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Economic Discrimination and Cultural Differences as Barriers to Migrant Integration: Is Reverse Causality Symmetric?

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This paper examines the endogenous relationship between the economic and cultural integration of migrants in Switzerland or, more precisely, how economic and cultural barriers to integration reinforce each other. Are cultural differences preventing the successful integration of migrants or does the root of integration failures lie in unequal economic opportunities and discrimination? How legitimate are claims arguing migrants are economically discriminated because they don't integrate culturally compared to claims that migrants don't integrate because they are discriminated? And are Muslim communities, which currently often lie at the center of this debate, different in this regard? Implementing an empirical method to build indices of economic discrimination and cultural differences ("cultural distance"), the findings of this paper show that, at the aggregate level, population groups facing higher economic discrimination are culturally more distant from the natives. Muslim communities are no different in this regard: their specificity resides more in the stronger discrimination they face in the labour market than in cultural differences separating them from natives. Using an instrumental variable approach, evidence at the individual level reveals that there is an asymmetric causal relationship between economic discrimination and "cultural distance", the former clearly dominating the latter. It also shows that the asymmetry is at least twice as acute for second-generation compared to first-generation migrants.

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Keywords: migration, labor market, unemployment, Muslim, religious, ethnic, discrimination, culture, integration

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1 Introduction[1]

During the last decade, the debate about migration and integration has been growing in many Western societies including Switzerland. Facing new kinds of migration flows from more distant regions, Swiss policy-makers try to address the concern of many voters that recently arrived migrants don't integrate in the host country. Although such a concern is not new and doesn't reflect the evidence gathered and analysis produced by social scientists in Switzerland (Wicker et al., 2003), the argument that migrants (or certain migrant groups) don't integrate culturally has easily made its way into public debate and is being accepted by many as commonplace. In the contemporary political arena where perception is key, various discourses are competing to explain integration issues in ethno-cultural vs. socio-economic terms. In recent years, the populist right wing narrative, which argues that "cultural distance"[2] prevents the successful integration of migrants, has gained ground against the liberal narrative, which considers that the root of integration failures lies in unequal economic opportunities and discrimination.[3]

This paper assesses the relevance of these opposed narratives by investigating the endogenous relationship between economic discrimination and "cultural distance". Both factors certainly reinforce each other negatively, hindering the integration of migrants in the host society, but is there a way to determine which of the two narratives is more relevant in the Swiss context? How legitimate are claims arguing that migrants are economically discriminated because they don't integrate culturally compared to claims that migrants don't integrate because they are discriminated? A series of articles inspired by Battu et al (2007) found evidence of the former without examining the latter. The contribution of this study is to examine both

[1] This paper is part of a thesis (Kohler, 2012) on the economic and cultural integration of migrants in Switzerland, reverse causation between these two dimensions of the integration process, and the role of host society culture. Whereas each dimension is usually examined separately, this study proposes a systemic approach to investigate both the economic and cultural dimensions of migrant integration, their interaction as well as the influence of the broader social context. For a more detailed and critical contextualisation of this paper, see http://mpra.ub.uni-muenchen.de/38129/1/MPRA_paper_38129.pdf

[2] This concept is placed in quotations marks in the introduction and conclusion of this paper in order to remind the reader about its inherent limitations. For some critical comments, see the introduction of Kohler (2012).

[3] The populist right wing discourse sometimes merges with a third discourse, the moderate conservative discourse. While the latter traditionally emphasizes economic considerations, like the need to proceed to a cost-benefit analysis of migration or the merits of selective migration to pick out the most educated and productive migrants, the former emphasizes the threat migration represents to the native culture and the argument that cultural differences represent an insurmountable obstacle to the integration of migrants. In the political arena, however, they usually converge and blend in support of more stringent migration and asylum rules. An example of their political complementarity is the integration by the Swiss administration of the concept of "cultural distance" in the formulation of the "three circles" policy during the 1990s. This policy aims at restricting certain types of migration by granting individuals a different right to migrate to Switzerland according to their origin, creating a hierarchy favoring individuals from EU/EFTA countries over those from the US and the rest of the world (Mahnig and Piguet, 2003). Over the last decade, the right wing rhetoric became increasingly appealing to voters. As a consequence, the conservative/right wing narrative not only became more radical, it also gained ground against the liberal narrative. These two shifts are illustrated by the growing share of far right representatives in the Swiss Parliament, mostly to the detriment of conservative political parties (11,1% in 1991; 22,5 % in 1999; 29% in 2007), and by a series of successfully launched referenda asking for harsher laws ruling the status of migrants and asylum seekers (in 1999, 2002, 2004, 2006 and again 2008). In 2009, the right wing alone succeeded in convincing Swiss voters to approve a constitutional ban of minaret construction, singling out Muslim migrants.

sides of the coin at once. Given the current strong focus on Muslim migrants in the integration debate in Switzerland and other Western countries, the situation of this minority is examined more closely. Indeed, as Muslim migration has become controversial especially in regard of their cultural integration, it is of particular interest to examine these communities when looking at the reciprocal influence between "cultural distance" and economic discrimination. Furthermore, by using data from the year 2000, it is possible to shed some light on the situation prevailing prior to the anti-minaret initiative and even prior to 9/11, at a time when the cultural integration of Muslims had yet gotten as much attention as it currently does.

Before proceeding further, it is necessary to define the concepts at stake as well as give a hint about the way they are approached empirically in this study, in order to better frame the debate and stress the scope of this study. Integration can be defined as individual and collective processes happening after migration occurred. Those can be classified into different categories, which are not mutually exclusive. Economic processes encompass moves of a migrant across a society's classes. Cultural processes cover the evolutions happening in behaviors, attitudes, daily life habits, beliefs, etc. (Wanner et al., 2002).[4] In this framework, barriers to economic processes may affect cultural processes, and vice versa, impeding the integration of migrants.

The empirical approach comprises two steps. The first consists in finding acceptable proxies for the barriers to integration put forward in both narratives (economic discrimination and "cultural distance"). As employment is at the heart of economic processes, employment discrimination is probably the most crippling economic barrier to integrate the host society. Employment discrimination is therefore used as a proxy for economic discrimination, and both terms are sometimes used as substitutes in this paper. It is measured using a decomposition of the probability to be employed. Cultural distance is a multidimensional and diffuse concept that is difficult to approach empirically. In the present context, the best feasible way to proxy for "cultural distance" is to build a dissimilarity index based on cultural indicators that, according to previous studies, potentially distinguishes migrants from natives. The second step consists in finding appropriate instruments to avoid the endogeneity bias when estimating how economic discrimination and "cultural distance" affect each other. The empirical approach is presented in more details under the methodology section.

Endogeneity certainly makes it difficult to understand the extent to which barriers to integration reinforce each other, but ideology is a reason why voters, policy-makers, as well as intellectuals and social scientists can develop strongly opposed views on whether the root of integration failures is economic or cultural.[5] After

[4]The reference mentioned also includes a legal dimension of integration that is left aside in this study.

[5]This opposition is illustrated by the polemic that followed the riots in French suburbs in 2005. While some conservative intellectuals (Alain Finkielkraut, etc.) pointed to the cultural stickiness of (Muslim) migrants from the second or third-generation migrants in order to blame their alleged unwillingness to integrate into French society, other social scientists (Dominique Vidal,

all, did Max Weber not show that the beliefs and behaviors considered as desirable in certain cultures are more conducive to work than others?[6] And does employment discrimination not affect migrants' income, which in turn influences their consumption patterns (buying clothes, movies, books, etc.) as well as their investment decisions (notably decisions concerning the education of their children; see Djajic, 2003), thus limiting the economic capacity of migrants to imitate the behaviors of natives and their access to the culture of the host society? The debate about the causes generating integration failures is loaded, and new evidence may help assess the relevance of existing arguments and put in them perspective.

The next section provides a brief review of the literature on economic discrimination and cultural integration, including Switzerland as a particular case. Section 3 presents the data and descriptive statistics. Section 4 introduces the empirical strategy, which consists of (i) measuring employment discrimination faced by migrants of different origin in the labour market (ii) computing an index of "cultural distance" to the natives (iii) using an instrumental variable approach to deal with endogeneity in order to estimate the effect of employment discrimination on "cultural distance" and vice versa. Section 5 describes the results at the aggregate level for eight groups of migrants, distinguishing across gender, between first and second-generation migrants as well as between Muslim and non-Muslim individuals; it then presents the results obtained at the individual level using the instrumental variable approach. The last section concludes.

2 Related literature

2.1 A barrier to integration (I): employment discrimination

As mentioned previously, the economic integration of migrants encompasses theirs moves across a society's classes. Economic discrimination represents a barrier to those moves and thus hinders their economic integration. With the development of empirical investigation methods in social sciences, sociologists and economists found evidence of employment, wage and other kinds of economic discrimination in many countries. In the labour market, migrant workers are usually more likely to be unemployed than natives, they earn less and occupy positions with lower social prestige. Penalties faced by migrants can be explained by observable individual characteristics, but they are also caused by unobservable factors like discrimination.

Emmanuel Todd, etc.) portrayed the outbreak of violence as a new version of the class struggle opposing the economically oppressed to the social order established by the well-to-do, which has closed its doors upon them. Although this polemic is anchored in the French context, the clichés used in this debate and the rationale justifying the analysis of integration failures in ethno-cultural vs. socio-economic terms are similar in the Swiss political debate. As a starting point, see Dominique Vidal, "Alain Finkielkraut, bouffon du roi," Le Monde Diplomatique, 8 January 2007.

[6] In the political arena, this subtle analysis often boils down to a deterministic argument claiming that the higher unemployment rate of migrants is culturally determined, culture being itself a product of climatic (Montesquieu) or genetic (Gobineau) factors.

As employment is at the heart of economic processes, employment discrimination is the most crippling economic barrier to integrate the host society. In most countries, the unemployment rate of migrants is above that of natives (Wanner, 2004). In Switzerland, practice testing results show that second-generation non-EU migrants have lower chances to be invited to a job interview, and that discrimination is more severe in the Swiss German part of Switzerland (Fibbi et al., 2006). The estimates of discrimination these authors obtained through practice testing will later be put in perspective with those obtained through a decomposition of the probability to be employed. Widmer (2005) already implemented the latter method in the Swiss context. Using data from the census 2000, his findings show returns to factors are lower for migrants. Comparing the unexplained residuals of different national groups, he argues that although the non-transferability of human capital acquired abroad and unobserved differences in human capital may partly explain these residuals, a substantial part of them can be attributed to discrimination.

Few studies have examined the situation of Muslim migrants. Berthoud and Blekesaune (2007) look at the British labour market. They first observe that unemployment rates among majority Muslim ethnic communities (Pakistani, Bangladeshi) are much higher than among non-Muslim migrant groups. Analyzing the probability to be employed, they find a significant negative effect for being Muslim, which supports their claim that discrimination is at work on the British labour market, not only along ethnic, but also along religious lines. The Open Society Institute (2009) also finds evidence of religious discrimination, which, together with other kinds of discrimination (origin, skin color, gender) and factors (lower human capital endowment, individual preferences, etc.) explain the poor integration of Muslim workers into the mainstream labour market.

2.2 A barrier to integration (II): cultural distance

As a subcategory of integration, cultural integration concerns the evolution of behaviors, attitudes, daily life habits, beliefs, etc. (Wanner et al., 2002). These processes occur in migrant communities as well as among natives, but minority groups bear the bulk of it. The larger the initial differences in behaviours and attitudes, the more intense will be the process of cultural integration. In this sense, cultural distance can be seen as a barrier to cultural integration. Cultural integration is a rather novel field of study in economics. Economists started to investigate the phenomenon of cultural integration more than a decade ago, developing theoretical models on identity (Akerlof and Kranton, 2000) or cultural transmission (Bisin and Verdier, 2000) choices. The field of research is expanding rapidly. However, in addition to disagreements on definitions and modeling techniques, researchers also face constraints imposed by data when it comes to capturing a multidimensional

phenomenon like cultural integration. The articles surveyed in this section illustrate the variety of existing theoretical and empirical approaches.

When studying migrant cultural integration using a quantitative approach, several questions need to be considered. First, what dimensions does cultural integration encompass? And how can it be measured? Some economists chose to build indices of cultural integration or cultural distance to the natives. Zimmermann et al. (2006), for instance, propose a weighted index ("ethnosizer") that captures a person's ethnic identity. This index is a function of individual characteristics and behaviors related to 1) language 2) culture 3) ethnic self-identification 4) ethnic interaction 5) migration history. Vigdor (2009) proposes another way to measure cultural integration. His index encompasses the following individual characteristics: 1) language 2) intermarriage 3) fertility 4) marital status, but it can easily be expanded as weights are "naturally" attributed through the estimation of the probability to be born abroad. Instead of building indices, other economists have used single variables on self-declared ethnic identity or information considered to reveal the attachment of the interviewed migrant to a particular culture (e.g., attitude towards intermarriage). Another issue is how to deal with the phenomenon of multiple identities? Acknowledging individuals can belong to several cultures and instrumentalize their ethnic identities in specific contexts, some economists have made attempts to go beyond the one-dimensional trade-off between cultures/identities, which is assumed in theoretical models. Inspired by acculturation theories of Berry (1980), the two-dimensional ethnosizer of Zimmermann et al. (2006) takes into account both the attachment to the origin and host country in order to distinguish between 1) separated 2) integrated 3) assimilated and 4) marginalized migrants. The choices made to empirically define the four categories are however a bit arbitrary and can be subject of a debate.[7] A third important question concerns the time dimension and how should it be integrated in theoretical models and empirical investigations? Data usually enables the distinction between first and second-generation migrants, and some datasets include information about the time spent in the host country, but even using this information in the analysis of migrant integration is only a rough way to account for the complex adaptation processes migrants are undergoing over time.

Quantitative studies about the cultural integration of migrants in Switzerland are very few. Kohler (forthcoming) reviews some of the literature and provides an analysis of the cultural integration paths of 8 migrant groups. This study specifically analyzes the evolution of objective behaviors and subjective attitudes from the first to the second generation, looking at this evolution from different perspectives: across cohorts

[7]The variables taken to proxy for the five dimensions mentioned above are a bit thin on the ground. As an example, the third dimension, culture, is only proxied by one indicator that is the preferred media. This dimension is however given the same weight as other dimensions that may actually be more informative about the attachment of a migrant to his home and host country.

(older vs. younger migrants) and across types of couples (individuals in endogamous vs. mixed couples). The findings show that there is overall convergence in all examined indicators.

Empirical studies on the cultural integration of Muslim migrants are also few in numbers. Bisin et al. (2006) builds a theoretical model of ethnic identity formation focusing on how identity choices are affected by cultural transmission and socialization within the family, peer pressure and social interactions. Using data from the UK, they look at the determinants of identity choices, as proxied by 1) the importance of religion 2) the attitude towards intermarriage 3) the importance of the racial composition of schools attended by the children of the surveyed individuals. The authors find that the main determinants are past experience of discrimination, language spoken at home and with friends, quality of housing and structure of the family. Using the same framework and data, Bisin et al. (2007) analyze the possibility of a distinct integration pattern for Muslims. In their results Muslims appear to have a stronger feeling of identity than non-Muslims. Higher household incomes as well as better qualification do not temper this phenomenon. Arai et al. (2008) however challenge the validity of the findings of Bisin et al. (2007) claiming that replicated results turn out to be non-significant. Other studies temper these findings. Georgiadis and Manning (2011) show evidence that behaviors of individuals belonging to the two largest Muslim communities in Britain (Pakistani, Bangladeshi) may be somewhat different, but that they converge towards the native baseline on many cultural integration indicators. In another article (2009) they explore the correlations between various measures of identity and indicators that commentators have argued to be important determinants of identity (e.g., experience of discrimination, frequency and intensity of interaction with natives). When looking at the significance of Muslim religion compared to other religions as a determinant of cultural integration, they don't find evidence justifying a binary categorization of Islam vs. other religions.

2.3 The relationship between employment discrimination and cultural distance

In theory, the causality in the relation between economic discrimination and cultural distance goes both ways: while economically discriminated individuals may themselves reject the cultural codes of the majority group and find a refuge in their ethnic community, it is also true that individuals stemming from a foreign culture may find it more difficult to understand and adapt to professional codes in the host country in order to find (and keep) a job. Empirically, causality in this relationship is difficult to estimate.

Battu et al. (2003) develops a model having in mind the United States and the relationship between whites and non-whites, but the mechanism it tries to capture is relevant to the relationship between natives and migrants in other countries. Repeating in other words the summary the authors make of their own one-

dimensional identity model, migrants must decide to adopt the natives' culture or to reject it anticipating the implications of this choice on their labour market outcomes. The model shows that the cultural integration of migrants increases their probability of getting a job, because interacting with undiscriminated natives offers them access to more performing social networks. It is therefore rational to integrate culturally. However, if utility from following ethnic peer pressure is higher than utility derived from the access to a more performing social network, migrants have an incentive not to integrate even if it results in a lower probability of finding a job. Empirical evidence of Battu et al. (2010) confirms the existence of a trade-off for ethnic minorities between sticking to their own roots and labour market success. They find that the social environment of individuals and attachments to the culture of origin has a strong association with identity choice, and that migrants, who have preferences that accord with being "oppositional" do experience an employment penalty. A small number of other empirical studies examines the relationship between ethnic identity, cultural integration and economic outcomes.[8] Pendakur and Pendakur (2005), Constant and Zimmermann (2008), Nekby and Rödin (2007) also find evidence of the effect of cultural integration on labour market outcomes in Canada, Germany and Sweden.

The studies mentioned here focus on the choice migrants make to integrate culturally or not, and on the effect of cultural integration on labour market outcomes. Yet, in their model Battu et al. (2003) assume that native social networks are more performing because natives aren't discriminated against, and in other studies there is evidence that economic discrimination is one of the main determinants of identity formation and cultural integration.[9] It is therefore surprising that these studies did not examine in more detail the effect that economic discrimination may have on cultural integration.

The contribution of this study is to examine both sides of the coin at once. In order to better understand how barriers to integration reinforce each other, this study proposes to examine the endogenous relationship between economic discrimination and cultural distance with the objective of assessing causality both ways and at the same time.

[8]Most of the research looking at identity and outcomes tends to be in the field of education and focuses on the academic achievement of African American youths.

[9]Bisin et al. (2007) find such evidence. In this study, the variable capturing discrimination is a dummy variable taking value one if the respondent had been refused a job at least once or had been treated unfairly at work with regard to promotion or a move to a better position for has been attacked or insulted in the last year for reasons to do with race or color, or religious or cultural background.

3 Data

3.1 Data and sample

The census covers 7 million individuals living in Switzerland in 2000. Sample size decreases once individuals aged less than 18 or more than 65 years old,[10] and observations with missing information on key characteristics listed in the descriptive statistics part are discarded. Table 1 shows the number of observations for natives and eight ethnic groups: Western Europe (WE), Southern Europe (SE), Eastern Europe (EE), Africa (AF), Turkey, the Middle-East and Maghreb (TMM), Latin America (LA), Asia (AS) and South and Central Asia (SCA).[11] Additionally, the split up is refined across gender, between Muslim and non-Muslim and first and second-generation migrants. Natives are defined as individuals born in Switzerland and Swiss since birth. First generation migrants are born abroad. An individual born in Switzerland, but whose first or second nationality is foreign is defined as a second-generation migrant.[12]

European migrants represent the bulk of migrant population, the most numerous being Southern Europeans, followed by Western and Eastern Europeans. Although TMM has a sizeable community, the five extra-European minorities are comparatively much smaller. The same is true for the second generation. The even larger proportion of Southern Europeans is due to the fact that Italian and Spanish migrants where the first to come to Switzerland from the 1960s on. The relative size of the second generation is a rough indicator of the length of stay of a group in Switzerland.

Turning to the religious distinction, it appears migrants declaring to be Muslim are a minority in most migrant communities, except TMM. The Muslim community from Eastern Europe, mostly from Kosovo and Bosnia-Herzegovina is also sizeable. The number of second-generation Latin American and Asian Muslim migrants, and to a lesser extent of African migrants, is irrelevant for any analysis. The size of some other Muslim groups (first-generation LA, second-generation WE, SE, AF or SCA) could be considered problematic too, but these groups are not excluded from the analysis.

3.2 Descriptive statistics

Table 2 presents descriptive statistics about the variables used in this paper. These numbers already reveal differences between population groups. Looking at the economic status of migrants, it first appears that

[10] The reasons for limiting the sample are explained below.

[11] See the general introduction for more details.

[12] A small fraction of second-generation migrants are included in the native group as some of them only have the Swiss nationality since their birth. Those who are only Swiss, but were naturalized and are of unknown origin are not included in either category.

unemployment slightly decreases for second-generation migrants compared to first-generation migrants. Men are generally more likely to be active in the labour market and to have a job, while more women are inactive. However, the pool of inactive women decreases by about 10% from the first to the second generation. Muslim migrants are on average more likely to be inactive or unemployed. As the sample covers individuals aged 15 to 65, these differences in economic status might be partly due to the lower average age of the Muslim population. It might also be related to differences in types of residence permits (see below).

Turning to education, it appears the average number of years of education is higher for men than for women.[13] Second-generation migrants are more educated compared to first-generation migrants, and come closer to the native average (12.63 years of education). Here again, age might partly explain the fact that Muslim migrants have the lowest average number of years of education, and second-generation men perform worse (9.72 years) than the first generation (10.23 years).

While 66% of first-generation and 96% of second-generation migrant men declare to speak a national language as their main language, these proportions fall to 38% and 78% among Muslim migrants. They are slightly lower for women than for men. For first-generation migrants, the fact that Muslim migrants are less likely to have one of the national languages as their main language compared to non-Muslim migrants is related to the fact that a vast majority of non-Muslim migrants come from neighboring countries and have as their mother tongue one of the Swiss national languages. This factor might partly explain the persisting difference among second-generation migrants. The proportions of migrants that speak the language of the linguistic region they are living in as their main language is slightly lower. As natives are mobile across linguistic regions in Switzerland, the proportion of natives having the language of the region they are living in as their main language is above 90%, but not 100%.

Turning to civil status and household characteristics, it appears 53% of native men (55% women) are married, a large majority of them (44%) to native women (48% for women). First-generation migrants have higher marriage rates, but these rates drop at the second generation, although less so for women than for men. Muslim migrants are more likely to be married, despite the lower average age of this population group. The rate of intermarriage with a native is 13% among first-generation men (19% for women) and slightly decreases at the second-generation (11% and 12%). It is of 7% for first-generation Muslim men, and as low as 3% for women. It is most surprising that less than 2% of second-generation Muslim migrants intermarry with natives given the high propensity of this population group to marry, even at a young age. It should also be noted that the highest divorce rates are observed among native Muslims (6% for men and 10% for

[13] In the census, the available educational variable is categorical, but de Coulon et al. (2003) propose a scale to compute the number of years of education.

women), but migrant Muslim have the lowest separation rates (1 to 3%). On average, Muslims also have more children, except for native Muslim men.

The proportion of permit holders is higher among male than female migrants, and higher among Muslim than among non-Muslim migrants. This indicates that women are more often naturalized than men, and that Muslim migration is a more recent phenomenon, which is also reflected in the lower average age of Muslim population groups.

4 Methods and specifications

Using the dataset described above, the empirical strategy to estimate the endogenous relationship between employment discrimination and cultural distance in order to assess the relevance of opposed discourses explaining migrant integration in socio-economic vs. ethno-cultural terms consists of three steps (i) measuring employment discrimination faced by Muslim and non-Muslim migrants of different origin compared to the natives (ii) computing an index of cultural distance to the natives (iii) using an instrumental variable approach to deal with endogeneity and measurement errors in order to estimate the reinforcing effect existing between economic and cultural barriers to integration.

4.1 Employment discrimination

Employment outcomes are analyzed using a simple logistic regression:

$$E_i^* = X_i'\alpha + \varepsilon_i \tag{1}$$

where E_i^* is the latent variable associated with being employed in a professional occupation. The vector X, includes the following individual characteristics: education (the number of years of education), age, age squared, number of children, as well as dummies taking a value of one if an individual is married (married), if married to a Swiss spouse (native spouse), if his main language is the language of the region where he lives (language of the region), dummies for permit types (C, B and Other), as well as the cantonal unemployment rate. The effects of these factors on employment are easy to guess. Whereas education, age and language of the region are expected to increase the probability to be employed, holding a permit and cantonal unemployment should have a negative effect. Having a Swiss spouse should positively influence the probability to be employed as it provides access to a larger social network, but being married and having

children usually has a different effect across gender: positive for men and negative for women. The choice of determinants is inspired by the analysis of migrant unemployment that Widmer (2005) made using the same data, but additionally includes information on language and nationality of the spouse. α is a vector of coefficients and ε is a vector of independent and identically distributed error terms. The probability to be employed can be expressed as

$$\begin{aligned} Prob(E_i^* > 0) &= Prob(\varepsilon_i > -X_i'\alpha) \\ &= \Phi(X_i'\alpha), \end{aligned} \tag{2}$$

where $\Phi(\bullet)$ is the standard normal cumulative distributive function (C.D.F.). In order to obtain a measure of employment discrimination, the probability to be employed is predicted twice for every individual, using the coefficients estimated for the natives (the reference group) and those estimated for his group. The difference in the probability to be employed of individual i predicted using the coefficients estimated for the reference group and those estimated for his ethnic group j is not explained by endowments, but by differences in returns to factors. This unexplained part of the differential in the probability to be employed,

$$UDE_{ij} = Prob(E_i^* > 0|X_i', \alpha_{reference}) - Prob(E_i^* > 0|X_i', \alpha_j), \tag{3}$$

is used as proxy for employment discrimination. For unemployed individuals, this measure can be interpreted as realized discrimination, whereas for employed individuals it rather represents the additional effort they needed to make to get a job compared to a native having the exact same endowments.

To estimate α_j and compute UDE_{ij}, separate regression are run over subsamples defined by generation, gender, origin and religion. Whereas differences in discrimination according to generation, gender and origin are commonly acknowledged, it remains to be seen if employment discrimination as measured by the decomposition of the probability to be employed is different for Muslim and non-Muslims. As mentioned in the literature review, evidence of religion-based discrimination has been found in other countries. No study has so far confirmed the existence of such a bias in Switzerland, but the acceptance by a majority of voters of the minaret ban in 2009 hints to the existence of strong anti-Muslim feelings. It would be surprising if interactions in the labour market were fully immune of such a strong and socially widespread phenomenon. The analysis excludes individuals that don't participate in the labour force, individuals aged less than 15 years (youngest age to work in Switzerland) are excluded, as well as men aged over 65 and women aged over 62 years (pension age in Switzerland in 2000).

4.2 Cultural distance

As mentioned in the introduction, the concept of cultural distance has been used in the formulation of Swiss migration policy in order to classify entire countries as more or less culturally distant from Switzerland. This may be useful from a political or administrative point of view, but is not suited to examine the research question. The literature review emphasized the lack of consensus about the way to define and empirically measure cultural distance, as well as the variety of proposals advanced so far. All of them can be the subject of a debate. The first step in building the dissimilarity index chosen for this study consists in a simple logistic regression

$$B_i^* = Y_i'\beta + \mu_i \tag{4}$$

where B_i^* is the latent variable associated with being born in the host country, i.e., Switzerland. Following Vigdor (2009), the vector Y includes factors, which are considered as marking a cultural difference between migrants and natives in social sciences: ability to speak the national language, being married to a native, number of children and marital status. While adopting the language of the host country as one's main language is a prerequisite for cultural integration, and being married to a native represents the incorporation of an individual into a native social network, the role of the two last factors as a catalyst for cultural integration is less obvious. However, like the two first factors, they remain potential markers differentiating individuals born in Switzerland from those born abroad. Vector Y also includes information on age and gender.

There are several reasons for including objective indicators only in the measure of cultural distance, and excluding information on subjective attitudes. First, this is the solution that Vigdor (2009) proposes. Secondly, the census 2000 only contains information on objective indicators. The third reason is more complex and related to the tentative of setting a reference point when defining/measuring cultural distance. As illustrated by the political debate around the preparative text (Arbenz report) that led to the definition of the three circles migration policy, defining differences between cultures in terms of values often can easily lead to a "clash of cultures" worldview sometimes bordering on racism. As an example, the Arbenz report considered that migrants from some countries "don't belong to the same culture marked by European ideas in the broad sense" and that, as a consequence, "they cannot be integrated." The Federal Commission against Racism (CFR, 1996) made a thorough criticism of implicit assumption that the European culture is more advanced, creating impassable barriers between different cultures. This commission also stressed the religious

bias against countries majoritarily populated by Muslims that had slipped into the definition of the circles, asking why all of them were relegated into the third circle although some of them were located in Europe. Furthermore, concrete issues occur when trying to set a reference point for a cultural distance index. As an example, such an index may easily integrate information on values regarding gender equality, because, as has been shown by Gianni et al. (2005) or in Kohler (forthcoming), migrants living in Switzerland seem to have more conservative attitudes in this regard. However, it also appears that many of them are more attached to democracy or human rights than the natives are. If information about such attitudes was included in the measure of cultural distance, would it make sense to consider an individual whose attachment to democracy is higher than the native average as culturally more distant? Such a paradoxical situation illustrates that although the measure of cultural distance proposed by Vigdor does attribute less weight to indicators that do not significantly distinguish migrants from natives, it is not an inherently neutral measure, and the meaning of the measure is a function of the variables included in the index. As a consequence, it may be better to avoid using information about subjective attitudes in such a measure.

Only one regression is run over the sample of individuals aged 25 to 65, with different coefficients allowed across gender for certain variables. The sample is thus different from the sample used to estimate employment discrimination: it includes inactive individuals that are not in the labour market; and it excludes individuals aged between 15 and 25 years old. The higher minimum age that is proposed by Vigdor (2009) can be justified by the possibly yet incomplete socialization process of young individuals still living with their family. For instance, a second-generation migrant living with his parents may be more enclined to declare that his main language is the language spoken at home, although this may change in his adult life.

In a situation where the age and gender composition of the migrant population would be very different and have a strong effect in distinguishing individuals born abroad from those born in Switzerland, it would be possible to implement a procedure to net-out the effect those factors have on the estimated probability. A transformation of the estimated probability allowing to net-out such effects is derived in appendix.[14] μ is a vector of independent and identically distributed error terms. The probability to be born in Switzerland can be expressed as

$$\begin{aligned} Prob(B_i^* > 0) &= Prob(\mu_i > -Y_i'\beta) \\ &= \Phi(Y_i'\beta), \end{aligned} \tag{5}$$

[14] In the section presenting the results, it will appear that the effect of age and gender is not strong enough to justify implementing the alternative procedure.

where $\Phi(\bullet)$ is the standard normal cumulative distributive function (C.D.F.). In order to obtain a measure of cultural distance, the probability to be born in Switzerland is predicted for each individual using the same coefficients. This predicted probability is then substracted from the average predicted probability of natives to be born in Switzerland. Let S_i be a dummy taking a value 1 if individual i is a Swiss native, so that

$$CD_i = \frac{\sum_{i=1}^{n} Prob(B_i^* > 0|S_i = 1)}{\sum_{i=1}^{n} S_i} - Prob(B_i^* > 0|Y_i'), \tag{6}$$

can be used as a proxy for the cultural distance to the natives of individual i. Following Vigdor (2009), the sample used to estimate CD_i includes all individuals aged 25 to 65.

4.3 Employment discrimination and cultural distance: an instrumental variable approach

Once employment discrimination and cultural distance are estimated, it is possible to examine how the group averages of these two measures correlate at the aggregate level. A correlation analysis can provide a first hint about the relationship between these two variables, but it needs to be confirmed or invalidated by evidence at the individual level.

As causation is reverse between employment discrimination and cultural distance, an ordinary least square (OLS) estimator will be biased. One solution to obtain a non-biased estimator of the effect of employment discrimination on cultural distance and vice-versa is to use the instrumental variable (IV) approach. The intuition is that in a model where $y_i = \beta x_i + \epsilon_i$, if the regressors are correlated with the error term, then the OLS estimator will be biased.[15] However, if there exists a variable z that is (i) correlated with the endogenous regressor x, but (ii) not with the independent variable y, it is possible to net out the part of x that is caused by y by using the value of x predicted using z instead of the actual value of x in the initial model in order to obtain a non-biased IV estimator.[16] The instrumental variable approach thus provides non-biased estimates in the presence of endogeneity, which can arise from omitted variables, measurement errors in the covariates or reverse cauasation.[17]

Instrumenting for the endogenous regressors in the context of this study, the two following equations are

[15] Formally, if $E[x'\epsilon] \neq 0$, then $\hat{\beta}_{OLS} = \frac{x'y}{x'x} = \frac{x'(x\beta+\epsilon)}{x'x} = \beta + \frac{x'\epsilon}{x'x}$ and $\hat{\beta}_{OLS} \neq \beta$.

[16] If $z'\epsilon = 0$ by assumption, then $\hat{\beta}_{IV} = \frac{z'y}{z'x} = \beta + \frac{z'\epsilon}{z'x}$.

[17] This is the intuition behind the two-stage least squares instrumental variable method. See Greene (2003) for more details and extensions.

estimated:

$$CDi = \delta * UDE_{ij} + \lambda * Z1'_i + \nu_i \tag{7}$$

$$UDE_{ij} = \kappa * CD_i + \theta * Z2'_i + \omega_i \tag{8}$$

where δ represents the effect employment discrimination on cultural distance, and κ captures the effect of cultural distance on employment discrimination. The vector of exogenous regressors $Z1_i$ and $Z2_i$ contain a limited set of common variables, including linguistic region dummies and the proportion of same-origin-group individuals in the canton. Variables used to instrument for employment discrimination are also included in vector $Z1_i$ in the regression where employment discrimination is the dependent variable.[18] The same applies to $Z2_i$ the regression on cultural distance. λ and θ are coefficient vectors. ν and ω are error vectors.[19]

The instrumental variable method requires only one instrument per endogenous regressor. However, at least two instruments are necessary to conduct tests confirming the exogeneity of the instruments (Sargan/Hansen tests). Two instruments are therefore proposed for each endogenous regressors. For all four instruments, it is necessary to verify that it is (i) influencing the endogenous regressor (ii) without directly influencing the dependent variable. Furthermore, in order to be a perfect instrument, the indirect influence of the instrument on the independent variable should be channeled entirely through the endogenous regressor.

4.3.1 Instrumenting for employment discrimination

Skin color: (i) Skin color is an obvious marker likely to influence employment discrimination. In many societies, dark skin individuals have been and still are discriminated. Switzerland is no exception. Results of the decomposition of the probability to be employed (see results section) will confirm that individuals with darker skin color still face more intense discrimination in the Swiss labor market. (ii) Skin color, however, has no direct impact on cultural distance. The genetic factors determining the skin color of a migrant do not determine his ability to adopt a certain language as her main language or to intermarry with a native. As a matter of fact, African migrants living in Switzerland are more likely to speak one of the national languages as their main language or to intermarry with natives than other migrants (see first paper). It could be argued that skin color also indirectly affects cultural distance, but through other channels. It is true that dark skin individuals might get rebuffed when attempting to enter a night club, but looking at

[18] Instruments are presented below.

[19] It should be noted that, alternatively, equations 7 and 8 could be estimated as a system. Results of the simultaneous estimation of both equations provide very similar results to the ones presented in this paper. Each equation is estimated separately, because it is then possible to conduct various tests to assess the quality of the proposed instruments.

the big picture, only two (non-family) institutions really matter for the socialization of individuals: school and the labour market. Whereas skin color-based discrimination is at best a marginal issue in the former environment that is usually considered as progressive (and only concerns second-generation migrants), it is acknowledged to be a problem in the latter (for all migrants). It therefore seems the effect of skin color is channeled to cultural integration through economic discrimination only. The skin color variable is built using the human skin color distribution map designed by the Italian geographer Renato Biasutti and based on von Luschan's chromatic scale, by assigning a value between 1 (clearest) and 8 (darkest) to each observation according to its origin.[20] It is averaged for each of the eight origin regions. The value associated with the skin color of each individual is thus a function of his origin.[21]

Cantonal policy to fight against xenophobia: (i) Policies to fight against xenophobia target the natives in order to foster a better understanding among communities and attenuate existing discriminations. This in turn facilitates the integration of migrants in the host society. (ii) As policies to fight against xenophobia do not directly target migrants, they do not directly affect the measure of cultural distance. As for the previous instrument, it is possible to imagine a situation where such policies could affect cultural distance by reducing other kinds of discrimination than economic discrimination. For example, if a migrant is barred from entering a night club, he might develop bad feelings against natives or an "oppositional" attitude against their culture. It is however important to keep in mind the big picture that was mentioned in relation to the previous instrument and how cultural distance is measured. After all, do most couples not meet at the workplace? And are most daily conversations not held at the workplace? Employment discrimination is therefore again considered to be the only channel through which such policies affect cultural distance. More importantly, it remains to be seen if such policies have an impact at all. This policy variable is built using the typology developed by Cattacin and Kaya (2001). In their comparative study of integration policies at the local level in Switzerland. The authors classify the 26 Swiss cantons in two categories: active/passive in "leading campaigns to sensibilize the public to cultural diversity and fight against racism and xenophobia." This categorization is based on the assessment of the extent to which cantons are involved in/support the organization of events like the National Day of Refugees or activities to increase public awareness about foreign cultures and ethnic diversity.

[20] The map is available in Barsh (2003).

[21] The measurement and mapping differences between human population groups began in the 19th century, with the work of anthropologists and geographers often inspired by racists ideologies (Winlow, 2006). The use of a skin color scale variable in the context of this paper is an artifact, and is not intended to legitimate this tradition of thought.

4.3.2 Instrumenting for cultural distance

Official language in the origin country: (i) If the origin country of a migrant and Switzerland share a common official language, it is likely he has been exposed or has learned this language. As a consequence, this variable is likely to directly influence the measure of cultural distance. (ii) However, the fact that the origin country of a migrant and Switzerland share a common official language, even if it may improve the probability that an individual is employed, does not influence employment discrimination, i.e., differences in returns to factors determining the probability to be employed. This variable is built using publicly available information about official national languages across the world.[22]

Cantonal policy on naturalization: (i) Academic research has found evidence that facilitated naturalization procedures positively influence attitudes of migrants towards the host country as well as their cultural integration (Fibbi et al., 2005; Mey and Rorato, 2010). It is therefore plausible that an individual that is offered the opportunity to acquire the nationality of the host country is more likely to adopt the official language of that country as his main language than an individual who is deprived from this perspective. Variations in cantonal naturalization policies may thus have a positive impact on the proposed measure of cultural distance. (ii) Such policies do however not directly influence how migrants are discriminated when looking for a job. This policy variable is built using the typology developed by Cattacin and Kaya (2001). In their comparative study of integration policies at the local level in Switzerland, the authors classify the 26 Swiss cantons according to their liberal/restrictive naturalization policy. This categorization is based on the assessment of five binary criteria (i) the existence of a fast-track procedure (ii) the possibility to challenge the official decision (iii) the fact that naturalization is considered a right (iv) whether the duration of residence in the canton is short and (v) whether the criteria used in the naturalization procedure are stringent or not.

4.3.3 Three estimators

Three different estimators are used to estimate parameters in equations 7 and 8: OLS, IV two-stage least squares (2SLS) and IV general methods of moments (GMM) allowing for clustered errors within origin groups. Allowing for clustered standard errors might address potential issues arising from the fact that origin is used in measuring employment discrimination and in building the skin color variable. Four sets of separate regressions are run on women and men of the first and second generation.

Ideally, a model to investigate the relationship between economic discrimination and cultural distance would allow non-linear effects and estimate causality over time. While it is possible to add squared endoge-

[22] German and Italian are official languages in only a handful of countries. For French, see http://www.francophonie.org.

nous regressors in equation 7 and 8, cross-sectional evidence about the effect of employment discrimination on cultural distance (and vice-versa) is the best that can be obtained with census data.

5 Results

5.1 Employment discrimination

Tables 3 to 6 show the results of the estimation of the probability to be employed (equation 1) for men and women of different generation, origin and religion. Human capital is taken into account and has a positive effect on it. For most groups, education raises the probability to be employed. In comparison to natives, the magnitude of the effect is often stronger for first-generation migrants, but weaker for second-generation migrants. These results seem to weaken the argument about the non-transferability of human capital and strengthen the claim that employment discrimination is at work on the Swiss labor market. Indeed, if human capital was non-transferable across countries, returns to education of first-generation should be lower. And if there were no discrimination, second-generation should experience similar returns to education as natives. Widmer (2005) draws the same conclusion. The fact that he uses three dummies for categories of educational achievement instead of a continuous variable allows him to go into a more detailed analysis. The other human capital characteristic, speaking the language of the region as one's main language, has a positive effect too.

For men, being married and having children increases the probability of being employed, while the opposite is true for women. However, being married to a native increases the likelihood of having a job, which supports the hypothesis that the integration in a native family and tapping into its social network facilitates the mobilization of resources when it comes to looking for a job. First and second-generation migrants who have received the Swiss nationality have better chance to be employed than those still holding a permit.[23] Finally, a higher proportion of unemployed individuals in the canton negatively affects the probability to be employed. These results are also consistent with those obtained by Widmer (2005). They are displayed for the sake of transparence, but not commented further here, as the number of groups considered is large and the focus of this section is the unexplained part of the probability to be employed.

Table 7 reports summary statistics of all the regressions. Since the purpose is not to compare the goodness-of-fit of different specification for a given sample, the pseudo R-squared of these logistic regressions can't be compared to each other and only have an indicative value. The chi-squared statistic allows to test whether the model proposed is better than a random walk. The p-values of F tests indicate that the null

[23]Permit C is a permanent residence permit, permit B is an annual work permit.

hypothesis that all coefficients in the model are simultaneously zero can be rejected in most cases with a high level of confidence. However, the iterative estimation process could not converge for several small samples (second-generation Muslim women from WE, AF, LA, AS and SCA as well as second-generation Muslim men from SE, LA and AS) or many determinants dropped due to collinearity (second-generation Muslim WE and SCA men, second-generation Muslim).[24]. Furthermore, the null hypothesis cannot be rejected with a 1% level of confidence for some other groups for which the procedure did converge (native Muslim women, first-generation Muslim women from WE, LA and AS; second-generation women from LA and second-generation Muslim women from SE; first-generation Muslim men from LA; second-generation men from AF, TMM, LA and second-generation Muslim men from WE and AF).

Based on these estimations, table 8 reports the average value of the unexplained part of the probability to be employed for each population group. Average UDE_{ij} for each group j are also graphically represented in figure 1. According to these estimates, migrants seem to be at a disadvantage in the labour market, and Muslim migrants seem to be doubly disadvantaged for their origin and for their religion. A first-generation female African migrant, for instance, has -13.1% chance of being employed compared to a native with similar characteristics, and if she were also Muslim, the employment probability gap grows to -24.3%.

It is true that census data doesn't provide information on the number of years spent by an individual in Switzerland, and that this matters in the labour market. This is an important issue as Muslim migration is a rather recent phenomenon. The more intense employment discrimination faced by Muslim migrants, however doesn't disappear in the second generation. The only exception concerns second-generation males from TMM. For this group, the discrimination related to origin still exists, but not the one related to being a Muslim. On possible explanation could be that, facing difficult circumstances in the labour market, young Muslims turn to self-employment working for small family businesses (restaurants, grocery shops, etc.) as has been observed in Germany (Constant and Zimmermann, 2006).

The stronger discrimination faced by female migrants could be explained by the fact that their decision to migrate is more often related to family reunion. As a consequence, many of them have to look for a job once they are in Switzerland. In contrast, male migration is more often triggered by a concrete job opportunity. A higher number of men therefore have a job when they arrive in Switzerland and don't have to look for one. This interpretation is also consistent with the fact that differences across gender dampen among second-generation migrants.

There are other ways to estimate employment discrimination faced by migrants and it is interesting to

[24]Summary statistics are shown for these groups, but regression results are not showsn in table 4 and they don't appear in figure 1.

compare different measures of discrimination. An alternative method is to include origin dummies in a regression estimating the probability to be employed of all individuals active in the labour market. As this method does not measure differences in returns to factors, but the effect of origin on the probability to be employed after controlling for individual characteristics, it is more relevant to call this measure "employment penalty" rather than "employment discrimination." Results of this method applied to the same sample are graphically represented in figure 2. Although there are differences, both approaches provide estimates that are quite close and lead to a conclusion that migrants are discriminated in the labour market, along ethnic as well as religious lines.

Pratice testing is yet another method to estimate employment discrimination. This method consists in having two fictitious candidates, who differ only in their name and country of origin, send two letters of application for job vacancies advertised in the newspapers. Qualifications, experience, sex, age, and all the employability criteria are identical. There is inequality of treatment when one candidate is refused and the other invited to a job interview. Fibbi et al. (2005) conducted such a study for a limited number of second-generation male migrants living in Switzerland and found much higher estimates of employment discrimination.[25] Portuguese and Turks migrants are respectively 9.6%, 30.1% less likely be invited to a job interview than a native. Migrants from former Yugoslavia face a discrimination level of 23.5% in the Latin region and to 59.4% in the German region. In table 8, estimates of employment discrimination for second-generation Southern European, Turks and Eastern Europeans are much lower: 0.7%, 7.2% and 3.7% respectively. The ordering, however, is respected. The difference in the magnitude of the estimated level of employment discrimination is caused by the fact that most migrants facing employment discrimination will prefer to accept a job involving less prestige and a lower pay rather than remain unemployed, resulting in a kind of forced "self-selection" of migrants into lower category occupations. A decomposition of the probability to be employed is blind to this phenomenon. As a consequence, the method used in this study provides a very conservative measure of employment discrimination.

5.2 Cultural distance

Table 9 shows the results of the estimation of the probability to be born in Switzerland. Language is the strongest predictor. Having a national language as one's main language increases by 79% the probability to be born in Switzerland. Being married increases by about 40% the probability to be a first-generation

[25] In the ILO methodlogy used in their study, employment discrimination is defined as the ratio between the number of positive answers given to the foreign applicant minus the number of positive answers given to the Swiss candidate and the number of total valid observations.

migrant, while being married to a native decreases it by 40%. First-generation migrants are more likely to be divorced or widowed than individuals born in Switzerland by about 10%. The effect related to the number of children is very weak. The strongly negative log likelihood statistics confirms the relevance of the model.

The cultural dissimilarity measure proposed by Vigdor (2009) has the advantage of not arbitrarily weighting factors composing it. As a consequence, the cultural distance index, CD_i, is dominated by language and intermarriage. The influence of other factors is comparatively marginal. On the one hand, the dominance of these two factors is interesting as it reveals the marginality of other variables in distinguishing individuals born in Switzerland from those born abroad. On the other hand, the limitations it implies for the meaning of the cultural distance measure should be kept in mind when interpreting the results.

The average cultural distance of each population group is displayed in table 10 and represented graphically in figure 3. Among first generation migrant men, WE migrants are closest to natives, followed by SE, AF and TMM migrants. EE, LA, AS, and SCA migrants have lower average index values. First-generation female migrants are similar, but the ordering is different, as AF and TMM migrants have higher index values than SE migrant women. In all origin groups, Muslim migrants are slightly more distant from natives than other migrants, except for the other SCA migrants, who happen to also have the largest average cultural distance among all groups.

Second-generation migrants all progress compared to the first generation. The average index value of those most distant from the natives at the first generation generally increases most. Among non-Muslim migrants, distance shrinks most for Eastern Europeans migrants and, among Muslim migrants, all non-European groups progress even more. Overall, migrant women seem to be culturally slightly stickier than men. Furthermore, although the cultural distance to the natives shrinks for second-generation migrants in comparison to the first generation, the gap between Muslims and non-Muslims migrants slightly increases, especially for Muslim women. As an example and in contrast to non-Muslim Eastern European migrants, Muslim women from this region have the worst score among all second-generation migrants and progress relatively little compared to the first generation. While such differences in outcome may partly be explained by cultural factors, it might also be caused by other factors, including economic discrimination as will be shown later.[26]

[26]The outlier in the fourth panel of figure 3 (Muslim AS women) can be explained by the very small size of this group (3 observations, see table 1). In such a small sample, it can occur that the characteristics pushing up the average index score (in this case, the fact of being married with a native) are more concentrated than in the native population itself.

5.3 Employment discrimination and cultural distance: an endogenous and asymetric relationship

5.3.1 (i) At the aggregate level

Figure 4 represents the correlation between average employment discrimination and cultural distance measured in the two previous sections.[27] The trends and confidence intervals are set without taking natives into account. As the employment penalty of natives is null and their average cultural distance index value is naturally the highest, the reference group is an outlier that shouldn't be included.

Several patterns appear in the distribution of correlation points in figure 4. First, most correlation points belonging to Muslim groups lie below the correlation trend line in all four panels of figure 4. This should not come as a surprise as it directly derives from results obtained in the two previous sections: in comparison to a non-Muslim migrant with the same cultural distance score, a Muslim migrant faces higher employment discrimination in the Swiss labor market.

Secondly, correlation points of the first generation are more dispersed than those of the second-generation. The same is observable for men with respect to women. The fact that most correlation points lie within the 95% confidence intervals in the panel for second-generation women indicates that the relationship between employment discrimination and cultural distance may be statistically most consistent for this particular population group.

Finally, the slope of the trend lines may provide an intuition about the elasticity of cultural distance with respect to employment discrimination (and vice versa). Overall, it seems that a small reduction in employment discrimination is matched by a larger change in cultural distance. Furthermore, the steeper slopes observed in female panels hint to the possibility that the cultural integration of women is less influenced by the intensity of employment discrimination than it is the case for men, whose cultural integration is more dependent on fair access to jobs. Keeping in mind how the measure of cultural distance is constructed, this might also be related to the higher intermarriage rate of female migrants in comparison to men. In any case, given the endogeneity of the relationship, such a hypothesis needs to be verified at the individual level using an instrumental variable approach.

[27] In figure 4, Muslim origin labels are in minor case appended with "$_m$."

5.3.2 (ii) At the individual level

Tables 12 and 13 contain results of the instrumental variable approach used to estimate the endogenous relationship between economic discrimination and cultural distance. Table 12 presents the results of the estimated effect of employment discrimination on cultural distance, and table 13 the results of the estimated effect of cultural distance on employment discrimination. Both contain two panels: Panel A with structural (second-stage) coefficients associated with the endogenous regressor and Panel B with reduced form (first-stage) coefficients associated to instruments. In each panel, results are shown separately for men and women of the first and the second generation in order to enable comparison. Three different estimators are presented for each relationship: OLS, IV 2SLS and IV GMM allowing for clustered errors within origin groups.

Summary statistics report the number of observations, a goodness of fit measure (R-squared) and an assessment of the relevance of the model against a random walk (F test). Additional statistics are reported in order to gauge the relevance of the proposed instrumental approach and of the instruments: the p-value of the Sargan/Hansen overidentification test of all instruments; the weak identification Cragg-Donald Wald F statistic/Kleibergen-Paap rk Wald F statistic together with a benchmark (i.e the critical values established by Stock and Yogo). Other complementary results like the value of the F test of excluded instruments and its p-value as well as the p-value of an underidentification test are commented in the text, but not reported in order to avoid overloading results tables.

The steps followed to assess results of the instrumental variable approach consist in first looking at the F test of excluded instruments, which is a test of weak identification of endogenous regressors. It is constructed by partialling-out linear projections of the remaining endogenous regressors. Like other F tests, it allows to reject (or accept) the null hypothesis that including the instruments in the model does not lead to a better statistical fit. A rule of thumb is that if the value of the F test is larger than 10, then instruments are good.

The Sargan/Hansen test is a test of overidentifying restrictions. The joint null hypothesis is that the instruments are valid instruments, i.e., uncorrelated with the error term, and that the excluded instruments are correctly excluded from the estimated equation. A rejection casts doubt on the validity of the instruments. It is therefore desirable that the null hypothesis can't be rejected with a high level of confidence. A p-value>0.1 is usually considered satisfactory.

Finally, even when the Sargan/Hansen test is passed successfully, it might be that the estimated equation is underidentified or that weak instruments introduce a bias in the estimation of the effect of the endogenous regressor. The first issue is addressed through a Lagrange Multiplier (LM) test of the null hypothesis that the equation is underidentified, i.e., that the excluded instruments are not relevant, meaning not correlated

with the endogenous regressors. Stock and Yogo (2002) have developed a method to address the second problem. By comparing the Cragg-Donald Wald F statistic or the Kleibergen-Paap Wald rk F statistic to the critical values calculated by Stock and Yogo, it is possible to estimate the bias that might be introduced by weak instruments. The critical values they established for one endogenous regressor and two instruments are the following:

10% IV size bias = 19.93;

15% IV size bias = 11.59;

20% IV size bias = 8.75;

25% IV size bias = 7.25.

As an example, even if the first-stage F test of excluded instruments is strong, a Cragg-Donald Wald F statistic of 15 is still introducing a bias of 10% to 15% in the measure of the effect of the endogenous regressor.

Reduced form: Looking at first-stage results (Panel B in both tables), it appears that variables proposed to instrument for employment discrimination (skin color, cantonal policy to fight against xenophobia) and cultural distance (official language in origin country, cantonal naturalization policy) all have the expected sign. Cantonal policy variables are more often statistically not different from zero than the two other instruments. This is not surprising as cantonal policy variables can only be expected to have a weak effect through the difference in proportions of well/weakly integrated or more/less discriminated migrants living in Swiss cantons.

Instrument coefficient variations across generations and gender also provide some insights. The effect of skin color as a determinant of employment discrimination is stronger for female compared to male migrants, but it plays a lesser role for second-generation migrants. The same can be observed for cantonal policy to fight xenophobia. These decreasing effects could mean that those variables matter less for men or for second-generation migrants, but it is also because measured employment discrimination is smaller for men and second-generation migrants that the estimated effect is smaller. That said, while the effect of the cantonal policy to fight xenophobia is indeed positive but infinitesimal, being of dark skin color remains a strong factor of discrimination among second-generation migrants. Concretely, it increases the unexplained employment probability gap by 9.66% for women, and by 3.42% for men.[28]

Turning to variables used to instrument for cultural distance, it appears that the cultural distance score of

[28] As the skin color scale goes from 1 to 8, and the highest value attributed to AF and SCA migrants is 7, multiplying the coefficients estimated for skin color (in panel B of table 12) by 7 provides an estimate of the employment discrimination increase due to skin color.

a migrant improves if Switzerland and his origin country share a common official language. While, this factor matters less for second-generation migrants, the effect of cantonal naturalization policy is more important for them. This variable remains a feable determinant of cultural distance, but it is remarkable that its effect increases when the dependent variable (cultural distance) is on average smaller for second-generation compared to first-generation migrants. As both independent variables are dummies and the measure of cultural distance in this last part is normalized (see table 11), coefficients can be readily interpreted.[29] As an example, if a second-generation female migrant (see regression 12 in table 13) originally comes from a francophone country, this reduces the cultural distance separating her from natives by 12.4%. If the canton in which she resides has a liberal naturalization procedure, this reduces the cultural distance by 1.42%.

Common factors (not reported here for the sake of simplicity) also provide an interesting insight. Dummies for the French and Italian-speaking regions have a positive and significant effect on both cultural distance and employment penalty. This seems to indicate that migrants are better integrated and less discriminated in the Latin parts of Switzerland. While it might be argued that the learning the Swiss German dialect represents a bigger hurdle to cultural integration than learning French or Italian, it is difficult to find such an argument to explain the seemingly higher employment discrimination in the German-speaking region. Other practice testing studies have also found that discrimination according to origin is higher in the German part of Switzerland (Fibbi et al., 2006), but this study is not designed to address this question. The proportion of same-origin individuals in the canton also has a positive and generally significant effect on employment discrimination, and a negative effect on cultural distance. This could mean that while ethnic networks might be helpful in searching for a job, a stronger density of same-origin migrants also reinforces intra-group interactions, including the preservation of origin country language and endogamous marriage.

Structural form: Several observations can be made when comparing the results of OLS with the second-stage of the IV 2SLS and IV GMM estimations in the upper panels. First, while IV estimates seem to converge, OLS estimates vary more in magnitude and sometimes even have the wrong sign, which indicates that there is a bias caused by endogneity.[30] Second, in comparison to robust standard errors, allowing for robust and clustered standard errors within origin groups (IV GMM) weakens the statistical significance of estimated coefficients.

As is readily visible, most tests don't pose any problem in table 13, whereas test results are less clear-cut

[29] Once normalized, an increase by one unit in cultural distance can be interpreted as the difference existing between the individual that is culturally most distant from the average non-Muslim Swiss national (an individual in an endogamous couple who doesn't speak one of the official Swiss language as her main language) and the individual that displays the exact same cultural characteristics as an average representative belonging to the reference group.

[30] See the negative coefficients in the regressions made on second-generation male samples.

in table 12. It appears second-generation women are the only group for which the statistical significance of the estimated coefficient and the relevance of the proposed instrumental approach can be established both ways (regressions 11, 12, 23, 24).

Starting with second-generation women in table 12, it appears that all tests are fine in regression 11. When error terms are clustered in regression 12, the p-value of the F test of excluded instruments remains good (0.01), the p-value of the underidentification test is a bit high (0.13), and the value of the Kleibergen-Paap Wald rk F statistic (7.36) indicates there is a bias in the estimated coefficient of about 25%. Even with this bias, the IV estimate remains informative as the coefficient (3.693) is about twice as large as the one estimated by OLS (1.824).

For other groups, the IV estimate is also larger than the OLS estimate (for second-generation men, the estimated effect even turns from negative to positive), but one of the tests always fails. In regressions 3, 6 and 9 the coefficients are insignificant. In regressions 2 and 5 allowing for clustered errors, the Hansen test is not good, but it is close to pass in regression 8 for second-generation men.

These mixed results could be interpreted as a challenge to the claim that employment discrimination influences cultural distance, but it is more likely to reflect the difficulty of finding a perfect instrument in this context to obtain a non-biased estimate using the instrumental variable approach. A strict interpretation of tests results would be that employment discrimination hinders the cultural integration of second-generation women, but not of second-generation men. There is however no reason to believe that the existence of such an effect is gender-specific. In this situation, it is more realistic to point out the limitations of the proposed method, than to assume that results faithfully mirror a complex reality, which remains difficult to approach with quantitative tools.

The magnitude of the IV estimates should be interpreted as local average treatment effects rather than average treatment effects (Imbens and Angrist, 1994). In other words, an IV estimate only reveals the effect for the subpopulations that are most affected by observed changes in the instrument. As a consequence, the estimated effect of employment discrimination on cultural distance is only revealed for dark skin subpopulations.

Table 14 shows the results of a simple comparative statics exercise were UDE_j or CD_j to vanish or to increase by one standard deviation SD. The first part of table 14 shows that the cultural distance score of representative individuals from dark color skin groups first-generation migrants would be only moderately affected, were employment discrimination to disappear ($UDE_j = 0$). Most second-generation migrants would, however, reach a score of about 2 and close the cultural gap. For several groups (second-generation

Muslim men) the disappearance of employment discrimination leads the cultural distance score to exceed the maximum value of 2. Such unrealistic outcomes can easily occur in simple linear models. For comparison, the last column illustrates a less dramatic scenario were UDE_j would not disappear, but change by one standard deviation.

Turning to estimates of the effect of cultural distance on employment discrimination in table 13, it appears that the significance of the effect is established in all regressions without clustered errors. When clusters are introduced, the p-value of underidentification tests increases above 0.1, except for first-generation women. The value of the F test of excluded instruments however remains above 10 for all groups, and the estimate of the effect for second-generation men is the only to suffer from a weak instrument bias (of 15%).

As the main instrument is a dummy taking a value of 1 when the origin country of the migrant shares a common official language with Switzerland, no population group is more affected by a change in the instrument than any other group. The comparative statics exercise in table 14 shows the change in employment discrimination if cultural distance were to vanish ($CD_i = 0$). As the average measured employment discrimination is already very low, most groups end up with positive employment discrimination. First-generation Muslim migrants are the only exceptions. This unrealistic outcome again highlights the limitations of this simple linear model and the caution necessary when interpreting the results. In the last column, the more moderate scenario of a one standard deviation increase in cultural distance provides more reasonable results.

After having looked separately at results in tables 12 and 13, it is possible to make several comments about the magnitude of estimated coefficients across tables. Firstly, given that the measures of employment discrimination and cultural distance both span over a space of approximately 1 (see table 11), the effect of employment discrimination on cultural distance (that is estimated to range from 1.07 to 5.745) seems larger than the reverse effect (that is estimated to range from 0.0261 to 0.192). However, as already mentioned, IV estimates can be interpreted as local average treatment effect, not as average treatment effects, and they are non-biased only for the subpopulation most affected by changes in the instrument, not for the whole sample. In the current context, these results for instance indicate that, for second-generation African women, the negative effect of employment discrimination on cultural distance is stronger than the reverse effect. In that sense, economic discrimination is a stronger impediment to their integration than cultural distance is. But the specificity of the instrumental variable approach doesn't allow to consider this explanation as valid for the whole sample or for subpopulations that do not experience any change in the instruments (for instance EE migrants).

Secondly, table 11 also shows that, although the measures of employment discrimination and cultural

distance both span over a space of approximately 1, observations are more densely regrouped in the former, which has a smaller standard error. As mentioned previously, the method employed to measure employment discrimination is very conservative, because it is blind to the channeling of migrants (or "self-selection" of migrants) into lower-pay or lower-prestige occupations. As a result, measured employment discrimination is low for many migrant groups. With a measurement method considering the self-selection of migrants into lower-pay and lower-prestige occupations as part of employment discrimination, the distribution of the employment discrimination would be more dispersed. With a less conservative measure of employment discrimination, the estimated effect on cultural distance would probably be less pronounced.

Despite the limitations of the methodology proposed in this study, the results obtained through the instrumental variable approach allow several observations that are interesting from a policy point of view. First, the relationship between employment discrimination and cultural distance is indeed endogenous, and it is necessary to take reverse causation into account when discussing it. Secondly, the reinforcing effects between employment discrimination and cultural distance are stronger for second-generation migrants in comparison for fist-generation migrants. Finally, it seems that the effect of employment discrimination on cultural distance is dominating the one cultural distance exerts on employment discrimination, at least for subpopulations for which the IV estimates can be interpreted. These findings are interesting as they indicate that a policy aiming at integrating migrants should pay special attention to achieve a level playing field and uphold equal employment opportunities for migrants, especially second-generation migrants.

It should be noted that these findings are robust to changes in the measure of employment discrimination and cultural distance as well as changes in sample composition. Similar results not shown here can be obtained using a measure of employment penalty[31] or an alternate measure of cultural distance.[32] Excluding groups for which the p-value of the F test in table 2.7$>$ 0.01 from the sample doesn't affect the results significantly. Neither does excluding from the sample migrants originating from neighbouring countries. Ideally, different instruments and covariates should be included in order to test various specifications. However, it is very difficult to make an argument for including further covariates available in the census in the proposed specification. Furthermore, it is difficult to find instruments satisfying the required conditions in a context where instruments, endogenous regressors and independent variables are linked in a complex web of relationships.

[31] As mentioned earlier, employment penalties can be estimated by including origin dummies in a regression in the whole sample rather than comparing returns to factors across subsamples. As a consequence, all migrants belonging to one group suffer the same employment penalty.

[32] As mentioned above and detailed in the appendix, it is possible to net-out the effect of non-cultural factors like age or gender from the cultural distance index. However, if these effects are negligible, it is more intuitive to keep it simple and avoid transforming an index that still requires careful interpretation.

6 Discussion

The main findings of this investigation into the relationship between economic discrimination and cultural integration of migrants in Switzerland can be summarized as follows:

- Evidence at the aggregate level
  - Population groups facing higher employment penalties are culturally more distant from the natives.
  - Muslim communities are no different in this regard: their specificity relies more in the stronger discrimination they face in the labour market than in the "cultural distance" separating them from natives.
- Evidence at the individual level
  - The relationship between economic discrimination (as proxied by employment discrimination) and cultural integration (as proxied by "cultural distance") is indeed endogenous, and it is necessary to take reverse causation into account when discussing it.
  - The reinforcing effects between employment discrimination and "cultural distance" are stronger for second-generation migrants in comparison for first-generation migrants.
  - The effect of employment discrimination on "cultural distance" is dominating the one "cultural distance" exerts on employment discrimination, at least for subpopulations for which the IV estimates can be interpreted.
- Other findings are that skin color does indeed play a significant role in explaining economic discrimination, and that originating from a country that shares a common official language with Switzerland facilitates cultural integration. Additionally, liberal cantonal naturalization policies seem to facilitate the cultural integration of second-generation migrants.

The findings of this study rely on a methodology constrained by the difficulty of measuring complex concepts. As a consequence, the measure of employment discrimination and cultural integration are rather conservative or restrictive. The approach is also constrained by the structure of census data and the absence of a time horizon. Despite these limitations, cross-section data provides convincing evidence.

In the context of the current migration and integration debate unfolding in Switzerland and in many other Western countries, and the strong focus on Muslim migrants, the findings summarized above stress

the importance of equal economic opportunities for the integration of migrants, especially second-generation migrants. It is of course possible to argue that migrants who don't adopt the language of the host country and don't mix with the natives are a cause of integration failures, but evidence gathered here doesn't support the argument that cultural factors are dominant in the integration process. Overall, without prejudging whether/the extent to which diversity is desirable for the Swiss society, these findings tend to stress the relevance of the liberal narrative as opposed to the conservative/right wing narrative, and promote the analysis of integration processes in socio-economic rather than in ethno-cultural terms.

Finally, several recommendations can be derived from this investigation of the reinforcing effects existing between economic and cultural barriers to integration. First, it appears that policy-makers concerned with migration and integration issues should support further research on that topic to enhance the understanding of migrant integration processes, which is required for an informed public debate and policy decisions. Second, in designing successful integration policies, policy-makers should fully take into account the need to provide economic opportunities to migrants, and especially make additional efforts to ensure equal economic opportunities are granted to second-generation migrants of all origins.[33] Tolerating or being indifferent to discriminations against individuals born in Switzerland bears undesirable consequences that can be prevented. As supported by evidence presented in this paper, offering migrants the perspective of fully integrating the Swiss society as a citizen through liberal naturalization policies has a positive impact on their cultural integration. Other policies might need to be modified or strengthened, like the policy to fight against xenophobia, whose effectiveness in reducing discrimination couldn't be clearly established. Most importantly, policy-makers who insist on the dominance of ethno-cultural factors in determining the outcome of integration processes should be asked to provide more than anecdotal evidence in support of their arguments.

[33]It may well be that Italian and Spanish second-generation migrants are show cases for integration (Bolzmann and Fibbi, 2003), but results obtained in this study, which confirm the successful integration of Southern European second-generation migrants, also show other migrants have a harder time integrating the labour market and that this hinders their integration.

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Technical appendix

Formal derivation of the Vigdor index

Define D to be a binary variable taking the value 0 if the individual is a native, 1 if they are an immigrant. Suppose that the proportion of immigrants in the population is p. Denote by $f_0(x)$ to be the density function of x among natives, $f_1(x)$ to be the density function of x among immigrants. Define:

$$g(x) = \frac{f_0(x)}{f_1(x)}$$

to be the ratio of the density functions – this will be equal to 1 if immigrants and natives have the same distribution of x i.e. they are fully assimilated. The mean value of g(x) across natives must be equal to 1, and the mean value of 1/g across immigrants must be one. Now write the Vigdor index using this formulation. He estimates a model for

$$Pr(D = 1|x) = \frac{pf_1(x)}{pf_1(x)+(1-p)f_0(x)} = \frac{pf_1(x)}{f(x)} = \rho(x)$$

Vigdor assumes this is a probit function. There is no particular reason to do this – lets just assume this function can be estimated which we know is possible from standard econometric results. Obviously the average value across the population must be equal to p. Vigdor derives his index for a value of p=0.5 only, but it is natural to think about what it should be for different values of p. One generalization which seems to retain his property that it should be between zero and one is:

$$I = \frac{\int [1-\rho(x)]f_1(x)dx}{1-p} = \int \frac{f_0(x)f_1(x)}{f(x)}dx$$

If immigrants and natives have the same density $f_1(x) = f_0(x) = f(x)$, then this takes the value 1. If they are completely distinct and $f_1(x)f_0(x) = 0\ \forall x$, then it takes the value 0. However, this formulation lacks the desirable properties normally required of segregation e.g. it is not composition-invariant. An composition-invariant alternative is:

$$I = 2\int \frac{f_0(x)f_1}{f_0(x)+f_1}dx = \int \frac{1}{1+g(x)}f_1(x)dx$$

This way it is possible to estimate g(x) using the probit equation as the mechanism to do that. However, there are many other segregation indices, which can also be written as functions of g(x). For example, the most familiar is the Duncan dissimilarity index:

$$I = \int |f_1(x) - f_0(x)|\, dx = \int \left|1 - \frac{1}{g(x)}\right| f_1(x)dx$$

The same is probably true for many other indices. So one way to view what Vigdor does is to provide a convenient way to estimate g(x) when x is multi-dimensional and possibly a continuous random variable – essentially applying diNardo, Fortin and Lemieux, Ecta 1996.

Tables and figures

Table 1: Sample

	MEN		WOMEN	
	Other	Muslim	Other	Muslim
CH	1557425	1430	1522658	1584
1st generation				
WE	123171	712	166045	887
SE	166218	179	132397	154
EE	68110	46609	80093	37597
AF	9748	2073	11515	1384
TMM	12830	28941	10204	21403
LA	11217	46	26009	59
AS	10711	281	24728	506
SCA	13274	3360	10382	1880
All 1st	415279	82201	461373	63870
2nd generation				
WE	13734	53	13656	49
SE	67427	67	58042	101
EE	5379	1700	5322	1475
AF	199	19	215	20
TMM	971	3906	900	3336
LA	256	0	398	3
AS	290	5	349	3
SCA	327	79	265	42
All 2nd	88583	5829	79147	5029
ALL	2061287	89460	2063178	70483

Source: Swiss census, 2000

Note: Sample limited to individuals aged 18 to 65 with non-missing information on variables of interest.

Table 2: Descriptive statistics

		MEN		WOMEN		
VARIABLE		Other	Muslim	Other	Muslim	DESCRIPTION
employed	Natives	0.860	0.790	0.682	0.623	1 if employed
	1st gen	0.843	0.767	0.635	0.486	
	2nd gen	0.834	0.712	0.736	0.567	
unemployed	Natives	0.016	0.042	0.019	0.059	1 if unemployed
	1st gen	0.036	0.087	0.056	0.152	
	2nd gen	0.034	0.067	0.038	0.102	
inactive	Natives	0.122	0.166	0.298	0.316	1 if inactive
	1st gen	0.120	0.144	0.307	0.361	
	2nd gen	0.130	0.219	0.224	0.330	
yearsed	Natives	12.63	12.07	11.71	11.51	number of years of education
	1st gen	11.86	10.23	11.53	9.24	
	2nd gen	12.07	9.72	11.72	9.27	
lang	Natives	0.99	0.97	0.99	0.99	1 if main language is a national language
	1st gen	0.66	0.38	0.63	0.32	
	2nd gen	0.96	0.78	0.96	0.73	
langreg	Natives	0.94	0.87	0.93	0.89	1 if main language is that of the region
	1st gen	0.47	0.36	0.49	0.31	
	2nd gen	0.82	0.76	0.82	0.71	
single	Natives	0.39	0.36	0.33	0.22	1 if single
	1st gen	0.22	0.21	0.16	0.16	
	2nd gen	0.61	0.63	0.52	0.53	
married	Natives	0.53	0.55	0.55	0.65	1 if married
	1st gen	0.70	0.75	0.71	0.78	
	2nd gen	0.34	0.34	0.42	0.44	
widow	Natives	0.006	0.005	0.026	0.017	1 if widow
	1st gen	0.007	0.002	0.031	0.017	
	2nd gen	0.001	0.001	0.004	0.003	
separated	Natives	0.059	0.068	0.079	0.104	1 if separated/divorced
	1st gen	0.060	0.031	0.086	0.031	
	2nd gen	0.034	0.012	0.046	0.021	
spouse	Natives	0.448	0.197	0.482	0.153	1 if married to a native spouse
	1st gen	0.130	0.074	0.198	0.036	
	2nd gen	0.112	0.014	0.121	0.011	
children	Natives	1.13	1.04	1.27	1.41	number of children
	1st gen	1.35	1.65	1.39	1.83	
	2nd gen	0.54	0.68	0.68	0.81	
permisC	Natives	0	0	0	0	1 if holder of a permis C
	1st gen	0.57	0.51	0.40	0.46	
	2nd gen	0.71	0.74	0.58	0.64	
permisB	Natives	0	0	0	0	1 if holder of a permis B
	1st gen	0.18	0.29	0.19	0.37	
	2nd gen	0.014	0.078	0.016	0.124	
permisO	Natives	0	0	0	0	1 if holder of another typer of permit
	1st gen	0.057	0.086	0.037	0.073	
	2nd gen	0.006	0.019	0.005	0.016	
age	Natives	39.9	37.2	40.0	36.4	age
	1st gen	42.1	34.8	41.7	33.3	
	2nd gen	30.2	25.7	29.9	25.1	

Source: Swiss census, 2000.

Table 3: Probability to be employed (men, first generation)

	CH	WE	SE	EE	AF	TMM	LA	SA	SCA
	NON-MUSLIM								
VARIABLES	empl	empl	empl	empl	empl	empl	empl	empl	empl
yearseducation	0.001***	0.003***	0.001***	0.002***	0.003***	0.004***	0.006***	0.004***	0.0006
	(3.86e-05)	(0.000154)	(0.0001)	(0.0002)	(0.0009)	(0.0007)	(0.0008)	(0.0006)	(0.0005)
age	0.0005***	0.002***	0.004***	0.004***	0.008***	-0.0008	0.008***	0.007***	0.005***
	(4.61e-05)	(0.0002)	(0.0002)	(0.0005)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
age2	-1.14e-05***	-3.41e-05***	-5.73e-05***	-7.26e-05***	-0.0001***	3.02e-06	-0.0001***	-0.0001***	-8.34e-05***
	(5.71e-07)	(3.01e-06)	(2.67e-06)	(5.99e-06)	(2.85e-05)	(2.00e-05)	(2.09e-05)	(1.71e-05)	(1.62e-05)
married	0.007***	0.010***	0.024***	0.031***	0.037***	0.045***	0.020**	0.020***	0.030***
	(0.0003)	(0.001)	(0.001)	(0.003)	(0.009)	(0.008)	(0.007)	(0.007)	(0.006)
spouse	0.013***	0.001	-0.0009	-0.010**	-0.034***	-0.007	-0.007	0.006	-0.023**
	(0.0003)	(0.001)	(0.001)	(0.004)	(0.011)	(0.009)	(0.008)	(0.009)	(0.011)
nenf	0.002***	0.002***	0.0007	0.002***	-0.002	0.001	0.002	0.0006	-0.001
	(0.0001)	(0.0004)	(0.0004)	(0.0009)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
langreg	0.001***	0.005***	-0.003***	0.003**	0.009	0.026***	0.007	0.005	0.008*
	(0.0004)	(0.001)	(0.0009)	(0.001)	(0.007)	(0.006)	(0.006)	(0.005)	(0.004)
permisC		-0.004***	-0.006***	-0.019***	-0.021*	-0.040***	-0.0003	-0.030***	-0.028***
		(0.001)	(0.001)	(0.002)	(0.011)	(0.007)	(0.007)	(0.006)	(0.010)
permisB		-0.0002	-0.019***	-0.031***	-0.079***	-0.086***	-0.042***	-0.019**	-0.004
		(0.001)	(0.003)	(0.003)	(0.012)	(0.0109)	(0.009)	(0.008)	(0.007)
permisOther		0.017***	0.023***	-0.158***	-0.228***	-0.253***	0.006	-0.030*	-0.028***
		(0.001)	(0.001)	(0.012)	(0.020)	(0.023)	(0.014)	(0.016)	(0.008)
can_unemployment	-0.505***	-0.620***	-0.396***	-1.015***	-0.173	0.092	-1.187***	-0.279	-0.799***
	(0.010)	(0.039)	(0.040)	(0.095)	(0.324)	(0.259)	(0.266)	(0.242)	(0.209)
	MUSLIM								
yearseducation	0.0005	0.012***		0.0001	0.003	0.002***	0.296	0.007*	0.001
	(0.001)	(0.002)		(0.0004)	(0.003)	(0.0006)	(0.233)	(0.004)	(0.001)
age	0.006***	-0.001		0.014***	0.017***	0.004***	0.392	-0.008	0.008*
	(0.002)	(0.005)		(0.0008)	(0.006)	(0.001)	(0.396)	(0.008)	(0.004)
age2	-9.48e-05***	3.24e-05		-0.0002***	-0.0002**	-8.40e-05***	-0.005	0.0001	-0.0001**
	(3.22e-05)	(7.24e-05)		(1.08e-05)	(8.36e-05)	(1.60e-05)	(0.005)	(0.0001)	(5.07e-05)
married	0.049***	0.037		0.010**	0.034	0.046***	-0.456	-0.018	0.055***
	(0.017)	(0.026)		(0.004)	(0.030)	(0.006)	(0.594)	(0.019)	(0.019)
spouse	0.029**	0.014		-0.037***	-0.036	-0.038***		-0.009	0.023
	(0.012)	(0.032)		(0.008)	(0.034)	(0.007)		(0.022)	(0.023)
nenf	-0.002	0.013		0.001	-0.013	-0.002	-0.502	0.020	-0.008
	(0.005)	(0.010)		(0.001)	(0.008)	(0.001)	(0.387)	(0.014)	(0.005)
langreg	-0.0005	0.010		0.014***	0.103***	0.032***		0.016	0.032**
	(0.016)	(0.019)		(0.002)	(0.023)	(0.004)		(0.018)	(0.015)
permisC		-0.002		-0.024***	-0.090*	-0.023***		0.021	-0.108***
		(0.026)		(0.007)	(0.053)	(0.006)		(0.028)	(0.025)
permisB		0.028		-0.044***	-0.143***	-0.091***		0.017	-0.090***
		(0.025)		(0.009)	(0.046)	(0.008)		(0.029)	(0.025)
permisOther		0.026		-0.384***	-0.265***	-0.364***	0.756	-0.025	-0.285***
		(0.026)		(0.024)	(0.046)	(0.017)	(0.484)	(0.061)	(0.033)
can_unemployment	-0.838*	-2.404***		-0.623***	-0.206	-0.520**	-92.59	-0.157	-0.690
	(0.506)	(0.760)		(0.151)	(1.087)	(0.204)	(91.59)	(0.780)	(0.686)

Source: Swiss census, 2000; S.E in parenthesis, *** p<0.01, ** p<0.05, * p<0.1.

Table 4: Probability to be employed (men, second generation)

	CH	WE	SE	EE	AF	TMM	LA	SA	SCA
	NON-MUSLIM								
VARIABLES	empl	empl	empl	empl	empl	empl	empl	empl	empl
yearseducation	0.005***	0.004***	0.004***	-0.005	0.009**	0.017	0.008	-0.007**	
	(0.0006)	(0.0002)	(0.001)	(0.005)	(0.004)	(0.011)	(0.008)	(0.003)	
age	0.002**	0.0008**	0.001	-0.013	0.003	-0.008	0.032***	0.014**	
	(0.0009)	(0.0003)	(0.002)	(0.010)	(0.007)	(0.018)	(0.011)	(0.006)	
age2	-3.50e-05***	-1.97e-05***	-3.44e-05	0.0001	-8.85e-05	6.69e-05	-0.0004***	-0.0001**	
	(1.25e-05)	(5.29e-06)	(3.20e-05)	(0.0001)	(0.0001)	(0.0002)	(0.0001)	(9.05e-05)	
married	0.0264***	0.030***	0.042***	-0.001	0.045	0.121	-0.042	0.085*	
	(0.005)	(0.001)	(0.011)	(0.040)	(0.031)	(0.081)	(0.082)	(0.049)	
spouse	0.005	0.006**	-0.056	0.015		-0.174			
	(0.006)	(0.002)	(0.037)	(0.035)		(0.183)			
nenf	0.005**	0.002**	0.007	0.047**	-0.002	-0.027	0.068*	0.002	
	(0.002)	(0.001)	(0.006)	(0.022)	(0.018)	(0.039)	(0.040)	(0.015)	
langreg	0.017**	0.002	0.012	-0.059*	0.019	-0.122**	0.079	0.020	
	(0.007)	(0.001)	(0.010)	(0.030)	(0.032)	(0.048)	(0.062)	(0.026)	
permisC	-0.008**	-0.007***	-0.030***	0.008	-0.034	-0.019	0.047	0.017	
	(0.003)	(0.001)	(0.008)	(0.035)	(0.025)	(0.055)	(0.065)	(0.020)	
permisB	-0.048**	-0.032**	-0.064**	-0.238	-0.027	-0.136	-0.147	0.002	
	(0.019)	(0.012)	(0.028)	(0.169)	(0.063)	(0.289)	(0.153)	(0.031)	
permisOther	0.013	0.011	-0.137*	-0.224	-0.103			0.022	
	(0.014)	(0.007)	(0.077)	(0.158)	(0.202)			(0.026)	
can_unemployment	-1.472***	-0.742***	-0.752	0.857	-2.600**	0.522	-3.183	-0.994	
	(0.155)	(0.064)	(0.473)	(1.316)	(1.177)	(2.486)	(1.987)	(1.101)	
	MUSLIM								
yearseducation				0.0001	-0.0005	0.009***			
				(0.002)	(12.68)	(0.001)			
age				0.015***	-0.002	0.006**			
				(0.004)	(48.89)	(0.003)			
age2				-0.0002***	6.61e-05	-0.0001**			
				(6.24e-05)	(1.075)	(4.70e-05)			
married				0.012	1.000	0.046***			
				(0.028)	(9.083)	(0.013)			
spouse				-0.047		-0.133**			
				(0.108)		(0.066)			
nenf				-0.002	-0.005	0.001			
				(0.007)	(97.08)	(0.007)			
langreg				-0.007	1.000	0.024*			
				(0.016)	(5.728)	(0.013)			
permisC				-0.024	-1.000***	-0.024**			
				(0.031)	(0.0001)	(0.012)			
permisB				0.004	-1***	-0.042			
				(0.039)	(0)	(0.038)			
permisOther				-0.522***	-1***	-0.263**			
				(0.112)	(0)	(0.126)			
can_unemployment				0.825	-1.418	-0.829			
				(1.020)	(24.512)	(0.615)			

Source: Swiss census, 2000; S.E in parenthesis, *** p<0.01, ** p<0.05, * p<0.1.

Table 5: Probability to be employed (women, first generation)

	CH	WE	SE	EE	AF	TMM	LA	SA	SCA
	NON-MUSLIM								
VARIABLES	empl	empl	empl	empl	empl	empl	empl	empl	empl
yearseducation	0.002***	0.003***	0.0006**	0.0001	0.007***	0.003***	0.004***	0.006***	0.005***
	(7.14e-05)	(0.0002)	(0.0003)	(0.0004)	(0.0013)	(0.0012)	(0.0008)	(0.0006)	(0.0013)
age	-0.0004***	-8.48e-05	0.007***	0.011***	0.004	-0.003	0.005***	0.006***	0.009***
	(8.65e-05)	(0.0004)	(0.0004)	(0.0007)	(0.003)	(0.002)	(0.002)	(0.001)	(0.003)
age2	8.31e-06***	4.56e-06	-8.02e-05***	-0.0001***	-1.80e-05	5.47e-05	-3.46e-05	-6.56e-05***	-0.0001**
	(1.09e-06)	(5.00e-06)	(5.79e-06)	(9.99e-06)	(4.02e-05)	(3.39e-05)	(2.77e-05)	(2.36e-05)	(4.82e-05)
married	-0.005***	-0.016***	-0.001	-0.028***	-0.002	-0.011	-0.025***	-0.025***	-0.070***
	(0.0005)	(0.001)	(0.002)	(0.003)	(0.010)	(0.010)	(0.007)	(0.006)	(0.012)
spouse	0.014***	0.015***	0.002	-0.017***	-0.001	0.018	0.002	0.006	0.045**
	(0.0005)	(0.001)	(0.003)	(0.004)	(0.011)	(0.013)	(0.006)	(0.005)	(0.021)
nenf	-0.001***	-0.005***	-0.010***	-0.010***	-0.027***	-0.013***	-0.019***	-0.013***	-0.005
	(0.0001)	(0.0006)	(0.0009)	(0.001)	(0.003)	(0.003)	(0.002)	(0.002)	(0.005)
langreg	0.003***	0.011***	0.008***	0.024***	0.024***	0.063***	0.047***	0.036***	0.049***
	(0.0006)	(0.001)	(0.001)	(0.002)	(0.008)	(0.009)	(0.006)	(0.005)	(0.010)
permisC		0.0009	-0.002	-0.022***	0.004	-0.044***	-0.025***	-0.035***	-0.008
		(0.001)	(0.002)	(0.003)	(0.012)	(0.011)	(0.008)	(0.007)	(0.020)
permisB		-0.029***	-0.066***	-0.098***	-0.115***	-0.094***	-0.109***	-0.127***	-0.106***
		(0.002)	(0.005)	(0.004)	(0.013)	(0.015)	(0.008)	(0.009)	(0.017)
permisOther		0.023***	0.023***	-0.235***	-0.222***	-0.233***	-0.033*	-0.055***	-0.234***
		(0.002)	(0.004)	(0.015)	(0.020)	(0.032)	(0.019)	(0.018)	(0.022)
can_unemployment	-0.592***	-0.681***	-0.550***	-0.925***	0.291	0.035	-0.715***	-0.317	-1.678***
	(0.017)	(0.057)	(0.073)	(0.132)	(0.385)	(0.389)	(0.277)	(0.253)	(0.485)
	MUSLIM								
yearseducation	0.007*	0.012**	0.012	0.008***	0.006	0.001	0.034	0.016**	0.0002
	(0.003)	(0.005)	(0.015)	(0.001)	(0.004)	(0.001)	(0.035)	(0.007)	(0.004)
age	0.004	0.022**	-0.068**	0.032***	0.012	0.018***	0.096	0.002	0.017*
	(0.005)	(0.009)	(0.032)	(0.002)	(0.011)	(0.002)	(0.115)	(0.019)	(0.009)
age2	-4.99e-05	-0.0002**	0.0009**	-0.0004***	-0.0001	-0.0002***	-0.001	5.49e-05	-0.0001
	(6.72e-05)	(0.0001)	(0.0004)	(3.02e-05)	(0.0001)	(3.38e-05)	(0.001)	(0.0002)	(0.0001)
married	-0.008	-0.026	0.091	-0.093***	-0.058	-0.065***	0.265	-0.064	-0.069**
	(0.020)	(0.035)	(0.116)	(0.008)	(0.039)	(0.009)	(0.379)	(0.058)	(0.033)
spouse	0.009	-0.044		0.079***	0.012	0.006		0.069	0.090*
	(0.025)	(0.063)		(0.028)	(0.048)	(0.014)		(0.054)	(0.052)
nenf	-0.017**	-0.027*	0.003	-0.038***	-0.007	-0.028***	-0.139	-0.016	-0.039***
	(0.007)	(0.015)	(0.035)	(0.002)	(0.010)	(0.003)	(0.179)	(0.023)	(0.012)
langreg	0.0008	0.054*	0.124	0.060***	0.085**	0.043***	-0.0009	-0.068	0.054*
	(0.027)	(0.032)	(0.090)	(0.006)	(0.034)	(0.007)	(0.164)	(0.072)	(0.030)
permisC		-0.071	-0.006	-0.049***	-0.054	-0.018	0.070	0.113**	-0.166***
		(0.049)	(0.102)	(0.018)	(0.064)	(0.011)	(0.115)	(0.050)	(0.046)
permisB		-0.160***	0.113	-0.160***	-0.173***	-0.163***	0.117	0.013	-0.161***
		(0.055)	(0.086)	(0.019)	(0.054)	(0.013)	(0.152)	(0.062)	(0.046)
permisOther		0.031		-0.485***	-0.244***	-0.348***	-0.377	-0.091	-0.415***
		(0.071)		(0.023)	(0.057)	(0.029)	(1.263)	(0.149)	(0.056)
can_unemployment	-2.112***	-5.059***	-6.760*	-0.222	2.586*	-1.297***	1.053	0.171	1.908
	(0.812)	(1.421)	(3.701)	(0.349)	(1.486)	(0.357)	(6.105)	(2.484)	(1.315)

Source: Swiss census, 2000; S.E in parenthesis, *** p<0.01, ** p<0.05, * p<0.1.

Table 6: Probability to be employed (women, second generation)

	CH	WE	SE	EE	AF	TMM	LA	SA	SCA
	NON-MUSLIM								
VARIABLES	empl	empl	empl	empl	empl	empl	empl	empl	empl
yearseducation	0.0003	0.003***	0.001	0.004	0.016***	0.0005	0.026***	0.011	
	(0.0008)	(0.0004)	(0.001)	(0.010)	(0.004)	(0.005)	(0.008)	(0.009)	
age	0.003***	0.002***	0.001	0.011	-0.019**	-0.031**	0.025	0.007	
	(0.001)	(0.0006)	(0.002)	(0.019)	(0.009)	(0.014)	(0.016)	(0.024)	
age2	-3.38e-05*	-2.27e-05**	-3.79e-06	-9.56e-05	0.0002**	0.0004**	-0.0003	-0.0002	
	(1.78e-05)	(9.88e-06)	(3.85e-05)	(0.0002)	(0.0001)	(0.0002)	(0.0002)	(0.0003)	
married	0.005	0.009***	-0.005	0.072	0.013	0.092	-0.012	-0.021	
	(0.006)	(0.002)	(0.011)	(0.096)	(0.028)	(0.057)	(0.090)	(0.086)	
spouse	0.004	0.004	0.001	-0.459**	0.0006	-0.027	-0.095		
	(0.006)	(0.003)	(0.021)	(0.189)	(0.057)	(0.057)	(0.098)		
nenf	-0.009***	-0.014***	-0.007	-0.085**	-0.019	-0.009	0.012	-0.004	
	(0.002)	(0.001)	(0.005)	(0.034)	(0.014)	(0.020)	(0.032)	(0.027)	
langreg	-0.002	0.011***	0.017*	0.118	0.034	0.031	0.018	0.145**	
	(0.007)	(0.002)	(0.010)	(0.107)	(0.035)	(0.044)	(0.062)	(0.067)	
permisC	-0.008*	-0.007***	-0.060***	-0.165*	-0.031	-0.135**	-0.033	0.187***	
	(0.004)	(0.002)	(0.009)	(0.093)	(0.026)	(0.062)	(0.064)	(0.050)	
permisB	-0.020	-0.097***	-0.128***	-0.088	-0.084	-0.254***	-0.093	0.172*	
	(0.021)	(0.020)	(0.029)	(0.114)	(0.070)	(0.089)	(0.103)	(0.092)	
permisOther	-0.013	0.026**	-0.271**	-0.485*		-0.268	-0.076	0.059	
	(0.025)	(0.011)	(0.127)	(0.266)		(0.303)	(0.196)	(0.091)	
can_unemployment	-1.153***	-0.959***	-1.321***	-3.312	-0.856	0.385	-8.376***	-3.154	
	(0.183)	(0.094)	(0.463)	(3.064)	(1.174)	(1.769)	(2.718)	(2.997)	
	MUSLIM								
yearseducation			0.008	0.011**		0.010***			
			(0.026)	(0.004)		(0.002)			
age			-0.021	0.021**		0.019***			
			(0.079)	(0.010)		(0.005)			
age2			0.0006	-0.0003**		-0.0002***			
			(0.001)	(0.0001)		(8.26e-05)			
married			0.057	-0.121***		-0.036*			
			(0.174)	(0.036)		(0.019)			
spouse						-0.020			
						(0.056)			
nenf			-0.122	-0.003		-0.029***			
			(0.093)	(0.012)		(0.010)			
langreg			-9.978	0.084***		0.074***			
			(7.641)	(0.028)		(0.018)			
permisC				-0.083		-0.039**			
			35	(0.068)		(0.015)			
permisB			0.244	-0.210**		-0.137***			
			6	(0.087)		(0.048)			
permisOther			7.837	-0.662***		-0.171			
			-12.12	(0.089)		(0.170)			
can_unemployment			-9.978	0.888		-4.057***			
			(7.641)	(1.812)		(0.786)			

Source: Swiss census, 2000; S.E in parenthesis, *** p<0.01, ** p<0.05, * p<0.1.

Table 7: Summary statistics of the probability to be employed

	Natives	WE	SE	EE	AF	TMM	LA	AS	SCA
MEN									
1ST GENERATION									
MUSLIM									
Observations	1,366,047	109,175	146,497	59,555	8,533	11,052	9,497	8,842	12,154
Pseudo R-squared	0.066	0.049	0.044	0.041	0.064	0.060	0.035	0.040	0.026
Chi2	17383	1315	1860	1050	407.7	438.5	200.6	165.9	136.2
Chi p	0	0	0	0	0	0	0	0	0
MUSLIM									
Observations	1,192	595	139	39,896	1,666	24,889	11	219	2,842
Pseudo R-squared	0.086	0.133	1	0.098	0.077	0.067	0.212	0.247	0.083
Chi2	41.75	42.45	36.27	2216	144.4	1248	3.05	30.80	212.4
Chi p	0	0	0.0001	0	0	0	0.87	0	0
2ND GENERATION									
NON-MUSLIM									
Observations		11,172	60,084	4,244	134	723	157	187	231
Pseudo R-squared		0.069	0.058	0.030	0.265	0.037	0.080	0.216	0.277
Chi2		293.2	1083	63.71	21.44	18.07	9.665	30.89	39.04
Chi p		0	0	0	0.029	0.053	0.470	0	0
MUSLIM									
Observations		7		1,324	12	3,082			29
Pseudo R-squared		1		0.11	1	0.049			1
Chi2		8.376		90.17	15.28	87.63			23.27
Chi p		0.078		0	0.12	0			0
WOMEN									
1ST GENERATION									
NON-MUSLIM									
Observations	1,068,374	110,150	92,798	60,831	8,437	6,911	17,350	15,863	7,066
Pseudo R-squared	0.013	0.026	0.020	0.042	0.062	0.061	0.039	0.062	0.0808
Chi2	3667	1092	875.3	1746	489.8	346.3	642.6	728.8	550.5
Chi p	0	0	0	0	0	0	0	0	0
MUSLIM									
Observations	1,083	628	99	23,832	871	14,013	27	262	1,052
Pseudo R-squared	0.026	0.089	0.092	0.077	0.060	0.050	0.571	0.064	0.109
Chi2	17.15	52.13	8.666	2069	63.78	744.9	17.66	16.08	134.7
Chi p	0.028	0.46	0	0	0	0	0.061	0.13	0
2ND GENERATION									
NON-MUSLIM									
Observations		9,822	46,127	4,010	127	644	250	202	167
Pseudo R-squared		0.021	0.026	0.053	0.22	0.11	0.13	0.12	0.18
Chi2		77.52	465.5	108.7	25.65	46.09	24.99	23.41	28.91
Chi p		0	0	0	0	0	0	0.015	0
MUSLIM									
Observations			35	990		2,259			
Pseudo R-squared			0.24	0.105		0.096			
Chi2			7.83	107.3		165.1			
Chi p			0.25	0		0			

Table 8: Employment discrimination: average by group

	MEN		WOMEN	
origine	1st gen	2nd gen	1st gen	2nd gen
Other				
CH	0	0	0	0
WE	-0.004	-0.02	-0.017	-0.013
SE	0.003	-0.007	-0.008	-0.009
EE	-0.03	-0.037	-0.064	-0.033
AF	-0.093	*-0.055*	-0.131	-0.122
TMM	-0.072	*-0.072*	-0.097	-0.058
LA	-0.061	*-0.092*	-0.134	-0.083
AS	-0.034	-0.095	-0.08	-0.13
SCA	-0.025	-0.057	-0.138	-0.126
Muslim				
ch_m	-0.026	-0.026	*-0.049*	*-0.049*
we_m	-0.049	*-0.233*	*-0.136*	
se_m	0.007		-0.126	*-0.123*
ee_m	-0.056	-0.064	-0.192	-0.16
af_m	-0.213	*-0.296*	-0.243	
tmm_m	-0.095	-0.052	-0.167	-0.084
la_m	*-0.327*		*-0.208*	
as_m	-0.059		*-0.144*	
sca_m	-0.139	-0.1	-0.227	

Source: Swiss census, 2000.

Note: Values in italic produced by a model with a F test value < 0.01.

Table 9: Probability to be born in Switzerland

VARIABLES	Born in Switzerland	
	Women	Men
widow	-0.133***	-0.106***
	(0.002)	(0.004)
divorced	-0.117***	-0.097***
	(0.001)	(0.001)
married	-0.420***	-0.393***
	(0.001)	(0.001)
sexe	-0.005***	
	(0.001)	
age	-0.002***	
	(2.66e-05)	
spouse	0.405***	
	(0.0005)	
nenf	0.007***	
	(0.0002)	
lang	0.793***	
	(0.0005)	
Observations	3609095	
Pseudo R-squared	0.38	
ll	-1.262e+06	

Source: Swiss census, 2000; S.E in parenthesis, *** p<0.01, ** p<0.05, * p<0.1

Table 10: Cultural distance: average by group

	MEN		WOMEN	
origine	1st gen	2nd gen	1st gen	2nd gen
Other				
CH	0.003	0.003	-0.003	-0.003
WE	-0.249	-0.056	-0.249	-0.068
SE	-0.396	-0.07	-0.441	-0.118
EE	-0.564	-0.158	-0.567	-0.175
AF	-0.423	-0.124	-0.403	-0.167
TMM	-0.436	-0.131	-0.444	-0.133
LA	-0.514	-0.191	-0.623	-0.307
AS	-0.551	-0.151	-0.623	-0.287
SCA	-0.644	-0.327	-0.623	-0.426
Muslim				
ch_m	-0.121	-0.121	-0.185	-0.185
we_m	-0.354	-0.128	-0.377	-0.174
se_m	-0.431	-0.145	-0.45	-0.275
ee_m	-0.601	-0.34	-0.659	-0.443
af_m	-0.49	-0.168	-0.539	-0.256
tmm_m	-0.579	-0.176	-0.636	-0.234
la_m	-0.613		-0.585	-0.264
as_m	-0.642	-0.219	-0.701	0.037
sca_m	-0.588	-0.173	-0.612	-0.21

Source: Swiss census, 2000.

Table 11: Descriptive statistics of constructed variables

Variable	Obs	Mean	Std. Dev.	Min	Max
employment discrimination	828239	-0.031	0.062	-0.992	0.141
cultural distance (normalized)	1031628	1.348	0.331	1	2

Source: Swiss census, 2000; sample: migrants only.

Note: higher values represent an improvement. A higher value for employment discrimination reflects a weaker discrimination on the labour market, and a higher value for cultural distance reflects migrants are culturally closer to natives. Positive employment discrimination mainly concerns low-qualified SE and high-qualified WE migrants.

Table 12: Effect of employment discrimination on cultural distance

PANEL A: Structural coefficents (effect of endogenous regressor on dependent variable)

ENDOGENOUS REGRESSOR	DEPENDENT VARIABLE: CD					
	Men			**Women**		
	1st generation					
	OLS	IV	IV cluster	OLS	IV	IV cluster
	(1)	(2)	(3)	(4)	(5)	(6)
UDE	0.561***	1.070***	1.070	1.446***	1.824***	1.824
	(0.013)	(0.024)	(1.130)	(0.008)	(0.021)	(1.113)
N	395409	395409	395409	321472	321472	321472
R2/uncentered R2	0.059	0.955	0.955	0.147	0.953	0.953
F	4137	21635	85.89	9220	14719	184.9
Sargan/Hansen test		0.002	0.571		0.024	0.691
Weak identification stat		51316	10.23		22922	14.22
Stock & Yogo critical value at 20%		8.75	8.75		8.75	8.75
	2nd generation					
	(7)	(8)	(9)	(10)	(11)	(12)
UDE	-0.678***	5.745***	5.745	1.352***	3.693***	3.693*
	(0.038)	(0.696)	(5.711)	(0.028)	(0.194)	(2.032)
N	61791	61791	61791	47426	47426	47426
R2/uncentered R2	0.035	0.976	0.976	0.092	0.979	0.979
F	371.5	317.1	177.0	796.2	351.9	5.456
Sargan/Hansen test		0.050	0.387		0.145	0.259
Weak identification stat		49.11	1.198		202.4	7.360
Stock & Yogo critical value at 20%		8.75	8.75		8.75	8.75

PANEL B: Reduced-form coefficients (effect of instruments on endogenous regressor)

INSTRUMENTS						
	Men			**Women**		
	1st generation					
	(1)	(2)	(3)	(4)	(5)	(6)
skin color		-0.015***	-0.015***		-0.018***	-0.018***
		(0.00004)	(0.003)		(0.00008)	(0.006)
policy xenophobia		0.0007***	0.0007		0.002***	0.002*
		(0.0001)	(0.0006)		(0.0003)	(0.001)
	2nd generation					
	(7)	(8)	(9)	(10)	(11)	(12)
skin color		-0.004***	-0.004		-0.013***	-0.013**
		(0.0001)	(0.004)		(0.0002)	(0.004)
policy xenophobia		0.0003	0.0003		0.0001	0.0001
		(0.0002)	(0.0005)		(0.0004)	(0.0008)

Source: Swiss census, 2000; S.E in parenthesis, *** p<0.01, ** p<0.05, * p<0.1

Table 13: Effect of cultural distance on employment discrimination

PANEL A: Structural coefficents (effect of endogenous regressor on dependent variable)

ENDOGENOUS REGRESSOR	DEPENDENT VARIABLE: UDE					
	Men			**Women**		
	1st generation					
	OLS	IV	IV cluster	OLS	IV	IV cluster
	(13)	(14)	(15)	(16)	(17)	(18)
CD	0.007***	0.026***	0.026	0.057***	0.097***	0.097*
	(0.0001)	(0.0004)	(0.018)	(0.0003)	(0.0008)	(0.057)
N	395409	395409	395409	321472	321472	321472
R2/uncentered R2	0.259	0.354	0.354	0.253	0.457	0.457
F	23046	22868	9.301	18151	14790	6.166
Sargan/Hansen test		0.002	0.44		0.28	0.86
Weak identification stat		51261	65.80		28428	41.91
Stock & Yogo critical value at 20%		8.75	8.75		8.75	8.75
	2nd generation					
	(19)	(20)	(21)	(22)	(23)	(24)
CD	-0.007***	0.072***	0.072***	0.033***	0.192***	0.192***
	(0.0004)	(0.002)	(0.021)	(0.0007)	(0.006)	(0.072)
N	61791	61791	61791	47426	47426	47426
R2/uncentered R2	0.045	-0.29	-0.29	0.14	-0.59	-0.59
F	486.8	159.7	5.340	1334	276.3	5.759
Sargan/Hansen test		0.813	0.918		0.406	0.647
Weak identification stat		1014	11.45		542.0	24.43
Stock & Yogo critical value at 20%		8.75	8.75		8.75	8.75

PANEL B: Reduced-form coefficients (effect of instruments on endogenous regressor)

INSTRUMENTS						
	Men			**Women**		
	1st generation					
	OLS	IV	IV cluster	OLS	IV	IV cluster
	(13)	(14)	(15)	(16)	(17)	(18)
official language in origin country		0.346***	0.346***		0.300***	0.300***
		(0.001)	(0.035)		(0.001)	(0.034)
easy naturalization		0.006***	0.006		0.004***	0.004
		(0.001)	(0.008)		(0.001)	(0.008)
	2nd generation					
	(19)	(20)	(21)	(22)	(23)	(24)
official language in origin country		0.155***	0.155***		0.124***	0.124***
		(0.002)	(0.033)		(0.002)	(0.034)
easy naturalization		0.009***	0.009**		0.014***	0.014***
		(0.002)	(0.003)		(0.002)	(0.002)

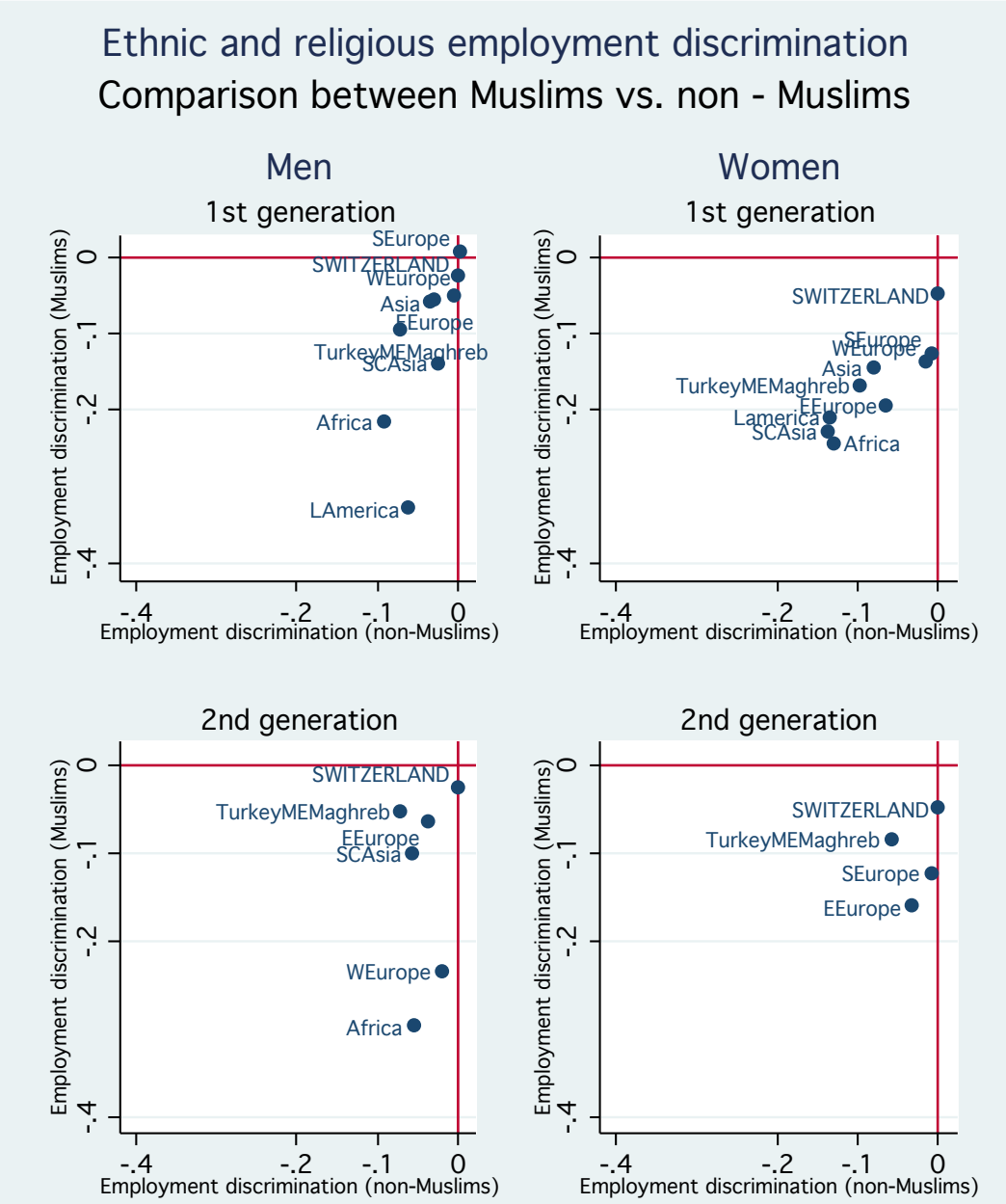
Source: Swiss census, 2000; S.E in parenthesis, *** p<0.01, ** p<0.05, * p<0.1

Table 14: Comparative statics

Groups most affected by change in instrument

Individuals with darkest skin color			
	Average CD_j	...if $UDE_j = 0$	...if $\Delta^+ UDE_j = \overline{SD}$
1st AF men	1.44	1.54	1.51
1st AF Muslim men	1.38	1.61	1.45
1st SCA men	1.2	1.23	1.27
1st SCA Muslim men	1.27	1.42	1.34
2nd AF men	1.68	1.99	2.06
2nd AF Muslim men	1.63	3.33	2.01
2nd SCA men	1.55	1.88	1.93
2nd SCA Muslim men	1.45	2.03	1.83
1st AF women	1.3	1.54	1.42
1st AF Muslim women	1.46	1.9	1.58
1st SCA women	1.23	1.48	1.35
1st SCA Muslim women	1.19	1.6	1.31
2nd AF women	1.45	1.9	1.69
2nd AF Muslim women	1.59		
2nd SCA women	1.53	1.99	1.77
2nd SCA Muslim women	1.28		
Individuals whose origin country doesn't share a common official language with Switzerland			
	Average UDE_j	...if $CD_j = 0$	...if $\Delta^+ CD_j = \overline{SD}$
1st men	-0.01	0.02	0
1st Muslim men	-0.07	-0.03	-0.06
2nd men	-0.01	0.11	0.01
2nd Muslim men	-0.04	0.07	-0.02
1st women	-0.04	0.09	-0.01
1st Muslim women	-0.17	-0.05	-0.14
2nd women	-0.02	0.3	0.04
2nd Muslim women	-0.11	0.17	-0.05

Calculations of the author.



Data: Swiss census, 2000; Sample: women/men aged less than 63/66 in the labor force
The gap in the probability to be employed is measured using the group - native coefficients

Figure 1: Economic barrier to integration (employment discrimination)

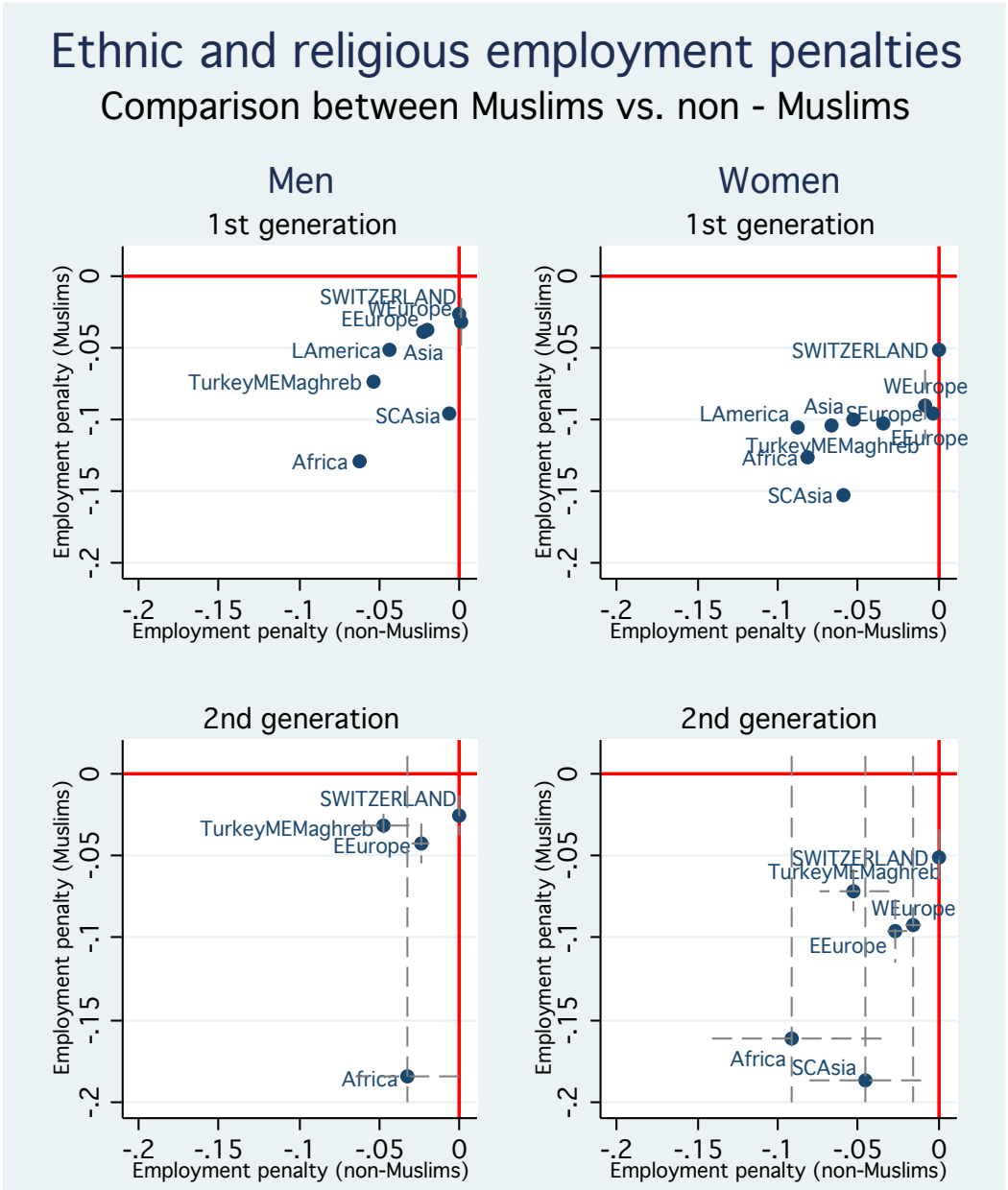


Figure 2: Economic barrier to integration (employment penalties)

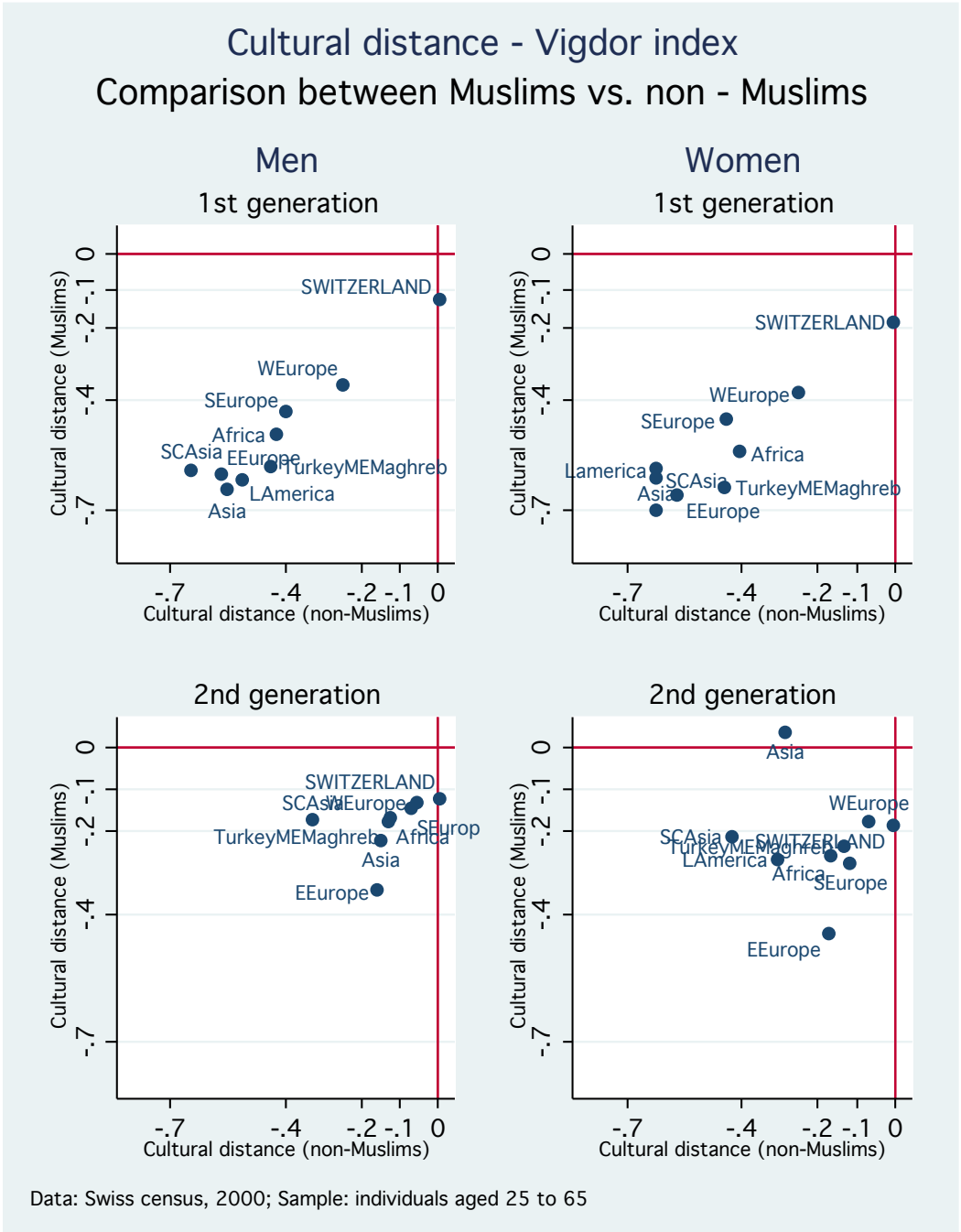
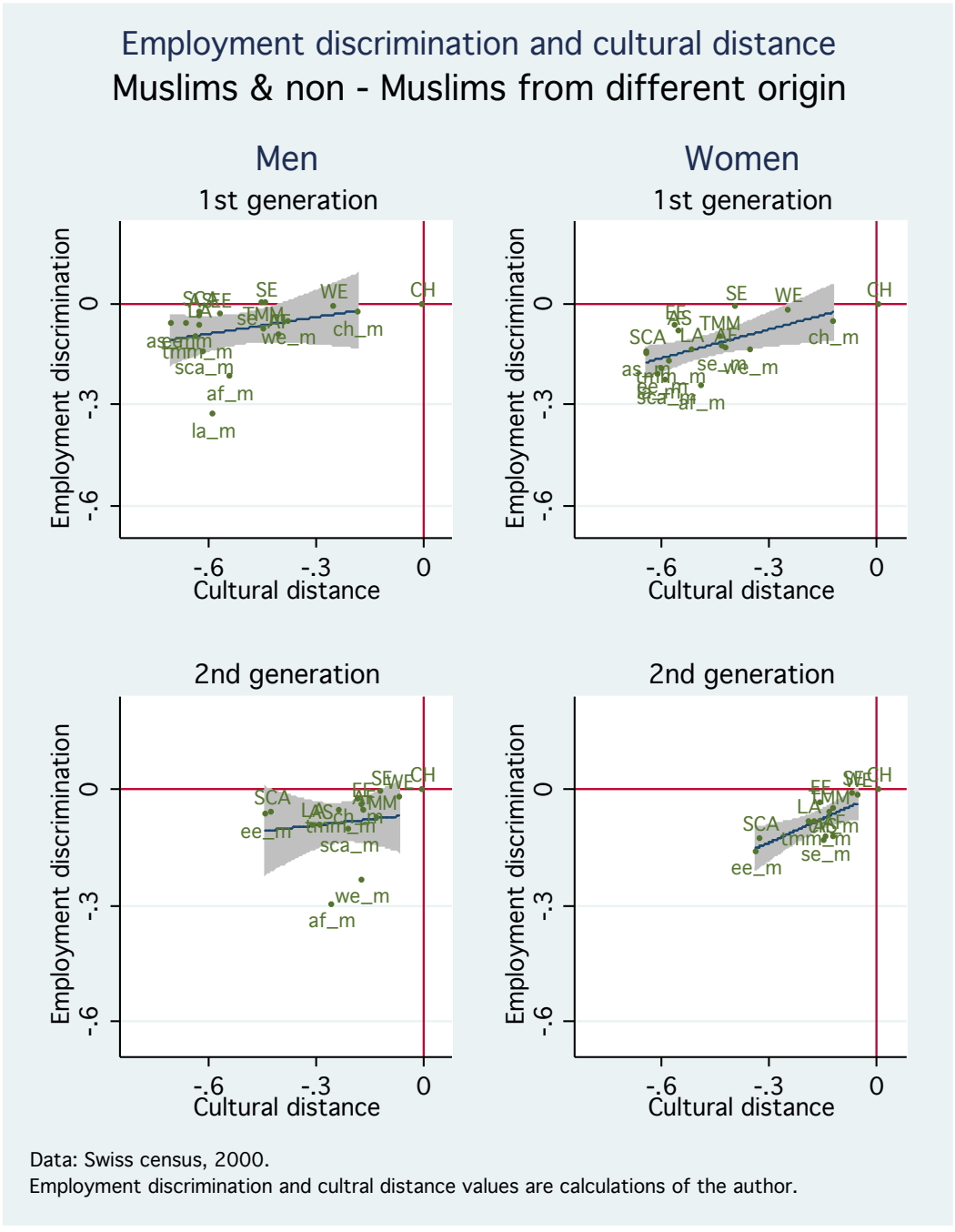


Figure 3: Cultural barrier to integration (cultural distance)



Data: Swiss census, 2000.
Employment discrimination and cultral distance values are calculations of the author.

Figure 4: Correlations between employment discrimination and cultural distance