defined by assuming that the model $G(X^e, Z, e) = 0$ is specified and can thus be estimated. The second assumption is that the model $G(X^e, Z, e)$ can be solved for the vector of errors e .

³⁷ Furthermore, this method is easily computable in Stata software thanks to the `-ivprobit-` command.

Finally, we have to assume that there exists a function h and an error term U , independent of both X and e , such that $\varepsilon = h(e, U)$.

Implementation is as follow, h is obtained after estimating the function $G(X^e, Z, e)$ and then plugged into the employment L model such that, $L = M[X, \beta, h(e, U)] = \tilde{M}(X, e, \beta, U)$. e is thus considered as a set of additional regressors, the error term in the model \tilde{M} is now U which is independent of the regressors X and e . As a result, the model \tilde{M} does not face anymore endogeneity problem and can be estimated in a standard way in place of M .

In this specific case, the threshold model corresponds to equation (2). Since our endogenous regressor (assimilation index) is continuous, the function G is given by the linear model $X^e - Z'\alpha - e = 0$ and we assume that ε and e are jointly normal with mean zero³⁸. This latter assumption is important since it implies that they can be linearly decomposed as $\varepsilon = \lambda e + U$ where $U \perp Z, e$ and the constant λ depends on the covariance matrix of (e, ε) .

From that point, the control function method consists in linearly regressing X^e on Z and taking the residuals from this equation for the estimates of e . Plugging $\varepsilon = \lambda e + U$ into the employment equation gives $L = I(X^{e'}\beta_e + X^0'\beta_0 + \lambda e + U \geq 0)$. This latter employment model consists in a usual probit model with independent normal errors U , regressors X^e , X^0 and e . Thus, λ is simply estimated as the other coefficients β_e and β_0 .

Control functions estimators are more general than maximum likelihood ones but they require to be able to solve the estimated first stage vector of G for their errors e and that including e in equation (2) fixes the endogeneity problem.

Bivariate probit models for binary outcomes and binary endogenous regressors

One of the main limitations of the control function method is that it may lead to inconsistent estimates if the endogenous regressor is binary. This is precisely the case when we approach ethnic identity by national identity, which is a dummy that takes one if the respondents feels French and zero otherwise.

³⁸ This particular distribution of errors is not compulsory for stata to implement `-ivprobit`. Note also that the name of this command is misleading since this method gives a control function estimator which is different than instrumental variables estimator.

In such a case, Nichols (2007) recommends the calculus of the bivariate probit estimator. This method assumes $L = I(X^{e'}\beta_e + X^0'\beta_0 + \varepsilon \geq 0)$ and $G(X^e, Z, e, \theta) = 0$. Here, maximum likelihood estimation G is assumed to be known relatively to θ as well as the joint distribution of ε and e , conditional on Z has to be specified. In our case, X^e being binary we assume that G can be estimated thanks to a probit model with ε and e jointly normal³⁹.

Whatever the method, the set of instrument is of primary importance. Indeed, dropping any valid instrument of Z will lead to misspecification of G and then inconsistency of maximum likelihood. That is the reason why, further in this chapter, we test our instruments for over- or underidentification.

3.3.2.2 Wages: 2SLS and Heckman selection

The wage formation investigation needs two practical issues to be fixed. As in the previous part, unclear causality between hourly wages and the cultural identity is approached by instrumental techniques. In particular, wage is continuous and standard 2SLS are appropriate and well documented. However, a second practical estimating issue must be dealt with. As underlined by Heckman (1976), investigation of wage determinants raises specific selection biases. Indeed, wage is only observed for those who are employed, that is those who are selected – in a non-randomly process – by the labor market. Thus estimating the wage equation from the working subpopulation introduces selection biases.

Two stages least squares (2SLS)

Let us call W the vector of hourly wages in log of our sample. Let X' be the set of wages determinants including exogenous regressors (X^0) and endogenous regressors (X^e). The 2SLS procedure supposes that $W = X'\beta + \varepsilon$ and $E(\varepsilon|Z) = 0$ with Z a valid set of instruments of X^e on W (including X^0). On stage 1, the procedure regresses X^e on Z , therefore the first stage consists in estimating model $X^e = Z\alpha + e$ which gives $\hat{\alpha}$ and allows calculation of predicted values $\widehat{X^e} = Z\hat{\alpha}$. On stage 2, W is regressed on the predicted values from the first stage, $W = X^0\beta_1 + \widehat{X^e}\beta_2 + u$ with $\text{corr}(u, e) = 0$.

Heckman selection bias correction

³⁹ This specification is implemented in Stata software thanks to the `-biprobit-` command.

Wage earnings are only observed for those who are employed. This fact may seem trivial but has important consequences on wage formation estimation. Indeed, we do not observe what would be the wage of those who are actually unemployed if they were not. This fact would be pointless if the selection on the labor market was random. Of course it is not and wage formation investigation must take into account selection biases. Heckman (1976) proposed a simple correction to overcome this issue. This correction is detailed and implemented in Chapter 1. To sum it up, it consists in introducing the inverse Mills ratio obtained from the employment probit equation as regressor in the wage equation.

Heckman selection and IV procedure

As far as we know, there does not exist a ready-to-use command in statistical software for such issues. Though, our strategy to combine these two procedures (IV and Heckman correction) is simple. We first run probit regressions on employment equation taking endogenous issues of ethnic identity into account (following the methodology developed in subsection 3.3.2.1). From this first estimation we are able to calculate linear predictions and therefore inverse Mills ratios. Finally, we integrate these inverse Mills ratios as regular regressors in the 2SLS wage equation where cultural identity is instrumented.

3.4 Determinants of labor-market-outcomes: descriptive analysis

3.4.1 Labor market outcomes: variables of interest

The *TeO* survey provides much information about respondents' professional life. Consistently with Chapter 1, we choose here to focus on employment access and wages formation. We have already presented these data in Chapter 1 and we make the exact same restrictions here. As in this Chapter, we contrast different subsamples of first (5251 respondents) and second generation immigrants (5347 respondents) and natives (2667 respondents).

Employment

The dependent variable here is a dummy which takes 1 when the respondent is employed and 0 otherwise. We exclude from our sample students and retired individuals. Thus our definition of employed and unemployed matches the international

labor standards of the International Labor Organization. Since we aim to investigate the wage formation, we decide to exclude from our sample self-employed workers too.

Wages

The dependent variable is the logarithm of hourly wages. As said above, this implies self-employed workers to be removed from the sample.

National identity and index of assimilation as cultural identity proxies

Chapter 2 deeply discusses the relevance of each of these two measures to assess ethnic identity. The main conclusion of this chapter is that a combination of these measures is the best strategy. We obviously follow this recommendation in this chapter and we investigate the impact of cultural identity on professional outcomes through both channels.

3.4.2 Controls

Besides cultural identity, the set of covariates unifies Chapters 1 and 2. The exogenous set Z of the first stage equation on cultural identity is taken from Chapter 2. The set of covariates X in the second stage is composed of the labor market determinants explored in Chapter 1.

Employment equation covariates

The set of regressors at this stage is the same as Chapter 2 plus usual determinants of labor market access which are notably described in Chapter 1. Table A.1 of the appendix details their status in the following regressions.

Of course, each of the following results of this chapter is estimated under control of the set of covariates as presented in Table A.1. However, we do not report estimates of these covariates both because it would make the chapter much more cumbersome to read and also because our main concern entails the impact of cultural identity. The reader interested in the coefficient of these controls can refer to Chapters 1 and 2⁴⁰.

⁴⁰ Multicollinearity of course modifies the estimates but in a marginal way.

3.4.3 Correlations between cultural identity, employment and wages

Our goal here is mainly descriptive. We do not take endogeneity issues into account yet. This will be done in section 3.5. As many previous studies (Constant and Zimmermann, 2008, Constant et al., 2011, Nekby and Rödin, 2007, Gorinas, 2014), we choose to investigate similar questions with standard (OLS or probit) methods. In these studies authors inform readers that the coefficient of cultural identity is likely to be overestimated because of endogeneity. This should be kept in mind while considering Tables 1 and 2.

Access to labor market

We run probit models where cultural identity is believed to be a perfectly exogenous regressor. It is measured either by national identity, the assimilation index, or both together to check whether collinearity occurs.

Table 1 – *Cultural identity and employment (no control for endogeneity)*

		National Identity	Assimilation Index	Pseudo R2
Whole population	Marginal effect	0,0835**		0,3478
	z-stat	(2,36)		
	Marginal effect		0,0478***	0,353
	z-stat		(4,48)	
	Marginal effect	0,0794**	0,0474***	0,3540
	z-stat	(2,20)	(4,44)	
Immigrants	Marginal effect	-0,0087		0,2995
	z-stat	(-0,49)		
	Marginal effect		0,0409***	0,3042
	z-stat		(4,89)	
	Marginal effect	-0,0187	0,0419***	0,3044
	z-stat	(-1,05)	(4,99)	
Descendants	Marginal effect	0,1374***		0,3080
	z-stat	(4,05)		
	Marginal effect		0,0487***	0,3116
	z-stat		(3,40)	
	Marginal effect	0,1214***	0,0462***	0,3148
	z-stat	(3,58)	(3,22)	

Reading: for descendants of immigrants, national identity significantly raises the probability of being employed of 12.14%. The marginal effect of the assimilation is 4.62%.

Table 1 describes marginal effects and corresponding z-stats of ethnic identity on employment while controlling for the set of covariates detailed in Table A.1. Pseudo R-square are also provided to compare models. Both measures have expected – when significant – estimates. The closer from natives the cultural identity is, the higher the employment probability. However, national identity is not correlated with immigrants'

employment, that is, to feel French is not an asset for labor market access. The index is always positively related to employment and estimates are quite steady across subpopulations of interest (about a 4-5% raise of employment probability per marginal increase of the index). This result is consistent with previous empirical findings (Constant and Zimmermann, 2008, Batu and Zenou, 2010, Bisin *et al.*, 2011, Gorinas, 2013) and theoretical predictions (Akerlof and Kranton, 2000, Battu *et al.*, 2007).

Wages

Whereas identity is often expected to play a significant role on job access, its impact on wages formation has not been widely explored. To our knowledge, the three following studies are the only empirical analyses of the impact of identity on wages and they exhibit some significant effects only for very specific subpopulations. Mason (2004) finds that acculturation toward a non-Hispanic identity increases hourly wages of Mexican and Cuban immigrants in the U.S. With panel data in Germany, Casey and Dustman (2010) exhibit a slightly significant and positive impact of German identity on wages only for male immigrants. Constant and Zimmermann (2009) do not find any significant correlation between the ethnosizer and monthly earnings.

Table 2 – Cultural identity and wages (no control for endogeneity)

		No selection correction			Selection correction		
		National Identity	Index	R2	National Identity	Index	Rho
Whole population	Marginal effect	-0.0104		0.4138	-0.0106		0.0920
	t-stat	(-0.75)			(-0.76)		(1.27)
	Marginal effect		0.0012	0.4138		0.0010	0.1057
	t-stat		(0.05)			0.11	(1.46)
	Marginal effect	-0.0106	0.0013	0.4138	-0.0107	0.0010	0.1055
	t-stat	(-0.75)	(0.15)		(-0.76)	0.12	(1.46)
Immigrants	Marginal effect	-0.0029		0.3124	-0.0157		-0.5273***
	t-stat	(-0.19)			(-0.97)		(-4.71)
	Marginal effect		0.0091	0.3127		0.0089	0.0844
	t-stat		(1.16)			1.14	(0.92)
	Marginal effect	-0.0056	0.0095	0.3128	-0.0002	0.0099	-0.5272***
	t-stat	(-0.37)	(1.22)		(-0.01)	1.26	(-4.72)
Descendants	Marginal effect	0.0446*		0.3702	0.0450		-0.4637***
	t-stat	(1.72)			(1.72)		(-3.31)
	Marginal effect		-0.0002	0.3696		0.0015	-0.4768***
	t-stat		(-0.03)			0.18	(-3.33)
	Marginal effect	0.0451*	-0.0014	0.3702	0.0448*	0.0004	-0.4771***
	t-stat	(1.74)	(-0.16)		(1.71)	0.04	(-3.35)

Coefficients of Table 2 suggest that the relationship between cultural identity and wages is much less important than it is with employment. Indeed, we do not observe

any correlation between either national identity or the assimilation index and wages for the whole population or the first generation of immigrants. However, national identity is positively related with workers' remuneration if we focus on second generation of immigrants. Of course, the significance degree of this relation is low (10%) and the causality is unclear. Do descendants who do not feel French receive lower wages in return? Or, do low-paid descendant workers less identify with their native counterparts?

Overall, at this stage, we suspect that if cultural identity influences immigrants' labor-market outcomes, it more likely occurs at the hiring level.

3.5 IMPACT OF CULTURAL IDENTITY ON IMMIGRANTS' SOCIOECONOMIC OUTCOMES

Even if results of subsection 3.4.4 are consistent with previous findings, they may be fairly accused of being endogenous and therefore overestimated. Several methods exist when scholars have to face endogeneity issues between the response variable and regressors. In the specific case of cross-section data, the use of instrument variables (also called identifying variables) is the best-known solution. These instruments are variables that do influence the endogenous regressor (as strong as possible) but do not impact the response variable in another way than through its impact on the endogenous regressor.

3.5.1 Reminding: the determinants of ethnic identity

Chapter 2 is devoted to ethnic identity measurement and determinants. First, the main conclusion is that measurement matters and leads to potentially different – even opposite – conclusions. This is the reason why we advocate – as far as possible – for a combined analysis of measures. Second, the significance of determinants differs among subpopulations of interest. However, some determinants are robust and can be underlined.

Whole population

Not surprisingly origins matter. When French native origin is taken as the reference, almost all the foreign origins (except North America and Northern Europe for the

assimilation index) have a negative impact on commitment toward French identity (natives being the reference). On the opposite, a mixed origin (exactly one parent who is French) is an asset.

Discrimination and segregation of the neighborhood drives French identity down, as well as religion of parents and its importance in respondent's childhood rearing. Finally, educational attainment and time since arrival drive it up.

Immigrants

Most of the previous determinants hold for immigrants. Nevertheless, in Chapter 2 we observe that origins can have opposite consequences on the level of both measures of ethnic identity. In a nutshell, the farther – in cultural and economic terms – the country of origin, the higher the probability of feeling French (national identity) on the one hand, but on the other hand the lower the assimilation index. Our explanation for this seemingly paradox is quite simple. We believe that national identity tells us less about an immigrants' cultural identity than about her wish for being considered as a standard French citizen. In other words, national identity is more a claim than a self-image. Individuals from culturally and economically close countries do not face major integration problems. They do not need to feel French because they are *de facto*. On the opposite, those from further countries may be willing to fill a natural wider cultural gap by a stronger national identity claim. This is also suggested by the strong and significant effect of French citizenship acquisition on national identity and its null effect on the assimilation index.

Descendants

Cultural identity of descendants is close from that of natives according to either national identity or assimilation index levels. Fewer determinants are significant. Descendants' country of origin is positively significant on national identity (Northern Europe being the reference) but no longer on the assimilation index. Last, mixed origin, discrimination, and importance of religion play the strongest roles on descendants' identity.

3.5.2 Instruments

The look for valid instruments is complex and must satisfy several conditions. In this field of the literature, different instruments are used and one must confesses that in most cases the selection of valid instruments faces a lack of theoretically suitable variables mainly due to a more general lack of data on this issue.

In Battu and Zenou (2010), instruments are “experience of racial harassment”, “the person who made the wedding decision” and “preferences regarding own children school”. To our mind, these instruments validity should have been more discussed. For instance, preferences about children’s school should imply are likely influenced by job positions. The declarative nature of racial harassment also questions. Could we not imagine that bad outcomes in the labor market could drive harassment feeling up? These instruments are also available in the *TeO* survey however these unclear causal directions lead us to prefer others. Koczan (2012) chooses the language in which the respondent was raised as identifying variables. Here again this language is likely to have unwelcome direct impacts on labor market outcomes. Bisin *et al.* (2011) instrument sense of ethnic identity with the average of their composite measure of ethnic identity by region of origin which is clearly a choice constrained by the lack of subtle data at the European level.

Finally, we choose to keep as instruments three variables:

- (i) A framing effect control (framing dummy thereafter) ;
- (ii) The importance of religion during respondent childhood rearing ;
- (iii) Religion of parents.

The first instrument cannot be suspected of hazy causality direction. Indeed, it corresponds to the ranking of features proposed to respondents to define themselves in the questionnaire (see section 2.3 of Chapter 2). There are two different rankings. As in every survey, the framing plays a role on respondents’ self-definition⁴¹ but obviously not on their status on the labor market. The two others are theoretically also valid since they correspond to parents’ past decisions. Of course, we could also face troubles inherent to the declarative nature of the answers. However we cannot overcome these potential troubles or, said differently, we assume that respondents are trustworthy.

⁴¹ Of course, these different rankings were randomly proposed to immigrants, descendants and natives. Even though the features that are chosen by respondents to define themselves depend on these ranking, it is not a big deal for us since we are interested in the choice of a group relatively to another.

In previous studies, instruments' validity discussion is at best not deepened or even neglected. Although the subjective nature of identity complicates the finding of perfect instruments, we detail validity analysis for each of the models we run. We discuss the three most important criteria for an instrument to be valid: strength, identification and absence of direct impact on response variable.

Strength of instruments

The primary property of an instrument is to be correlated with the endogenous regressors. If this correlation is low, the instrument is a weak instrument. Tests of instruments' strength are provided latter in this chapter but we can already have some incentives regarding those we selected.

Table 3 reminds the coefficients and their significance corresponding to each instrument and regarding the ethnic identity measure. These coefficients can be found in the regression Tables 6 and 7 of the second Chapter.

Table 3 – *Coefficients and significance of instruments*

	Cultural identity	Framing Dummy (1)	Importance of religion (2)	Parents religion (3)				
				Atheist	Christian	Muslim	Buddhist	Other
Whole population	National Identity	-0.00669	0.00207	ref.	-0.0087	-0.0158	-0.0441**	-0.0215
	Assimilation index	0.129***	-0.0836***	ref.	0.0656*	-0.211***	0.0523	0.0538
Immigrants	National Identity	-0.000224	-0.0180**	ref.	0.0122	0.0257	-0.178**	-0.0535
	Assimilation index	0.180***	-0.153***	ref.	0.0967	0.0144	0.195*	0.148*
Descendants	National Identity	0.00740	-0.00901***	ref.	-0.0137	-0.054**	0.00152	-0.056*
	Assimilation index	0.118***	-0.135***	ref.	0.186**	-0.121	-0.0919	-0.0380

The framing dummy is highly correlated with the assimilation index and we can expect that its strength will be confirmed by further test. However, it cannot be correlated with national identity. This is the reason why we only use it as instrument of the assimilation index further in this chapter.

Importance of religion is significantly correlated with both ethnic identity measures irrespective of the subpopulation of interest (immigrants or descendants of immigrants). One can thus expect rejection of the weak instrument hypothesis in further tests.

Parents' religion correlation is not very high or always significant. We therefore expect that this instrument will hardly pass strength tests and its use will depend on its suitability regarding response and endogenous variables.

Number of instruments

While choosing the number of instrument, one has to face a trade-off between precision and bias. Indeed:

- The higher the number of instruments, the more precise the estimator but;
- The higher the number of instruments, the higher the bias.

This is checked thereafter by testing over- and underidentification⁴² of instruments. Framing dummy and importance of religion used as single instruments cannot be suspected of overidentification. Religion of parents may however suffer from it since this instrument is actually composed of 5 dummies which are very weakly correlated with our endogenous regressors: atheist (the reference), Christian, Muslim, Buddhist, Other religion.

We also combine these instruments and of course test for identification.

Correlation with response variable

The principal requirement for any instrument is that it must not directly impact the response variable (employment and wage). This condition about instruments cannot be tested. Researchers have to provide arguments either based on theory or more simply on common sense.

The first instrument – framing dummy – fulfills this condition since the random framing of the questionnaire cannot be suspected of playing a role on respondents' employment probability or wage formation.

⁴² In a theoretical point of view, there exist an exact amount, k , of valid instruments. Let m be the number of instruments we actually consider. If $m < k$, the model is underidentified, if $m = k$, the model is exactly identified and if $m > k$, the model is overidentified

The second and third instruments, all about religion during childhood, are declarative which always raises collinearity issues with other variables. However, we believe that importance of religion in childhood rearing and parents' religious cults are theoretically not supposed to impact professional life through another channel than that of cultural identity. In that case, these are good instruments regarding this condition.

3.5.3 Employment

While investigating labor market outcomes, the first natural stage to focus on is the access to jobs. As other dimensions of identity, ethnic identity helps people to define who they are and therefore partly dictates how they should behave. This is the reason why people with different identity are expected to have different success on the labor market. More precisely, some may select jobs opportunities more than others regarding to the prescriptions of their ethnic group. For instance, in the U.S., this idea can be found in "acting white" theory (Austen-Smith and Fryer, 2005) or in the concept of *linked fate* for African American (Simien, 2005, individuals' fate is tied with their race). Overrepresentation of some ethnic groups in some occupations can notably be seen as a proof of this self-selection. This is a supply side view of identity on the labor market and we use the *TeO* survey to investigate this side. If workers' ethnic identity is likely to impact their employment probability, employers' identity also does. Unfortunately, we do not observe demand side of the labor market.

Our strategy here is the following. We first run simple 2SLS (as in Battu and Zenou, 2010, or Bisin et al., 2011) and then Limited Information Maximum Likelihood (LIML) regressions. Even if we are aware of the high risks of obtaining a biased 2SLS estimator in presence of binary variables, this method allows testing for identification of instruments. Furthermore, comparison of the 2SLS estimators and LIML estimators (biprobit for national identity and ivprobit for the assimilation index) will tell us about robustness of the causal relationship between cultural identity and labor market access.

3.5.3.1 National identity

National identity is the most used proxy of cultural identity in the economic literature. However, its causal relations with employment probability are very uncertain among authors and papers. Some find positive and significant impacts (Constant and Zimmermann, 2008, Battu and Zenou, 2010, Bisin *et al.*, 2011, Gorinas, 2013,

Drydakakis, 2013), others do not exhibit any significant ones (Nekby and Rödin, 2010, Koczan, 2012).

In order to take into account the binary natures of both the response variable (employment) and the endogenous regressor (national identity), we follow Nichols' recommendations (2007) and calculate a bivariate probit estimator which allows the specification of their distributions.

Table 4 shows 2SLS estimates, corresponding probabilities of instruments' tests, and LIML estimators of the bivariate probit models (z-value under brackets). We consider two separate sets of instruments (importance of religion and parents' religion) as well as their combination.

Table 4 – *National identity causality on employment*

Instrument	Sample	2SLS estimator				LIML estimator (biprobit)	
		Estimate	Overid	Weakid	Underid	Estimate	Rho
(2) Importance of religion	Whole pop.	0.1910 (0.04)	0.000	1	0.6146	0.203 (0.89)	0.033
	Immigrants	0.9268 (1.18)	0.000	1	0.0931	0.835*** (3.48)	-0.562***
	Descendants	0.7817 (0.95)	0.000	0.20	0.006	0.1964 (0.08)	0.1242
(3) Parents' religion	Whole pop.	-0.2050 (-0.25)	0.0224	1	0.0869	0.1699 (0.71)	0.046
	Immigrants	-0.2622 (-0.06)	0.7356	1	0.0188	0.6760* (1.89)	-0.4494*
	Descendants	0.3016 (0.56)	0.4684	1	0.0395	-0.5086 (-0.64)	0.532
(2) + (3) Importance of religion + parents' religion	Whole pop.	-0.1494 (-0.18)	0.0287	1	0.1410	0.1790 (0.75)	0.041
	Immigrants	-0.0191 (-0.09)	0.3012	1	0.0102	0.7432** (2.51)	-0.497**
	Descendants	0.3804 (0.85)	0.5745	1	0.0001	-0.1318 (-0.07)	0.3035

Note: quality tests results are given by their p-values. If the critical value is less than .05 then the null hypothesis (that is overidentification, weak instrument and underidentification) is rejected. For instance, for immigrants and instrument (2), over- and underidentification are rejected but the instrument is given as weak.

First, one should not be surprised by the 2SLS estimates non-significance. 2SLS are not a suitable procedure in case of binary variables. Austin Nichols notably explains that “too often, researchers make a significant coefficient insignificant by instrumenting and then conclude the true effect is zero”. This is all the more likely when the estimating method is not appropriate. Second, the 2SLS method allows testing for instruments' validity when the endogenous regressor is continuous. However, it is not

the case here since national identity is a binary variable. As a result, tests of instruments' strength are not and cannot be good in Table 4 (we discuss these tests values in the next sub-section where they are more suitable). To our knowledge there exists no suitable test in presence of binary endogenous regressor. A good option is simply to look at Table 3 to have an idea of the influence of each instrument. According to this table, we expect the strength of instrument (2) to be sufficient. However, instrument (3) is likely to be weak. Concerning identification test, model (2) is exactly identified whereas models (3) and ((2) + (3)) are overidentified.

Rho captures the correlation between first and second stages equations. A significant rho suggests that endogeneity occurs between employment and identity. Even if the choice of instrumental procedure has to be the consequence of researcher's intuitions, a significant rho validates the use of this method.

Regarding the influence of cultural identity, let us focus on the bivariate probit estimators. The conclusion in this case is quite clear. Cultural identity – measured by national identity – does not impact either the whole population or second generation of immigrants. However, a positive impact of national identity on employment always appears for the first generation of immigrants. This effect is significant whatever the instrument. Employment probability increases for an immigrant when she feels French. If national identity is a good expression of immigrants' cultural assimilation, these results confirm early literature expectations (Chiswick, 1978, Borjas, 1985). On the one hand, cultural assimilation allows immigrants acquiring unobservable social and human capitals of natives that are relevant on the local labor market. On the other hand, identification with the host culture also expresses a lower importance of prescriptions regarding the job opportunities favored by the ethnic group. As a result, immigrants' employability increases.

3.5.3.2 Assimilation index

Instruments' quality tests from 2SLS estimation are computed from the first stage equation. For the tests to be suitable, the endogenous variable in the first stage equation must be continuous. Contrary to national identity, this is the case of the assimilation index. 2SLS tests are therefore must more trustworthy in Table 5 than they are in Table 4.

Table 5 displays the estimates and quality tests of 2SLS methods, and maximum likelihood estimates of cultural identity – measured by the assimilation index – on employment probability. As previously, what should be focused on are 2SLS tests and LIML estimates.

Except for models (3) and ((1)+(2)), all quality tests are satisfied. Regarding the specific case weak identification test, Stock and Yogo (2005) provide critical values for rejection of the weak instrument hypothesis. The threshold is not anymore 5% (software do not even provide the critical value for such a low acceptance threshold) but more around 15%⁴³. If the statistic is lower than the 15% critical value calculated thanks Stock and Yogo's method, the weakness of the instrument can be rejected. Thus, models (1), (2) and ((1) + (2)) do not suffer from strength issues. Quality tests encourage us to not consider model (3).

Table 5 – Assimilation index causality on employment

Instrument	Sample	2SLS estimator				LIML estimator (ivprobit)	
		Estimate	Overid	Weakid	Underid	Estimate	Rho
(1) Framing dummy	Whole pop.	0.0034 (0.04)	0.000	<10%	0.000	-0.0521 (-0.63)	0.3490
	Immigrants	0.023 (0.37)	0.000	<10%	0.000	-0.0107 (0.36)	0.1592
	Descendants	0.2833 (1.27)	0.0113	0.20	0.000	0.2188*** (2.98)	-0.8384
(2) Importance of religion	Whole pop.	-0.0038 (-0.04)	0.000	<10%	0.000	-0.0239 (-0.29)	0.2362
	Immigrants	0.0668* (1.69)	0.000	<10%	0.000	0.0701* (1.92)	-0.1636
	Descendants	0.0892 (1.01)	0.000	<10%	0.000	0.0978 (1.44)	-0.2524
(3) Parents' religion	Whole pop.	0.3154** (2.26)	0.1217	>30%	0.0004	0.3196*** (19.17)	-1.7078***
	Immigrants	-0.0413 (-0.24)	0.5333	>30%	0.3859	-0.2476** (-2.50)	1.3937
	Descendants	0.1514 (1.41)	0.5480	>30%	0.0028	0.1592** (2.04)	-0.5211
(1) + (2) Framing dummy + importance of religion	Whole pop.	-0.0005 (-0.01)	0.9547	<10%	0.000	-0.0368 (-0.62)	0.2884
	Immigrants	0.0546 (1.58)	0.5470	<10%	0.000	0.0479 (1.43)	-0.0739
	Descendants	0.1228 (1.55)	0.4073	15%	0.000	0.1260** (2.24)	-0.3733

⁴³ This might be disturbing for a reader used to econometric tests. But as explained by Stock and Yogo (2005), the rejection rate of their test depends on the rejection rate of the rho and the number of degree of freedom.

One could consider the general non-significance of rho in every model as a limit of this analysis but also remind that it just says that exogeneity cannot be rejected. In other words, the instrumental procedure may be an excessive precaution. If this were the case, simple regressions presented in section 3.4 would be sufficient. This is precisely in such situations that researchers have to think about the pertinence of complex procedures according to their theoretical knowledge of the topics. Here, endogeneity is likely to arise between identity and professional outcomes which supports the calculation of IV estimators.

Regarding IV probit estimates, significance depends on the instrument. Models (1) and ((1) + (2)) exhibit a positive effect of assimilation only on descendants' employment probability. Model (2) shows evidence of a positive causality for immigrants. This latter result is strengthened by the significance of the 2SLS estimate. Once more, these results are the evidence that cultural assimilation is an advantage in the French labor market in terms of employability. This assimilation observed through cultural identity measures expresses more suitable social and human capitals. It also reflects the understanding and adoption of the explicit (how to look for and apply job vacancies for instance) and implicit (job interviews' attitudes, use of compatible networks, etc.) norms ruling the labor market of the host country.

If we now compare results of Tables 4 and 5, we observe that national identity only impact first generations. This could be expected since almost all the second generation feel French. As explained in Chapter 2, we believe that national identity is more related to legal facts ("Am I French in a legal point of view?") than an actual measure of cultural assimilation. With this in mind, the assimilation index offers finer information and allows investigation of cultural identity influence on both first and second generations. Table 5 indeed exhibit quite strong causalities between cultural identity and employment for both subpopulations.

As proposed by Akerlof and Kranton (2000) or Sam (2006), cultural identity is a way to measure cultural assimilation. Tables 4 and 5 give evidence which verifies the Immigrant Assimilation Hypothesis (IAH, Chiswick, 1978) and demonstrate that cultural assimilation improves employment.

3.5.4 Wages

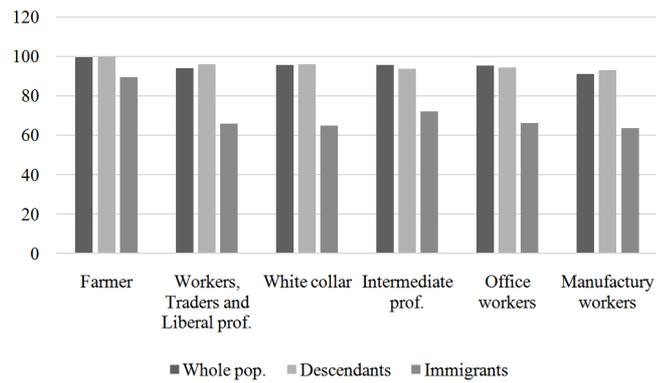
Subsection 3.5.3 demonstrates that cultural identity influences employment. However, its impact on wages is much more uncertain. As presented before, Mason (2006), Constant and Zimmermann (2009) and Casey and Dustman (2010) are the only studies which have investigated the relationship between ethnic identity and wages. Furthermore, they show that when a significant causality appears it is for a very particular subpopulation. As for employment, we expect cultural identity to express cultural assimilation and, according to the IAH, we should be able to exhibit a significant influence of identity on wages formation. However, Table 2 has already suggested that such a relation does not exist. Let us now consider this issue through instrumental procedures.

3.5.4.1 Selection and occupational issues

One of the main issues when researchers want to investigate wage formation is to deal with selection issues. Heckman correction to these selection biases has been implemented in the first chapter and reminded at the beginning of the current one. The main idea is that one has to correct for the non-random selection of workers on the labor market since wage earnings are only observed for those who actually work. In practice, the Heckman correction consists in calculating the inverse Mills ratios of the estimated linear probabilities of being employed. Once calculated, these ratios are integrated in the wage equation as a standard regressor. Usually, statistical softwares provide ready-to-use commands for Heckman correction. However, we have to address identity endogeneity issues in the meantime and, to our knowledge, there is no suitable command in Stata or other softwares. We thus implement ourselves the Heckman correction in our instrumental procedure as explained in subsection 3.3.2.2.

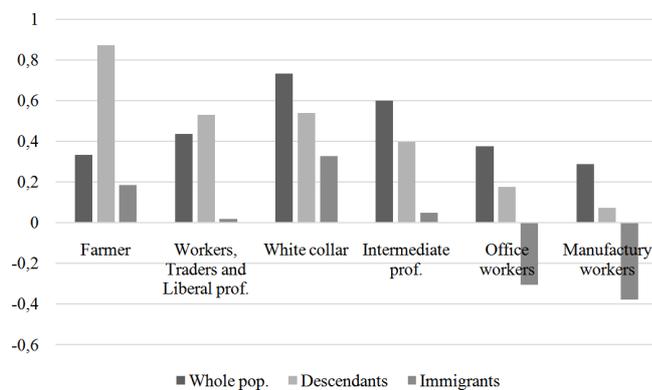
If selection issues can be managed thanks to the Heckman correction one should also note that cultural identity is also likely to impact and to be impacted by individuals' job occupations. However this chapter is already quite dense because of all the outcomes it studies and this is the reason why we decide to not investigate the role of ethnic identity on job occupation. Furthermore, his seminal hypothesis (Chiswick, 1978) states that the wage ethnic gap reflects a deeper gap in terms of cultural assimilation. However Figures 1 and 2 may help the reader to have a descriptive view of cultural identity levels among job occupations.

Figure 1 – National identity levels among job occupations



According to Figure 1, although national identity levels differ among the subpopulations, these differences seem rather steady among job occupations. On the contrary, levels of the assimilation index change both over subpopulations and job occupations (Figure 2). Here again causalities are not clear and we are aware that it is likely to cause multicollinearity in further regressions. Unfortunately, such a kind of multicollinearity between regressors is quite inherent to these issues.

Figure 2 – Assimilation index among job occupations



3.5.4.2 National identity

Table 6 gives wage equation results for instrumented ethnic identity (measured by national identity). It also provides validity tests of instruments. As expected, these tests for (3) are very bad which worsens those of ((2) + (3)). With these instruments, a significant impact of national identity appears on wages. This impact is negative which makes it quite inconsistent with theoretical expectations. Due to the poor quality of tests we however believe that these results should not be given an excessive interest. Instrument (2) has better but still not very satisfying validity tests and does not elicit a significant causality between variables.

Table 6 – National identity causality on wages

Instruments	Sample	2SLS estimator			
		Estimate	Overid	Weakid	Underid
(2) Importance of religion	Whole pop.	-5.7469 (-0.41)	0.000	>30%	0.6576
	Immigrants	0.4607 (0.51)	0.000	>30%	0.2484
	Descendants	-16.005 (-0.39)	0.000	>30%	0.6954
(3) Parents' religion	Whole pop.	-1.1415* (-1.71)	0.8787	>30%	0.0767
	Immigrants	0.9614 (0.97)	0.8450	>30%	0.6967
	Descendants	-0.1410 (-0.09)	0.0854	>30%	0.3044
(2)+(3) Importance of religion + parents' religion	Whole pop.	-1.1975* (-1.77)	0.8997	>30%	0.0960
	Immigrants	-0.6182 (-0.90)	0.8769	>30%	0.7522
	Descendants	-0.1259 (-0.08)	0.0981	>30%	0.4727

3.5.4.3 Assimilation index

Table 7 gives coefficients of ethnic identity measured by the assimilation index on wage formation. No estimate is significant – even when quality tests are good – except in model ((1)+(2)) for the whole population of natives, immigrants and descendants of immigrants. The sign of this coefficient is once more not expected and hardly explainable. However, its significance is very low (the p-value associated with the z-stat is 0.094). Furthermore, the strength of the instrument is not very high and overidentification is likely. These are possible causes of overestimation of this estimate.

The Immigrant Assimilation Hypothesis (IAH), specifies that immigrants acquire destination relevant human capital, but at a decreasing rate, with duration in the destination. Chapter 2 shows that duration in the host country is a major determinant of national identity and the assimilation index. To verify the IAH with wages we should have observed a positive causality between our cultural identity measures and wages. However, this is not the case. Of course it is not a sufficient evidence for IAH rejection. However, this is in line with Constant and Zimmermann (2009) with a different measure of ethnic identity and suggests that the wage ethnic gap is the consequence of observable differences of human capital (in education in particular). This is also supported by Chapter 1's findings.

Table 7 – *Assimilation index causality on wages*

Instruments	Sample	2SLS estimator with Heckman correction			
		Estimate	Overid	Weakid	Underid
(1) Framing dummy	Whole pop.	-0.481 (-1.49)	0.000	<20%	0.0158
	Immigrants	-0.0738 (-0.33)	0.000	20%	0.0111
	Descendants	-6.2215 (-0.41)	0.000	>30%	0.6740
(2) Importance of religion	Whole pop.	-0.1118 (-0.87)	0.000	<15%	0.001
	Immigrants	0.0351 (0.50)	0.000	<10%	0.000
	Descendants	0.6100 (1.54)	0.000	<30%	0.0423
(3) Parents' religion	Whole pop.	0.7491 (1.09)	0.1842	<15%	0.3442
	Immigrants	-0.8867 (-0.58)	0.7243	<15%	0.8991
	Descendants	-0.6365 (-0.62)	0.1003	>30%	0.4160
(1)+(2) Framing dummy + importance of religion	Whole pop.	-0.2228* (-1.67)	0.3309	<20%	0.0001
	Immigrants	0.0123 (0.29)	0.5539	<10%	0.000
	Descendants	0.2552 (0.320)	0.0034	>30%	0.1153

3.6 Political behaviors

Issues of sections 3.4 and 3.5 become quite standard in the identity literature since they focus on essential microeconomic questions. Identity theory also has potential implementations in political economics. To our knowledge, there is no empirical study of political behaviors involving cultural identity. Scholars study immigrant assimilation thanks to labor market outcomes. However, voting participation in particular but also political self-placement are factors through which are expressed individuals' sense of belonging to a wider collective. This section therefore aims to explore the relationship between cultural identity of immigrants of first and second generations and their political behaviors.

As already said previously in this manuscript, one of the TeO survey's main asset is that it allows the investigation many different aspect of respondents' lives. Besides usual microeconomic features, an entire part of the survey is devoted to political involvement. We select five measures of political behaviors which we expect to depend

on the level of cultural assimilation. This allows us making some contributions to the literature. First, we consider a larger amount of control. Second, compared to previous papers, we enlarge our study to different aspects of voting decisions: voters' list registration, voter participation at municipal and presidential elections (first and second rounds) and political orientation (from the far left to the far right).

Response variables

As said previously we focus on five measures of political involvement:

- Voters' list registration;
- Participation at municipal elections in 2008;
- Participation at the first round of the presidential election in 2007;
- Participation at the second round of the presidential election in 2007;
- Political orientation.

Covariates

We limit our covariates to simple and standard sociodemographic controls to exhibit correlations between ethnic identity and voting behaviors. These covariates are described in Table A.2. of the appendix. As in previous sections we consider both national identity and the assimilation index to approach ethnic identity either separated or combined.

3.6.1 Voting participation

A look at some descriptive statistics (Table 8) shows limits of self-declared vote participations since they seem excessive compared to official participation figures in particular for the municipal elections. Of course, this over-declaration is a big deal for our analysis and cautiousness is required while interpreting the next results. Note that we obviously only consider individuals who are allowed to vote in France which excludes from our scope immigrants who are not naturalized citizens.

Table 8 – Descriptive statistics

	Whole pop.	Immigrants	Descendants	Official figures
Voters' list Registration	90.36	82.83	86.56	
Municipal (2008)	83.77	82.88	79.52	[65.2 – 66.54]
Presidential (2007) - 1st round	91.09	87.67	88.9	85.78
Presidential (2007) - 2nd round	88.38	85.32	86.74	85.97

Another issue may cause mismeasurement. If multicollinearity is a hardly surmountable issue in every microeconomic approach, it is even more obvious in our case. Indeed, in the following regressions, ethnic identity is integrated as an explanatory variable among other regressors. Of course, since these latter regressors were used to study ethnic identity formation in chapter 2, they surely share information with it and multicollinearity has to arise when they are combined as regressors. One could wonder why we do not follow an IV procedure as we did during the rest of this chapter. First, remind that a valid instrument must be highly related with the endogenous regressor (cultural identity) but not have any direct causal relation on the response variable (voting behavior). Such instruments are hardly findable. For instance, importance of religion which was a quite valid instrument for labor market outcomes would be strongly suspected of having direct implication on voting decision. The second reason for not using an IV procedure is that causal relation between ethnic identity and voting relation is clearer than for labor market participation for instance. Cultural identity is already formed when the first voting decision is taken. However, we are aware that the act of voting may, for instance, then increase the sense of belonging to a national community and thus drive cultural identity toward the majority one. If endogeneity occurs, as said in Section 3.4, the coefficients can be overestimated. Conclusions should therefore be cautious.

Tiberj and Simon (2012) have already explored the determinants of voters' participation with the *TeO* survey. For this reason and to not make the chapter too cumbersome, we choose to not detail regressions' tables but to only make a quick summary of main determinants. Only are reported coefficients of cultural identity in Table 9.

Registration on voters list

Table 9 reports the predicted marginal effects of both measures of ethnic identity, either separated or combined in the same probit model. Whereas ethnic identity does not matter for the whole French population, it is not the case for immigrants. For these latter, a French national identity and a good assimilation are features which increase the probability of being registered on the electoral list. Concerning descendants of immigrants, their probability of being registered on this list is only affected by national

identity. Another lesson of these results is that, as we expected while creating a new measure of ethnic identity, both measures are weakly collinear. Indeed, the inclusion or withdrawal of one measure only marginally impacts the effect of the other. Cultural identity being a wider concept than national identity or the assimilation index taken separately, we believe that their association helps to deepen our knowledge of its consequences on individuals' behaviors.

Many controls⁴⁴ are used but not detailed here. One can note some expected but strong effects of employment status, age, diploma or even size of the city.

Table 9 – Cultural identity on voters' list registration

	Whole pop.			Immigrants			Descendants		
National Identity	-0.0036	-	-0.0036	0.0446**	-	0.0401*	0.0541**	-	0.0524**
	(-0.30)	-	(-0.30)	(2.03)	-	(1.85)	(2.57)	-	(2.50)
Assimilation index	-	0.0006	0.0006	-	0.0173**	0.0155*	-	0.0064	0.0053
	-	(0.13)	(0.13)	-	(2.06)	(1.85)	-	(0.87)	(0.71)

Sample: Probit model on individuals with French citizenship and old enough to vote (more than 18). See Table A.2 for controls.

Participation to municipal and presidential elections

Table 10 displays the marginal effects of ethnic identity measures on voter participation. It seems quite clear with this table that vote participation and cultural identity are linked. This all the more obvious with national identity which has a significant impact in every regression. This particular result is consistent with Huddy and Khatib (2007) where authors find a strong and significant impact of national identity on voter turnout. Our results suggest that national identity is associated with a raise of voting probability around 8-9% for first generations and around 4% for second generations. However, we show in the next subsection that, contrary to what Huddy and Khatib argue, national identity is ideologically biased. This is important for them since they wish to approach non-ideological patriotism thanks to national identity. It is a much minor concern for us.

⁴⁴ See Table A.2. of the appendix for the complete list of covariates.

Table 10 – Impact of cultural identity on voters' participation

<i>Participation in municipal elections (2008)</i>								
	Whole pop.		Immigrants			Descendants		
National Identity	0.149***		0.151***	0.089***		0.086***	0.041*	0.041*
	(3.41)		(3.44)	(3.38)		(3.28)	(1.69)	(1.66)
Assimilation index		0.010	0.011		0.015	0.012		0.003
		(1.33)	(1.44)		(1.54)	(1.29)		(0.39) (0.41)
<i>Participation in the first round of presidential elections (2007)</i>								
	Whole pop.		Immigrants			Descendants		
National Identity	0.055**		0.056**	0.104***		0.098***	0.040**	0.039**
	(2.01)		(2.04)	(4.31)		(4.11)	(2.41)	(2.35)
Assimilation index	-	0.006	0.006		0.025***	0.022***		0.003
	-	(1.04)	(1.11)		(3.07)	(2.71)		(0.40) (0.69)
<i>Participation in the second round of presidential elections (2007)</i>								
	Whole pop.		Immigrants			Descendants		
National Identity	0.088**		0.089**	0.081***		0.074***	0.037*	0.040*
	(2.45)		(2.48)	(3.18)		(2.93)	(1.93)	(1.78)
Assimilation index		0.008	0.008		0.030***	0.028***		0.011**
		(1.27)	(1.34)		(3.47)	(3.20)		(2.20) (2.07)

Regarding the assimilation index, it is not a significant determinant of voting participation at the municipal level and its impact is, quite surprisingly, either strongly significant or null at the presidential one. It seems to be particularly important for first generations.

With all the needed caution because of potential troubles cited above, our results validate the expectation of the literature (implicit in Turner et al., 1987, and explicit in Akerlof and Kranton, 2000, or Huddy and Khatib, 2005) which is that identity leads to higher levels of political involvement among strong national identifiers because of their greater adherence to group norms.

3.6.2 Political self-placement

Left/right terminology is tightly linked with French political history since it comes from the seating arrangement in the French Assembly during the Revolution, where supporters of the *ancien régime* were seated on the right and revolutionaries on the left. However, it says much more than a simple distribution of seats. The terminology is mainly used by political scientists, journalists, or politicians and the majority of voters are able to situate themselves on a left/right scale. Recently, European Elections have shown that immigration and the debate about national or ethnic identity that it raises

leads to an increase of extreme right parties’ political representation. The literature in political science has described how voters’ self-placements are influenced by the conflicts and debates they observe in the political system (Freire, 2006, Adams, Green and Millazo, 2012). In particular, De Vries *et al.* (2013) shows how the mobilization of more culturally based policy issues affects the way people identify with politics. In other words, political parties can, partly, drive voters’ orientation by manipulating ethnic issues. According to them, economic aspects have lost importance in voters’ left/right self-placement in favor of immigration and cultural issues. Does it mean that ethnic identity matters in individuals’ political orientation? This is the question we seek to answer here since we aim to highlight the impact of ethnic identity on political orientation while controlling for a large set of characteristics.

In their seminal work about left/right identification, Inglehart and Klingemann (1976) tell apart three components. First the social component includes information related to job occupation, religion and spatial location. Second, the value component considers voters’ attitudes toward the major value conflicts in Western Europe and can include aspects like the role of the state in the economy and public life or the importance of traditional lifestyles. Finally, the partisan component which refers to the part of any individual’s ideological orientation reflecting partisan loyalties.

Table 11 – Left/right self-placement, proportions

	Whole pop.	Immigrants	Descendants	2007 Pres. 1 st Round
(1) Left	51.7	58.06	62.16	36.44
<i>Incl. Far left</i>	8.84	8.8	11.75	9
<i>Incl. Fairly Left</i>	42.86	49.26	50.41	27.44
(2) Middle	16.65	21.55	17.84	18.57
(3) Right	31.65	20.4	20	44.99
<i>Incl. Fairly Right</i>	28.69	18.7	18.09	32.33
<i>Incl. Far right</i>	2.96	1.7	1.91	12.66
	100	100	100	100

In Table 11 self-placements do not exactly correspond to the scores observed during the first round of the 2007 French presidential election, especially for Left and Far Right orientation. This may be caused by voters turnout and well-known under-declaration of Far Right placements. However, studies of electoral behaviors have shown that such

declarative placements are still major predictors of voting choices (Franklin, 1992, Gunther and Montero, 2001)⁴⁵.

Some works study the determinant of political self-placement (De Vries *et al.* in the Netherlands, 2013, Freire on a set of European countries, 2006, or Inglehart, 1977). We keep the same set of sociodemographic controls than for voter participation. This set follows to the recommendations of this literature (Inglehart and Klingemann, 1976).

Our econometric strategy is simple. Considering that an ordered logit model could be seemed more suitable but would also require the slopes of each cut to be parallel – which is more than unlikely – we follow Kroh (2007) recommendations by merging far with fairly left and far with fairly right placements. Finally, we run three probit models on the five features of the political scale. Marginal effects are calculated and reported in Table 12. Each one can be thus interpreted as a rise or a cut in the probability of self-placement on the political scale at: (1) Left; (2) Middle; (3) Right. Of course, one must not forget that these results are suspected of endogeneity. Once more, the cautious reader should consider these results as correlation coefficients more than causality evidence. Note that we run for each dependent variable and each population three regressions depending on the measure of identity included as a regressor: (a) National Identity; (b) Assimilation index; (c) National Identity + Assimilation index. Our goal is to overcome potential collinearity issues between both measures. However, this collinearity seems weak since estimates and their significances do not widely vary across models (a), (b) and (c).

As one can observe in Table 12, although Huddy and Khatib's (2013) claim that national identity is not ideologically biased, it is not true at least for the French case. This leads us to the main result which is that both measures of identity can have reversed implications on political orientations.

⁴⁵ For more detailed information about political orientations with these data, one can see Tiberj and Simon (2012).

Table 12 – Impact of ethnic identity on voters' political orientation

<i>(1) Left</i>									
	Whole pop.			Immigrants			Descendants		
	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)
National Identity	-0.097*** (-2.75)		-0.098*** (-2.84)	-0.031* (-1.96)		-0.033** (-2.07)	-0.001 (-0.04)		-0.006 (-0.14)
Assimilation index		0.042*** (4.35)	0.043*** (4.37)		-0.008 (1.06)	0.010 (1.25)		0.019 (1.43)	0.019 (1.43)
<i>(2) Middle</i>									
	Whole pop.			Immigrants			Descendants		
	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)
National Identity	0.019 (1.32)		0.018 (1.26)	0.009 (0.93)		0.009 (0.87)	0.050*** (2.70)		0.050*** (2.68)
Assimilation index		0.010* (1.65)	0.010 (1.63)		0.004 (0.78)	0.003 (0.70)		0.002 (0.23)	0.002 (0.17)
<i>(3) Right</i>									
	Whole pop.			Immigrants			Descendants		
	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)
National Identity	0.005 (0.14)		0.005 (0.13)	0.019** (2.01)		0.018* (1.83)	0.052** (2.48)		0.052** (2.68)
Assimilation index		-0.019** (-2.25)	-0.019** (0.13)		0.010* (1.94)	0.010* (1.83)		-0.002 (-0.19)	-0.002 (-0.24)

The whole population – An opposite observation to the statement of Huddy and Khatib (2013) is done in model (1) for Left placement. Indeed, national identity is negatively related to this political orientation whereas the assimilation index is positively related to it. This is a supplementary argument in favor of the combination of several measures of ethnic identity already defended in Chapter 2. Both measures do not comprise the same information and there is no clear advantage in favor of one or another. The choice of one measure over another would not be a big deal if both had led to similar results and implications. Nevertheless, this is not the case. In Chapter 2, conclusions in terms of assimilation among origins are reversed. In this Chapter, the implications in terms of political orientations are also reversed. Finally, the assimilation index is the only measure which is significant for others features of the political scale. It is notably negatively related with the Right positioning probability of respondents.

Immigrants – Their national identification seems even more linear than for the whole population. To feel French goes with Right self-placement and vice-versa. Nevertheless, contrary to the whole population, their assimilation index plays positively on their Right positioning. Therefore, the lower their ethnic identity, the higher their self-placement on the Right wing of the political scale.

Descendants – Ethnic identity is not a driving component of descendants’ political self-placement. Only national identity matters and drives positioning to the middle or the right sides of the political scale.

Finally, a strong national identity is more linked to Right-wing orientations and a strong assimilation index more linked with Left-wing ones. This is verified by OLS or ordered logit models with p-values less than 5%. As said before these latter models are not really suitable given the nature of the dependent variable, however they are additional evidence of the opposite relations between national identity and left/right placements, and assimilation index and left/right placements.

3.7 Discussion

This Chapter’s goal is quite ambitious: measuring the impact of ethnic identity on professional outcomes (while overcoming endogeneity issues) and political behaviors. There are many obstacles for such an aim, reverse causality, lack of data and controls, mismeasurement problems, instruments’ validity, or even the cross-disciplinary nature of the topic. All these features are as much sources of potential bounds of our analysis.

Regarding the reverse causality which is likely to imply endogeneity between explained and explanatory variables, more than other works in this literature, we try to adjust our econometrical strategy to the specificities of this topic and notably to clearly discuss the validity of our instruments. Gorinas (2013) notices that econometric models which do not take into account endogeneity leads to overestimated coefficients. Results of such econometric models must be considered as upper bounds of the “true effect” (Tables 1 and 2 in this Chapter). On the opposite, Austin Nichols (2007) remarks that power is a huge concern for IV strategies. He explains that too often researchers make a significant coefficient insignificant by instrumenting and then conclude that the “true effect” is zero. Results of IV strategies can be considered as lower bounds of the “true effect” (Tables 4, 5, 6 and 7). Therefore, a significant impact with and without IV strategy is an evidence of robustness.

As any empirical analysis, this one is bounded by the availability of data. However, the *TeO* survey has been conducted on several lifecourse fields (education, housing,

labor market outcomes, political behaviors, health) and provides many controls. Its interest for our concern is important since it also provides an entire section about respondents' self-image. In particular, the assimilation index is constructed on characteristics chosen by respondents to define themselves and therefore matches Akerlof and Kranton's (2000, 2010) definition of social identity. The main limit of these data is their cross-sectional type. Panel data would more suitable. Nevertheless, to our knowledge studies using the German Socio-Economic Panel (GSOEP) are the only ones which provides panel analysis (Casey and Dustman, 2010). However regarding identity related data, contrary to *TeO*, the GSEP only provides the national identity measure which is the reason why Constant and Zimmermann had to develop the ethnosizer in order to extract identity information from other variables.

The next and last Chapter of this thesis tries to overcome these empirical biases by implementing a laboratory experiment where group identity is induced and therefore perfectly controlled and behavioral predictions are based on a simple model. As any economic topic, the combination of theoretical, empirical and experimental approach is a decisive asset.

Finally, the adoption of the concept of identity in economics, although increasing, is not widely documented. Such issues therefore cannot only rely on the sole economic literature. This work has been also based on the related literature in psychology, sociology and political science. This cross-disciplinary aspect of constitutes both its strength and its weakness. It provides our work with wide and old footings, but it also situates it on an edge of the economic literature.

3.8 Conclusion

This chapter has investigated the relationship between ethnic identity, economic outcomes and political behaviors. As suggested in the previous chapter, we show that identity measurement matters which should encourage scholars interested in such issues to combine several measures of ethnic identity.

In section 3.4, we show that the positive relationship between ethnic identity and employment probability is strong. On the opposite, wages' formation seems only to

depend on national identity for the second generation of immigrants. Nevertheless, these results are suspected of reverse causality which is likely to overestimate their importance. We therefore adopt in section 3.5 different IV strategies in order to elicit the “true effect” of ethnic identity on economic outcomes. Regarding immigrant employment, subsection 3.5.3 exhibits results which are consistent with the theoretical and empirical literature. In particular, national identity positively impacts the employment probability of immigrants, while the assimilation index impacts more that of descendants of immigrants. We explain this difference by the fact that national identity is a less major concern for second generations (they almost all feel French), than the characteristics they choose to define themselves and which tells how well they assimilate the host culture. We do not find any robust evidence of a potential impact of ethnic identity on wages’ formation.

In section 3.6, we take the opportunity allowed by *TeO* data to investigate the relation between ethnic identity and political behaviors. We find that national identity is strongly related to voting participation. This is also the case for the assimilation index but only at the presidential election level. In both cases, these results verify what we could call “common sense” expectations. The higher the commitment toward the host culture, the higher the involvement in political issues and the higher the will to vote. Finally, the role of ethnic identity is less central when we consider left/right political self-placement. Results suggest that national identity corresponds to a more right-wing placement, whereas a high assimilation index corresponds to a more left-wing one.

This chapter starts by emphasizing the recent interest of policy makers for ethnic diversity and identity. It then shows that ethnic identity as a significant role on two of the three fields of immigrants and descendants of immigrants’ life that we take into account: access to job and political involvement. These findings justify this interest of policy makers. Then, what are the policy implications of such findings? Let us go back to the seminal definition of identity given by Tajfel (1981). Identity has two components: group membership and attachment to the group. These two components define persons’ sense of selves (Akerlof and Kranton, 2000), that is their identity. Thus there are two components which can be targeted by policy makers. First, consider the salience of the group. Ethnic groups are exogenous but their salience is also strongly related to geographical and social spaces (Zenou, 2013). If these spaces are related to ethnic belonging, then segregations in both of them makes the salience of the minority

group increase relatively to the majority group. Ghettoisation of some urban areas, self-selection, and discrimination on the labor market are compounding factors of segregation. Policies which would manage to decrease segregation on these spaces would drive salience of ethnic groups and identities down and would improve employment and political involvement. Virtuous circles may then arise. However, in their model of spatial mismatch, Selod and Zenou (2006) consider that identity-based preferences are the initial causes of segregational spatial decisions. The second component of identity is attachment to the group. This is a more psychological component and here topics and semantics of the public debate are central since the literature in political science has described how individuals are influenced by the conflicts and debates they observe in the political system (Freire, 2006, Adams, Green and Millazo, 2012, De Vries *et al.*, 2013). A pacified public debate should not impact the attachment that individuals give to their (ethnic) group, whereas an engaged one may increase this attachment and promote pro-(ethnic) group behaviors.

Appendix

Table A1 – List of regressors of labor market outcomes

		Table 1	Table 2	Table 3	Table 4
		Employment	Wages	Employment	Wages
Origin					
	French (Natives)	covariate	covariate	covariate	covariate
	North America	covariate	covariate	covariate	covariate
	South America	covariate	covariate	covariate	covariate
	Northern Europe	covariate	covariate	covariate	covariate
	Southern Europe	covariate	covariate	covariate	covariate
	Eastern Europe	covariate	covariate	covariate	covariate
	Asia	covariate	covariate	covariate	covariate
	Turkey	covariate	covariate	covariate	covariate
	Middle-East	covariate	covariate	covariate	covariate
	North Africa	covariate	covariate	covariate	covariate
	Sub-Saharan Africa	covariate	covariate	covariate	covariate
	Other Africa	covariate	covariate	covariate	covariate
	Mixed Origins	covariate	covariate	covariate	covariate
Age		covariate	covariate	covariate	covariate
Gender		covariate	covariate	covariate	covariate
Discrimination					
	Skin-color	covariate	covariate	covariate	covariate
	Origins	covariate	covariate	covariate	covariate
Immigrants' share in neighborhood		covariate	covariate	covariate	covariate
Mother education		covariate	covariate	covariate	covariate
Citizenship					
	French	covariate	covariate	covariate	covariate
	Reintegration	covariate	covariate	covariate	covariate
	Acquisition	covariate	covariate	covariate	covariate
	Foreigner	covariate	covariate	covariate	covariate
Home sense of belonging		covariate	covariate	covariate	covariate
Time since arrival (years)		covariate	covariate	covariate	covariate
Educational attainment		covariate	covariate	covariate	covariate
Potential work experience		covariate	covariate	covariate	covariate
Squared potential experience		covariate	covariate	covariate	covariate
Number of children		covariate	covariate	covariate	covariate
City size					
	<10000	covariate	covariate	covariate	covariate
	[10000;50000]	covariate	covariate	covariate	covariate
	[50000;200000]	covariate	covariate	covariate	covariate
	[200000;Paris]	covariate	covariate	covariate	covariate
	Paris	covariate	covariate	covariate	covariate
Family structure					
	Single man		covariate		Instr./Heck.
	Single woman		covariate		Instr./Heck.
	Man with working spouse		covariate		Instr./Heck.
	Woman with working spouse		covariate		Instr./Heck.
	Man with non-working spouse		covariate		Instr./Heck.
	Woman with non-working spouse		covariate		Instr./Heck.
Parents' religion					
	Atheist			Instr./ IV	Instr./ IV
	Christian			Instr./ IV	Instr./ IV
	Muslim			Instr./ IV	Instr./ IV
	Buddhist			Instr./ IV	Instr./ IV
	Other			Instr./ IV	Instr./ IV
Importance of religion in childhood rearing					
	Not important			Instr./ IV	Instr./ IV
	Not much important			Instr./ IV	Instr./ IV
	Fairly important			Instr./ IV	Instr./ IV
	Very important			Instr./ IV	Instr./ IV
Framing effect control				Instr./ IV	Instr./ IV
Respondent Occupation					
	Worker		covariate		covariate
	White-collar		covariate		covariate
	Middle-level occupation		covariate		covariate
	Executive or intellectual profession		covariate		covariate
	Seniority within the firm		covariate		covariate

Table A2 – List of regressors of political behaviors

Employed		covariate
Origin		
	French (Natives)	covariate
	North America	covariate
	South America	covariate
	Northern Europe	covariate
	Southern Europe	covariate
	Eastern Europe	covariate
	Asia	covariate
	Turkey	covariate
	Middle-East	covariate
	North Africa	covariate
	Sub-Saharan Africa	covariate
	Other Africa	covariate
	Mixed Origins	covariate
Age		covariate
Gender		covariate
Immigrants' share in neighborhood		covariate
Mother education		covariate
Citizenship		
	French	covariate
	Reintegration	covariate
	Acquisition	covariate
	Foreigner	covariate
Home sense of belonging		covariate
Time since arrival (years)		covariate
Educational attainment		covariate
Number of children		covariate
City size		
	<10000	covariate
	[10000;50000]	covariate
	[50000;200000]	covariate
	[200000;Paris]	covariate
	Paris	covariate
Family structure		
	Single man	covariate
	Single woman	covariate
	Man with working spouse	covariate
	Woman with working spouse	covariate
	Man with non-working spouse	covariate
	Woman with non-working souse	covariate
Parents' religion		
	Atheist	covariate
	Christian	covariate
	Muslim	covariate
	Buddhist	covariate
	Other	covariate
Importance of religion in childhood rearing		
	Not important	covariate
	Not much important	covariate
	Fairly important	covariate
	Very important	covariate
Framing effect control		covariate

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Chapter 4

GROUP IDENTITY AND EFFORT PROVISION IN A COMPETITIVE FRAMEWORK

4.1. Introduction

Economists have recently considered that people's image of who they are is likely to impact the way they act. Observing that the growing importance of multinational companies was raising issues about cooperation between managers and staffs of different cultures, Schöllhammer (1977) asked for the creation of international codes of conduct to govern cross-cultural activities. In a rather different context, Austen-Smith and Fryer (2005) model the idea that actions of individuals from cultural minorities (black people) may have opposite utility monetary and identity returns when they have to match majority norms (white people). Indeed, some behaviors are rewarded by the labor market but lead to peer rejection. This phenomenon is referred to as "acting white". Although very different, these two contexts are examples of situations where members of a given cultural group with a corresponding identity have to interact with individuals from different groups with different behaving norms and identities. Underprovision of efforts, conflicts or desertion can thus result from identity conflicts.

Chapters 2 and 3 deal with the particular cultural dimension of identity which is consequent upon the immigration process. Many other dimensions exist and Sen (2007) plead for the consideration of multiple identities. This fourth chapter adopts a more general view of groups aiming to inform about the relationship between identities and behaviors.

Although recent the concept of identity has been rapidly used by scholars to improve the understandings of individuals' behaviors. Its adoption by economists was especially eased by a deeply documented literature in psychology since Tajfel and Turner (1979). In this latter, authors postulate that individuals do not only behave regarding their personal self but also regarding several selves corresponding to as many group memberships. These social groups may overlap and each one impacts people's identity and behaviors even under the *minimal group* paradigm⁴⁶.

Based on identity theory, we aim to investigate the provision of efforts and labor participation of individuals in a specific frame where they are matched with in-group – and become insiders – or out-group members – and become outsiders. Our interest here

⁴⁶ The minimal group paradigm (Tajfel and Turner, 1979) shows that even when groups are created using trivial and sometimes meaningless tasks, significant behaving differences occur.

is not to investigate the impact of group saliency on individuals' decisions but to exhibit situations where participants choose pro-group behaviors even if they imply lower economic returns. In particular, we are interested in people's decisions when they have to choose between high payoffs but identity-costly and low payoffs but identity-preserving decisions. Our experimental design also allows us to investigate whether individuals would be willing to accept to not participate in a task (joining no working team and getting a fixed and quite low remuneration instead) rather than joining a team sharing an opposite identity.

In their seminal paper, Akerlof and Kranton (2000) present a theoretical framework where identity is considered as a driving component of individuals' utility function. In this work, based on previous psychology knowledge, an agent's identity results from a trade-off between her actions, others group members' actions, her idiosyncratic self, and the behaving prescriptions of the group. Pursuant to this article, they deepened and adapt their framework in economics of education (Akerlof and Kranton, 2002) and economics of organization (Akerlof and Kranton, 2005). Battu, Mwale and Zenou (2007) propose a model where minorities (non-white individuals) have to adopt either majority identity or what they call an "oppositional identity"⁴⁷. Bénabou and Tirole (2011) develop a model of identity formation where investments in identity depend on past choices.

Besides this theoretical literature and in addition to Chapter 3, some empirical works investigate the relationship between identity and socioeconomic outcomes. Most of these works focus on immigrants' ethnic identity (Constant and Zimmermann, 2008, Casey and Dustmann, 2010, Nekby and Rödin, 2010, Battu and Zenou, 2010, Bisin, Patacchini, Verdier and Zenou, 2011, Drydakis, 2013, Georgiadis and Manning, 2013, Gorinas, 2014). However, conclusions of the literature differ and one could hardly extract a clear and generally shared conclusion regarding the role of ethnic identity on individuals' outcomes in the labor market. Indeed, it turns out that the impact of identity on behaviors raises endogeneity issues.

The most appropriate way to measure the impact of identity on individuals' behaviors and thus socioeconomic outcomes probably remains experimental economics. So far, there are only few studies addressing identity through controlled experiments.

⁴⁷ One could see also see Horst, Kirman and Teschl (2005), Dasgupta and Goyal (2009) or Georgiadis and Manning (2013) to deepen the theoretical literature about identity and economics.

Moreover, the experimental literature mostly focuses on the formation of identity and the saliency of groups. Eckel and Grossman (2005) observe that strong identification to one's team leads to increased cooperation in a public-goods game. Similarly, Charness, Rigotti and Rustichini (2007) show that the stronger the group membership saliency, the higher the impact on individuals' behaviors. They declare a group – and we keep their definition – salient when members and non-members of the group recognize the existence of the group. In Chen and Li (2009) identity inside groups leads to higher charity, higher forgiveness and more social-welfare maximizing decisions toward in-group compared to out-group members. More recently, Currarini and Mengel (2012) also find that individuals can have in-group biases whether they play with out-group or in-group members. However, in-group biases disappear when individuals can choose their match. Interestingly, in a context of games with multiple Pareto-ranked equilibria, Chen and Chen (2011) show that an induced salient group identity, by increasing cooperation between members, can lead the group to reach the high effort equilibrium whereas the low-effort equilibrium is observed in absence of group identity. Chen *et al.* (2014) adopt the priming methods in order to activate existing natural identities (ethnic or school). They find that priming ethnic identity significantly decreases efficient coordination whereas priming school identity increase the choice of a joint payoff maximizing strategy.

We contribute to the literature by implementing identity inducing methods in the particular context of competitive games whereas the economic literature mainly focuses on public good games. Our work is also deeply rooted in theoretical literature since we combine the theoretical framework of Nalbantian and Schotter (1997) of effort provision in competitive games with that of Akerlof and Kranton (2005) of identity based decisions. This framework allows a symmetric comparison of individuals' behaviors regarding two different identity statuses: insiders and outsiders. That is in situations where they are either in an identity dominant position or in an identity dominated position. Contrary to many previous studies where only one individual takes a decision involving the rest of the group, at each period of the games all participants are in situations where they have to fix an identity dilemma.

We find that group identity has strong consequences on individuals' performance when both monetary and identity returns increase with effort. In particular, the performance of group where identity is induced is on average 24% higher than that of

group with no identity inducing. In a second game of this experiment, individuals' effort leads to opposite monetary and identity returns. In this frame, there are always a majority and a minority group. We exhibit that this dominant/dominated structure of work-teams leads to a significant rise of the aggregate output compared with control (of 2.35% on average). Finally, we show that group identity has a particularly strong impact on one type of workers: the insiders. These latter's effort indeed appears to be attracted by identity prescriptions and significantly exceeds the monetary ideal.

Section 4.2 presents the experimental design. Section 4.3 presents the behavioral predictions. Leaning on these predictions, Section 4.4 states behavioral hypotheses. Section 4.5 presents the main results and stresses the hypotheses. Section 4.6 discusses the limits of the paper and concludes.

4.2. Experimental design

We compare our baseline treatment, called NoId, with a treatment where participants are assigned to groups, called Id. The only but paramount difference between NoId and Id is that in this latter, as soon as the experiment starts, participants are randomly assigned to an artificial group (red or blue)⁴⁸. We have chosen to use induced identities over natural identities (e.g. gender, ethnicity or social background) to ensure a maximal control on the determinants of individuals' decision. The red and blue groups do not differ in size. Finally, games are always played with the eight same participants among who four are blue and four are red in the Id. In the NoId, the eight participants are not assigned to color groups.

4.2.1 Game 1 – The quiz game

In this game, each participant is asked to solve a general knowledge quiz within a group of 4 members. In the NoId treatment, the four group members are randomly matched. In the Id treatment, the four group members are either all red or blue. In both treatments, participants support each other by communicating through a chat window (see appendix A.1 for a chat window screenshot and detailed instructions). They are

⁴⁸ Participants discover their group once randomly seated in the laboratory by opening an envelope containing either a blue or a red card.

encouraged to use this window to share information about correct answers⁴⁹ since members of the group can only pass to the next question once all the four members have correctly answered to the current question. Each correct answer yields a payoff of 2 ECU (Experimental Currency Units) given that 40 ECU equal €1. The final payoff of the quiz game for a participant is therefore equal to $(2 \times \text{number of questions correctly answered by her group})$. This kind of preliminary task has been previously used in the literature (Chen and Li, 2009, Chen and Chen, 2011).

The aim of this game is twofold. First, according to the *minimal group* paradigm, a clear distinction of groups is sufficient to observe group identity. The quiz game therefore targets to isolate a group identity effect on the aggregated performance of its members under the *minimal group* paradigm. Second, as in Chen and Chen (2011) it aims to raise identity salience⁵⁰ within group by implementing social interactions.

4.2.2 Game 2 – The competitive effort game

At this stage, two work-teams (R and B) are introduced (their formation is described thereafter). A very important point is that groups and teams should never be confounded. In the NoId treatment, participants have never heard about red or blue groups. They just participate in the quiz game with three other random players. In the Id treatment, identity groups (red or blue) are created at the beginning of the experiment and individuals belonging to a group keep this identity all along the experiment. Furthermore, members of the same identity group have participated in the quiz game together. Contrary to groups (red or blue), work-teams (R or B) only last a period of the ten that contains game 2.

The matching mechanism of Id leads the participant to know that she is likelier to be matched with her three in-group counterparts than with the four other out-group players. Indeed, in the Id treatment and for each period, the work-team R is composed of three red subjects and one blue subject. Similarly the work-team B is composed of three blue subjects and one red subject. Thus there are always a majority and a minority identity in work-teams of the Id. However, we are aware that besides the pure identity effect that we wish to isolate there could therefore be strategic decisions due to the different

⁴⁹ They could not use the chat window to reveal their identity to others or they would be dismissed from the experiment. This never happened.

⁵⁰ Saliency describes the attachment of members to their group. The minimal group paradigm sets the minimal conditions for saliency to occur.

matching probabilities. Thus, in order to control for these strategic behaviors unrelated with identity in both the NoId and the Id, at the beginning of the game and for its ten periods, participants know that they will either have a probability $\frac{3}{4}$ to be in team R and $\frac{1}{4}$ to be in team B or a probability $\frac{3}{4}$ to be in team B and $\frac{1}{4}$ to be in team R.

As said above, in the Id, the work-team R (resp. B) includes three red subjects (resp. blue subjects) and one blue subject (resp. red subject). This implicitly creates two types of status for participants in the Id treatment. If a subject belongs to the red (resp. blue) group and joins the R (resp. B) work-team then her team matches her group. Following Akerlof and Kranton (2005), we call insiders participants who are concerned by this status. Otherwise, when the work-team mismatches the identity group, they are defined as outsiders. Teams are valid for one and only one period. After each of the ten periods, teams are removed and new ones are randomly formed by following the same procedure.

The task of this game consists in a team tournament game in which participants individually choose a level of effort⁵¹. The tournament opposes two teams R and B of 4 among the same 8 participants.

Payoffs are divided into two parts. First, participants get an individual payoff from their effort decision. The level of effort ranges from 1 to 10. Each unit of effort is rewarded 10 ECU and is associated to a quadratic cost (see Table 1 below). The individual part of the payoff is therefore maximized for an effort of 5 units.

Table 1 – *Non-real effort scheme: benefits and costs of efforts.*

effort	1	2	3	4	5	6	7	8	9	10
Gain	10	20	30	40	50	60	70	80	90	100
Cost	1	4	9	16	25	36	49	64	81	100
Net monetary gain ⁵²	9	16	21	24	25	24	21	16	9	0

In addition, teams compete for a prize, depending on their relative performance. Once that all participants have made their effort decisions, efforts are aggregated for each team. A random continuous shock between -4 and 4 is applied to the aggregate effort of each team. We define performance as the sum of team's aggregate effort and

⁵¹ We implement a chosen-effort rather than real-effort task to make sure that individual behavior would not be conditioned on heterogeneity in ability.

⁵² Note that this profit line was not given to participants. Although, they were provided with calculators.

this random shock. The team which provides the highest performance is granted an extra prize of 64 ECU, equally divided between participants (i.e. 16 ECU for each member of the winning team). On the other side, the losing team does not benefit from any extra prize. Note that the random shock ensures the absence of tie.

For each period t , the total payoff π of a given subject i regarding her effort e and I_{win} the indicator function of winning can then be expressed as,

$$\pi_{i,t} = 10 \cdot e_{i,t} - e_{i,t}^2 + I_{win} \cdot 16.$$

And the final payoff of this game for any subject is thus $\sum_{t=1}^{10} \pi_{i,t}$.

We are aware that in the Id and even in the so-called NoId work-team identity-based behaviors may arise. Indeed, participants may develop a work-team (R or B) identity and play consequently. We cannot observe this work-team identity. However, this is not our goal since we aim to investigate the consequences of group (blue or red) identity on behaviors in the Id compared to the NoId. Furthermore, work-team (R and B) identity may occur in both treatments in the same way whereas group (red and blue) identity only occurs in the Id treatment. Thus, while comparing the Id with the NoId, the net identity effect can only be due to group identity.

4.2.3 Game 3 – The participation game

This game includes two stages. In the first stage, subjects face twenty choices between two options. These decisions are made on a single screen consisting in two panels of ten lines (see figure 1). The left panel reports choices between joining team B and playing the task described above, or getting a fixed remuneration U without playing any task. The right panel is similar, except that team R is considered.

Once all participants have declared their decision, a matching procedure (see appendix A.2.) distributes them among work-teams. Then they play the task described above, or wait for others if they selected the outside option. This game is played only once at the end of the experiment and payoffs are not known before the end of it.

This game aims at understanding if individuals attribute the same value to teams R and B or if they have homophilic preferences. We do not intend to study effort choices after teams are formed. This is the reason why we do not describe the matching procedure here but in the appendix.

Figure 1 – Participation game

Choix équipe B	Choix équipe R
<input type="radio"/> Rejoindre équipe B <input type="radio"/> Montant fixe de 5 UME	<input type="radio"/> Rejoindre équipe R <input type="radio"/> Montant fixe de 5 UME
<input type="radio"/> Rejoindre équipe B <input type="radio"/> Montant fixe de 10 UME	<input type="radio"/> Rejoindre équipe R <input type="radio"/> Montant fixe de 10 UME
<input type="radio"/> Rejoindre équipe B <input type="radio"/> Montant fixe de 15 UME	<input type="radio"/> Rejoindre équipe R <input type="radio"/> Montant fixe de 15 UME
<input type="radio"/> Rejoindre équipe B <input type="radio"/> Montant fixe de 20 UME	<input type="radio"/> Rejoindre équipe R <input type="radio"/> Montant fixe de 20 UME
<input type="radio"/> Rejoindre équipe B <input type="radio"/> Montant fixe de 25 UME	<input type="radio"/> Rejoindre équipe R <input type="radio"/> Montant fixe de 25 UME
<input type="radio"/> Rejoindre équipe B <input type="radio"/> Montant fixe de 30 UME	<input type="radio"/> Rejoindre équipe R <input type="radio"/> Montant fixe de 30 UME
<input type="radio"/> Rejoindre équipe B <input type="radio"/> Montant fixe de 35 UME	<input type="radio"/> Rejoindre équipe R <input type="radio"/> Montant fixe de 35 UME
<input type="radio"/> Rejoindre équipe B <input type="radio"/> Montant fixe de 40 UME	<input type="radio"/> Rejoindre équipe R <input type="radio"/> Montant fixe de 40 UME
<input type="button" value="Valider"/>	

4.2.4 Treatments

The experiment has been implemented in the LABEX-EM laboratory (Université de Rennes 1) by the end of May 2014. The experimental design is computerized under the Z-Tree software which is mainly used in experimental economics. Participants are recruited among students of the University with no restrictions on their age, level or field of study, and past experimental experience. Once the laboratory capacity is reached, registrations are closed. Once in the laboratory, participants are not allowed to interact with anyone except the experimentalist and are randomly seated in isolated compartments. Any deviating from the imposed anonymity would lead to the exclusion of the concerned participant(s). At the end of the experiment a questionnaire is filled by subjects and they remain seated until they receive their payment check. To ensure a minimal number of independent observations, that is to say 6 by treatment, 2 experimental sessions of 24 participants each have been run (see Table 2)⁵³. Each session would include 3 cohorts of 8 players. The experiment lasts about 60 minutes and the average payment per player is about €15.43 (S.D.=1.34).

⁵³ Treatments of this Chapter constitute the first part of a larger project. Two new treatments which will be run by November 2014 will allow investigating the both identity and peer pressure (see the discussion of the Chapter).

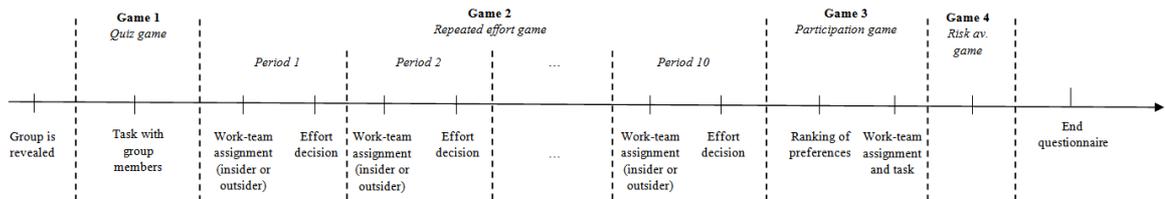
Table 2 – Experimental sessions

Treatment	Sessions	Participants	Date
No Identity – No Peer Pressure (NoId)	2	48	May 2014
Identity – No Peer Pressure (Id)	2	48	May 2014
	4	96	

4.3 Behavioral predictions

This chapter focuses on individuals' decisions in a collective and competitive frame. We construct our behavioral predictions on Nalantian and Schotter (1997) and Akerlof and Kranton (2005). We borrow the Nalantian and Schotter (1997)'s tournament-based scheme with competitive teams. In their model the entire individual's payoff depends on the team performance, whereas in this chapter the payoff is composed of two parts, an individual one which only depends on the agent effort and a collective one depending on the team performance. Furthermore, we add to this usual monetary part of utility an identity part which depends on individuals' belonging and attachment to groups and inspired by Akerlof and Kranton (2005). This psychological dimension allows understanding relations between groups' belonging and individuals' behaviors.

Figure 2 reminds readers the sequence of the experiment.

Figure 2 – Experimental sequence

4.3.1 Monetary payoff

We consider two work-teams $T = \{T_B, T_R\}$ composed of four workers indexed $i = 1, 2, 3, 4$. Each member of the firm can choose an effort level e_i in the closed interval $[1; 10]$. Direct monetary benefits from individual effort are given by ωe_i , effort is costly and defined by $C(e_i) = ce_i^2$ with $c > 0$.

The collective effort output of firm T is:

$$Y_T = \sum_{j \in T} e_j + \varepsilon_T. \quad (1)$$

The random variable $\varepsilon_T \in [-\bar{\varepsilon}; \bar{\varepsilon}]$ is uniformly distributed. One can see this variable as random shocks in work-team production, or the positive or negative returns of team members' synergy (Sutter and Strassmair, 2009). In practical terms, this variable is needed to make the expected payoff continuous.

Resulting from the competition, a collective payoff W is equally shared between the four members of the winning work-team. We detail here the payoff for the work-team T_B . The process is of course equivalent for T_R 's payoff.

The payoff for an individual i in workteam T_B is given by (this is the payoff described in subsection 4.2.2.),

$$\pi_i(e_i, Y_{T_B}, Y_{T_R}) = \begin{cases} \omega e_i - c e_i^2 + \frac{W}{4}, & \text{if } Y_{T_B} > Y_{T_R} \\ \omega e_i - c e_i^2, & \text{if } Y_{T_B} < Y_{T_R} \end{cases} \quad (2)$$

Individuals are supposed to be homogenous and perfectly able to maximize their payoffs (in the experiment, this will be guaranteed by the non-real efforts scheme).

Therefore, i is willing to maximize her expected payoff. If $p(\cdot)$ is the probability of winning,

$$\begin{aligned} E(\pi_i) &= p(e_i) \left(\omega e_i - c e_i^2 + \frac{W}{4} \right) + (1 - p(e_i)) (\omega e_i - c e_i^2) \\ \Leftrightarrow E(\pi_i) &= \omega e_i - c e_i^2 + p(e_i) \frac{W}{4} \end{aligned} \quad (3)$$

Nash-equilibrium :

$$\omega + \frac{\partial p_T W}{\partial e_i} \frac{1}{4} = 2c e_i^*$$

As shown by Schotter and Weigelt (1992) and quite finely described by Sutter and Strassmair (2009) for the case of competitive teams, this model of a team tournament has a unique (and symmetric) Nash-equilibrium where all team members choose the following effort $e_i^* = e^*$. They first demonstrate that $\frac{\partial p_T}{\partial e_i} = \frac{1}{2\bar{\varepsilon}}$ ⁵⁴. This leads to the following Nash-Equilibrium:

⁵⁴ See Sutter and Strassmair (2009)'s appendix for a nice demonstration of this result.

$$e^* = \frac{\omega}{2c} + \frac{W}{16c\bar{\varepsilon}} \quad (4)$$

Replacing the parameters of equation (4) with those of our experiment ($\omega = 10$, $c = 1$, $W = 64$, and $\bar{\varepsilon} = 4$) gives the optimal effort which we call the monetary ideal thereafter :

$$e^* = 6 \quad (5)$$

4.3.2 Identity returns

Group salience starts when individuals are aware of “their objective membership in the group and have a psychological sense of group attachment” (Tajfel, 1981). Thus, the *nearly minimal group* paradigm states the sole distribution of players among distinctive groups creates salience and therefore impacts behaviors. We follow this statement by exogenously and randomly allocating individuals in two different identity groups $\mathbf{G} = \{G_{Blue}; G_{Red}\}$.

By construction, T_B will always be composed of three members of G_{Blue} and one member of G_{Red} and T_R composed of three members of G_{Red} and one member of G_{Blue} . We insist here on the paramount difference between groups (\mathbf{G} , blue or red, among which identity is induced) and work-teams (\mathbf{T} , among which tasks are undertaken).

Let $\mathbf{C} = \{N; O\}$ summarize agent’s position regarding both \mathbf{G} and \mathbf{T} :

- i insider (N) if $\forall i \in \{\mathbf{G}; \mathbf{T}\}$ then \mathbf{G} and \mathbf{T} *match*, that is $i \in ((G_{Blue} \cap T_B) \cup (G_{Red} \cap T_R))$;
- i outsider (O) if $\forall i \in \{\mathbf{G}; \mathbf{T}\}$ then \mathbf{G} and \mathbf{T} *mismatch*, that is $i \in ((G_{Blue} \cap T_R) \cup (G_{Red} \cap T_B))$.

According to identity theory, membership to $\mathbf{G} = \{G_{Blue}; G_{Red}\}$ impacts individuals’ behaviors in work-team $\mathbf{T} = \{T_B; T_R\}$. Indeed, following the seminal papers of Akerlof and Kranton (2000, 2005) with any social group there are behaving prescriptions (\bar{e}_C) attached⁵⁵. People’s utility functions do not only include the monetary payoff but also a psychological part depending on teams’ and groups’ belonging (\mathbf{C}), prescriptions (\bar{e}_C) and attachment to prescriptions (t_C). We can therefore write the utility function of Akerlof and Kranton (2005) as follow:

⁵⁵ See Akerlof and Kranton (2000, 2010) for examples of prescriptions or norms that are attached with social groups among a large scope of fields (education, work space, army, etc.).

$$U_i(\pi_i, C) = \pi_i(e_{i,C}^{ld}) + I_C - t_C(e_{i,C}^{ld} - \bar{e}_C)^2. \quad (6)$$

with $\pi_i(\cdot)$ the monetary part of the utility function presented in (2). $e_{i,C}^{ld}$ is i 's effort regarding C when group identity is salient. I_C is the utility derived from the belonging to C . t_C is a psychological parameter and as Akerlof and Kranton, we assume $t_C > 0$. The higher the saliency of the group is, the stronger members' identity and prescriptions' attachment, the more meaningful t_C .

As in real-life, we believe that even if \bar{e}_C is not perfectly observed, individuals have expectations on what they may be. In the context of our model and experiment, the implicit goal for every member of \mathbf{G} is to maximize other group members' payoffs under its own payoff constraint. Therefore, as in Akerlof and Kranton (2005), the prescription (or identity ideal) for an insider, \bar{e}_N , (resp. outsider, \bar{e}_O) worker is to provide a high (resp. low) level of effort. This is why we assume,

$$\bar{e}_O < e^* < \bar{e}_N. \quad (7)$$

Once group identity is salient – which occurs under very light conditions according to the *minimal group* paradigm – the identity ideal for insiders is strictly superior to the identity ideal for outsiders. Furthermore, we assume that they cannot be both equal to the monetary ideal e^* . This is quite intuitive, by increasing her effort an insider increases the winning probability of her work-team mainly composed of members of her own group. On the opposite, by decreasing her effort an outsider decreases the winning probability of her work-team and consequently increases that of the other work-team composed of her group counterparts. Thus groups implicitly promote higher efforts for insiders and lower ones for outsiders.

While taking account their position regarding \mathbf{C} , individuals maximize their utility as regard to their effort, e_C^{ld} , leading to the following intermediate result,

$$e_C^{ld} = \frac{\omega}{2c} + \frac{W}{16c\bar{e}} - \frac{t_C}{c}(e_C^{ld} - \bar{e}_C).$$

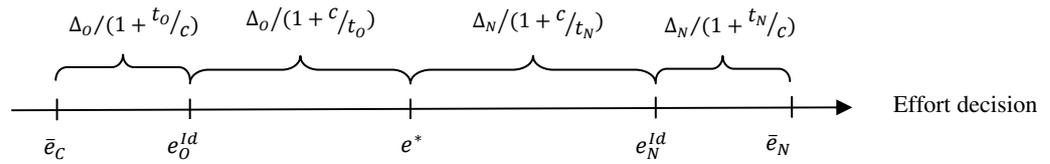
Therefore, from equation (4), it can be written that $e_C^{ld} = e^* - \frac{t_C}{c}(e_C^{ld} - \bar{e}_C)$ with e^* being the monetary ideal found in (5). Finally, we obtain the Nash Equilibrium,

$$e_C^{ld} = e^* + \frac{1}{1 + \frac{c}{t_C}}(\bar{e}_C - e^*). \quad (8)$$

The optimal effort, e_C^{Id} , with identity is thus the weighted combination of two ideals. e^* maximizes the monetary payoff whereas \bar{e}_C maximizes the identity payoff. e^* and \bar{e}_C taken as given, e_C^{Id} depends on the relative weights of two costs: c , the monetary cost and t_C , the identity cost,. When the monetary cost increases relatively to the identity cost (that is when c/t_C is high), $\frac{1}{1+\frac{c}{t_C}}(\bar{e}_C - e^*)$ decreases and the optimal effort is close from the monetary ideal. On the opposite, when the identity cost increases relatively to the monetary one, the optimal effort becomes closer from the identity ideal⁵⁶.

It is easily verifiable that if (7) holds, and for $c, t_C > 0$, then, for an outsider worker, $\bar{e}_O < e_O^{Id} < e^*$, whereas for an insider worker, $e^* < e_N^{Id} < \bar{e}_N$. The effort gap between the NoId and Id treatment is therefore, $e_C^{Id} - e^* = \frac{\Delta_C}{1+\frac{c}{t_C}}$ with $\Delta_C = (\bar{e}_C - e^*)$. Figure 3 summarizes the position of optimal efforts given the different ideals.

Figure 3 – Monetary and identity ideals and Nash Equilibria



Finally, by introducing the parameters of our experiment in the optimal effort,

$$e_C^{Id} = 6 + \frac{1}{1+\frac{1}{t_C}}(\bar{e}_C - 6). \quad (9)$$

Of course, this simple model does not aim to provide precise behavioral predictions but to offer theoretical basis and intuitions for the following hypotheses.

4.3.3 Hypotheses

Our experiment targets to investigate several assumptions regarding the impact of individuals' identity on their behaviors. Based on previous literature findings and the predictions of the previous model, the hypotheses which are stressed in this chapter are the following:

HYPOTHESE 1 (*Performance, no trade-off between monetary and identity returns*)
When individuals' returns of efforts are positive both in monetary and identity terms,

⁵⁶ An alternative writing of (8) which may also help is $e_C^{Id} = \frac{1}{1+\frac{c}{t_C}}e^* + \frac{1}{1+\frac{c}{t_C}}\bar{e}_C$.

the stronger the group identity is, the higher the cooperation and, as a consequence, the higher the performance.

Strategy – The quiz game is played by participants among their identity groups. Monetary and identity returns are therefore both positive. Thus we compare groups' performances in the Id treatment with the NoId.

HYPOTHESIS 2 (*Performance of insiders, trade-off between monetary and identity returns*) *After inducing salient groups and identity (i.e. $t_N > 0$), insiders' effort increase to match groups' prescriptions ($e^* \leq \bar{e}_N$). As a result, the optimal effort with identity is superior to the optimal effort of the control, $e^* \leq e_N^{Id}$.*

HYPOTHESIS 3 (*Performance of outsiders, trade-off between monetary and identity returns*) *After inducing salient groups and identity (i.e. $t_O > 0$), outsiders' effort decreases to match group's prescription ($\bar{e}_O < e^*$). As a result, the optimal effort with identity is inferior to the optimal effort of the control, $e_O^{Id} < e^*$.*

Note that verifying these hypotheses in the experiment implies that (7) holds and that participants feel attached enough to their group (t_C in the model) to adopt pro-group behaviors. Such behaviors consist in increasing their effort to increase the aggregate output and therefore raise their group counterparts' winning probability.

HYPOTHESIS 4 (*Aggregate production and identity*) *The aggregate effort of the teams is superior when identity is induced compared with the control, $\sum_T Y_T^* \leq \sum_T Y_T^{Id}$.*

This implies that in each team, the potential free-riding of the outsider is more than compensated by the effort raise of the three insiders, that is $\sum_{j=1}^3 e_{j,N}^{Id} \geq e_{i,O}^{Id} \forall i, j \in T$.

Strategy – Hypotheses 2, 3 and 4 are investigated thanks to the repeated effort game. In this game participants are confronted to situations where they are sometimes insiders and sometimes outsiders in the Id. The comparison of insiders' and outsiders average effort with that of the baseline should allow verifying or not these hypotheses.

HYPOTHESIS 5 (*participation game*) *When everything else remains equal an individual prefers to be insider than outsider. $I_O < I_N$.*

Strategy – The participation game allow comparisons of participation decision as an insider or outsider instead of common fixed remunerations. This hypothesis should be

verified if, for a given fixed remuneration, an individual prefers to participate in the task as an insider (i.e. with in-group members) instead of the fixed remuneration, whereas she prefers to obtain the fixed remuneration instead of participating in the task as an outsider (i.e. with out-group members). This would suggest a pure preference for being insider (I_N) over being outsider (I_O).

4.4 Results

4.4.1 Quiz game

Each treatment starts with a general culture quiz game. In this game, participants are given the possibility to share information through a chat window. In particular, they are encouraged to give the solution to other members as soon as they find it since they have to wait for the good answer of each of the three others before moving to the next question.

For this game as for the followings, we implement two treatments. In the baseline (NoId) treatment, participants only know that they participate in the quiz game in a group with three other unknown participants. In the Id treatment, the only difference is that, before the quiz, players open an envelope, discover either a blue or a red card and know that the three other players they will interact with during the quiz game share the same color. This treatment corresponds to the *near-minimal group paradigm*⁵⁷ (Tajfel and Turner, 1986).

Table 3 – Quiz game scores

	Quiz score	Standard dev.	Min	Max
NoId	30.75	4.92	23	35
Id	38.25	5.97	25	48

RESULT 1 (*Nearly-minimal identity on performances*): *the random assignment to groups is sufficient to induce identity and significantly increase performance of participants.*

⁵⁷ The criteria for *minimal groups* (Tajfel and Turner, 1986) are: subjects are randomly assigned to groups; subjects do not interact; group membership is anonymous; subjects' choices do not affect their own payoffs. As many economic works (Chen and Chen, 2011, Charness *et al.*, 2007), we call our treatment *near-minimal* since the second and last criteria are not met in our experimental design.

Support: Table 3 exhibits a large difference between treatments. On average, groups in the NoId treatment answer 30.75 questions whereas groups in the Id treatment answer 38.25 questions. A Wilcoxon-Mann-Whitney test confirms that this difference is significant ($z=-2.931$; $p=0.0034$).

Table 4 – Means and Spearman correlations

	No identity (1)	Identity (2)	Quiz score (3)
Age	20.0625 (1.895)	20.2917 (1.675)	0.0455 (0.833)
Female	0.4375 (0.501)	0.4792 (0.505)	-0.0094 (0.965)
Years in academic	1.125 (1.231)	1.3542 (1.082)	0.0553 (0.797)
<i>Field of study</i>			
Law	0.125 (0.334)	0.0833 (0.279)	0.1253 (0.560)
Management	0.1042 (0.309)	0.0417 (0.202)	-0.2046 (0.337)
Economics	0.6458 (0.483)	0.5417 (0.504)	-0.2000 (0.349)
Others	0.125 (0.334)	0.3333 (0.476)	0.2484 (0.242)
Risk aversion	0.3875 (0.171)	0.3729 (0.172)	-0.0983 (0.648)
<i>Chat window</i>			
Number of messages	15.6458 (9.877)	17.7292 (11.572)	0.2327 (0.274)
Good answers messages	12.5208 (7.610)	15.0208 (9.946)	0.3787* (0.068)

Note: Col (1) and (2), means, standard deviations in brackets; Col (3) Spearman rhos, p-values in brackets.

Table 4, gives some descriptive statistics and correlations tests of potentially explanatory features⁵⁸. The age structure is very similar among treatments and risk aversion as well. We observe some slight differences in the level and the field of study. The number of years in academic could explain a part of the difference between both treatments since participants with higher educational attainment can be expected to perform better. Females are more numerous in the Id treatment. Although gender differences in cooperative behavior is not clear cut in the economic literature (see

⁵⁸ Since the performance of each individual cannot be separated from the group's one, it would be pointless to regress the quiz game score by individuals' characteristics.

Croson and Gneezy, 2009 for a discussion), results may be affected by differences in gender structure between treatments. However, none of these characteristics is correlated with the score (column (3)).

It seems that the only presence of an envelope with a either a blue or a red card inside leads to large differences in performances in the quiz game. With this card, individuals understand that they now belong to a group. This sense of belonging makes them increase their score. How can we explain that? We look at the number of messages sent by participants in each treatment (Table 4). In the Id treatment, participants exchange on average 2 supplementary messages compared to the NoId treatment. This could be interpreted as evidence for increased cooperation due to identity inducing. Nevertheless, there is no significant correlation between the performance of the group and the amount of messages. When we look at the quality of messages, they are more often about the correct solution to the current question in the Id and are significantly and positively correlated with the score. Thus, cooperation seems to be improved by the introduction of salient identity and to lead to an increase of group performance. One could also argue that inducing salient groups affects intrinsic motivation, even if these groups are randomly assigned.

We see result 1 as a confirmation of hypothesis 1. This latter states that the introduction of salient groups in a frame where individuals' monetary and identity returns are positively correlated should lead to a raise of their effort level.

A second goal of this quiz game is to increase saliency among groups. This strategy is inspired by previous works in economics (Chen and Chen, 2009, Chen and Li, 2011) which are themselves inspired by experiments in psychology (Tajfel and Turner, 1986). The red or blue card randomly delivered to subjects at the beginning of the experiment allows inducing the first criterion of Tajfel's definition of social identity (1981): the awareness of their objective membership in the group. The second criterion states that they must have a psychological sense of group attachment. The quiz game coupled with the chat window aims to create and increase the sense of belonging to the red or blue group.

Remind that in this introductory game, participants do not face any trade-off between monetary and identity returns of effort. This could also explain the important difference between treatments. This is different in the following game.

4.4.2 Competitive effort game: baseline treatment

We focus in this section on the NoId treatment. In this game, two work-teams are competing for a prize. The team which provides the highest aggregate effort (or production) plus a random shock ($\varepsilon_T \in [-4; 4]$) wins a prize of 64 ECU which is equally shared between the four members of the work-team.

This game has theoretical predictions based on Nalbantian and Schotter (1997) and presented in section 4.3 of this Chapter. The Nash Equilibrium predicted thanks to this model and regarding our parameters is $e^* = 6$. It is an intuitive result since a quick look at Table 1 shows that an effort of 5 leads to the highest payoff ($\pi_i(5) = 25$) when there is no prize to share. The introduction of tournament-based payoff should increase the optimal effort. In particular, it is not very costly to play 6 instead of 5 in case of defeat ($\Delta\pi = -1$) and potentially highly beneficial in case of victory ($\Delta\pi = 15$).

Table 5 provides the notations which are used thereafter.

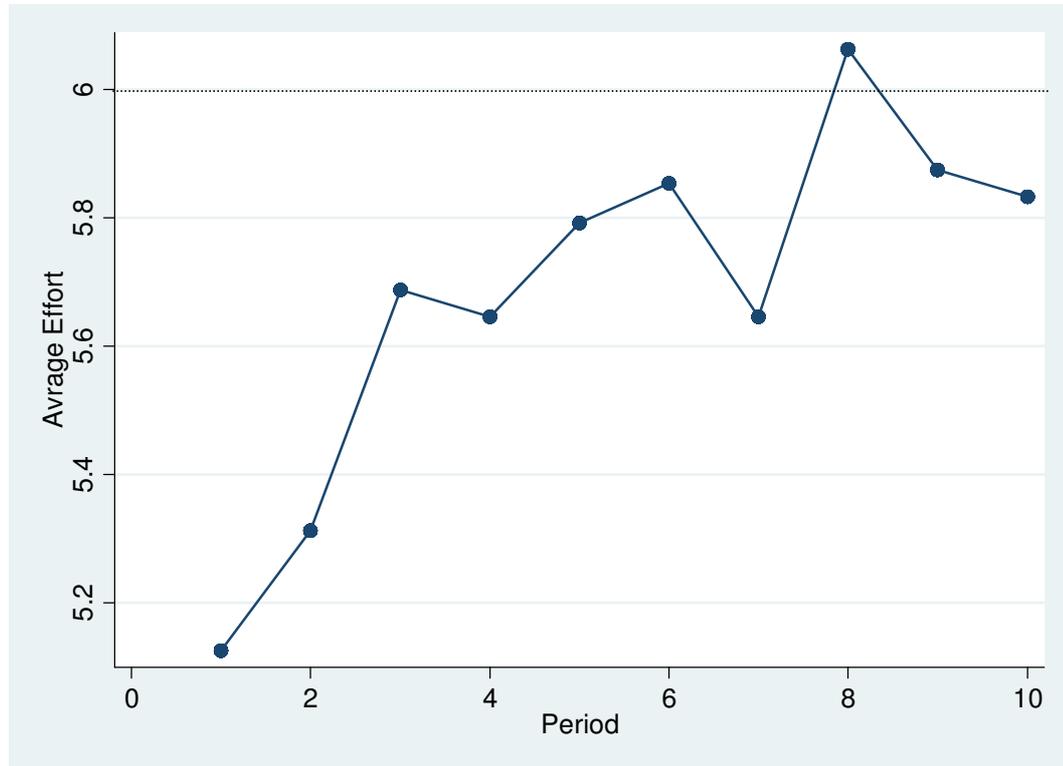
Table 5 –*Effort notations*

Effort	Theoretic		Observed ($\forall t$)	
Monetary ideal	e^*	(= 6)	\widehat{e}^*	(= $Mean(e_{i,t}) \forall i \in NoId$)
Optimal decision of outsiders	e_O^{Id}	(See (8))	\widehat{e}_O^{Id}	(= $Mean(e_{i,t}) \forall i \in (Id \cap O)$)
Optimal decision of insiders	e_N^{Id}	(See (8))	\widehat{e}_N^{Id}	(= $Mean(e_{i,t}) \forall i \in (Id \cap N)$)

RESULT 2 (*Behavioral predictions without identity*): *Participants' observed effort (\widehat{e}_t^*) converges toward the Nash Equilibrium (e^*) in the no-identity treatment as t increases.*

Support: Figure 4 displays the average effort of participants in the no-identity treatment. Even if participants do not play the Nash Equilibrium ($e^* = 6$) at the first period, they converge toward it as the game is repeated.

This game is designed such that only monetary returns should matter for subjects. These latter had never heard about a red or a blue group. They know that with a probability $\frac{3}{4}$ they participate to the task in team R (resp. B) and with a probability $\frac{1}{4}$ they participate to it in team B (resp. R). This specification was necessary to control for potential strategic behaviors related to the non-random assignment to work-teams in both treatments.

Figure 4 – Average effort with time (NoId)

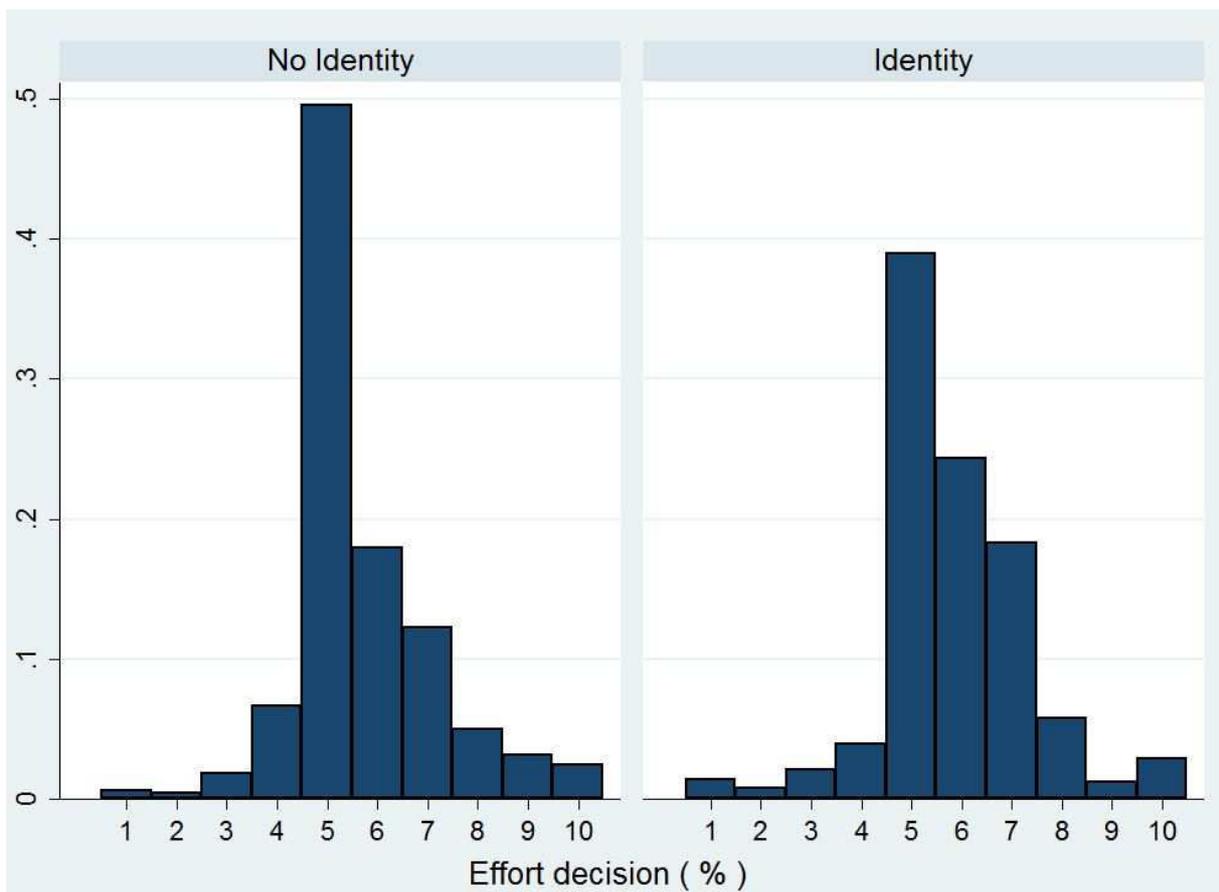
4.4.3 Competitive effort game: identity treatment

In the Id treatment, individuals face a trade-off between monetary and identity returns. They have to choose between maximizing the monetary payoff by playing the monetary ideal ($e^* = 6$) or deviating from it regarding their insider or outsider position (C) in order to match the attached identity ideal (\bar{e}_C). In particular, if group identity is salient enough, an insider (resp. outsider) will face positive (resp. negative) identity returns of playing a high effort. Therefore, we expect that observed effort of insiders is higher than the observed monetary ideal ($\widehat{e}_N^{Id} > \widehat{e}^*$). On the opposite, we expect that effort of outsiders is lower than effort in the no-identity treatment ($\widehat{e}_O^{Id} < \widehat{e}^*$). Since three out of four participants in a work-team are insiders, the net effect of identity inducing on work-teams' output is expected to be positive compared to the control.

RESULT 3 (Effort distribution and group identity): The distribution of efforts is modified when group identity is introduced, higher levels of effort are more often chosen.

Support: Figure 5 presents the distribution of efforts in both treatments. In the NoId, 5 represents almost one half of the efforts, 18% for 6 (the Nash Equilibrium) and 23% of efforts are then higher. Thus, around 40% of efforts are equal or superior to 6 in the NoId baseline. In the Id treatment, 5 represents less than 40% of efforts, 25% for 6 and 28% are higher. Around 53% of efforts played are therefore equal or superior to 6 in the identity treatment. Finally, it is clear that effort distribution significantly varies with treatment⁵⁹.

Figure 5 – Effort distribution



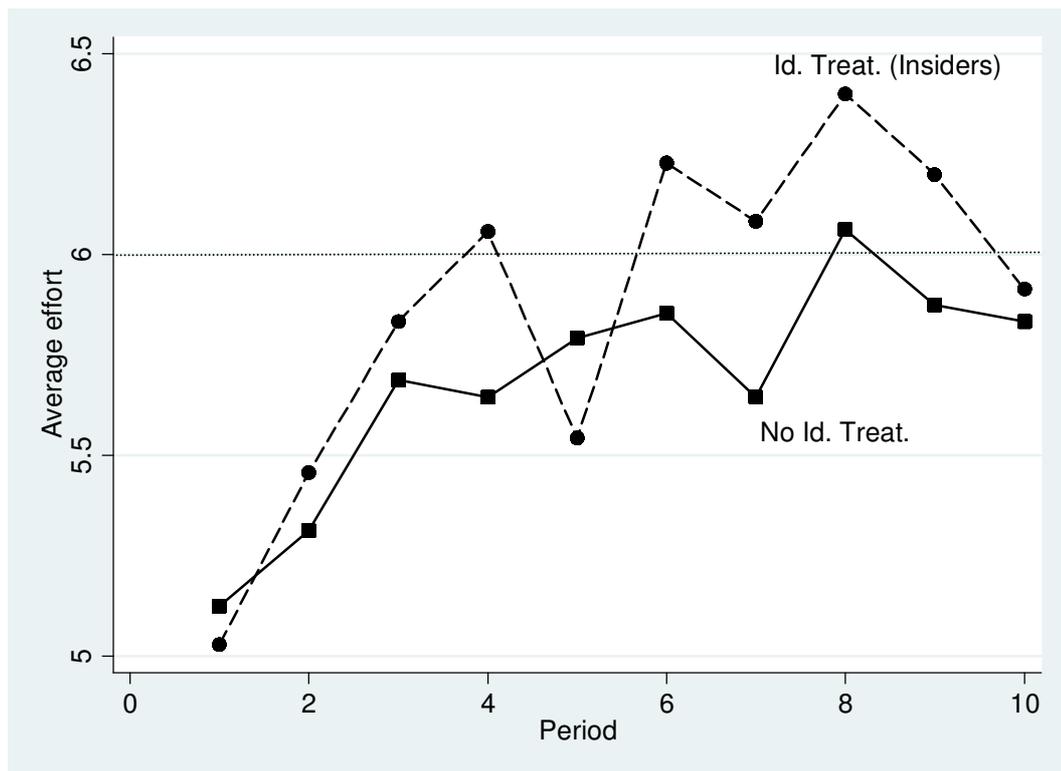
This change in efforts' distribution may have several causes. Are subjects in the Id treatment playing the Nash equilibrium, e_C^{Id} , as soon as the game starts? Do they converge faster toward the monetary ideal, e^* ?

⁵⁹ Khi square independence test confirms that effort is not identically distributed across treatments ($\chi^2 = 26.5268$, $p = 0.0020$).

RESULT 4 (*Behavioral predictions, Insiders*): In presence of salient groups, insiders faster reach and then overpass the monetary ideal (e^*) compared with the baseline. Thus insiders' effort seems to converge toward the theoretic optimum $e_N^{Id} > e^*$.

Support: Figure 6 displays the average effort for each period of the repeated effort game in the NoId baseline and for insiders in the Id treatment. In particular, insiders' average effort reaches $e^* = 6$ in period 4 against period 8 in the NoId. One of our behavioral predictions regarding insiders' optimal effort is that $e^* < e_N^{Id} < \bar{e}_N$. From period 6 to 9, this prediction seems to be confirmed since insiders' average effort exceeds 6. Regarding identity theory insiders' effort has been attracted by an unobserved ideal, \bar{e}_N , such that, after a time of convergence, $e^* < \widehat{e}_N^{Id} < \bar{e}_N$ from period 6 to 9.

Figure 6 – Insiders effort with time



RESULT 5 (*Group identity in teams and individual effort, insiders*) Individuals increase their effort when they belong to a team which matches their group identity suggesting a significant attachment ($t_N > 0$) to group's prescriptions ($\bar{e}_N \geq e^*$).

Support – Except in period 1 and 5⁶⁰, Figure 5 lets us suppose that the average effort of insiders (\widehat{e}_N^{1d}) is always higher than the average effort of participants in the baseline (\widehat{e}^*). This is confirmed by Table 6 which provides tests of means' comparison showing that average effort provision of insiders (\widehat{e}_N^{1d}) is significantly higher in the whole 10 periods. Column (2) of Table 7 is even more specific. It displays the determinants of effort choices. The NoId taken as the reference, we observe a positive and significant impact of the insider status on the level of effort. As predicted by the literature and the model, the effort level is significantly increased when identity is induced and individuals belong to the majority group of a team composed of two different and salient groups. In other words, cooperation is increased between group members when group-based heterogeneity is introduced in competitive teams. In our framework, there is always a majority and thus a minority identity in a given team. This leads to raise efforts' levels. Thus, results 4 and 5 are supports to hypothesis 2.

Table 6 – Means, standard errors and comparison tests

Treatment	Average	Standard Error	Bilateral test	Unilateral test
NoId (\widehat{e}^*)	5.6833	1.4361	ref.	ref.
Id (\widehat{e}_C^{1d})	5.8167	1.4833	No (t=1.4149; p=0.1574)	Yes (t=1.4149; p=0.0787)
Id – Insiders (\widehat{e}_N^{1d})	5.8556	1.4048	Yes (t=1.7361; p=0.0829)	Yes (t=1.7361; p=0.0415)
Id – Outsiders (\widehat{e}_O^{1d})	5.7000	1.6982	No (t=0.1095; p=0.9129)	No (t=0.1095; p=0.4564)

RESULT 6 (*Group identity in teams and individual effort, outsiders*) *Outsiders do not perform differently from the baseline.*

Support – Tables 6 and 7 show that without or with control, the average effort of outsiders (\widehat{e}_O^{1d}) is not significantly different than that observed in the baseline. This goes against hypothesis 3 which states that outsiders should provide a lower effort (or should free-ride) than participants who do not face any identity conflict. This result could be seen as an evidence for $t_0 = 0$. We discuss this result in section 4.5.

⁶⁰ We do not have explanation regarding the fifth period particular results. By looking more precisely on the data, we observe that 2 insiders in 2 groups of this period have surprisingly chosen very low levels of efforts. This was sufficient to dramatically decrease the aggregate level of their work-teams. We do believe that it is more an unfortunate coincidence than an evidence for a specific event at this period.

RESULT 7 (*Identity: majority versus neutral work-teams*): *The output of a work-team is higher when it is mainly composed of members sharing a common identity than that of identity neutral work-teams.*

Support – We call identity neutral work-teams those composed of participants with no previous induced identity (i.e. teams of the NoId). The unilateral test of Table 6 supports result 7. This latter is even clearer when – as in column (1) of Table 7 – we control for other determinants of individuals' effort decision. Indeed, the NoId being the reference, the introduction of identity in the Id treatment has a significant and positive impact participants' effort. Finally, this result verifies hypothesis 4.

Determinants of effort (other than identity)

Table 7 – *Determinants of effort's choices*

	(1)	(2)
Identity (t_C)	0.289*** (0.096)	
Identity*Insider (t_N)		0.318*** (0.120)
Identity*Outsider (t_O)		0.197 (0.155)
Blue	-0.129 (0.145)	-0.129 (0.146)
Period	0.080*** (0.019)	0.080*** (0.019)
Risk aversion	-0.129 (0.509)	-0.135 (0.513)
Female	-0.364*** (0.139)	-0.362*** (0.141)
Age	0.089* (0.056)	0.089* (0.055)
Level of study	-0.196*** (0.074)	-0.195*** (0.075)
Control: Study field	YES	YES
Control: Session	YES	YES
N	960	960

Regarding other determinants (Table 7), as observed in graphs of figures 1 and 3, participants increase their effort with repetitions of the game (Period variable). First, they learn by doing that the optimal effort is closer to 6 than 5. Second, as explained by

Prospect Theory⁶¹, an income effect may occur. This theory explains that when individuals become wealthier they tend to be less risk averse⁶² and play more the risky strategies. In our case, it consists in increasing the effort in order to win the competition. The color of the card associated to groups does not matter. Females choose significantly lower levels of effort than males. This finding is in line with the economic literature on gender differences in attitude which shows that females tend to be less competitive than males (e.g. Niederle and Vesterlund, 2007, Larribeau et al., 2012). This could also reflect larger aversion to risk from females, as the probability to win the tournament is conditioned to a large random shock (see Croson and Gneezy, 2009 for a discussion). As regards to participants' age, the elder they are, the higher their effort choice. Finally, players with higher educational levels play lower levels of effort.

Participation game

The participation game aimed to exhibit pro-group preferences in team compositions. Thus, in game, individuals have to choose between either to participate to the task among their matching team (B if blue, R if red), among their mismatching team (R if blue, B if red), or to receive a fixed remuneration for not taking part in the task. Our goal with this game was to observe to what extent participants prefer to join (resp. not join) in the task with their group members (resp. other group members). However, we do not observe any significant difference between the NoId and the Id. This is quite surprising regarding the significant effects of identity found in the quiz and effort games. Beside a potential intrinsic absence of pro-group preferences, some reasons may be proposed to explain this result. First, the outside option game is played at the end of the experimental sessions and participants' identity may have become blunted after a certain amount time. Second, a framing effect due to the presentation of the game (see Figure 1) and leading to an over-selection of team B may hide the influence of group identity. Finally, if we consider identity incentives as significant but marginal relative to monetary incentives for participants, the intervals of our scale of fixed remunerations may be too large to let participants express their identity preferences.

⁶¹ See Kahneman and Tversky (1979).

⁶² Note that this particular kind of risk aversion related to income cannot be assessed with our risk aversion measure which depends on individuals' one shot decision in the game of risk aversion.

4.5 Discussion and extensions

After early techniques of work-space rationalization symbolized by Taylors' *Principles of Scientific Management* (1915), new issues of work-teams organizations have appeared to firms. The exclusive rational organization proposed by scientific management has proven to fail to reach efficiency and many of them now develop more open management methods as Google for the best-known and more generally as many IT companies. These methods aim to improve workers' identification within the firm and thus promote interactions between departments and work-teams.

This study emphasizes the significant effect of group identity in a competitive framework. We first observe thanks to the quiz game that, when there is no trade-off between monetary and identity returns of effort, individuals strongly increase their performance once they are assigned to salient groups. Second, while facing a situation where they have to arbitrate between opposite monetary and identity consequences of their choices (the effort game), insiders tend to increase their effort beyond the sole monetary optimum. The competitive frame of this experiment is a plus compared to previous studies which mainly focus on public good games. Indeed, workers may face two types of competitions where their identity may influence their performance. First, firms have to compete with contestant for market shares. This chapter shows that when individuals share a group identity, their aggregate output increases. Second, they may also have to compete within their firm with other work-teams. Indeed, after a merger or an acquisition for instance they may be assigned to work-teams where members used to be contestants leading to identity conflicts. We show that if there is a dominant identity in these work-teams the output is higher than the case where there is no group identity. An interesting extension to this work would be to compare different work-team compositions (equal share of red and blue, only blue, only red, or other compositions if the size of teams increases).

On the opposite, one of the important issues related to identity theory are behaviors such as "acting white" (Austen-Smith and Fryer, 2005). It corresponds to the fact that people may be willing not to adopt behaviors which would increase their monetary payoffs because of the identity penalties that they would mean. These behaviors can be high effort levels in an identity controversial situation or even to refuse to take part in a task. The question of outsiders' behaviors then arises. Contrary to our expectations, we

do not observe any significant impact of the outsider status and our hypothesis stating that outsiders should decrease their effort when group identity is made salient does not hold (see Tables 5 and 6). Several rationales could explain this result. First, participants may not consider that the prescription for an outsider is to decrease its own effort (they do not expect that $\bar{e}_O < e^*$). Second, whereas attachment to the identity group seems significant for insiders ($t_N > 0$), it may disappear for outsiders ($t_O = 0$). Third, outsiders may not really realize that their effort has a negative impact on their group counterparts' winning probability. Then, in more practical terms, in each work-team there is one outsider, the Id treatment is composed of 12 groups, thus we only have 12 observations of outsiders' effort by period. We may lack of data. Finally, groups' members do not observe each other's efforts. An outsider providing a high effort is thus neither monitored nor sanctioned by other members of the group. These potential explanations will be stressed with new treatments⁶³ where group members will be able to punish each other. These forthcoming treatments will both allow increasing the number of observations and analyzing the impact of monitoring. According to the literature (Charness *et al.*, 2007), monitoring increase groups salience. It should therefore increase the role of identity in individuals' behaviors.

When investigating identity in a laboratory experiment, scholars have two choices: inducing group identities or priming existing identities. In this work, we chose the first solution. As many authors (Tajfel and Turner, 1981, Eckel and Grossman, 2005, Charness *et al.*, 2007, Chen and Chen, 2011, Currarini and Mengel, 2012), we believe that induced identity allows investigating a minimal situation. If group identity has consequences which are observable in such a minimal case they are more than likely going to be observed in real-life where groups are more numerous and often more salient (gender, ethnic, political, age,...). Several articles (see Chen *et al.*, 2014, for the most recent) have adopted priming methods to activate existing identities. The advantage is that interpretations to real-life are direct, however control is lost and endogeneity issues already discussed in previous chapters can occur. Finally, social identity turns out across empirical, experimental or theoretical economics to be a powerful but also very complex to manipulate source of understanding of humans' behaviors.

⁶³ These treatments are scheduled in November 2014.

Appendix

A.1 Instructions

L'expérience à laquelle vous allez participer vise à étudier les décisions individuelles dans le cadre d'un programme de recherche en économie. Vous allez prendre un certain nombre de décisions qui seront décrites dans la suite des instructions. Les instructions sont simples. En les suivant scrupuleusement vous pourrez gagner une somme d'argent.

Vos gains dépendront de vos décisions et dans certains cas des décisions des autres participants à l'expérience. Il est donc important de lire avec attention ces instructions. Toutes les transactions menées dans l'expérimentation et vos gains seront calculés sur la base suivante : votre gain final est la somme de vos gains obtenus dans chacune des parties composant cette session + un forfait de participation de 3 euros.

Lors de l'expérience, les sommes seront exprimées en Unités Monétaires Expérimentales (UME). Toutes les UME gagnées pendant l'expérimentation seront converties en euros une fois l'expérience terminée. Le taux de conversion appliqué sera de **1€ pour 40 UME**.

Toutes vos réponses seront traitées de façon anonyme (aux yeux des autres joueurs, comme aux yeux de l'expérimentaliste).

A l'issue de la lecture de ces instructions uniquement, vous ouvrirez l'enveloppe se trouvant devant vous. A l'intérieur de celle-ci se trouve une carte de couleur rouge ou bleue. La couleur de cette carte détermine votre appartenance à un groupe (le groupe rouge ou le groupe bleu) composé de quatre participants, vous compris, et ce **jusqu'à la fin de cette expérience**.

Déroulement du jeu 1.

Lors de ce jeu, vous allez collaborer avec **les trois autres membres de votre groupe (rouge ou bleu)** afin de répondre à des questions de culture générale. Chacune des questions à laquelle votre groupe aura répondu correctement rapportera **2 UME à chaque membre du groupe** (vous-inclus). Le jeu durera 10 minutes.

Voici une illustration de ce qui s'affichera sur votre écran lors de la durée du jeu :

The screenshot shows a game interface with two main panels. The left panel contains a question: "Sur un dé à 6 faces, quel chiffre est inscrit sur la face opposée au 3?" and a text input field labeled "Votre réponse:". Below the input field is a red button labeled "Valider". The right panel is titled "<< Fenêtre de discussion >>" and contains a message from "A : Quelqu'un connaît la réponse?". Below the message is another text input field. At the bottom of the right panel, there is an "Aide" section with the text "Appuyez sur la touche 'Entrée' pour valider le message."

Sur la partie droite de l'écran, une fenêtre de discussion vous permettra de communiquer avec les trois autres membres de votre groupe (rouge ou bleu). Les messages que vous enverrez ne seront visibles que des membres de votre groupe. Un pseudonyme (Joueur A, B, C ou D) vous sera aléatoirement attribué pour la durée de ce jeu seulement. Vous êtes libre dans l'utilisation de cette fenêtre de discussion. Vous pouvez par exemple demander aux membres de votre groupe la réponse à la question en cours. Vous pouvez aussi vous-même communiquer la réponse à la question si vous la connaissez. La seule restriction est que **vous ne pouvez en aucun cas révéler ou donner des indices sur votre véritable identité** aux membres de votre groupe. Si vous enfreignez cette unique restriction, vous vous verrez exclu de l'expérience et des paiements.

Sur la partie gauche de l'écran s'affichent la question en cours et la case vous permettant d'y répondre. Les réponses pour toutes les questions susceptibles de vous être posées sont des nombres. Vous n'aurez donc pas à entrer de texte. Si la réponse que vous fournissez est incorrecte, vous recevrez un message d'erreur et vous pourrez réessayer. Vous n'êtes pas limité dans le nombre de tentatives pour répondre correctement à une question et les mauvaises réponses ne seront pas pénalisées.

Vous ne passerez à la question suivante que lorsque chacun des quatre membres de votre groupe aura répondu correctement à la question en cours. Si vous répondez correctement à la question, mais que certains membres de votre groupe n'y ont pas encore répondu, un message d'attente apparaîtra. Vous pourrez toujours utiliser la fenêtre de discussion. La question suivante n'apparaîtra que lorsque les quatre membres de votre groupe auront fourni la bonne réponse.

Votre paiement pour ce jeu (en UME) :

2 x Nombres de bonnes réponses fournies par votre groupe.

Déroulement du jeu 2.

Ce jeu est composé de 10 périodes. Dans chacune des périodes, vous participerez au sein d'une équipe à la tâche présentée ci-dessous. Dans ce jeu, deux équipes (R et B) s'affrontent.

Formation des équipes

Dans ce jeu, vous interagirez avec 7 autres participants. Ces 7 participants resteront les mêmes tout au long des 10 périodes du jeu. Chaque équipe est composée d'exactly 4 joueurs et est formée pour la durée de la période seulement. Autrement dit, les équipes sont reformées au début de chaque période. Au début de chacune d'entre-elles, un des membres de votre groupe sera aléatoirement désigné pour rejoindre une équipe composée de trois membres de l'autre groupe, ainsi :

- *Si vous êtes membre du groupe rouge* : au début de chaque période, vous ou un autre membre de votre groupe rouge rejoindra l'équipe B, les trois autres membres intégreront l'équipe R. Ainsi, à chaque période, vous avez 3 chances sur 4 d'être affecté à l'équipe R et 1 chance sur 4 d'être affecté à l'équipe B.
- *Si vous êtes membre du groupe bleu* : au début de chaque période, vous ou un autre membre de votre groupe bleu rejoindra l'équipe R, les trois autres membres intégreront l'équipe B. Ainsi, à chaque période, vous avez 3 chances sur 4 d'être affecté à l'équipe B et 1 chances sur 4 d'être affecté à l'équipe R ;

Composition finale des équipes : quelle que soit la période, l'équipe B est ainsi composée d'exactly trois membres du groupe bleu et d'un membre du groupe rouge et l'équipe R est composée d'exactly trois membres du groupe rouge et d'un membre du groupe bleu.

La tâche

Dans ce jeu, la tâche consiste à choisir un niveau d'effort entre 1 et 10. Chaque niveau d'effort que vous pouvez choisir est associé à un gain individuel et à un coût individuel. Le tableau ci-dessous vous présente en détail ces éléments (en UME). Notez que ce tableau sera présent à votre écran lorsque vous prendrez une décision.

Effort	1	2	3	4	5	6	7	8	9	10
Gain individuel	10	20	30	40	50	60	70	80	90	100
Coût individuel	1	4	9	16	25	36	49	64	81	100

Par exemple, un effort de 4 vous rapportera 40 UME et vous coûtera 16 UME. La partie individuelle de votre gain s'élèvera donc à 24 UME ($40-16=24$) si vous choisissez un effort de 4. Un effort de 7 vous rapportera 70 UME et vous coûtera 49 UME. La partie individuelle de votre gain s'élèvera donc à 21 UME ($70-49=21$) si vous choisissez un effort de 7.

Les efforts individuels des membres d'une même équipe seront additionnés. A cette somme viendra s'ajouter un nombre aléatoire compris entre -4 et 4. Autrement dit, la somme des efforts de votre équipe pourra se voir diminuer ou augmenter aléatoirement. Elle ne sera jamais diminuée de plus de 4 unités d'effort, et elle ne sera jamais augmentée de plus de 4 unités d'effort. Le nombre aléatoire n'est pas nécessairement un nombre entier. Il peut par exemple

être égal à -1.14, 0 ou +3.45. Notez qu'il ne peut pas y avoir d'égalité entre les deux équipes. La performance de votre équipe est ainsi définie comme :

$$\text{Performance de l'équipe} = \text{Somme des efforts des membres de l'équipe} \pm \text{Nombre aléatoire}$$

La performance de votre équipe et la performance de l'équipe adverse seront comparées afin de déterminer l'issue du tournoi. L'équipe dont la performance sera la plus élevée remportera le tournoi. Si votre équipe remporte le tournoi, vous partagerez à parts égales avec les membres de votre équipe un gain supplémentaire de 64 UME. Votre équipe étant composée de 4 membres, vous toucherez ainsi un gain supplémentaire de 16 UME ($64/4=8$). Si votre équipe ne remporte pas le tournoi, vous n'aurez aucun gain supplémentaire.

Une fois que tous les participants auront choisi un niveau d'effort, vous serez informé de l'issue du tournoi et de votre gain pour ce jeu. La période sera alors terminée et les équipes R et B seront reformées pour la période suivante.

Votre paiement pour une période de ce jeu (en UME)

Si votre équipe remporte le tournoi :

$$\text{Gain pour le jeu} = \text{Gain individuel} - \text{Coût individuel} + \text{Part du gain d'équipe}$$

Si votre équipe ne remporte pas le tournoi :

$$\text{Gain pour le jeu} = \text{Gain individuel} - \text{Coût individuel}$$

Déroulement du jeu 3.

Ce jeu est composé de deux étapes. Dans la première étape, vous effectuerez une série de choix qui détermineront votre situation en seconde étape. Dans cette seconde étape, vous pourrez participer à la tâche présentée dans le jeu 2 au sein de l'équipe R, participer à cette tâche au sein de l'équipe B, ou recevoir une rémunération fixe et ne pas participer à la tâche.

Première étape du jeu 2

En première étape, vous devrez effectuer une série de décisions qui affecteront votre situation en seconde étape. Plus précisément, vous devrez choisir à 16 reprises entre participer à la tâche au sein d'une équipe ou ne pas participer à la tâche et accepter une rémunération fixe pour le jeu 2. La tâche en question est celle à laquelle vous avez participé lors du jeu 2 et sera rappelée dans la suite des instructions. Les 16 choix diffèrent par la nature de l'équipe (R ou B) que vous pouvez rejoindre et par le montant de la rémunération fixe proposée.

Une décision devra être prise pour chaque ligne de chaque colonne du tableau présenté ci-dessous. Un des choix parmi les 16 choix présents dans le tableau sera tiré au hasard. Il est donc important que vous preniez chaque décision avec sérieux.

Choix équipe B	Choix équipe R
<input type="radio"/> Rejoindre équipe B <input type="radio"/> Montant fixe de 5 UME	<input type="radio"/> Rejoindre équipe R <input type="radio"/> Montant fixe de 5 UME
<input type="radio"/> Rejoindre équipe B <input type="radio"/> Montant fixe de 10 UME	<input type="radio"/> Rejoindre équipe R <input type="radio"/> Montant fixe de 10 UME
<input type="radio"/> Rejoindre équipe B <input type="radio"/> Montant fixe de 15 UME	<input type="radio"/> Rejoindre équipe R <input type="radio"/> Montant fixe de 15 UME
<input type="radio"/> Rejoindre équipe B <input type="radio"/> Montant fixe de 20 UME	<input type="radio"/> Rejoindre équipe R <input type="radio"/> Montant fixe de 20 UME
<input type="radio"/> Rejoindre équipe B <input type="radio"/> Montant fixe de 25 UME	<input type="radio"/> Rejoindre équipe R <input type="radio"/> Montant fixe de 25 UME
<input type="radio"/> Rejoindre équipe B <input type="radio"/> Montant fixe de 30 UME	<input type="radio"/> Rejoindre équipe R <input type="radio"/> Montant fixe de 30 UME
<input type="radio"/> Rejoindre équipe B <input type="radio"/> Montant fixe de 35 UME	<input type="radio"/> Rejoindre équipe R <input type="radio"/> Montant fixe de 35 UME
<input type="radio"/> Rejoindre équipe B <input type="radio"/> Montant fixe de 40 UME	<input type="radio"/> Rejoindre équipe R <input type="radio"/> Montant fixe de 40 UME
<input type="button" value="Valider"/>	

Il sera considéré que si vous acceptez une rémunération fixe, vous serez prêt à accepter toutes les rémunérations fixes d'un montant supérieur. Par exemple, si vous choisissez d'accepter une rémunération fixe de 30 UME plutôt que de rejoindre l'équipe B, vous serez aussi prêt à accepter 35 ou 40 UME plutôt que de rejoindre l'équipe B. Pour cette raison, un remplissage automatique est mis en place. Par exemple, si vous choisissez d'accepter un montant de 30 UME, l'ordinateur cochera automatiquement les décisions pour 35 et 40 UME. Tant que vous n'avez pas validé votre choix en cliquant sur le bouton «valider», vous pourrez toujours modifier votre décision.

Lorsque tous les participants auront rempli ce tableau, une rémunération fixe sera tirée au hasard pour chacun d'entre eux. Les équipes seront composées en tenant compte des préférences exprimées dans ce tableau pour cette rémunération précise par chaque participant. Un seul membre du groupe bleu, désigné de manière aléatoire, pourra être affecté à l'équipe R et un seul membre du groupe rouge, désigné de manière aléatoire, pourra être affecté à l'équipe B.

Supposons par exemple que le choix de la première colonne – deuxième ligne est tiré. En remplissant le tableau, vous avez pris une décision entre rejoindre l'équipe B pour participer à la tâche et recevoir une rémunération fixe de 10 UME sans participer à la tâche. Supposons que vous ayez choisi de rejoindre l'équipe B. Vous participerez donc à la tâche au sein de l'équipe B, et votre paiement pour ce jeu sera le paiement de la tâche. Si par contre vous avez choisi la rémunération fixe de 10 UME, vous ne participerez pas à la tâche en seconde étape, et votre paiement pour ce jeu sera de 10 UME.

Composition finale des équipes : suivant ces modalités, l'équipe B peut-être composée au maximum d'un membre du groupe rouge et au maximum de trois membres de groupe bleu et l'équipe R peut-être composée au maximum d'un membre du groupe bleu et au maximum de trois membres du groupe rouge.

Seconde étape du jeu 2

Si vous participez à cette tâche, vous participerez à la tâche déjà décrite lors du jeu 2 au sein de l'équipe qui vous aura été assignée auparavant.

Rappel concernant la tâche : Vous devrez choisir un niveau d'effort entre 1 et 10. Chaque niveau d'effort correspond à un gain individuel et à un coût individuel présenté dans un tableau affiché à l'écran. Le niveau d'effort que vous choisirez sera additionné à celui des membres de votre équipe (R ou B). Un nombre aléatoire entre -4 et 4 sera ajouté à cette somme, afin de former la performance de votre équipe. L'équipe dont la performance est la plus élevée remportera le tournoi. Si votre équipe remporte le tournoi, vous partagerez avec les autres membres de votre équipe un gain supplémentaire de 64 UME. Chaque membre de l'équipe obtiendra donc un gain supplémentaire de 16 UME ($64/4=8$). Si votre équipe ne remporte pas le tournoi, vous n'aurez aucun gain supplémentaire. Il ne peut pas avoir d'égalité entre équipes.

Une fois que tous les participants auront choisi un niveau d'effort, vous serez informé de l'issue du tournoi et de votre gain pour ce jeu.

Votre paiement pour ce jeu (en UME)

Si vous ne participez pas à la tâche :

Gain pour le jeu = Rémunération fixe acceptée

Si vous participez à la tâche et votre équipe remporte le tournoi :

Gain pour le jeu = Gain individuel – Coût individuel + Part du gain d'équipe

Si vous participez à la tâche et votre équipe ne remporte pas le tournoi :

Gain pour le jeu = Gain individuel – Coût individuel

Déroulement du jeu 4.

Lors de ce jeu, vous devrez prendre dix décisions (Une décision par ligne). Chaque décision consiste à choisir entre une option A et une option B. Vous devez indiquer votre choix en cochant l'option correspondante (dans la colonne à droite du tableau intitulée « Votre Choix »). Pour chacune des options, deux gains sont réalisables. Pour chacun des gains, il vous est indiqué le pourcentage de chances que ce gain soit effectivement réalisé.

Option A	Option B	Votre choix
10 % de chances de gagner 80 UME 90 % de chances de gagner 64 UME	10 % de chances de gagner 136 UME 90 % de chances de gagner 8 UME	<input type="radio"/> Option A <input type="radio"/> Option B
20 % de chances de gagner 80 UME 80 % de chances de gagner 64 UME	20 % de chances de gagner 136 UME 80 % de chances de gagner 8 UME	<input type="radio"/> Option A <input type="radio"/> Option B
30 % de chances de gagner 80 UME 70 % de chances de gagner 64 UME	30 % de chances de gagner 136 UME 70 % de chances de gagner 8 UME	<input type="radio"/> Option A <input type="radio"/> Option B
40 % de chances de gagner 80 UME 60 % de chances de gagner 64 UME	40 % de chances de gagner 136 UME 60 % de chances de gagner 8 UME	<input type="radio"/> Option A <input type="radio"/> Option B
50 % de chances de gagner 80 UME 50 % de chances de gagner 64 UME	50 % de chances de gagner 136 UME 50 % de chances de gagner 8 UME	<input type="radio"/> Option A <input type="radio"/> Option B
60 % de chances de gagner 80 UME 40 % de chances de gagner 64 UME	60 % de chances de gagner 136 UME 40 % de chances de gagner 8 UME	<input type="radio"/> Option A <input type="radio"/> Option B
70 % de chances de gagner 80 UME 30 % de chances de gagner 64 UME	70 % de chances de gagner 136 UME 30 % de chances de gagner 8 UME	<input type="radio"/> Option A <input type="radio"/> Option B
80 % de chances de gagner 80 UME 20 % de chances de gagner 64 UME	80 % de chances de gagner 136 UME 20 % de chances de gagner 8 UME	<input type="radio"/> Option A <input type="radio"/> Option B
90 % de chances de gagner 80 UME 10 % de chances de gagner 64 UME	90 % de chances de gagner 136 UME 10 % de chances de gagner 8 UME	<input type="radio"/> Option A <input type="radio"/> Option B
100 % de chances de gagner 80 UME 00 % de chances de gagner 64 UME	100 % de chances de gagner 136 UME 00 % de chances de gagner 8 UME	<input type="radio"/> Option A <input type="radio"/> Option B
		<input type="button" value="OK"/>

Une fois vos choix effectués, un chiffre entre 1 et 10 sera aléatoirement tiré. Ce chiffre définira la ligne du tableau qui sera utilisée pour le calcul de votre gain. Chaque ligne a, bien entendu, la même chance d'être tirée au hasard. Un tirage aléatoire définit ensuite votre gain, selon l'option que vous avez choisie pour cette ligne.

Exemple

Supposons que la deuxième ligne soit tirée au hasard.

Si vous avez choisi l'option A pour cette ligne, vous avez 20% de chance de gagner 80 UME et 80% de chance de gagner 64 UME.

Si vous avez choisi l'option B pour cette ligne, vous avez 20% de chance de gagner 136 UME et 80% de chance de gagner 8 UME.

Supposons que la septième ligne soit tirée au hasard.

Si vous avez choisi l'option A pour cette ligne, vous avez 70% de chance de gagner 80 UME et 30% de chance de gagner 64 UME.

Si vous avez choisi l'option B pour cette ligne, vous avez 70% de chance de gagner 136 UME et 30% de chance de gagner 8 UME.

Vous ne serez informé de votre gain qu'à la fin de l'expérience.

<p>Votre paiement pour ce jeu (en UME) :</p> <p>Gain réalisé pour la décision choisie.</p>
--

A.2 Participation game: matching mechanism

Reminder of figure 1 – Participation game

Choix équipe B	Choix équipe R
<input type="radio"/> Rejoindre équipe B <input type="radio"/> Montant fixe de 5 UME	<input type="radio"/> Rejoindre équipe R <input type="radio"/> Montant fixe de 5 UME
<input type="radio"/> Rejoindre équipe B <input type="radio"/> Montant fixe de 10 UME	<input type="radio"/> Rejoindre équipe R <input type="radio"/> Montant fixe de 10 UME
<input type="radio"/> Rejoindre équipe B <input type="radio"/> Montant fixe de 15 UME	<input type="radio"/> Rejoindre équipe R <input type="radio"/> Montant fixe de 15 UME
<input type="radio"/> Rejoindre équipe B <input type="radio"/> Montant fixe de 20 UME	<input type="radio"/> Rejoindre équipe R <input type="radio"/> Montant fixe de 20 UME
<input type="radio"/> Rejoindre équipe B <input type="radio"/> Montant fixe de 25 UME	<input type="radio"/> Rejoindre équipe R <input type="radio"/> Montant fixe de 25 UME
<input type="radio"/> Rejoindre équipe B <input type="radio"/> Montant fixe de 30 UME	<input type="radio"/> Rejoindre équipe R <input type="radio"/> Montant fixe de 30 UME
<input type="radio"/> Rejoindre équipe B <input type="radio"/> Montant fixe de 35 UME	<input type="radio"/> Rejoindre équipe R <input type="radio"/> Montant fixe de 35 UME
<input type="radio"/> Rejoindre équipe B <input type="radio"/> Montant fixe de 40 UME	<input type="radio"/> Rejoindre équipe R <input type="radio"/> Montant fixe de 40 UME
<input type="button" value="Valider"/>	

Once participants have made their decision in figure 1, the following matching procedure distributes them among work-teams:

Id – Work-team R:

1. One participant of the red group is randomly drawn to potentially join B and then be the outsider of this work-team.
2. For this participant, one of the lines of the left panel of figure 1 is randomly drawn. Depending on her decision at this line, she could either join work-team B and play the task as the outsider, or get a fixed remuneration without playing the task.
3. We then consider the three remaining members of the red group to potentially be the insiders of work-team R. For each of them, one of the lines of the right panel of figure 1 is randomly drawn. Depending on the decision of the subject at this line, she could either join team R and play the task as one of the three potential insiders, or get a fixed remuneration without playing the task.

Id – Work-team B (same matching as R):

1. One participant of the blue group is randomly drawn to potentially join R and then be the outsider of this work-team.
 2. For this participant, one of the lines of the right panel of figure 1 is randomly drawn. Depending on her decision at this line, she could either join work-team R and play the task as the outsider, or get a fixed remuneration without playing the task.
 3. We then consider the three remaining members of the blue group to potentially be the insiders of work-team B. For each of them, one of the lines of the left panel of figure 1 is randomly drawn. Depending on the decision of the subject at this line, she could either join team B and play the task as one of the three potential insiders, or get a fixed remuneration without playing the task.

The same procedure is adopted in the NoId with fictional and random red and blue groups only known by the experimentalist.

Note that participants know that every line of figure 1 is likely to be considered. For that reason, our elicitation mechanism is incentive compatible. This matching procedure could lead to the emergence of two teams of different sizes. We do not correct for this asymmetry when comparing team outcome at the end of the task.

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GENERAL CONCLUSION

5.1 Culture identity and immigrant socioeconomic assimilation

This thesis aims to enlighten the relationship between cultural and socioeconomic assimilations. In order to reach this goal, it mobilizes the recent identity theory in economics. We postulate that if cultural assimilation of immigrants and their socioeconomic outcomes are tied, their relationship is observable through their cultural identity.

The first Chapter gives an overview of the socioeconomic situation of first and second generations of immigrants in France as regard to their native's counterparts. For this purpose, we first focus on the determinants of the ethnic gap in educational attainment, underlining the central role of family background (e.g. parental education, family income and family structure) as key determinants of education. Then, we consider ethnic gaps on both labor market access and wages' formation and highlight the paramount role of education over the lifecycle.

Our work differs from the previous literature (in particular Aeberhardt and Pouget, 2010, and Belzil and Poinas, 2010) since we emphasize the role of education in explaining ethnic labor-market differences and adopt a lifelong view of first and second generation of immigrants socioeconomic integration.

We observe that childhood environment is a key determinant of education. Controlling for family background knocks out the negative effect of ethnic origin on education of both generations of immigrants (except Southern European and Turkish first generations). It becomes even positive for some of them. Another important finding is that education plays a prominent role in explaining both the reduction of employment and wage ethnic gaps. In the same vein, controlling for both the selection bias and the education level, the ethnic wage gap remains but is less significant and smaller in size.

On the whole, our findings potentially challenge the role of discrimination in explaining ethnic labor-market outcomes and suggest that targeting the education gap via family-oriented policies may be at least as efficient as discrimination-oriented policies in reducing ethnic gaps in the labor market. However, it cannot be denied that a significant part of the ethnic gaps remains unexplained by differences in observable

characteristics and human capital. Discrimination is generally seen as the cause of these remaining gaps. Of course, we keep this potential explanation in mind. Nevertheless, we postulates in this thesis that these unexplained gaps are also the consequences of unachieved cultural assimilation which is expressed into immigrants' cultural identity.

In order to investigate the influence of cultural assimilation on socioeconomic outcomes in Chapter 3, Chapter 2 clarifies the concept and the measurement of cultural identity. This second chapter explores different measures of ethnic identity. In particular, we use national identity and create an assimilation index to understand the formation of individuals' cultural identity thanks to *TeO* data. Our goal is not to validate or reject measures of the literature but to improve the knowledge of the determinants of first and second generation immigrants' attachment to both home and host cultures.

Our contribution to the literature consists in providing a new measure of cultural identity called the assimilation index. Contrary to national identity and the ethnosizer, this measure is continuous and does not need prior assumptions on what characteristic is native or immigrant

We show that migration activates the ethnicity of minority ethnic groups. It pushes immigrants into choosing more often identity attributes related to their ethnic traits than do natives. We also highlight the paramount role of duration in the host country for first generations which notably verifies the Immigrant Assimilation Hypothesis. Furthermore, we observe that descendants are culturally more like natives than first generation which is an evidence of cultural assimilation. Finally, we show that the importance of religion in childhood rearing has strong negative impacts on cultural convergence of immigrants toward French identity.

Overall, we show that the measure of identity matters and conclusions in terms of cultural assimilation quite strongly depend on it. Scholars should therefore consider different measures of cultural identity in order to avoid abusive interpretations. Although quite methodological, this stage is essential for further investigations about the influence of ethnic identity on socioeconomic outcomes which are the topics of Chapter 3.

This third aims to extract the relationship and more particularly the causal impact of first and second generation immigrants' cultural identity on their socioeconomic

outcomes. It contributes to the literature by implementing instrumental strategies to overcome overestimation of estimates due to reverse causality. This chapter also focuses on the role of cultural identity in both employment access and wage formation taking both selection bias and endogeneity issues into account. Finally, the investigation of cultural identity's influence on political behavior is completely new in the economic literature.

We show that the positive relationship between ethnic identity and employment probability is strong. On the opposite, wages' formation seems only to depend on national identity for the second generation of immigrants. In causal terms, national identity positively impacts the employment probability of immigrants, while the assimilation index impacts more that of descendants of immigrants. We explain this difference by the fact that national identity is a less major concern for second generations (they almost all feel French), than the characteristics they choose to define themselves and which tells how well they assimilate the host culture. We do not find any robust evidence of a potential impact of ethnic identity on wages' formation.

In addition to labor market outcomes, we investigate the relation between ethnic identity and political behaviors. We find that national identity is strongly related to voting participation. This is also the case for the assimilation index but only at the presidential election level. In both cases, these results verify expectations. The higher the commitment toward the host culture, the higher the involvement in political issues and the higher the will to vote. Finally, the role of cultural identity depends mainly depends on its measure when we consider left/right political self-placement. Results suggest that national identity corresponds to a more right-wing placement, whereas a high assimilation index corresponds to a more left-wing one.

Cultural assimilation appears to be a determinant of economic assimilation at the hiring stage. It also generates higher political involvements. As already suggested in Chapter 2, we show that identity measurement matters in terms of political self-placement which should encourage scholars interested in such issues to combine several measures of ethnic identity.

Consistently with the literature, Chapter 3 brings evidence that identity is likely to matter in people's socioeconomic outcomes. Based on these findings, Chapter 4 investigate the provision of efforts and labor participation of individuals in a specific

framework where they are matched with in-group (same color) or out-group (other color) members in an environment preserved from endogeneity issues. We are particularly interested in people's decisions when they have to choose between high payoffs but identity-costly and low payoffs but identity-preserving decisions. We do not explicitly refer to ethnic identity in this experiment but the findings related to these abstract groups can surely be exported to ethnic ones.

Our study differs from previous ones by implementing a symmetric analysis of both those whom identity matches work-team's identity (insiders) and those whom identity does not (outsiders) among members of the same identity groups. We also contribute to the literature by implementing a competitive framework which we believe to exacerbate identity conflicts.

We first observe that individuals strongly increase their performance once they are assigned to salient groups. Second, we show that when they have to arbitrate between opposite monetary and identity returns insiders tend to increase their effort. This effort raise suggests that monetary losses are compensated by positive identity returns. We also show that the output of a work-team is higher when it is mainly composed of members sharing a common identity than that of identity neutral work-teams (i.e. composed of participants with no previous induced identity).

Finally, under the *nearly minimal group* paradigm, identity influences participants' efforts. Based on this result we can conjecture that natural identities and notably ethnic identity activated and enforced by immigration (Phinney and Ong, 2007), and which are much more salient than induced identities due to experience of behaving norms and peer pressure are likely to impact individuals real-life behaviors and outcomes.

If we agree to see the consequence of immigration as the cohabitation of ethnic groups with specific prescriptions in a common territory, we can have some simple political recommendations. Identity conflicts are mainly the result of different set of values and prescriptions. Majority's behaving norms (explicit or implicit) are seen by minority members as exogenous. The solution would be to endogenize the prescriptions, notably by integrating minorities in the political process through representative quotas.

5.2 Limits and extensions

First, this work is bound by the relative recentness of the associated literature. Only a few theoretical models have been developed (Akerlof and Kranton, 2000, Battu *et al.*, 2007, Benabou and Tirolle, 2011). Furthermore, these models are quite difficult to test notably because of the lack of data related to identity. In this thesis, we use the *TeO* survey. The amount of information related to identity represents an asset for this thesis. However, this advantage is also limited by the cross-sectional nature of the data. For the moment, scholars have to choose between detailed but cross-sectional and panel but poorly identity-detailed surveys (the German Socio-Economic Panel is the most used of these latter).

Our view of cultural assimilation is one-sided. We only consider the “move” of ethnic groups toward the majority but never that of the majority toward ethnic groups. For Sam (2006), since the dominant group exerts more influence than the non-dominant group, it is often and wrongly assumed that only the non-dominant group is changing. Phinney *et al.* (2001) therefore explain that ethnic identity-based attitudes interact with the actual and perceived levels of acceptance of immigrants in the society. History and official policies are not neutral in that sense. The exploration of the role of immigration on the dominant group identity could surely improve the understanding of immigrant assimilation.

Chapters 2 and 3 focus on cultural identity. This particular dimension of identity is the most suitable for us since we focus on immigrants’ assimilation. However, this is not the only one. Sen (2007) defends the consideration of multiple identities. People do not only belong to an ethnic group but to many overlapping groups related to job occupation, gender, age, and so forth. Identities related to these groups are likely to influence behaviors too.

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Identité culturelle, assimilation des immigrants et inégalités socioéconomiques

Les questions relatives à l'intégration des immigrants et de leurs descendants ne sont pas nouvelles dans la littérature économique. Celles-ci ont toutefois majoritairement été traitées du point de vue de l'efficacité économique de l'immigration ou des discriminations. L'assimilation culturelle revient, elle, régulièrement au cœur du débat public et en particulier au travers des notions d'identité nationale et culturelle. La théorie de l'identité est apparue en économie il y a une dizaine d'années et a permis d'améliorer la compréhension des décisions des individus lorsque ceux-ci se définissent par leur appartenance à un ou plusieurs groupes auxquels sont attachées des normes de comportement. À l'aide de cette théorie, nous regardons à quel point l'identité culturelle, considérée comme l'expression de l'assimilation culturelle des immigrants, permet d'améliorer la compréhension des inégalités socioéconomiques. Après avoir rappelé l'importance du contexte familial et du niveau d'éducation dans la réussite professionnelle des immigrants et descendants d'immigrants, nous analysons la formation de l'identité culturelle. Si l'identité ethnique diminue avec le temps passé dans le pays hôte, elle dépend aussi de la manière dont elle est mesurée. Nous mettons ensuite en évidence un impact négatif de l'identité ethnique sur l'accès à l'emploi et la participation politique mais neutre sur le niveau de salaire. Enfin, à l'aide d'une expérience contrôlée en laboratoire, nous vérifions de manière plus générale l'influence significative de l'identité de groupe sur les décisions individuelles.

Cultural identity, immigrant assimilation and socioeconomic inequalities

Immigrants' and their descendants' assimilations are old issues in the economic literature. However, they have mainly been investigated in terms of immigration economic efficiency and discriminations. At the same time, cultural assimilation is a recurrent issue in the public debate and particularly through the concepts of national and cultural identity. The identity theory came out in economics more than a decade ago. It allowed improving the understanding of individuals' decisions when they define themselves by their belonging to one or more groups to which behaving norms are attached. Thanks to this theory, we explore to what extent cultural identity, seen as the expression of immigrants' cultural assimilation, allows improving the understanding of socioeconomic inequalities. We first highlight the importance of the family context and the educational attainment for the professional outcomes of first and second generations of immigrants. Then, we analyze the formation of the cultural identity. If ethnic identity diminishes with time since arrival in the host country, it also depends on the way it is measured. We exhibit a negative influence of ethnic identity on employment and voting participation but neutral on the wage level. Finally, thanks to a laboratory controlled experiment, we verify in a more general framework the significant role of group identity on individual behaviors.