

DISCUSSION PAPER SERIES

IZA DP No. 17403

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Housing Market:  
The Effect of Information Concerning First  
and Second-Generation Immigrant Status**

Doris Weichselbaumer  
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## ABSTRACT

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# Discrimination in the Austrian Rental Housing Market: The Effect of Information Concerning First and Second-Generation Immigrant Status\*

In this study, we conduct an email correspondence test to examine ethnic discrimination against males with different immigration backgrounds (Serbian, Turkish/Muslim and Syrian/Muslim) in the Austrian rental housing market. In particular, we investigate the effect that immigrant generation has on callback chances. Property owners may perceive more recent immigrants as particularly “other” and fear that they will not be good tenants because, for example, they treat a property in an undesirable manner. We compare landlords’ replies to inquiries from immigrants of the first, first and a half, and second generation to those who do not provide respective information about their immigration background. We find substantial levels of ethnic discrimination, which – in the case that no information on immigrant generation is provided – is highest for applicants with a Syrian name, followed by those bearing a Turkish and Serbian name. When applicants specify their place of birth and upbringing, callback rates are highest for second generation immigrants and lowest for first generation immigrants. This suggests advantages for more acculturated applicants. Accommodation seekers with a Syrian name, who may otherwise be perceived as refugees, benefit the most from stating that they were born in Austria.

**JEL Classification:** C93, R21, R31

**Keywords:** ethnic discrimination, housing market, email correspondence experiment

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## Introduction

For ethnic minorities, discrimination in the housing, labor and credit markets as well as in social life is a common problem in many countries and societies (Pager and Shepherd 2008). The Universal Declaration of Human Rights as well as the Austrian Federal Constitution state that all people should have equal dignity and rights. Furthermore, the prohibition of discrimination is a central principle of the founding treaties of the European Union (European Union Agency for Fundamental Rights 2022). In Austria, where this study was executed, the Equal Treatment Act prohibits discrimination based on gender, age, ethnicity, religion, sexual orientation and disabilities in the workplace. Within the housing context prohibition of discrimination is limited to gender and ethnicity (Federal Ministry of Labour, Social Affairs and Consumer Protection 2016). Despite EU and national legislation, there are reports of discriminatory behavior against ethnic minorities and immigrants in many areas of life in Austria such as work, education, housing and health (Kammer für Arbeiter und Angestellte für Wien 2019).<sup>1</sup>

In this paper we examine discrimination against immigrants in the housing market, focusing on males with different religious and ethnic backgrounds (Serbian, Turkish/Muslim and Syrian/Muslim), who vary with regard to their cultural proximity to the native population in Austria. We are especially interested whether discrimination varies between different generations of immigrants. In particular, we want to know whether discrimination is especially strong against recent immigrants. This could be because they are stereotyped as most “other” (Hall 1997), perceived as particularly distant to the social “in-group” (Weichselbaumer and Schuster 2021) or considered to have different cultural values (see, e.g., Koopmans, Veit, and Yemane 2019). Such cultural distance may trigger a particular distaste, but it may also be that recent immigrants face more difficulties finding a job (Oreopoulos 2011; Weichselbaumer 2017) and thus paying their bills. Research has also found lower wages for first than second generation immigrants (for Austria see, e.g., Reiter, Palz and Kreimer 2020; for Germany Melzer et al. 2018). Landlords might further fear that recent immigrants lack other qualities that make a “good tenant”.<sup>2</sup> As Bonnet and Pollard (2021) have found in interviews, ethnic minorities often face the stereotype that they will not sufficiently take care of a flat or not maintain it properly. Some property owners argue that ethnic minorities overcrowd their spaces or cook dishes whose smell disturbs the neighbors; some even fear that they may cook on the floor (p. 1437). These fears of property owners, that obviously hinder immigrants finding suitable

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<sup>1</sup> For discrimination against immigrants in the Austrian labor market, see Weichselbaumer (2017) and Weichselbaumer and Schuster (2021).

<sup>2</sup> According to Bonnet and Pollard (2021) a good tenant is not only financially solvent but also pays rent regularly, keeps the apartment for an extended period, maintains it in good condition and does not cause any trouble.

housing, may be particularly directed against recent immigrants who are assumed to have little experience with local customs. Therefore, information about an applicant's immigrant generation may be utilized by private property owners, especially since it is often easily available – if it is not provided by housing seekers themselves, as in our experiment, it can be acquired informally through casual conversations at property viewings (e.g., with the common question “where are you from”).<sup>3</sup> For these reasons, we examine whether our signal for acculturation, being brought up and/or born in Austria, helps flat seekers with an immigration background.

To examine the effect of immigration background, we performed an email correspondence test in the Austrian rental housing market. We created four fictitious male profiles that suggested different ethnic/religious backgrounds, namely an Austrian, Serbian, Turkish/Muslim or Syrian/Muslim heritage. These profiles contacted private landlords advertising their properties on popular real estate websites. In the “no information treatment”, only the name of the applicant provided a clue about potential immigration background – no further details about place of birth and place of upbringing were given. In the “information treatments”, each foreign profile included details indicating the person's immigrant generation, specifically whether they were born and raised in Austria, born abroad and raised in Austria, or born and raised abroad.

Our results show that individuals with an Austrian name were clearly more successful in receiving positive callbacks from property owners than candidates with a Serbian, Turkish, or Syrian name. We confirm that second generation immigrants tend to do better than those of the first generation. Compared to providing no information, it is the candidates with Syrian sounding names who benefit most from signaling that they are born in Austria, while for other immigrant groups this information had no effect. The positive effect for applicants with Syrian names most likely occurs because without this information they are perceived as recent refugees and statistically discriminated for that.

Our paper is structured as follows: we begin by offering background information on the Austrian setting as well as on theory, and provide an overview of the empirical literature on housing discrimination. In the next section we describe the experimental design of our email correspondence test. This is followed by a presentation of the results, and in the last section, a conclusion.

### **Background on the Austrian setting**

Austria has a history of immigration that reaches back to the Habsburg monarchy, where Vienna constituted a “melting pot” with particularly high numbers of Eastern European immigrants. Much of the more current immigration history, however, dates back to the 1960s, when so-called guest

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<sup>3</sup> For implications of this question that produces a distance from an “in-group”, see Cassilde (2013).

workers were invited in particular from Turkey and the former Yugoslavia to support the country's fast-growing economy. Another wave of immigration took place during the wars following the break-up of Yugoslavia, when Serbians, Bosnians and Croatians sought refuge in Austria. Since the 1990s the inflow of non-European immigrants has also increased. From 2015 onwards, the Syrian civil war led to a sharp increase of refugees in Austria (leading to what some have called a "refugee crisis", see Greussing and Boomgaarden 2017) and also the number of immigrants from other non-European countries such as Afghanistan increased rapidly. As a result, the Muslim population in Austria doubled from 4% in 2001 to around 8% in 2016 (Goujoun, Jurasszovich, and Potančoková 2017).

In 2021, the overall population of Austria was approximately 8.8 million. According to Statistik Austria (2022a), of this population around 2.24 million had an immigration background (defined as: both parents were born abroad) and 1.59 million were foreign citizens. Out of the population with an immigration background 73% were first generation immigrants, i.e., they were born abroad, and 27% were second generation immigrants, i.e., they were born in Austria to parents who were born abroad. With regard to current foreign citizens (i.e., non-naturalized immigrants), Germans represent the largest group. Among non-EU citizens, Serbians and Turks are the largest foreign groups in Austria, with 121 613 and 117 625 individuals in 2022, respectively. With 68 358 nationals, Syrians are currently the largest non-European foreign group in Austria. In our study, we focus on these three countries of origin (Serbia, Turkey, and Syria) that differ with respect to their cultural proximity to Austria. The vast majority of the Serbian population is Christian, while Turks and Syrians are predominantly Muslim.

The different groups under investigation have different lengths of immigration history in Austria: While a high proportion of individuals with a Turkish or Ex-Yugoslavian/Serbian<sup>4</sup> background belong to the second generation, i.e., have been born in Austria (43% and 32%, respectively), this fraction is only 15% for individuals with backgrounds from Afghanistan, Syria and Iraq (Statistik Austria 2022a).<sup>5</sup>

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<sup>4</sup> Precisely, the number refers to individuals with a background in one of the successor states of Yugoslavia that have not yet joined the EU (Statistik Austria, 2022a).

<sup>5</sup> With regard to the living standard of immigrants in Austria, in 2015 around 28.9% of the foreign-born population resided in overcrowded living arrangements compared to only 5.7% of the native-born population and 22.7% of foreign-born people lived in substandard housing (natives: 13%) (OECD/EU 2018). Also, the rental housing market is larger in Austria than in the EU-27 countries overall, as in 2021 roughly 60.3% of national citizens were home owners, and the numbers were even lower for non-citizens: only 24.9% of non-Austrian EU citizens and 12.6% of non-EU citizens had their own property (EU-27 average overall: 74.3%, Eurostat 2022). Because immigrants often lack the financial capital to buy real estate, they are even more vulnerable in the rental housing market and depend on gatekeepers such as property owners, rental agents or community housing administrations to secure suitable housing.

## Theoretical background

Economic research has focused on two theories to explain discrimination. Becker (1957) pointed to discriminatory preferences as a source of unequal treatment. Decision makers may simply dislike particular groups (e.g., ethnic, religious, or sexual minorities) and pick others over them as a result. If in the labor market the preferences of employers, customers and co-workers negatively affect minorities' outcomes, in the housing context it may be property owners who have distastes against, e.g., people with an immigration background and behave in discriminatory ways.

Another reason for unequal treatment has been discussed by Phelps (1972) and Arrow (1973). They argued that characteristics of demographic groups may differ on average. Because decision makers often have incomplete information about the characteristics of individuals, they draw upon group averages to inform their decisions. In the context of the rental housing market this so-called statistical discrimination may occur, e.g., when landlords fear that immigrants have fewer financial means than locals or when they are believed to make less "good tenants" on average. If immigrant candidates then do not provide a signal to the contrary, they may be rejected due to statistical discrimination.<sup>6</sup> Statistical discrimination should be reduced when applicants provide relevant information about their background. In this paper, we investigate the impact of information regarding an applicant's immigration history, which serves as an indicator of varying levels of acculturation. Individuals with an immigration background who specify a long duration of residence or birth in Austria may be perceived as more akin to locals, both in terms of their financial opportunities and their behavior as tenants. We expect that, when compared to immigrants who do not provide any information about their connection to Austria, these individuals have better housing chances.

## Empirical background

With regard to empirical studies, early experiments on housing discrimination have worked with matched testers of, e.g., different ethnicities who approached property owners in person or via telephone (for an overview, see Riach and Rich 2002). However, as Heckman (1998) has argued, it is difficult to match testers in all characteristics other than the one under investigation. Also, with the rise of the internet, it has become common to interact with landlords via email. Researchers have

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<sup>6</sup> Economists usually assume that decision makers' beliefs are correct on average. However, England and Lewin (1989) have noted from a sociological perspective that such perceptions concerning average group characteristics may also be erroneous. For example, property owners may simply *believe* that immigrants are more likely to hold particular unfavorable characteristics than natives, while this is not true in reality. England and Lewin (1989) called the resulting unfavorable treatment "error discrimination". In our study, we are not able to identify how property owners form their (potentially erroneous) beliefs.

therefore turned to written tests, so-called *correspondence tests*, which have the advantage that they can be strictly standardized. The first study of that type was conducted by Carpusor and Loges (2006) who examined the housing opportunities of African-American and Arab males compared to white males in the Greater Los Angeles Area. The ethnicity of the applicants was indicated via their names. The study found that a white sounding name prompted significantly more positive responses than the African-American and Arab sounding names. In Europe, Ahmed and Hammarstedt (2008) were the first to use an email correspondence test in the housing context and found discrimination against Arab/Muslim males in Sweden. Later correspondence studies confirmed the existence of ethnic discrimination for example against Turkish males in Germany (Auspurg, Hinz, and Schmid 2017), against Arab/Muslim and Eastern European men and women in Italy (Baldini and Federici 2011), and against Eastern European, East Asian and Arab/Muslim males in Sweden (Molla, Rhawi, and Lampi 2022). Flage (2018) conducted a meta-analysis of 25 studies, published between 2006 and 2017, that examined housing discrimination in OECD countries. He showed that, overall, ethnic minorities had 47% lower odds of receiving a positive callback than the majority group. Also, Auspurg, Schneck, and Hinz's (2019) meta-analysis based on 71 studies and including person audits finds significant, albeit low, levels of rental housing discrimination.

Regarding statistical discrimination, there is no consistent evidence that providing information helps people with an immigration background. The first experiment that examined the effect of statistical discrimination in the rental housing market was conducted by Ahmed, Andersson, and Hammarstedt (2010). The study focused on discrimination against applicants with an Arab/Muslim name in Sweden and compared callback rates for applicants that did or did not provide information concerning their employment (advisor at a bank), education level (economics graduate), marital status (single) and age (35 years). Including such information increased the callback rates of applicants, but left the level of discrimination unchanged. Hence, no evidence was found for statistical discrimination. A similar result was found for Polish and Nigerian applicants who signaled employment in the Irish housing market (Gusciute, Mühlau and Layte 2022). Also Bosch, Carnero, and Farré (2010) did not find clear evidence for statistical discrimination against Moroccan immigrants in Spain when including positive information about them (most importantly their job).<sup>7</sup> In contrast, Baldini and Federici (2011), who examined the situation of candidates with an Arab/Muslim or Eastern European background in Italy, provide evidence of statistical discrimination. Their results showed that providing information in various dimensions<sup>8</sup> overall reduced, but did not eliminate,

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<sup>7</sup> The authors found a reduction of discrimination against males (not females) with Moroccan names if positive information was provided, but this effect was not statistically significant at conventional levels when considering positive callbacks instead of any kind of reply.

<sup>8</sup> The study varied whether positive information was provided with regard to the job, the family situation, the possibility to provide references, not being a smoker and not having pets.



discrimination against males with a Muslim name.<sup>9</sup> Statistical discrimination also occurred in a German phone experiment by Horr, Hunkler, and Kroneberg (2018) as unfavorable treatment of Turkish candidates was reduced when applicants indicated employment.

Some experiments did not compare scenarios where positive instead of no information was given, but looked at “high” and “low quality” applicants. The argument is that with statistical discrimination, unfavorable treatment against ethnic minorities should be reduced for “high quality” candidates. For example, in Sweden Carlsson and Eriksson (2014) varied the information about a candidate’s characteristics, most importantly their employment status. However, ethnic discrimination did not differ by employment status.<sup>10</sup> Similarly in Norway, Andersson, Jakobsson, and Kotsadam (2012) did not find discrimination against Arabs significantly reduced when they reported having a high rather than a low occupational status. In contrast, a study by Auspurg, Hinz, and Schmid (2017) for Germany did find that discrimination against Turkish names was smaller if candidates held a high instead of a low status job. Some US studies also varied the “quality” of applicants by giving them different writing styles (concerning spelling, grammar etc.), but yielded mixed results (Hanson and Hawley 2011; Murchie and Pang 2018).<sup>11</sup>

One study by Ewens, Tomlin, and Wang (2014) compared the level of discrimination against Afro-Americans in the US without information to a positive and negative information case. Positive information increased callback rates for either group without affecting the level of discrimination. Negative information, however, reduced the callback rates for the white candidates more strongly than for Afro-Americans, thus reducing the level of discrimination. As one interpretation, the authors suggested that property owners may place more weight on signals given by white candidates, who may be more sanctioned for a surprisingly negative signal. Overall, in their meta-analysis Auspurg, Schneck, and Hinz (2019) note that there is no consistent evidence concerning statistical discrimination. However, they find that on average, positive information reduces discrimination.

While most studies focus on traditional housing markets, some studies also looked at the shared housing market, where a tenant (and not a property owner) is the decision maker. In the decision of which person to live with, not only financial motives but also perceptions of compatibility play a role. Locals may believe that other locals have more similar attitudes towards daily flat life and therefore make better flatmates. While Dräger (2020) found that discrimination against applicants

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<sup>9</sup> For females, no reduction in ethnic discrimination was found.

<sup>10</sup> Also, leisure time interests, smoking behavior and the provision of references did not have a joint impact on the level of discrimination.

<sup>11</sup> Hanson and Hawley (2011) found that discrimination was smaller against “high” than “low quality” Afro-Americans, an effect that Murchie and Pang (2018) did not confirm in their study on discrimination against black and Arab candidates.

with a Turkish name in Germany was reduced (on a marginally significant level)<sup>12</sup> if financial information was given, adding social and personality information that presumably signals compatibility with flatmates did not significantly reduce discrimination in a logistic regression. However, in a study by Moritz and Manger (2022), personality information reduced discrimination against Turkish men even though discrimination against Turkish women was increased.<sup>13</sup> Another study by Sawert (2019) examined the chances of a Syrian (who indicated recent arrival in Germany as a refugee) in the Berlin shared housing market. When the Syrian candidate sent a letter in good instead of bad German (thus providing a signal of “acculturation”) discrimination was reduced but remained significant. The results from a recent study by Moritz, Manger, and Pull (2023), which found that applicants with a Turkish name benefited from an Instagram profile that looked like that of an average German native, may also be due to the fact that this profile signaled acculturation.

One study by Hanson and Santas (2014), that focused on discrimination against Hispanics in the US, examined the effect of acculturation also in conventional housing markets. The authors made use of the fact that original Spanish names have two surnames and compared how individuals with such “nonassimilated Hispanic names” fare compared to those who have only one Spanish surname (“assimilated Hispanic names”). Their results proved discrimination of immigrants with unassimilated Hispanic names but not of immigrants with assimilated names. A German telephone audit study by Horr, Hunkler, and Kroneberg (2018) pointed in a similar direction, as applicants with a Turkish name were only discriminated against when they also had an accent.

To the best of our knowledge, no previous study has investigated the effect of immigrant generation on housing discrimination. Because second generation immigrants assimilate into their host society with respect to educational and socioeconomic attainment as well as cultural beliefs (Drouhot 2019), we hypothesize that second generation immigrants fare better with property owners when compared to first generation immigrants.<sup>14</sup>

Little is known about discrimination in the rental housing market in Austria, the country on which we focus in this study. So far, only subjective experiences of housing discrimination have been surveyed. According to Schönherr, Leibetseder, and Hofinger (2019), 22% of individuals with an immigration background reported such experiences (compared to 10% of individuals without immigration background). Among people whose accents or skin color make their immigration

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<sup>12</sup> Diehl et al. (2013), in contrast, did not find discrimination against individuals with Turkish names in Germany when focusing on university students.

<sup>13</sup> Relatedly, Carlsson and Eriksson (2015) found discrimination increased for ethnic minorities with a high status instead of a low status occupation in London.

<sup>14</sup> In the labor market, Oreopoulos (2011) found that immigrants who already had job experience in Canada fared better than new arrivals. Carlsson (2010) however, did not find better chances for second generation immigrants from the Middle East in Swedish hiring processes.

background more salient, the number was 30%; among Muslims 35%. With this study we provide objective evidence from the field on the treatment of immigrants in the Austrian housing market.

## Experimental design

In order to test discrimination against apartment seekers of different immigrant generations as well as statistical discrimination in this regard, we conducted an email correspondence test. For this purpose, we created four fictitious male applicants,<sup>15</sup> namely one autochthonous Austrian, one Serbian, one Turkish/Muslim and one Syrian/Muslim profile. Each applicant received a distinctively male name that is typical for a particular country of origin.<sup>16</sup> The following combinations of first and second names were used as signals for the respective backgrounds: Lukas Huber (autochthonous Austrian),<sup>17</sup> Dragan Jovanovic (Serbian), Mehmet Yilmaz (Turkish/Muslim), and Mohammad Ahmad (Syrian/Muslim).<sup>18</sup> For each applicant profile an email account was registered with the popular German online provider GMX using first name, surname and a prefix (e.g., lukas\_huber00001@gmx.at).

To examine the effect of statistical discrimination and immigrant generation, we implemented different experimental treatments (see Table 1). In the *no information treatment*, only the name of the applicant provided a potential cue about his background. For the set of immigrants, we examined three different *information treatments*, in which the cover letter explicitly stated where the immigrant applicant was born and raised. In particular, *information treatment 1* revealed that the applicant was born and raised abroad, more specifically in the capital city of his country of origin (thus, in Ankara, Belgrade, or Damascus, respectively). He thereby constitutes a first-generation immigrant (– note that his email was in the same flawless German as that of the others nevertheless). *Information treatment 2* indicated that the applicant was born abroad and raised in Austria. More specifically, the candidate stated to be born in the capital city of his country of origin

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<sup>15</sup> Some previous studies also examined gender-based housing discrimination (e.g., Ahmed and Hammarstedt 2008; Bosch, Carnero, and Farré 2010) by comparing success-rates for male and female names. However, given that we also examine the effects of different generation immigrant statuses, distinguishing by gender was beyond the scope of this study.

<sup>16</sup> Like Carlsson and Eriksson (2015) we used various websites with name registers, e.g., [www.forebears.io](http://www.forebears.io).

<sup>17</sup> Note that according to [www.forebears.io](http://www.forebears.io) the surname Huber is much more frequent in Austria (second most common name) than in Germany (forty most frequent name).

<sup>18</sup> The names used were pre-tested with 194 business and economics students. Participants were asked to indicate for each name as precisely as possible where they think the person originates from. 99% of the respondents associated Lukas Huber with the German-speaking region (Austria, Germany and Switzerland), 71% directly named Austria. For Mehmet Yilmaz, 77% indicated Turkey as country of origin. 86% of respondents identified Dragan Jovanovic as having a Balkan background (e.g., Serbia, Croatia, Kosovo, Slovenia, „former Yugoslavia“), 34% explicitly pointed to Serbia. The name Mohammad Ahmad was associated with Muslim countries (Syria, Turkey, Saudi Arabia, Iran, Afghanistan, Egypt or Iraq) by 78% of the respondents, 22% referred specifically to Syria. Thus, while the participants were often not sure about a name’s specific country of origin, they were usually able to identify the broader region.

and to have grown up in the capital of the state in which the property under question was located. For example, if the property was in Lower Austria, the letter stated that the applicant grew up in St. Pölten. He thereby represents an immigrant of the 1.5 generation (see, e.g., Rumbaut 2004). In *information treatment 3*, the candidate was born and raised in Austria, specifically in the capital of the state in which the property under question was located. The applicant thereby revealed that he was either a second-generation immigrant or that the immigration history of his family dated back even further. The statement also conveyed that the candidate was anchored in his federal state and would likely stay longer in the region. Non-immigrants, i.e., applicants with an Austrian name, alternated between not providing any information and stating that they were born and grew up in Austria in the capital city of the property.<sup>19</sup> This allows us to assess whether property owners appreciated longer emails or the lower probability of moving soon for the Austrian natives.

Both the information treatment and the immigration background were randomly assigned. To generate a large set of data, each advertised property received one application from a person with a foreign sounding name and one from a candidate with an Austrian sounding name. To avoid detection, the two applications were sent a couple of hours apart and differed with respect to their treatment (information or no information treatment (see also Bosch, Carnero, and Farré 2010; Moritz and Manger 2022)). The wording between the treatments was also slightly different. Specifically, in the *no information treatment*, the property owner was contacted with the text (translated from German): “Hello, my name is [name, surname]. I am interested in the apartment you have advertised. Please contact me. With best regards, [name, surname]”. The *information treatments* additionally revealed details concerning the background of the applicants. For example, in the *information treatment 3* contact was made with the text: “Hello, my name is [name, surname], I was born and raised in [capital of the Austrian federal state in which the property is located]. I am interested in the apartment and would ask you to be contacted. Many greetings [name, surname]”. With these texts, we made sure that property owners would see the names that provided crucial cues for immigration background.

The experiment was conducted from March 2019 to October 2020 throughout all nine federal states of Austria. We screened advertisements from private property owners on the most popular real estate classifieds websites (Willhaben, Immobilienscout24 and Immowelt) for residential properties such as apartments and houses for rent. Every landlord was included not more than once

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<sup>19</sup> We did not include information treatment 1 and 2 for the applicant with the Austrian name for the following reasons: Stating that Lukas Huber was born, e.g., in Damaskus, would have suggested he is the child of international expats, a group of rather privileged people (Berry and Bell, 2012). Comparing the housing chances of immigrants to those of expats would have overestimated the level of discrimination. Furthermore, our strategy allowed us to cost efficiently maximize our data given our matching procedure in the paired application design (described below).

to avoid detection. All real estate platforms used in this study offered the possibility to contact the property owner using an online form. To send an enquiry to the landlord, users (in our case the fictitious candidates) had to provide their name and email address when filling out the form. If we received a positive callback from a landlord, in order to minimize any inconvenience, we politely declined within 24 hours, by stating that suitable housing has been found in the meantime.

Overall, we sent a total of 3876 online requests to landlords and replied to 1938 advertisements posted. For each immigrant/information cell we have on average 162 observations. Because of the matching procedure described above, we have a larger set of observations for the Austrian name (without information: N=1412, with information about Austrian background: N=526).

### **Empirical results**

Table 2 provides first insights into our sample. The average apartment was 70 square meters (2.5 rooms) with an average rental price of 850 Euros. Half of the apartments were situated in Vienna or state capitals. Around one quarter of the apartments were in Western Austria (Vorarlberg, Tirol and Salzburg). In terms of the property owners' characteristics, according to their advertisement 43% were female, 11% had a foreign sounding name and 5% had an academic background (recognizable by their title, e.g. Dr., which was attached to their name in the ad).

In our analysis, we focus on the positive callbacks that applicants received. These include invitations to showings as well as other positive replies (see, e.g., Ahmed and Hammarstedt 2008).<sup>20</sup> Table 3 shows the descriptive results which are also visualized in Figure 1 in the Appendix.

### **No information treatment: Differences by national background**

The first line of Table 3 reports the callback rates for the different profiles in the no information treatment. With a callback rate of 68% the applicant with the Austrian name is clearly more successful than those with a foreign sounding name (Serbian: 61%, Turkish/Muslim: 51% and Syrian/Muslim: 39%). Specifically, the application with an Austrian name has a 7pp. (or 11%)<sup>21</sup> higher probability of receiving a positive callback than with a Serbian name, a 17pp. (34%) higher probability than with a Turkish name<sup>22</sup>, and a 29pp. (74%) higher likelihood than with a Syrian name. These differences to the Austrian applicant are statistically significant in a two-sided t-test (for the Serbian applicant only at a marginal level,  $p=0.07$ ). Serbian names are significantly more successful than Turkish names ( $p<0.05$ ) that still receive significantly more positive callbacks than Syrian names

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<sup>20</sup> Similar results have been obtained for invitations to viewings.

<sup>21</sup> The percentages in bracket are: (Relative callback rate – 1).

<sup>22</sup> This points to higher levels of discrimination against tenants with a Turkish background in Austria than in Germany, for which Auspurg, Hinz, and Schmid (2017) reported only a 9pp. difference (with similar callback rates for the majority population).

( $p=0.02$ ). Thus, Austrian names are followed by Serbian, Turkish and Syrian names. This ranking may reflect cultural proximity (see, e.g., Koopmans, Veit and Yemane 2019), as Serbians are typically considered to be culturally familiar to Austrians, while Syrians are often perceived (and maybe feared) as different.<sup>23</sup> The result is in line with the findings from Baldini and Federici (2011) for Italy and Carlsson and Eriksson (2015) for London where the level of housing discrimination against Eastern Europeans was lower than against individuals with an Arab/Muslim name. Also, the meta-analysis by Auspurg, Schneck, and Hinz (2019) finds the highest level of housing discrimination against Arab/Muslim applicants.

### **Differences between first, first and a half, and second generations of immigrants**

For immigrants who reveal that they are born and raised abroad, we find the same ranking as in the no information treatment: a Serbian name (callback rate: 50%) fares better than a Turkish (40%) or a Syrian name (30%). If immigrants state that they were only born abroad, but grew up in Austria (1.5 generation, Table 3, line 3), this increases their callback rates (compared to Table 3, line 2), but the effect is only statistically significant for Syrian names ( $p<0.001$ ). If the applicants indicated that they were also born in Austria and, thus, represented second generation immigrants (Table 3, line 4), this again increases their probability of receiving a callback compared to those of the 1.5 generation, although with  $p$ -values between 0.12 and 0.15 these effects fall short of reaching conventional levels of significance. However, when comparing first and second-generation immigrants (line 2 and line 4), we find that all applicants with an immigration background who were born in Austria do significantly better than those born abroad (again, for Serbian names the effect is only marginally significant). This pattern very clearly indicates that landlords prefer immigrants whose immigration history lies further in the past as tenants.

### **Differences between the no information and information treatments: statistical discrimination**

If landlords discriminate more against recent immigrants, we would expect that revealing having been born and raised abroad (as indicated in information treatment 1) reduces an applicant's callback chances compared to not providing any information (no information treatment). This is confirmed by the results: Compared to no information, the statement of being born and raised abroad reduces the probability of a positive callback for applicants with a Serbian (from 61% to 50%), Turkish (from 51% to 40%) and Syrian background (from 39% to 30%). These differences are

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<sup>23</sup> In a labor market study, Koopmans, Veit, and Yemane (2019) analysed discrimination across German-born candidates from 35 ethnic groups. Discrimination for minority groups (e.g., Sub-Saharan, Muslim, Blacks) with values that differ strongly with German culture was higher than for groups from Western Europe, Southern Europe and US American origin.

statistically significant in a two-sided t-test (for the Syrian name only marginally so,  $p=0.07$ ).

“Negative information” therefore leads to worse callback rates than no information, as expected.

The opposite should be the case if “positive information” is provided (that the applicant is a second-generation immigrant as in information treatment 3). However, adding this information does not uniformly increase the callback rates of all applicants with a foreign sounding name compared to the no information treatment. Indeed, the success rates of applicants with a Serbian or Turkish name remain virtually unaffected. Apparently, landlords expect them to be rooted in Austria also when they do not provide the respective information. Indeed, individuals with Serbian and Turkish names have a longer history of immigration in Austria than, e.g., Syrians. Nevertheless, 67% of individuals with a Turkish immigration background and 68% of those with an Ex-Yugoslavian background are first generation immigrants (Statistik Austria 2022a). These are not negligible numbers. However, only the candidates with a Syrian background benefit from stating that they are born and raised in Austria compared to the no information treatment. Their 15 pp. (39%) increase from 39% in the no information treatment to 54% in information treatment 3 is statistically significant ( $p=0.015$ ). Apparently, when receiving an email from a candidate with a Syrian name without information to the contrary, property owners expect to be confronted with a refugee or a recent migrant – a rational expectation given that the majority of Syrian immigrants have moved to Austria relatively recently.<sup>24</sup> This expectation property owners, however, clearly disliked. As a result, they statistically discriminated Syrian names when no background information was available. Interestingly, when applicants signaled that they were born and raised in Austria, those with a Syrian name were not treated any differently to those with a Turkish name. Their differential callback rates in the no information scenario may therefore only come from property owners’ different expectations concerning the length of their stay (and refugee status) in Austria and not a generally greater dislike of people with a Syrian compared to a Turkish background.

Interestingly, the callback rate for applications with an Austrian name increases by 6 pp. (9%) when the candidate indicates being born and raised in Austria ( $p=0.04$ ). This may be surprising, given that this statement does not reveal unexpected information for an applicant with an Austrian name. However, property owners may interpret the statement that the applicant is born and raised in the area as a signal of a “good tenant” who is unlikely to move again quickly which keeps future turnover costs low. They may also appreciate the autochthonous Austrians’ efforts to add a personal extra sentence to the letter; an effect that was not observed for Serbian and Turkish names, however. As a result, in this scenario (information treatment 3) the relative gap actually increases compared to the no information treatment, as the applicant with the Austrian name is now 13 pp. (21%) more likely to

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<sup>24</sup> According to Statistik Austria (2022a), 85% of individuals with an immigration background from Afghanistan, Syria and Iraq are born outside the country.

receive a callback than that with a Serbian name (difference in the no information treatment: 7 pp. or 11%), and 23 pp. (43%) more likely than that with a Turkish name (difference in the no information treatment: 17 pp. or 34%). Only the percentage points difference to the applicant with the Syrian name was reduced compared to the no information scenario (from 30pp. to 20pp.).

### **Pattern of callback rates**

The pattern of callback rates over different treatments is visualized in Figure 1 in the Appendix. We can observe a U-pattern for all immigrant groups: Relative to the no info treatment, indicating foreign birth hurts immigrants' chances, but – compared to the latter – being raised or even born in Austria is rewarded. The callback patterns of applicants with a Serbian and a Turkish name are very similar, albeit the probability of a callback is 10pp. lower for Turkish names in all treatments. For candidates with a Syrian name the U-pattern is more skewed, because of their particularly high reward for indicating that they are not a recent immigrant/refugee.

### **Multivariate analysis of callback probabilities**

In the next step, we examine the probability of receiving a positive callback in a linear probability model. Table 4 shows the results (robust standard errors are clustered at the advertisement level). The callback rates of all immigrant types in the different treatments are compared to those of the applicant with the Austrian name, born and raised in Austria, who was the most successful candidate overall. Panel A shows the results for the candidates with the Serbian names, Panel B for those with the Turkish and Panel C for those with the Syrian names. While the first column in each panel is without controls, we add information on landlords and property characteristics in the following columns. We see that adding controls leaves our results virtually unaffected. The applicant with the Serbian name, who also indicates being born and raised in Austria has an approximately 13pp. lower probability to receive a positive callback than the candidate with an Austrian name. This is a large gap, considering that Serbia is a Christian country in relative proximity, and also considering the long history of migration from former Yugoslavia. However, the disadvantages for second generation immigrants from Turkey and Syria, predominantly Muslim countries, are markedly higher with callback chances that are 23pp. and 21pp. lower than that of an autochthonous Austrian. If immigrants indicated that they were born abroad or born and raised abroad that further reduced their relative callback chances. (Appendix Figure 2, based on specification 4 of Table 4, indicates which differences between coefficients are statistically significant.) As we have seen before, candidates with a Serbian or Turkish name never benefit from giving details on their background (no coefficient is significantly smaller than the one for "foreign name, no info"): If they indicate being born and raised in Austria, they do as poorly as without giving any information. If they indicate some



closer connection to their countries of origin, they do worse. Applicants with a Syrian name are the only immigrant group that faces significantly smaller disadvantages when stating that they were born and raised in Austria than without giving any information about their background, probably because without information they are believed to be recent refugees. As has been shown before, autochthonous Austrians are rewarded for stating that they were born and brought up in Austria. If they do not include this information, their callback chances are reduced by 6pp. However, this is still a very small “penalty” compared to that which the immigrant applicants face.

### **Effects on callbacks and potential reasons for unequal treatment**

In the last step, we examine what drives callback rates as well as unequal treatment of immigrants. We are particularly interested whether some property owners discriminate more than others. For instance, studies have often found that men hold more negative views of immigrants (for a review see, e.g., Ponce 2017), although some studies find that women are more xenophobic (e.g., Zick, Küpper, and Hövermann 2011). Also, landlords with academic degrees may behave differently. For example, Zick, Hüpper, and Hövermann (2011) found survey respondents with a higher level of education to be less xenophobic which may lead to less discriminatory behavior. Finally, the origin of the property owner may have an influence on the presence and the degree of discrimination. Property owners, who have a foreign sounding name themselves may sympathize with the struggles of an applicant who shares this characteristic. As a result, they may discriminate less (e.g., Ahmed, Andersson, and Hammarstedt 2010).

It may also be that discrimination is higher for some types of properties than others. For example, discrimination may be less severe in larger cities, where the population tends to be more progressive (see, e.g., Luca et al. 2022). The level of discrimination may also depend on the rent. A foreign sounding name may be associated with a lower income, thus, reducing the chances for high priced apartments (Flage 2018). Alternatively, immigrants who apply for an expensive apartment may also be seen as not conforming to conventional stereotypes and considered financially viable, leading to more positive outcomes.<sup>25</sup> Finally, we also test whether discrimination has been affected by the Covid-19 pandemic as suggested by studies from other countries (see Ahmed, Lundahl, and Wadensjö 2023 for a review).

Table 5 presents the results. All immigrant types examined in this experiment are merged into the category “having an immigration background”. Column 1 shows that on average and without control variables, our immigrant applicants have a 21pp. lower probability of receiving a callback than autochthonous Austrians. Column 2 adds characteristics of the property owners, the property

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<sup>25</sup> Van der Bracht, Coenen and Van de Putte (2015) actually found the highest level of discrimination for lowest and highest prized housing offers.

and whether the flat search took place during the Covid-19 pandemic. We find that property owners who hold an academic degree call back applicants at a significantly higher rate (+ 15pp.), while the gender and the immigration background of landlords have no significant impact. Apartments located in Vienna or in one of the state capitals receive 7pp. fewer callbacks, probably because these apartments face a higher demand. Similarly, flats located in the West of Austria (Vorarlberg, Tyrol or Salzburg), where housing is scarce and more expensive (Statistik Austria, 2022b), yield 6pp. fewer callbacks. Callbacks are higher for expensive flats: An additional 100€ rental price increases the callback rate by 0.8pp. Amidst the Covid-19 pandemic, inquiries are 5 percentage points less likely to elicit a positive response, probably due to a surge in demand for housing (see, e.g., Gamber, Graham and Yadav, 2023). In Column 3, instead of the absolute rental price, we include the rental price per square meter, which does not affect the callback rates.

To test the above-mentioned hypotheses concerning potential causes of unequal treatment against immigrants, we include various interaction effects from Column 4. According to Column 4, female property owners do not treat immigrant applicants differently than males. The same is true for property owners who are academics (Column 6) and who hold a foreign-sounding name (Column 5). The latter is in contrast to Carlsson and Eriksson (2014) who found less discrimination for Muslim names occurring from ethnic minority landlords in Sweden. There is only some indication that applicants with an immigration background receive a somewhat better treatment in the state capitals than in more rural areas. However, not even this effect is significant at conventional levels of statistical significance (Column 7). There is also no correlation between discrimination against immigrants and the price level of a flat (Column 8) and the Covid-19 pandemic in Austria (Column 9).

## **Conclusions**

In this study, we examined discrimination in the Austrian rental housing market against the largest non-EU citizen groups residing in the country, Serbians and Turks, as well as the largest non-European group, Syrians. Using an email correspondence test (e.g. Riach and Rich 2002), we found substantial evidence for ethnic discrimination against male candidates with foreign sounding names. Without further information about the background of a person other than their name, applicants with an Austrian name were the most successful, followed by candidates with a Serbian, Turkish/Muslim and Syrian/Muslim name, in this order. The finding that discrimination against Eastern European candidates who come from countries with predominantly Catholic faith is smaller than against applicants from more distant regions where the majority is Muslim is consistent with previous findings (e.g., Molla, Rhawi, and Lampi 2022; Baldini and Federici 2011). That Syrian names are discriminated the most may have to do with large numbers of refugees from Syria who have arrived in Austria in recent years and who have often been stereotyped in the media in negative

ways (e.g., Greussing and Boomgaarden 2017). Syrians may also be statistically discriminated because of property owners' fear that recent refugees are unable to pay their rent.

We were particularly interested whether immigrant generation affects the level of discrimination. During a property viewing, employers have the opportunity to assess the immigrant generation of a candidate, if necessary by making casual enquiries. In our experiment, to investigate whether discrimination differs between first, first and a half, and second-generation immigrants, we provided landlords with information about the place of birth and the place where the applicant grew up. While the term first (second) generation immigrants implies that individuals are born and raised abroad (in the country of residence), first and a half generation signifies that a person was born abroad but grew up in the country of residence (Rumbaut 2004). When providing such information about immigration background in our experiment, callback rates were highest for second generation immigrants and lowest for first generation immigrants for all immigrant groups. One reason may be that being raised as well as being born in the country signals acculturation (see Sawert 2019) which reduces social distance and possibly prejudice. Second generation immigrants may be perceived as more similar to the native population in dimensions like culture, education, and employment, which may be appreciated by property owners. Our results are consistent with studies, which have found that "acculturated" applicants are more successful in the housing market if they have assimilated names (Hanson and Santas 2014), good knowledge in the local language (Sawert 2019; Horr, Hunkler, and Kroneberg 2018) or if they present themselves like the average majority applicant on social media (Moritz, Manger, and Pull 2023).

Compared to providing no information, only applicants with a Syrian name benefited from indicating to be rooted in Austria, very likely because this signified that they have not arrived as refugees from the Syrian civil war. Thus, Syrian applicants appear to be affected by statistical discrimination. The other migrant groups did not benefit from adding information about their long connection to Austria. Apparently, landlords expected candidates with a Serbian or Turkish name, who did not include more detailed background information, to be second generation immigrants anyhow. However, also Syrians could not eliminate discrimination by providing "positive" information. Interestingly, also housing seekers with an Austrian name fared better when stating that they were born and grew up in the federal state of the inquired property, possibly because it implies that they are unlikely to move again soon. This suggests that disclosing information about being rooted in the vicinity of a property can be advantageous at the individual level in the search for housing, although it does not necessarily reduce the extent of discrimination.

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## Tables

**Table 1: Experimental design**

<b>Applicant types and names</b>		<b>Information treatments</b>	
Autochthonous Austrian	Lukas Huber	No information treatment	only basic information included
Syrian/Muslim	Mohammad Ahmad	Information treatment 1	born and raised abroad
Turkish/Muslim	Mehmet Yilmaz	Information treatment 2	born abroad, raised in Austria
Serbian	Dragan Jovanovic	Information treatment 3	born and raised in Austria

**Table 2: Descriptive Statistics**

	<b>N</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
<b>Characteristics apartment</b>					
Rental price	3,870	849.76	402.57	200	5500
Rental price per square meter	3,870	12.83	4.27	2.92	37.5
Size of apartment in square meter	3,876	69.49	29.27	11	460
Number of rooms	3,858	2.53	1.06	1	17
Vienna or state capital	3,876	0.50	0.50	0	1
West (Vorarlberg, Tirol and Salzburg)	3,876	0.25	0.43	0	1
<b>Characteristics landlord</b>					
Landlord female	3,876	0.43	0.49	0	1
Landlord minority	3,876	0.11	0.31	0	1
Landlord academic	3,876	0.05	0.22	0	1
<b>Response of landlords</b>					
Callback (invitation or request)	3,876	0.59	0.49	0	1



**Table 3: Callback rates**

<b>Treatment/Background</b>	<b>Austrian</b>	<b>Serbian</b>	<b>Turkish</b>	<b>Syrian</b>
No information	68.1%	61.2%	50.8%	38.5%
Information 1: "Born and raised abroad"		50.3%	40.0%	29.9%
Information 2: "Born abroad and raised in Austria"		53.1%	43.2%	45.0%
Information 3: "Born and raised in Austria"	74.3%	61.2%	51.1%	53.8%

**Table 4: Probability of a positive callback (linear probability model)**

	Panel A: Serbian names					Panel B: Turkish names					Panel C: Syrian names				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Foreign name, born and raised in Austria	-0.132*** (-3.13)	-0.132*** (-3.14)	-0.132*** (-3.14)	-0.136*** (-3.23)	-0.136*** (-3.22)	-0.232*** (-5.49)	-0.234*** (-5.59)	-0.235*** (-5.56)	-0.239*** (-5.68)	-0.239*** (-5.68)	-0.205*** (-4.81)	-0.211*** (-5.00)	-0.209*** (-4.94)	-0.213*** (-5.05)	-0.213*** (-5.05)
Foreign name, born abroad and raised in Austria	-0.213*** (-4.68)	-0.209*** (-4.62)	-0.202*** (-4.48)	-0.206*** (-4.62)	-0.204*** (-4.57)	-0.312*** (-6.89)	-0.313*** (-6.95)	-0.315*** (-6.98)	-0.315*** (-7.02)	-0.316*** (-7.03)	-0.293*** (-6.54)	-0.294*** (-6.55)	-0.290*** (-6.52)	-0.292*** (-6.60)	-0.291*** (-6.57)
Foreign name, born and raised abroad	-0.240*** (-5.28)	-0.239*** (-5.24)	-0.240*** (-5.27)	-0.240*** (-5.24)	-0.238*** (-5.20)	-0.343*** (-7.74)	-0.343*** (-7.72)	-0.341*** (-7.68)	-0.338*** (-7.64)	-0.338*** (-7.66)	-0.445*** (-10.70)	-0.435*** (-10.47)	-0.437*** (-10.58)	-0.439*** (-10.64)	-0.437*** (-10.59)
Foreign name, no info	-0.131*** (-3.56)	-0.130*** (-3.52)	-0.132*** (-3.57)	-0.132*** (-3.59)	-0.132*** (-3.57)	-0.235*** (-6.43)	-0.235*** (-6.43)	-0.235*** (-6.43)	-0.236*** (-6.48)	-0.236*** (-6.48)	-0.358*** (-9.67)	-0.361*** (-9.80)	-0.362*** (-9.73)	-0.361*** (-9.70)	-0.361*** (-9.70)
Austrian name, no info	-0.062*** (-2.73)	-0.061*** (-2.67)	-0.059*** (-2.59)	-0.061*** (-2.71)	-0.060*** (-2.66)	-0.062*** (-2.73)	-0.063*** (-2.78)	-0.063*** (-2.78)	-0.064*** (-2.84)	-0.065*** (-2.86)	-0.062*** (-2.73)	-0.061*** (-2.66)	-0.059*** (-2.58)	-0.061*** (-2.69)	-0.060*** (-2.66)
Landlord characteristics		x	x	x	x		x	x	x	x		x	x	x	x
Property characteristics			x	x	x			x	x	x			x	x	x
Rental price/sqm			x		x			x		x			x		x
Rental price				x	x				x	x				x	x
Constant	0.743*** (38.98)	0.750*** (35.82)	0.791*** (20.65)	0.736*** (22.91)	0.755*** (18.22)	0.743*** (38.98)	0.736*** (35.30)	0.737*** (19.25)	0.707*** (22.52)	0.701*** (17.33)	0.743*** (38.98)	0.747*** (35.81)	0.784*** (21.39)	0.736*** (23.72)	0.748*** (19.11)
Observations	2,567	2,567	2,564	2,564	2,564	2,597	2,597	2,593	2,593	2,593	2,588	2,588	2,583	2,583	2,583
R-squared	0.019	0.024	0.028	0.032	0.032	0.049	0.054	0.058	0.063	0.063	0.073	0.080	0.086	0.089	0.089

Notes: Robust t-statistics in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Reference group: Austrian name, born and raised in Austria. Landlord characteristics include gender, foreign sounding name, academic; property characteristics include Vienna or state capital, Western part of country.

**Table 5: Effects of landlord and property characteristics on callback probability (linear probability model)**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Immigration background	-0.214*** (-19.68)	-0.214*** (-19.67)	-0.214*** (-19.67)	-0.217*** (-15.08)	-0.218*** (-18.98)	-0.217*** (-19.40)	-0.232*** (-14.95)	-0.220*** (-8.48)	-0.217*** (-12.65)
Landlord female		-0.008 (-0.42)	-0.010 (-0.51)	-0.011 (-0.51)	-0.008 (-0.42)	-0.008 (-0.42)	-0.008 (-0.42)	-0.008 (-0.42)	-0.008 (-0.42)
Landlord foreign sounding name		-0.019 (-0.61)	-0.019 (-0.62)	-0.019 (-0.61)	-0.038 (-1.07)	-0.019 (-0.61)	-0.019 (-0.61)	-0.019 (-0.61)	-0.019 (-0.61)
Landlord academic		0.150*** (3.98)	0.160*** (4.25)	0.150*** (3.98)	0.150*** (3.98)	0.129*** (3.17)	0.150*** (3.98)	0.150*** (3.98)	0.150*** (3.98)
Vienna or state capital		-0.065*** (-3.31)	-0.058*** (-2.69)	-0.065*** (-3.31)	-0.065*** (-3.31)	-0.065*** (-3.31)	-0.083*** (-3.85)	-0.065*** (-3.31)	-0.065*** (-3.31)
Western part of country		-0.060*** (-2.63)	-0.044* (-1.82)	-0.060*** (-2.63)	-0.060*** (-2.63)	-0.060*** (-2.63)	-0.060*** (-2.63)	-0.060*** (-2.63)	-0.060*** (-2.63)
Rental price (in 100€)		0.008*** (3.27)		0.008*** (3.27)	0.008*** (3.27)	0.008*** (3.27)	0.008*** (3.27)	0.008*** (3.06)	0.008*** (3.27)
Rental price per square meter			0.001 (0.41)						
Covid-19		-0.048** (-2.51)	-0.049** (-2.55)	-0.048** (-2.51)	-0.048** (-2.51)	-0.048** (-2.51)	-0.048** (-2.51)	-0.048** (-2.51)	-0.050** (-2.37)
Immigration background*landlord female				0.006 (0.26)					
Immigration background*landlord foreign name					0.037 (1.03)				
Immigration background*landlord academic						0.041 (0.80)			
Immigration background*Vienna or state capital							0.036 (1.64)		
Immigration background* rental price								0.001 (0.23)	
Immigration background*Covid-19									0.004 (0.18)

Constant	0.698*** (66.92)	0.703*** (25.68)	0.751*** (22.86)	0.704*** (25.39)	0.705*** (25.68)	0.704*** (25.71)	0.712*** (25.62)	0.706*** (25.08)	0.704*** (25.25)
Observations	3,876	3,870	3,870	3,870	3,870	3,870	3,870	3,870	3,870
R-squared	0.047	0.063	0.059	0.063	0.063	0.063	0.063	0.063	0.063

Notes: Robust t-statistics in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

## Appendix: Figures

Figure 1: Callback probabilities by nationality of name (CI 95% level)

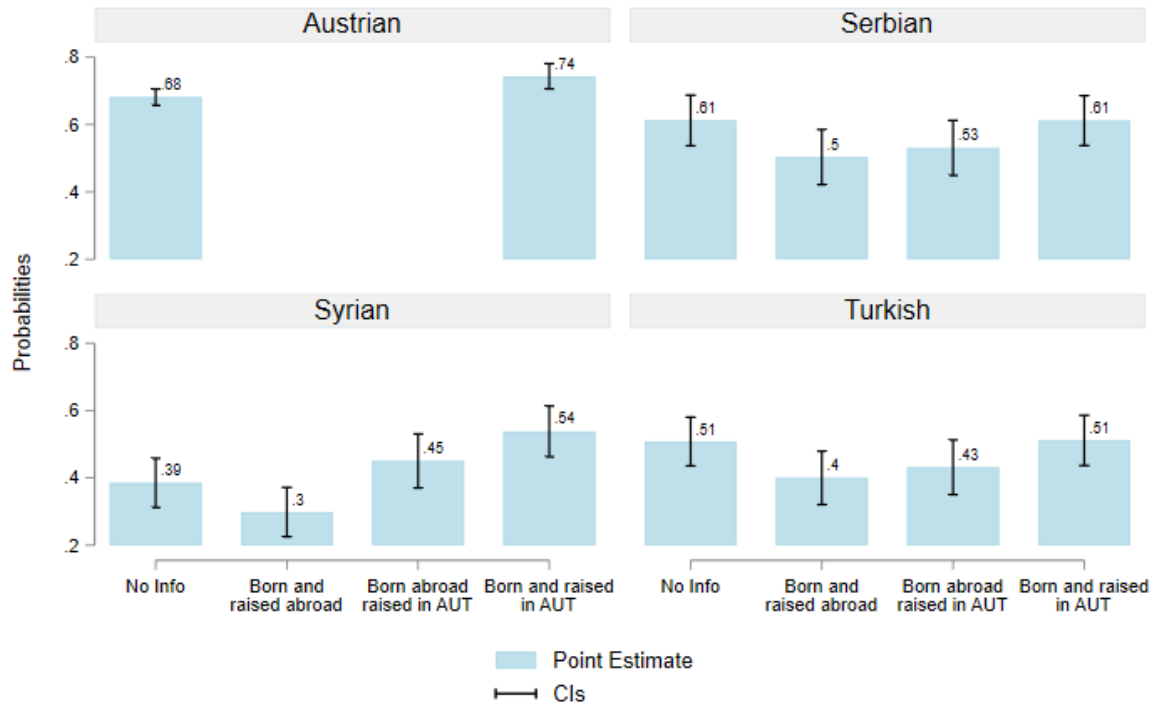
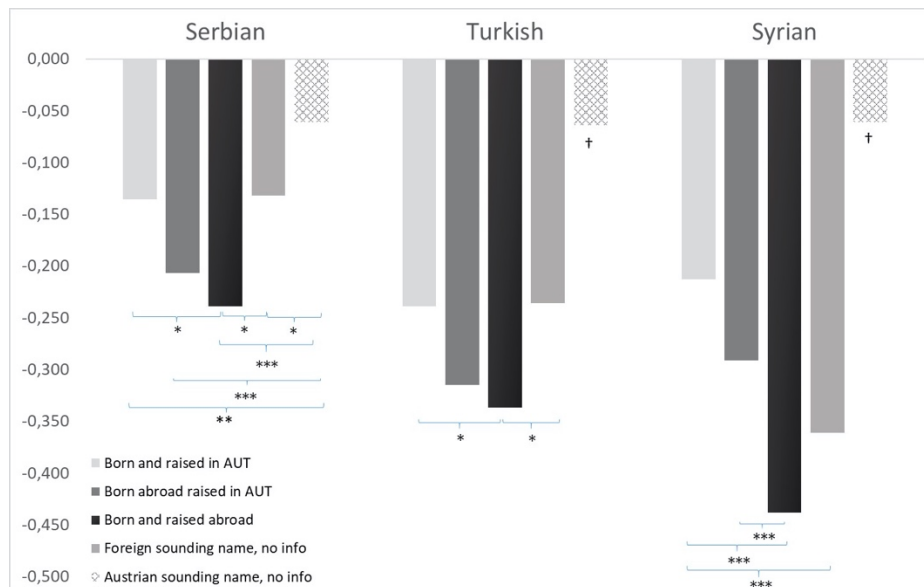


Figure 2: Coefficients for different treatments and immigrant groups



Notes: The coefficients come from Table 4, specification 4, and compare the callback probability of the different applicants to those with the Austrian sounding name, when he indicates to be born and raised in Austria. The coefficient for the Austrian sounding name with no background information is included for comparison reasons.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

† coefficient is significantly different to that of all other profiles at  $p < 0.01$ .