The matching hierarchies model: Evidence from a survey experiment on employers' hiring intent regarding immigrant applicants

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Abstract

We seek to understand why immigrants encounter labor market integration difficulties and thus propose a model that combines ethnic and occupational rankings to predict which candidates employers will favor for particular occupations (a matching hierarchies model). In a Swiss survey experiment, we found that employers' evaluations of non-natives follow socio-cultural distance perceptions and that a non-native background is a disadvantage mainly in high-skilled occupations. In low-skilled occupations, having an immigrant background is less detrimental. In elucidating disadvantage patterns, we conclude that it is important to consider contextual factors (occupational hierarchies) that may change the nature of nationality-based discrimination.

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1. Introduction

Labor-market access is key to successful social and economic integration in every society. In today's world of steadily growing immigration and refugee movements, elucidating why certain groups of immigrants face more difficulties than others in accessing the labor market has become particularly relevant to preventing increasing social inequality (Heath and Cheung 2007). This study focuses on *employers' hiring behavior* because eventually, employers decide which candidates are hired or promoted and consequently are at least partially responsible for the disadvantages faced by specific groups in the labor market (Riach and Rich 2002; Rydgren 2004). We contribute to the understanding of how employers make use of information pertaining to candidates' national origin in *hiring* decisions. More precisely, we develop a model that accounts for instances in which natives are preferred over immigrants and for instances in which there is no apparent discrimination against (or preference for) immigrant candidates. In other words, we show that discrimination regarding non-native applicants is *not generalized* but is instead primarily applicable to more skilled occupations and that, at least in the case of Switzerland, a foreign background hardly hampers employment chances for 'undesirable jobs.'

This outcome can be explained by understanding that employers are striving to find a good match between *two hierarchical systems*. On the one hand, societies construct *ethnic hierarchies* that rank individuals with immigrant backgrounds based on the perceived social distance of various immigrant groups from the host society (Hagendoorn, 1993; 1995). On the other hand, jobs are also ranked in an *occupational hierarchy* based on perceived social status (e.g., Inkeles and Rossi, 1956; Goldthorpe and Hope 1972; Ganzeboom et al. 1992). During the hiring process, employers use these two ranking systems to choose one applicant, from among

equally qualified candidates, whose nationality best matches the vacant job's hierarchical position.

We investigate the question of how employers use information regarding national origin in hiring decisions, drawing on data from a survey experiment with employers in the Swiss hotel sector. Switzerland is an interesting case for several reasons. First, the country is host to a large and diverse group of immigrants, allowing us to determine the differential effects of various nationalities in different occupations. Second, although the current *political* climate might foster increasing disadvantages for immigrants[2], *economic* circumstances counteract this tendency. This is largely because Switzerland faces a labor shortage in various branches[3] – a so-called *Fachkräftemangel* (B, S, S. 2014). Immigrants might thus be expected to face fewer obstacles in Switzerland than in countries with an abundant supply of qualified labor. Third, Switzerland is also a convenient case to study employers' hiring preferences because the topic of immigrant labor is currently receiving much attention, as an immigrant quota system looms. Hence, it might be expected that employers will unveil their true preferences more readily because they are afraid of being neglected in the political game.

The hotel sector is particularly suitable for testing our model because it relies heavily on immigrants[4] and is defined by its international orientation. As a result, employers we contacted in this industry are accustomed to evaluating candidates of different nationalities. In addition, hotels provide jobs situated throughout the occupational hierarchy. Some occupations, such as room cleaners, are among the least desirable in terms of wage, working hours, (physical)

[2] As in many European countries, Switzerland's immigration debate is heated. Some parties and media outlets effectively portray immigrants as threatening the very existence of Swiss culture by arguing that immigrants over-rely on welfare benefits and are responsible for exacerbating urban sprawl. This negative campaigning peaked in February 2014, when a majority of Swiss voters accepted a referendum "Against Mass Immigration" meant to tighten immigration rules.

[3] A study in Switzerland on behalf of the Swiss State Secretary for Migration shows that in 26 occupation fields (out of 39), at least one occupation faces a labor shortage. Overall, 36% of employees in Switzerland work in a field affected by a labor shortage (B, S, S. 2014).

[4] According to recent figures (hotelleriesuisse 2015), approximately 45 percent of hotel employees in Switzerland are foreign nationals.

discomfort, and social recognition, while others, such as reception jobs, are better paid and have a better social image.

In our experimental survey, Swiss hotel managers were asked to indicate how likely they were to hire hypothetical applicants with different profiles. Thereby, the candidates' nationality, gender, age, education, labor-market history (captured by participation in an active labor market measure, such as training or occupational programs), and hobbies were varied randomly. The advantage of factorial experiments is that they allow numerous factors to be varied contemporaneously and thus facilitate joint exploration of different sources of and mechanisms triggering disadvantage.

Our findings confirm the theoretical expectation that nationality plays a significant role in hiring but also show that its effect depends on the occupational profile (low-skilled vs. medium-skilled job). Although a foreign nationality leads to a clear disadvantage for positions ranked higher in the occupational hierarchy, we find no evidence that having a foreign nationality is disadvantageous for positions at the lower end of the hierarchy, which indicates that employers' discrimination against immigrants is not homogeneous across the labor market.

The remainder of this paper proceeds as follows: Section 2 sets out the theoretical framework for labor-market disadvantage in terms of different nationalities and how such disadvantage is linked to the occupational hierarchy. Section 3 describes the experiment, the data, and the methods applied to test our hypotheses. Results are presented in Section 4. Finally, Section 5 discusses the study's implications.

2. Theory: explaining immigrants' labor market disadvantage

We know that immigrants face disadvantages in various areas of the labor market (Riach and Rich 2002; Fibbi et al. 2006; Fleichmann and Dronkers 2010; Auer et al 2017). For instance, immigrants may suffer from lower hiring chances (Carlsson and Rooth 2007; Kaas and Manger

2011; Bertrand and Mullainathan 2004), lower promotion likeliness (Blank et al. 2004; Pierce 2012), and lower wages (Ebner and Helbling 2016; Blank et al. 2004; Braddok and McPartland 1987). All these factors contribute to constraining immigrants' social mobility (Pierce 2012; Blank et al. 2004; Ebner and Helbling 2016).

The literature has also shown that immigrants face a conspicuous level of disadvantage compared to natives, even after controlling for compositional differences (often called 'ethnic penalties') (Rydgren 2004; Arai and Vilhelmsson 2001; Ballarino and Panichella 2015). For this reason, we analyze the demand-side mechanism or employers' hiring behavior (not the supply-side mechanism, such as candidates' traits) that leads to potential disadvantage for applicants with a non-native background. In fact, employers are the gatekeepers whose decisions regarding who will be hired have important consequences and shape the very structure of labor-market disadvantage. As Acker (1990) explains for gender, discriminatory practices become a substantive issue when they are institutionalized in asymmetric power structures that systematically channel minority applicants into less attractive positions.[5] Thus, a better understanding of hiring decisions might help prevent the spread of such automatisms.

Drawing on social psychology and discrimination theory, we propose a model that explains employers' hiring behavior and – more precisely – how different types of hierarchical information are used to choose suitable candidates for specific occupations. We argue that two mechanisms affect employers' hiring decisions. On the one hand, employers evaluate a candidate's nationality within the framework of a pre-existing ethnic hierarchy in a particular society. In this manner, employers consider traits, such as social distance, work attitudes in the form of stereotypical perceptions of working morale, anticipation of customer preferences for particular groups, etc. On the other hand, employers have an understanding of the occupational

[5] This phenomenon is comparable with the reproduction of inequality as we know it in the educational system (Bourdieu 1966).

hierarchy (i.e. how a job is regarded in terms of social status, prestige, etc.), as Section 2.3 discusses. Our model predicts that employers match these types of information to maximize the fit between an applicant's position within the ethnic hierarchy and the occupation's position within the social status scale. In other words, the interplay of these hierarchies determines how an employer evaluates candidates.

2.1. Ethnic hierarchies

Several studies have shown that employers generally use the information conveyed by place of origin and/or nationality in their hiring decisions (e.g. Baumle and Fosset 2005; Midtbøen 2013). However, understanding how ethnic hierarchies are created and what mechanisms underpin these perceptions is complex and controversial. Informed by social psychology, we know that individuals automatically impose classifications on people (Reskin 2000) and that members of in-groups are preferred in social interactions (Hagendoorn 1993). Theoretically, this preference for in-group members entails multiple advantages. For instance, in-group contacts ease communication due to shared "cultural understandings" (Hutnik 1991). Moreover, in-group contacts foster a supportive and cohesive environment (Sumner 1906) and strengthen their own identity relative to other groups (Tajfel 1982; Snellman and Ekehammar 2005). Unsurprisingly, individuals not only prefer to *interact* with in-group members but also *evaluate* other in-group members higher than they evaluate out-group members (Reskin 2000). In the context of hiring decisions, in-group membership translates into a lower level of (perceived) *uncertainty* for employers (including with respect to work attitudes) and into more positive evaluations. As a consequence, we expect (native) employers to generally prefer native applicants over applicants with a different national background.

In multi-ethnic societies, a more fine-grained classification that ranks out-group members within a hierarchical system seems more appropriate than a dichotomous distinction. The

literature has shown that the concept of social distance is helpful with regard to understanding the *nature* of this ranking (Hagendoorn 1993; 1995 and Hagendoorn et al. 1987). As a concept, social distance dates to Park (1923) and Bogardus (1925; 1959), who established a measure to study interethnic relations[6]. These authors defined social distance as the "degree of intimacy and understanding" that characterizes relationships between individuals and groups (Park 1923: 39)[7].

The concept of social distance is inherently multidimensional and is determined by at least three factors. First, differences in the perceived socio-economic status of the group shape social distance, with immigrants frequently clustering at the bottom of the social stratification system (Park 1923). Second, social distance is defined by the degree of perceived cultural overlap in terms of language, habits, religion, and – particularly in the labor market – work-related values, including work morale, engagement, and precision (e.g. Hagendoorn et al. 1998; Auer et al. 2017). The third element that defines social distance is appearance, mainly skin color and facial traits. These last characteristics may be of particular relevance for occupations with a high level of customer contact, as argued by Becker (1957).

These three dimensions of what from now on we will refer to as "socio-cultural" distance frequently overlap because immigrants concentrate in particular social classes[8], have a different cultural background from natives, and are (more or less) easily identifiable because of physical characteristics (Ebner and Helbling 2016; Hagendoorn 1993 and 1995)[9]. However, it is not necessary for these components to overlap, and they do not always. For instance, immigrants in the U.S. from Asian countries face fewer difficulties integrating into the labor market than

[6] The Social Distance or Bogardus Scale remains a commonly used instrument to measure prejudice (Wark and Galliher 2007).

[7] Akerlof (1997) later used this concept to explain individual economic decisions that have social consequences. He observed conformist decisions among individuals who shared common class backgrounds.

[8] In recent times, these can also be high rather than low social status classes (see Ebner and Helbling 2016).

[9] In addition to employers, governments also rely on these distance perceptions and frequently establish immigration criteria that not only reflect the need for particular skill sets but also mirror perceptions of cultural or ethnic closeness by prioritizing those immigrants who can be expected to integrate more easily into a society (e.g., with language proficiency, links established through colonial history, etc.) (SEM 2016).

other immigrant groups (Kossoudji, 1988). In particular, it is plausible that Asians benefit from positive stereotypes linked to work-related values assigned more weight by employers, who thus disregard other elements that might trigger perceptions of greater distance (e.g., religion or language). Based on work-related standards, Asian immigrants seem closer to US citizens than other groups who are less similar in terms of work-related values but more similar in terms of physical appearance, for instance (Fiske et al. 2002).

In summary, socially constructed rankings are based on a multitude of dimensions that seem to gain or lose relevance, depending on the groups of interest. With respect to hiring situations, we hypothesize that employers who are (implicitly) aware of these rankings take them into account but give more weight to those characteristics that convey information about workers' expected productivity in the context of a specific occupation.

Overall, the literature shows that ethnic rankings are surprisingly consistent within this context (Snellman and Ekehammar 2005). For instance, individuals who share the same foreign background rank members of *other* nationalities along social distance perceptions, as would members of the in-group (Hagendoorn 1993 and 1995). In other words, they conform to the ethnic hierarchy irrespective of their own ethnicity and social status. In Northern European countries[10], individuals from Southern and Eastern European countries are ranked closer to in-group members, whereas individuals from the Middle East and Africa are located at the lower end of the ethnic hierarchy (Hagendoorn 1993; 1995 and Hagendoorn et al. 1987).[11] The findings by Hagendoorn and colleagues mirror the distance perceptions we find in Switzerland. Former immigrant groups from Southern European countries (e.g., Italians and Spaniards) are

[10] Ethnic hierarchies may vary based on cultural/geographical areas. For instance, immigrants from Asian countries with rather collectivist values generate different rankings than those from Western countries.

[11] The perception of ethnic distance may evolve over time. Earlier immigration waves are generally perceived more positively than more recent waves. Initial problems (e.g., welfare dependency) tend to fade over time with increasing social mobility and the opportunity to show the willingness to "acculturate" and thus gain "closeness" to the host society (see Andriessen et al. 2012). For instance, although Italian immigrants in Switzerland were perceived as "dirty", "uncultivated", and "loud" in the early 1960s, today they are appreciated for their hospitality and lifestyle (Wessendorf 2008).

today perceived as culturally close, together with the recently immigrated Portuguese, particularly because of their reputation as hard workers (Ruedin et al. 2013; Städler 2015; Wimmer 2004). Immigrants from the former Yugoslavia (e.g., Serbia and Kosovo) are instead associated with negative stereotypes, which are particularly explicit in the tabloid media (Scherrer, 2012; BfM, 2010: 41; Fibbi et al. 2006; Wyssmüller, 2005). Finally, immigrants from Muslim countries like Turkey occupy the most disadvantaged position in the Swiss ethnic ranking system (Ruedin et al. 2013; Hainmueller and Hangartner 2013; Helbling 2010). These distance perceptions, which also involve productivity assumptions, are relevant criteria when employers make hiring decisions.

2.2. Job hierarchies

In modern societies, economic inequalities derive mainly from how different labor-market positions affect individuals' social standing. In other words, working in a particular occupation defines the economic class to which an individual belongs (see Erikson and Golthorpe 1992). The effect of labor-market positioning is not limited to material wellbeing and affects social stratification patterns more generally. Occupations are closely linked to three dimensions of capital (economic, social, and cultural) that – to some extent – can be converted to one another and that allow an individual to acquire a particular standing in society (Bourdieu, 1984). First, a well-paid job is likely to lead to higher social standing than a low-paid job. Second, occupations that require high levels of cultural capital (i.e., particular forms of knowledge and competencies that are frequently "inherited" from family or acquired through education) also ensure higher social position. Finally, social capital helps access good positions, but the reverse is also true, as attractive positions open new opportunities for networking. In summary, an individual's position in a society is based on these three forms of capitals, which are then reflected in the occupational structure. Thus, it follows that, as with ethnic rankings,

occupations are ordered hierarchically with respect to multiple dimensions (economic, social, and cultural). Unsurprisingly, sociological research suggests a number of different ways to measure such occupational stratification[12]. The focus of these scales/indexes varies from measuring economic capital (wages) to more complex schemes that attempt to also capture social stratification patterns (cultural capital). However, all these schemes try to rank occupations based on some definition of desirability. Based on this work, we expect that employers rank occupations in line with the social status associated with a particular occupation.

2.3. The matching hierarchies model

When assessing their candidates, employers take both, the social-distance perception and the occupational hierarchy into account. Initially, groups that are more distant are disregarded because they are associated with less certainty about their productivity and overall fit with the position (higher socio-cultural distance, especially different work attitudes) and because people of other nationalities are generally evaluated more negatively than fellow nationals (in-group evaluation bias[13]).

However, unattractive jobs can lead to downward social mobility and status loss for natives. Thus, if a native worker applied for a job at the lower end of the occupational hierarchy, potential employers would be left wondering whether this person might come with (negative) traits that prevent her or him from applying for better jobs. In this context, an employer is less

[12] Examples of such scales include the Occupational Earning Scale (Nickell 1982) and the Socio-Economic Index (Ganzeboom et al. 1992) that both rely on observable data (wage and/or educational attainment). Other scales focus on subjective information, such as "desirability perceptions" (Goldthorpe and Hope 1972). The Standard Occupational Classification Hierarchy (SOC) provides a possible operationalization of social stratification by distinguishing among nine major categories, ranging from managers to so-called "elementary occupations". Occupations at the top of the hierarchy are regarded as more attractive in terms of prestige, wage, and social status (e.g., Inkeles and Rossi 1956; Nakao and Treas 1994).

[13] This proposition is in line with the literature on labor-market segmentation (e.g. Massey et al. 1993; Piore 1979).

inclined to strictly prefer a native applicant[14]. Whenever an occupation conveys the image of being "unsuitable" or "unattractive" for a native worker, an immigrant background almost automatically signals a better fit for employers (Wingfield and Alston 2014; Piore 1979; Massey et al. 1993; cf. Friberg 2012)[15]. In addition, an immigration background may be advantageous for an employer that expects a higher level of (long-term) commitment and motivation. Since immigrants experience greater difficulties in finding a job, employers anticipate that they will go to greater lengths to keep jobs that they have after being hired. As an illustration, Zinn and Dill (1994) show that employers believe that (immigrant) women are ideal workers for many jobs because they are more compliant and demand lower wages (Waldinger and Lichter 2003: 15).

To sum up, *we hypothesize that employers hire members of a given nationality when the associated distance perception is consistent with and fits the vacant occupation*.

Figure 1 below summarizes the theoretical argument and presents employers' preferences as a combination of job hierarchy and socio-cultural distance. Although the dualization literature divides applicants into insiders and outsiders and argues that immigrants are more likely to find employment in outsider jobs (Piore 1979), we argue for a more nuanced distinction. Instead of a dichotomy, the distinctions are multidimensional and subject to employers' matching strategies.

Figure 1 about here

[14] When we argue within a taste-based discrimination model (Becker 1974), we would expect that employers' motivation is to avoid loss in social status with their in-group members.

[15] If an employer would want to attract native workers for unattractive positions (i.e., garbage collection), she would have to either pay higher wages or find other ways to compensate for the status loss. For instance, in Bourdieu's (1966) reasoning, an increase in economic capital (wage) might be converted into social and/or cultural capital forms and might be used to regain social status.

The hierarchy of a given job increases on the x-axis, whereas an individual's proximity to the host society increases on the y-axis. The dotted line represents the best possible match between a candidate's socio-cultural distance and the job's position in the occupational hierarchy.[16] All else equal, the closer the applicant's position to the diagonal, the better the fit. For occupations perceived as undesirable, an immigrant background (i.e., low socio-cultural proximity (black dot on the line)) constitutes a good – or at least reasonable – attribute relative to natives. Conversely, as an occupation becomes increasingly attractive, in-group nationality (i.e., high socio-cultural proximity) becomes increasingly preferred. Combinations of proximity to the host society and job hierarchies that are farther away from the dashed matching hierarchies line represent a worse fit and are thus less likely to be realized in a hiring situation (hollow circles). Up to a certain point, employers who cannot find applicants "close" to the optimal match (dotted line) may hire less suitable candidates. However, if the candidates are too "far away" (empty circles), they may resort to alternative strategies, such as revising the *occupation*'s description to better fit with the individuals who actually applied. As Pager et al. (2009) show, employers – particularly those with more than one vacancy – attempt to either channel minority members into those openings that rank lower in the hierarchy or re-negotiate the job with applicants. For instance, they might offer more responsibility, a better wage, or a more prestigious job title to native applicants; conversely, they may "downgrade" the job for non-native candidates. In this sense, employers have quite some room to manoeuvre to reach or restore the ideal hierarchical match.

The matching hierarchies' theory comes with restrictions. In some contexts, nationality might be a less relevant signal. In the instance of a high level of specialization or in the context of a labor shortage (Baert and De Pauw 2014), for example, employers might have to resort to individuals with foreign backgrounds although they would prefer hiring natives. The

[16] We do not necessarily assume a linear relationship but use it for reasons of parsimony.

importance of the matching hierarchies model might also be attenuated in highly internationalized work environments and particularly at the very top of the occupational distribution (management and research), where employers are used to hiring non-natives and/or where other candidates' attributes become more important or convey less "fuzzy" information. In similar fashion, it is possible that employers' characteristics affect the importance of nationality or immigrant status on the hiring process. More libertarian values, or being an immigrant oneself (i.e., in ethnic labor markets), is likely to make nationality drop in relevance as a signal. The same might be true when employers have the occasion to *learn* over an extended period and thus counteract their stereotypical beliefs and assumptions regarding "normality". As contact theory suggests, recurrent interactions with non-native employees, particularly within a professional environment, may lead to a correction of perceptions (Pettigrew and Tropp 2006).

3. The experimental setting: factorial survey design

Studying employers' hiring behavior has proven difficult, due to the lack of data. Determining which characteristics influence hiring decisions would require the researcher to know not only the successful candidate but also the entire applicant pool. To overcome this problem, we study employers' hiring preferences in an experimental setting, simulating a hiring process for the position of a receptionist (a medium-skilled, "fairly attractive" position) and a room cleaner (a low-skilled, "rather unattractive" position) in the Swiss hotel sector. We focus on these two positions because they are the most common occupations in the hotel industry. Therefore, we expect higher survey engagement because hotel employers are faced with a familiar hiring scenario. In addition, the social policy relevance of focusing on low- and medium-skilled individuals is higher, since most individuals with a migration background still have lower qualifications than natives (BFS 2017) and since low-skilled workers are generally more at risk

of becoming unemployed. The advantage of conducting this study with hotel employers is that this sector has, first, a highly fluctuating employment rate and, second, a generally high share of foreign employees, which means that foreign applications are quite common. Moreover, we do not rely on convenience samples but instead study actual hotel employers, who can better assess a job's required skills than a general population sample and who have been shown to reveal their preferences more readily and "honestly" than human resources personnel (Waldinger and Lichter 2003: 25; Midtbøen 2013: 1663). Moreover, in the current Swiss context, hotel managers have an interest in revealing their true preferences based on the current labor shortage and the possibility that contingents on workers are introduced, as a consequence of the bilateral negotiations with the European Union.

We conducted a factorial survey experiment, which is a widely applied methodology (Wallander 2009) increasingly used to study employers' hiring behaviors (van Beek 1993; Biesma et al. 2007; Di Stasio and Gërxhani 2015; Di Stasio 2014; de Wolf and van der Velden 2001; Abraham and Damelang 2016). In factorial experiments, participants must rate or rank tasks of fictitious descriptions (called vignettes) of situations or objects. In our case, we asked employers to evaluate two pairs of fictitious *curriculum vitae* (CV) on a 10-point Likert scale. This paired conjoint setup has been shown to capture real-world decisions remarkably closely (see Hainmueller et al. 2014). Such vignettes are advantageous in that they (i) reduce the risk of attributing employers' preferences to a characteristic that remains unobserved to the researcher but is nonetheless observed by the employer, (ii) allow for testing several dimensions at the same time, and (iii) are not prone to ethical concerns, as is the case for correspondence studies (Zschirnt 2016). Moreover, it has been shown that vignettes deliver a more valid measurement of attitudes and are less biased by social desirability than item-based techniques, such as standard surveys, because it is more difficult to follow socially desirable patterns when

several characteristics associated with lower productivity or other disadvantage vary contemporaneously (Auspurg, Hinz, and Liebig 2009).

In the reviewed CVs, we focused on the influence of six dimensions, each of which can assume different values, which we varied randomly (see Table A2 in the appendix for the dimensions and levels). We drew a sample (d-efficiency = 90.7; see Auspurg and Hinz, 2015) from all possible combinations of characteristics, which allows us to estimate both single and interaction effects. Overall, the main advantage of this method is that it enables us to randomize numerous individual attributes in a single experiment (Andriessen et al. 2014: 240; Hainmueller and Hopkins 2014: 2) and thus not only compare one minority group to a majority group but also differentiate among several groups of immigrants.

In the general description of the scenario, all candidates were declared as unemployed for 6 months because their previous employer closed his/her hotel as a result of retirement. To ensure that employers perceived candidates with an immigrant background to have mastered the local language as well as native speakers – in addition to avoiding divergent assumptions regarding the schooling returns for candidates of foreign nationality – we specified that all applicants were schooled in Switzerland and were, thus, well acculturated to Swiss society (Gordon 1964). Therefore, we expect our estimation of immigrants' disadvantage to be conservative in nature.[17]

We capture the level of immigrant disadvantage by how likely respondents were to hire a candidate, as indicated in the survey. [18] Of course, this is not a direct outcome measure; instead, the rating presents a stated choice. However, studies such as Webb and Sheeran (2006) and De Dreu et al. (2001) show that there is a high correlation between stated and actual behavior.

[17] Not becoming naturalized after a certain period of residence, as is the case for our candidates, might be interpreted as a negative signal and might increase immigrants' overall disadvantage. However, we have no reason to assume that this potential negative signal affects only one of the two jobs.

[18] We used a stronger framing and asked for the likeliness to hire because we wanted employers to think about making a *decision* rather than about possibly avoiding a decision by inviting several candidates for interviews.

3.1. Operationalization of socio-cultural distance

For the operationalization of socio-cultural distance and the choice of nationalities with different rankings, we rely on Hagendoorn (1995). We chose Portuguese applicants to represent southern European countries, which, according to Hagendoorn (1995), rank lower than nationals of Nordic countries. However, as discussed above, Portuguese workers are likely to be perceived as quite close to Swiss employees due to their positive work attitudes and stereotype as particularly hard workers. Next, we selected Serbians to represent nationals from the former Yugoslavia, which should again be more distant particularly because of the possibility of different cultural and religious backgrounds. Moreover, in Switzerland, minorities from this region are associated with negative stereotypes in terms of character traits (aggressiveness, speeding motorists, etc.) (BFM, 2010: 41; Besic, 2005; Wyssmüller, 2005). Both communities are among Switzerland's largest immigrant groups. Finally, as representative of the most distant group, we chose Senegalese immigrants, who differ substantially in terms of culture and with respect to appearance[19]. Generally, immigrants from Africa still represent a smaller share of immigrants in Switzerland. However, their number is steadily on the rise, as shown in Figure 2, and is thus an interesting group to study with respect to possible future group-specific challenges.

Figure 2 about here

[19] It might be argued that individuals with a Senegalese background are perceived as less distant because they likely have the same linguistic background as the French-speaking part of Switzerland. In that sense, an upward bias in the estimates would be expected. However, the vignettes presented all candidates as having obtained their education in Switzerland. Accordingly, nationality should not impact language proficiency.

3.2. Data and estimation strategy

We collected data between September and November 2015, using an online survey sent to members of Switzerland's largest hotel employer organization. Surveys targeting employers and particularly managers are often characterized by lower response rates than general population surveys (Anseel et al. 2010). An important reason for this difference in response level is that in contrast to general population surveys, it is not possible to draw additional samples if the targeted response rate is not reached. Thus, from the beginning, we contacted *all* 1982 members of the largest employer organization (which covers enough hotels to account for 80% of all overnight stays in Switzerland) by means of postal mail. We informed them of the study and that both the employer organization and the university had explicitly supported our research. One week after sending this information, we sent an email with a personalized link, followed by two waves of reminders (see S1c in the appendix for the experimental protocol).

A total of 237 participants[20] completed the survey, yielding a response rate of 12 percent, which is comparable to other studies that have analyzed similar populations (Abraham and Damelang, 2016) and to the insights provided by studies drawing on smaller sets of selected respondents (Di Stasio 2014, Biesma et al 2007, de Wolf and van der Velden 2001). Generally, a low response rate increases the risk that results are biased because of unknown respondent selection in the sample. For instance, our sample has a slight overrepresentation of respondents from urban areas (see Table S3). However, these areas are normally more immigration-friendly, and, as the tourism sector is more developed there than in rural areas, the demand for workers is higher.

As Cook et al. (2000) argue, the representativeness of responses is more important than the actual response rate. Thus, in Table S3 in the supplementary materials, we show that the distribution for a set of crucial macro-level variables of respondents and non-respondents is

[20] In Table A1 in the appendix, we provide descriptive statistics for respondents and in Table S3 of the supplementary materials, information on the distribution of respondents compared to the contacted population.

similar among the two groups. Given the fact that the distributions of a number of important respondent (and hotel) characteristics marginally differ between the contacted population and the respondent sample, we expect our results to be unbiased in spite of our low response rate.

To identify the influence of the candidate's characteristics, respondents' overall rating of each candidate was regressed on the vignette dimensions as independent variables (see Table S2 in the supplementary materials). If specific assumptions hold, Hainmueller et al. (2014b: 10) have shown, linear regression of the outcome on the vignette characteristics produces an unbiased estimate of the so-called average marginal component effect (AMCE[21]), which represents the marginal effects of a given attribute over the joint distribution of the remaining vignette attributes. AMCE is unbiased if, first, there are no carryover effects, which means that a respondent's rating of one candidate or a pair of candidates cannot be influenced by the outcomes of the previous rating task. Second, AMCE is unbiased if profile ordering does not affect ratings. In a given pair of candidates, the individual rating does not depend on whether a candidate has been presented in first or second place (in our case, on the left- or right-hand side of the page). Third, for AMCE to be unbiased, candidate profiles must be properly randomized across all respondents. This assumption holds by study design for the overall population. However, randomization may be violated for the subsample that answered the survey, particularly if the sample size is small. We provide a test for each key assumption below in Section 4.1. As two pairs of candidates for each job have been presented to respondents, we must assume that the ratings are correlated because of unobserved respondent characteristics. Therefore, we estimate robust standard errors clustered at the respondent level, as suggested by Hainmueller et al. (2014b).

The outcomes can be analyzed in three ways. Initially, we assume by study design that respondents compare the candidates within each pair and assign their rating afterwards. Hence,

[21] For a detailed elaboration of the AMCE and its underlying assumptions, see Hainmueller et al. 2014b.

we recode the candidate-specific ratings into a binary choice variable that takes the value of 1 if a candidate was preferred (had a higher rating than its counterpart) and 0 if the other candidate was preferred, where 0.5 represents equal ratings. This approach represents the original way to analyze conjoint experiments, and it can be argued that a choice situation most closely approaches a real-world hiring scenario[22]. In addition, we can further minimize potential bias in ratings due to unobserved respondent characteristics (i.e., if a randomization on respondent characteristics that leads to a systematically higher or lower rating of candidates would have failed). As a second piece of evidence, we retain the individual ratings and normalize them such that they represent a continuous stated choice model ranging from 0 to 1, with 1 representing the best candidate. Since we assume the individual ratings to be influenced by the other candidate of the pair, we stick to standard errors clustered at the respondent level to account for the possible non-independence of the ratings (Hainmueller et al. 2014b: 17). Finally, we performed the analyses using multilevel regressions,[23] following the suggestions of Steenbergen and Jones (2002) and Auspurg and Hinz (2015). The results remain stable across all estimation strategies.

4. Results

Figure 3 below shows the vignette ratings by job type and by applicant nationality (descriptive results). Although applicants with a Swiss background for the reception job are rated higher, the low-skilled cleaning occupation depicts a rather similar picture for all nationalities (i.e., the average rating for Swiss candidates aligns with the three migrant groups). This change is also shown in the third plot of Figure 3: respondents' rating of the Swiss candidates remains

[22] Note that binary outcomes are used for conjoint experiments with forced choice between two candidates. In this experiment, we infer the choice from the respondent's ratings of the two candidates, which can be identical. Hence, we do not force a preference of one candidate over the other, thus adding an outcome with a value of 0.5 if both candidates obtain the identical rating.

[23] See Figure S2 in the supplementary material for the distribution of the dependent variables.

relatively stable at approximately 5.5 points, whereas the three immigrant groups close the gap between them and the Swiss candidates for the cleaning position.

Figure 3 about here

The descriptive finding that the effects of immigrant background differ by occupation (Figure 3) is confirmed by the regression analysis (Table 1).

Table 1 about here

In more detail, Column 1 in Table 1 presents the regression of the choice variable for the cleaning position on the full battery of vignette dimensions. The results depict no significant differences between the four nationalities in the probability of being the preferred candidate for the cleaning position[24]. However, in descriptive terms, we find the ethnic hierarchy is predicted by our model.

In Column 2, we added respondent characteristics to the model, whereby the results remain unchanged. These respondent characteristics include individual attributes of age, gender, origin, educational attainment, and years of experience in hiring staff, in addition to hotel-specific criteria (i.e., the Swiss language region in which the hotel is located, the share of foreign staff in the hotel, and the local unemployment rate) to account for segregation at the firm level and possible variation in labor supply (see Section 2.4. above).

Generally, the sign of the particular coefficients is as expected. For instance, older age and the individualistic and competitive sport of kickboxing lead to a negative sign that is significant at

[24] Technically, since the outcome can take on the values (0;0.5;1), a positive regression coefficient depicts an increase in the probability of being rated better *or at least equally as good as* the other candidate.

the 10% level. The effects of education and specific active labor-market measures are instead positive and thus associated with a higher probability of being the preferred candidate, indicating that employers tended to choose the most employable individuals within a specific group. Thus, among minority candidates for the cleaning position and majority candidates for the receptionist positions, employers preferred those applicants who could be expected to be most productive.

Columns 3 and 4 (with respondent characteristics) present the results for the reception position. Although age and hobbies have similar effects, respondents seem to prefer female candidates in the reception position and are more skeptical of activation measures[25]. The preference for women might result from the higher female share in this occupation(s), although we made sure that both positions were described as gender neutral. In terms of immigration background, we find a negative effect that is large in magnitude and statistically highly significant. The probability of moving from 0 to 1 (i.e., to be the preferred candidate) decreases for all immigrants. The average disadvantage of the different nationalities roughly follows that predicted by the social distance literature and conforms to our matching theory, whereby the negative effect size for Portuguese remains substantial (-0.13 points) but smaller than for the Serbian and Senegalese candidates (-0.20 points).

Overall, the analysis seems to corroborate the hypothesis that ethnic rankings are mirrored in the labor-market chances of the respective communities, as expressed by the hiring preferences of employers in Switzerland. We predicted that immigrants would experience increased disadvantage for positions that are high on the occupational hierarchy. With regard to employers' assessments in the cleaning services – an occupation that is not attractive for native workers – we find that Swiss natives are no longer the preferred group. However, for a medium-skilled position at the hotel reception, immigrants are strongly disadvantaged compared to

[25] We discuss the finding of job-specific effects of education and active labor market measures in Liechti et al. (2017).

Swiss natives. In fact, nationality turns out to be the strongest driver of our sample of applicant characteristics.

At times, the literature argues that employers' preference for natives over minorities is affected by the level of customer contact expected in an occupation (e.g., reception versus back office). Employers may be more reluctant to hire minority candidates who are easily identifiable because they have trouble speaking the local language, have a strong accent, or are easily identifiable due to physical characteristics. In our study, this customer contact should not decisively influence the hiring choice because we specified that all candidates completed their education in Switzerland and because there should be no expected difference in either the quality of education or language mastery between immigrant applicants and Swiss natives in this test. Moreover, in term of facial traits, applicants from Serbia and Portugal are often indistinguishable from Swiss natives[26]. In other words, an employer seeking to guarantee that his or her customer will have a "local" experience when interacting with a receptionist will find all our candidates – except maybe those with a Senegalese background – should be interchangeable in terms of productivity. We conclude that the degree of customer contact should not affect our results substantially.

We demonstrate the change in preferred choices from the receptionist to the cleaning position for each nationality in Table 2 below. Although the Swiss demonstrate a strong and significant decrease in being the preferred group when shifting the job from receptionist to cleaner, all immigrant groups exhibit an increase in their favoritism, with the difference for the Senegalese – arguably the most distant of the three immigrant groups – being significant at the 10% level.

[26] For second-generation candidates, also bureaucratic hurdles that could be linked to a non-EU origin do not represent a disadvantage in terms of labour-market access (e.g., work or residence permits).

As a robustness check, we retained the (normalized) ratings of each candidate and repeated the analysis. The results shown in Table A3 in the Appendix do not differ from those presented in Table 1 above.

Table 2 about here

4.1. Experimental robustness

To test our experimental results' robustness, we performed a number of diagnostics, as suggested by Hainmueller et al. (2014b). Initially, we measured the possibility of carryover effects. Given the AMCE's underlying assumptions described above, a respondent should maintain the same choice regardless of any candidates she would see later or has seen already. We test this assumption by estimating the AMCE separately for the two rounds of vignette-pairs for each job. In Table A4.1 in the Appendix, the columns are labeled Round 1 and Round 2, respectively. Given the small sample size, the results remain relatively stable for both jobs, which excludes the possibility of strong bias in the results from strong carryover effects.

Next, we tested for profile order effects. According to the AMCE's second assumption, respondents should make choices in a given pair of vignettes independently of the candidate's ordering. Again, we test the AMCE separately, this time by the ordering of the candidate's nationality. The results shown in Table A4.2 remain stable, which indicates that the overall effects are not influenced by whether a given nationality was assigned to the first or second candidate in a given vignette pair.

Eventually, we tested for successful randomization of the candidates' characteristics within our sample of respondents. Since survey experiments are conducted based on respondents' information within the questionnaire, it is impossible to compare the sample groups' attributes with those of the overall population. However, whether experimental groups are balanced

within a given sample can be tested by regressing respondents' characteristics on the nationality of candidates. As shown in Table A4.3, all candidate nationalities are statistically insignificant. In addition, the omnibus F-test shows a p-value that is generally above 0.9, indicating that randomization has worked well.

5. Conclusions

We set out to test our theoretical model postulating that natives should not always be advantaged compared to candidates with an immigration background and that the degree of disadvantage instead depends on the occupation at stake. Indeed, we find applicants for more attractive, medium-skilled positions (such as a receptionist) to be clearly advantaged if they are native. In other words, in Switzerland immigrants suffer from high levels of disadvantage for positions that are desirable for native workers based on occupational stereotypes. However, when an occupation is considered not "attractive enough" for native workers, an applicant from the out-group is not disadvantaged because the occupational profile corresponds to the immigrant candidate's position in the system of ethnic hierarchies. In sum, foreign nationality seems to be a source of double disadvantage: it not only hampers hiring chances in good jobs but also seems to increase potential lock-in effects in bad jobs. In fact, individuals with a non-Swiss background have an easier route than Swiss nationals in terms of accessing the least desirable positions in the occupational hierarchy.

This paper makes both theoretical and empirical contributions to the literature on these themes. First, we add to the theoretical debate on the causes of discrimination by proposing a more refined theory explaining why and when individuals with foreign backgrounds encounter difficulties on the job market. We argue that a simple insider-outsider dichotomy does not do justice to employers' hiring strategies, in fact, our results show that these differentiate depending on the occupation a (minority) candidate postulates for. Second, experimental data

on discrimination remain rare in the Swiss context (for a laudable exception see Fibbi et al., 2006). Thus, our results add to understandings of the patterns of disadvantage in Switzerland. Third, we base our analysis of discrimination on responses of *involved actors* – the hotel managers – rather than relying on readily available convenience samples (cf. Baert and De Paw, 2014). In fact, many survey experiments proxy employers' hiring behaviour relying on student samples. Conversely, we provide results reflecting the preferences of individuals directly involved in real-world recruiting decisions.

We are aware that our study has shortcomings, not least because employers are a notably difficult population to study (see Abraham and Damelang, 2017). Thus, we have low response rates even when exerting rigorous efforts to increase participation. Nonetheless, given the response/non-response comparison for the variables available for both groups, we have no reason to believe that the analyzed sample deviates significantly from the target population (see supplementary material).

However, the question remains whether our results are generalizable to other sectors. We believe that the matching hierarchy logic applies to most occupations from low- to medium- to high-skilled and particularly to jobs in which requirements and qualifications are flexible, as such jobs make more room available for discrimination (Moss and Tilly, 2001; Dovidio and Gaertner, 2000). However, further research should test this question using more sectors, different occupations, different immigrant backgrounds, and possibly comparative settings. It would also be interesting to add further dimensions such as language proficiency, cultural and ethnic attachment, or foreign education to explore the patterns of immigrant disadvantage in more detail. When seeking to understand the patterns of disadvantage of individuals with a foreign background, we conclude that it is important to be aware of the contextual factors that may change the nature of obstacles that immigrants face. In particular, we show that nationality-

based signals may be contingent on occupational characteristics and may also interact with active labor market policy participation, as we show elsewhere (Liechti et al. 2017).

These findings have several policy implications. First, more effort should be devoted to eliminating access difficulties to medium-skilled jobs and to preventing lock-in effects in low-desirability jobs. Research has shown that standardized application assessments and blinded application procedures help reduce discrimination (for gender e.g., Bohnet, 2016). Thus, introducing minimal requirements for hiring professionals and anti-discrimination legislation – which Switzerland does not have – might be helpful tools for reducing this disadvantage. Second, it is important to foster promotion possibilities in low-skilled jobs to increase the social mobility of individuals who have difficulties accessing medium-skilled occupations immediately. This might be achieved by investing in on-the-job training programs. Finally, awareness campaigns and specialized training for employers with recruitment duties might alleviate the problem, in addition to fostering a (seemingly) much-needed debate on inequality in the age of migration.

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Tables and Figures

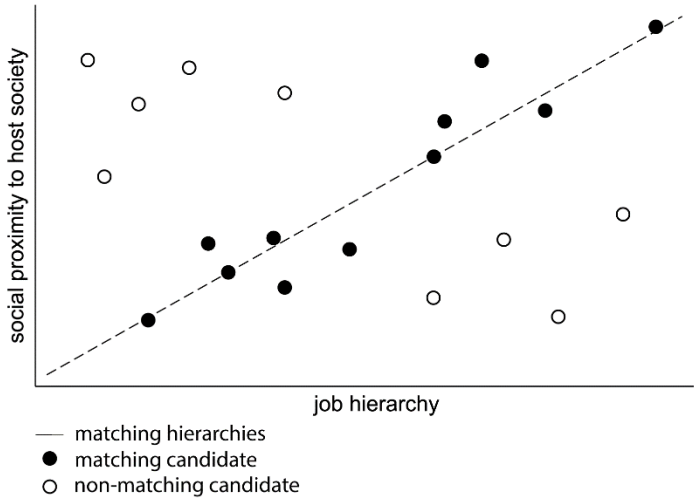


Figure 1: The matching hierarchies model: how employers select candidates based on social proximity and job hierarchy

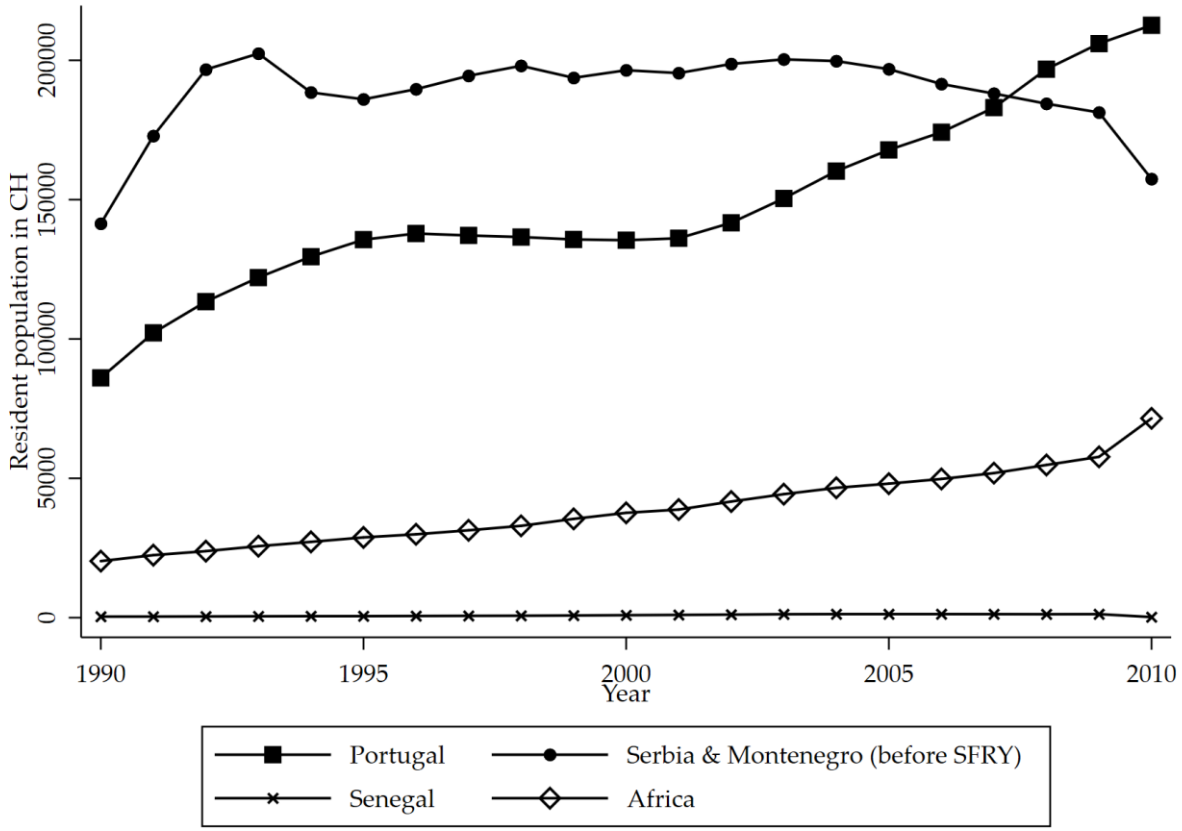


Figure 2: The total number of foreigners for selected nationalities, 1990-2010

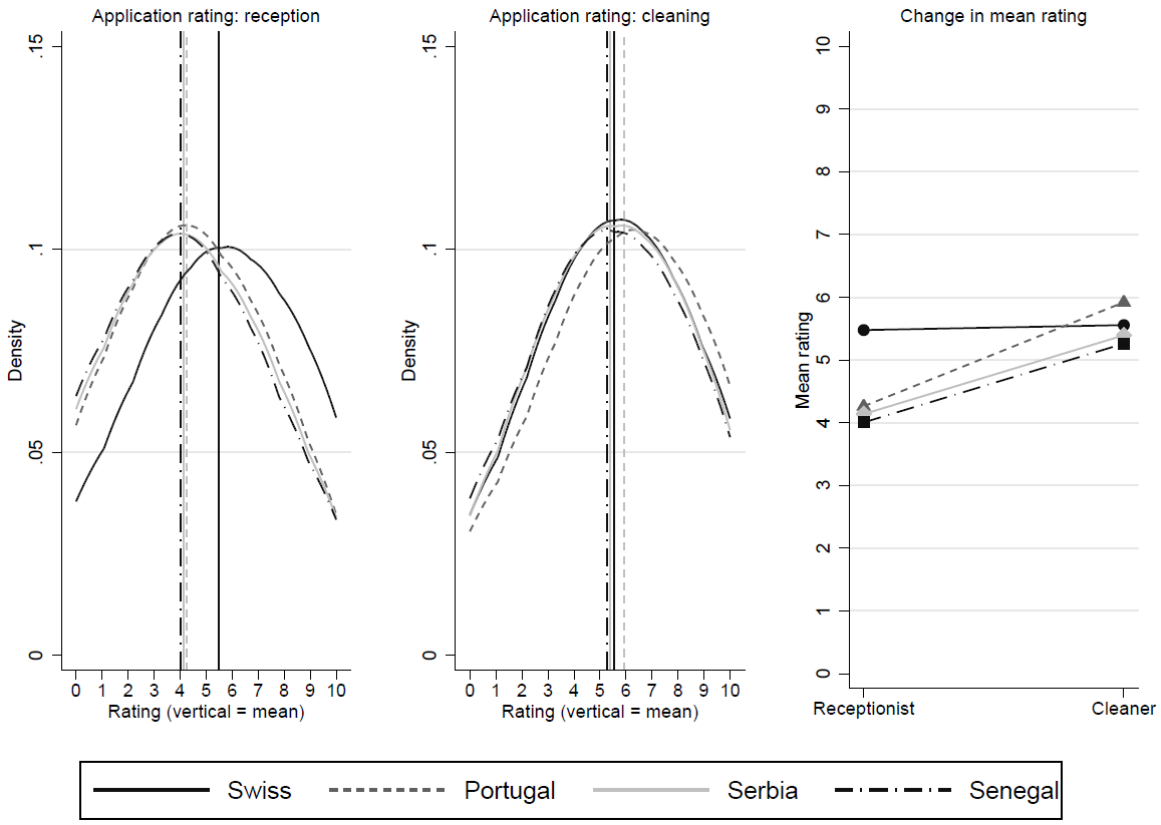


Figure 3: Vignette ratings by job type and applicant nationality

Table 1: The determinants of employers' evaluation of applicants in two occupations

	Cleaning		Reception	
	(1)	(2)	(3)	(4)
Nationality (reference: Switzerland)				
Portugal	0.06	0.05	-0.12****	-0.13****
	(0.04)	(0.04)	(0.03)	(0.04)
Serbia	-0.05	-0.05	-0.19****	-0.20****
	(0.04)	(0.04)	(0.04)	(0.04)
Senegal	0.00	-0.01	-0.19****	-0.20****
	(0.04)	(0.04)	(0.04)	(0.04)
Gender (reference: male)				
Female	0.02	0.02	0.06****	0.06****
	(0.01)	(0.01)	(0.01)	(0.01)
Age (reference: 25 years)				
32 years	0.00	0.01	0.01	0.02
	(0.03)	(0.03)	(0.03)	(0.03)
40 years	-0.06*	-0.06	-0.12***	-0.12***
	(0.03)	(0.04)	(0.04)	(0.04)
Education (reference: obligatory)				
Secondary	0.21****	0.21****	0.16****	0.15****
	(0.03)	(0.03)	(0.03)	(0.03)
ALMP (reference: none)				
Training	0.00	0.00	0.04	0.03
	(0.04)	(0.04)	(0.04)	(0.04)
Subsidy	0.11**	0.09**	0.06	0.05
	(0.04)	(0.05)	(0.04)	(0.04)
Occupation	0.09**	0.09**	-0.04	-0.05
	(0.04)	(0.04)	(0.04)	(0.05)
Two occupations	0.09**	0.08**	-0.14****	-0.15***
	(0.04)	(0.04)	(0.04)	(0.04)
Hobbies (reference: none/music)				
Volunteering	0.02	0.02	0.02	0.03
	(0.04)	(0.04)	(0.04)	(0.04)
Team sports	-0.08*	-0.07*	-0.09*	-0.09*
	(0.04)	(0.04)	(0.05)	(0.05)
Kickboxing	-0.09*	-0.09**	-0.08*	-0.07*
	(0.04)	(0.04)	(0.04)	(0.05)
Chess	-0.05	-0.05	-0.08*	-0.08*
	(0.04)	(0.04)	(0.04)	(0.04)
Respondent characteristics+	**no**	**yes**	**no**	**yes**
Observations	948	920	962	926

SE in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, and **** $p < 0.001$

+ Respondent characteristics include age, gender, educational attainment, whether the respondent was born in Switzerland, as well as the language region in which the hotel is located, the local unemployment rate (cantonal level), and the share of foreigners employed in the hotel (as derived from the respondent's answers in the accompanying survey).

Table 2: Student's t-test results for employer evaluation differences for cleaners and receptionists, by nationality

	(1) **Swiss**	(2) **Portuguese**	(3) **Serbian**	(4) **Senegalese**
Stated choice	-0.15****	0.06	0.02	0.07*
E(cleaner) - E(receptionist)	(-4.06)	(1.59)	(0.65)	(1.91)
Observations	467	481	486	476

t statistics in parentheses
* p < 0.10, ** p < 0.05, *** p < 0.01, and **** p < 0.001

Appendix

Table A.1: Descriptive statistics of survey respondents (employers)

	Mean / column % (Std. dev.)
Language region (of hotel, col %)	
German	0.69
French	0.22
Italian	0.08
Romanesque	0.02
Regional unemployment rate	0.03
	(0.01)
Share of foreign employees (of hotel)	0.60
	(0.24)
Female	0.45
	(0.50)
Age	49.56
	(10.28)
Educational attainment (col %)	
Mandatory or other	0.10
Professional education	0.16
Professional higher education	0.51
University	0.24
Hiring experience in years	15.55
	(9.74)
Born in Switzerland	0.73
	(0.44)
N	237

Table A.2: Dimensions and levels of vignettes (cleaning and reception)

Dimension	Level	
Gender	-	Mr. (reference category)
	-	Ms.
Nationality	-	Swiss citizen, unmarried, without children (reference category)
	-	Portuguese citizen, unmarried, without children
	-	Serbian citizen, unmarried, without children
	-	Senegalese citizen, unmarried, without children
Age	-	25 years old (reference category)
	-	32 years old
	-	40 years old
Education	-	Completed mandatory school in Switzerland
	-	Completed a 3-year apprenticeship[1] program as merchandiser (*receptionist*)
	-	Completed a 2-year apprenticeship as hotel employee (*cleaning*)
ALMP	-	(no mention) (reference category)
	-	Russian course paid by the job center (Training)
	-	40% wage subsidy paid by the job center (Subsidy)
	-	Temporary employment program in the field of clothing recycling (Occupation)
	-	Temporary employment program in the field of clothing recycling and temporary employment in the packing sector (Two occupations)
Hobby	-	Loves listening to music (reference category)
	-	Two times a week plays checks in the local association
	-	Two times a week practices kick-boxing
	-	Two times a week plays soccer (volleyball for female) with a local club
	-	Volunteers for an association taking care of the elderly

[1] Switzerland has a strong vocational education and training system (VET) in which most adolescents follow a dual track program that combines practical training at a company with theoretical classes for one or two days. There are programs for over 230 occupations, and most are three- or four-year VET programs with a federal diploma, there are shorter two-year programs years with a federal certificate. The two-year VET program as hotel employee consists of courses in laundry service, looking after guests, housekeeping, logistics, interior decoration. The three-year VET program as merchandiser consists of a course in German, a foreign language, economics, and communications.

Table A.3: The determinants of employers' evaluation of applicants for cleaning and reception position using normalized ratings

		Cleaning		Reception	
		(1)	(2)	(3)	(4)
Nationality (ref. Switzerland)					
	Portugal	0.03*	0.03	-0.10****	-0.11****
		(0.02)	(0.02)	(0.02)	(0.02)
	Serbia	-0.02	-0.02	-0.12****	-0.13****
		(0.02)	(0.02)	(0.02)	(0.02)
	Senegal	-0.03	-0.03	-0.14****	-0.15****
		(0.02)	(0.02)	(0.02)	(0.02)
Gender (ref. male)					
	Female	0.14****	0.14****	0.09****	0.09****
		(0.02)	(0.02)	(0.02)	(0.02)
Age (ref. 25 years)					
	32 years	0.01	0.02	0.01	0.01
		(0.02)	(0.02)	(0.02)	(0.02)
	40 years	-0.01	-0.01	-0.07****	-0.07****
		(0.02)	(0.02)	(0.02)	(0.02)
Education (ref. obligatory)					
	Secondary	0.11****	0.12****	0.09****	0.09****
		(0.01)	(0.01)	(0.02)	(0.02)
ALMP (ref. none)					
	Training	-0.01	-0.00	0.01	0.01
		(0.02)	(0.02)	(0.02)	(0.02)
	Subsidy	0.03	0.04*	0.01	0.00
		(0.02)	(0.02)	(0.02)	(0.02)
	Occupation	0.00	0.01	-0.04*	-0.04*
		(0.02)	(0.02)	(0.02)	(0.02)
	Two occupations	0.03	0.03	-0.07***	-0.08***
		(0.02)	(0.02)	(0.02)	(0.02)
Hobbies (ref. none/music)					
	Volunteering	0.02	0.02	-0.01	-0.00
		(0.02)	(0.02)	(0.02)	(0.02)
	Team sports	-0.00	-0.00	-0.01	-0.01
		(0.02)	(0.02)	(0.02)	(0.02)
	Kickboxing	-0.03	-0.03	-0.04*	-0.04
		(0.02)	(0.02)	(0.02)	(0.02)
	Chess	-0.01	-0.01	-0.02	-0.02
		(0.02)	(0.02)	(0.02)	(0.02)
Respondent characteristics		**no**	**yes**	**no**	**yes**
Observations		958	928	967	931

SE in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, and **** $p < 0.0$

+ Respondent characteristics include: age, gender, educational attainment, whether the respondent was born in Switzerland, the language region in which the hotel is placed in, the local unemployment rate (cantonal level), and the share of foreigners employed in the hotel (as derived from the respondent's answers to the accompanying survey.)

Table A.4: Diagnostics tests for carryover, profile order, and randomization effects

	(1)	(2)	(3)	(4)

Table A.4.1: Carryover Effects

	Cleaning Round 1	**Cleaning Round 2**	**Reception Round 1**	**Reception Round 2**
Portugal	0.04	0.08	-0.11*	-0.13**
	(0.06)	(0.06)	(0.06)	(0.05)
Serbia	-0.04	-0.05	-0.14**	-0.24****
	(0.05)	(0.07)	(0.06)	(0.07)
Senegal	0.01	-0.01	-0.15***	-0.21****
	(0.05)	(0.06)	(0.05)	(0.05)
Observations	460	460	464	462

Table A.4.2: Profile Order Effects

	Cleaning First	**Cleaning Second**	**Reception First**	**Reception Second**
Portugal	0.03	0.07	-0.11***	-0.13***
	(0.05)	(0.06)	(0.04)	(0.05)
Serbia	-0.09*	-0.05	-0.15**	-0.24****
	(0.05)	(0.06)	(0.06)	(0.05)
Senegal	-0.02	-0.01	-0.15****	-0.25****
	(0.05)	(0.06)	(0.04)	(0.06)
Observations	460	460	463	463

Table A.4.3: Randomization

	clean gender	**recep gender**	**clean age**	**recep age**	**clean educ**	**recep educ**	**clean exper**	**recep exper**
Portugal	0.01	-0.00	-0.02	0.02	0.01	-0.02	-0.15	0.02
	(0.01)	(0.01)	(0.21)	(0.15)	(0.02)	(0.02)	(0.21)	(0.16)
Serbia	-0.02	-0.00	-0.42	-0.24	0.01	0.00	-0.19	-0.08
	(0.01)	(0.01)	(0.31)	(0.22)	(0.02)	(0.02)	(0.29)	(0.20)
Senegal	0.00	-0.01	-0.08	-0.22	-0.01	0.00	-0.05	-0.14
	(0.01)	(0.01)	(0.19)	(0.17)	(0.02)	(0.01)	(0.21)	(0.14)
p omnibus F	0.92	0.99	0.96	0.99	0.99	0.99	0.99	0.99
p Bartlett's	1.00	1.00	0.99	1.00	0.99	0.99	0.98	0.99
Observations	972	972	972	972	972	972	972	972
	clean ch-born	**recep ch-born**	**clean foreign share**	**recep foreign share**	**clean lang. reg**	**recep lang. reg**	**clean unempl**	**recep unempl**
Portugal	-0.00	0.01	0.00	-0.01	0.00	0.01	0.02	0.03
	(0.01)	(0.01)	(0.00)	(0.00)	(0.02)	(0.01)	(0.02)	(0.02)
Serbia	-0.00	-0.01	-0.01	0.01	0.03	-0.02	0.05	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.03)	(0.01)	(0.03)	(0.02)
Senegal	0.01	-0.01	0.01	0.00	-0.01	0.00	-0.01	0.02
	(0.01)	(0.01)	(0.00)	(0.00)	(0.02)	(0.01)	(0.02)	(0.02)
p omnibus F	0.97	0.96	0.97	0.95	0.93	0.96	0.96	0.98
p Bartlett's	0.99	0.98	0.99	0.96	0.89	0.97	0.99	0.98
Observations	972	972	972	972	972	972	972	972

SE in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, and **** $p < 0.001$

Supplementary Material

Table S1a: Experimental Protocol

Date	Step
9 November 2015	Postal letter announcing the survey and a leaflet with more information on the survey
11 November 2015	Electronic survey link
16 November 2015	Reminder to those that had not yet responded
23 November 2015	Second reminder to those that had not yet responded
19 January 2016	Survey closed

Figure S1b: First screen vignette experiment

Recruitment Decision Receptionist

In this section we would like to capture your staff requirements the best possible. Instead of traditional question batteries, we will therefore present you four candidate profiles and ask you to evaluate them.

The following candidates apply for a position as a receptionist in your hotel. All four candidates hand in a written application and have already worked as a receptionist in different hotels in Bern. They have lost their current position due to the closed down of the hotel six months ago and are currently unemployed and are looking for a new position.

Figure S1c: Second screen vignette experiment

Please indicate for each candidate the likelihood that you would engage him for a position as a receptionist.
(1=very unlikely; 10=very likely)

You receive the written application of the candidates below. Both have already worked as a receptionist in different hotels in Bern. They have lost their current position due to the closed down of the hotel six months ago and are currently unemployed and are looking for a new position.

	Candidate 1	**Candidate 2**
	Mr. G.	Ms. F
	Serbian citizen, unmarried, no children	Swiss citizen, unmarried, no children
	Is 32 years old	Is 40 years old
	Has completed a 2-years education as hotel employee	Has completed compulsory education in Switzerland
	Is currently in an occupational programme for the recycling of old cloths, before he completed one in packaging.	
	In his free time he is volunteering for an organisation that support elderly people	In her free time she likes to listen to music.
Hiring	**(--)□ □ □ □ □ □ □ □ □ □(++)** **1 2 3 4 5 6 7 8 9 10**	**(--)□ □ □ □ □ □ □ □ □ □(++)** **1 2 3 4 5 6 7 8 9 10**

Third screen vignette experiment: Two additional candidates in the same form as in the second screen

Forth screen vignette experiment: All four candidates are presented next to one another and participants are asked to place them in their preferred order from 1 (liked best) to 4 (liked least).

This experiment was followed by a second experiment for the position of a room-cleaner. The set up was the same as presented above.

Table S2: Correlation Matrix for applicants' and respondents' attributes

The tables below show the correlation between the different vignette dimensions from the rated vignettes and the correlation between the vignette dimensions and the respondents' characteristics. As not every vignette of the entire vignette universe was rated, we draw a d-efficient sample, and the vignette dimensions are correlated with one another, although this correlation is close to 0. The correlation between the observed respondent characteristics and vignette dimensions indicate whether the random allocation of vignettes to the respondent has worked out. The vignette dimensions should not be correlated with the respondent characteristics, which would mean, for example, that female respondents should not have rated significantly more female vignettes than male respondents. The correlation indicated below indicates that randomization was successful, as all correlations are near 0 and non-significant.

Table S2a: Pairwise correlation for the cleaning position vignettes, applicant and respondent characteristics

	Gender	Nationality	Age	Education	ALMP	Hobby
Applicant/vignette variables						
Gender	1.00					
Nationality	0.01	1.00				
Age	0.00	0.04	1.00			
Education	0.04	-0.01	0.08**	1.00		
ALMP	0.01	0.02	0.06*	-0.01	1.00	
Hobby	0.01	-0.02	0.04	0.00	0.00	1.00
Employer/respondent variables						
Gender	0.00	0.00	-0.01	0.00	0.01	0.00
Age	0.00	0.00	0.01	0.00	0.14	0.00
Education	0.00	-0.01	-0.02	-0.01	0.01	-0.01
N Employees	0.00	0.00	-0.01	0.00	0.00	-0.02
Lang. Region	0.00	0.00	0.00	0.00	0.00	-0.01
Unemployment	0.00	0.00	0.00	0.00	0.00	0.00

Note: **Significant at the 5%-level and *Significant on the 10%-level.

Table S2b: Pairwise correlation for the receptionist vignettes, applicant and respondent characteristics

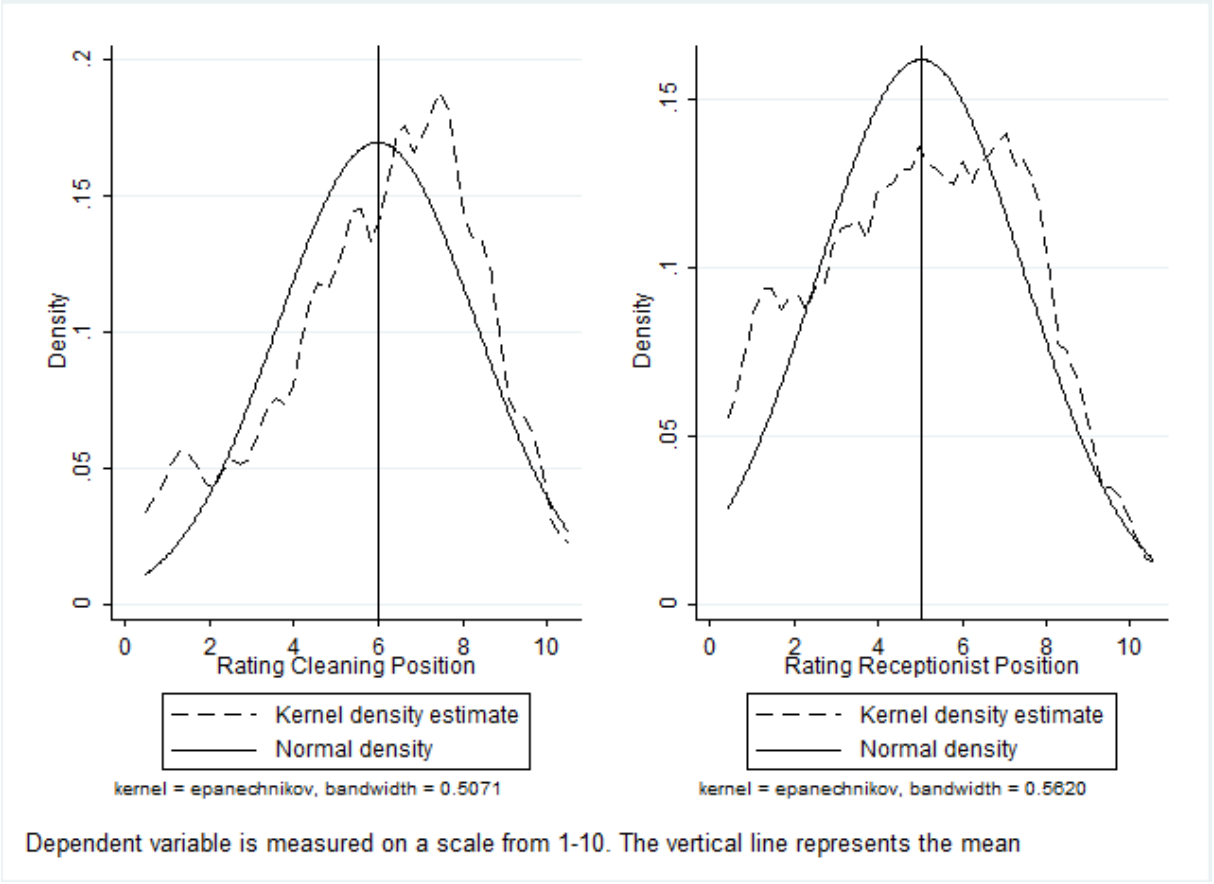
	Gender	Nationality	Age	Education	ALMP	Hobby
Applicant/vignette variables						
Gender	1.00					
Nationality	0.04	1.00				
Age	0.00	0.01	1.00			
Education	-0.01	-0.06*	0.03	1.00		
ALMP	0.04	0.02	0.08**	-0.05	1	
Hobby	0.04	0.04	-0.01	-0.01	0.02	1.00
Employer/respondent variables						
Gender	0.01	0.00	0.00	0.00	-0.01	0.00
Age	0.01	0.00	0.01	-0.02	0.01	0.01
Education	0.01	0.01	0.00	-0.01	0.00	-0.01
N Employees	0.03	0.00	-0.02	0.00	0.00	-0.01
Lang. Region	0.00	0.00	-0.01	0.00	-0.01	0.00
Unemployment	0.00	0.00	-0.01	0.00	-0.01	-0.01

Note: **Significant at the 5%-level and *Significant at the 10%-level.

Table S3: Descriptive statistics comparing employers (respondents and non-respondents) for specific macro variables

	Non-Respondents	Respondents
Language Region		
German-speaking	0.69	0.69
French-speaking	0.21	0.21
Italian-speaking	0.08	0.08
Romanesque-speaking	0.03	0.02
City Type		
Central city of agglomeration	0.26	0.29
Agglomeration	0.23	0.25
Isolate city	0.02	0.02
Rural area	0.49	0.43
Category		
1 star	0.01	0.01
2 stars	0.09	0.07
3 stars	0.47	0.46
4 stars	0.24	0.24
5 stars	0.04	0.07
Swisslodge	0.11	0.11
Other classification	0.04	0.05

Figure S2: Distribution of dependent variables (evaluation of applicants for cleaning and receptionist position)



Dependent variable is measured on a scale from 1-10. The vertical line represents the mean