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Organizational Context of Ethnic Discrimination. Results From a Cross- National Factorial Survey Experiment

Authors: Dominik Buttler, Vegar Bjørnshagen, Marta Palczyńska,
Mateusz Smoter, Christian Imdorf

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**European Labour Markets Under Pressure –
New knowledge on pathways to include persons
in vulnerable situations**

Title: Organizational Context of Ethnic Discrimination. Results From a Cross-National Factorial Survey Experiment

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Author(s): Dominik Buttler, Vegar Bjørnshagen, Marta Palczyńska, Mateusz Smoter, Christian Imdorf

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Introduction

The recent migration crisis, driven by conflicts and economic instability in regions such as the Middle East, Africa, and more recently Ukraine, has led to an increased movement of people into Europe. Labour market integration of immigrants remains one of the most pressing challenges for European countries. While immigrants can help address labour shortages, particularly in aging economies, they often face significant barriers to employment, including language difficulties, non-recognition of qualifications and employer discrimination. Numerous field experiments have shown that hiring discrimination against ethnic minorities and applicants with immigrant backgrounds is widespread (Quillian & Midtbøen, 2021; Lippens et al., 2023a). Across a wide range of countries, occupations, and ethnic groups, studies find that applicants with ethnic minority and immigrant backgrounds face substantially lower hiring chances than the majority population (Quillian & Midtbøen, 2021).

While meta-analyses conclude that the magnitude of discrimination has changed little over the past decades (Quillian and Lee, 2023; Quillian et al., 2017, Lippens et al., 2023a), its prevalence varies across countries, occupations, and firms (e.g., Quillian et al., 2019; Zschirnt & Ruedin, 2016; Di Stasio & Lancee, 2020; Lippens et al., 2023b; Baert et al., 2015). However, despite the longstanding call to recognize the importance of the organizational context in generating and sustaining inequalities (e.g., Baron and Bielby, 1980), it has received limited attention in experimental research on discrimination (Deros and Ryan, 2019; Lancee, 2021).

Previous research has, for example, documented substantial variation in racial discrimination in hiring between large employers in the US (Kline et al., 2022), and investigated whether discrimination varies by organizational characteristics, such as firm size and sector. Overall, these studies suggest that public or not-for-profit organizations (Lippens et al., 2023b; Midtbøen, 2016; Cahuc et al., 2019) and organizations with a large workforce (Lippens et al., 2023b; Carlsson & Rooth, 2007; Banerjee et al., 2018) discriminate less. Yet, the organizational factors potentially underlying these patterns remain empirically unaddressed. An exception is Midtbøen (2015), who found that ethnic discrimination was lower in companies with a higher degree of formalisation in hiring procedures, based on interviews with employers observed in a field experiment.

In this study, we contribute to the existing body of discrimination research by directing attention to the contextual nature of discrimination and focus on how different organizational settings affect employers' hiring decisions. We test a set of pre-registered hypotheses about organizational moderators of ethnic discrimination in hiring using data from a cross-nationally harmonized factorial survey experiment (FSE) conducted in Germany, Norway, Poland and Romania. In the factorial survey, we present a series of hypothetical applicants to individuals with recruitment experience. The participants then rate how likely it is that the applicants would be employed at the organizations they recruit for. In addition, we asked the participants a range of questions about their organizations' characteristics, including hiring practices, diversity management practices and job characteristics. By randomly varying the applicants' nationality, we can test hiring discrimination directly, as well as its interplay with different organizational characteristics.

The study contributes to the literature on the various factors that shape discrimination and ethnic inequality in the labour market by combining causal evidence on discrimination with

direct measures of organizational policies and practices. Correspondence studies, in which the ethnic background of fictitious applicants is randomly assigned to job applications and sent to real job vacancies, offer strong evidence on discrimination but limited insight into its mechanisms (Gaddis, 2018). While these studies can collect additional data from job ads or other sources, they seldom have direct information on organizations' policies and practices.

Conversely, studies based on rich survey data about organizations' policies and practices, linked with administrative data, provide valuable insights into the effects on workplace diversity (Dobbin and Kalev, 2022). However, observational studies are unsuited to distinguish whether observed outcomes are due to supply side processes, such as job search strategies, demand-side behaviour such as discrimination, or a combination of both. By conducting a factorial survey experiment, which combines the advantages of survey and experimental research, we can investigate the organizational moderators of ethnic discrimination and disentangle their effects. The focus on organisational characteristics rather than on individual ones has major policy implications as implementation of policies at the organisational level is more realistic than policies aiming to change individuals' stereotypes and prejudice.

2. Theoretical framework and hypotheses

Prominent theories of discrimination emphasize employers' motives to discriminate, rooted in individual motivations or psychological biases (Quillian and Midtbøen, 2019). In economics, for example, taste-based and statistical discrimination theory respectively suggest that employers discriminate due to prejudice against minority groups (Becker, 1957), or because they lack information about the productivity of applicants and thus use group characteristics to inform their decisions (Arrow, 1973; Phelps, 1972). In sociology and social psychology, explanations for discrimination have to a greater extent focused on the impact of biased stereotypes and implicit attitudes (Small and Pager, 2020; Pager and Shepherd, 2008).

Beyond the motives behind employers' discriminatory behaviour, scholars have long argued that discrimination is more than an individual-level, psychological process (Reskin, 2003). In this study, we draw on theory and research that highlights the idea that organizations shape discrimination as the organizational context defines employers' "opportunity structure for discrimination" (Petersen & Saporta, 2004). This literature directs attention to organizations as the sites where discrimination occurs, as they mediate the biases of employers while also being affected by external pressures from broader economic and legal frameworks (Baron & Bielby, 1980; Pager and Shepherd, 2008; Stainback et al., 2010). Building on this literature, this section presents our expectations about the interplay between organizational characteristics and hiring discrimination based on national origin.

Recruitment practices

The first organizational features we consider concern the recruitment process, as organizations' screening and evaluation practices are likely to have implications for discrimination.¹ First, the amount of information organizations acquire about applicants is likely to affect the likelihood of (statistical) discrimination in the hiring process. Statistical discrimination theory posits that discrimination is a product of employers' uncertainty about the future productivity of minority applicants (Arrow 1973; Phelps 1972). The uncertainty arises from the limited information about candidates, and the costs of obtaining such information. Under these conditions, employers will statistically discriminate due to using group-level information as a proxy for the productivity of individual job applicants. Conversely, the theory predicts that employers who acquire more information about candidates will rely less on group characteristics to assess their productivity and thus be less likely to discriminate (Guryan and Charles 2013). Similarly, earlier work suggests that limited information increases biased decision-making (Reskin, 2000) and that employers' opportunities to discriminate are reduced when employment-relevant information is available (Petersen and Saporta, 2004). Thus, in organizations that incur greater costs by acquiring and assessing more sources of information about candidates, we expect employers to be less likely to statistically discriminate.

Hypothesis 1: Discrimination based on national origin is less likely in organisations that use more sources of information (signals) about candidates.

The second factor is the degree to which hiring practices are formalised, which affects how employers evaluate applicants and their opportunity to use an applicant's group characteristics as a source of information during the hiring process (Midtbøen, 2015; Reskin, 2000). Classical sociological assumptions about bureaucratic neutrality indicate that formalised personnel practices limit discrimination by ensuring that staffing decisions are made based on formal qualifications (Weber, 1978). According to organizational and social-psychological research, formalised recruitment and screening practices (e.g., pre-defined, job-relevant evaluation criteria and documentation of the process) curtail discrimination by limiting the influence of discretion and stereotypes on employers' hiring decisions (Bielby, 2008; Dobbin et al., 2015; Reskin, 2000), or simply because information about discriminatory practices can more easily be collected and documented, thus increasing transparency (Petersen and Saporta, 2004). An alternative mechanism, suggested by Lippens et al. (2023b), is that recruiters in organizations with formalised hiring practices adopt the associated norms (e.g., equal opportunity and decision-making based on formal criteria), resulting in less discrimination (see Wolgast et al., 2017).

Hypothesis 2: Discrimination based on national origin is less likely in organisations with more formalised recruitment processes (documented, with clear recruitment criteria, with little individual discretion about who should be hired).

¹ We have preregistered each of the hypotheses. In the preregistration, we specified more hypotheses than those tested in this article. The focus of this article is on the hypotheses that concern organizational moderators of discrimination based on national origin. This included a hypothesis about recruitment channels, which we decided not to include as the adopted methodology did not permit its verification. The remaining hypotheses in the preregistration will be tested in separate papers.

The third factor related to organisations' recruitment practices is whether hiring decisions are based on collective or individual decision-making. Theories of status beliefs and prejudice predict that the presence of others is likely to reduce individuals' probability of acting in discriminatory ways (Derous and Ryan, 2019). For example, contemporary theories of prejudice suggest that individuals may be externally motivated to act without prejudice when others are present to comply with nonprejudiced social norms and to avoid disapproval from others (Plant & Devine, 1998; 2009). Moreover, research on the construction of status beliefs has found that when an individual rejects dominant belief about competence differences between groups, they may direct the group away from such cognitive biases (Ridgeway and Correll, 2006). Another related argument is that the presence of others will affect individual behaviour by creating a culture of accountability, whereby more supportive participants put normative pressure on their more resistant counterparts (Correll, 2017). Thus, when hiring decisions are made collectively, and the individuals involved must justify their assessments to each other, ethnic discrimination may be less likely to occur.

Hypothesis 3: Discrimination based on national origin is less likely in organisations with more developed recruitment panels/boards.

Diversity policies and training opportunities

Employers have increasingly adopted policies to foster diversity, equity and inclusion, and to reduce discrimination (Dobbin, 2009; Dobbin and Kalev, 2022). Yet, correspondence studies have found racial discrimination occurs even among employers that explicitly declare their commitment to diversity (Kang et al., 2016), and scholars have questioned whether organisations' diversity efforts are mere "window-dressing" (Edelman, 1992). Other studies suggest that certain organisational diversity efforts may have a positive effect on the employment of minority workers (Kalev et al., 2006). More specifically, Dobbin et al. (2015) argue that organisations are more likely to achieve diversity goals if they assign managerial responsibility for achieving such goals, and ensure that diversity efforts are monitored, which is assumed to activate accountability among decision makers (see also Bielby 2000; Castilla, 2015). Accordingly, their findings suggest that having a diversity manager increases managerial diversity as well as the effect of other diversity programs (see also Kalev et al. 2006). These findings are consistent with social psychological theory and research on accountability indicating that when decision makers know that they will be held accountable for making fair decisions, bias is less likely to occur. Based on this research, we expect that in organisations that promote diversity, and where mechanisms that trigger accountability are in place, employers will adjust to organisational norms and be less likely to reject immigrant applicants.

Hypothesis 4: Discrimination based on national origin is less likely in organisations with developed diversity aims that are subject to monitoring (i.e., internal reporting, employing person(s) responsible for diversity, inclusion, equality).²

Beyond setting diversity goals and institutionalizing responsibility to ensure oversight, a variety of organisational-level diversity programs have been developed (Dobbin and Kalev, 2022; Yang

² We have modified the pre-registered hypothesis to state "diversity aims" rather than "diversity policies" and specify that the diversity aims are subject to monitoring. The modification is consistent with the literature and our measurements, which specify internal reporting and monitoring of diversity-related aims (see Section 3).

and Konrad, 2011). Existing scholarship suggests that some of the most popular diversity programs (e.g., diversity training) have limited efficacy, whereas other measures, particularly those enhancing accountability (e.g., diversity manager, diversity committees) and that engage managers in promoting diversity (e.g., diversity management training), are associated with increased workplace diversity (Kalev et al., 2006; Dobbin et al., 2015). These studies also indicate that organisations may succeed in increasing diversity by ensuring that employees, regardless of their group characteristics, have access to mentoring that can help them achieve their career goals.

Organisations may also take more active steps to hire and support immigrant workers in particular, for instance by introducing measures that help with language or administrative or legal issues. As above, we expect employers in organisations that have adopted such diversity and support measures to adjust to organisational norms and expectations and be less likely to engage in ethnic discrimination.

Hypothesis 5: Discrimination based on national origin is less likely in organisations that implement diversity policy measures (offering training schemes focused on diversity management, adopting specific hiring practices that account for diversity and equity, establishing formal groups to address diversity-related tasks, providing mentoring or buddy programs accessible to a wide range of employees, offering support systems for immigrant workers).

The availability of training opportunities may also influence discrimination. Many organisations may provide training primarily to boost productivity and invest in human capital rather than to address pre-labour market disadvantages and equalise opportunities (Kalev, 2009). However, in organisations where training is made available to all employees, discrimination might be less likely to occur. More specifically, training provides workers with the skills needed to perform their jobs and advance in their careers, which may mitigate discrimination that is due to employers' uncertainty about immigrants' productivity and skills. Training reduces any (perceived) immigrant-native skill or productivity gaps; hence, employers' concerns about hiring applicants with an immigrant background should be lower in organisations where immigrants are more likely to receive training (Banerjee et al., 2018).

Hypothesis 6: Discrimination based on national origin is less likely in organisations that offer more opportunities for professional development.

We also explore the interrelationships among the organisational characteristics mentioned above, although we do not formulate respective hypotheses. Prior studies report lower levels of discrimination in larger and public-sector organisations, and we expect that this is because size and ownership structure are linked to the features hypothesized to reduce discriminatory practices (e.g., Banerjee et al., 2018; Cahuc et al., 2019; Carlsson & Rooth, 2007; Midtbøen, 2016; Zschirnt & Ruedin, 2016). In the same vein, earlier work suggests correlations between setting diversity-oriented goals and various organisational features, including adjustments of personnel strategies, such as broader recruitment, more rigorous screening, and a greater emphasis on formal evaluations (Holzer & Neumark, 2000).

Intra- and extra-organisational contact

Previous research has highlighted the significance of extra- and intra-organisational contact—that is, contact with customers and other employees—for discrimination (Andriessen et al.,

2012; Becker, 1957; Fernandez-Reino et al., 2023; Lippens et al., 2023b; Weichselbaumer, 2017).³ Based on this literature, we expect more severe discrimination for positions that require a high level of interaction with customers or with other employees. There are two underlying explanations for these predictions. First, the theory of taste-based discrimination suggests that employers discriminate due to the perceived preferences of employees or customers (Becker, 1957). This means that even unprejudiced employers may engage in ethnic discrimination if they anticipate that their customers or employees have a preference against interacting with them.

Next, a relationship between intra-organisational contact and discrimination may also be driven by hiring decisions based on person-organisation fit (Reskin, 2000), while extra-organisational contact may moderate discrimination due to person-job fit. First, research shows that hiring decisions are influenced by whether recruiters think candidates will fit in and get on with other people in the organisation (e.g., Rivera, 2012; Coverdill and Finlay, 1998; Tholen, 2023). Organisational fit evaluations are often based on the candidate's perceived similarity to the existing workforce. Consequently, selection based on compatibility between candidates and the organisation may lead to the exclusion of various social groups, including immigrant job applicants (Horverak et al., 2013). We expect that this mechanism is stronger for positions that entail more contact with co-workers, where factors such as ease of interaction and a cohesive environment are likely considered as more important.

Similarly, employers may have concerns about immigrants' lack of competencies necessary for effective communication, such as knowledge of cultural context and confidence in interpersonal interactions. We expect such person-job fit considerations to be greater for jobs that involve more interaction with customers, and thus greater levels of discrimination, than for jobs that entail less extra-organisational contact.

Hypothesis 7a: Discrimination based on national origin is less likely in the case of jobs requiring less interaction with customers.⁴

Hypothesis 7b: Discrimination based on national origin is less likely in the case of jobs requiring less interaction with other employees.

Gendered nationality-based discrimination

Finally, we include an individual-level hypothesis about gendered ethnic discrimination. Based on existing theoretical and empirical work, we expect more severe ethnic discrimination against men than women (e.g., Bursell et al., 2014; Dahl & Krogh, 2018; Fossati et al., 2024; see also Di Stasio & Larsen, 2020). The subordinate male target hypothesis states that minority men are perceived as more threatening to the dominant group and will therefore be the main targets of discrimination (Sidanius and Pratto, 1999). An alternative explanation for why men may experience greater levels of ethnic discrimination is evidence indicating that ethnic, racial, and nationality-based stereotypes are more focused on the traits of men rather than those of

³ The level of customer contact has mainly been considered as an occupational- or job-level characteristic. Since the task composition of occupational categories may be organized differently across organizations, it could also be considered an organizational factor.

⁴ Hypotheses 7a-b were preregistered as a single hypothesis. However, since discrimination due to intra- and extra-organisational contact constitute somewhat different mechanisms, we separate it into two separate hypotheses.

women (Eagly and Kite 1987; Ridgeway and Kricheli-Katz 2013). Consequently, minority women may more easily avoid being associated with negative stereotypes.

Hypothesis 8: Discrimination based on national origin is more likely to affect male candidates.

3. Data and methods

In order to examine organisational moderators of discrimination in the hiring process, we conducted a factorial survey experiment (FSE) among individuals with recruitment experience in four European countries (Germany, Norway, Poland, and Romania). We deliberately chose this method rather than correspondence tests. While correspondence studies tend to be less biased when assessing discrimination, they are difficult to integrate with questionnaires which limits their capacity to capture organisational-level factors. Moreover, FSEs present several methodological strengths. Firstly, unlike standard single-item survey questions, they are less prone to social desirability responding (SDR)⁵ bias making them useful for examining sensitive issues such as discrimination. Secondly, when carefully constructed, the dimensions of the vignettes are orthogonal, which increases statistical power and allows for clearer identification of causal effects that are often confounded in observational data (Auspurg & Hinz, 2015, p. 25). Thirdly, the approach permits complete control over the information presented to participants, thereby minimising bias arising from unobserved characteristics.

That said, FSEs are not without shortcomings. First, the method is critiqued for capturing respondents' intentions rather than their actual behaviours, and these may not always align. Second, because the decision-making process is set in a hypothetical framework with no tangible consequences, it may lack psychological realism (Forster & Neugebauer, 2024, pp. 888–889). These limitations can introduce biases stemming from SDR and insufficient effort responding (IER). SDR could lead to an underestimation of the level of discrimination. IER, on the other hand, may affect the validity of results due to inattentive or careless responses. Despite these concerns, a substantial body of research has demonstrated strong consistency between findings from FSEs and field experimental methods (Hainmueller et al., 2015; Petzold & Wolbring, 2019).⁶

3.1. Experimental Design

In the FSE, participants were asked to assess fictitious job applicants depicted through vignettes. The vignettes included information that is usually included in written applications.⁷ The list of dimensions (variables) and their levels (values) is presented in Table 1. The levels of the dimensions varied randomly across vignettes.

⁵ Socially desirable responding is the tendency of respondents to answer questions in a manner that will be viewed favourably by others, rather than responding truthfully.

⁶ Although a recent critique has emphasised limitations in FSEs when applied to hiring discrimination (Forster & Neugebauer, 2024), it has itself been criticised for methodological inconsistencies (Pickett, 2025).

⁷ The exception is parenthood and partnership status. We assumed that such personal details are often disclosed informally during the selection process. The broader scope of the research project included an examination of discrimination based on caregiving responsibilities, which explains the inclusion of parenthood and partnership variables, even though they are not analysed in this paper.

Table 1. Dimensions and Their Levels Used in the Vignettes

Dimensions	Levels
Dim1: referrals	1. you received the application directly from the candidate 2. the candidate was recommended by one of the employees
Dim2: gender	1. woman 2. man
Dim3: nationality	1. host country [German; Norwegian; Polish; Romanian] 2. host country ⁸ [German; Norwegian; Polish; Romanian] 3. Ukrainian 4. other country [Syrian (in NO and DE); Belarusian (in PL); Nepalese (in RO)]
Dim4: country where the candidate graduated	1. host country 2. home country
Dim5: level of host country language	1. proficient level (C2) 2. upper intermediate level (B2)
Dim6: partnership status	1. the candidate lives with a partner/spouse and 2. the candidate lives alone
Dim7: parenthood status	1. the candidate raises a preschool-aged child 2. the candidate has no children
Dim8: candidate's experience	1. two years in the host country in a similar position 2. two years in the host country not related to the job applied for

The key variable of interest is the candidates' nationality. We examine hiring discrimination against two migrant groups in each country—Ukrainians and a second group, which varies by country. All countries in the study host a substantial number of Ukrainian refugees.⁹ Compared with each country's total population, Poland has one of the highest shares of Ukrainian refugees in the EU, followed by Germany and Norway, with levels above the EU average, and Romania at the EU average (Eurostat, 2025b).

Aside from Ukrainians, we also examine against other migrant groups: Syrians in Germany and Norway, Nepalese in Romania, and Belarusians in Poland.¹⁰ Except for Belarusians in Poland, these groups are culturally more distinct from the local populations than Ukrainians. They are also the biggest non-European migrant groups in these countries. In Poland, we decided to investigate Belarusians for two reasons: first, they are the second-largest minority in the country, which increases the economic relevance of our study. Second, Poles' attitudes toward Belarusians are predominantly negative and differ from their attitudes toward Ukrainians due to the political situation (CBOS 2023, 2024). This makes it interesting to examine whether we observe higher discrimination against a group perceived more negatively, despite the two minorities being culturally and linguistically very similar.

⁸ To approximate the actual applicant pools and to increase psychological realism, the number of native applicants was doubled. Technically, this was achieved by assigning two values indicating natives to the 'country of origin' variable.

⁹ There were 1 126 000 of Ukrainian refugees in Germany, 987 000 in Poland, 78 000 in Norway, and 178 000 in Romania as of 31 December 2024 (Eurostat, 2025a).

¹⁰ There are over 130 000 Belarusians in Poland, over 970 000 Syrians in Germany, almost 40 000 Syrians in Norway and almost 19 000 Nepalese in Romania.

The migrant groups in the study have various legal statuses; some are officially recognized as refugees, and some are economic migrants, depending on country of origin and time of arrival. In our study, we do not distinguish between economic migrants and refugees. To avoid differing assumptions about the bureaucratic challenges of hiring these workers and uncertainties regarding their ability to remain in the country, we informed participants that all applicants have a residence and work permit allowing them to be employed.

To more precisely estimate the effect of nationality, the vignette included variables that are both correlated with nationality and strongly influence hiring likelihood. In addition to language skills, we included the country of graduation, as the transferability of foreign qualifications has been shown to be limited (Damelang et al., 2019, 2020). We also controlled for employee referrals, since foreign job candidates often have reduced access to referral networks (McDonald, 2011). Finally, we included an experience variable, assigning all job candidates two years of professional experience in the host country. This signals that the immigrant candidates have, to some extent, integrated into both the labour market and the broader society.

Alongside the randomly manipulated dimensions, each vignette included several fixed attributes. The candidates were described as having an education level and English language skills suitable for the position they were applying for in the given country. Age was standardised based on the average age at graduation for each education level plus two years, resulting in candidates aged either 22 or 25. In order to emphasise the nationality of job candidates, we also included information on their mother tongue corresponding to their country of origin. To control for the possible influence of labour market conditions, respondents were informed that the hypothetical job advertisement had received a sufficient number of applications.

Respondents were given the option to assess candidates applying for one of the following occupations: ICT technician, office clerk, secretary, bookkeeping clerk, or sales worker.¹¹ The selection of these occupations was guided by three criteria. First, since the study examined organisational-level determinants of hiring discrimination, the chosen occupations ensured a high level of organisational diversity. The chosen occupations are found across various industries, regardless of company size or ownership structure which also increased the likelihood that the recruiters to be contacted actually had experience in recruiting for these professions. Second, the study focused on medium-skilled occupations, where discrimination is more likely than in low-skilled jobs (Auer et al., 2023; Hermansen et al., 2025). Finally, only non-licensed occupations were selected to eliminate regulatory influences on candidate evaluations. An example vignette is shown in Figure A1 in Appendix A.

The dimensions listed in Table 1 resulted in 512 potential vignette combinations. Two implausible combinations were excluded, namely those in which native candidates had either low native language proficiency ($\text{Dim3} \leq 2$ & $\text{Dim5} = 2$) or educational qualifications from countries corresponding to the immigrant group (Syria, Nepal, Belarus; Ukraine) ($\text{Dim3} \leq 2$ & $\text{Dim4} = 2$). To manage the large number of potential combinations, a subset of vignettes was selected using the SAS %Mktex macro (Auspurg & Hinz, 2015, pp. 3–32; Kuhfeld, 2010, pp. 243–265). This procedure enables the selection of a reduced set of vignettes while retaining essential statistical properties such as orthogonality and balance. The experimental design allowed for estimation of all main effects and two-way interactions, except those involving the excluded

¹¹ When more than one occupation was selected, the system assigned one in a way that promoted an even distribution of evaluated occupations.

combinations. The final set included 144 vignettes, as further additions offered minimal improvement in D-efficiency ($D = 86.46\%$). These were divided into 24 sets (decks), each containing six vignettes presented in random order. The decks were randomly assigned to respondents. All vignette dimensions, except for those involving excluded combinations (Dim3 $\times$ Dim4 and Dim3 $\times$ Dim5), were uncorrelated with each other, as well as with the variables indicating the deck number and the vignette order within the deck, indicating that the randomisation process was successful (see Table A1 in Appendix A).

3.2. Survey Organisation and Sample Selection

The main research, preceded by a pilot study, was conducted in four countries between November 2024 and March 2025, using respondent panels from various providers, including Cint, Dynata, Norstat, and Daisycon. The fieldwork and data collection, including access to panels, were carried out by GfK Polonia. Given that the respondents were relatively difficult to reach, efforts were undertaken, where feasible, to enlarge the sample. This was possible in Germany, where additional data were collected using email addresses of managers and recruiters obtained from the consulting company Dun & Bradstreet and the HR managers' association (BPM).

The study targeted individuals with direct experience in employee recruitment, such as managers, business owners, external recruitment professionals, and HR specialists. Two levels of respondents screening were employed. Initially, a pre-selection within the panels targeted adults (18 years or more) currently working in recruitment-related roles. Subsequently, the survey applied three additional screening questions: (1) respondents had to select "Hiring of employees" as one of their professional responsibilities in a multiple choice question about main fields of professional activity; (2) they needed to select at least one of the five occupations included in the study (as described above) for which they felt qualified to assess candidates; and (3) they were required to refer to a specific organisation they currently or previously recruited for and felt able to describe. Respondents failing to meet any of these criteria were excluded.

Data quality assurance was based on four criteria: IP address verification, browser and device information, response time patterns, and answering patterns in the screener question. Out of 3,070 completed surveys (including vignette evaluations), 2,087 respondents (67.98%) passed the quality control filters. The detailed information about the quality control procedure is presented in Table B1 in Appendix B.

Prior to data collection, the study's hypotheses, method, and proposed analytical approach were preregistered at the Open Science Framework: https://osf.io/z3paf/?view_only=d635849ac66147a79bfea982441f0da3

3.3. Operationalisation of Variables

Our main outcome of interest – the likelihood of employment – was derived from the following question used to evaluate the candidates:

How likely is it that this person would be employed given the needs and characteristics of your organisation / the organisation you recruit for? (0 – very unlikely; 10 – very likely)

We also measured a second outcome: a perceived likelihood that a candidate would be invited for a job interview. As the two response variables are correlated, the analysis focuses on the

employment likelihood rating, which exhibits a less skewed distribution. The job interview invitation outcome is analysed as a robustness check (see Section 6).

The FSE was incorporated into a survey questionnaire that collected background information on the respondents and the organisations for which they worked. Table 2 provides a detailed overview of how the organisational variables were defined and measured for the purpose of testing the hypotheses, along with references to the specific survey items used (see questionnaire in the Deliverable 3.1).

Table 2. Hypotheses and Key Variable Measurement Summary

Hypotheses	Operationalisation of Variables
H1: sources of information	Scale: number (sum) of various information sources used in the recruitment process (e.g., announcements at the unemployment office, job ads on social media); z-standardised; Q4 [<i>rchuef-rchoth</i>]
H2: recruitment formalisation	Scale: mean of three 5-point Likert scale items measuring: whether the recruitment process is documented, whether recruitment criteria are clearly defined, and whether recruiters can bypass formal criteria (reverse-coded); DK/hard to say = missing; z-standardised; Q7–Q9 [<i>recrdoc, recrcrit, recrdisc</i>]
H3: recruitment panel	Dummy: 1 – only one person involved in the recruitment process for the selected occupation within the organisation; 0 – otherwise; DK/hard to say = missing; Q5 [<i>rcper1</i>]
H4: diversity policy aims	Dummy: 1 – the organisation has ethnic diversity goals that are monitored and reported AND employs a diversity manager; 0 – otherwise (including DK/hard to say ¹²); Q19 [<i>divmng</i>], Q21 [<i>divact2</i>]
H5: diversity policy measures	Scale: number (sum) of existing diversity-oriented measures implemented in the organisation: training scheme(s) focused on diversity management, hiring practices that take account of diversity/equity, formal group(s) dealing with diversity-related tasks, mentoring or buddy programmes accessible to a wide range of employees; comprehensive support for foreign employees in many areas available; z-standardised; Q22 [<i>divmes1-divmes4</i>], Q23 [<i>divsupport</i>]
H6: development opportunities	Dummy: 1 – the organisation offers extensive opportunities for professional development for the applied position (strongly agree, agree); 0 – strongly disagree, disagree, neither disagree or agree; DK/hard to say = missing; Q10 [<i>posdev</i>]
H7a: interactions with customers	Dummy: 1 – [in the position applied for] at least half of the working time is spent talking about job-related matters with persons outside the organisation (e.g., customers, suppliers); 0 – less than half; DK/hard to say = missing; Q12 [<i>posout</i>]
H7b: interactions with co-workers	Dummy: 1 – [in the position applied for] at least half of the working time is spent discussing job-related matters with co-workers; 0 – less than half; DK/hard to say = missing; Q11 [<i>posinter</i>]

¹² In most cases, the 'DK/hard to say' answer was coded as a missing value. In this case, however, it was coded as 0, based on the assumption that a lack of knowledge about diversity-oriented aims in the organisation indicates that such a policy either does not exist or plays only a marginal role.

3.4. Descriptive Statistics

After removing cases with missing values on the dependent or independent variables (see Table 2), the estimation sample consisted of 1,752 respondents who evaluated a total of 10,512 vignettes (6 per person). Table A2a in Appendix A confirms the designed uniform distribution of vignette variables. The skewed distribution of two variables (education, language level) was caused by the exclusion of two unlikely combinations of vignettes' values (see Section 3.1). The characteristics of the respondents listed in Table A2c indicate a predominance of men, individuals with higher education, those in senior management roles but still relatively young (aged 30-39). More than 20 percent felt that they belong to a non-native ethnic group (including those who were not sure about it).

Table A2b presents a comprehensive summary of organisational characteristics, with composite indicators displayed in their original form, prior to any aggregation or standardization. The sample of organisations consists mostly of small and medium private firms with a significant share of public organisations and entities exceeding 1000 employees, located mostly in large cities. Almost half of the organisations operated internationally (having a branch or headquarter abroad). The organisations applied on average 6 types of recruitment tools to acquire knowledge about candidates' competences. The most common information sources were CVs, job interviews, educational and former employers' references, and certificates. A majority of respondents indicated that their organisations had formal procedures in place, including documentation of the recruitment process and clearly defined evaluation criteria. However, despite these formal structures, many respondents also acknowledged that the ultimate hiring decision lay with managers, who had the discretion to bypass the established criteria. The most commonly used diversity policy measures were diversity-oriented hiring practices and mentoring programmes. About a quarter of all organisations did not implement any policies of this kind and almost one third used all of them. The majority of organisations (nearly 60 percent) implemented some kind of support system for immigrant workers (assisting them with dealing with e.g., legal, administrative, housing issues). A vast majority of firms offered good development opportunities to the employees.

4. Empirical strategy

In the empirical analysis, we follow a four-step estimation approach. In each step we apply a two-level random intercept linear model nesting vignettes within individuals using the pooled sample including all four countries. In the first step we examine the relationship between the dependent variable (log-transformed likelihood of hiring) and the vignette attributes. The findings from this initial step serve as the basis for exploring how organisational-level factors moderate discrimination. In the second step, we add organisational-level factors and their interactions with candidates' nationality to the model.¹³ The model is specified as follows:

$$Y_{ij} = \beta_0 + \beta_1 Nat_{ij} + Org_j \beta_2 + Nat_{ij} Org_j \beta_3 + Vign_{ij} \beta_4 + Ind_j \beta_5 + Other_j \beta_6 + Country \beta_7 + u_j + \epsilon_{ij}(1)$$

¹³ In the model specification, we do not differentiate between respondent and organisation levels because the anonymity of the data collection process prevented us from identifying instances where multiple respondents came from the same organization. Nevertheless, we believe such instances are likely uncommon.

where:

- Y_{ij} : natural logarithm of likelihood (0-10) that a candidate would be employed in the organisation for a given position
- Nat_{ij} : candidates' nationality: native, Ukrainian, other (Syrian, Belarusian, or Nepalese depending on the country)
- $Vign_{ij}$: set of remaining vignette variables as presented in Table 1 and vignette order control
- Org_j : respondents' firm/organisation characteristics: variables as described in Table 2 as well as company size and ownership status (private, public or mixed)
- Ind_j : respondents' characteristics: age, gender, whether belonging to non-native national minority, tertiary education degree, position in the organisation¹⁴
- $Other_j$: other control variables: location of the firm/organisation (size of the city/town), whether firm has branches or a headquarter abroad, occupation evaluated (ICT technician, office clerk, secretary, bookkeeping clerk, sales worker), sample source
- $Country$: country fixed effects (Germany, Norway, Poland, Romania)
- u_j, ϵ_{ij} : error terms at individual/organisational and vignette levels respectively

A negative coefficient of the nationality variable indicates that employers are less likely to employ immigrant candidates and is thus interpreted as ethnic discrimination. The interactions between nationality variable (Nat_{ij}) and organisational characteristics (Org_j) allow us to test the hypotheses on the moderating effects of the organisational context. More specifically, a negative coefficient of the interaction term indicates that a given organisational characteristic increases the strength of discrimination, while a positive coefficient suggests that it weakens it. To better understand the interdependencies among organisational-level variables, we adopt a stepwise introduction of the independent variables.

In the third step, we re-estimate the model described by Equation (1) expanding the aggregated variable that proxies for diversity policy measures to investigate which specific policies are most effective in reducing ethnic discrimination. In the final step, we conduct an analysis of gender differences.

5. Results

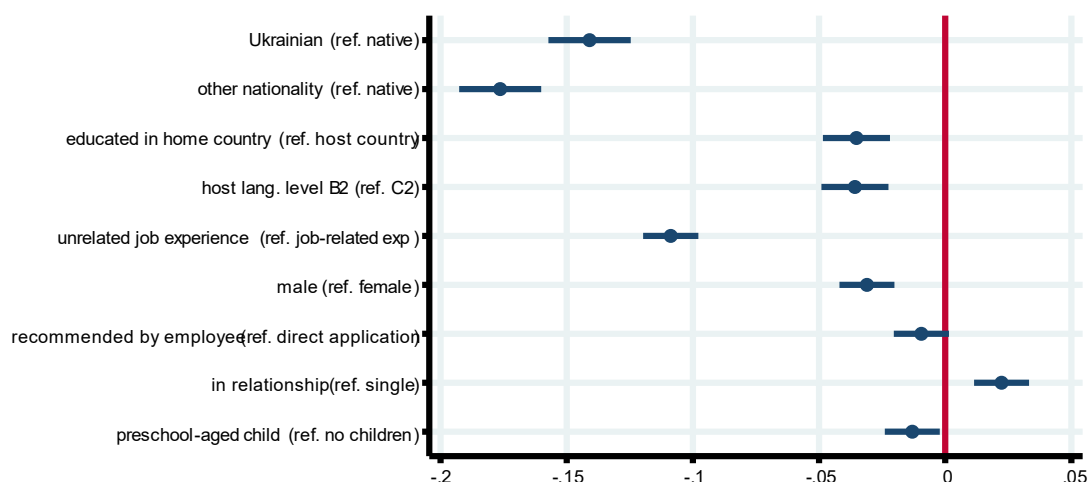
5.1. Nationality-Based Discrimination

Figure 1 shows the effects of vignette dimensions on hiring probability. Nationality has the strongest effect on hiring likelihood. As indicated in other research (Lippens et al., 2023a), the national origin of immigrant candidates influences the degree of discrimination: applicants from more culturally distant countries have lower chances of being hired than Ukrainians. Their hiring chances are evaluated as more than 17 percent lower compared to natives, while Ukrainians experience a reduction of 14 percent. The ethnic discrimination is present across all the countries analysed (see Table A3 in Appendix A).

¹⁴ The detailed description of control variables' categories is presented in Tables A2b and A2c.

Consistent with other studies, our results also indicate that immigrant workers are penalised for having foreign educational credentials (Damelang et al., 2019) as well as for lower language skills. The lower hiring chances of males likely reflect the fact that, among the occupations the hypothetical candidates applied for, female-dominated ones slightly prevailed.

Figure 1. Determinants of Hiring



Note: Coefficients of two-level linear random intercept models (vignette variables only). All countries pooled. Dep. Variable: natural log of employment likelihood. N=10,512

5.2. Organisational Characteristics Moderating Nationality-Based Discrimination

In the first part of this section, we test the hypotheses concerning the organisational characteristics that moderate nationality-based discrimination in hiring. In the second part, we complement this with a more exploratory analysis of the interrelationships between organisational moderators of discrimination.

The estimation results are presented in Table 3. Model 6 is the full model described in Equation (1) which tests the hypotheses discussed in the theoretical section. Models 1-5 add the proxies for organisational features stepwise.

Table 3. Organisational Moderators of Nationality-Based Discrimination

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Ukrainian	-0.141*** (0.010)	-0.145*** (0.011)	-0.165*** (0.013)	-0.187*** (0.021)	-0.150*** (0.023)	-0.139*** (0.023)
other nationality	-0.176*** (0.010)	-0.187*** (0.011)	-0.223*** (0.013)	-0.269*** (0.021)	-0.224*** (0.023)	-0.212*** (0.023)
company size		-0.020* (0.011)	-0.024** (0.011)	-0.026** (0.011)	-0.027** (0.011)	-0.027** (0.011)
Ukrainian # size		0.011 (0.008)	0.006 (0.008)	0.000 (0.008)	-0.001 (0.008)	-0.001 (0.008)
other nationality # size		0.017** (0.008)	0.007 (0.008)	0.001 (0.008)	-0.001 (0.008)	-0.001 (0.008)
company ownership (public, ref. private)		0.011 (0.023)	0.004 (0.023)	0.003 (0.023)	-0.002 (0.023)	-0.003 (0.023)
Ukrainian # public		0.016 (0.018)	0.012 (0.018)	0.008 (0.018)	0.001 (0.018)	0.000 (0.018)
other nationality # public		0.042** (0.018)	0.034* (0.018)	0.030* (0.018)	0.022 (0.018)	0.021 (0.018)
diversity policy aims (yes, ref. no)			0.058*** (0.022)	0.048** (0.022)	0.029 (0.024)	0.030 (0.024)
Ukrainian # aims			0.054*** (0.017)	0.053*** (0.017)	0.012 (0.020)	0.010 (0.020)
other nationality # aims			0.095*** (0.017)	0.086*** (0.017)	0.035* (0.020)	0.034* (0.020)
sources of information				0.006 (0.010)	0.005 (0.010)	0.005 (0.010)
Ukrainian # sources				0.007 (0.008)	0.006 (0.008)	0.007 (0.008)
other nationality # sources				0.010 (0.008)	0.009 (0.008)	0.010 (0.008)
recruitment formalisation				0.004 (0.010)	0.001 (0.010)	0.001 (0.010)
Ukrainian # formalisation				-0.004 (0.008)	-0.008 (0.008)	-0.008 (0.008)
other nationality # formalisation				0.002 (0.008)	-0.003 (0.008)	-0.003 (0.008)
recruitment panel (1 person, ref. bigger panel)				0.013 (0.028)	0.012 (0.028)	0.011 (0.028)

Ukrainian # panel				-0.096*** (0.022)	-0.105*** (0.022)	-0.100*** (0.022)
other nationality # panel				-0.069*** (0.022)	-0.081*** (0.022)	-0.075*** (0.022)
development opportunities (yes, ref. no)				0.058** (0.027)	0.051* (0.027)	0.052* (0.027)
Ukrainian # dev. opportunities				0.047** (0.022)	0.027 (0.022)	0.029 (0.022)
other nationality # dev.opportunities				0.076*** (0.022)	0.051** (0.022)	0.054** (0.022)
diversity policy measures					0.024* (0.012)	0.024* (0.012)
Ukrainian # measures					0.045*** (0.010)	0.045*** (0.010)
other nationality # measures					0.055*** (0.010)	0.056*** (0.010)
interaction with customers (>50% time, ref. less time)						-0.016 (0.024)
Ukrainian # interact. custom.						-0.024 (0.020)
other nationality # interact. custom.						-0.044** (0.020)
interaction with co-workers (>50% time, ref. less time)						0.008 (0.023)
Ukrainian # interact. co-work.						-0.019 (0.018)
other nationality # interact. co- work.						-0.009 (0.018)
N	10512	10512	10512	10512	10512	10512
ngrps	1752	1752	1752	1752	1752	1752
var_vign	0.114	0.114	0.114	0.113	0.113	0.113
var_ind	0.116	0.113	0.110	0.109	0.107	0.107
ICC	0.505	0.497	0.493	0.490	0.487	0.486
ll	-5234	-5197	-5166	-5137	-5106	-5100

Note: Standard errors in parentheses. Coefficients of two-level linear random intercept models. Models additionally control for: company characteristics – branch, location; individual characteristics of respondents – sex, ethnicity, tertiary degree, age, job position; other characteristics - occupation evaluated, vignette order, country, sample source, vignette variables. Dependent variable - natural log of hiring likelihood. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Contrary to our expectations, greater availability of information about candidates is not associated with a lower propensity to discriminate (an insignificant and small coefficient for the interaction term between the sources of information and nationality variables) (model 6, Table 3). Similarly, no moderating effects are found for formalised hiring practices. For these reasons, we reject Hypotheses 1 and 2. In organisations with small recruitment panels—consisting of only one person—discrimination is more pronounced, which supports Hypothesis 3. Having diversity aims with respect to ethnicity that are internally reported and monitored, combined with having a diversity manager is also associated with lower levels of discrimination. However, these effects are modest, marginally statistically significant, and observed only with respect to candidates who are culturally more distant from natives than Ukrainians. Therefore, Hypothesis 4 is partially confirmed. The extent of discrimination declines with the number of diversity-related measures implemented, confirming Hypothesis 5. Discrimination is also weaker in organisations offering extensive training opportunities for the position in question, although this effect is statistically significant only for the ‘other nationality’ group. This finding supports Hypothesis 6. Finally, consistent with Hypothesis 7a, discrimination – at least against non-Ukrainian immigrant candidates – is more pronounced in jobs requiring frequent interaction with external stakeholders (e.g., customers or suppliers). Notably, a similar effect is not observed for roles involving frequent interaction with co-workers, leading us to reject Hypothesis 7b.

We complement the hypotheses testing with exploring the interrelationships among the organisational moderators of discrimination. This is achieved by analysing the stepwise regression results presented in columns 1–5 of Table 3, alongside the descriptive statistics reported in Table A4 in Appendix A. In the top panel of Table A4, we observe that large organisations (with more than 249 employees) use, on average, a greater number of information sources, have more formalised recruitment processes, more frequently offer good development opportunities and set diversity goals. They also implement a wider range of diversity measures. The results presented in the middle panel show that public organisations, compared to private companies, are slightly larger, have larger recruitment panels, more formalised recruitment processes, and offer development opportunities more often. They also formulate diversity policy aims more frequently and implement more diversity-related measures. These findings help explain why many studies report lower levels of discrimination in larger organisations and in the public sector (e.g., Banerjee, Reitz, & Oreopoulos, 2018; Cahuc et al., 2019; Carlsson & Rooth, 2007; Midtbøen, 2014; Zschirnt & Ruedin, 2016), namely that organisational size and ownership structure are associated with a range of other organisational characteristics that reduce the likelihood of discrimination. Finally, the lower panel of Table A4 compares the same organisational characteristics between organisations with diversity-oriented aims and those without such aims. As noted by Holzer and Neumark (2000), establishments adjust their personnel strategies in line with diversity goals: they recruit more broadly, screen more rigorously, and place greater emphasis on formal evaluations. In addition, these organisations invest more in employee training and other support programs to compensate for potentially less productive hires from marginalised groups (Holzer & Neumark, 2000, p. 269). Almost all of these interrelationships are reflected in the lower panel of Table A4—except for recruitment panel size, which is, on average, slightly smaller in organisations with diversity policy aims.

We examine the abovementioned interrelationships by first analysing the most parsimonious model and then incrementally adding organisational-level features and their interactions with the candidate’s nationality. The regression model presented in column 2 in Table 3 includes two organisational characteristics previously identified in the literature as moderators of ethnic discrimination: company size and ownership structure. The results confirm that public and larger

organisations discriminate less. The effect is statistically significant only for the more culturally distant immigrant group.

As expected, these effects are substantially reduced after incorporating a proxy for diversity-oriented aims (column 3) and disappear in the more comprehensive model specifications. Model 4 adds further organisational features: the number of information sources used in recruitment, the level of recruitment formalisation, the size of the recruitment panel, and the availability of development opportunities. As discussed earlier, the latter two features significantly reduce the tendency to discriminate. However, adding this set of variables does not substantially reduce the magnitude or statistical significance of the coefficient for diversity-oriented aims or its interaction with the nationality variable. This suggests that these features do not mediate—or at most only partially mediate—the relationship between diversity-oriented aims and discrimination. What does appear to mediate this relationship strongly is the number of implemented diversity measures. Including a proxy for this feature in column 5 significantly reduces the effect of diversity aims on the likelihood of discrimination.

5.3. Diversity Policy Measures as Moderators of Nationality-Based Discrimination: Unpacking the Effects

Since diversity measures strongly moderate the likelihood of discrimination, in the third empirical step we disaggregate the proxy for this feature. Due to high correlations among the disaggregated variables, we group them into two categories. The first group includes four diversity measures: inclusive hiring practices, mentoring/buddy programs, diversity management training, and formal group(s) dealing with diversity-related tasks (“task force”). The second group captures the type of support system available to immigrant employees—classified as comprehensive, partial, informal, or none. These two groups of variables are analysed in separate models.

Table 4. Diversity Policy Measures as Moderators of Nationality-Based Discrimination

	Model 1	Model 2
Ukrainian	-0.200*** (0.023)	-0.327*** (0.028)
other nationality	-0.291*** (0.023)	-0.378*** (0.028)
diversity management training	0.045* (0.026)	
Ukrainian # training	0.021 (0.021)	
other nationality # training	0.026 (0.021)	
diversity hiring	-0.013 (0.025)	
Ukrainian # hiring	0.056*** (0.020)	
other nationality # hiring	0.080*** (0.020)	
diversity task force	0.023 (0.026)	
Ukrainian # task force	-0.033 (0.021)	
other nationality # task force	-0.035 (0.021)	
diversity mentoring	0.008 (0.023)	
Ukrainian # mentoring	0.032* (0.019)	
other nationality # mentoring	0.041** (0.019)	
support comprehensive (ref. no support)		0.119*** (0.036)
Ukrainian # sup. comprehensive		0.263*** (0.029)
other nationality # sup. comprehensive		0.193*** (0.029)
support partial (ref. no support)		0.053* (0.032)

Ukrainian # supp. partial		0.207*** (0.026)
other nationality # supp. partial		0.173*** (0.026)
support informal (ref. no support)		0.027 (0.032)
Ukrainian # supp. informal		0.206*** (0.026)
other nationality # supp. informal		0.159*** (0.026)
<i>N</i>	10512	10512
ngrps	1752	1752
var_vign	0.113	0.112
var_ind	0.107	0.104
ICC	0.488	0.481
ll	-5105	-5046

Note: Standard errors in parentheses. Coefficients of two-level linear random intercept models. Models additionally control for: company characteristics and their interactions with nationality vignette variable – as in Table 4; other company characteristics – branch, location; individual characteristics of respondents – sex, ethnicity, tertiary degree, age, job position; other characteristics - occupation evaluated, vignette order, country, sample source, vignette variables. Dependent variable - natural log of hiring likelihood. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The results presented in column 1 indicate that two diversity policy measures are particularly effective in reducing ethnic discrimination: inclusive hiring practices and mentoring/buddy programs. The small moderating effect for diversity management training aligns with previous findings suggesting that engaging managers may be effective in promoting diversity (Kalev & Dobbin, 2022), but the relationships are not statistically significant. The direction of the moderating effect related to diversity task forces runs contrary to our expectations; however, the corresponding coefficients are not statistically significant. The results in column 2 confirm that organisations offering no support systems for foreign workers exhibit the highest levels of discrimination. The strongest reduction in discrimination is associated with comprehensive support programs, though even partial or informal support contributes to reducing discriminatory behaviour.

5.4. Gender-specific analysis

Table 5 presents the results broken down by the gender of the candidate displayed in the vignettes. In the basic specification, we observe that among non-natives, men experience slightly higher levels of discrimination. The difference in vignette ratings between immigrant men and women is statistically significant only for Ukrainians as indicated by the estimation results of the model with additional interaction between gender and nationality of the candidates (column 3 in Table 5). Therefore, we confirm the hypothesis that ethnic discrimination is more likely to affect male candidates.

Table 5. Determinants of Hiring Likelihood by Gender of Candidates

	Women	Men	Full sample
Ukrainian (ref. native)	-0.125*** (0.015)	-0.157*** (0.016)	-0.123*** (0.013)
other nationality (ref. native)	-0.161*** (0.015)	-0.187*** (0.016)	-0.161*** (0.013)
Ukrainian # man			-0.035** (0.018)
other nationality # man			-0.029 (0.018)
man			-0.009 (0.440)
Observations	5251	5261	10512
ngrps	1752	1752	1752
var_vign	0.1094	0.1164	0.1142
var_ind	0.1026	0.1312	0.1163
ICC	0.4840	0.5299	0.5044
ll	-2810	-3099	-5231

Standard errors in parentheses. Coefficients of two-level linear random intercept models. Models additionally control for other vignette variables. Dependent variable: natural log. of hiring likelihood. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

We also investigated whether the results regarding organisational-level moderators differed by gender. Therefore, we estimated the main model – described by Equation 1 – separately for men and women. In most cases, we find no gender differences. We only observe slightly stronger discrimination against Ukrainian men in publicly owned companies and stronger discrimination against men of other nationalities in organisations that require frequent interaction with co-workers (see Table A5 in Appendix A). We confirmed the statistical significance of these differences estimating the main model with additional three-ways interactions between organisational-level variables, nationality and gender of candidates (the results are available upon request).

6. Robustness analysis

As part of our robustness checks, we conducted two distinct analyses. First, we re-estimated the regression model described in Equation 1, using an alternative dependent variable that measures the likelihood of receiving an interview invitation on a scale from 0 to 10. The results of this estimation, presented in Table A6 of Appendix A, confirm the robustness of our findings. During the preliminary phase of recruitment—when decisions are made about who progresses to subsequent stages—ethnic discrimination is also evident. As in our main results, this penalty is moderated by organisational features, including the size of the recruitment panel, diversity policy measures, training opportunities, and the level of customer interaction. Although the moderating effect of diversity aims is not statistically significant, the effect size is comparable to that estimated in the main model. Consistent with the main findings, the hypotheses regarding the moderating roles of information sources used and recruitment formalisation are also not supported.

In the second analysis, we examine the potential existence of socially desirable responding (SDR), which could bias the estimates—especially those associated with the vignette variables. To mitigate this potential bias, we incorporated into the survey a five-item measure of SDR (SDRS-5) developed by Hays, Hayashi, and Stewart (1989), which is a short version of the Marlowe–Crowne Social Desirability Scale. This instrument presents respondents with narratives of highly desirable behaviours that are infrequent and undesirable behaviours that are common. Respondents who claim they always engage in the former (e.g., ‘are always good listeners, no matter who they are talking to’) and never in the latter (e.g., ‘sometimes feel resentful when they do not get their way’) are considered to be prone to SDR.

To assess whether SDR bias may have influenced our results, we regressed the dependent variable (the natural logarithm of hiring likelihood) on the vignette variables in two subsamples of respondents—those identified as SDR-prone and those not, according to the SDRS-5 scale. If SDR bias were present, the estimated effects related to sensitive candidates’ characteristics—nationality in particular—would be expected to be smaller in the former subsample, as SDR-prone respondents may be less willing to acknowledge that candidates’ nationality matter in their evaluations of hiring likelihood. However, the results presented in Table A7 in Appendix A do not support this expectation suggesting that our results are not subject to social desirability bias.¹⁵

7. Concluding Discussion

This study extends the scope of existing research by investigating organisational moderators of ethnic discrimination in hiring. Despite the importance of organisations in shaping discrimination and inequality (Baron & Bielby, 1980; Hermansen et al., 2025; Stainback et al., 2010), the organisational context has received limited attention in experimental discrimination research. Earlier work that has addressed organisational characteristics tends to focus on firm size and sector (Banerjee et al., 2018; Cahuc et al., 2019; Carlsson & Rooth, 2007; Lippens et al., 2023b; Midtbøen, 2016). Although these studies provide important insights into the contextual nature of discrimination, there is a need for greater understanding of the underlying organisational features that affect discrimination. Based on data from a factorial survey experiment conducted in four European countries, we combine the strengths of experimental and survey methods and test several hypotheses on how organisational characteristics moderate ethnic discrimination.

In line with the experimental literature on ethnic and racial discrimination (Quillian and Midtbøen 2021; Lippens et al., 2023a), our empirical results are consistent with discrimination as the likelihood that immigrant candidates would be hired is lower than that of native candidates. As expected, we also find that the culturally more distant immigrant group are less likely to be hired than Ukrainians.

Turning to the organisational moderators of discrimination, the first main finding of the study is that discrimination is more frequent in organisations with single-person recruitment panels than in organisations where hiring decisions are made collectively. This could be because collective

¹⁵ It has to be emphasised, however, that the validity of short SDR scales is not well researched in FSEs on hiring discrimination

decision-making fosters accountability, as evaluators may need to justify their choices to peers (Correll, 2017), and because social norms motivate individuals to avoid appearing prejudiced to others (Plant & Devine, 1998; 2009).

Next, in regard to the hypotheses on diversity policies, we find partial evidence that having ethnic diversity goals subject to monitoring (i.e., through internal reporting and a diversity manager) is associated with less discrimination, at least against non-Ukrainian migrant groups, and only at the 10 percent significance level. This aligns with findings from the U.S. showing that efforts to ensure accountability to diversity goals can be effective (Dobbin et al., 2015; Kalev et al., 2006). Additionally, focusing on diversity practices supported by prior studies as successfully increasing diversity (Dobbin and Kalev, 2022), we find that discrimination decreases with the number of diversity measures implemented in the organisation.

We further show that the effect of ethnic diversity aims is largely mediated by the implementation of diversity measures. This suggests that setting goals is important insofar as they lead to more concrete action, and highlights that these diversity initiatives are promising—particularly with respect to hiring procedures that take account of diversity, mentoring or buddy programs, and support programs for foreign employees—and should not be dismissed as merely symbolic gestures. However, it is still important to note that these efforts do not fully eliminate discrimination, as gaps in hiring probabilities remain even in these organisations.

The fourth key finding is that discrimination is less likely in organisations that offer extensive training opportunities, though this was only the case for the non-Ukrainian minority group. To be sure, organisations may primarily offer training to invest in their employees and enhance productivity (Kalev, 2009). However, the findings could be interpreted as indicating that the availability of opportunities for professional development reduces employer concerns about perceived immigrant-native skill or productivity gaps, in turn leading to a lower risk of discriminatory hiring decisions.

Further, we find that discrimination was stronger in jobs that involve frequent interaction with individuals outside the organisation, such as customers or suppliers. This result is consistent with those of some other studies (e.g., Andriessen et al. 2012; Derous et al., 2017; see also, Lippens et al., 2023b), and taste-based discrimination (Becker, 1957). However, an alternative explanation more in keeping with statistical discrimination is that employers recruiting for customer-oriented jobs may be more concerned about non-native employees' lacking competencies for effective communication, such as familiarity with the cultural context or confidence in interpersonal interactions.

Like previous research (Banerjee et al., 2018; Cahuc et al., 2019; Carlsson & Rooth, 2007; Lippens et al., 2023b; Midtbøen, 2016), we found that large and public employers discriminate (non-Ukrainian minorities) less. Extending earlier findings, however, our study demonstrates that these relationships disappear once we control for organisational features correlated with company size and ownership type, such as sources of information used, size of the recruitment panel, recruitment formalisation, training opportunities, and diversity goals and measures. This is consistent with proposed explanations in the literature (e.g., Quillian and Midtbøen, 2021; Lippens et al., 2023b). As discussed below, however, we did not find that formalised hiring

practices reduced discrimination, which has often been suggested to explain differences in discrimination by size and sector (e.g., Banerjee et al., 2018; Quillian and Midtbøen, 2019).

Regarding gender differences, we find support for the hypothesis that ethnic discrimination is more likely to affect male candidates, at least for Ukrainians. This is in line with the subordinate male target hypothesis, suggesting that minority men are perceived as more threatening and thus the main targets of discrimination (Sidanius and Pratto, 1999), or intersectional theories indicating that ethnic minority women may more easily avoid negative stereotypes about ethnic minority groups (Eagly and Kite 1987; Ridgeway and Kricheli-Katz 2013). Regarding organisational moderators of discrimination, however, the exploratory analyses indicate almost no gender differences.

In contrast to the organisational moderators of discrimination discussed above, we did not find any statistically significant differences in discrimination depending on the jobs' frequency of interaction with co-workers, which corresponds with other recent studies (Lippens et al., 2023b). Hence, discrimination does not seem to be driven by employers' perceptions of other employees' preferences or how the minority candidates fit in socially at the workplace. Two other possible interpretations are that such considerations of social fit are relevant regardless of how frequently the job involves interaction with colleagues, or that they become more important during later stages of the hiring process (Rogstad et al., 2025). Moreover, drawing on statistical discrimination theory as well as organisational and psychological research, we hypothesized that organisations collecting more information about candidates and employing more formalised hiring practices would be less likely to discriminate. Contrary to expectations and previous findings (Midtbøen et al., 2015; Wolgast et al., 2017; Agan and Starr, 2018; Kaas and Manger, 2012; Zschirnt and Ruedin, 2016), our results do not support these hypotheses.

Why might this be? One possibility is that discrimination is not effectively reduced by these factors. For example, formalisation has been shown to induce a false sense of procedural fairness, potentially leading decision-makers to stop suppressing their biases (Castilla and Benard 2010; Dobbin and Kalev, 2022). Additionally, earlier research has also suggested that efforts to control discretion can provoke resistance, resulting in adverse effects (Dobbin et al., 2015). Evidence from previous studies on the impact of information about candidates is mixed (see Thijssen et al. 2021), but its impact may depend on the type and perceived reliability of the information (Quillian and Midtbøen, 2019).

Consistent with previous discrimination research emphasising the importance of contextual factors (Midtbøen et al., 2015; Lippens 2023b), our findings demonstrate that employers' hiring decisions are shaped by organisational contexts, which define their opportunities for discrimination and the extent to which prejudice or stereotypes translate into discriminatory behaviour. While reducing prejudice and stereotypes through policy may be challenging, organisational policies and practices are easier to modify, providing a tangible avenue for interventions to reduce discrimination. Thus, we believe our findings have clear policy implications, as they highlight a range of organisational-level interventions that employers may implement to reduce ethnic discrimination in hiring. More specifically, the results suggest that organisations can reduce discrimination by offering training opportunities to all employees, making hiring decisions collectively, implementing hiring practices that are attentive to diversity, mentoring or buddy programs as well as support programs for foreign employees.

Appendix A. Supplementary Tables and Figures

Figure A1. Example of the Vignette Used in the Survey (German Version, before Translation)

You are recruiting for the full-time **bookkeeping clerk** position. You have received a sufficient number of applications. All the applicants have the resident and work permit allowing them to be employed in your country. Among them there is a candidate with characteristics provided below:

Application	you received the application directly from the candidate
Age	22 years old
Gender	man
Nationality	Ukrainian
Education	upper secondary, vocational obtained in Ukraine
Professional experience	two years of professional experience in Germany in a similar position
Mother Tongue	Ukrainian
German	proficient level (C2)
English	intermediate level (B1)
Background information	the candidate lives with a partner/spouse and has no children

How likely is that you will **invite this person for the interview** given the needs and characteristics of your organisation? (0 – very unlikely; 10 – very likely)

0 1 2 3 4 5 6 7 8 9 10

How likely is that this person **would be employed** given the needs and characteristics of your organisation? (0 – very unlikely; 10 – very likely)

0 1 2 3 4 5 6 7 8 9 10

Table A1. Pairwise Correlations among Dimensions

Dimensions	Dim1	Dim2	Dim3	Dim4	Dim5	Dim6	Dim7	Dim8	Vorder	Deck
Dim1: referrals	1.000									
Dim2: gender	0.002	1.000								
Dim3: country of origin	0.012	0.009	1.000							
Dim4: country where graduated	-0.007	-0.015	0.432	1.000						
Dim5: level of host country language	0.007	0.010	0.430	0.250	1.000					
Dim6: partnership status	0.004	0.007	-0.006	-0.013	0.002	1.000				
Dim7: parenthood status	0.003	0.002	-0.011	-0.010	-0.004	-0.012	1.000			
Dim8: candidate's experience	-0.013	0.013	-0.017	-0.008	0.009	0.015	0.003	1.000		
Vignette order within the deck	-0.011	0.017	-0.013	-0.001	0.000	0.014	-0.008	0.016	1.000	
Deck number	0.042	0.003	0.000	0.000	0.000	-0.008	0.001	-0.020	0.000	1.000
N=10512										

Table A2a. Descriptive Statistics: Dependent Variable and Vignette Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Dep var: employment likelihood	10512	6.532	2.504	0	10
vign: references	.	.	.	.	.
you received the application directly from the candidate	10512	0.499	0.500	0	1
the candidate was recommended by one of the employees	10512	0.501	0.500	0	1
vign: sex	.	.	.	.	.
woman	10512	0.500	0.500	0	1
man	10512	0.500	0.500	0	1
vign: nationality	.	.	.	.	.
native	10512	0.333	0.471	0	1
Ukrainian	10512	0.333	0.471	0	1
other nationality	10512	0.333	0.471	0	1
vign: education	.	.	.	.	.
in host country	10512	0.667	0.471	0	1
in home country	10512	0.333	0.471	0	1
vign: host country language level	.	.	.	.	.
proficient level (C2)	10512	0.667	0.471	0	1
upper intermediate level (B2)	10512	0.333	0.471	0	1
vign: type of experience	.	.	.	.	.
2 years' experience in a similar position	10512	0.504	0.500	0	1
2 years' experience not related to job applied for	10512	0.496	0.500	0	1
vign: parenthood	.	.	.	.	.
preschool-aged child	10512	0.499	0.500	0	1
no children	10512	0.501	0.500	0	1
vign: partnership	.	.	.	.	.
in partnership	10512	0.500	0.500	0	1
single	10512	0.500	0.500	0	1

Table A2b. Descriptive Statistics: Organisational Characteristics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Sources of information					
No. of recruitment tools used	1752	6.081	2.468	1	14
Recruitment formalisation	.	.	.	.	.
Recruitment process well documented					
Strongly disagree	1752	0.026	0.160	0	1
Disagree	1752	0.039	0.193	0	1
Neither Agree nor Disagree	1752	0.076	0.265	0	1
Agree	1752	0.381	0.486	0	1
Strongly agree	1752	0.478	0.500	0	1
Clearly defined evaluation criteria	.	.	.	.	.
Strongly disagree	1752	0.018	0.132	0	1
Disagree	1752	0.039	0.194	0	1
Neither Agree nor Disagree	1752	0.077	0.266	0	1
Agree	1752	0.443	0.497	0	1
Strongly agree	1752	0.423	0.494	0	1
Recruiters decide, regardless of criteria	.	.	.	.	.
Strongly disagree	1752	0.030	0.170	0	1
Disagree	1752	0.105	0.306	0	1
Neither Agree nor Disagree	1752	0.122	0.327	0	1
Agree	1752	0.406	0.491	0	1
Strongly agree	1752	0.338	0.473	0	1
Recruitment board	.	.	.	.	.
Broader recruitment panel	1752	0.837	0.370	0	1
Only 1 person involved in recruitment	1752	0.163	0.370	0	1
Diversity policy aims	.	.	.	.	.
No	1752	0.605	0.489	0	1
Yes	1752	0.395	0.489	0	1
Diversity policy measures					
Training on diversity management	.	.	.	.	.
No	1752	0.521	0.500	0	1
Yes	1752	0.479	0.500	0	1
Diversity-oriented hiring practices	.	.	.	.	.
No	1752	0.433	0.496	0	1
Yes	1752	0.567	0.496	0	1
Task forces	.	.	.	.	.
No	1752	0.546	0.498	0	1
Yes	1752	0.454	0.498	0	1
Accessible mentoring programs	.	.	.	.	.
No	1752	0.430	0.495	0	1
Yes	1752	0.570	0.495	0	1
Diversity support system	.	.	.	.	.
Comprehensive support	1752	0.258	0.438	0	1
Partial support in some areas	1752	0.337	0.473	0	1
Only informal support available	1752	0.286	0.452	0	1
No support	1752	0.119	0.323	0	1
Professional development opportunities	.	.	.	.	.
Poor	1752	0.185	0.388	0	1
Good	1752	0.815	0.388	0	1
Interactions with customers	.	.	.	.	.
Less	1752	0.743	0.437	0	1
Half of the working time or more	1752	0.257	0.437	0	1
Interactions with co-workers	.	.	.	.	.
Less	1752	0.666	0.472	0	1
Half of the working time or more	1752	0.334	0.472	0	1

Ownership	.	.	.	.	.
Private	1752	0.727	0.446	0	1
Public or mixed	1752	0.273	0.446	0	1
Company size	.	.	.	.	.
10 to 49	1752	0.232	0.422	0	1
50 to 249	1752	0.328	0.470	0	1
250 to 999	1752	0.243	0.429	0	1
More than 1000	1752	0.197	0.398	0	1
Branch or headquarter abroad	.	.	.	.	.
No	1752	0.542	0.498	0	1
Yes	1752	0.458	0.498	0	1
Company localization	.	.	.	.	.
Large city	1752	0.568	0.495	0	1
Middle-sized town	1752	0.330	0.470	0	1
Village or small town	1752	0.102	0.303	0	1

Table A2c. Descriptive Statistics: Respondents' Characteristics and Other Control Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Sex	.	.	.	.	.
Male	10512	0.522	0.500	0	1
Female	10512	0.478	0.500	0	1
Non-native ethnicity	.	.	.	.	.
No	10512	0.776	0.417	0	1
Yes or hard to say	10512	0.224	0.417	0	1
Tertiary education degree	.	.	.	.	.
No	10512	0.191	0.393	0	1
Yes	10512	0.809	0.393	0	1
Age	.	.	.	.	.
20-29	10512	0.138	0.345	0	1
30-39	10512	0.357	0.479	0	1
40-49	10512	0.292	0.455	0	1
50-59	10512	0.163	0.369	0	1
60-69	10512	0.049	0.216	0	1
70 or more years	10512	0.002	0.041	0	1
Job position	.	.	.	.	.
Executive manager or owner	10512	0.138	0.345	0	1
Senior manager/board member	10512	0.271	0.445	0	1
HR specialist	10512	0.168	0.374	0	1
Direct supervisor	10512	0.204	0.403	0	1
Co-worker	10512	0.065	0.246	0	1
External recruiter	10512	0.154	0.361	0	1
Occupation evaluated	.	.	.	.	.
ICT technician	10512	0.194	0.396	0	1
Office clerk	10512	0.208	0.406	0	1
Secretary	10512	0.204	0.403	0	1
Bookkeeping clerk	10512	0.203	0.402	0	1
Sales worker	10512	0.191	0.393	0	1
Vignette order	10512	3.500	1.708	1	6
Country	.	.	.	.	.
Germany	10512	0.290	0.454	0	1
Norway	10512	0.188	0.391	0	1
Poland	10512	0.291	0.454	0	1
Romania	10512	0.230	0.421	0	1
Sample source	.	.	.	.	.
Cint	10512	0.401	0.490	0	1
Own	10512	0.025	0.156	0	1

Dynata	10512	0.346	0.476	0	1
Norstat (NOR)	10512	0.113	0.317	0	1
Talk Online Panel	10512	0.003	0.058	0	1
Daisycon	10512	0.111	0.314	0	1

Table A3. Determinants of Hiring Likelihood by Country

	All	Germany	Norway	Poland	Romania
Ukrainian (ref. native)	-0.141*** (0.010)	-0.150*** (0.017)	-0.054** (0.021)	-0.216*** (0.020)	-0.111*** (0.020)
other nationality (ref. native)	-0.176*** (0.010)	-0.191*** (0.017)	-0.089*** (0.021)	-0.227*** (0.020)	-0.172*** (0.021)
educated in home country (ref. host country)	-0.035*** (0.008)	-0.005 (0.014)	-0.023 (0.017)	-0.058*** (0.016)	-0.054*** (0.017)
host lang. level B2 (ref. C2)	-0.036*** (0.008)	-0.046*** (0.014)	-0.054*** (0.017)	-0.020 (0.016)	-0.027 (0.017)
unrelated job experience (ref. job-related exp.)	-0.109*** (0.007)	-0.064*** (0.011)	-0.160*** (0.014)	-0.097*** (0.014)	-0.138*** (0.014)
recommended (ref. direct application)	-0.009 (0.007)	-0.021* (0.011)	-0.007 (0.014)	-0.012 (0.014)	0.009 (0.014)
in relationship (ref. single)	0.022*** (0.007)	0.039*** (0.011)	0.010 (0.014)	0.029** (0.013)	-0.001 (0.014)
preschool-aged child (ref. no children)	-0.013** (0.007)	-0.029*** (0.011)	-0.015 (0.014)	-0.026* (0.013)	0.022 (0.014)
Observations	10512	3060	1986	3042	2424
ngrps	1752	510	331	507	404
var_vign	0.114	0.098	0.097	0.137	0.113
var_ind	0.116	0.111	0.108	0.121	0.119
ICC	0.505	0.531	0.527	0.468	0.513
ll	-5234	-1318	-841	-1758	-1198

Standard errors in brackets, coefficients of two-level linear random intercept models. Vignette variables only

* p<0.10, ** p<0.05, *** p<0.01

Table A4. Means Comparisons of Selected Organisational Characteristics by Company Size, Ownership Structure, and Presence of Diversity Policy Aims

organisation-level characteristics	big (>249) organisation	small organisation	difference (1-2)
Public (binary)	0.752	0.695	0.057***
sources of information (z-score)	0.118	-0.092	0.210***
recruitment panel (1 person) (binary)	0.153	0.170	-0.017
recruitment formalisation (z-score)	0.112	-0.087	0.199***
development opportunities (binary)	0.865	0.777	0.088***
diversity policy aims (binary)	0.504	0.312	0.192***

diversity policy measures (z-score)	0.169	-0.132	0.301***
organisation-level characteristics	public sector	private sector	difference (1-2)
big organisation (>249)	0.580	0.509	0.070***
sources of information	-0.028	0.011	-0.039
recruitment panel (1 person)	0.127	0.176	-0.049**
recruitment formalisation	0.204	-0.077	0.280***
development opportunities	0.841	0.806	0.035*
diversity policy aims	0.468	0.369	0.098***
diversity policy measures	0.201	-0.076	0.277***
organisation-level characteristics	diversity aims	no diversity aims	diff (1-2)
sources of information	0.106	-0.070	0.176***
recruitment panel (1 person)	0.192	0.144	0.048***
recruitment formalisation	0.205	-0.135	0.340***
development opportunities	0.922	0.746	0.176***
diversity policy measures	0.654	-0.429	1.082***
N=1752	1752		

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, Independent samples t-tests. Variables were operationalised as described in Table 2, either as binary indicators or as z-scores standardised to a mean of 0 and a standard deviation of 1.

Table A5. Determinants of Hiring Likelihood: Organisational Moderators of Nationality-Based Discrimination by Gender

	All	Women	Men
Ukrainian	-0.137*** (0.023)	-0.123*** (0.035)	-0.146*** (0.036)
other nationality	-0.209*** (0.023)	-0.198*** (0.036)	-0.224*** (0.036)
size	-0.027** (0.011)	-0.030** (0.012)	-0.022* (0.013)
Ukrainian # size	-0.001 (0.008)	0.003 (0.012)	-0.010 (0.013)
other nationality # size	-0.001 (0.008)	-0.004 (0.013)	-0.000 (0.013)
ownership (public, ref. private)	-0.002 (0.023)	-0.012 (0.026)	0.029 (0.028)
Ukrainian # public	0.000 (0.018)	0.025 (0.027)	-0.064** (0.029)
other nationality # public	0.021 (0.018)	0.027 (0.028)	0.002 (0.028)
sources of information	0.005 (0.010)	0.009 (0.012)	0.005 (0.012)
Ukrainian # sources	0.006 (0.008)	-0.007 (0.012)	0.005 (0.013)
other nationality # sources	0.010 (0.008)	0.008 (0.013)	0.011 (0.013)
recruitment formalisation	0.002 (0.010)	0.003 (0.012)	0.003 (0.013)
Ukrainian # formalisation	-0.008 (0.008)	-0.018 (0.013)	0.002 (0.013)
other nationality # formalisation	-0.003 (0.008)	0.012 (0.013)	-0.020 (0.013)
recr. panel (1 pers., ref. bigger)	0.012 (0.028)	0.023 (0.032)	0.008 (0.034)
Ukrainian # panel	-0.101*** (0.022)	-0.111*** (0.033)	-0.117*** (0.035)
other nationality # panel	-0.075*** (0.022)	-0.106*** (0.034)	-0.046 (0.034)
diversity policy aims (yes, ref. no)	0.030	0.028	0.028

	(0.024)	(0.028)	(0.030)
Ukrainian # aims	0.010 (0.020)	0.008 (0.029)	0.031 (0.031)
other nationality # aims	0.032* (0.020)	0.029 (0.029)	0.027 (0.030)
diversity policy measures	0.024* (0.012)	0.025* (0.014)	0.020 (0.015)
Ukrainian # measures	0.046*** (0.010)	0.046*** (0.015)	0.045*** (0.015)
other nationality # measures	0.057*** (0.010)	0.058*** (0.015)	0.061*** (0.015)
development opport. (yes, ref. no)	0.051* (0.027)	0.052* (0.031)	0.054 (0.033)
Ukrainian # dev.opp.	0.027 (0.022)	0.004 (0.033)	0.041 (0.035)
other nationality # dev.opp.	0.051** (0.022)	0.023 (0.034)	0.075** (0.035)
Interact.custom.(>50% time,ref.less)	-0.016 (0.024)	-0.029 (0.028)	-0.014 (0.029)
Ukrainian # custom. interact.	-0.023 (0.020)	0.014 (0.030)	-0.054* (0.031)
other nationality # custom. interact.	-0.044** (0.020)	-0.013 (0.030)	-0.053* (0.030)
Interact.cowork(>50% time,ref.less)	0.008 (0.023)	-0.011 (0.026)	0.018 (0.028)
Ukrainian # co-work interact.	-0.020 (0.018)	-0.006 (0.028)	-0.023 (0.029)
other nationality # co-work interact.	-0.010 (0.018)	0.046* (0.028)	-0.044 (0.028)
<i>N</i>	10512	5251	5261
<i>ngrps</i>	1752	1752	1752
<i>var_vign</i>	0.113	0.108	0.114
<i>var_ind</i>	0.107	0.093	0.120
<i>ICC</i>	0.487	0.465	0.512
<i>ll</i>	-5110	-2723.3	-3004

Standard errors in parentheses. Coefficients of two-level linear random intercept models. Vars not shown: company characteristics – branch, location; individual characteristics – sex, ethnicity, tertiary degree, age, job position; other characteristics - occupation evaluated, vignette order, country, sample source, vignette variables. Dependent variable - natural log of hiring likelihood. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A6. Determinants of Interview Invitation Likelihood: Organisational Moderators of Nationality-Based Discrimination

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Ukrainian	-0.133*** (0.010)	-0.140*** (0.011)	-0.163*** (0.012)	-0.175*** (0.021)	-0.139*** (0.022)	-0.129*** (0.023)
other nationality	-0.172*** (0.010)	-0.186*** (0.011)	-0.219*** (0.012)	-0.253*** (0.021)	-0.208*** (0.022)	-0.195*** (0.023)
size		-0.011 (0.010)	-0.013 (0.010)	-0.015 (0.011)	-0.016 (0.011)	-0.016 (0.011)
Ukrainian # size		0.015* (0.008)	0.009 (0.008)	0.004 (0.008)	0.003 (0.008)	0.003 (0.008)
other nationality # size		0.021*** (0.008)	0.012 (0.008)	0.006 (0.008)	0.004 (0.008)	0.004 (0.008)
ownership (public, ref. private)		0.000 (0.022)	-0.004 (0.022)	-0.006 (0.022)	-0.010 (0.022)	-0.011 (0.022)
Ukrainian # public		0.028 (0.018)	0.023 (0.018)	0.021 (0.018)	0.015 (0.018)	0.013 (0.018)
other nationality # public		0.048*** (0.018)	0.042** (0.018)	0.038** (0.018)	0.030* (0.018)	0.028 (0.018)
diversity policy aims (yes, ref. no)			0.041* (0.021)	0.036* (0.021)	0.026 (0.024)	0.026 (0.024)
Ukrainian # aims			0.060*** (0.017)	0.061*** (0.017)	0.020 (0.019)	0.019 (0.019)
other nationality # aims			0.088*** (0.016)	0.081*** (0.017)	0.029 (0.019)	0.028 (0.019)
sources of information				0.003 (0.010)	0.002 (0.010)	0.002 (0.010)
Ukrainian # sources				0.011 (0.008)	0.010 (0.008)	0.011 (0.008)
other nationality # sources				0.011 (0.008)	0.010 (0.008)	0.011 (0.008)
recruitment formalisation				0.003 (0.010)	0.002 (0.010)	0.002 (0.010)
Ukrainian # formalisation				-0.007 (0.008)	-0.011 (0.008)	-0.012 (0.008)
other nationality # formalisation				0.001 (0.008)	-0.004 (0.008)	-0.004 (0.008)

recr. panel (1 pers.,ref. bigger panel)				-0.014 (0.027)	-0.013 (0.027)	-0.013 (0.027)
Ukrainian # panel				-0.081*** (0.021)	-0.090*** (0.022)	-0.086*** (0.022)
other nationality # panel				-0.064*** (0.021)	-0.076*** (0.022)	-0.070*** (0.022)
development oport. (yes,ref. no)				0.038 (0.026)	0.034 (0.027)	0.036 (0.027)
Ukrainian # dev.opp.				0.031 (0.021)	0.011 (0.022)	0.013 (0.022)
other nationality # dev.opp.				0.059*** (0.021)	0.034 (0.022)	0.037* (0.022)
diversity policy measures					0.014 (0.012)	0.014 (0.012)
Ukrainian # measures					0.044*** (0.010)	0.045*** (0.010)
other nationality # measures					0.055*** (0.010)	0.057*** (0.010)
Interact.custom.(>50% time,ref.less)						-0.034 (0.023)
Ukrainian # custom. interact.						-0.030 (0.019)
other nationality # custom. interact.						-0.047** (0.019)
Interact.cowork(>50% time,ref.less)						0.009 (0.022)
Ukrainian # co-work interact.						-0.011 (0.018)
other nationality # co-work interact.						-0.008 (0.018)
N	10512	10512	10512	10512	10512	10512
ngrps	1752	1752	1752	1752	1752	1752
var_vign	0.108	0.108	0.108	0.108	0.107	0.107
var_ind	0.110	0.107	0.105	0.104	0.103	0.102
ICC	0.503	0.497	0.494	0.492	0.490	0.489
ll	-4955	-4924	-4898	-4876	-4848	-4839

Standard errors in parentheses. Coefficients of two-level linear random intercept models. Vars not shown: company characteristics – branch, location; individual characteristics – sex, ethnicity, tertiary degree, age, job position; other characteristics - occupation evaluated, vignette order, country, sample source, vignette variables. Dependent variable - natural log of interview invitation likelihood. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A7. Determinants of Hiring Likelihood: SDR vs. Non-SDR Sample

	SDR all	SDR women	SDR men	Non-SDR all	Non-SDR women	Non-SDR men
Ind12						
Ukrainian (ref. native)	-0.141*** (0.013)	-0.135*** (0.020)	-0.148*** (0.020)	-0.140*** (0.015)	-0.106*** (0.024)	-0.170*** (0.025)
other nationality (ref. native)	-0.183*** (0.013)	-0.166*** (0.020)	-0.198*** (0.020)	-0.166*** (0.015)	-0.153*** (0.024)	-0.174*** (0.025)
educated in home country (ref. host country)	-0.037*** (0.010)	-0.017 (0.016)	-0.064*** (0.017)	-0.032** (0.013)	-0.053*** (0.019)	-0.012 (0.020)
host lang. level B2 (ref. C2)	-0.023** (0.010)	-0.021 (0.016)	-0.017 (0.016)	-0.056*** (0.013)	-0.055*** (0.019)	-0.068*** (0.020)
unrelated job experience (ref. job-related exp)	-0.107*** (0.009)	-0.126*** (0.013)	-0.087*** (0.014)	-0.111*** (0.010)	-0.102*** (0.016)	-0.109*** (0.016)
male (ref. female)	-0.029*** (0.009)			-0.034*** (0.010)		
recommended (ref. direct application)	-0.003 (0.009)	-0.008 (0.013)	-0.002 (0.013)	-0.020* (0.010)	-0.038** (0.016)	-0.014 (0.016)
in relationship (ref. single)	0.018** (0.009)	0.009 (0.013)	0.032** (0.014)	0.029*** (0.010)	0.047*** (0.016)	0.024 (0.017)
preschool-aged child (ref. no children)	-0.007 (0.009)	-0.014 (0.013)	0.002 (0.013)	-0.023** (0.010)	-0.047*** (0.015)	-0.024 (0.016)
N	6390	3204	3186	4122	2047	2075
ngrps	1065	1065	1065	687	687	687
var_vign	0.117	0.113	0.118	0.110	0.103	0.112
var_ind	0.113	0.103	0.125	0.119	0.100	0.138
ICC	0.492	0.477	0.514	0.519	0.491	0.551
ll	-3230	-1749	-1879	-1991	-1047	-1206

Standard errors in brackets, coefficients of two-level linear random intercept models. Vignette variables only.

Dependent variable - natural log of hiring likelihood

* p<0.10, ** p<0.05, *** p<0.01

Appendix B. Data Quality Control Procedure

Table B1. Overview of Data Quality Control Criteria (First Step)

Count	IP not survey country	IP not survey or border country	browser not survey language (excl. English)	high outlier	screen size 30%	slow-poker >=20%	speeder >=30%	speeder >=50%	suspicious panel
385						x			
167							x		
120						x			x
109							x	x	
93									x
67					x				x
53					x				
38					x		x		x
36				x					
28			x						
23					x	x			x
18			x			x			
12							x		x
11					x		x	x	x
9					x	x			
8						x	x		x
7	x	x							
5			x				x		
5					x	x	x		x
3	x	x					x		
2	x								
2	x	x				x			
2	x		x						
2	x					x			
2			x			x	x		
2			x				x	x	
2				x		x			
2						x	x		
2				x			x		
1	x	x	x			x			
1	x		x			x			
1	x				x	x			
1			x	x					
1			x		x				
1	x	x			x		x	x	
1	x		x				x	x	
1					x		x	x	
1						x	x	x	
1				x			x	x	

1							x	x	x
1	x	x			x		x		x
1	x	x				x			x
1	x	x		x		x			x

The research project adopted a two-stage data quality assessment system. In the first step, a multi-criteria method for assessing data quality was applied, taking into account the criteria listed below:

- **browser not survey language (excl. English):** browser language does not match to interview language
- **high outlier:** too many options chosen (>5) in a screener question
- **screen size 30%:** >30% of respondents within a panel with 10+ respondents have the same screen size (to detect click-farm that uses same device or type of device to fill in many surveys via one (sub) panel)
- **speeder >=30%:** >=30% of the questions which a respondent answered are flagged for speeding (i.e. answered in <=50% of overall median duration)
- **speeder >=50%:** >=50% of the questions which a respondent answered are flagged for speeding (i.e. answered in <=50% of overall median duration)
- **slow-poker >=20%:** >=20% of short questions are “slowpoked” (i.e. question with a median duration of <=5 seconds are answered in >250% of the median duration)
- **suspicious panel:** data come from the panel containing >60% respondents with at least 1 flag, or >30% respondents with at least 3 flags.

If the respondent meets an exclusion criterion, his/her response is flagged. Receiving two or more flags results in the respondent's data being removed from the database. Furthermore, respondent panels with a high number of flagged cases are also rejected (see the 'suspicious panel' criterion). Table B1 presents the number of rejected responses broken down by exclusion criterion (type of flag). Cases highlighted in blue represent those that received only one flag and were therefore not excluded.

In the second step, a response time criterion for the vignette questions was applied. Any observation for which the response time for both of the first two vignettes was below 15 seconds—the minimum necessary to read and understand the question and the vignette—was excluded.

In total, out of 3,070 responses gathered, 983 were excluded (558 in the first step and 425 in the second), resulting in 2,087 responses considered to be of good quality.

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Consortium members

OSLOMET

OSLO METROPOLITAN UNIVERSITY
STORBYUNIVERSITETET

arco



Contact

Dominik Buttler

d.buttler@ish.uni-hannover.de