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Discrimination against migrants in Austria
An experimental study

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Abstract:
In this paper, I experimentally examine the employment opportunities of Austrians with and without migration background. Applications of candidates with a Serbian, Turkish, Chinese, Nigerian and no migration background are sent in response to job openings. Previous experiments have indicated ethnicity via the name of an applicant, however employers may not always correctly perceive this signal. Since photographs are a requirement for applications in the German speaking context, this study uses a novel approach to signal ethnic background and employs carefully matched photos as distinct visual cues. While results document employment discrimination for all groups with migration background, it is most pronounced for applicants with an African, i.e. Nigerian, background. To explain why and when discrimination occurs, a battery of firm and job specific characteristics are examined (e.g. whether team or customer contact is part of the job description). However, these help little to explain the actual level of discrimination. Discrimination in Austria therefore seems to be a general phenomenon driven by employers' preferences that is barely affected by situational variables.

JEL Classification: C93; J15; J71
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Introduction

In this study, I experimentally examine whether discrimination against job applicants with migration background exists in Austria. In particular, applications of equally qualified individuals, some of which indicate migrant background while others do not, have been sent to companies to measure whether individuals with migrant background have the same employment chances in comparison to equally qualified candidates without (recognizable) migration history. Similar experiments have been conducted to examine discrimination based on ethnicity/migration history in the United States (Bertrand and Mullainathan, 2004; Jacquemet and Yannelis, 2012; Pager, Western and Bonikowski, 2009), Australia (Booth, Leigh and Varganova, 2010), Canada (Oreopoulos, 2011), Sweden (Carlsson and Rooth, 2007), Ireland (McGinnity and Lunn, 2011), and Germany (Kaas and Manger, 2012). These studies have tested the effect of a foreign (or Afro-American sounding) name on employment probabilities and found that minority candidates are significantly less successful when applying for jobs than white natives with exactly the same qualifications. The degree of discrimination detected in these studies varies substantially. While in Germany students with a Turkish name who are looking for an internship have to send 14% more applications than those with a German name (Kaas and Manger, 2012), applicants with an African name have to mail 144% more applications than a local to be invited to an interview in Ireland (McGinnity and Lunn, 2011). Of course, national differences may be responsible for these different results as well as different experimental designs. However, it may also be that particular migrant groups are more disliked than others, for example because of their ethnicity (Booth et al., 2012; McGinnity and Lunn, 2011). In the current paper, I therefore test a number of migrant groups with the same experimental design. I focus on migrants from Turkey and former Yugoslavia, who constitute the largest fractions of migrants in Austria, as well as migrants from China and Nigeria, who form the largest Asian and African, i.e. 'non-white', communities, respectively.

Politically as well as methodologically, Austria provides an interesting case to study the employment situation of migrants. Methodologically, Austria is special because a vast amount of information and documents are required for job applications, as is the case in other German speaking countries. In particular, photographs are an integral element of an application. Consequently, employers hold a vast amount of information on the applicants to base their employment decision on. As will be discussed in more detail later, the Austrian

setting therefore allows for a particularly reliable measure for discrimination that is largely unaffected by statistical discrimination. In comparison to other countries where only résumés are sent to employers, the measured level of unequal treatment should therefore be relatively low. However, anti-migrant sentiments are relatively widespread, which makes Austria an interesting case study from a political point of view. According to the World Value Survey, in 2008, 23.19% of Austrian respondents stated that they would not like to have immigrants/foreign workers as neighbors. This number is quite high compared to other Western countries (Germany: 11.60%, Greece: 15.38%, Ireland: 14.15%, Poland: 17.52%, 2009: Belgium: 6.20%, Sweden: 6.40%, United Kingdom: 14.85%, 2006: Canada: 4.26%, US: 13.71%). It is therefore not surprising that Austria has one of the largest right-wing populist parties in Europe. By serving xenophobic sentiments the so-called 'Freedom Party' has managed to reach 27% of the national votes at its peak in 1999.[1] It is likely that the popularity of anti-immigration slogans is reflected in the levels of employment discrimination measured in Austria.[2]

Anti-immigration sentiments have gained popularity over the last quarter of a century despite Austria's long history of immigration. In the 19th century during the Habsburg monarchy, Vienna, conveniently located in the center of Europe, constituted a melting pot that attracted migrants in particular from Eastern Europe. Since these migrants have been fully assimilated into the host country, occasional Slavic surnames persist until today. Much of the more current migration history, however, has to do with the shortage of labor in the 1960s and early 1970s that caused Austria (as well as Germany) to actively seek 'guest workers' from Turkey and former Yugoslavia. Contrary to Austria's initial intentions, the 'guest workers' did not return to their home countries when jobs got scarce. In 1973, when the number of foreign workers in Austria reached its peak, 78.5% of them were Yugoslavian and 11.8% Turkish (Biffl, 2005, 65).

The next big wave of immigration took place after 1989 as a result of the fall of the Iron Curtain. Due to the collapse of the Yugoslavian state and the succeeding wars, many Serbians and Croatians sought asylum during this time. Contrary to migration from European countries, immigration from outside Europe is a relatively recent phenomenon in Austria.

[1] The Freedom Party has become popular with electoral slogans like „Heimatliebe statt Marokkaner-Diebe" (love for one's country – instead of Moroccan thieves), „Daham statt Islam" (home – instead of Islam), „Wien darf nicht Istanbul werden" (Vienna must not become Istanbul).

[2] Of course, these measures for values do not directly translate into discrimination. Rooth (2010) finds that responses at the Implicit Association Test are a relatively good predictor for discriminatory behaviour.

Only within the last quarter of a century, people with a non-European background have immigrated in larger numbers and now constitute a visible non-white population in Austria. It is noteworthy that with the last big wave of immigration in the early 1990s, the 'Freedom Party' became a mass phenomenon in Austria.

Currently, more than 19% of Austrian residents are first or second generation immigrants (Statistik Austria, 2014). This fraction of migrants is one of the largest in the OECD. Some of the disadvantages faced by immigrants in Austria have been documented by Krause and Liebig (2011). They show, for example, that for immigrants working in Austria the disparity between their level of education obtained abroad and the level of education required at the current job is among the highest in the OECD. Also unemployment rates differ between natives and immigrants. While in 2012 the unemployment rate was only 7% for Austrians, it was 9.7% for foreigners (13.8% for Turks, 12.7% for foreigners from former Yugoslavia) (Biffl, 2013, 108).

So far, due to a lack of data, little economic research has been conducted to examine the situation of immigrants in Austria. To my knowledge only two papers have previously studied their discrimination in wages. Grandner and Gstach (2015) use the EU-SILC data to examine the wage gap between native and foreign workers and find that it varies over the income distribution. Using counterfactual densities to decompose the wage differential the authors find that the discrimination component follows a U-shape with the maximum of 20% around the 8^{th} decile. Hofer et al. (2014) merge information from the micro-census and administrative social security data to re-examine the wage gap and find that immigrants earn 15% less than natives. 10-30% of this wage gap can be explained by differences in human capital endowments. When the authors also control for occupation and job position, the unexplained residual shrinks to 3-5%. Like Grandner and Gstach (2015) they find higher levels of discrimination in the upper part of the wage distribution.

Of course, when estimating discrimination via wage regressions like the mentioned studies, one would want to control for occupations only if migrants and natives have the same access to jobs. Otherwise discrimination may be underestimated. This study will show whether equal access to jobs currently exists for migrants and natives in Austria.

Measuring discrimination

There are two main strands of theory that explain a differential treatment of different demographic groups: Taste-based theories and statistical discrimination theories. Taste-based theories (Becker, 1957) assume that unfavorable labor market outcomes are the result of employers' preferences against working with minority group members. Statistical discrimination theories (Arrow, 1973; Phelps, 1972) argue that employers use demographic signals to infer about productive characteristics that are unobservable in the hiring process. For example, employers who evaluate the résumé of a recently immigrated foreign worker may infer that the candidate's language skills will be insufficient. This, however, may not be true in reality.

In the last decades, experimental methods have increasingly been applied to examine discrimination. The great advantage of experiments is that they largely allow the experimenter to control for all variables of interest, in particular the human capital of employees and job applicants respectively. In the so called 'audit studies', actual 'real life' auditors from different demographic groups (e.g. Hispanics and Anglo-Saxons) are matched and sent to interviews to examine who gets the job. There are a number of difficulties associated with this method (Heckman, 1998; Heckman and Siegelman, 1993). In particular, it is difficult to match real humans and their behavior closely enough in all relevant dimensions. Interview situations are unpredictable and it is hard to train individuals sufficiently to guarantee comparable reactions under all circumstances. Since the interview situation is unobservable to the experimenter, it may go unnoticed if auditors systematically have troubles adequately coping with it. Moreover, auditors may have an own covert interest in obtaining a particular finding and adapt their behavior accordingly. As a result of these problems, researchers have increasingly refrained from the audit studies method.

The method of correspondence testing, applied in the current study, avoids the aforementioned problems. Correspondence testing experiments study discrimination by sending fictitious résumés that indicate identical human capital but different group membership (e.g. natives versus immigrants). The advantage of this method is that due to the strict standardization of the procedure, there is no room for an experimenter/tester bias. Furthermore, since the candidates represented in the written applications are fictitious, their productivity can strictly be matched. Of course, correspondence tests can only examine discrimination in the first stage of the hiring process and investigate who gets invited for an

interview. Who gets hired for the job remains unknown. However, studies show that the vast majority of discrimination occurs at the initial stage of hiring that is captured in the correspondence testing experiment (Rich, 2014, 6).

Norms considering job applications vary drastically between countries. While in English speaking countries like the US, UK and Australia it is common to send letters of applications and résumés only, in German speaking countries a whole batch of application material is required. An applicant needs to submit at least a letter of application, a résumé, school reports and a photograph to be considered a serious candidate (Weichselbaumer, 2004; Kaas and Manger, 2012). Of course, this significantly complicates the creation of applications for a correspondence testing experiment. Furthermore, every variation in any variable of interest (level of education, age etc.) requires the fabrication of additional school reports and photographs. As a consequence, studies in German speaking countries will usually not be able to vary as many variables or cover as many occupations as studies conducted in English speaking countries. However, despite these drawbacks there are also advantages of running correspondence experiments in German speaking countries. Due to the vast amount of information provided in German speaking applications, statistical discrimination is rather unlikely to occur and results are most likely due to a taste for discrimination. In some sense, a correspondence test in a German speaking country offers the advantages of an audit study while avoiding its drawbacks: The requirements for multiple attachments to an application allow communicating large amounts of information that are usually available in audit studies only.[3] As a result, statistical discrimination is largely avoided in such a setting. Furthermore, applications in German speaking countries allow the experimentalist to use the required photos as visual cues to convey particular information that in English speaking countries can only be transmitted via the personal appearance of a tester in an audit study (Pager, 2007). While the preparation of matching identities for an application in the German speaking setting is time consuming, it is nevertheless feasible, because the characters are entirely fictitious and can be created in accordance to the needs of the study. Equal qualifications can simply be claimed and photos can be digitally manipulated to guarantee comparable looks and beauty. For an audit study, in contrast, an experimenter has to identify real life individuals that truly

[3] As Oreopolous (2011) has pointed out 'Audit studies can (…) help reveal or rule out statistical discrimination, which arises when employers use observable characteristics as signals for inferring unknown information' (151).

match each other in all potentially relevant characteristics. They must also represent the particular demographic groups under investigation. This may be an unsatisfiable task.

Indicators for ethnicity and migration background

In correspondence testing experiments, migration history – and along with it ethnicity – can be signaled through various channels. For example, if an applicant is born in a foreign country and has obtained schooling and/or job experience there, this becomes apparent in the conventional résumé that lists all schools attended as well as previous employers. However, foreign schooling and experience is often less valued by employers (Oreopoulos, 2011; Carlsson and Rooth, 2008), because it may not sufficiently prepare for local job requirements. Consequently, the cleaner test for employer discrimination is to compare two individuals (one with and one without migration background) who have completed all schooling in the country of residence.[4] However, if the applicant obtained schooling and experience in the host country, these indicators are not available as signals for migrant status.

When foreign schooling and experience cannot be used as indicators for migrant background, studies usually have relied on names to indicate a particular migration history and/or ethnicity. Names, however, may not always correctly transmit the information intended by the experimenter. For example, in their experiment Bertrand and Mullainathan (2004) have signaled ethnicity via typical African-American and white first names.[5] However, as they point out, 'some employers may simply not notice the names or not recognize their racial content' (997). In this case, employers are unable to assign the correct demographic group to the name and discrimination will be mismeasured. Some researchers have therefore attempted to use alternative routes to indicate ethnic background, for example by indicating voluntary memberships in organizations that reveal ethnic membership or by having their applicants explicitly stating their ethnicity in their résumé (for an overview see Riach and Rich, 2004).

One possibility to clearly indicate ethnicity is through the use of photographs. Photos, however, have rarely been used in correspondence tests, since most studies have been conducted in countries where employers would perceive their attachment as awkward. If pictures have been utilized, this was done in countries where they are a common component

[4] This, of course, gives a lower bound estimate for discrimination because there may already be discrimination in the assessment of the quality of foreign schooling and on-the-job-training.

[5] For example, they have used Latoya versus Laurie for female names and Tremayne versus Todd for male names.

of applications. The goal of such studies usually was to measure the effect of physical attractiveness on employment chances (e.g., López Bóo et al., 2013; Ruffle and Shtudiner, forthcoming; Rooth, 2009). Hardly have pictures been employed to convey characteristics of a job candidate apart from beauty. Only Weichselbaumer (2003, 2004) has used pictures to indicate different personality types of women and compared the employment outcomes of a woman with 'masculine' looks to a woman who appears 'feminine'. To avoid any bias, the photos in these studies have been carefully constructed and pretested to ensure that they reveal a different personality but not different social desirability.

In a recent correspondence study in Germany, Kaas and Manger (2012) examined discrimination against applicants with a Turkish sounding name. To adhere to German norms, photographs for the fictitious candidates have been included in the applications. Because individuals with a Turkish background do not necessarily look different to Germans without migration history, the same photos were randomly used for applicants with and without migration background. The photographs therefore did not reveal any ethnic information and migration background was merely signaled via distinct Turkish names.

The current study explores the employment chances not only of white but also of non-white ethnicities in a country where the attachment of photographs is the norm. The method applied by Kaas and Manger (2012), that randomly assigns the same two photographs to two applications, was therefore an option only for the fraction of 'white' identities examined (i.e. applicants with Serbian, Turkish and no migration history).[6] For the applicants with a Chinese or Nigerian background, distinct photographs had to be generated that account for ethnicity. Thus, for the current study matching photographs had to be carefully prepared for the different ethnicities tested. While the construction of matching photographs is a very time-consuming procedure, their required inclusion in the application material also comes at an advantage: First of all, including photographs allows employers to envision applicants more realistically. If photographs are carefully matched, they avoid statistical discrimination that may arise if employers have prejudices for example with respect to the attractiveness of certain migrant groups. Second, photographs are a clearly visible indicator for ethnicity. As a pretest of the current study shows, in particular Nigerian names are difficult to recognize for many. Attaching a photo erases all uncertainty which ethnic group is under investigation.

[6] Certainly one could measure the impact of different names while holding the ethnicity of a candidate constant. However, there is little empirical relevance for examining the employment chances of hypothetical white individuals with African or Asian names.

Discrimination is therefore directly measured and not potentially understated as is the case when some employers do not correctly interpret the applicant's name that is given as a cue. Finally, employers may not only have difficulties identifying the ethnicity, but also the sex of an applicant with a foreign name (Oreopoulos, 2011, 164). Given that sex can strongly affect hiring decisions (Weichselbaumer, 2004; Rich 2014), a misperception of the applicant's sex may also strongly bias the measured effect concerning ethnicity. For example, a candidate with a foreign name that is erroneously interpreted as male may unsuccessfully apply for a female dominated job like secretary – not necessarily because of her migration background but because of a misperception of her sex.

To sum up, attaching equally attractive sex-specific photographs for different ethnicities ensures that experimental results are free from any misconceptions not only with respect to ethnicity but also with respect to the sex of an applicant. Furthermore, attaching photographs that depict equally attractive and likeable individuals also avoids statistical discrimination that may arise as a result of stereotyped believes of employers about levels of beauty and likability of different ethnic groups. Consequently, including carefully matched photographs in an experiment should guarantee an unbiased measure for discrimination.

Experimental design

In the current experiment I focus on the employment opportunities of job candidates with and without migration background who hold the same human capital. As Oreopoulos (2011) as well as Carlsson and Rooth (2008) have shown, foreign schooling and experience is less valued by employers. While some of this may be due to prejudice, it is likely that local schooling and experience better prepare for the tasks relevant at a local position. Therefore in the current experiment, the fictitious applicants have conducted all their schooling and gained their job experience in Austria at comparable institutions which have been randomly assigned. This ensures that the human capital of migrants and natives is strictly the same.

Often, job applicants with migrant background face statistical discrimination on two fronts: language skills and residence status. If no opposite information is given, employers may fear that migrants hold insufficient language skills or have an uncertain residence status. Since in the current experiment all individuals obtained all their schooling in Austria, language clearly cannot be an issue. Also all fictitious applicants indicate to hold an Austrian

citizenship, this avoids any doubts about work permits and legal residence status.[7] Thus, statistical discrimination of such kind cannot be responsible for unequal treatment of these applicants.

In total, office jobs, in particular secretaries and accountants/payroll accountants, as well as jobs in the hotel and restaurant industry, comprising waiters, cooks and receptionists, have been examined. These occupations have been chosen because written applications are the norm (instead of phone calls) and jobs advertised by different firms are relatively homogeneous. Therefore standardized application documents could be sent to companies without raising suspicion. Most importantly, however, in these occupations a high labor demand existed during the time of the experiment so that sufficient data could be collected.

Names and photographs as signals for migrant background

As has been pointed out before, in this study migrant background and ethnicity of applicants are signaled via their names and photos. The names of the fictitious applicants were generated by combining first and last names, which are common in the respective countries of origin (i.e. Austria, Serbia, Turkey, China and Nigeria) (see Table 1). A pretest conducted with Austrian students helped identify whether names appropriately signal a particular migrant background. Students were asked to state as precisely as possible, where they believe that a person with a particular name comes from. Table 1 shows that Austrian, Turkish, Serbian and Chinese names were to a large extent identified correctly. Even if respondents were unable to state the exact country of origin, they usually were able to specify the broader region (for example, 'Eastern Europe' for the Serbian name and 'Asia' for the Chinese name). However, the Nigerian name turned out to be more difficult: Only 71% of respondents associated the Nigerian name with 'Africa' or any sub-Saharan African country.[8] Hence, only a fraction of respondents were able to associate the Nigerian name with a black identity. Since ethnicity certainly plays a role in discrimination against migrants, it was particularly important to include photos for applicants with sub-Saharan African background in the experiment so that their ethnic identity could be correctly inferred from.

To avoid any bias, the fictitious applicants on the photos needed to be comparable in terms of e.g. attractiveness, charisma or age. All in all, four photos were needed for each sex to signal African (Nigerian), Asian (Chinese), Serbian, Turkish or Austrian background.

[7] Note that no birth country is explicitly stated in the résumé.
[8] The other respondents suggested a large range of other countries from Asia, Europe, and Latin-America.

While, theoretically, all three 'white' identities could be represented by one identical photo, it was necessary to produce two matching photos of different 'white' candidates because two applications were typically sent to one employer (one of which was always the applicant without migration history).[9] Since in some cases two white identities were sent to one employer (e.g. Serbian and no migration background), these had to be represented by different photographs to avoid detection.

To find suitable models for the photos, students in Berlin (Germany) and Linz (Austria) were invited through email to participate in the experiment and to submit photos. Additionally, personal contacts were used and 'International Days' of universities and colleges were visited to approach young adults of different ethnic backgrounds. The aim was to identify potential candidates of different ethnic background who were of similar age and attractiveness. Students who mailed photos that appeared interesting for the project were invited to a personal meeting and subsequently twelve students were invited to a photo session. These 'models' received specific instructions concerning outfit and styling. For instance, male models had to turn up to the photo session shaved with white shirts and dark jackets. Female models were requested to put on discreet make-up and bring a collection of tops and a jacket. Each photo session lasted between two to five hours. These relatively long sessions were necessary to generate a repertoire of different photos with different poses that later allowed a good matching between photos of different candidates. Also, in some cases time-consuming on the spot modifications in style were necessary to guarantee the comparability with other candidates.[10]

Each photo was pre-tested by 40 to 50 university students, who evaluated one applicant each with respect to looks, intelligence and reliability as well as whether s/he was considered likable on a scale from 1 (very much/very good) to 5 (poor). In a very labor-intensive procedure, the photos were then digitally manipulated, tested and exchanged until the photos of all different identities received comparable scores in the pre-test in terms of looks, likability, intelligence, reliability as well as in their overall score. As a result, I am confident that the photos are carefully matched so not to introduce any bias.[11] Table 2 provides an overview of how these photos have been evaluated in the pretest. On average,

[9] So that one photo matched different 'white' identities (including Turks and Serbs), fair-haired individuals have not been included in the study.
[10] As incentive the 'models' received 12 €/hour for the photo session. If their photo was included in the study they received an additional premium of 80 €.
[11] The final selection of photographs that have been employed in the current study is available from the author.

photos of females received a more positive evaluation than those depicting men. It is unclear, whether the female models portrayed are indeed more attractive or whether women are generally evaluated differently than men. This question cannot be settled within this study. To avoid any potential bias in my analysis I only compare experimental outcomes within one gender.

Further application documents

The applications sent out comprised a letter of application, a current résumé with a photo and either a school report for the school leaving exam (secondary school) or a certificate of apprenticeship. Letters of application were kept relatively general. They mentioned the website where the job ad was posted, the title of the open post as well as information on the job applicant, in particular year of graduation, current position as well as place of work. Furthermore, they contained a contact address in Vienna, an email address and a mobile phone number, which have been set up for each of our ten fake identities (five for each sex).[12] The addresses employed were based in two different Viennese districts with comparable socio-economic characteristics.

The résumés included personal information, information on education and professional career as well as on particular relevant skills (e.g. specific computer programs or languages) and further training. Moreover, all applicants held a driver's license and mentioned a mix of sporting and creative activities as hobbies. Identities (represented by means of name and photo) were randomly assigned to applications. To account for the compulsory year of military service (all male applicants had served in the Austrian army), male applicants (with an age of 25) were one year older than female applicants.[13] Résumés and school reports have been constructed specifically for each occupation. While office jobs are typically dominated by female workers, more men than women are working in the hotel and restaurant industry. Hence, given the gender-bias in the selected occupations, I followed Bertrand and Mullainathan (2004) and sent only female applications to office jobs, while male applications were used in the hotel and restaurant industry.

[12] Some previous correspondence testing experiments have not included addresses or made up fake ones. Either strategy would create suspicion in the Austrian context.

[13] Applicants who attended secondary school had four full years of work experience while, due to the shorter training period, apprentices had five years of work experience.

Two applications per ad (one with and one without migration background) were sent to prospective employers in Vienna. To avoid detection, these were closely matched but differed in their level of education (i.e. secondary school versus apprenticeship). The level of education was alternated by applicant identity so that any possible effects of education cancel out in the total sample. Hence, discrimination is not measured at the level of the individual firm but for the overall sample. Outside of Vienna the job market and pool of applicants is substantially smaller. As a result, the risk of being disclosed is even bigger. Consequently only one fictitious application was sent in response to an ad in the provinces to avoid detection.[14]

Procedure

The experiment was carried out between December 2012 and August 2013. During this period selected job portals (in particular the *Wiener Kurier* and the *Jobroom* of the Public Employment Service Austria, AMS) were screened weekly for relevant ads. Ads by headhunters or which publicized part-time jobs were not considered. Also if a company announced multiple job openings during the course of the experiment, only one ad per firm has been included in the study to avoid disclosure. All application documents were generated automatically with the applicant's identity and level of education being assigned randomly. The application material then was emailed to the employer. To register callbacks and responses, all email accounts, mailboxes as well as voicemail boxes were checked regularly. When an applicant was invited to an interview, the appointment was canceled within a day to keep firms' search and waiting costs at a minimum.

Results

Descriptives

In total, 2,142 applications were sent to companies located in Austria. As illustrated in Figure 1, callback rates differ strongly by identity. With a callback rate of 37 %, Austrian applicants without migration history are clearly the most successful group examined. In contrast, applicants with migrant background are doing less well. Applicants with a Serbian

[14] Weichselbaumer (2015) discusses the heightened problem of detection in the German speaking setting.

background, who fare the best among all migrant identities considered, receive a positive feedback from 28.2 % of companies contacted. They are followed by applicants with a Chinese background, who receive a positive feedback from 27.1 % of firms, and applicants with a Turkish background who obtain an interview 25.3 % of the time. Finally, applicants with a Nigerian background are at the bottom of the league and are invited to interviews only by 18.7 % of all companies they have applied to. Hence, applicants with Nigerian background receive half as many positive callbacks as Austrian applicants without migration history. Table 3 gives not only the callback rates for each identity, but also the relative invitation rate ('ratio') of the different migrant groups. This value can also be interpreted as the ratio by which a candidate with migration history has to send more applications to receive the same number of invitations to interviews as an applicant without migration background. For example, job seekers with a Serbian background have to send 31 % more applications for the same number of interviews than a native (more specific, they have to send 3.5 instead of 2.7 applications to receive one job interview on average). Candidates with a Nigerian background even need to send double the amount of applications to be equally successful as a native. The last column of Table 3 highlights that all differences between the Austrian applicant and the migrant identities are highly statistically significant at the 1 percent level. This is a first indication that Serbian, Turkish, Chinese and Nigerian applicants are treated unfavorably in the Austrian labor market.

There are some differences in invitation rates between occupations (see Table 4). The overall callback rate is lowest for secretaries (22.3%). This suggests that in this profession employers have a relatively large pool of attractive applicants available that they can choose from. As Becker (1957) argues under such conditions, firms can discriminate more easily. Indeed, for the occupation of secretary we find the most consistent picture for discrimination, as *all* migrant groups are treated significantly less favorably than applicants without migration background. However, this high level of significance may also be due to the fact that in this profession there are the most job openings and therefore the number of observations is high. In contrast to the low response rate of secretaries, the callback rate for applicants is highest for cooks (41.2%). This indicates that the demand for cooks is particularly high and that the labor market is tight. Therefore, according to Becker (1957), labor market discrimination should be low because employers are keen to find matching employees and do not have the scope for discrimination. This, however, is not what we find in the data. In the occupation of cooks,

significant discrimination is found against all migrant groups except for Serbs. This is all the more surprising given that cook is a job with no customer contact (in contrast to waiter, receptionist and many secretary jobs), so customer discrimination cannot be responsible for the unfavorable treatment in this profession.[15] The final picture that emerges when comparing occupations is that applicants with Nigerian background always fare the worst (they are always discriminated at a significant level except for the low observation occupation of receptionists).

Next, callback rates and levels of discrimination are compared between the capital of Vienna and the rest of Austria. Vienna may be different from other parts of Austria, as people may hold more liberal views in the capital.[16] Also Vienna's labor market is characterized by a particularly large share of migrant workers that may make firms accustomed to a diverse pool of workers. Indeed, as Table 5 illustrates, applicants with a migrant background experience higher callback rates in Vienna than outside of Vienna. In Vienna only applicants with a Chinese or Nigerian background are treated unfavorably on a significant level, while outside of Vienna significant discrimination is found for all migrant groups. Again, applicants with a Nigerian background fare the worst – no matter whether in Vienna or in other provinces.

Econometric results

Multivariate analysis is used to shed light on the probability with which applicants with and without migrant background are invited to job interviews while controlling for different firm and job specific characteristics. Controlling for job and firm specific variables is of particular importance in the current setting, where not all identities of the experiment have applied to the exactly same job advertisements. I use a linear probability model (LPM) for two major reasons: First, binary response models like probit or logit may produce biased results if the strong modeling assumptions on the behavior of the error term – the cumulative distribution function (cdf) of the error term is assumed to be normal for probit models and logistic for logit models – are not fulfilled. In contrast, the properties of LPMs are robust to any cdf of the error term. Second, given the particular setup of the model, the linear probability model (LPM) is a good approximation to the probit model. In particular, the model is nearly

[15] Of course employers may hold the prejudice that applicants with migrant backgrounds hold different culinary tastes. However, given that all applicants have had their training in Austria and have previously been employed in a 'traditional' Austrian restaurant, they have documented to be perfectly firm in local cooking styles.

[16] For example, Weichselbaumer (2015) has found significant discrimination against lesbians in Munich, but not in the more liberal capital of German, Berlin.

saturated as almost all control variables are dummy variables for mutually exclusive and exhaustive categories so that fitted probabilities do not fall outside the unit interval. Hence, estimates are unbiased and consistent, rendering the LPM a good description of the response probability. One concern, however, is that OLS estimates impose heteroskedasticity in the case of a binary response variable. This is dealt with by using standard heteroskedasticity-robust standard errors and t-statistics.

For the following, data has been aggregated to two broad occupational groups: office jobs (secretary and accountant) and jobs in the hotel and restaurant industry (waiter, cook and receptionist). Remember that for the female dominated office jobs only female applications have been sent out, while for the more male dominated hotel and restaurant jobs only male applications have been used. Furthermore, I account for migrant background with different precision. First, I investigate the four different migrant groups (Serbian, Turkish, Chinese and Nigerian background) separately and introduce controls for firm and job specific characteristics. In the second step all migrants are grouped together and compared to Austrian applicants without migration history. This allows to test for a large array of characteristics that may cause differential treatment of migrants.

Apart from occupational and sector dummies[17] the following characteristics have been included in the multivariate analysis: The variable 'Vienna' captures whether a position is located in the capital of Austria or in the provinces as it is likely that the Viennese labor market differs from the rest of Austria. 'A-levels' indicates whether an applicant has successfully passed the final exams of secondary school (these allow to enter university) or has completed an apprenticeship instead. Education has been assigned to an applicant randomly in the experiment. Next, the firm specific variables 'firm size' and 'firm's action radius' have been coded. 'Firm size' is based on the number of employees (1 for firms with between 1 and 20 employees, 2 for firms between 21 and 500 employees and 3 for firms with more than 500 employees) and 'firm's action radius' (FAR) indicates whether a firm is primarily active on the local, national or international level (1: local, 2: national and 3: international). Job specific variables have also been generated: Since in Austria firms are legally required to announce the minimum salary that is paid for a particular job, the variable 'salary' captures the advertised monthly gross salary (in hundreds). The variable 'German'

[17] Sector dummies were used for the following sectors: creative industry, information and communication, finance and business consultancy, hotel and restaurant, trade, real estate, public sector and social affairs, production, and lawyers.

measures whether proficiency of the German language was explicitly requested in the job ad (yes = 1, 0 otherwise). This variable is of particular interest when examining discrimination against migrants because it may serve as a hint that migrants are not welcome at the advertised position – irrespective of their language skills. This hypothesis can be tested in the current experiment as the migrants studied indicate to be fluent in German. Therefore, if the requirement of German proficiency affects the migrants negatively, this reveals a general distaste against migrant employees.

As Becker (1957) argues, not only employers may hold tastes for discrimination, also coworkers and customers may be responsible for discriminatory treatment. If employers worry that customers or coworkers dislike interacting with migrant workers, they have more reasons to do so if such a contact is actually required according to the job description. For this reason, the variables 'team contact' (TC) and 'customer contact' (CC) have been created which capture whether interaction with coworkers or customers is explicitly mentioned in the job ad (yes = 1, 0 otherwise). These variables allow to test whether unfavorable treatment is (partly) due to customers' or coworkers' preferences. Finally, the variable 'job requirements' captures whether particular skills have been requested in the job ad that the fictitious applicants do not possess. The variable is coded as follows: 0 if the fictitious job applicant matches the requirements, 1 if according to the job ad the applicant should *ideally* hold particular skills (e.g. with respect to specific computer programs or languages) that our standardized profile does not have, 2 if the job ad *requires* particular skills or experiences which our profile fails to possess. The variable 'job requirements' therefore captures excess requirements that our candidates are missing. In the case that companies face an excess supply of very high-qualified labor, one would expect a negative effect for this variable. Note, however, that given the experimental profiles hold 'typical' qualifications for the job, if the fictitious applicants do not match all job requirements, the average job applicant also would not.

Discrimination in office jobs (secretary and accountant)

Results for office jobs are presented in Table 6. Standard errors are corrected for clustering of observations at the firm level. The first specification in Table 6 is without any controls (but with occupation and sector dummies). It demonstrates that applicants with a Turkish migrant background are 9 percentage points, those with a Chinese background 8 percentage points and

those with a Nigerian background 16 percentage points less likely to receive a callback than those without migration history. The negative effect for applicants with a Serbian name does not reach statistical significance. In specification (2), the previously mentioned firm and job specific controls are added. Comparing the results of column 1 and column 2 one finds that the coefficients for the different migrant groups have barely changed. This confirms that a somewhat different distribution of job ads is not responsible for the lower success rate of migrant applicants. Tests for the equality of coefficients show that the difference in coefficients between the applicant with Nigerian background and the applicant with Serbian background is significant (p=0.03) in specifications (1) and (2). The difference in coefficients between the applicant with Nigerian background and the applicant with Turkish background is significant (p=0.09) in specification (1) only. Also the difference in coefficients between the applicant with Nigerian background and the applicant with Chinese background is significant (p=0.07) in specification (1) only.[18] With respect to the control variables, results show that a higher announced salary reduces the likelihood to be invited to an interview for an office job. Probably when offering a higher wage, firms expect that applications are especially tailored towards the specific job opening, while our fictitious profiles are highly standardized. Larger firms and firms advertising jobs that require team contact are somewhat more likely to invite our applicants to an interview, but only on a marginally significant level. It may be that larger firms have the resources to interview a larger number of applicants.

Column (3) finally compares how migrant groups fare in Vienna in comparison to the provinces. Once geographic location (Vienna) is interacted with migrant background, we find more negative coefficients for all migrant groups for the reference group (outside of Vienna). In particular, applicants with a Serbian background are significantly discriminated outside of Vienna (with a 16 percentage points lower invitation rate than Austrians without migration history), while in columns (1) and (2) there was no effect for Serbian names observable for the overall sample. Consistently, the interaction effect (Vienna*migrant group) documents that some identities profit from applying for a job in Vienna as opposed to the provinces. In particular, applicants with a Turkish background have a 17 percentage points higher probability for a callback in Vienna than in the rest of Austria. Also, applicants with a Serbian name benefit from applying to a job in Vienna on a marginally significant level. No

[18] Any significant differences between coefficients for different migrant groups disappear once additional variables and interaction terms are included in specification (3).

significant effects, however, emerge for applicants with a Chinese, Nigerian or without migration background when they apply for office jobs in Vienna.

Next, to examine what drives discrimination against migrants in more detail, all migrant groups are aggregated and all control variables are interacted with migrant status to see whether firm or job specific characteristics affect the employment chances of migrants differently than applicants without migration history. Column (1) and column (2) in Table 7 replicate the first two columns from Table 6. Overall, migrants have a 10 percentage points lower probability to be invited to a job interview when applying to an office job; this result is unaffected by controlling for firm and job specific variables. Columns (3) and (4) examine whether firm and applicant specific variables, as well as job specific characteristics, can explain the differential treatment of migrants – at least partly. For this purpose, interaction terms for region (Vienna), educational level (A-levels) as well as all firm characteristics (firm size and firm's action radius) are included in specification (3). Specification (4) adds further interaction terms for all job specific characteristics. As has been shown before, migrants applying for office jobs fare better in Vienna than in the rest of Austria. Overall, they are more likely to receive a positive feedback in Vienna by 11 percentage points (on a marginally significant level). However, other hypotheses on what drives discrimination against migrants are not confirmed. For example, one may expect that discrimination is reduced if migrants signal their abilities by successfully passing secondary schooling (A-levels). This, however, has not been found. Indeed, there is also no overall effect for higher education even for natives. This may be due to the fact that the fictitious applicants have been closely matched and have held comparable positions despite differences in schooling. Possibly job experience (and professional application materials) are more important than the precise level of education. Moreover, Kaas and Manger (2012) have shown that in Germany larger firms are less likely to discriminate against migrant applicants. While in the current experiment clerical applicants are overall somewhat more likely to receive a callback from larger firms (on a marginally significant level), migrants do not especially profit from applying to a bigger firm. The same is true when they apply to more international firms (FAR). This is surprising, given that these companies should be more accustomed to interacting with diverse populations than firms operating on a local level. As pointed out before, not only employers, but also coworkers and customers may hold discriminatory tastes (Becker, 1957). Consequently, one may assume that discrimination is particularly high when team or customer contact is part of

the job description. This is not what is found in the data, however. Migrants are not affected in any way if team or customer contact is required. It therefore seems that primarily employers' distastes are responsible for discriminatory behavior in Austria. Interestingly, at higher paying office jobs migrants face somewhat less discrimination. It may be that well-paying firms are more concerned about their public image and therefore act less discriminatory. Many job ads emphasize that proficiency of the German language is required for the job (23% of all office job ads). If these statements are to be taken at face value, the candidates of this experiment should be unaffected because their applications clearly signal their fluency in the German language. If, however, employers use such statements to signal a distaste against migrant employees in general, also the applicants of the experiment may be negatively affected. As results show, the migrants of the experiment are equally discriminated no matter whether proficiency in German is required or not. Language requirements stated in a job advertisement therefore do not seem to signal a stronger dislike against migrants than average. Finally, it is possible that employers hold the prejudice that migrants are less likely to cope with particularly demanding job requirements. However, as column (4) illustrates, also this final interaction effect is not significant. This means that the level of discrimination is not affected by the level of qualifications that is required for a job. To sum up, the coding and evaluation of different variables has helped little to explain why and when discrimination occurs. Discrimination in office jobs seems to be a general phenomenon driven by employers' preferences that is barely affected by situational variables.

Discrimination in the hotel and restaurant industry (waiter, cook and receptionist)

Analogously to the previous examination of office jobs, multivariate analyses are also conducted for jobs in the hotel and restaurant industry. Similarly to Table 6, Table 8 differentiates between different migrant groups. As column (1) shows (controlling for occupation and sector dummies), all migrant groups are less successful than natives in the hotel and restaurant industry. It is noteworthy that their disadvantage is systematically higher than in clerical jobs. The negative effects of migrant background do not change significantly when adding the previously specified control variables in column (2). As for office jobs, a somewhat different distribution of job ads is therefore not responsible for a lower success rate of migrant applicants. Columns (1) and (2) illustrate that for applicants with a Chinese,

Turkish and Serbian background, the probability of a callback is 11 to 15 percentage points lower than that of an Austrian applicant without migration history. As in clerical occupations, applicants with Nigerian background face the highest degree of discrimination: in comparison to Austrian applicants, applicants with a Nigerian background experience a 20 to 22 percentage points lower probability of a callback. Tests for equality of coefficients show that in the first specification, the difference in coefficients is significant between applicants with Chinese and Nigerian background only (p=0.05), while in specification (2) differences are significant between the applicant with Nigerian background on the one hand and applicants with either Serbian background (p=0.07) or Chinese background (p=0.06) on the other. However, any significant differences disappear once additional variables and interaction terms are included in specification (3).

Column (3) finally illustrates that, in contrast to the results for office jobs, discrimination is not smaller in Vienna than in the provinces. While all job seekers experience higher callback rates in Vienna, candidates with a migrant background cannot reduce the level of discrimination experienced by applying to tourism jobs in the capital. In contrast to office jobs, applicants profit (on a marginally significant level) from having obtained secondary schooling (A-levels) instead of having finished an apprenticeship. Also more international firms appear to like the experimental candidates better than companies that act more on a local level. Maybe the fictitious applicants of the experiment appear more worldly-wise than the average applicant in the hotel and restaurant industry.[19] However, to what degree different variables affect the level of discrimination is examined more fully in Table 9.

In Table 9, all migrants applying for jobs in the hotel and restaurant industry are summated under the category 'migrant'. Columns (1) and (2) corroborate the first two columns of Table 8, but document the overall effect for migrant background. They illustrate that migrant applicants have a 14 to 16 percentage points lower likelihood to receive a callback than Austrians without migration history. Whether discrimination is especially high in particular contexts is examined in column (3) and (4) where interaction terms for migrant status and firm and job specific characteristics are included. Again, it is found that applicants in the hotel and restaurant industry have better chances to be invited to an interview when

[19] Informally, real life job applications have been examined for various secretary jobs as well as for one receptionist job. This exploration showed that the design and layout of applications in the hotel industry is on average less professional than in office jobs.

they apply for a job in Vienna. However, also when all migrant groups are aggregated, there is no indication that they fare relatively better in the capital than in the periphery.

As for clerical jobs, barely any of the coded variables can explain different treatment due to migrant status. Again, migrants neither fare better if they have finished secondary school (A-levels), nor if they apply to bigger or more international firms. Contrary to office jobs, higher paying companies in the hotel and restaurant industry do not tend to reject the standardized profiles of our applicants. Indeed, a check of actual applications in the tourism industry, confidentially provided from a hotel, indicated that applications in this sector are on average of lower quality than in office jobs. For this reason the standardized profiles of the experiment may also suffice at positions with higher pay in this sector. In contrast to clerical professions, migrants are negatively affected when applying to better paid jobs in the hotel and restaurant industry on a marginally significant level. In tourism, well-paying companies therefore seem to be less concerned about appearing diversity-friendly, but prefer to hire a native for the higher salary they pay. The results for ads requiring proficiency in the German language are particularly interesting. If such a requirement is mentioned in the advertisement (as in 27% of the examined ads in the industry), chances for a callback are only reduced for applicants *without* migration history. It therefore appears that companies in the hotel and restaurant industry that demand good German language skills actually do not seek natives. The employment chances of the examined migrant applicants (who all document to meet these language demands) are unaffected by the language requirement. Note that, contrary to office jobs, in the tourism industry no effects could be calculated for team and customer contact. This is due to the fact that there is no variation within jobs in the hotel and restaurant industry in these dimensions (for example, cooks never have customer contact, but receptionists and waiters always do by definition.)

Summing up, for jobs in the hotel and restaurant industry – just like for office jobs, reasons for discrimination could barely be detected despite an intensive coding of different variables. Firm and job specific characteristics could not explain why and when discrimination occurs. Neither location of a position nor education of an applicant affects the level of differential treatment. One significant effect obtained concerns the salary offered by firms: When companies in the hotel and restaurant industry offer a higher salary, discrimination is increased. Better paying firms in the hotel and restaurant industry therefore seem to have a stronger preference for natives than those paying less. The contrary appears to

be true for companies that explicitly require German proficiency. These invite fewer natives to interviews than those that do not mention any language requirements.

Other types of discrimination: the time interval until a callback

In addition to differences in callback rates, also other forms of discrimination against migrant applicants are conceivable as highlighted by Kaas and Manger (2012). In particular the time span until a candidate receives a response from a company may illustrate how keen a firm is to meet with a particular applicant. For instance, even if a company invites both, an applicant with and without migrant background, discriminatory tastes may be revealed if the native is invited immediately upon receipt of the application, while the migrant applicant receives a callback only after other candidates have turned down a job offer. Similarly it may be that the application of a migrant is promptly declined, while the same application by a native is kept in reserve in case no more attractive candidates are available.

In the following I therefore examine whether the time interval until an applicant either receives an invitation to a job interview or a rejection differs between applicants with and without migration history.[20] Applicants with a migration background experience discriminatory treatment if they have to wait significantly longer for an invitation to a job interview as well as if they receive rejections significantly earlier than applicants without migration history. For the purpose of the analysis, the time interval that passes until a response is received is measured as the number of days that elapse between the submission of the application and the receipt of a response (either a rejection or an invitation to a job interview). I explicitly account for differences in work-week standards between sectors: While office jobs typically have a five-day work-week from Monday to Friday, jobs in the hotel and restaurant industry are characterized by seven-day work weeks, extending to weekends. Companies in the hotel and restaurant industry therefore respond to applications also on weekends and expect applicants to come in for interviews on Saturdays and Sundays (sometimes on very short notice). This is inconceivable in office jobs.

As Table 10 shows, results suggest that there is indeed a time-dimension to discrimination. Applicants without migration history receive invitations to job interviews earlier than applicants with migration background. In particular, applicants without migration

[20] For this purpose, the sample is now restricted to observations where either an invitation to an interview or a rejection has been received as response to an application. Cases with no response do represent rejections, but because they cannot be assigned to a particular date, they are eliminated in the following. This procedure reduces our sample to 636 invitations to interviews and 512 explicit rejections.

history received an invitation to a job interview after 3.62 days on average, while applicants with migrant background had to wait 4.5 days on average. This difference is statistically significant (t=1.8525, p=0.0322, one-tailed).

The hypothesized difference in waiting period in case of a rejection can also be observed. While applicants with migration background receive a rejection already after 8.05 days, the application of a candidate without migration history is officially declined only after 10.12 days. This difference is statistically significant (t=2.3708, p=0.0091, one-tailed).

As these results illustrate, discrimination also occurs on subtle levels. Migrants are not only discriminated with respect to the frequency with which they are invited to interviews, they also receive these invitations more hesitantly. Companies give themselves more time until they articulate an interest in a migrant applicant, while they more readily (i.e. more quickly) reject their applications than in the case of a native candidate.

Summary and conclusion

This study has investigated employment opportunities of various migrant groups in Austria and found significant levels of discrimination against migrants. Statistical discrimination is unlikely to be the reason for this outcome for a variety of reasons. First, all fictitious applicants obtained their schooling in Austria and also hold the Austrian citizenship. As a result, the qualifications of migrants have not only been carefully matched with those of candidates without migrant background, companies were also provided with sufficient information to be assured that the applicants are fluent in the German language and do not require work permits. Second, applications in the Austrian setting are very comprehensive and give detailed information on personal characteristics (age, marital status etc.) as well as on job qualifications (school grades, further education etc.). For this reason, companies do not have to resort to stereotypes to infer the expected productivity of a candidate from but have a vast amount of information available to base their decision on. Finally, for the current study matching photos have been attached to the applications to conform to local norms. These photos have been produced with much effort to display comparable looks, likability, intelligence and reliability of all applicants. These photos allow employers to envision applicants more realistically than without visual representation. Therefore, stereotypical believes about the beauty and likability of different ethnic groups are prevented and thus

statistical discrimination is avoided. However, the attachment of photos in the application material also serves other purposes. Although previous experiments indicated ethnicity via the name of an applicant, employers may not always correctly perceive this signal. As a pretest of the current study has shown, in particular names with African origin are often not recognized as such. A sizeable fraction of test participants did not associate an African name with a black ethnicity. The attachment of photographs therefore allowed me to give an unambiguous visual cue concerning the ethnic group membership of candidates.

The experiment found substantial discrimination against applicants with a Serbian, Turkish, Chinese and Nigerian background. However, discrimination it is most pronounced for applicants with an African background.[21] To explain why and when discrimination occurs, a battery of firm and job specific characteristics have been examined (e.g. whether team or customer contact is part of the job description). However, these help little to explain the actual level of discrimination. For example, for office jobs it was possible to identify from the job advertisements whether team or customer contact was part of the job description. If coworker or customer discrimination exists, one would expect differential treatment to be higher when team or customer contact is required at a job. This has not been found in the data. Discrimination in Austria therefore seems to be a general phenomenon driven by employers' preferences. It is barely affected by situational variables.

Apart from discrimination in the frequency of callbacks, the current study also found discrimination with respect to the time period within which firms respond to an application. It turned out that companies are more quickly to invite candidates without migrant background – apparently they are more eager to meet with non-migrants. At the same time, companies turn down migrant applications more rapidly – it seems that they find it easier to reject migrants while they keep equally qualified non-migrants in the pool of potential candidates for a bit longer. This illustrates that discrimination is a more multi-facetted phenomenon than usually considered.

[21] In comparison to studies from other countries, the current experiment finds a relatively low level of discrimination against migrants with Chinese background (Oreopoulos, 2011; Wood et al., 2009; Booth et al., 2012), but relatively high levels of discrimination against applicants with Turkish (Goldberg et al., 1996; Fibbi et al., 2006; Andriessen et al, 2012; Kaas and Manger, 2012; Baert et al., 2013) and African background (Firth, 1981; Cediey and Foroni, 2008; Wood et al., 2009; Eid, 2012).

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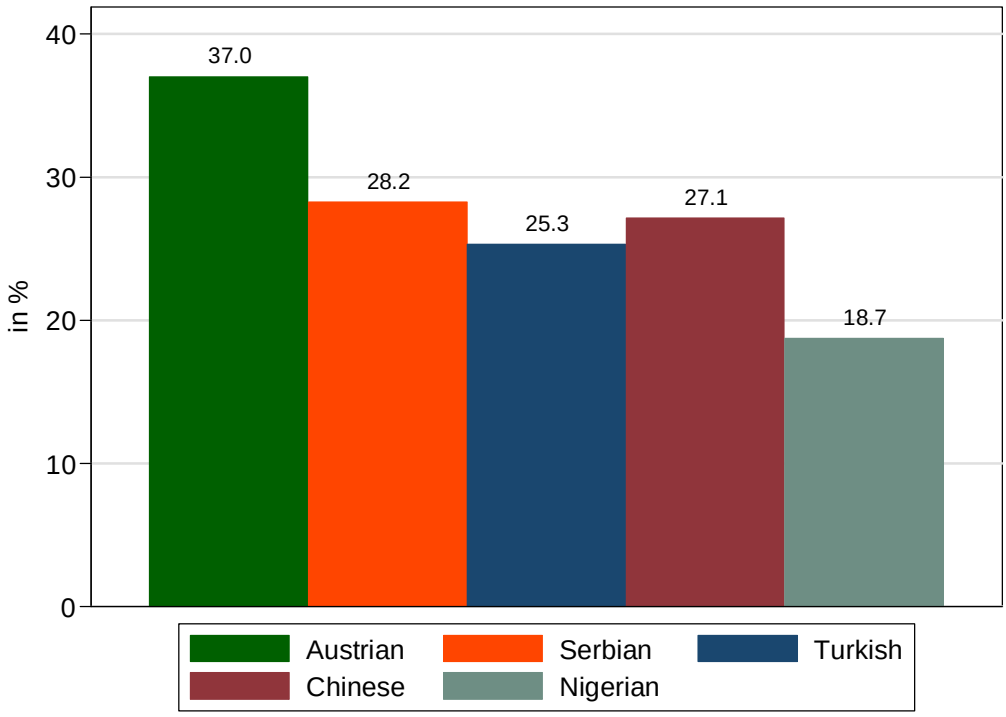
Figures

Figure 1 Callbacks by identity/migrant background (in %)



Tables

Table 1: Names of applicants used in the experiment

First names	Last names	Identity	Correct identification of background
Michael/Julia	Pichler	Austria	97%
Dragan/Dejana	Nikolić	Eastern Europe (Former Yugoslavia, Serbia)	96% (73%, 20%)
Murat/Emine	Öztürk	Turkey	97%
Cheng/Xiu	Wang	Asia (China)	99% (73%)
Olabode/Omolare	Adebayo	Africa (Nigeria)	71% (7%)
N=535			

Table 2: Means and standard deviations of pre-test scores by identity/migrant background and sex

	Looks		Likeable		Intelligence		Reliability		Total		
	Mean	Std.dv	Mean	Std.dv	Mean	Std.dv	Mean	Std.dv	Mean	Std.dv	N
Female applicants											
Austrian/Serbian	2.37	0.60	2.04	0.56	2.21	0.70	2.22	0.64	2.21	0.44	51
Austrian/Turkish	2.33	0.61	2.02	0.64	2.21	0.47	2.00	0.66	2.14	0.38	42
Chinese	2.45	0.71	2.05	0.54	2.05	0.58	2.05	0.70	2.15	0.43	42
Nigerian	2.19	0.77	1.98	0.47	2.19	0.59	2.05	0.73	2.10	0.43	42
Male applicants											
Austrian/Serbian	2.60	0.64	2.38	0.83	2.28	0.57	2.32	0.82	2.40	0.46	50
Austrian/Turkish	2.60	0.71	2.38	0.71	2.25	0.63	2.43	0.84	2.41	0.46	40
Chinese	2.77	0.78	2.17	0.83	2.23	0.59	2.17	0.75	2.33	0.47	48
Nigerian	2.68	0.62	2.13	0.82	2.10	0.44	2.20	0.72	2.28	0.44	40

Table 3: Callback rates by identity/migrant background

	Callbacks	N	Callback rate (in %)	Ratio†	t-values	p-values
Austrian	335	905	37.0			
Serbian	85	301	28.2	1.31***	2.7755	0.0056
Turkish	77	304	25.3	1.46***	3.7382	0.0002
Chinese	86	317	27.1	1.37***	3.1986	0.0014
Nigerian	59	315	18.7	1.98***	6.0625	0.0000
Total	642	2142	30.0			

Note: † Significant difference in callback rates: *** p<0.01, ** p<0.05, * p<0.1

Table 4: Callback rates by occupation

	Secretary		Accountant		Waiter		Cook		Receptionist	
	CB rate (%)	Ratio†	CB rate (%)	Ratio†	CB rate (%)	Ratio†	CB rate (%)	Ratio†	CB rate (%)	Ratio†
Austrian	28.3		38.7		39.6		52.2		39.7	
Serbian	19.6	1.44*	42.1	0.92	22.2	1.78***	40.7	1.28	32.0	1.24
Turkish	17.5	1.62**	31.6	1.22	28.1	1.41	32.8	1.59**	29.2	1.36
Chinese	18.8	1.51**	30.8	1.26	29.0	1.37	33.3	1.57***	38.5	1.03
Nigerian	14.3	1.98***	18.4	2.10**	16.9	2.34***	28.6	1.83***	24.0	1.65
Total	22.3		34.5		29.7		41.2		34.5	
Obs.	837		290		451		396		168	

Note: † Significant difference in callback rates: *** p<0.01, ** p<0.05, * p<0.1

CB rate refers to the callback rate; Accountant refers to accountants and payroll accountant.

Table 5: Callback rates by region: Vienna relative to outside-Vienna

	Vienna			
	Callbacks	N	Callback rate (in %)	Ratio†
Austrian	212	582	36.4	
Serbian	48	138	34.8	1.05
Turkish	42	142	29.6	1.23
Chinese	43	155	27.7	1.31**
Nigerian	30	150	20.0	1.82***
Total	375	1167	32.1	

	Outside Vienna			
	Callbacks	N	Callback rate (in %)	Ratio†
Austrian	123	323	38.1	
Serbian	37	163	22.7	1.68***
Turkish	35	162	21.6	1.76***
Chinese	43	162	26.5	1.44**
Nigerian	29	165	17.6	2.16***
Total	267	975	27.4	

Note: † Significant difference in callback rates: *** p<0.01, ** p<0.05, * p<0.1

Outside Vienna refers to all remaining Austrian states apart from Vienna.

Table 6: Probability of a callback for office jobs: all identities separately (OLS)

Office	(1)	(2)	(3)
Variables	Callback	Callback	Callback
Serbian	-0.058	-0.059	-0.164**
	(-1.58)	(-1.56)	(-2.26)
Turkish	-0.089***	-0.085**	-0.212***
	(-2.63)	(-2.36)	(-3.20)
Chinese	-0.083**	-0.092***	-0.134*
	(-2.38)	(-2.65)	(-1.93)
Nigerian	-0.162***	-0.157***	-0.226***
	(-4.79)	(-4.62)	(-3.53)
Vienna		0.038	-0.033
		(1.15)	(-0.62)
Vienna*Serbian			0.144*
			(1.67)
Vienna*Turkish			0.174**
			(2.20)
Vienna*Chinese			0.048
			(0.60)
Vienna*Nigerian			0.087
			(1.14)
A-levels (Yes=1)		-0.005	-0.002
		(-0.23)	(-0.10)
Firm characteristics			
Firm size		0.048*	0.051*
		(1.66)	(1.75)
Firm's action radius		-0.015	-0.018
		(-0.73)	(-0.88)
Job characteristics			
Salary		-0.016***	-0.016***
		(-4.69)	(-4.67)
German		0.024	0.025
		(0.65)	(0.67)
Job requirements		-0.025	-0.024
		(-1.38)	(-1.35)
Team contact		0.066*	0.069**
(Yes=1)		(1.94)	(2.02)
Customer contact		-0.033	-0.031
(Yes=1)		(-0.99)	(-0.92)
Occupation dummy	Yes	Yes	Yes
Sector dummies	Yes	Yes	Yes

Constant	0.218***	0.451***	0.505***
	(5.06)	(4.94)	(5.06)
No of observations	1,127	1,085	1,085
R^2	0.054	0.087	0.092

Note: Robust t-statistics in parentheses, *** p<0.01, ** p<0.05, * p<0.1
Standard errors are corrected for clustering of observations at the firm level.
Sector dummies refer to the following sectors: creative industry and information and communication, finance and business consultancy, hotel and restaurant, trade, real estate, public sector and social affairs, production, and lawyers.
Office comprises accountants and secretaries.

Table 7: Probability of a callback for office jobs: migrants as a group (OLS)

Office	(1)	(2)	(3)	(4)
Variables	Callback	Callback	Callback	Callback
Migrant	-0.099***	-0.099***	-0.224***	-0.371***
	(-4.76)	(-4.58)	(-2.85)	(-3.53)
Vienna		0.036	-0.036	-0.036
		(1.10)	(-0.67)	(-0.67)
Vienna*Migrant			0.112*	0.113*
			(1.93)	(1.89)
A-levels (Yes=1)		-0.011	0.003	0.009
		(-0.46)	(0.07)	(0.21)
A-levels*Migrant			-0.022	-0.032
			(-0.38)	(-0.54)
Firm characteristics				
Firm size		0.051*	0.062*	0.069*
		(1.75)	(1.65)	(1.82)
Firm size*Migrant			-0.017	-0.032
			(-0.48)	(-0.86)
Firm's action radius (FAR)		-0.017	-0.044	-0.043
		(-0.82)	(-1.55)	(-1.49)
FAR*Migrant			0.046	0.045
			(1.60)	(1.53)
Job characteristics				
Salary		-0.017***	-0.017***	-0.021***
		(-4.72)	(-4.72)	(-4.84)
Salary*Migrant				0.009**
				(2.00)
German		0.021	0.019	0.021
		(0.57)	(0.53)	(0.42)
German*Migrant				-0.002
				(-0.03)
Job requirements		-0.026	-0.024	-0.018
		(-1.44)	(-1.36)	(-0.71)
Job requ*Migrant				-0.013
				(-0.50)
Team contact (Yes=1)		0.067**	0.069**	0.049
(TC)		(1.97)	(2.02)	(1.00)
TC*Migrant				0.036
				(0.69)
Customer contact (Yes=1)		-0.033	-0.031	-0.048
(CC)		(-0.99)	(-0.92)	(-1.01)
CC*Migrant				0.031

				(0.62)
Occupation dummies	Yes	Yes	Yes	Yes
Sector dummies	Yes	Yes	Yes	Yes
Constant	0.217***	0.457***	0.537***	0.615***
	(5.03)	(5.00)	(5.07)	(5.37)
No of observations	1,127	1,085	1,085	1,085
R^2	0.050	0.084	0.088	0.091

Note: Robust t-statistics in parentheses, *** p<0.01, ** p<0.05, * p<0.1
Standard errors are corrected for clustering of observations at the firm level.
Sector dummies refer to the following sectors: creative industry and information and communication, finance and business consultancy, hotel and restaurant, trade, real estate, public sector and social affairs, production, and lawyers.
Office comprises accountants and secretaries.

Table 8: Probability of a callback for jobs in hotel and restaurant industry: all identities separately (OLS)

	(1)	(2)	(3)
Variables	Callback	Callback	Callback
Serbian	-0.141***	-0.115***	-0.142***
	(-3.31)	(-2.65)	(-2.59)
Turkish	-0.146***	-0.116**	-0.129**
	(-3.36)	(-2.58)	(-2.38)
Chinese	-0.123***	-0.113***	-0.110*
	(-2.91)	(-2.60)	(-1.96)
Nigerian	-0.220***	-0.207***	-0.202***
	(-5.47)	(-5.07)	(-3.98)
Vienna		0.104**	0.091*
		(2.43)	(1.66)
Vienna*Serbian			0.089
			(0.96)
Vienna*Turkish			0.045
			(0.43)
Vienna*Chinese			-0.015
			(-0.17)
Vienna*Nigerian			-0.026
			(-0.29)
A-levels (Yes=1)		0.052*	0.052*
		(1.91)	(1.92)
Firm characteristics			
Firm size		0.012	0.011
		(0.32)	(0.29)
Firm's action radius		0.089**	0.090**
		(2.43)	(2.45)
Job characteristics			
Salary		0.001	0.001
		(0.22)	(0.19)
German		-0.065	-0.065
		(-1.60)	(-1.59)
Job requirements		0.002	0.003
		(0.07)	(0.10)
Occupation dummies	Yes	Yes	Yes
Sector dummies	Yes	Yes	Yes
Constant	1.034***	0.779***	0.760***
	(19.77)	(5.78)	(5.43)
No of observations	1,015	985	985
R^2	0.048	0.072	0.073

Note: Robust t-statistics in parentheses, *** p<0.01, ** p<0.05, * p<0.1
Standard errors are corrected for clustering of observations at the firm level.
Sector dummies refer to the following sectors: hotel and restaurant, trade, public sector and social affairs, and production.
Tourism comprises waiters, cooks and receptionists.

Table 9: Probability of a callback for jobs in hotel and restaurant industry: migrants as a group (OLS)

	(1)	(2)	(3)	(4)
Variables	Callback	Callback	Callback	Callback
Migrant	-0.157***	-0.138***	-0.299***	-0.021
	(-5.61)	(-4.78)	(-2.88)	(-0.10)
Vienna		0.104**	0.114**	0.173***
		(2.44)	(2.03)	(2.89)
Vienna*Migrant			-0.012	-0.098
			(-0.20)	(-1.49)
A-levels (Yes=1)		0.050*	0.061	0.058
		(1.83)	(1.21)	(1.16)
A-levels*Migrant			-0.016	-0.014
			(-0.24)	(-0.20)
Firm characteristics				
Firm size		0.010	-0.024	-0.034
		(0.29)	(-0.44)	(-0.61)
Firm size*Migrant			0.057	0.070
			(0.94)	(1.14)
Firm's action radius		0.089**	0.041	0.042
(FAR)		(2.40)	(0.72)	(0.75)
FAR*Migrant			0.077	0.076
			(1.14)	(1.11)
Job characteristics				
Salary		0.001	0.001	0.012
		(0.19)	(0.22)	(1.52)
Salary*Migrant				-0.018*
				(-1.88)
German		-0.065	-0.065	-0.191***
		(-1.59)	(-1.59)	(-3.15)
German*Migrant				0.207***
				(3.05)
Job requirements		0.000	0.000	0.022
		(-0.00)	(-0.00)	(0.48)
Job requ*Migrant				-0.031
				(-0.62)
Occupation dummies	Yes	Yes	Yes	Yes
Sector dummies	Yes	Yes	Yes	Yes
Constant	1.041***	0.794***	0.883***	0.730***
	(20.85)	(5.94)	(5.83)	(3.86)
No of observations	1,015	985	985	985
R^2	0.044	0.067	0.070	0.082

Note: Robust t-statistics in parentheses, *** p<0.01, ** p<0.05, * p<0.1
Standard errors are corrected for clustering of observations at the firm level.
Sector dummies refer to the following sectors: hotel and restaurant, trade, public sector and social affairs, and production.
Tourism comprises waiters, cooks and receptionists.

Table 10: Time interval until callback for a job, by identity

	Invited to interview		**Rejected**	
	No. of days	p-values	No. of days	p-values
Austrian	3.62		10.12	
Migrant background	4.50	(0.03)	8.05	(0.01)
Serbian background	4.99	(0.03)	7.44	(0.03)
Turkish background	4.57	(0.10)	8.47	(0.10)
Chinese background	3.86	(0.36)	7.78	(0.04)
Nigerian background	4.66	(0.09)	8.34	(0.09)

Note: p-values of one-sided tests in parentheses