

# **Explaining the lacking effectiveness of labor market integration programs for workers with immigrant backgrounds: The role of cognitive shortcuts in recruitment**

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## **Acknowledgements**

This research was financed by the NCCR-on the move IP7, which is funded by the Swiss National Science Foundation (51NF40-142020). We are grateful to Anna Wilson for the translation of the questionnaires into Swedish. We extend our thanks to Jeremias Stadlmair and the INEX group at the Political Science Department of the University of Vienna for their feedback on the research questionnaire.

## **Abstract**

Many countries use active labor market programs (ALMPs) to improve the labor market outcomes of workers with immigration backgrounds. Empirical findings on these programs' effects are mixed, however. We shed new light on the mechanisms behind the lacking effectiveness of ALMPs in countering immigrant workers' labor market disadvantages by arguing that the relevance of ALMPs for an open position is typically difficult for employers to evaluate. As a result, employers are willing to expend the necessary effort only when hiring for positions of high criticality to their businesses. It is exactly these positions, however, where workers with immigration backgrounds face the greatest degree of discrimination in hiring, and their applications are thus less likely to be given close enough consideration for ALMPs to matter. Positions where discrimination is less pronounced, on the other hand, are typically not of sufficient criticality to employers to warrant an evaluation of the relevance of ALMPs. We provide empirical evidence for our argument by using original vignette experiments administered to an online panel of employers in Germany, Sweden and the United Kingdom in 2019 and thus are able to expand on previous research stemming mainly from Switzerland. Finally, we discuss the implications of our findings for public policy and show how programs that are created to help the social and economic integration of immigrants can fail to attain their goal.

## **Introduction**

Integrating immigrants and their descendants into their host countries' economies and labor markets and raising their employment rates remain major challenges in many advanced democracies (OECD et al. 2019). The importance of this issue is testified by its prominence in public debates and by the large amount of academic research produced over several decades on the hurdles immigrants face and on how these hurdles could potentially be overcome (Borjas 1985; 1999; Chiswick 1978; Friedberg 2000; Kogan 2007; Pichler 2011; van Tubergen, Maas, and Flap 2004).

Many countries have introduced policies that specifically target the economic integration of workers with an immigration background. Such policies include language courses, labor market training or other active labor market programs (ALMPs). In many cases, however, these programs are found to be ineffective or even counterproductive (e.g. Butschek and Walter 2014; Clausen et al. 2009; Kogan 2016; Rinne 2012; Thomsen and Walter 2010). More specifically, while language courses and wage subsidies often do have the intended positive effects, the record for training programs is more mixed. In fact, public-sector employment programs hurt rather than help the job-finding chances of workers with an immigrant background (which corresponds quite closely to the findings from more general research on the effectiveness of ALMPs; e.g. Card, Kluve, and Weber 2010; Kluve 2010).

In this contribution, we shed further light on the mechanisms behind the labor market disadvantages of workers with immigration backgrounds and the (in)effectiveness of ALMPs in countering these disadvantages. We do so by studying how employers hiring in low-skill labor markets evaluate the employability of workers with an immigration background and how ALMPs impact these evaluations. We focus on employers because they are the main 'gatekeepers' to employment, and

understanding their perceptions and behavior in recruitment situations is thus crucial if we are to understand labor market outcomes more generally (building on inter alia Moss and Tilly 2001; Auer et al. 2019; Bonoli and Hinrichs 2012). We focus on the case of workers who have an immigration background, i.e., who are second-generation immigrants or arrived during early childhood but completed their education in their host countries. This is a numerically important group that often suffers from discrimination and low labor market participation (e.g. Midtbøen 2014) and, for better or worse, often competes in low-skill labor markets.

We develop an argument for why ALMPs often fail to advance immigrant workers' hiring chances. Our argument, which is similar to economic theories of attention discrimination in recruitment (Bartoš et al. 2016), centers on the idea that employers are selective and strategic with respect to how closely they study applicant profiles when recruiting. In essence, employers rely as much as possible on fast elimination routines and cognitive shortcuts to select and sort applicants, and they pay closer attention to applicants' profiles only when necessary. We argue that this means that employers devote closer attention to applicants only when hiring for positions of higher criticality to their operation but not when hiring for less important jobs, where mistakes in recruitment are less costly. Because of this selective allocation of attention, information about applicants that is ambiguous and difficult to interpret affects recruitment only for more critical positions, for which employers pay sufficient attention – and ALMP participation is a notoriously ambiguous signal of applicants' productivity (Liechti et al. 2017). Crucially, and according to the on research on ethnic sorting by employers in recruitment (Pager, Bonikowski, and Western 2009), it is precisely these more critical positions where workers with immigrant backgrounds also tend to face more discrimination (see also Bonoli and Fossati, 2018). The main implication is therefore that ALMP participation fails to affect immigrants' hiring chances because in situations where ALMP

participation could theoretically matter, immigrant workers are sorted out before their profiles are given closer scrutiny. In the cases of positions of lower criticality, on the other hand, immigrants tend to face less discrimination – but in these cases, employers are also less willing to put sufficient effort into recruitment for ambiguous signals such as ALMP participation to matter.

Evidence for our argument comes from an original survey experiment administered on an online panel of employers in Sweden, Germany, and the UK in 2019. Employers were asked to evaluate several brief descriptions of applicants in which their characteristics (e.g., immigration background, ALMP participation) varied at random. The random variation of the different characteristics allowed us to identify unbiased causal effects of applicant characteristics such as immigrant background and ALMP participation on employers' hiring intention.

The remainder of this paper is structured as follows. We briefly review the state of the art of research on labor market discrimination against immigrants and their descendants and on the limited effectiveness of ALMPs. We then develop our argument in the third section. The fourth section describes our experiment, and the fifth section presents our findings. The final section briefly discusses the scope conditions and policy implications of our study and concludes the contribution.

### **Discrimination against immigrants and the conditional effects of ALMPs**

That there is discrimination against both first- and second-generation immigrants (and other minority groups) in labor markets is a well-established fact. More controversial matters are the precise mechanisms driving this discrimination (e.g. Baert and De Pauw 2014; Guryan and Charles

2013; Hewstone, Rubin, and Willis 2002) and the patterns in which it unfolds. Research in sociology has, for instance, shown that minority job applicants not only receive fewer callbacks and job offers overall but also, when offered positions, are systematically steered toward less prestigious and lower-paid positions (Pager, Bonikowski, and Western 2009; see also Moss and Tilly 2001). It has also been found that employers tend to prefer natives for what they see as “critical” positions in their establishments (Almeida, Fernando, and Sheridan 2012) and that natives or ethnic majority candidates are preferred for jobs involving customer contact (Holzer and Ihlanfeldt 1998). Other studies have found that employers in fact often *prefer* immigrants for less desirable types of jobs, particularly because they see immigrants as more obedient and less averse to dirty, physically difficult, repetitive, and unrewarding work (Bonoli and Hinrichs 2012; Zamudio and Lichter 2008) or because they consider immigrants to be more motivated than similarly skilled natives (Friberg 2012). The overall conclusion is that employers tend to fill open positions along ethnic and occupational hierarchies: higher-status positions are preferably filled with native candidates or those higher on ethnic hierarchies, whereas lower-status positions are at least open if not reserved for those lower on ethnic hierarchies, which are typically more ethnically distant and more recent groups of immigrants (Auer et al. 2019; see also Hagendoorn 1995).<sup>1</sup>

Can ALMPs such as training, public employment programs or wage subsidies counteract these tendencies? The existing evidence is not encouraging (e.g. Butschek and Walter 2014; Clausen et al. 2009; Rinne 2012; Thomsen and Walter 2010) and points in particular to the fact that any potentially positive substantive effects of such programs, including an increase in skill levels or a reduction in wage costs, on productivity are often counteracted by unintended negative signaling

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<sup>1</sup> There is also evidence that minority candidates self-select into labor market areas where they expect less discrimination (Pager and Pedulla 2015).

effects. The negative effects may arise because ALMPs are specifically intended for individuals facing difficulties in the labor market. Consequently, employers can interpret the fact that an applicant participated in such a measure as a signal that the applicant is less employable and more in need of support to obtain a particular job. Kogan (2016), for instance, finds that labor market training and counseling programs in 15 countries had very limited positive effects, which she attributes to negative signaling effects. Liechti et al. (2017) suggest that such negative signaling effects arise primarily in recruitment for higher-status positions because employers strongly prefer applicants who are highly employable and accordingly are not in need of support. On the other hand, employers expect that applicants for lower-status positions are more likely to be distant from the labor market and that they more commonly might need help. In the resulting absence of negative signaling effects, positive substantive effects can materialize. In their empirical analysis, Liechti et al. find positive substantive effects for applicants with lower educational attainment. When the authors look specifically at the case of a worker with an immigration background, however, the positive effects of ALMP participation vanish almost completely.

It thus seems that unlike lower-skilled natives, individuals with immigration backgrounds do not benefit from ALMP participation. We develop an argument for why this is in the following section.

### **Employer selectivity and the conditional effects of ALMPs**

When engaging in hiring, employers must cope with two fundamental constraints: limited information and limited time. Their information is limited in the sense that they cannot possibly know the future productivity of an applicant with certainty beforehand, and job applicants have strong incentives not to provide an accurate and objective account of their skills and abilities.

Employers thus have to infer applicants' likely future productivity from information that applicants deliberately or unwittingly convey to them (Spence 1973). In this process, employers can rely on several sources of information, including applicants' formal qualifications or degrees as well as attributes such as gender, immigration status, or ethnicity.

Some types of information are obviously easier to interpret than others because it is clearer how they are linked to applicants' future productivity on the job. When a job requires formal qualifications and certificates, such as an M.D. for many medical professions, the simple presence or absence of such qualifications is a prerequisite to assess whether an applicant is in principle able to perform the required tasks. The value of a degree from a particular university, on the other hand, is more difficult to interpret. Also difficult to interpret are credentials that send ambiguous signals, which include ALMPs (Liechti et al. 2017).

Another type of information that influences employers' recruitment decisions is applicants' demographic attributes, such as immigration background (or age or gender). This influence is likely due in part to employers' "distaste" for certain groups (Becker 1957), but there is sufficient evidence to assume that employers also use such demographic attributes simply as signals of future productivity (e.g. Bonoli and Hinrichs 2012; see also Arrow 1973). More specifically, employers seem to rely on stereotypes about the behavior and capabilities of different groups to infer their likely future productivity (Bordalo et al. 2016; Hilton and von Hippel 1996). Because stereotypes are a form of cognitive shortcuts (Bodenhausen 1990; Macrae, Milne, and Bodenhausen 1994), they allow employers to apply simple generalizations about social groups to individual applicants and thereby quickly (albeit often incorrectly) predict applicants' employability.

In addition to having limited information and facing difficulties in interpreting different signals, employers have only a limited amount of time they can devote to recruiting for each individual open position. In small businesses, recruitment is often performed by owners or at least slightly more senior employees or supervisors concurrently with and at the expense of other tasks. Large companies may have dedicated HR personnel, but these employees are often tasked with recruiting for multiple open positions at the same time. In either case, we think it is safe to argue that time is sufficiently scarce to force employers to be strategic in how they use it.

We expect that employers cope with these constraints on their time and information by relying on easily interpretable signals, cognitive shortcuts, and satisficing strategies as much as possible and relying on more difficult-to-interpret signals and more cognitively demanding considerations only when necessary (see also Bartoš et al. 2016).<sup>2</sup> In practice, this means two things. First, employers' use of more demanding methods should be contingent on the importance of the position they are recruiting for. Employers should be more willing to invest scarce resources when recruiting for a position that is critical to the operation of their businesses and when a poor decision can therefore produce substantial losses. On the other hand, when they are recruiting for a noncritical position or one that can be at least temporarily substituted by existing labor and when failure is accordingly less costly, employers can be expected to devote less or even no effort to engage in demanding cognitive tasks and are therefore less likely to pay attention to ambiguous signals in candidates' profiles.<sup>3</sup>

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<sup>2</sup> Our reasoning also resembles and is inspired by two-process theories from psychology, according to which humans rely as much as possible on fast heuristics and intuition ("System 1") and resort to more careful analytical reasoning ("System 2") only when necessary (e.g. Stanovich and West 2000). These theories have been popularized by Kahneman (2011).

<sup>3</sup> Evidence for this can be found in in-depth studies of recruitment processes. Almeida et al. (2012), for instance, show evidence that employers invest more into recruitment processes when the perceived "criticality" of a job is greater.



Second, even when recruiting for critical positions, employers should rely on cognitively easy methods in the initial stages of a selection process and adopt more demanding strategies only later on. More concretely, in an initial step, employers are likely to engage in shortlisting, meaning they screen applicants for the mere presence or absence of qualifications that are central to the job at hand and deselect all applicants who do not fulfill these requirements (see e.g. Fossati, Liechti, and Wilson 2020). In addition, employers initially should rely on another relatively easily interpretable type of information—demographic attributes or, more precisely, the stereotypes about them—which can serve as cognitive shortcuts that permit quick information-processing and decision-making when time and resources are limited (Macrae, Milne, and Bodenhausen 1994).

Only once these cognitively easy methods are exhausted do employers assess applicants' profiles more carefully and engage in cognitively more demanding analytical reasoning (Chaiken 1980; Fiske and Taylor 2013, 319) to determine which candidate(s) should be prioritized. Crucially, only at this point additional but more difficult-to-interpret information such as ALMP participation can matter.

All of this has important implications for the effectiveness of ALMPs as instruments to support the labor market integration of workers with immigrant backgrounds. First, in recruiting for positions of higher criticality, employers' reliance on cognitively easy methods, particularly stereotypes, to select applicants in the first stages of a recruitment process works to the disadvantage of workers with immigrant backgrounds. This is because stereotypes of immigrants and their work attitudes

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Akkinson and Williams (2003), on the other hand, show that employers invest less effort into recruiting for low-status and low-paid position despite the higher turnover that results (but see also Hieming et al. 2005). Significant labor market deregulation over recent decades has also made it relatively easy and cheap to dismiss workers in marginal positions, even in otherwise highly regulated economies such as Germany (King and Rueda 2008). This should give employers additional reasons to put less effort into recruitment for noncritical and marginal positions in their businesses.

are, with some exceptions, often negative (e.g. Stephan et al. 1998; Timberlake and Williams 2012), and natives are therefore generally favored over workers with immigrant backgrounds in recruitment (Quillian et al. 2017; Zschirnt and Ruedin 2016). This means that workers with an immigrant background are more likely to be excluded at early stages of a recruitment process before factors such as ALMP participation are considered. Put more simply, ALMPs fail to work in this context because immigrants are deselected before ALMP participation can factor into employers' evaluations.

Workers with immigrant backgrounds may, however, have better chances of obtaining less critical positions. In practice, workers with immigration backgrounds are less likely to be discriminated against and are sometimes even preferred over natives for jobs with these characteristics (e.g. Bonoli and Hinrichs 2012; Auer et al. 2019). However, for such jobs, employers' strategic use of time makes them less likely to engage in more cognitively demanding reasoning, including the consideration of harder-to-interpret signals such as ALMP participation. We argue that ALMP participation can therefore not exert positive effects on employers' evaluations.

To put all this more succinctly: when immigrant workers compete for the types of jobs where ALMP participation could actually count in their favor, they face employers' reliance on cognitive shortcuts and stereotypes, which means that their applications are more likely to be sorted out before any closer consideration is given to the finer details of their profile. If, on the other hand, they compete for the types of jobs where they are less disadvantaged or may be preferred given the stereotypes about them—that is, for jobs closer to the bottom of a typical occupational hierarchy—employers do not put in sufficient cognitive effort into the recruitment process for ALMP participation to matter. As a result, we expect that ALMP participation is inconsequential for the hiring prospects of workers with immigrant backgrounds regardless of the jobs they apply for.

## **Methods**

### *Research design*

To examine what determines employers' hiring preferences for different jobs and whether workers with immigrant backgrounds can improve their prospects on the labor market, we use a factorial survey experiment (FSE; see e.g. Jasso 2006; Wallander 2009). FSEs have been widely used to study labor market discrimination, and they have been proven to be reliable and valid instruments to analyze employers' preferences because they yield similar results to those provided by other approaches, such as correspondence testing and real-world behavior (Di Stasio and Gërkhani 2015; Hainmueller, Hangartner, and Yamamoto 2015; Zschirnt and Ruedin 2016).

In an FSE, survey respondents are presented with brief descriptions of persons or objects ("vignettes") and are asked to rate them on some dimension of interest. In our case, the respondents were employers, and they were asked to evaluate the profiles of fictional job applicants. The vignettes featured a defined set of attributes ("dimensions", e.g., applicants' age, gender, or immigration background) that varied along defined levels. Importantly, the composition of vignettes was randomized. This means that unlike in the real world, where certain attributes might be correlated (e.g., a certain immigration background and educational attainment), attributes were entirely uncorrelated across vignettes. The assignment of vignettes to individual respondents was also randomized. This setup enabled us to estimate the effects of individual vignette attributes on respondents' evaluations that are unconfounded by both other attributes and respondent characteristics (Auspurg and Hinz 2015).

FSEs have several more advantages: they also allow testing the effects of various dimensions contemporaneously and deliver measurements of attitudes that are less biased by social desirability

than item-based techniques (Auspurg et al. 2014). Moreover, FSEs allow the inclusion of details that go beyond those included in a CV and thus can also help capture informal recruitment practices, including information on the application procedure. In addition, the survey in which FSEs are embedded allows us to collect respondent-level information that can be further utilized to analyze whether particular employers' characteristics affect employment preferences. Other advantages of using FSEs include their cost efficiency and the fact that they are ethically less problematic than correspondence testing, which intervenes directly in real hiring situations by sending CVs of fictional candidates to real job openings and can potentially have a nonnegligible impact on employment processes (Di Stasio and Gërxhani 2015; Liechti et al. 2017; Zschirnt and Ruedin 2016).

### *The experiment*

We administered our FSE on an incentivized online panel run by Qualtrics<sup>®</sup>, an international market research firm in 2019 in Germany, Sweden, and the United Kingdom.<sup>4</sup> Our panel respondents needed to have been involved in at least one hiring process during the 12 months prior to taking the survey. In addition, we specified quotas to obtain a sociodemographically diverse sample. Respondents were recruited according to age (50% had to be younger than 35<sup>5</sup>), gender (50% female), and firm size (60% from firms up to 250 employees, 40% from larger firms). We nevertheless have an overrepresentation of respondents employed in larger firms, which we do not consider to be problematic because these firms also employ a larger number of workers and their

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<sup>4</sup> Research shows that FSEs with population-based and online samples yield comparable results (Weinberg et al., 2014).

<sup>5</sup> For low skilled positions the recruitment process is oftentimes informal and rather young supervisors are asked to recruit for less critical positions. To mirror such recruiting structures, we ensure to reach young enough recruiters.

hiring preferences are thus also relevant for a large share of jobseekers.<sup>6</sup> We obtained 368 respondents for Germany, 362 for Sweden and 368 for the UK. From the whole vignette universe of 8,100 possible combinations, we draw a d-efficient subsample of 220 vignettes per job that minimizes the correlation between the different dimensions in the vignette universe (Auspurg and Hinz, 2015).<sup>7</sup>

Respondents were asked to evaluate brief CV-like descriptions of applicants for two different jobs. The two jobs we selected were sufficiently low-skilled to be within the reach of typical unemployed jobseekers, immigrant background or not, but differed in their prestige and skill requirements. The first position was a janitor position with very basic duties (facility maintenance in- and outdoors, ordering of supplies), and the second was an administrative assistant position with greater responsibilities and more challenging tasks (correspondence, keeping of minutes, support to accounting department).<sup>8</sup> Prior to introducing the applicant descriptions, we mentioned that all candidates had lost their job due to the closure of the firm they previously worked for and that they all had some years of work experience.

Employers were shown a set of four vignettes for each job (8 vignettes in total). Both the order in which the two jobs appear and the order of the vignette within each job were varied at random. Employers had to judge the candidates on a scale from 1 to 10, i.e., from “not at all likely” to “very

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<sup>6</sup> See Table S4, Supplementary Material, for more information on the characteristics of the employers.

<sup>7</sup> See Supplementary Material for more information on the D-efficient design.

<sup>8</sup> See Supplementary Material for the experimental protocol and more information on the job and candidate descriptions (Tables S1a-S1b, Table S2, Figure S1, Tables S3a-S3c).

likely” to invite the candidate for a job interview.<sup>9</sup> Our respondents rated a total of ~4,300 vignettes per job, which amounted to a total of ~8,700 vignettes.

The candidates’ descriptions were composed of eight different dimensions: gender (male, female), age (25, 35, 45, 55 years of age), nationality (native; Spanish, Polish, Turkish), language spoken (native language + English, native + English + foreign language), channel of application (email, job center, private placement firm), ALMP participation (see below), channel of application (mail, PES or private firms), assessment of soft skills by previous employers (reliable and polite; reliable, polite and motivated; reliable, polite and tractable) and the duration of the unemployment spell (6, 12, 18 months) (see also Table A1, Appendix). We wanted to keep the nationalities constant across countries, and we therefore focused on immigrants with backgrounds from Spain, Poland, and Turkey. These nationalities represent sizeable groups in all three countries we cover, and they vary in the level of perceived cultural distance from their host societies in terms of language, culture and religion (Auer et al. 2019). In the description of the task that was presented prior to the vignettes, we explicitly mentioned that all candidates had completed their compulsory education and professional training in the host country. We did so to avoid divergent assumptions about certificate equivalence between native and profiles with an immigration background (see Supplementary Material, S1a and S1b). This means that our fictional applicants were implicitly presented as persons with immigration backgrounds who grew up in their host countries, but it was left open whether they were second-generation immigrants or immigrants who arrived as small children.

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<sup>9</sup> See Figure S2, Supplementary Material, for the distribution of the dependent variable.

Our main variable of interest is ALMP participation, which we varied along the following levels:<sup>10</sup>

- Reference: no ALMP participation (empty)
- Training: applicant is currently participating in a training program for building maintenance that is financed/administered by the local public employment service.
- Subsidy: applicant would be eligible to have 40 percent of his/her salary covered by a wage subsidy paid by the local public employment service for a duration of 6 months.
- Temporary employment program (TEP), mandatory: applicant has been assigned to a government-funded employment program by the local public employment service.
- TEP, voluntary: applicant has decided to participate in a government-funded employment program offered by the local public employment service.

In addition to the experiment, our survey included questions about the characteristics of the firm, respondents' socioeconomic characteristics and positions, and respondents' attitudes towards social protection policies.

### *Estimation strategy*

Because data obtained from FSEs are generally hierarchical (in our case, multiple vignette evaluations are nested within respondents) and because our outcome variable is numeric, we use multilevel linear random intercept regression models to estimate the effects of applicant attributes on vignette evaluations (thereby following methodological convention; see e.g. Auspurg and Hinz 2015).<sup>11</sup>

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<sup>10</sup> See Table S2, Supplementary Material, for the precise wording of the levels.

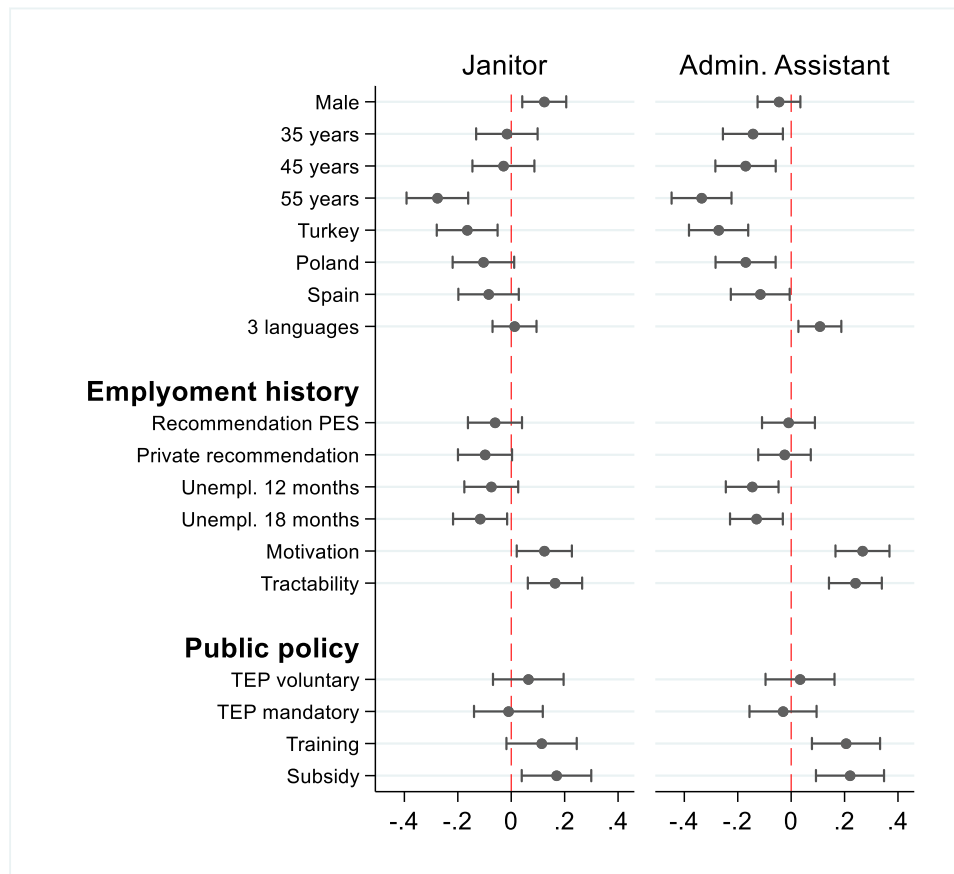
<sup>11</sup> We also estimate fixed effects models, but the results remain unchanged (see Tables S12 and Figures S9-10, Supplementary Material). For additional specifications, see Tables S5-S13 and Figures S3-S10 in the Supplementary Material.

## **Results**

We start by discussing the estimated effects of our vignette attributes for each of the two jobs, which are presented in Figure 1. A first general observation is that the effect estimates of all attributes are overall visibly larger in the case of the administrative assistant than in the case of the janitor. We believe this indicates that employers are more selective when hiring for the former, more critical position, which is in line with our argument.



**Figure 1:** Characteristics influencing employers' hiring preferences (by occupation, all countries)



*Notes:* Estimation based on Table S6, Model 1 (for janitor) and Table S7, Model 1 (for administrative assistant) in the Supplementary Materials. Estimates are coefficients with 95% confidence intervals (controls for country not shown).

Looking at the effects more in detail, we find that men are preferred for the janitor position, while there is no significant effect of gender in the case of the administrative assistant position. Concerning age there is a visible preference for younger over older applicants for both positions. However, only the oldest age group receives significantly lower evaluations in the case of the janitor position, whereas all age groups older than 25 years of are rated significantly lower in the case of the administrative assistant position. Likewise, having an immigration background lowers evaluations for both positions, but most effects are significant only in the case of the administrative

assistant position. Additional language skills are apparently of no relevance for the janitor position, but they improve ratings for the assistant position.<sup>12</sup> For both positions, the chosen job-search channel is of no consequence.<sup>13</sup> In general, referrals by either the public employment service or other former employees do not have a significant effect on employment chances. However, if interacted with nationality, immigrants applying via email rather than being referred are at a disadvantage relative to natives.<sup>14</sup> Longer periods of unemployment are more of an issue for the assistant position than for the janitor position.<sup>15</sup> Similarly, more positive testimonials from previous employers regarding candidates' soft skills help for both positions, but the effects are stronger in the case of the administrative assistant position. Finally, only one of the four ALMPs has an effect in the case of the janitor position, while two out of four have effects in the case of the administrative assistant position.<sup>16</sup>

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<sup>12</sup> We analyze this effect more closely by conditioning it on immigration background and find that Spanish knowledge drives this effect (see Figure S4, Supplementary Material). There are two nonexclusive and plausible interpretations for this finding. First, it could be that Spanish is a more useful language on the labor market in Germany, Sweden, and the UK than Polish or Turkish. Alternatively, it might be that Spaniards encounter less discrimination. Thus, the signal that they speak an additional language is not interpreted as a factor contributing to cultural distance but is interpreted exclusively in terms of human capital (see Figure S4, Supplementary Material).

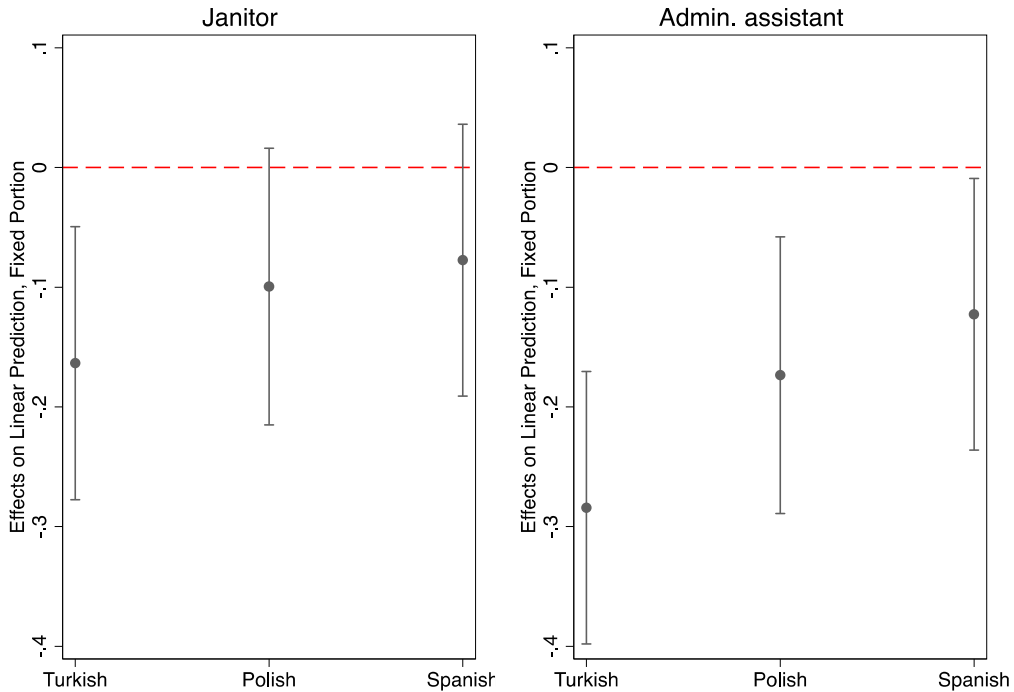
<sup>13</sup> See Table S10, Supplementary Material.

<sup>14</sup> See Figure S6, Supplementary Material.

<sup>15</sup> Additional analyses (not shown) suggest that there is no significant interaction with nationality. In other words, it is not the case that immigrants are discriminated against more when they have been unemployed for longer periods.

<sup>16</sup> Interestingly, as shown in the Supplementary Material in Table S5-S7, applicants were evaluated significantly better on average in Sweden and the UK than in Germany. This might have to do with the higher formalization of the labor market and the importance of diplomas (Rosenbaum, 2004).

**Figure 2:** Ethnic hierarchies: predicted rating of candidates with immigration background by occupation



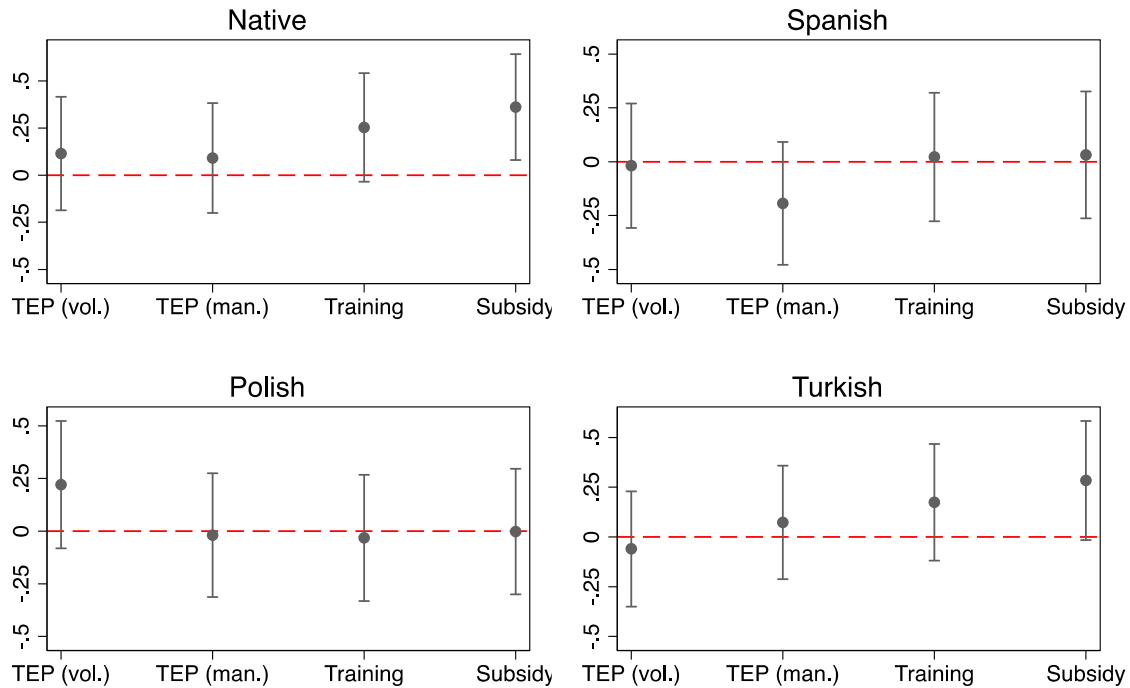
*Note:* reference category is native. Based on Model 1, Table S5 (Supplementary Material).

Our next step is to take a closer look at the effects of having an immigrant background when applying for the two positions. Figure 2 presents the conditional effects of having an immigration background when applying for either of the two positions. What becomes apparent here again is the visibly less pronounced penalty associated with coming from a foreign country when applying for a janitor position than when applying for a position as an administrative assistant (Table S9, Supplementary Material).<sup>17</sup> This finding is in line with our argument and the findings from much

<sup>17</sup> The patterns suggest even that employers' evaluations are informed, if only tacitly, by ethnic hierarchies (Hagendoorn, 1995), but the differences between immigrant groups are not sufficiently precisely estimated to draw firm conclusions.

previous research that employers are less likely to discriminate against or may even prefer workers with immigrant backgrounds for less prestigious and less critical positions.

**Figure 3:** Effect of ALMPs for a position as janitor



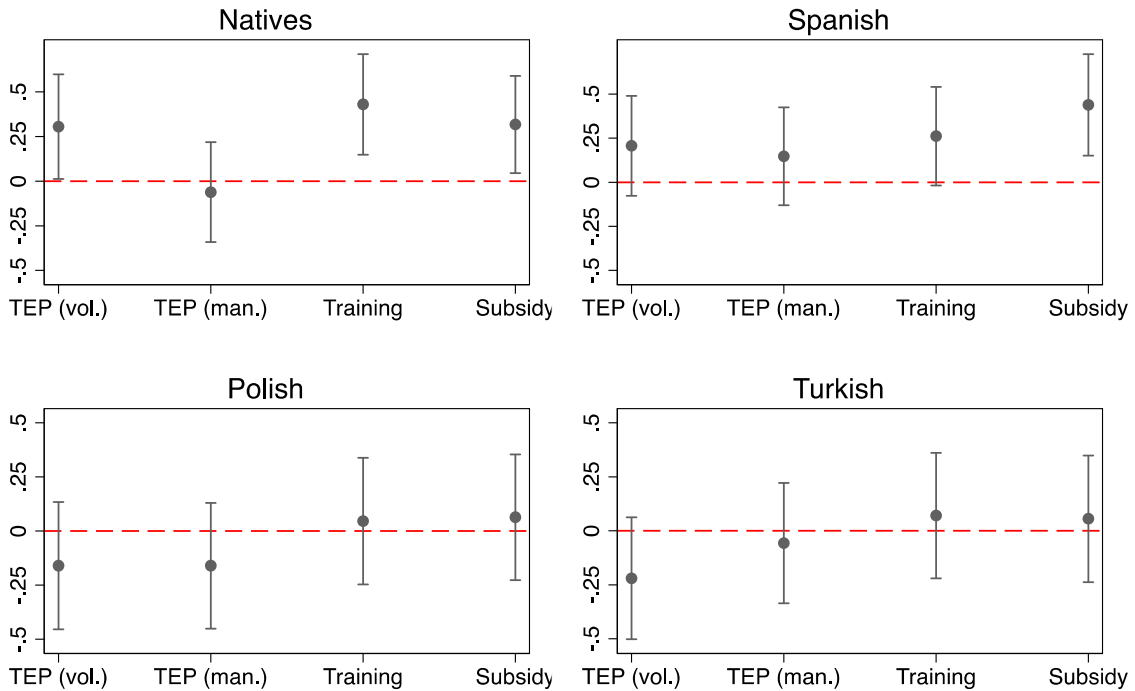
Reference: No ALMP participation

*Note:* Based on Model 2, Table S9 (Supplementary Material).

Having observed that workers with immigration backgrounds are discriminated against when applying for critical positions but not when applying for secondary positions, we analyze whether ALMPs can help them overcome this disadvantage. We present the effects of ALMP participation conditional on immigration background for the two positions in Figures 3 and 4.

It becomes immediately apparent from looking at Figure 3 that ALMPs overall have almost no effect in the case of the janitor position. What we find particularly remarkable is that there is no significant effect of having participated in the labor market training program even though the program is directly related to the position. Similarly, one might think that having voluntarily participated in a public employment program would indicate an applicant's willingness to do work even where this work is not rewarding, but this does not appear to count here either. The only significant effect we find is a positive effect of being eligible for a wage subsidy for natives. We tentatively suggest that this might be because employers see a higher likelihood that natives might not want to keep working as a janitor for a long time, and the subsidy compensates them for the risk of having to recruit again for the position. In general, however, the patterns we see here are consistent with our argument that employers generally do not bother to consider how ALMPs would affect the employability of a particular applicant when hiring for less critical positions such as janitors.

**Figure 4:** Effect of ALMPs for a position as administrative assistant



Reference: No ALMP participation

*Note:* Based on Model 3, Table S9 (Supplementary Material).

The picture is different when looking at the effects of ALMPs for the administrative assistant position (Figure 4). Here, participation in training, wage subsidies and (narrowly) voluntary participation in employment programs makes a difference for natives. Wage subsidies also work for the group that is ethnically closest to natives, workers with a Spanish background (for whom the effect of participation in training also very narrowly fails to reach statistical significance).<sup>18</sup>

<sup>18</sup> Interestingly, different from what Liechti et al. (2017) find, there is no negative signaling effect for natives who participated in ALMPs, particularly employment programs. In other words, even if native candidates participated in such measures, this does not hurt their career prospects, which was found to be the case in the Swiss hotel sector. Our interpretation of this result for the hotel sector is that employers in this sector hire employees to embody and represent their establishment (which is also what the authors learned in qualitative interviews). It is plausible that any profile that deviates from this ideal type, including participation in ALMPs, is considered inappropriate for such a position.

ALMPs make no difference, however, for applicants with Turkish or Polish backgrounds. We interpret the fact that ALMPs have overall more pronounced effects in the case of the administrative assistant position as a sign that employers, when recruiting for this more critical position, pay closer attention to such harder-to-interpret signals. Furthermore, the fact that ALMPs generally do not matter for workers with immigrant backgrounds may be explained by the fact that these workers are seen as generally less employable in these positions and that their profiles are not given sufficient consideration for ALMPs to matter.

## **Conclusion**

ALMPs fail to compensate for the hiring disadvantages experienced by workers with immigrant backgrounds. We identify a mechanism to explain that ALMPS lack effectiveness because employers consider difficult-to-interpret information about applicants such as ALMP participation only when hiring for more critical positions but give less or no consideration to this information when hiring for less important positions. At the same time, discrimination against workers with immigrant backgrounds is more pronounced in recruitment for critical positions (Bonoli and Fossati, 2018). As a result, workers with immigrant backgrounds are excluded from positions where ALMPs matter and are included where ALMPs do not matter.

Our results mirror the findings of two closely related studies, Liechti et al. (2017) and Auer et al. (2019), with one exception, which we discuss here. As we do, both of those studies examine immigrant discrimination in recruitment (in the Swiss hotel sector in their cases) and the effectiveness of ALMPs as tools to counter it. As in this paper, both of those studies find that immigrants face discrimination when applying for higher-status jobs, hotel receptionist jobs in their

studies. Liechti et al. also show that immigrants hardly benefit from ALMP participation, even when applying for lower-status jobs.<sup>19</sup> This is also consistent with our main argument here.

In contrast to us, however, they find that natives' recruitment chances tend to be hurt rather than improved when they have participated in an ALMP, especially when they apply for higher-status positions such as receptionist positions. We believe this finding points to important scope conditions for the effectiveness of ALMPs for native workers. Specifically, we suggest that the lacking effectiveness of ALMPs in their studies stems from the fact that the higher-status position they consider is a hotel receptionist position, which involves frequent customer contact and thus requires an arguably greater degree of independence, eloquence, and presentability than our administrative assistant position. Because having participated in an ALMP is an indirect sign that an applicant might lack precisely these qualifications, ALMP participation turns into a malus. In our study, in contrast, ALMPs can help natives' recruitment chances because the requirements are somewhat less stringent in the case of the administrative assistant position. All this suggests that if we were to study the effectiveness of ALMPs for a wider range of higher-status positions, we might see decreasing effectiveness with increasing requirements in terms of soft skills, even for native workers. However, as mentioned, the patterns for immigrant workers should remain the same.

These results have important implications for policy makers around the globe. If ALMPs are not appreciated by employers for the positions and groups ALMPs were originally developed for, namely, low-skilled employment and workers facing difficulties in labor markets, there is a need to reconsider which types of interventions should be emphasized. We suggest, tentatively at least, that the focus on workers as the main recipients of labor market interventions might be misguided

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<sup>19</sup> In their study, positive effects of ALMPs are limited to the case of lower-skilled workers; when studying immigrants specifically, ALMPs are mostly ineffective.



in many cases if the goal is to foster inclusion and equal treatment and that policymakers might be advised to instead pay more attention to employers and their behavior in recruitment processes. Policies to counteract discrimination are available, although they have their drawbacks as well. Mandating anonymized CVs is worth considering, although it is known that this can have unintended side effects (Behaghel, Crépon, and Le Barbanchon 2015). Affirmative action policies, which may be an alternative approach (e.g. Ibanez and Riener 2018), are politically very controversial.

A more comprehensive and arguably less controversial approach would be to reduce discrimination in labor markets by working towards countering discrimination and stereotyping in the larger society. Social psychologists have, for instance, identified meaningful social contact between different groups in multicultural societies as a promising way to counteract exclusion and discrimination (Green, Sarrasin, and Fasel 2015; Hewstone, Rubin, and Willis 2002).

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## Supplementary Material

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### Experimental protocol

#### D-efficient sample

From the whole vignette universe of 8,100 possible combinations, we draw a d-efficient sub-sample of 220 vignettes per job that minimizes the correlation between the different dimensions in the vignette universe (Auspurg and Hinz, 2015)<sup>20</sup>. The 220 vignettes were divided into 55 blocks of 4 vignettes each that were randomly distributed to respondents. We chose to have 4 vignettes per block because this resulted in eight vignettes per respondent (four for each job), and this is the number of vignettes respondents are usually able to evaluate without fatigue effects (Auspurg and Hinz, 2015).

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<sup>20</sup> A d-efficient design draws a subset of vignettes to be presented to the respondents from the vignette universe, it is a technique appropriate for small samples of respondents. We used the SAS algorithm *mktx* to identify a sub-sample that maximizes the orthogonality of the profiles, thereby also maximizing the statistical power one can obtain from a given number of observations (Auspurg and Hinz, 2015). Drawing a deficient sample (in contrast to a random sample) allows us to specify which effects can be estimated (we specified all main effects and all two-way interactions). Our vignette sample has a d-efficiency of 90.1, which allows to reduce correlations between dimensions to below 0.05.

## Implementation in Qualtrics

**Table S1a:** Job description administrative secretary

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### Rating of candidates

Please, imagine that there is a job opening for the position of **administrative assistant** at the firm you are currently working at and you are involved in the recruitment process.

The position involves the following tasks:

- General secretarial work (correspondence and the keeping of the minutes)
- Organisational tasks (reservation and preparation of meeting rooms)
- Support to the accounts team

On the following screens, you will be presented with four applicants. All candidates **have completed their compulsory education** and have qualification in business (both in the UK). All **have several years of professional experience** on the job and have lost their previous employment position because of the closure of the firm due to an economic downturn.

Please indicate for all four applicants **how likely it is that you would invite them for a job interview**. (1=very unlikely, 10=very likely).

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**Table S1b:** Job description caretaker/janitor

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### Rating of candidates

Please imagine that there is a job opening for the position of **janitor** at the firm you are currently working for and you are involved in the recruitment process.

The position involves the following tasks:

- Organization and execution of maintenance and service work
- Maintenance of the outdoor facilities including green areas
- Simple administrative tasks (e.g. ordering supplies)

On the following screens, you will be presented with four applicants. All candidates have **completed their compulsory education** and are trained as plumbers (both in the UK). All have **several years of professional experience** on the job and have lost their previous position because of the closure of the firm due to an economic downturn.

Please indicate for all four applicants **how likely it is that you would invite them for a job interview**. (1=very unlikely, 10=very likely).

---



**Table S2: Vignette dimension**

<b>Dimension</b>	<b>Level</b>	<b>Wording</b>
<b>Gender</b>	Male	Mr
	Female	Ms
<b>Immigration</b>	Native	[Name]
	Polish	
	Turkish	
	Spanish	
<b>Age</b>	25 35 45 55	is [25] years old and
<b>Language (if possible)</b>	Native	[he/she] speaks English.
	Native + Migration	[he/she] speaks English and [Polish/ Turkish/ Spanish].
<b>Channel</b>	Email	and applies via email to the advertised position.
	PES	and has been recommended to you by an employee of the local Jobcentre Plus.
	Private	and has been recommended to you by an employee of a private employment agency.
<b>Unemployment spell</b>	6 months	[Mr/Ms + Name] has been seeking work for 6 months
	12 months	[Mr/Ms + Name] has been seeking work for 12 months
	18 months	[Mr/Ms + Name] has been seeking work for 18 months
<b>ALMP</b>	Nothing	Reference (empty)
	Training	and is currently participating in a training measure for building maintenance financed/administration by the local Jobcentre Plus
	Wage subsidy	and if employed, 40 per cent of the salary will be covered by a wage subsidy paid by the local Jobcentre Plus for the duration of 6 months
	TEP mandatory	and has been assigned by the local Jobcentre Plus to a government funded employment programme
	TEP voluntary	and has decided to participate in a government funded employment programme offered by the Jobcentre Plus
<b>Soft Skills</b>	Neutral	His former employer describes him as a reliable and polite employee.
	Motivated	His former employer describes him as a reliable and polite employee that has always completed his tasks independently and with great enthusiasm.
	Manageable	His former employer describes him as a reliable and polite employee that has always completed extra tasks without complaint.

<b>D-efficiency =90.3</b>
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**Figure S1: Vignette example (English version)**  
Candidate Administration

- Ms. Ergün is 25 years old and is applying via email to the advertised position. She speaks English.
- Ms. Ergün has been seeking work for 12 months and has decided to participate in a government funded employment programme offered by the Jobcentre Plus.
- Her former employer describes her as a reliable and polite employee that has always completed extra tasks without complaint.

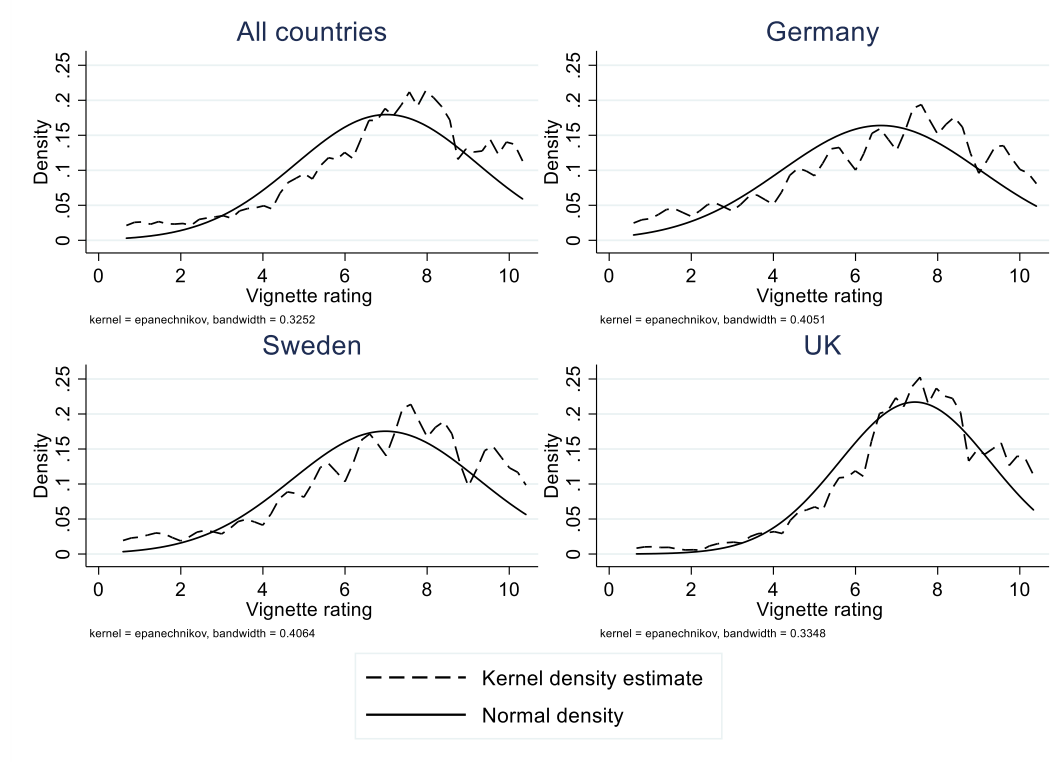
Please indicate **how likely it is that you would invite the candidate for a job interview**. (1=very unlikely, 10=very likely).

	1	2	3	4	5	6	7	8	9	10
Rating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Note:* The vignette for the position as caretaker are the same, only the job description changes.

# Robustness

**Figure S2:** Distribution of dependent variable (employers' ratings)



**Table S3a:** Correlations for vignette dimensions, both jobs

	<b>Gender</b>	<b>Age</b>	<b>Nationality</b>	<b>Language</b>	<b>Channel of application</b>	<b>Unemployment duration</b>	<b>Soft-skills</b>	<b>ALMP</b>
<b>Gender</b>	1							
<b>Age</b>	-0.0213	1						
<b>Nationality</b>	0.0206	0.0198	1					
<b>Language</b>	0.0216	-0.0196	-0.0244	1				
<b>Channel of application</b>	0.0221	-0.0210	0.0136	0.0277	1			
<b>Unemployment duration</b>	-0.0252	-0.0223	0.0104	-0.0108	-0.0043	1		
<b>Soft-skills</b>	-0.0072	-0.0102	-0.0121	0.0280	0.0147	0.0140	1	
<b>ALMP</b>	-0.0113	0.0010	-0.0231	0.0094	-0.0012	0.0252	0.0144	1
N=8784								

**Table S3b:** Correlations for vignette dimensions, Janitor

	<b>Gender</b>	<b>Age</b>	<b>Nationality</b>	<b>Language</b>	<b>Channel of application</b>	<b>Unemployment duration</b>	<b>Soft-skills</b>	<b>ALMP</b>
<b>Gender</b>	1							
<b>Age</b>	-0.0294	1						
<b>Nationality</b>	0.0105	0.0128	1					
<b>Language</b>	0.0278	-0.0199	-0.0294	1				
<b>Channel of application</b>	0.0189	-0.0285	0.0042	0.0138	1			
<b>Unemployment duration</b>	-0.0326	-0.0348	0.0098	-0.0084	0.0021	1		
<b>Soft-skills</b>	-0.0069	-0.0164	-0.0090	0.0373	0.0154	0.0173	1	
<b>ALMP</b>	-0.0187	-0.0012	-0.0241	0.0100	-0.0102	0.0197	0.0177	1
N=4392								

**Table S3c:** Correlations for vignette dimensions, Administrative Assistant

	<b>Gender</b>	<b>Age</b>	<b>Nationality</b>	<b>Language</b>	<b>Channel of application</b>	<b>Unemployment duration</b>	<b>Soft-skills</b>	<b>ALMP</b>
<b>Gender</b>	1							
<b>Age</b>	-0.0131	1						
<b>Nationality</b>	0.0307	0.0267	1					
<b>Language</b>	0.0154	-0.0192	-0.0195	1				
<b>Channel of application</b>	0.0254	-0.0137	0.0230	0.0415	1			
<b>Unemployment duration</b>	-0.0177	-0.0098	0.0110	-0.0132	-0.0107	1		
<b>Soft-skills</b>	-0.0073	-0.0039	-0.0152	0.0188	0.0141	0.0107	1	
<b>ALMP</b>	-0.0039	0.0032	-0.0221	0.0087	0.0077	0.0307	0.0112	1
N=4392								

**Table S4: Respondents' sample**

<b>Variable</b>	
<b>Size</b>	
1-9 employees	11.78
10-49 employees	21.27
50-249 employees <sup>1</sup>	26.69
250-499 employees	12.62
More than 500 employees	27.63
<b>Sector</b>	
Agriculture	2.29
Mining/Energy/Waste	2.92
Production	10.68
Construction	5.94
Wholesale	10.01
Transport	3.44
Information	7.61
Hospitality	4.8
Finance	3.65
Education	5.32
Health and social services	12.30
Other services	5.53
Public administration	3.96
<b>Urban</b>	
Urban	36.91
Suburban	22.52
Middle town	21.38
Rural	12.20

## Additional analyses

**Table S5:** Multilevel lineal model explaining employers' ratings of job applicants, by country.

	(1) All countries		(2) Germany		(3) Sweden		(4) UK	
<i>Female (ref.)</i>								
Male	0.040	(0.030)	0.120*	(0.060)	0.016	(0.049)	-0.020	(0.043)
<i>25 years (ref.)</i>								
35 years	-0.089*	(0.041)	-0.087	(0.084)	-0.177*	(0.069)	0.005	(0.060)
45 years	-0.107*	(0.042)	-0.074	(0.084)	-0.111	(0.070)	-0.126*	(0.061)
55 years	-0.313***	(0.042)	-0.306***	(0.084)	-0.349***	(0.069)	-0.291***	(0.061)
<i>Native background (ref.)</i>								
Turkish background	-0.224***	(0.041)	-0.182*	(0.083)	-0.320***	(0.069)	-0.171**	(0.060)
Polish background	-0.137**	(0.042)	0.009	(0.084)	-0.324***	(0.069)	-0.097	(0.061)
Spanish background	-0.100*	(0.041)	-0.059	(0.083)	-0.181**	(0.068)	-0.068	(0.060)
<i>2 languages (Native + English) (ref.)</i>								
3 languages (Native + English + immigration)	0.055°	(0.030)	0.049	(0.060)	0.051	(0.049)	0.058	(0.043)
<i>Mail application</i>								
PES recommendation	-0.043	(0.036)	-0.000	(0.073)	0.027	(0.061)	-0.150**	(0.053)
Private job centre	-0.067°	(0.036)	-0.106	(0.073)	-0.013	(0.060)	-0.089°	(0.052)
<i>6 months unemployed (ref.)</i>								
12 months unemployed	-0.109**	(0.036)	-0.164*	(0.073)	-0.144*	(0.060)	-0.025	(0.052)
18 months unemployed	-0.124***	(0.036)	-0.203**	(0.073)	-0.114°	(0.060)	-0.061	(0.053)
<i>Polite</i>								
Motivated	0.204***	(0.037)	0.268***	(0.074)	0.211***	(0.061)	0.138**	(0.053)
Tractable	0.224***	(0.036)	0.234**	(0.073)	0.250***	(0.060)	0.206***	(0.053)
<i>No ALMP (ref.)</i>								
TEP voluntary	0.052	(0.047)	0.117	(0.095)	-0.003	(0.078)	0.034	(0.070)
TEP mandatory	-0.020	(0.046)	0.016	(0.094)	-0.082	(0.077)	0.005	(0.067)
Training	0.149**	(0.047)	0.129	(0.095)	0.156*	(0.079)	0.153*	(0.068)

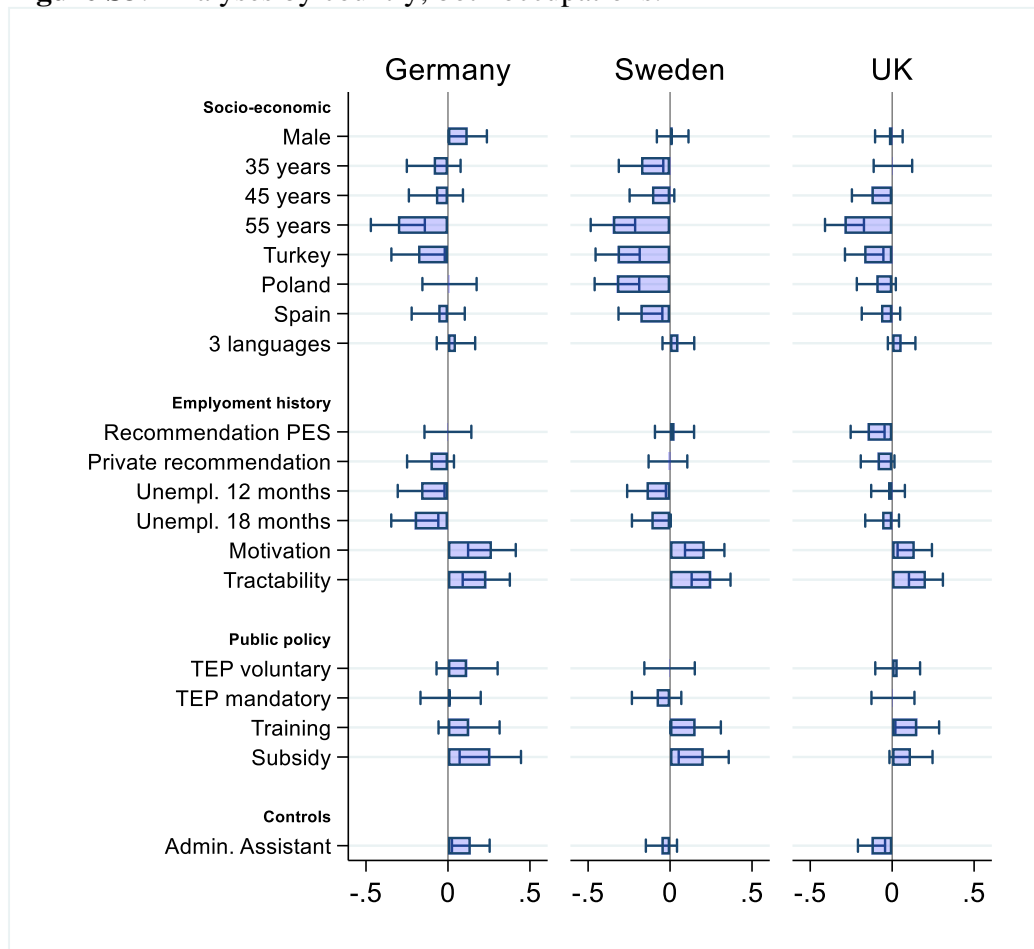
Subsidy	0.188***	(0.047)	0.258**	(0.095)	0.205**	(0.078)	0.115°	(0.067)
<i>Janitor (ref.)</i>								
Admin. position	-0.011	(0.029)	0.139*	(0.059)	-0.053	(0.048)	-0.126**	(0.042)
<i>Germany (ref.)</i>								
Sweden	0.365**	(0.131)						
UK	0.825***	(0.131)						
Constant	6.713***	(0.112)	6.522***	(0.161)	7.209***	(0.146)	7.603***	(0.122)
Var respondent	2.919	(0.134)	3.325	(0.269)	3.411	(0.269)	2.028	(0.162)
Var vignette	1.860	(0.030)	2.534	(0.070)	1.698	(0.047)	1.309	(0.036)
N respondents	1098		368		362		368	
N vignettes	8784		2944		2896		2944	
AIC	33292.788		12034.586		10823.294		10146.839	
BIC	33462.725		12166.312		10954.658		10278.564	
ll	-16622.394		-5995.293		-5389.647		-5051.419	

Standard errors in parentheses

° p<0.1, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001



**Figure S3:** Analyses by country, both occupations.



Note: estimates based on Table S5, Models 2-4.

**Table S6:** Model for janitor position, by country.

	(1) All countries		(2) Germany		(3) Sweden		(4) UK	
<i>Female (ref.)</i>								
Male	0.124**	(0.042)	0.292***	(0.085)	0.070	(0.070)	-0.022	(0.060)
<i>25 years (ref.)</i>								
35 years	-0.016	(0.059)	-0.042	(0.119)	-0.094	(0.098)	0.120	(0.085)
45 years	-0.029	(0.059)	-0.069	(0.120)	0.010	(0.099)	0.013	(0.085)
55 years	-0.277***	(0.059)	-0.300*	(0.120)	-0.297**	(0.097)	-0.223**	(0.085)
<i>Native background (ref.)</i>								
Turkish background	-0.165**	(0.058)	-0.086	(0.118)	-0.239*	(0.096)	-0.176*	(0.084)
Polish background	-0.104°	(0.059)	-0.013	(0.119)	-0.225*	(0.097)	-0.093	(0.085)
Spanish background	-0.085	(0.058)	-0.095	(0.117)	-0.108	(0.095)	-0.054	(0.083)
<i>2 languages (Native + English) (ref.)</i>								
3 languages (Native + English + immigration)	0.012	(0.042)	-0.048	(0.085)	0.042	(0.070)	0.049	(0.061)
<i>Mail application</i>								
PES recommendation	-0.061	(0.052)	-0.131	(0.105)	0.040	(0.086)	-0.066	(0.074)
Private job centre	-0.098°	(0.052)	-0.235*	(0.105)	0.002	(0.085)	-0.071	(0.075)
<i>6 months unemployed (ref.)</i>								
12 months unemployed	-0.075	(0.051)	-0.143	(0.105)	-0.116	(0.086)	0.043	(0.074)
18 months unemployed	-0.117*	(0.052)	-0.193°	(0.105)	-0.144°	(0.086)	-0.004	(0.074)
<i>Polite</i>								
Motivated	0.124*	(0.053)	0.216*	(0.108)	0.089	(0.087)	0.050	(0.075)
Tractable	0.164**	(0.052)	0.109	(0.105)	0.193*	(0.086)	0.189*	(0.075)
<i>No ALMP (ref.)</i>								
TEP voluntary	0.064	(0.067)	0.198	(0.136)	0.089	(0.111)	-0.084	(0.099)
TEP mandatory	-0.011	(0.066)	0.062	(0.134)	-0.109	(0.108)	0.033	(0.096)
Training	0.114°	(0.067)	0.104	(0.137)	0.132	(0.111)	0.115	(0.098)
Subsidy	0.169*	(0.066)	0.294*	(0.136)	0.164	(0.109)	0.075	(0.096)
<i>Germany (ref.)</i>								
Sweden	0.459**	(0.140)						
UK	0.955***	(0.140)						
Constant	6.600***	(0.133)	6.569***	(0.209)	7.111***	(0.180)	7.518***	(0.153)
Var respondent	3.1293	(0.153)	3.739	(0.323)	3.500	(0.291)	2.169	(0.184)
Var vignette	1.834	(0.045)	2.522	(0.107)	1.651	(0.071)	1.264	(0.053)
N respondents	1098		368		362		368	

N vignettes	4392	1472	1448	1472
AIC	17434.196	6293.261	5691.529	5323.730
BIC	17581.109	6404.443	5802.365	5434.912
ll	-8694.098	-3125.630	-2824.764	-2640.865

Standard errors in parentheses

° p<0.1, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001

**Table S7:** Model for administrative assistant, by country.

	(1) All countries		(2) Germany		(3) Sweden		(4) UK	
<i>Female (ref.)</i>								
Male	-0.046	(0.041)	-0.058	(0.081)	-0.045	(0.070)	-0.044	(0.060)
<i>25 years (ref.)</i>								
35 years	-0.143*	(0.057)	-0.071	(0.113)	-0.233*	(0.099)	-0.111	(0.083)
45 years	-0.171**	(0.058)	-0.034	(0.114)	-0.207*	(0.098)	-0.269**	(0.085)
55 years	-0.336***	(0.057)	-0.311**	(0.113)	-0.378***	(0.098)	-0.349***	(0.084)
<i>Native background (ref.)</i>								
Turkish background	-0.272***	(0.057)	-0.248*	(0.111)	-0.395***	(0.097)	-0.180*	(0.083)
Polish background	-0.171**	(0.057)	0.026	(0.114)	-0.433***	(0.098)	-0.113	(0.084)
Spanish background	-0.116*	(0.056)	-0.016	(0.111)	-0.265**	(0.096)	-0.078	(0.083)
<i>2 languages (Native + English) (ref.)</i>								
3 languages (Native + English + immigration)	0.108**	(0.041)	0.160*	(0.081)	0.090	(0.070)	0.081	(0.060)
Mail application								
PES recommendation	-0.010	(0.051)	0.161	(0.099)	0.041	(0.087)	-0.214**	(0.074)
Private job centre	-0.025	(0.050)	0.021	(0.099)	-0.014	(0.086)	-0.087	(0.073)
<i>6 months unemployed (ref.)</i>								
12 months unemployed	-0.146**	(0.050)	-0.174°	(0.099)	-0.182*	(0.086)	-0.080	(0.074)
18 months unemployed	-0.130**	(0.050)	-0.207*	(0.100)	-0.091	(0.086)	-0.096	(0.074)
Polite								
Motivated	0.267***	(0.052)	0.299**	(0.101)	0.297***	(0.088)	0.223**	(0.076)
Tractable	0.241***	(0.050)	0.306**	(0.100)	0.245**	(0.086)	0.193**	(0.074)
<i>No ALMP (ref.)</i>								
TEP voluntary	0.033	(0.066)	0.077	(0.130)	-0.088	(0.112)	0.097	(0.098)
TEP mandatory	-0.030	(0.064)	-0.005	(0.127)	-0.053	(0.111)	-0.040	(0.093)
Training	0.205**	(0.065)	0.207	(0.128)	0.205°	(0.113)	0.196*	(0.094)
Subsidy	0.220***	(0.065)	0.263*	(0.131)	0.244*	(0.112)	0.156°	(0.093)
<i>Germany (ref.)</i>								
Sweden	0.270*	(0.134)						
UK	0.696***	(0.133)						
Constant	6.802***	(0.127)	6.554***	(0.194)	7.246***	(0.179)	7.571***	
Var respondent	2.835	(0.140)	3.145	(0.274)	3.393	(0.284)	1.982	(0.170)
Var vignette	1.744	(0.043)	2.257	(0.096)	1.675	(0.071)	1.246	(0.053)
N respondents	1098		368		362		368	

N vignettes	4392	1472	1448	1472
AIC	17166.307	6110.494	5697.595	5278.037
BIC	17313.220	6221.676	5808.432	5389.219
ll	-8560.153	-3034.247	-2827.798	-2618.019

**Table S8:** Interaction language and nationality, all occupations, and all countries.

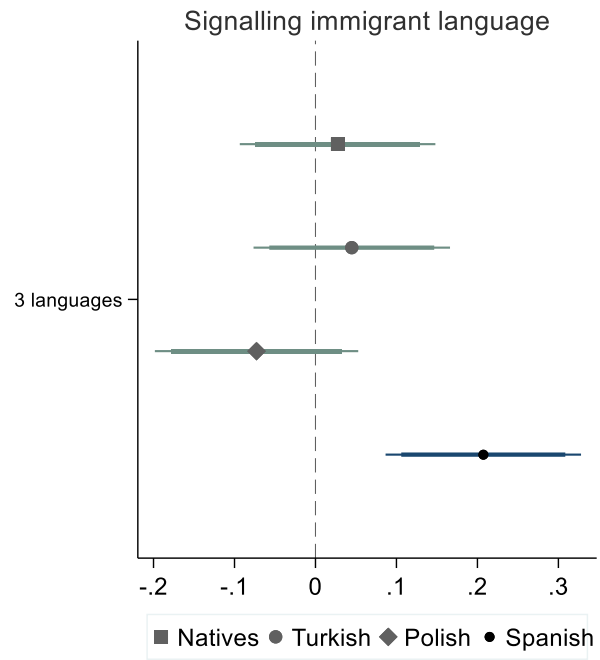
<b>Model 1</b>		
<i>Female (ref.)</i>		
Male	0.039	(0.030)
<i>25 years (ref.)</i>		
35 years	-0.090*	(0.041)
45 years	-0.105*	(0.042)
55 years	-0.315***	(0.042)
<i>Native background</i>		
<i>(ref.)</i>		
Turkish background	-0.235***	(0.061)
Polish background	-0.091	(0.061)
Spanish background	-0.191**	(0.061)
<i>2 languages (Native + English) (ref.)</i>		
3 languages (Native + English + immigration)	0.027	(0.062)
<i>Mail application</i>		
PES recommendation	-0.046	(0.036)
Private job centre	-0.070°	(0.036)
<i>6 months unemployed</i>		
<i>(ref.)</i>		
12 months unemployed	-0.111**	(0.036)
18 months unemployed	-0.128***	(0.036)
<i>Polite</i>		
Motivated	0.203***	(0.037)
Tractable	0.224***	(0.036)
<i>No ALMP (ref.)</i>		
TEP voluntary	0.058	(0.047)
TEP mandatory	-0.019	(0.046)
Training	0.154**	(0.047)
Subsidy	0.189***	(0.047)
<i>Janitor (ref.)</i>		
Admin. Assistant	-0.011	(0.029)
<i>Interactions</i>		
3 lang # 2. Turkish	0.018	(0.089)
3 lang # 3. Polish	-0.100	(0.089)
3 lang # 4. Spanish	0.180*	(0.089)
<i>Germany (ref.)</i>		
Sweden	0.365**	(0.131)

UK	0.827***	(0.131)
Constant	6.730***	(0.116)
Var respondent	2.919	(0.134)
Var vignette	1.858	(0.030)
N respondents	1098	
N vignettes	8784	
AIC	33288.927	
BIC	33480.106	
ll	-16617.464	

Standard errors in parentheses

° p<0.1, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001

**Figure S4:** Contrasts of predicted ratings for the interaction of nationality and languages, all countries.



*Note:* based on Table S8, Model 1.



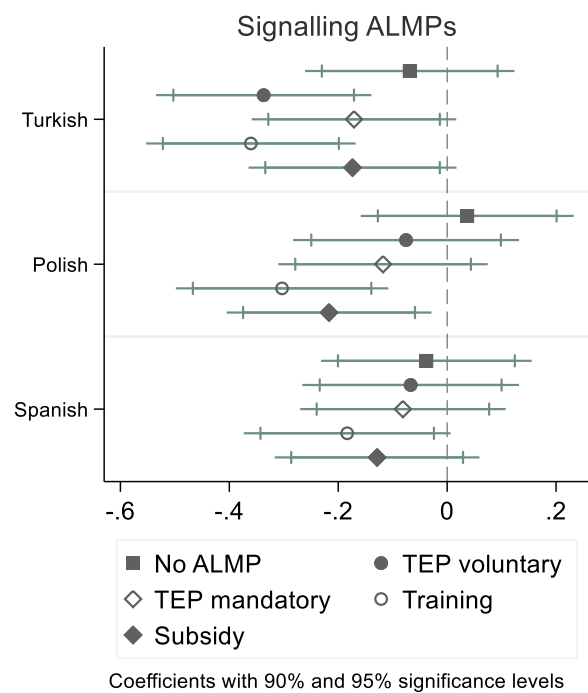
**Table S9:** Interaction ALMP and nationality, all occupations, and all countries.

	Model 1 Both occupations		Model 2 Janitor		Model 3 Admin. Assistant	
<i>Female (ref.)</i>						
Male	0.041	(0.030)	0.132**	(0.042)	-0.056	(0.041)
<i>25 years (ref.)</i>						
35 years	-0.095*	(0.042)	-0.018	(0.059)	-0.154**	(0.058)
45 years	-0.102*	(0.042)	-0.029	(0.060)	-0.169**	(0.058)
55 years	-0.312***	(0.042)	-0.269***	(0.059)	-0.344***	(0.057)
<i>Native background (ref.)</i>						
Turkish background	-0.069	(0.098)	-0.087	(0.149)	-0.052	(0.145)
Polish background	0.037	(0.100)	0.034	(0.151)	0.065	(0.147)
Spanish background	-0.038	(0.099)	0.118	(0.149)	-0.132	(0.143)
<i>2 languages (Native + English) (ref.)</i>						
3 languages (Native + English + immigration)	0.055°	(0.030)	0.019	(0.042)	0.104*	(0.041)
<i>Mail application</i>						
PES recommendation	-0.045	(0.036)	-0.059	(0.052)	-0.015	(0.051)
Private job centre	-0.062°	(0.036)	-0.096°	(0.052)	-0.015	(0.050)
<i>6 months unemployed (ref.)</i>						
12 months unemployed	-0.109**	(0.036)	-0.079	(0.052)	-0.146**	(0.051)
18 months unemployed	-0.127***	(0.036)	-0.128*	(0.052)	-0.123*	(0.051)
<i>Polite</i>						
Motivated	0.207***	(0.037)	0.119*	(0.053)	0.280***	(0.052)
Tractable	0.222***	(0.036)	0.164**	(0.052)	0.233***	(0.051)
<i>No ALMP (ref.)</i>						
TEP voluntary	0.155	(0.102)	0.115	(0.154)	0.305*	(0.149)
TEP mandatory	0.054	(0.098)	0.091	(0.149)	-0.062	(0.143)
Training	0.339***	(0.097)	0.253°	(0.147)	0.430**	(0.144)
Subsidy	0.300**	(0.095)	0.361*	(0.144)	0.317*	(0.139)
<i>Janitor (ref.)</i>						
Admin. Assistant	-0.011	(0.029)				
<i>Interactions</i>						
Turkish # TEP voluntary	-0.268°	(0.142)	-0.175	(0.217)	-0.525*	(0.211)
Turkish # TEP mandatory	-0.102	(0.139)	-0.018	(0.214)	0.004	(0.207)
Turkish # training	-0.292*	(0.142)	-0.079	(0.222)	-0.360°	(0.217)
Turkish # subsidy	-0.105	(0.140)	-0.077	(0.214)	-0.262	(0.209)
Polish # TEP voluntary	-0.112	(0.148)	0.106	(0.228)	-0.465*	(0.221)

Polish # TEP mandatory	-0.155	(0.142)	-0.110	(0.218)	-0.099	(0.212)
Polish # training	-0.340*	(0.143)	-0.285	(0.218)	-0.384°	(0.212)
Polish # subsidy	-0.254°	(0.141)	-0.363°	(0.217)	-0.254	(0.210)
Spanish # TEP voluntary	-0.029	(0.144)	-0.133	(0.219)	-0.099	(0.214)
Spanish # TEP mandatory	-0.043	(0.141)	-0.284	(0.215)	0.209	(0.207)
Spanish # training	-0.145	(0.140)	-0.231	(0.217)	-0.169	(0.208)
Spanish # subsidy	-0.090	(0.140)	-0.329	(0.214)	0.121	(0.208)
<i>Germany (ref.)</i>						
Sweden	0.367**	(0.131)	0.462***	(0.140)	0.266*	(0.134)
UK	0.826***	(0.131)	0.962***	(0.140)	0.687***	(0.133)
Constant	6.614***	(0.126)	6.491***	(0.160)	6.706***	(0.152)
Var respondent	2.9187	(0.134)	3.131	(0.154)	2.8297	(0.140)
Var vignette	1.858	(0.030)	1.828	(0.045)	1.7381	(0.043)
N respondents	1098		1098		1098	
N vignettes	8784		4392		4392	
AIC	33304.408		17445.943		17176.058	
BIC	33559.312		17669.507		17399.622	
ll	-16616.204		-8687.972		-8553.029	

Standard errors in parentheses, ° p<0.1, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001.

**Figure S5:** Contrasts of predicted ratings for the interaction between ALMPs and nationality, all countries.



Note: estimates based on Table S9, Model 1.

**Table S10:** Interaction application channel and nationality, all occupations and all countries.

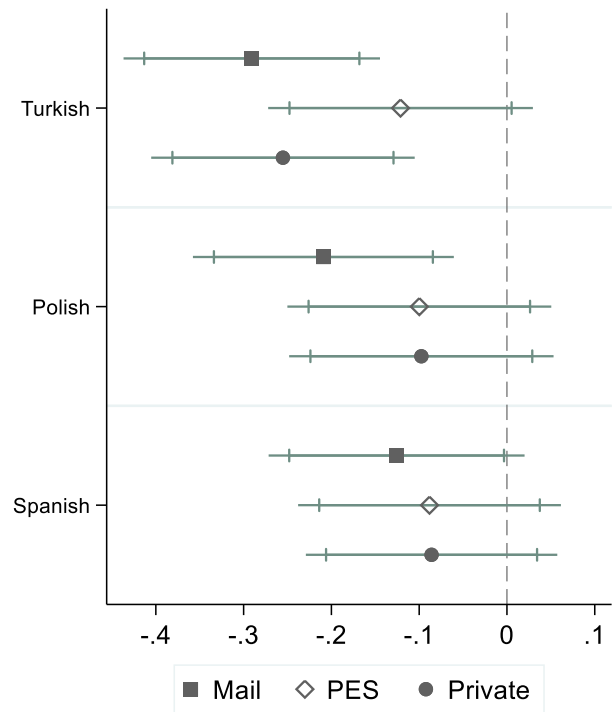
<b>Model 1</b>		
<i>Female (ref.)</i>		
Male	0.041	(0.030)
<i>25 years (ref.)</i>		
35 years	-0.089*	(0.042)
45 years	-0.108**	(0.042)
55 years	-0.311***	(0.042)
<i>Native background (ref.)</i>		
Turkish background	-0.291***	(0.075)
Polish background	-0.209**	(0.076)
Spanish background	-0.126°	(0.074)
<i>2 languages (Native + English) (ref.)</i>		
3 languages (Native + English + immigration)	0.057°	(0.030)
<i>Mail application</i>		
PES recommendation	-0.121	(0.076)
Private job centre	-0.112	(0.075)
<i>6 months unemployed (ref.)</i>		
12 months unemployed	-0.107**	(0.036)
18 months unemployed	-0.125***	(0.036)
<i>Polite</i>		
Motivated	0.207***	(0.037)
Tractable	0.225***	(0.036)
<i>No ALMP (ref.)</i>		
TEP voluntary	0.051	(0.048)
TEP mandatory	-0.023	(0.046)
Training	0.146**	(0.047)
Subsidy	0.186***	(0.047)
<i>Janitor (ref.)</i>		
Admin	-0.010	(0.029)
<i>Interactions</i>		
Turkish # PES	0.169	(0.110)
Turkish # Private	0.036	(0.111)
Polish # PES	0.109	(0.111)
Polish # Private	0.112	(0.110)
Spanish # PES	0.037	(0.109)
Spanish # Private	0.040	(0.107)

Sweden	0.365**	(0.131)
UK	0.825***	(0.131)
Constant	6.752***	(0.119)
Var. respondent	2.918	(0.134)
Var. vignette	1.860	(0.030)
N respondent	1098	
N vignettes	8784	
AIC	33300.658	
BIC	33513.078	
ll	-16620.329	

Standard errors in parentheses

° p<0.1, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001

**Figure S6:** Contrasts of predicted ratings for the interaction between PES and nationality, all countries.



**Table 11:** Interaction soft-skills and nationality, all occupations, and all countries.

<b>Model 1</b>		
<i>Female (ref.)</i>		
Male	0.035	(0.030)
<i>25 years (ref.)</i>		
35 years	-0.086*	(0.042)
45 years	-0.113**	(0.042)
55 years	-0.316***	(0.042)
<i>Native background (ref.)</i>		
Turkish background	-0.166*	(0.077)
Polish background	-0.202**	(0.076)
Spanish background	-0.083	(0.078)
<i>2 languages (Native + English) (ref.)</i>		
3 languages (Native + English + immigration)	0.055°	(0.030)
<i>Mail application</i>		
PES recommendation	-0.042	(0.036)
Private job centre	-0.063°	(0.036)
<i>6 months unemployed (ref.)</i>		
12 months unemployed	-0.109**	(0.036)
18 months unemployed	-0.124***	(0.036)
<i>Polite</i>		
Motivated	0.151°	(0.077)
Tractable	0.275***	(0.075)
<i>No ALMP (ref.)</i>		
TEP voluntary	0.042	(0.048)
TEP mandatory	-0.019	(0.046)
Training	0.143**	(0.047)
Subsidy	0.185***	(0.047)
<i>Janitor (ref.)</i>		
Admin	-0.012	(0.029)
<i>Interactions</i>		
Turkish # motivation	-0.004	(0.111)
Turkish # tractability	-0.159	(0.108)
Polish # motivation	0.221*	(0.110)
Polish # tractability	-0.010	(0.111)
Spanish # motivation	0.002	(0.110)
Spanish # tractability	-0.047	(0.110)
Sweden	0.364**	(0.131)
UK	0.824***	(0.131)

Constant	6.718***	(0.119)
Var. respondent	2.920	(0.135)
Var. vignettes	1.858 ***	(0.030)
N respondents	1098	
N vignettes	8784	
AIC	33295.100	
BIC	33507.520	
ll	-16617.550	

Standard errors in parentheses

° p<0.1, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001



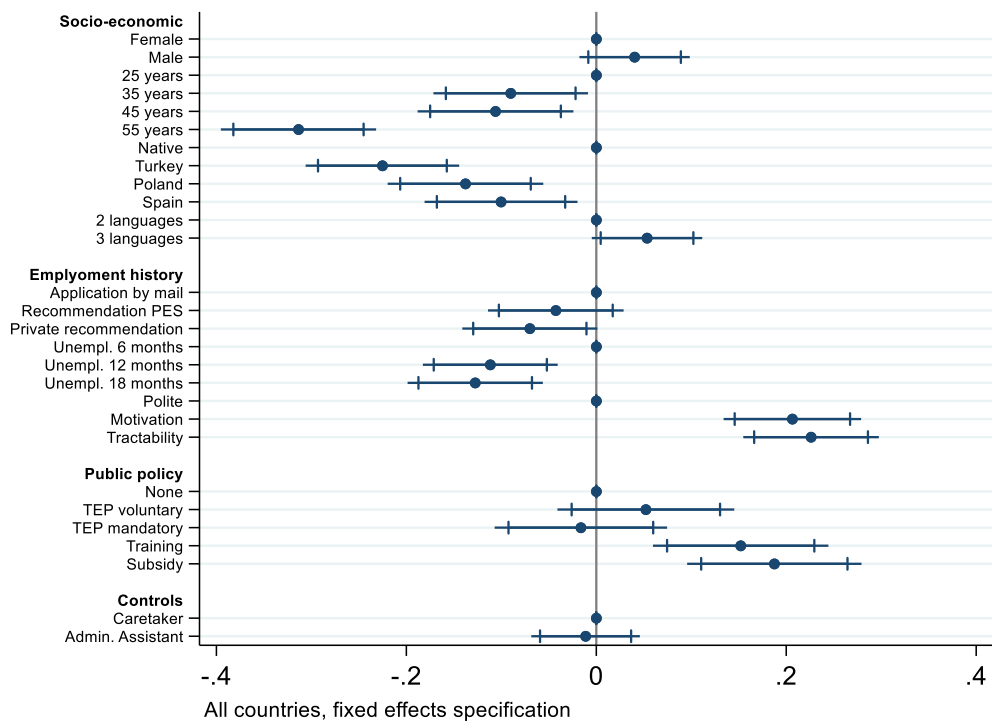
**Table S12:** Fixed effects specifications, by country.

	(1) All countries		(2) Germany		(3) Sweden		(4) UK	
<i>Female (ref.)</i>								
Male	0.040	(0.030)	0.125*	(0.060)	0.013	(0.049)	-0.019	(0.043)
<i>25 years (ref.)</i>								
35 years	-0.090*	(0.042)	-0.087	(0.084)	-0.179*	(0.070)	0.002	(0.060)
45 years	-0.106*	(0.042)	-0.072	(0.085)	-0.112	(0.070)	-0.124*	(0.061)
55 years	-0.314***	(0.042)	-0.306***	(0.084)	-0.348***	(0.069)	-0.293***	(0.061)
<i>Native background (ref.)</i>								
Turkish background	-0.225***	(0.041)	-0.184*	(0.083)	-0.322***	(0.069)	-0.171**	(0.060)
Polish background	-0.138***	(0.042)	0.006	(0.085)	-0.324***	(0.070)	-0.098	(0.061)
Spanish background	-0.100*	(0.041)	-0.061	(0.083)	-0.182**	(0.068)	-0.067	(0.060)
<i>2 languages (Native + English) (ref.)</i>								
3 languages (Native + English + immigration)	0.053°	(0.030)	0.045	(0.060)	0.053	(0.050)	0.055	(0.043)
<i>Mail application</i>								
PES recommendation	-0.043	(0.036)	-0.000	(0.073)	0.027	(0.061)	-0.149**	(0.053)
Private job centre	-0.070°	(0.036)	-0.110	(0.073)	-0.018	(0.061)	-0.090°	(0.053)
<i>6 months unemployed (ref.)</i>								
12 months unemployed	-0.112**	(0.036)	-0.168*	(0.073)	-0.147*	(0.061)	-0.026	(0.053)
18 months unemployed	-0.127***	(0.036)	-0.205**	(0.074)	-0.116°	(0.061)	-0.066	(0.053)
<i>Polite</i>								
Motivated	0.206***	(0.037)	0.267***	(0.075)	0.216***	(0.062)	0.139**	(0.054)
Tractable	0.226***	(0.036)	0.237**	(0.074)	0.253***	(0.061)	0.207***	(0.053)
<i>No ALMP (ref.)</i>								
TEP. voluntary	0.052	(0.047)	0.114	(0.096)	-0.002	(0.079)	0.036	(0.070)
TEP mandatory	-0.016	(0.046)	0.020	(0.094)	-0.076	(0.077)	0.007	(0.067)
Training	0.152**	(0.047)	0.131	(0.096)	0.163*	(0.079)	0.152*	(0.068)
Subsidy	0.187***	(0.047)	0.257**	(0.096)	0.204**	(0.078)	0.117°	(0.067)
<i>Janitor (ref.)</i>								
Admin	-0.011	(0.029)	0.139*	(0.059)	-0.053	(0.049)	-0.126**	(0.042)
Constant	7.111***	(0.066)	6.525***	(0.131)	7.208***	(0.110)	7.605***	(0.097)

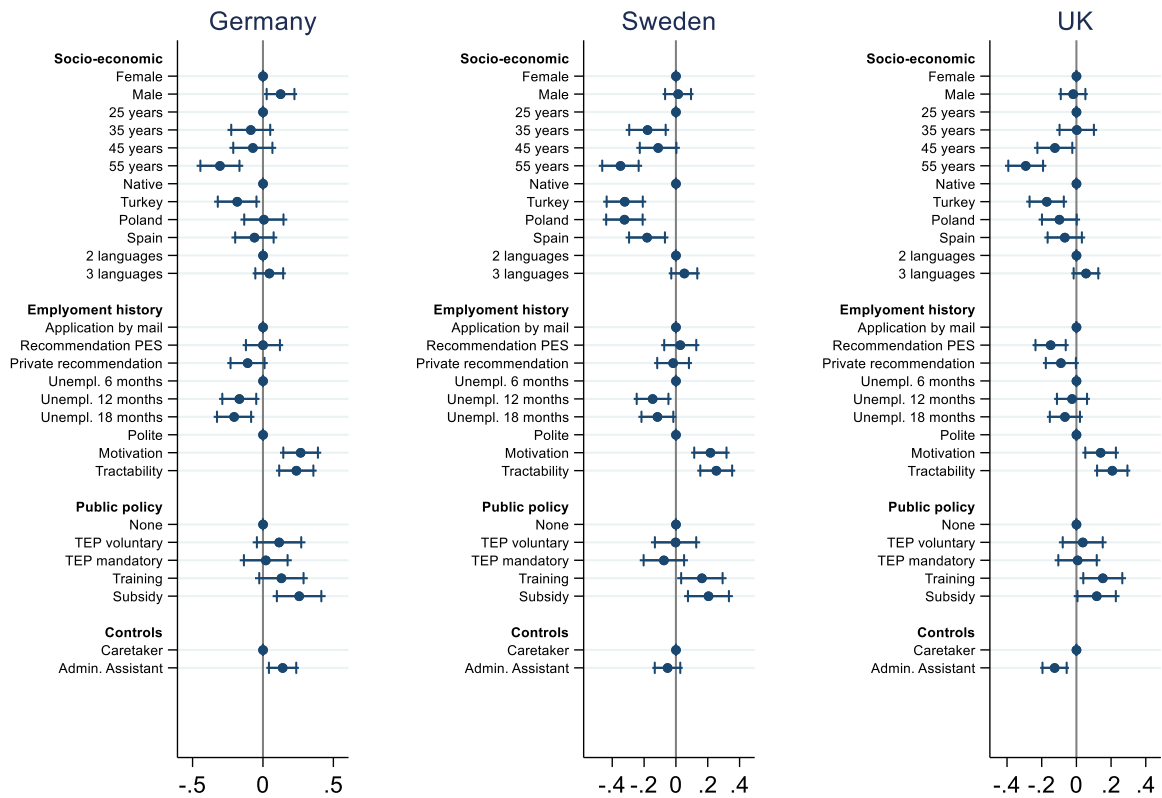
N respondents	1098	368	362	368
N vignettes	8784	2944	2896	2944
AIC	29249.982	10738.706	9405.400	8794.783
BIC	29391.595	10858.456	9524.821	8914.533
ll	-14604.991	-5349.353	-4682.700	-4377.391

Standard errors in parentheses, ° p<0.1, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001.

**Figure S9:** Fixed effects specification both occupations, all countries.



**Figure S10:** Fixed effects specification both occupations, by country.



Fixed effects specification