I Z A Institute
of Labor Economics
Initiated by Deutsche Post Foundation

DISCUSSION PAPER SERIES

IZA DP No. 14495

The Effect of Photos and a Local-Sounding Name on Discrimination against Ethnic Minorities in Austria

Doris Weichselbaumer
Julia Schuster

JUNE 2021

I Z A Institute
of Labor Economics

Initiated by Deutsche Post Foundation

DISCUSSION PAPER SERIES

IZA DP No. 14495

The Effect of Photos and a Local-Sounding Name on Discrimination against Ethnic Minorities in Austria

Doris Weichselbaumer
University Linz and IZA

Julia Schuster
University Linz

JUNE 2021

IZA – Institute of Labor Economics

Schaumburg-Lippe-Straße 5–9
53113 Bonn, Germany

Phone: +49-228-3894-0
Email: publications@iza.org

www.iza.org

ABSTRACT

The Effect of Photos and a Local-Sounding Name on Discrimination against Ethnic Minorities in Austria*

A large body of research documents the existence of discrimination against migrants and ethnic minorities in the labour market. This study investigates for Austria, to what degree employment discrimination against ethnic minorities is mitigated, when they abstain from following the Austrian norm of including a photograph to their job application that would make their ethnicity salient or when they hold a local sounding name. In our correspondence test, we found that with matching ethnic names and ethnic photographs, black but not Asian job applicants suffered from discrimination. With a local sounding name, blacks (but not Asians) bettered their employment chances. Although photographs may facilitate ethnic discrimination, we did not find that their omission improved minorities' labour market chances. On the contrary, Asians were penalised for leaving out their photograph. Indeed, if candidates did not attach photos despite the convention to do so, we found statistically significant discrimination not only against black, but also Asian applicants.

JEL Classification: C93, J15, J71
Keywords: migration, discrimination, hiring, correspondence testing

Corresponding author:
Doris Weichselbaumer
Department of Economics
University of Linz
Altenberger Strasse 69
4040 Linz-Auhof
Austria
E-mail: doris.weichselbaumer@jku.at

* We thank Michael Leiblfinger, Katherina Oberthaler, Veronika Prieler and Juliane Ransmayr for excellent research assistance and Anna Schopf for letting us use her mail address for this experiment. We also thank Sandra Leitner, Nicole Kronberger and anonymous reviewers for helpful comments and suggestions.

Introduction

The successful labour market participation of ethnic minorities and immigrants is not only important for the well-being of individuals, but also for a countries' economy. Yet, unemployment rates for immigrants in Europe suggest that this can be a difficult to reach aim (Eurostat, 2014). The reasons for this difficulty are manifold, one of them is discrimination. Discrimination can take numerous forms; for example, it can occur in hiring, in the assignment of tasks, or in the wage setting. This article focuses on discrimination in hiring and examines the situation of more recent immigrant groups in Austria: Asians and Africans, who may be at particular risk of discrimination as their ethnicities make them visually distinguishable from the Austrian majority population. According to Goffman (1963) this difference represents a "stigma". Stigmas are individual attributes that are seen as personal flaws by mainstream society. As such, they often lead to devaluation, prejudice, and discrimination.

Many ethnic minorities and individuals with migration background are aware of the discrimination they are facing. One particular challenge is that when applying for a job, their names reveal the "stigma" of a migration background, enabling discriminatory employers to react upon it. Many so-called "correspondence studies" have systematically shown that identical job applications are treated less favourable if the applicant holds a foreign sounding name (see, e.g., Quillian et al., 2019; Zschirnt and Ruedin, 2016). Because in German speaking countries like Austria, the attachment of photographs to job applications is the norm, the migration background or the non-white ethnicity of an applicant shows not only in the name, but also in the photograph.

This article experimentally examines the effect of measures that ethnic minorities may take to deal with potential discrimination that results from revealing their photo and name. As Goffman (1963) suggested, minorities may conceal or downplay their stigma to better their employment possibilities. While we do not propose that the problem of discrimination can or should be solved by individuals adapting to white norms of the labour market, we are interested in the effect such strategies can have. The first strategy that we consider is that individuals with a foreign sounding name may want to change it so that it sounds local (e.g., Arai and Thoursie, 2009; Bursell, 2012). If applicants, who have undergone a name change, follow the norm and attach their photographs, their ethnicity is still apparent, yet an Austrian sounding name may signal a higher level of "integration". Changing one's name is probably a step that most people do not take light-hearted – names are usually closely linked to one's personal identity. Yet, as we will show, for some applicants such a name change can indeed increase their labour market opportunities.

The second examined strategy, that ethnic minorities may take to help their employment chances, is less personally intrusive. While attaching a photograph to an application is considered the norm in Austria, for ethnic minorities it is unclear, whether adherence to this norm is beneficial. A photo makes ethnicity more salient and as a result may trigger discrimination. Possibly *seeing* someone's ethnicity activates discriminatory treatment more strongly than inferring the ethnicity from somebody's name.[1] For example, in their meta-study, Quillian et al. (2019) find larger levels of ethnic discrimination in "in-person audits", where job seekers apply in person and thus employers see the ethnicity of an applicant, than in correspondence tests where only names signal the minority status of a candidate. However, leaving out the photograph may also be detrimental for the labour market chances of ethnic minorities. As has been shown, employers prefer to work with likable, attractive individuals (Hamermesh and Biddle, 1994; Baert and Decuypere, 2014). If the majority population holds prejudiced beliefs with respect to the physical appearance of ethnic minorities, these may suffer from statistical discrimination. Phelps (1972) and Arrow (1973) stated that statistical discrimination occurs if information about an individual's productive characteristic is missing and employers resort to (beliefs about) group averages to infer from.[2] For example, Western stereotypes ascribe unflattering physical attributes to Asian men (for the United States see, e.g., Wong et al., 2011). As a result, they may benefit from providing information about their looks proving the stereotype wrong. If they attach attractive, friendly photos of themselves to their job application, employers may find them more pleasant looking than expected and discrimination may be mitigated.

In this study, we focus on two ethnic minority groups in Austria: Africans and (East) Asians[3], who are identifiable by their photograph, by their Nigerian or Chinese names, or both. The reason for choosing these relatively small populations is that Asians and blacks depicted in photographs are visually easily and quickly distinguishable from autochthonic Austrians – even at a brief glance, which is often all a portrait application photo receives by a potential

[1] This assumption is in line with Pager (2005) who emphasized that discrimination may be triggered more strongly in a live interaction (when being visually confronted with an ethic other), than in a survey question.

[2] Often statistical discrimination is distinguished from "taste-based" discrimination (Becker, 1957). However, because beauty is not necessarily a *productive* characteristic and likes based on attractiveness may also be taste-based, this distinction may be blurred in our case.

[3] We are aware that those are broad categories. Yet, given the small population sizes of those groups in Austria, there is reason to believe that employers in Austria do not distinguish between, for instance, applicants of different sub-Saharan African countries.

employer. This is crucial because one of our goals is to investigate the discriminatory effect of a visual clue (photo) for "otherness" in the hiring process. The other goal is to identify the effect of a name, while holding ethnicity – as revealed through the photo – constant.

We employed the method of correspondence testing, where fake letters of applications that indicate identical productive but different demographic characteristics are sent to firms to measure whether applicants have different chances for an invite to a job interview. With this method, Weichselbaumer (2017) previously showed high levels of discrimination for Austria – in particular against job applicants with Chinese and Nigerian names (who had ethnically matching photographs attached). Because the existence of discrimination is a precondition for evaluating strategies that are supposed to reduce discrimination, in our study we built on these findings and focused on one set of tested occupations that still had a large demand for workers during the time of our experiment. Because the previous study focused on male applicants for the occupations we were concerned with, for comparison reasons we followed suit in this study.[4]

Our study found discrimination against blacks (but not Asians) when photos and names simultaneously point to the minority status of the applicant. When adopting a local sounding name, blacks bettered their employment chances. This result is in line with a growing strand of literature on the ethnic distinctiveness of names, which argues that immigrants who hold less ethnically distinct names do better in the labour market (Goldstein and Stecklov, 2016; Biavaschi et al., 2017; Arai and Thoursie, 2009). The finding also corresponds with Kang et al. (2016) who showed that for ethnic minorities the "whitening" or "downplaying" of ethnic difference in an application can be beneficial. Although such downplaying could also be achieved by leaving out photographs that indicate one's ethnic minority status, we did not find that this strategy improved minorities' labour market chances. On the contrary, Asians were penalised for leaving out their photograph – possibly due to the stereotype of Asian men's plain looks. This suggests that dynamics of unfavourable treatment are complex and cannot necessarily be prevented by simple solutions.

This article is structured as follows: The next section gives a short description over the Austrian setting, followed by a review of the existing literature on the ethnic distinctiveness of names and an illustration of how previous correspondence tests have employed photographs. Subsequently, we present the design of our experiment; in particular we describe the application

[4] As Bursell (2014) as well as Dahl and Krog (2018) pointed out, many experiments on ethnic discrimination focus on males only. Because of the particular design of our study that involved large sets of photographs, analysing the effect of gender, unfortunately, is beyond the scope also of this study.

material that we created. This is followed by a section presenting the empirical results. The final section concludes.

The Austrian setting

Austria is an interesting setting for studying the employment situation of ethnic minorities, mainly for two reasons. First, immigration has a long history in Austria. During the Habsburg monarchy, in particular Vienna constituted a melting pot that attracted many migrants particularly from Eastern Europe. During the labour shortages in the 1960s and early 1970s, Austria actively recruited workers from Turkey and former Yugoslavia. Further immigrants followed during the collapse of Yugoslavia and the subsequent wars in the 1990s. Over the last 25 years, people with Asian or African backgrounds, who we examined in this study, immigrated in larger numbers – yet both communities are still relatively small in Austria. By January 2017, 53,961 people born in Africa live in Austria (that is 0.61% of the Austrian population) and 222,297 people born in Asia (2.5%). Nigerians (by country of birth) represent only 0.1% of the Austrian population and Chinese 0.19% (Statistik Austria, 2017).

Second, in Austria, like in other German-speaking countries, job-seekers are required to attach a vast amount of documents (photographs, school reports, etc.) to their application. This provides employers with detailed material about the applicants, which they can use for their employment decisions. While the extensive information on educational achievements, for instance, makes statistical discrimination less likely, the attachment of photographs may provide a basis for unequal treatment. This will be examined in this study.

This paper also discusses the possibility of changing one's name. Since 1988, Austrian citizens as well as recognized refugees living in Austria are legally entitled to have their first and last names changed by the Austrian administration ("Namensänderungsgesetz", NÄG). Individuals who convincingly argue that their old name subjects them to unreasonable social or economic disadvantages, or whose name is difficult to pronounce, are exempt from most administrative fees that otherwise arise with a name change (NÄG).[5] The same is true if migrants apply for a name change within two years of adopting the Austrian citizenship "if their new name is likely to enhance integration into the Austrian host society" (NÄG §2). Thus, the Austrian law is aware of the potential labour market discrimination a foreign-sounding name

[5] According to NÄG § 2, other "approved reasons" for a name change that lead to a reduction of fees to approximately € 30 are: ridiculousness, offensiveness and confusability of the old name. If no "approved reason" is provided, applicants need to pay additional € 545 to € 602.

can cause and expects an easier integration process of migrants who trade such names with Austrian names.

Previous research

The effect of names on economic outcomes

Numerous studies on discrimination in hiring have found unfavourable treatment of individuals with foreign-sounding names (for an overview see Quillian et al., 2019; Zschirnt and Ruedin, 2016). As a result, the ethnic distinctiveness of names has received increased academic attention in recent years. In one of the first studies on the topic, Fryer and Levitt (2004) examined the causes and consequences of black names in the United States. Interestingly, for African-Americans the authors identified an increase in the adoption of distinctively black names since the 1970s (possibly as a result of the civil rights movement), while the literature on immigrants to the United States observed their tendency to Americanize their names. Goldstein and Stecklov (2016) looked at children of European immigrants to the United States in the late nineteenth, early twentieth century, and found them to achieve a higher occupational status when they had more American-sounding first names. Because this effect also holds for recognizably foreign last names, they argued that assimilation may be responsible for this result. Also Biavaschi et al. (2017) focused on immigrants to the United States in the early twentieth century. Their findings revealed a larger occupational upgrading for immigrants who Americanized their first names than for those who did not.

Arai and Thoursie (2009) were the first who analysed the economic outcomes of immigrants who underwent an official name change. The authors examined changes from an Asian, African, or Slavic to a Swedish-sounding surname and found that such changes resulted in a 141% increase in earnings (in a fixed-effects estimation), which they attributed to reduced labour market discrimination. They suggested that increased employment probabilities may be responsible for this effect, as employers are more likely to call an applicant with a local sounding name. Also for Sweden, Bursell (2012) interviewed individuals with Middle Eastern backgrounds who changed their surnames and asked about their motivation to do so. More than half of the respondents mentioned labour market discrimination as one of the reasons, some explicitly mentioned obstacles that come with a foreign sounding name when applying for a job.

Related to our study, Kang et al. (2016) examined how ethnic minorities conceal or downplay their ethnicity in job applications. Interviews with black and Asian university

students in the United States revealed that many engaged in "résumé whitening." For example, students omitted or altered the description of (extra-)professional experiences, if these could signal a non-white ethnicity or an interest in racial identity politics. They also reported to change the presentation of their name (for example, by abbreviating an ethnic sounding first name). The study also found that such whitening techniques indeed bettered the employment chances of ethnic minorities.

In our experiment, we also wanted to identify whether downplaying ethnic cues helps ethnic minority job applicants. With respect to names, we therefore created job applicants who held a common Austrian first and second name, but their photograph indicated that they were members of an ethnic minority. Employers may hold different beliefs, why these applicants have a local sounding name – they may assume they have a biological or adoptive parent with an Austrian name, or that they have gone through a voluntary name change (e.g., Arai and Thoursie, 2009; Bursell, 2012). Whatever the attributed reason, a local sounding name is likely to be interpreted as indicating greater similarity with the majority group and can be achieved with an official name change. We thus test whether blacks and Asians, whose ethnicity is visible in their photograph, do better with a local than a foreign sounding name.

Photographs in discrimination research

In this study we also examined the effect of attaching a photograph for ethnic minorities. The employment of photographs in correspondence tests is relatively rare because most studies have been conducted in countries where photographs are typically not included in résumés. In countries where the attachment of photos is the norm (e.g., in the German speaking countries), some correspondence tests have included them simply to follow this convention and keep the invitation chances of the fictitious applicants intact. For example, Kaas and Manger (2012) used the same photo for applicants with a German sounding name and a Turkish sounding name, thereby holding attractiveness constant. Because Weichselbaumer (2017) examined the job opportunities of individuals with Asian and African sounding names in Austria, she attached photographs of different ethnicities (the individuals shown were matched in other characteristics like attractiveness) to their résumés. Thereby the ethnic background of an applicant was indicated not only through a foreign sounding name but also visually. Other studies worked with photos to explore the impact of particular characteristics of an applicant that could not be signalled otherwise (Rich, 2018). For example, in Mexico, where names do not signal the ethnicity of a person, Arceo-Gomez and Campos-Vázquez (2014) attached photos to indicate the white, Mestizo, and indigenous ethnicity of individuals. In a study in Germany,

Weichselbaumer (2020) used photos to reveal whether a female immigrant was wearing a Muslim headscarf. Another Austrian study employed photos to indicate different personality types of female applicants who appeared either "masculine" or "feminine" (Weichselbaumer, 2003). Within an experiment in Sweden, Rooth (2009) made job applicants either look obese or of average weight. Otherwise, photos have been employed to examine the effect of physical attractiveness on employment possibilities (Galarza and Yamada, 2014; López Bóo et al. 2013; Maurer-Fazio and Lei, 2015; Ruffle and Shtudiner, 2015). Attractiveness was typically measured in a pretest where participants were asked to rate the looks of those portrayed. These ratings were used to categorize photos according to their looks and control for attractiveness in the empirical analysis. Maurer-Fazio and Lei (2015), as well as López Bóo et al. (2013), examined the impact of attractiveness on callback rates in China and Argentina respectively. Both studies confirmed that attractive applicants had better chances to be invited to job interviews. The Argentinean study further suggested that unattractive candidates are better off when not including a photograph. In their correspondence test on the Peruvian labour market, Galarza and Yamada (2014) focused on attractiveness and ethnicity simultaneously and showed that white as well as attractive applicants received more callbacks than indigenous and less attractive applicants, respectively.

In this article we are interested in the effect of photos of different ethnic groups on employment chances. In particular, we want to identify whether omitting the photograph helps or hinders ethnic minorities – a question that has not yet been addressed in the literature. Because our photographs vary with respect to attractiveness, we follow the method typically used in this research area and control for perceived beauty of applicants in the analysis.

Method

In this experimental study, applications of equally qualified individuals, some of whom belonged to an ethnic minority, were sent to companies to examine potential differences in the callback rates of firms. We collected three different subsamples: In the *baseline treatment*, applications were sent for individuals whose photos and names were matched, i.e. signalled the same ethnicity. This baseline treatment contained applications of white applicants who held an Austrian name, black applicants who held a Nigerian name, and Asian applicants who held a Chinese name. Results from this treatment show the level of discrimination against applicants

with a Nigerian or Chinese background, who do not take up any of those measures potentially preventing discrimination that we examine in this study.

For the *name changer treatment*, we sent applications for individuals whose photos indicated an ethnic minority but who held an Austrian name (both first and last name). The resulting subsample consisted of black and Asian applicants who held an Austrian name. In the *no photo treatment*, applications did not include photos, but their Austrian, Nigerian or Chinese names indicated a specific ethnicity.

In total, the study included 8 different identities (3 from the *baseline treatment*, 3 from the *no photo treatment*, and 2 from the *name changer treatment*). The particular treatment/identity was assigned randomly to each application. The comparison between the different treatments allowed us to examine whether a local sounding name or the attachment of photos helps or hurts migrants.

Photographs and pretest

We selected 18 suitable professional headshots of males, six for each ethnic group (white, Asian, black). Most of these photographs were purchased from online stock photo companies, from which we selected photos of relatively attractive and professional looking young men. We aimed at creating comparable sets of photographs for each ethnicity. For that, we digitally manipulated some of the purchased photographs (e.g. we altered the persons' smile if it seemed exaggerated for our context or removed highlights in eyes which revealed overtly professional photo shootings).

Because the individual photographs may differ in their looks, we conducted a pretest in which the applicants were evaluated. Students of business and economics were asked to evaluate sets of six photographs with respect to attractiveness, likability, intelligence, reliability and competence.[6] Each set was evaluated by 65 to 68 students on a scale from 1 (poor), to 5 (excellent). These test scores later served as control variables in our empirical analysis.

Table 1 provides the mean scores per ethnicity as well as the p-values from a t-test comparing these scores between ethnicities. Although most photos came from stock photo companies and thus were relatively attractive, we find that the photos of white men (3.38) scored higher with respect to attractiveness than those of blacks (3.07) and much higher than those of Asians (2.45). Also the difference between black and Asian men is statistically

[6] We created three sets of six photos (two of each ethnic group), since evaluating all 18 photographs might have overburdened pretest participants. To control for a possible bias based on the order of the photos within sets, we altered this order in different versions of each set.

significant at the 1% level. These results are in line with common stereotypes that describe Asian men as physically less attractive (e.g., Wilkins and Kaiser 2011; Wong, Owen, Tran, Collins and Higgins 2011). Concerning likability, photos of black men (3.8) received higher scores than photos of white (3.49) or Asian men (3.43). In the dimensions "intelligence", "reliability", and "competence", we find another stereotype confirmed: Asian men were rated more favourably in all these aspects. The stereotype of smart and diligent Asians, who are considered a "model minority" (Sue and Kitano, 1973; Abraham and Appiah, 2006; Wong et al., 2011), is widely held and seems to be reflected in these scores. No difference was found between photos of white and black men in these dimensions. Of course, these ratings only measure perceptions and not objective differences. However, perceptions concerning, for example, attractiveness are culturally formed and shared. They reflect the beliefs and likes of a particular population and can thus have wide-reaching consequences – discrimination that we examined in this study is one of them.

Names and name changers

For the fictitious applicants we used names that are combinations of first and last names common in Austria, China, and Nigeria respectively: Michael Pichler, Cheng Wang and Olabode Adebayo. For those names, we drew on Weichselbaumer (2017) who tested and confirmed Austrians' ability to guess these names' national origin (or at least the broader region of origin). Hence, in the following, when these names are used in applications, we refer to applicants with a "Nigerian" or "Chinese background". When a photograph is the only clue for a non-Austrian ethnicity, we keep the broader terminology of "black" and "Asian" applicants.

Name changers we call those job applicants who signal an ethnic minority membership (black or Asian) via their photograph but hold the name "Michael Pichler." These applicants will cause employers to make assumptions about how they acquired a typical Austrian name. They may either have gone through a voluntary name change, or they may have at least one parent named Pichler (biological or adoptive).[7] Following the local norm, our fictitious

[7] Children with an Austrian citizenship receive the parents' last name if these share a name, otherwise the mother's name is automatically assigned (Stadt Wien, n.d.). The father's (or a combined) name can be acquired on demand. After an adoption, the child's last name is not automatically changed to match the new parents' name, however, such a name change is a relatively unbureaucratic act at the local registry office ("Standesamt") (oesterreich.gv.at, n.d.). Thus, there is room for parents to choose a name that may be advantageous for the child – usually, the name of the local adopters. In Austria, international adoption is a relatively small scale phenomenon. In 2017, there was a total of 42 new international adoptions organized based on the The Hague

applicants revealed their family status (in our case: single), thus, marriage or a civil union with a person named Pichler could not be a reason for the local sounding name. We assume that employers interpret the local sounding name of an applicant who "looks foreign" (as visualized in the attached photograph) as a signal for higher levels of integration or assimilation than someone of the same ethnic minority group with a foreign name. Voluntarily adopting an Austrian name, or having at least one Austrian parent, may suggest a strong connection to and orientation toward the host society.

Occupations

We examined the occupations of chefs, waiters, and receptionists.[8] These occupations are suitable for an empirical test because written applications are the norm (instead of phone calls) and jobs advertised by different firms are relatively homogeneous. Therefore, standardized application documents can be sent to companies without raising suspicion. Most importantly, however, in these occupations a high labour demand existed over years so it was feasible to collect a sufficient amount of data. Indeed, as it turned out, during the data collection period of the current study, labour demand may have been even too high, as will be discussed later.

Of course, the jobs tested in our experiment are not representative for all occupations in the economy. However, this study did not try to assess the average level of discrimination in the economy, but examined whether a name change or withholding one's photograph can affect the labour market success of ethnic minorities.

Application documents

When applying for positions for the above listed occupations in Austria, applicants are expected to include a cover letter, a résumé including a portrait photograph, and relevant educational certificates in their application. Hence, our applications comprised these documents.

We kept cover letters relatively general. They named the website where the job ad was found, the title of the job opening, as well as the job applicant's year of graduation, current position, and place of work. They also stated a contact address in Vienna, an email address, and a mobile phone number. The latter two have been set up specifically for this experiment for

Convention for all of Austria (Kaindl and Schipfer 2018, 59). Even though adoption from South Africa is relatively common, only 130 adoptive children have come from there (Eltern für Kinder Österreich, n.d.).

[8] In these jobs, discrimination against applicants with a Chinese and Nigerian background was previously shown for Austria (Weichselbaumer, 2017).

each of our identities. The postal address in Vienna was the same for all participants.[9] For vacancies in the provinces, applications emphasized the candidate's intention to move to the region of the respective job for personal reasons.

We constructed résumés and school reports specifically for each occupation. The résumés contained personal information, they outlined the applicant's educational and professional careers and named particular relevant skills (e.g. specific computer programs or languages) as well as further training. Moreover, the documents indicated that all applicants held a driver's license and pursued a mix of sporting and creative activities as hobbies. Applicants were 25 years old and had completed the compulsory year of military service. Their entire education as well as job experience was gained in Austria at comparable institutions that were randomly assigned. This ensured that the human capital of ethnic minorities and natives was strictly the same. As educational certificates, we either sent a school report for the school leaving exam (secondary school: "A-levels") or a certificate of apprenticeship. The educational and vocational achievements of our candidates were of a relatively high standard (e.g., they had good to average grades at school and no employment gaps).

Job applicants with ethnic minority or migrant background are likely to face statistical discrimination with respect to language skills and residence status in particular. Without information to indicate otherwise, employers may assume that migrants and ethnic minorities lack sufficient language skills or have an uncertain residence status. In the current experiment, employers' fears about language problems and citizenship or work permit issues should have been reduced to a minimum, because all candidates obtained all their schooling in Austria, and indicated to be Austrian citizens.[10] Thus, reasons for statistical discrimination were minimized in our study.

Other than with regards to educational levels (A-levels or apprenticeship), our fictitious applicants only differed with respect to their name (Austrian, Chinese, or Nigerian) and the photograph. Our applications included a photo with a probability of two thirds and if a photo was attached, it either represented a white, Asian, or black man with equal probability. All characteristics were randomly assigned.

[9] We used the address of an apartment inhabited by a confederate who forwarded all postal responses to our applications to the research team.

[10] Note that we did not indicate a country of birth in the résumés.

Data Collection

We collected our data between October 2015 and August 2016. During this period, we screened the online job portal *Jobroom* of the Public Employment Service Austria (Arbeitsmarktservice, AMS) weekly for relevant job openings for restaurant chefs, waiters, and receptionists across Austria. We emailed the employers the fictitious applications from their individual email accounts that we had set up. As we wanted to reduce the firms' search and waiting costs as much as possible, we cancelled the appointment within a day when one of our applicants was invited to an interview.

Many correspondence testing experiments send multiple applications per ad to prospective employers (e.g., Bursell, 2014; Birkelund et al., 2017; Dahl and Krog, 2018; González et al., 2019). However, due to the multitude of application documents necessary in the German speaking countries, sending matching applications to one company is prone to detection. Also the increasing awareness of correspondence test among employers plays into this risk (Weichselbaumer, 2015). Further, the Austrian job market is small, thus, to avoid the risk of being disclosed, we followed Bygren et al. (2017) and sent only one application to each company.

In total, 2,190 applications were sent, distributed evenly among the eight identity types (269 to 278 applications per type). 43% of these applications responded to job openings for chefs, 49% for waiters, and 7% for receptionists. The latter group is markedly smaller than the others due to fewer jobs being advertised in this field. The descriptive statistics of our data are shown in Table 2.

Results

The situation of black and Asian applicants in the baseline treatment

We are interested in how well our different fictitious applicants were doing in the labour market. This is measured with the variable "callback" that equals one if an applicant received either an invitation to a job interview, or if a firm stated its interest in the candidate otherwise (e.g., by requesting particular information on the applicant).

We start our analysis with the data from our *baseline treatment*, where photographs of applicants signalled the same ethnicity as indicated by the name (e.g., Chinese name and photo of an Asian man). As Table 3 illustrates in Panel A, among these candidates, whites with an Austrian name received the most callbacks (41%), followed by applicants with a Chinese background (36%). This difference, however, is not statistically significant. Applicants with a Nigerian background were the least successful with a callback rate of only 25%, which is

significantly lower compared to the autochthonic Austrian as well as the Chinese profile (both: $p<0.01$, two-sided test).

In the next step we estimate the probability of a callback as a function of different identities in a linear probability model (LPM), where we sequentially include various control variables. These controls include occupation (receptionist, waiter, reference category: chef), time dummies (quarters),[11] education of the applicant (A-levels versus apprenticeship), location of the company (Vienna versus provinces), and firm characteristics (in particular, firm size, internationality, offered minimum salary, level of job requirements).[12] As Table 4 shows, the coefficients for the ethnic minority identities remain unaffected from adding these control variables – as was expected given the random assignment of identities in the experiment. Across the different specifications, the coefficient for applicants with a Chinese background is negative, yet insignificantly so, while applicants with a Nigerian background have a 16 percentage points lower probability to receive a callback than autochthonic Austrians. For candidates with a Chinese background, the results are less negative than those found by Weichselbaumer (2017). The reason may be that because the shortage of labour in the hotel and restaurant industry had increased, employers tested in our study had less room for discrimination (Becker, 1957). As Baert et al. (2015) have shown, there is less discrimination if vacancies are difficult to fill. Concerning the control variables, we find that applicants have lower chances of a callback in Vienna than in the rest of Austria, and when applying as a waiter or a receptionist instead of as a chef.

The effect of a name change

We next compare the callback rates of *name changers* (Table 3, Panel B) to those from the *baseline treatment* (Table 3, Panel A). For illustration, the outcomes of these different treatments are also visualized in Figure 1. While Asian applicants do not benefit from a local name (their callback rates are 36.1% in either treatment), the success of black applicants increases significantly ($p=0.03$) when holding an Austrian name (32%) instead of a Nigerian

[11] Due to seasonal changes in the labour market, the annual quarter in which an application was sent can impact on its success.

[12] Firm characteristics include firm size (a small firm is categorized as having 20 employees or fewer), and whether the company is active internationally. Moreover, Austrian firms have to indicate the minimum salary they offer for an advertised post, which is captured in the variable "minimum salary". The variable "high job requirements" indicates whether an (otherwise matching) job advertisement asked for a qualification that our standardized candidates did not hold.

name (25%). Of course, given that in the baseline treatment no statistically significant discrimination was found against the applicant with a Chinese background, there was no discrimination to be reduced in the first place. Black applicants, however, are better off when signalling a greater level of integration through a local name.

Again, we estimate the probability for a callback in a multivariate setting. Table 5, Panel A, compares the success rate of applicants with a Chinese name and a photo of an Asian man (reference group) to those with an Austrian name and photo of an Asian man (Asian name changer, "AT name, Asian photo"), while progressively adding control variables. The results confirm that for an Asian looking applicant, a name change has no effect. Table 5, Panel B, shows that applicants with a photo of a black man increase their callback rates by 7 percentage points if they adopt a local name (marginally significant). This is a marked increase given the average callback rate of 25 % in the baseline treatment.

The effect of looks

In the two treatments considered so far, the *baseline* and the *name changer treatment*, applications included photographs of the candidates. Because physical attractiveness and other characteristics of a photograph may influence callback rates, we follow previous studies dealing with differently attractive photographs (see, e.g., Rich, 2018) and include the (standardized) evaluation scores of our photographs from the pretest in the analysis. This way we disentangle direct discrimination against ethnic minority members from discrimination that comes from the specific looks of an applicant. However, the effect of physical attractiveness will also include indirect ethnic discrimination that comes from minorities being perceived as less good looking. Because what is "beautiful" is constituted by social and cultural norms, any measure of attractiveness – even though employers may act upon it – will necessarily reflect "unfair" evaluations of looks that are shared by a particular society.

Column (1) in Table 6 replicates the last column of Table 4, but includes also the group of name changers. We find that the effects for individuals with an Asian and African background (Asian photo and black photo) from the baseline treatment are virtually identical to those in Table 4, and the effects of a name change resemble those from Table 5.[13] The following columns include the standardized pretest scores for attractiveness, likability,

[13] Note, that the effects for "Asian" and "black" represent the total discriminatory effects for blacks with a Nigerian name and Asians with a Chinese name. To compare an Asian name changer to the white profile with an Austrian name, the effect "Asian photo" and "Asian name changer" have to be added. (Because whites did not change their names, there is no main effect for name change.)

intelligence, reliability, and competence – subsequently so, because some of the dimensions are strongly correlated.[14] The final column works with the photo's standardized average score over all dimensions. Column (2) shows that attractiveness significantly increases callback rates – a one standard deviation increase in perceived attractiveness increases the probability of a callback by more than 4 percentage points. Including attractiveness in our model makes the effects for the black and Asian applicants less negative. The reason is that in this model, their relatively low callback rates are partly explained by their lower attractiveness ratings. This suggests that one part of unfavourable treatment may come from indirect discrimination as ethnic minorities are perceived to be less attractive than whites. According to column (3), also the perception of an applicant's likeability positively affects callback rates. Because blacks have somewhat higher likability ratings than whites, including this dimension in the estimation makes the main effect for blacks even more negative – accounting for how likeable black applicants are perceived, their chance for a callback is particularly poor. As has been shown before, Asians have been judged to look particularly intelligent and competent, therefore if we include the pretest's measures for these dimensions in columns (4) and (6), the main effect of having an Asian background becomes negative on a marginally significant level. Given the high levels of intelligence and competence they have been ascribed to, their callback rates are particularly low. Perceived reliability (column 5) does not seem to matter much.[15]

Leaving out the photograph

In the next step, we evaluate whether attaching photographs to applications helps or hinders the possibility of ethnic minorities receiving a callback. On the one hand, photos confront employers more directly with a person's ethnicity. For that reason, photos may aggravate discrimination against ethnic minorities. On the other hand, if the majority population believes

[14] In particular, attractiveness and likability are correlated (r=0.74), as well as intelligence and reliability (r=0.88), intelligence and competence (r=0.94), reliability and competence (r=0.85).

[15] Alternate to the results presented here, we also followed Galarza and Yamada (2014) who suggested that attractiveness ratings may better be standardized for each ethnicity instead of for the whole sample, because ethnicities may (unfairly) be evaluated and held to different standards. However, because this kind of normalization fully dissociates measures of looks from ethnicity, by definition, adding such scores does not affect the main effects for ethnicity compared to the base specification (column 1 in Table 6). Attractiveness (standardized for each ethnicity) still significantly affects callback rates, but the effect is smaller than when attractiveness is standardized for the entire sample of pictures (like in Table 6), because now differences in scores between ethnicities are not accounted for.

that ethnic minorities are less attractive, not attaching a photo may lead to unfavourable treatment. If a minority applicant attaches a friendly and likable photo, though, prejudiced employers may be pleasantly surprised and discrimination may be mitigated. Moreover, employers in Austria are used to receiving photographs in application documents. An application without a photo may thus irritate employers, who may perceive the application to be incomplete.

Table 3, Panel C presents the callback rates in the *no photo treatment*. The comparison to the baseline treatment is illustrated in Figure 2, which shows the callback rates with and without the attachment of photographs. Despite the fact that the attachment of a photograph is often considered as obligatory in Austria, its omission matters little empirically, at least for individuals with Austrian and Nigerian names. While their callback rates are unaffected by the attachment of a photo, applicants with a Chinese name do somewhat worse when they leave out their picture as their callback rate drops from 36% to 31% ($p=0.09$).

When we compare the callback rates of the different identities within the *no photo treatment* (Austrian name: 42%, Chinese name: 31%, Nigerian name: 24%), the differences in their callback rates are statistically significant. In contrast to the baseline condition, now not only individuals with a Nigerian name are treated significantly worse compared to those with an Austrian name ($p=0.000$), but also applicants with a Chinese name ($p=0.003$). This result holds in the multivariate analysis, as is shown in Table 7. The linear probability model confirms that among the applicants who do not attach their photo, applicants with a Nigerian name (minus 18 percentage points) and those with a Chinese name (minus 11 percentage points) are significantly discriminated against candidates with an Austrian name ($p<0.01$), even if the effect is somewhat larger for the first group.

Conclusion

This study tested whether, in Austria, non-white ethnicities benefit if their minority status is less salient in their job applications. Previous research has suggested that – at least in the United States – "whitening" one's résumé, i.e., leaving out job experience that points to activism and ethnic identity politics, or presenting one's first name in a way that appears less foreign, may help ethnic minorities (Kang et al., 2016). Similarly, because in Austria ethnic background is communicated in a job application through the name and through the photograph, ethnic minorities may consider omitting their photo to tone down markers of difference. Another option is to adopt a local sounding name. These two strategies were examined in this study.

We found that although the attachment of photos is typically considered obligatory in Austria, applicants with an Austrian or Nigerian name were not punished for omitting them. Not attaching a photo was negative only for the Chinese applicants. We can only speculate why this was the case. As previous literature has shown (in particular for the United States), Asian men are often stereotyped as less physically attractive (e.g., Wong et al., 2011). Also, in our pretest, the photos of the Asian applicants were judged as significantly less attractive than those of whites and blacks. That was the case although most of the photographs we used were bought from stock photo companies and thus were probably more attractive than the average applicant. This suggests that the Austrian majority population has little appreciation for the looks of Asian men. Because Asian applicants did better when attaching photos, employers must have found the individuals depicted more attractive than whom they imagined absent of a picture. In the debate on "anonymous applications", it is usually assumed that having to reveal less personal information about oneself and not providing a photograph in an application is beneficial for minorities (see, for example, Krause et al., 2012). This is not what we found in this study – at least the relatively attractive photographs used actually helped Asian applicants. Again, this was not the case for Nigerian applicants, who struggle with a different set of stereotypes (see also Gaddis and Ghoshal, 2019).

Concerning a name change, we found that only black but not Asian candidates bettered their employment chances when adopting an Austrian sounding name. The latter is unsurprising because in our setting Asian applicants were not discriminated even with a Chinese name, thus, there was no discrimination to be reduced in the first place. The particularly low level of discrimination observed was most likely due to an unanticipated labour market shortage in the hotel and restaurant industry during the data collection time of the study. This shortage may have pressured employers into considering applicants they would otherwise reject (Becker, 1957; Baert et al., 2015). That Asians could particularly profit from this situation may be due to the "model minority stereotype" that describes them as unobtrusive, hardworking, and intelligent (Sue and Kitano, 1973) – all qualities an employer might be looking for in an employee. Also, our pretest confirmed that Asians are often perceived as particularly intelligent and reliable – even more so than whites.

For black candidates who held an Austrian name, we found that they fared better than when they held a Nigerian name. This result is in line with the findings of Arai and Thoursie (2009) as well as Bursell (2012) who suggested that for individuals with foreign sounding names, changing it to one that is local sounding may be beneficial. The reason for this

betterment may be that an Austrian name indicates a higher level of integration and employers value this signal.

As previous authors have emphasized, for immigrants there may be a trade-off between maintaining one's cultural identity (of which the name is part of) and maximizing one's labour market opportunities through cultural assimilation (Biavaschi et al., 2017; Goldstein and Stecklov, 2016). Of course, assimilation can come with severe costs. For example, Austen-Smith and Fryer (2005) argued that "acting white" can lead to peer group rejection. In our case, adopting a local sounding name may burden the relations with fellow ethnic minority members in the community – these, however, may be the most reliable peer group that ethnic minorities have.

Overall, it should not be up to the individual to fight discriminatory processes. We do not advocate for strategies that call for ethnic minority members to adapt their identities to white norms of the labour market. Instead, such fight must be approached on many fronts, including the deconstruction of racist stereotypes in public discourses, the implementation and acceptance of suitable equal opportunity policies and anti-discrimination laws, as well as the development of an understanding among employers that diversity can be a benefit, not a problem.

References

Arai, Mahmood and Thoursie, Peter Skogman (2009). Renouncing personal names: An empirical examination of surname change and earnings, *Journal of Labor Economics*, **27**(1), 127-147.

Arceo-Gomez, Eva and Campos-Vázquez, Raymundo (2014). Race and marriage in the labor market: A discrimination correspondence study in a developing country, *American Economic Review*, **104**(5), 376-380.

Arrow, Kenneth (1973). The theory of discrimination. In Ashenfelter, Orley and Rees, Albert (Eds.), *Discrimination in Labor Markets*. Princeton, NJ: Princeton University Press, pp. 3–33.

Abraham, Landinus and Appiah, Osei (2006). Framing news stories. The role of visual imagery in priming racial stereotypes, *Howard Journal of Communications*, **17**(3), 183-203.

Austen-Smith, David and Fryer, Roland (2005). An economic analysis of "acting white", *Quarterly Journal of Economics*, **120**(2), 551-583.

Baert, Stijn and Decuypere, Lynn (2014). Better sexy than flexy? A lab experiment assessing the impact of perceived attractiveness and personality traits on hiring decisions, *Applied Economics Letters,* **21**(9), 597–601.

Baert, Stijn, Cockx, Bart, Gheyle, Nils and Vandamme, Dora (2015). Is there less discrimination in occupations where recruitment is difficult? *Industrial and Labor Relations Review*, **68**(3), 467-500.

Becker, Gary S. (1957). *The Economics of Discrimination*. Chicago: University of Chicago Press.

Biavaschi, Constanza, Giuletti, Corrado and Siddique, Zahra (2017). The economic payoff of name Americanization, *Journal of Labor Economics*, **35**(4), 1089-1116.

Bursell, Moa (2012). Name change and destigmatization among middle eastern immigrants in Sweden, *Ethnic and Racial Studies*, **35**(3), 471-487.

Bursell, Moa (2014). The multiple burdens of foreign-named men. Evidence from a field experiment on gendered ethnic hiring discrimination in Sweden, *European Sociological Review,* **30**(3), 399-409.

Bygren, Magnus, Erlandsson, Anni and Gähler, Michael (2017). Do employers prefer fathers? Evidence from a field experiment testing the gender by parenthood interaction effect on callbacks to job applications, *European Sociological Review*, **33**(3), 337-348.

Dahl, Malte and Krog, Niels (2018). Experimental evidence of discrimination in the labour market: Intersections between ethnicity, gender, and socio-economic status, *European Sociological Review*, **34**(4), 402-417.

Eltern für Kinder Österreich (n.d.). Legal bases of cooperation with South Africa. Available from: <http://www.efk.at/en/gesetzliche-grundlagen-suedafrika/> [accessed 12 September 2019].

Eurostat (2014). Unemployment rate by sex, age, migration status, citizenship and educational attainment level. Available from: <http://ec.europa.eu> [accessed 09 August 2017].

Fryer, Roland G. and Levitt, Steven (2004). The causes and consequences of distinctively black names, *Quarterly Journal of Economics*, **119**(3), 767-805.

Gaddis, S. Michael and Ghoshal, Raj (2019). Dynamic racial triangulation: Examining the racial order using two experiments on discrimination among millennials. SSRN, available from <SSRN: https://ssrn.com/abstract=3022208> [accessed 23 September 2019].

Galarza, Francisco B. and Yamada, Gustavo (2014). Labor market discrimination in Lima, Peru. Evidence from a field experiment, *World Development*, **58**, 83-94.

Goffman, Erving (1963), *Stigma. Notes on the Management of Spoiled Identity*. Englewood Cliffs, NJ: Prentice-Hall.

Goldstein, Joshua R. and Stecklov, Guy (2016). From Patrick to John F.: Ethnic names and occupational success in the last era of mass migration, *American Sociological Review*, **81**(1), 85-106.

González, M. José, Cortina, Clara and Rodríguez, Jorge (2019). The role of gender stereotypes in hiring: a field experiment, *European Sociological Review*, **35**(2), 187-204.

Hamermesh, Daniel S. and Biddle, Jeff E. (1994). Beauty and the labor market, *American Economic Review*, **84**(5), 1174-1194.

Kaas, Leo and Manger, Christian (2012). Ethnic discrimination in Germany's labour market: a field experiment, *German Economic Review*, **13**(1), 1-20.

Kaindl, Markus and Schipfer, Rudolf Karl (2018). Familien in Zahlen 2018. Statistische Informationen zu Familien in Österreich. Österreichisches Institut für Familienforschung. Available from: <https://www.eltern-bildung.at/service/service/studien/> [accessed 12 September 2019].

Kang, Sonia K., DeCelles, Katherine A., Tilcsik, András and Jun, Sora (2016). Whitened résumés: race and self-presentation in the labor market, *Administrative Science Quarterly*, **61**(3), 469-502.

Krause, Annabelle, Rinne, Ulf and Zimmermann, Klaus F. (2012). Anonymous job applications in Europe, *IZA Journal of European Labor Studies* **1** (5), available from <https://link.springer.com/article/10.1186/2193-9012-1-5> [accessed 23.09.2019].

López Bóo, Florencia, Rossi, Martín A. and Urzúa, Sergio S. (2013). The labor market return to an attractive face. Evidence from a field experiment, *Economics Letters*, **118**(1), 170-172.

Maurer-Fazio, Margaret and Lei, Lei (2015). "As rare as a panda": How facial attractiveness, gender, and occupation affect interview callbacks at Chinese firms, *International Journal of Manpower*, **36**(1), 68-85.

Namensänderungsgesetz (NÄG). Federal law of 22 March 1988 (§2, section 1, no. 3), available from: https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=10005648 [accessed 12 September 2019].

oesterreich.gv.at (n.d.). Rechte des Adoptivkindes. Available from: <https://www.oesterreich.gv.at/themen/familie_und_partnerschaft/adoption/1/Seite.720010.html> [Accessed 12 September 2019].

Pager, Devah (2005). Walking the talk? What employers say versus what they do, *American Sociological Review*, **70**(3), 355-380.

Phelps, Edmund S. (1972). The statistical theory of racism and sexism, *American Economic Review*, **62**(4), 659-661.

Quillian, Lincoln, Heath, Anthony, Pager, Devah, Midtboen, Arnfinn H., Fleischmann, Fenella and Hexel, Ole (2019). Do some countries discriminate more than others? Evidence from 97 field experiments of racial discrimination in hiring, *Sociological Science*, **6**, 467-496.

Rich, Judith (2018). Do photos help or hinder field experiments of discrimination, *International Journal of Manpower*, **39**(4), 502-518.

Rooth, Dan-Olof (2009). Obesity, attractiveness, and differential treatment in hiring, *Journal of Human Resources*, **44**(3), 710-735.

Ruffle, Bradley J. and Shtudiner, Ze'ev (2015). Are good-looking people more employable?, *Management Science*, **61**(8), 1760-1776.

Stadt Wien (n.d.). Familienname des Kindes nach der Geburt. Available from: <https://www.wien.gv.at/verwaltung/personenwesen/namen/familienname-kind.html> [Accessed 12 September 2019].

Statistik Austria (2017). Katalog Bevölkerungsstand 2017. Available from: <https://www.data.gv.at/katalog/dataset/stat_bevolkerungsstand-2017> [Accessed 17 August 2017].

Sue, Stanley and Kitano, Harry H. L. (1973). Stereotypes as a measure of success, *Journal of Social Isssues*, **29**(2), 83-98.

Weichselbaumer, Doris (2003). Sexual orientation discrimination in hiring, *Labour Economics*, **10**(6), 629-642.

Weichselbaumer, Doris (2015). Testing for discrimination against lesbians of different marital status. A field experiment, *Industrial Relations*, **54**, 131-161.

Weichselbaumer, Doris (2017). Discrimination against migrant job applicants in Austria: an experimental study, *German Economic Review*, **18**(2), 237-265.

Weichselbaumer, Doris (2020). Multiple discrimination against female migrants wearing headscarves, *Industrial and Labor Relations Review*, **73**(3), 600-627.

Wong, Y. Joel, Owen, Jesse, Tran, Kimberly K., Collins, Dana L. and Higgins, Claire E. (2012). Asian American male college students' perceptions of people's stereotypes about Asian American men, *Psychology of Men & Masculinity*, **13**(1), 75-88.

Zschirnt, Eva and Ruedin, Didier (2016). Ethnic discrimination in hiring decisions: A meta-analysis of correspondence tests 1990-2015, *Journal of Ethnic and Migration Studies*, **42**, 1114-1134.

Tables

Table 1: Pretest scores and t-tests by ethnic group

	White		Asian		Black		White vs. Asian	White vs. Black
	mean	sd	mean	sd	mean	sd	p-values	p-values
Attractiveness	3.38	0.89	2.45	0.89	3.07	0.94	0.00	0.00
Likability	3.49	0.88	3.43	0.87	3.80	0.89	0.28	0.00
Intelligence	3.47	0.75	3.93	0.79	3.51	0.74	0.00	0.40
Reliability	3.44	0.81	3.80	0.83	3.52	0.82	0.00	0.16
Competence	3.60	0.77	3.91	0.82	3.63	0.78	0.00	0.54

Note: photos have been evaluated by business and economics students on a scale from 1 (poor) to 5 (excellent), N=402.

Table 2: Descriptive statistics

Variable		Mean	Std.Dev
"Baseline treatment"	AT name, white photo	0.13	0.33
	CH name, Asian photo	0.13	0.33
	NI name, black photo	0.12	0.33
"Name changer treatment"	AT name, Asian photo	0.13	0.33
	AT name, black photo	0.12	0.33
"No photo treatment"	AT name, no photo	0.12	0.33
	CH name, no photo	0.13	0.33
	NI name, no photo	0.13	0.33
Callback (overall)		0.33	0.47
Photo attached		0.63	0.48
Austrian name		0.50	0.50
Chef		0.43	0.50
Waiter		0.49	0.50
Receptionist		0.07	0.26
A-Levels		0.50	0.50
Small firm		0.74	0.44
International firm		0.02	0.14
High job requirements		0.04	0.20
Minimum salary		18.7	3.1
Vienna		0.13	0.34
Burgenland		0.03	0.16
Carinthia		0.08	0.27
Lower AT		0.09	0.29
Upper AT		0.11	0.31
Salzburg		0.18	0.38
Styria		0.11	0.31
Tyrol		0.20	0.40
Vorarlberg		0.08	0.27

Notes: AT, Austrian; CH, Chinese; NI, Nigerian; N=2190. All variables apart from minimum salary represent dummy variables taking a value of 0 or 1. Minimum salary denotes the monthly gross income/100.

Table 3: Callback rates by identity

	Identity	N	Callbacks	Callback rate (in %)
Panel A				
Baseline treatment	AT name, white photo	278	115	41,4
	CH name, Asian photo	269	97	36,1
	NI name, black photo	272	68	25,0
Panel B				
Name changer treatment	AT name, Asian photo	277	100	36,1
	AT name, black photo	273	88	32,2
Panel C				
No photo treatment	AT name, no photo	272	114	41,9
	CH name, no photo	274	84	30,7
	NI name, no photo	275	66	24,0
Total		2190	732	33,4

Notes: AT, Austrian; CH, Chinese; NI, Nigerian.

Table 4: Probability of a callback (LPM), baseline treatment (name and photograph point to the same ethnicity)

	(1)	(2)	(3)	(4)
CH name, Asian photo	-0.053	-0.052	-0.051	-0.053
	(-1.27)	(-1.26)	(-1.24)	(-1.29)
NI name, black photo	-0.164***	-0.163***	-0.162***	-0.164***
	(-4.13)	(-4.13)	(-4.13)	(-4.17)
Receptionist		-0.121*	-0.125**	-0.132**
		(-1.88)	(-1.97)	(-2.03)
Waiter		-0.118***	-0.131***	-0.131***
		(-3.46)	(-3.80)	(-3.76)
A-levels			-0.009	-0.009
			(-0.29)	(-0.29)
Vienna			-0.144***	-0.141***
			(-3.14)	(-3.03)
Time Dummies	No	No	Yes	Yes
Firm Characteristics	No	No	No	Yes
Constant	0.414***	0.480***	0.494***	0.525***
	(13.98)	(13.64)	(9.63)	(8.90)
Observations	819	819	819	819
R-squared	0.021	0.036	0.052	0.054

Notes: Robust t-statistics in parentheses, *** p<0.01, ** p<0.05, * p<0.1. AT, Austrian; CH, Chinese; NI, Nigerian. Firm characteristics include the following variables: small firm, international activity, minimum salary, high job requirements.

Table 5: Probability of a callback (LPM), Effect of a name change

Panel A: Asian applicants with foreign and local names

	(1)	(2)	(3)	(4)
Asian name changer				
AT name, Asian photo	0.000	0.001	0.000	0.000
	(0.01)	(0.01)	(0.01)	(0.01)
Constant	0.361***	0.437***	0.432***	0.484***
	(12.29)	(11.35)	(7.29)	(6.86)
Observations	546	546	546	546
R-squared	0.000	0.019	0.025	0.031

Panel B: Black applicants with foreign and local names

	(1)	(2)	(3)	(4)
Black name changer				
AT name, black photo	0.072*	0.072*	0.072*	0.070*
	(1.87)	(1.85)	(1.86)	(1.81)
Constant	0.250***	0.281***	0.290***	0.331***
	(9.50)	(8.01)	(5.29)	(5.12)
Observations	545	545	545	545
R-squared	0.006	0.011	0.034	0.044

Notes: Robust t-statistics in parentheses, *** p<0.01, ** p<0.05, * p<0.1. AT, Austrian; CH, Chinese; NI, Nigerian. Column (1) has no control variables, column (2) includes occupation, column (3) adds education, location and time dummies and column (4) additionally includes firm characteristics (small firm, international activity, minimum salary and high job requirements).

Table 6: Probability of a callback (LPM), all candidates with photographs, effect of photos

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Asian photo	-0.054	0.020	-0.050	-0.106*	-0.068	-0.081*	-0.074*
	(-1.32)	(0.39)	(-1.23)	(-1.85)	(-1.35)	(-1.67)	(-1.73)
Black photo	-0.164***	-0.141***	-0.189***	-0.170***	-0.167***	-0.168***	-0.172***
	(-4.18)	(-3.45)	(-4.68)	(-4.33)	(-4.20)	(-4.28)	(-4.37)
Asian name changer (AT name, Asian photo)	-0.001	-0.001	-0.001	-0.001	-0.001	-0.002	-0.001
	(-0.03)	(-0.02)	(-0.02)	(-0.03)	(-0.03)	(-0.04)	(-0.03)
Black name changer (AT name, black photo)	0.070*	0.070*	0.070*	0.070*	0.070*	0.070*	0.070*
	(1.81)	(1.83)	(1.83)	(1.84)	(1.82)	(1.83)	(1.84)
Attractiveness		0.043**					
		(2.26)					
Likability			0.029**				
			(2.05)				
Intelligence				0.029			
				(1.33)			
Reliability					0.009		
					(0.50)		
Competence						0.018	
						(1.08)	
Average							0.034*
							(1.68)
Constant	0.538***	0.506***	0.547***	0.559***	0.544***	0.550***	0.549***
	(10.94)	(9.88)	(11.09)	(10.75)	(10.60)	(10.84)	(11.05)
Observations	1,369	1,369	1,369	1,369	1,369	1,369	1,369
R-squared	0.044	0.048	0.047	0.046	0.044	0.045	0.046

Notes: Robust t-statistics in parentheses, *** p<0.01, ** p<0.05, * p<0.1. AT, Austrian.
The effects for "Asian photo" and "black photo" represent the discriminatory effects for blacks with a Nigerian name and Asians with a Chinese name compared to whites with an Austrian name. To compare an Asian name changer to the white profile with an Austrian name, the coefficients "Asian photo" and "Asian name changer" have to be added. (Because whites did not change their names, there is no main effect for name change.)
All columns include occupation, education, location, time dummies and firm characteristics (small firm, international activity, minimum salary and high job requirements).

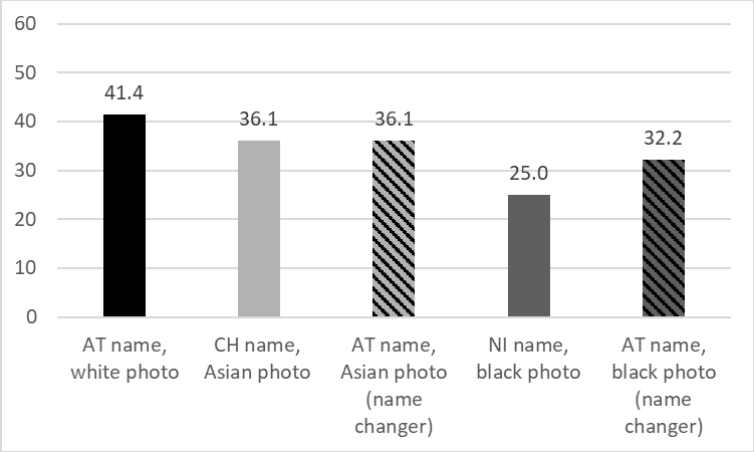
Table 7: Probability of a callback (LPM), candidates without photo

	(1)	(2)	(3)	(4)
CH name, no photo	-0.113***	-0.113***	-0.112***	-0.111***
	(-2.75)	(-2.78)	(-2.76)	(-2.74)
NI name, no photo	-0.179***	-0.179***	-0.180***	-0.179***
	(-4.53)	(-4.55)	(-4.58)	(-4.57)
Receptionist		-0.058	-0.064	-0.107*
		(-0.90)	(-0.98)	(-1.66)
Waiter		-0.113***	-0.119***	-0.121***
		(-3.36)	(-3.56)	(-3.58)
A-levels			-0.003	-0.005
			(-0.10)	(-0.15)
Vienna			-0.083*	-0.096**
			(-1.85)	(-2.15)
Time Dummies	No	No	Yes	Yes
Firm Characteristics	No	No	No	Yes
Constant	0.419***	0.479***	0.517***	0.569***
	(13.98)	(13.52)	(10.31)	(9.91)
Observations	821	821	821	821
R-squared	0.025	0.038	0.053	0.063

Notes: Robust t-statistics in parentheses, *** p<0.01, ** p<0.05, * p<0.1. CH, Chinese; NI, Nigerian. Firm characteristics include the following variables: small firm, international activity, minimum salary, high job requirements.

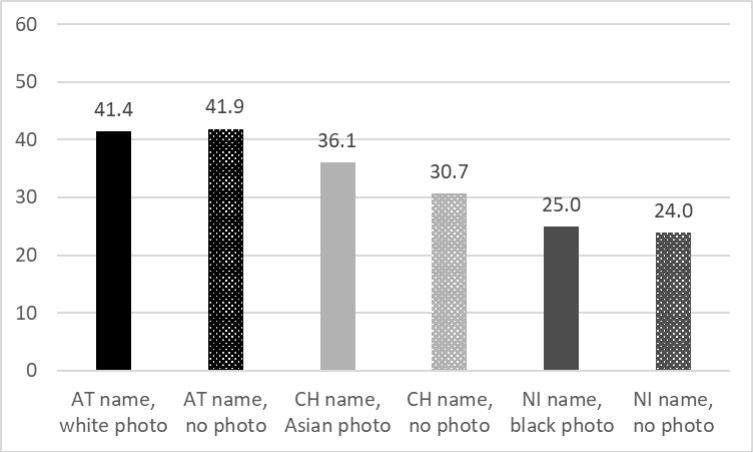
Figures

Figure 1: Callback-rates by identity, baseline and name changer treatment



Notes: AT, Austrian; CH, Chinese; NI, Nigerian.

Figure 2: Callback-rates and photo attachment



Notes: AT, Austrian; CH, Chinese; NI, Nigerian.