

Discrimination of Arabic-Named Applicants

Discrimination of Arabic-Named Applicants in the Netherlands: An Internet-Based Field Experiment Examining Different Phases in Online Recruitment Procedures

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This study examines discrimination of Arabic-named applicants in online recruitment procedures in the Netherlands. We develop and implement a new field experiment approach, posting fictitious résumés ($n = 636$) on two online résumé databases. Two phases of recruitment procedures are examined: employers' decisions to (1) view applicants' complete résumés after seeing short profiles and (2) contact applicants. The experiment covers both male and female applicants, three occupational levels, five sectors, and ten geographical regions, and consists of two waves. Results provide strong evidence of discrimination in the first phase (views). Résumés of Arabic-named applicants were requested less often, regardless of their education, gender, age, region, or sector, and for both websites and waves. Controlling for the number of times candidates' full résumés were viewed, there is less evidence of discrimination in the second phase (reactions). Yet, after two phases, the cumulative ethnic difference is considerable: Dutch-named applicants are 60 percent more likely to receive a positive reaction than Arabic-named applicants. We conclude that ethnic disparities in outcomes of recruitment procedures are substantial and arise already in the very first phase of the selection process. Hence, employers often do not even get to see Arabic-named applicants' résumés. Finally, discrimination is stronger in wave two, when the total number of views of résumés was lower, indicating lower labor demand.

Introduction

Ethnic minorities in Europe generally hold less favorable positions in the labor market than the majority population. Substantial ethnic gaps exist both in

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employment and in wages (Bassanini and Saint-Martin 2008; Heath, Rethon, and Kilpi 2008). Part of the existing ethnic inequalities in economic outcomes can be explained by ethnic disparities in human capital. The fact that ethnic minorities on average have relatively low levels of education, have less knowledge of labor market institutions, and are less proficient in the host-country language partially explains their unfavorable position in the labor market (Chiswick and Miller 1995, 2002; Kanas and Van Tubergen 2009; Van Tubergen and Kalmijn 2005). Moreover, ethnic minority group members typically have less contact with individuals who can provide information or recommendations about labor market opportunities (Aguilera and Massey 2003; Kanas, Van Tubergen, and Van der Lippe 2011; Sanders, Nee, and Sernau 2002). However, a considerable ethnic gap in economic outcomes remains after taking such variations in human and social capital into account (Altonji and Blank 1999; Bassanini and Saint-Martin 2008).

Another potential explanation for ethnic inequality in the labor market is discrimination in recruitment: unequal treatment of ethnic minority job applicants compared to natives with similar credentials by employers, personnel workers, or recruiters (National Research Council 2004). When confronted with comparable ethnic minority and majority applicants, employers or other decision makers may favor the majority candidate. Such discriminatory behavior may be driven by negative interethnic attitudes or prejudice toward ethnic minorities (c.f. Pager and Shepherd 2008). Ideas about the sources of negative interethnic attitudes or prejudice in turn range from “a taste for discrimination” (Becker 1957) to concerns about (group) conflicts regarding scarce economic resources or values (Blalock 1967; Blumer 1958; Scheepers, Gijsberts, and Coenders 2002). Alternatively, discrimination may be driven by beliefs held by employers or recruiters about group differences in productivity or suitability for a certain job. Discriminatory behavior based on such beliefs is often labeled “statistical discrimination” (Phelps 1972; Arrow 1973).

Discrimination in recruitment is difficult to measure (National Research Council 2004; Pager, Bonikowski, and Western 2009). Field experiments are generally considered the most suitable way to identify discrimination (Riach and Rich 2002). They allow researchers to isolate effects of various applicant features on employers’ responses through matching and random assignment. At the same time, they provide information about real hiring procedures. Field experiments thus combine the strengths of experimental methods with those of field-based research (Pager 2007; Pager and Shepherd 2008; Quillian 2006).

Field experiments on discrimination in recruitment typically involve fictitious matched job applicants who contact employers in response to vacancies. Specifically, two main types of field experiments exist: “correspondence tests” and “in-person audits” (Pager 2007). In correspondence tests, sets of résumés (and application letters) representing equivalent ethnic minority and majority applicants are sent to employers. In-person tests involve the use of pairs of individuals who pose as job applicants (testers) and contact employers via telephone or in person. Employers’ reactions to the matched fictitious candidates are registered. Systematic differences in outcomes (e.g., callbacks or invitations for job

interviews) by the ethnicity of the fictitious applicants provide a measure of ethnic discrimination (National Research Council 2004; Riach and Rich 2002).

Previous field experiments (e.g., Allasino et al. 2004; Andriessen et al. 2010; Bertrand and Mullainathan 2004; Kaas and Manger 2012; McGinnity et al. 2009; Pager, Bonikowski, and Western 2009) have consistently shown clear evidence of ethnic discrimination. In many of these studies, discrimination rates exceeded 25 percent (Pager 2007; Riach and Rich 2002).

Originally, research using the correspondence test or in-person audit methodology chose vacancies from newspapers (e.g., Pager and Quillian 2005). However, over the past years the internet has become an important channel through which job seekers search for employment opportunities (Feldman and Klaas 2002). In line with this development, some recent field experiments (e.g., Carlsson and Rooth 2007; Oreopoulos 2011; Rooth 2010) used job offers found on the internet. These studies have revealed that applicants with Middle Eastern or Arabic names in Sweden and those with Chinese, Indian, Pakistani, and Greek names in Canada are less likely to receive a callback from an employer than applicants with native names. The approach used in these studies is, however, still very close to the classical field experiment design. It overlooks the fact that, in addition to providing new ways of finding vacancies for job seekers, the internet offers new opportunities to organizations looking to hire new personnel; employers can actively recruit appropriate candidates using online résumé databases. Such forms of recruitment have become more and more important (Parry and Tyson 2008) but have so far been neglected in experiments on discrimination.

Investigating whether ethnic discrimination occurs during online recruitment procedures using résumé databases is relevant because such procedures differ from classical hiring procedures in several ways that may affect employers' hiring decisions. First, employers are able to look for potential employees more efficiently, using specific search criteria that are important for the position they have to fill to select from a large number of potential candidates. This might lead to a stronger focus on applicant features relevant for productivity and a smaller role of applicant characteristics that are irrelevant for employee productivity. Second, résumé databases standardize the information about job seekers that is presented to employers. This is true at least for the first phases of the recruitment process, in which employers are presented with lists of potential candidates consisting of very brief applicant profiles that are completely standardized (i.e., provide information about the same features of each applicant in exactly the same way). The standardized way in which information on candidates is portrayed rules out that ethnic differences in outcomes of applications are explained by the fact that ethnic minority applicants do a poorer job at presenting themselves than majority candidates.

This study examines discrimination of ethnic minority applicants in different stages of recruitment procedures using résumé databases on the internet. Specifically, we address the following research questions: are ethnic minority job applicants discriminated against in recruitment procedures via online résumé databases and, if so, is there a difference in the extent of discrimination between different phases of these recruitment procedures?

Adapting the field experiment methodology to the new possibilities regarding recruitment via the internet and to assess the prevalence of discrimination in such recruitment procedures, we develop and implement a new field experiment approach. This approach involves posting résumés of fictitious ethnic minority and majority applicants on online résumé databases used by employers and recruiters to find suitable candidates for a vacancy. Profiles of fictitious job applicants ($n = 640$) and accompanying résumés are created. Subsequently, applicants' names (signaling their ethnic origin) are assigned randomly to the profiles. Fictitious applicants' profiles and résumés are then posted on two websites. Finally, responses to the fictitious applicants are measured. Systematic differences in outcomes provide measures of discrimination.

One important way in which this study contributes to prior research is by studying multiple phases of recruitment processes, including the very first phases of such procedures, in order to better understand the processes through which discriminatory behavior arises. Previous field experiments on discrimination in recruitment typically examined only positive reactions of employers or invitations for job interviews via telephone or email (i.e., “callbacks,” National Research Council 2004). Such studies lump together any discrimination that may occur in the decision about whom to call back *and* in earlier decisions.¹ Researchers in this field have theorized about the role of these earlier phases in the recruitment process (Bertrand and Mullainathan 2004; McGinnity et al. 2009) and have suggested that if employers have to assess large numbers of candidates they may use simple heuristics to make a first selection (i.e., apply a “lexicographic search”). One of these heuristics could be to “simply read no further” when they see a minority name (Bertrand and Mullainathan 2004, 1011). Employers may then never see minority applicants' skills. Whether such processes actually occur has, to the best of our knowledge, not yet been investigated. The present study examines when exactly discrimination occurs. We do this by studying both the phase that precedes callbacks and callbacks themselves. That is, we focus on two dependent variables. The first dependent variable includes information on employers' decisions whether to view an applicant's complete résumé after seeing a short profile including the candidate's name, level of education, and job title. This will enable us to directly test the idea of a “lexicographic search” by employers. The second variable measures whether, having seen an applicant's complete résumé, an employer decides to contact this applicant, for example with a request for further information or an invitation for a job interview.

In addition to providing insights in the different phases of recruitment procedures, another advantage of this new field experiment approach using the internet is that it allows for more extensive coverage of *geographical areas* and *applicant features*. Prior field experiments generally have a rather limited geographical scope, often including one to three cities (e.g., Allasino et al. 2004; Arai, Bursell, and Nekby 2008; Bertrand and Mullainathan 2004; Bursell 2007; Carlsson and Rooth 2007; Oreopoulos 2011; Pager, Bonikowski, and Western 2009; Pager and Quillian 2005). Also, previous field experiments often include only male applicants and one occupational level (e.g., Allasino et al. 2004; Carlsson and Rooth 2007; Kaas and Manger 2012; Pager, Bonikowski,

and Western 2009). The present study includes fictitious job applicants that live across the Netherlands and indicate that they are willing to commute. Therefore, employers in all areas of the Netherlands can be expected to react to the fictitious applicants in this study. Moreover, we vary a range of applicant features across résumés. Candidates differ regarding gender, age, level of education, work experience, sector, additional courses or competencies, internships, hobbies, and marital status. Our approach thus improves the generalizability of our findings compared to previous field experiments.

This study focuses on discrimination of Arabic-named job applicants in the Netherlands. Within the Dutch context, most Arabs are of Moroccan origin. Moroccans came to the Netherlands as guest workers, mainly during the 1960s and 1970s. Their stay in the country was initially thought to be temporary. Yet, a considerable share of these guest workers eventually settled permanently in the Netherlands and brought their families over. There are several reasons for the focus on this minority group. First, Moroccans are the second largest non-Western ethnic minority group in the Netherlands; in 2011 they made up 2.1 percent of the population in the Netherlands² (Gijsberts, Huijnk, and Dagevos 2012). Second, in recent years, the Moroccan-Dutch population has been at the center of attention in the debate on the social and economic integration of ethnic minorities. This is due (in part) to their position on the labor market, which is worse than the position of the native Dutch population but also worse than that of most other non-Western minority groups (Gijsberts, Huijnk, and Dagevos 2012). Third, research has shown that natives in the Netherlands hold more negative attitudes toward the Moroccan minority than toward other minority groups (Verkuyten and Kinket 2000). Finally, of all non-Western groups, Moroccans most often file official complaints regarding perceived discrimination (Nievers and Andriessen 2010). Therefore, any degree of discrimination found in this study can be expected to provide an upper bound of the extent to which ethnic minorities are discriminated against in the Dutch labor market.

Experimental Design

Instead of using matched résumés of pairs of equivalent minority and majority candidates, as is common in correspondence tests (National Research Council 2004; Pager 2007; Riach and Rich 2002), we used unique résumés that are based on résumés of actual job seekers. To each unique résumé we randomly assigned either a typically Arabic or a typically native Dutch name. As a result of the random assignment, Arabic-named and Dutch-named candidates should have similar levels of education and work experience and in general be comparable regarding features relevant to employers. An examination of descriptive statistics for all variables in the analyses separately for applicants with Moroccan names and those with Dutch names verified that this randomization was successful³ (see table A1 in the online appendix). Any differences in outcomes that we may find between Moroccan-named and Dutch-named candidates can for that reason not be explained by differences in the quality of the candidates. The study was conducted in two waves; we repeated the experiment a couple of

months after the first wave using the same résumés but reversing the candidates' ethnic origin.

The first step in the preparation of the experiment was to create résumés for the fictitious job applicants. To ensure that the résumés were realistic and representative, we started with 160 résumés of actual job seekers that were accessible online. Given the relatively high costs⁴ that are involved with purchasing access to online résumé databases, we assume that employers looking for personnel choose one website to search for suitable candidates. We therefore consider a résumé on one website to be a different case than the same résumé on the other website. We posted résumés of fictitious candidates on two online résumé databases. This brings us to a total of 320 individual cases. The same procedure was repeated in the second wave, several months later, only in this wave, every résumé that was assigned a typically Dutch name in the first wave was assigned an Arabic name, and vice versa. Assuming that the employers looking for personnel during the first wave are different employers than those in the second wave, we view the fictitious applicants used in the second wave as different cases than those in the first wave. Hence, the total number of fictitious applicants in our experiment was 640. In one case, a profile was removed by the website after it was discovered that the fictitious applicant did not work at a company mentioned on the résumé. After removing this fictitious person and those with equivalent résumés from the data, the number of cases in our analyses is 636.

To prevent the résumés used in this study from being associated with actual applicants, we used résumés that we retrieved from a different online résumé database than the two databases used in this experiment, two years prior to the data collection for this study. Names and contact details of the genuine job seekers were removed from the résumés. Furthermore, in order to reduce similarity to actual job seekers, we adjusted or removed overly detailed information that would stand out too much. However, to preserve the realistic nature of the applicant profiles, the original overall content and form of the résumés were maintained as much as possible.

This experiment includes three occupational levels, namely jobs requiring intermediate vocational training, higher vocational training, or a university degree. All fictitious candidates in the experiment were born and obtained their education in the Netherlands. Hence, the Arabic-named applicants in this study were so-called "second generation" immigrants. Moreover, this study covers five labor market sectors: finance and accounting; human resources; transportation; marketing and production management; and health care. These sectors were chosen because they cover occupations that differ regarding the types of skills that are required, the amount of customer and co-worker contact involved, and the male-female ratio, although we avoided sectors that include either predominantly male or predominantly female occupations. Furthermore, fictitious applicants lived in ten different areas of the Netherlands. These areas consist of the following municipalities and their surroundings: Amsterdam, Apeldoorn, Breda, The Hague, Eindhoven, Nijmegen, Roosendaal, Rotterdam, Utrecht, and Zwolle. These municipalities vary in size but include the country's largest cities. The municipalities are located in seven of the twelve Dutch provinces. However,

given that their profiles indicated that applicants were willing to move or commute, this study is in fact broader than that; it potentially includes employers in the entire country.

All aspects of the résumés were registered. Remember that résumés are based on those of actual job seekers that were kept as they were as much as possible. For each résumé we coded age using information on the résumé about date and year of birth. Résumés of applicants older than 45 were avoided or altered, as higher educational degrees and occupations may seem implausible for early (and therefore older) migrants of Moroccan origin, who came to the Netherlands mostly to work in low-skilled jobs and were generally not highly educated.⁵ Level of education was coded using information on school types and graduation dates. As other (sub-) levels were not mentioned frequently enough to constitute a separate category, we distinguish between the three major educational levels in the Dutch system: intermediate vocational education, higher vocational education, and university level. Years of work experience and whether or not the occupational career of the candidate was ever interrupted were coded using information and dates that were provided regarding occupations and organizations. The level of work experience mentioned in the résumés varied between none and 26 years of experience. Additional features that, if mentioned in the résumé, were coded were whether the candidate had followed additional courses, had extra competencies, had held an internship, had had a job while studying, had any hobbies, and whether a partner was mentioned (the latter variables are dichotomous; see table 1 for details on these variables).

We generated identities for the fictitious job applicants: names, telephone numbers, email, and postal addresses. The names are crucial to our experimental design because they need to signal the applicants' ethnic background. Lists of typically native Dutch and Arabic first names and surnames were compiled using registers of names given to children born in the Netherlands, phone books, and the internet.⁶ Examples of typically Arabic first names are Fatima, Zainab, and Hakima (female) or Mohammed, Rashid, and Murad (male), whereas typically Dutch first names are Renske, Marloes, and Jasmijn (female) or Daan, Wouter, and Jeroen (male). Examples of typically Arabic last names are Alaoui, Abdellah, or Hamdaoui, whereas typically Dutch last names are De Groot, Willemse, or Brinkman (see table A2 in the online appendix for an overview of all names used in the experiment). Ambiguous names⁷ were avoided. Dutch and Arabic names were then assigned randomly to the résumés. Although it is uncommon for Dutch employers nowadays to send positive reactions via postal mail (Andriessen et al. 2010), applicants do need postal addresses. We constructed fictitious addresses using existing street names in the municipality of residence of the applicants but non-existing house numbers.⁸ Additionally, each fictitious applicant was assigned a unique, working phone number that was attached to a voicemail box. Each voicemail box had a similar, neutral outgoing message mentioning the number dialed and a request for the caller to leave a message. Messages were recorded. Finally, for each applicant, a working email address was created.

The next step was to upload the résumés to online résumé databases and create applicant profiles on the websites. The data were collected in two waves. Data for the first wave were collected between May and July 2011. Data for the second wave were collected between September and November 2011. We used two well-known and popular websites with a broad scope. We avoided websites that focus on a particular occupational level or sector. On the websites included in this study, employers can search for candidates by indicating preferences concerning a range of applicant features⁹ or by entering keywords. In order to avoid posting a large number of new résumés online at the same time, we uploaded résumés in smaller groups over the course of three weeks. We made sure that the groups consisted of fictitious applicants with different levels of education and across different sectors. Résumés were online for eleven weeks. The résumés were removed from the résumé database in the same order as they were put online, so the exposure for each résumé was the same.

Finally, we measured employers' responses to the fictitious applicants' profiles and résumés. We focus on two dependent variables corresponding to two types of responses. The first dependent variable is the number of times that more information about an applicant was requested by employers. After entering search terms, employers are presented with a list of short applicant profiles consisting of candidates' name, educational level, and current job title. Employers can obtain more information about a candidate from the full résumé that can be accessed by clicking candidates' names. Job seekers who have uploaded their résumé to one of these websites are able to track the number of times their complete résumé was viewed. We made use of this feature of online résumé databases to collect information about this stage of the recruitment procedure. The second dependent variable is the number of times a candidate received a positive reaction from an employer via email or phone. Employers' decisions in this second stage are conditional on those in the first stage in the sense that one can contact a candidate only after having viewed the complete résumé. Although we have so far mentioned only positive reactions of employers, this study in fact also includes reactions of employment agencies. A positive reaction may be an invitation for an interview or a request for more information about the candidate by either an employer or an agency, but can also be an employment agency informing an applicant that they may have interesting jobs for him or her, or an employment agency asking for permission to include the applicant in their database.¹⁰ Descriptive statistics of all variables included in the analyses are presented in table 1.

Ethical Considerations

Although field experiments have been widely used in recent decades, such studies entail some ethical considerations. There are two ethical issues involved (c.f. McGinnity et al. 2009). The first issue is that participants are unaware of the fact that they are part of an experiment. This is a crucial feature of this type of research, as informing participants would invalidate the experiment. It is therefore not possible to attain informed consent, as is generally required in social

Table 1. Descriptive Statistics

	Range	Mean	Standard deviation
<i>Dependent variables</i>			
Views complete résumé	0–81	7.96	9.03
Positive reactions received	0–11	0.61	1.20
<i>Independent variables</i>			
Arabic-named	0/1	0.50	
Female	0/1	0.48	
Age	21–45	30.65	6.48
Education			
Intermediate vocational	0/1	0.50	
Higher vocational	0/1	0.31	
University	0/1	0.19	
Work experience (years)	0–26	7.13	6.32
Internship mentioned	0/1	0.47	
Additional competencies mentioned	0/1	0.83	
Additional courses mentioned	0/1	0.57	
Interruptions occupational career	0/1	0.16	
Job during education mentioned	0/1	0.72	
Partner mentioned	0/1	0.25	
Hobby mentioned	0/1	0.55	
Sector			
Finances and accounting	0/1	0.20	
Human resources	0/1	0.20	
Marketing and production management	0/1	0.19	
Health care	0/1	0.20	
Transportation	0/1	0.20	
Region of residence applicant			
Amsterdam	0/1	0.13	
Apeldoorn	0/1	0.06	
Breda	0/1	0.09	
The Hague	0/1	0.09	
Eindhoven	0/1	0.09	
Nijmegen	0/1	0.13	
Roosendaal	0/1	0.07	
Rotterdam	0/1	0.16	
Utrecht	0/1	0.09	
Zwolle	0/1	0.09	
Wave	0/1	0.50	
Website	0/1	0.50	

Source: Internet-based field experiment ethnic discrimination in the Dutch labor market (2011).

Note: $N = 636$

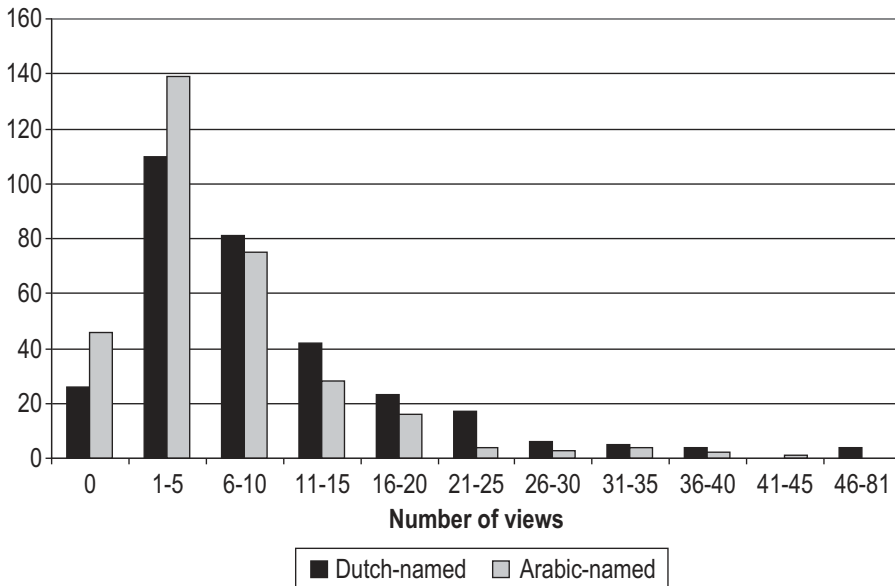
scientific research. A second issue is that field experiments involve deception, both in the fabrication of fictitious applicants' profiles and in applying for jobs. There are, however, several reasons that warrant the use of field experimental techniques. First, the social damage caused by discrimination is considerable. Hence, it is important to monitor discrimination and gain a better understanding of this phenomenon. Second, the "superior accuracy and transparency of this technique" (Riach and Rich 2004, 469) justifies the use of field experiments instead of other, less suitable ways to measure discrimination. We minimized possible inconveniences to employers or genuine applicants by responding to positive reactions quickly and politely. Finally, the outcomes of this study will be treated confidentially; no information about specific employers, agencies, or websites will be disclosed (c.f. National Research Council 2004; Riach and Rich 2004).

Results

Descriptive Results

Before we move on to our multivariate analyses, we briefly discuss some descriptive results. Figure 1 presents an overview of the number of times that applicants' complete résumés were viewed, distinguishing between Arabic-named and Dutch-named candidates. Compared to résumés of applicants with Dutch names, résumés of applicants with Arabic names are more likely to receive no

Figure 1. Number of times complete résumé viewed by applicants' name



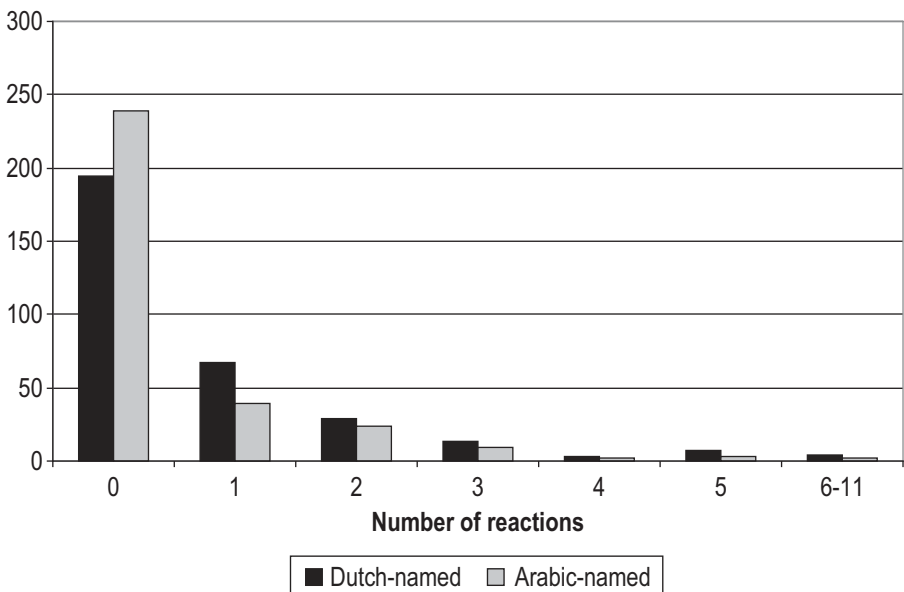
Source: Internet-based field experiment ethnic discrimination in the Dutch labor market 2011.

Note: For presentation purposes several separate categories were combined (only in this figure). $N=363$.

views at all. Of the 72 candidates whose complete résumé was never requested, 64 percent were Arabic-named.¹¹ Also, résumés of Arabic-named candidates are more likely than those of Dutch-named candidates to be viewed a very small number of times (1–5). Résumés of candidates with Dutch names, conversely, are more likely to be viewed frequently (ten times or more). Arabic-named applicants are completely absent in the highest category of résumés that were viewed 46 times or more. Looking at the average number of views per group, Dutch-named candidates' full résumés were typically viewed 9.57 times, whereas Arabic-named applicants' résumés were on average viewed 6.36 times. In other words, complete résumés of Dutch-named applicants are about 50 percent more likely to be viewed by employers or employment agencies than résumés of Arabic-named applicants.

Figure 2 presents a similar overview for the number of times applicants received a positive reaction from employers or agencies. Note that this figure includes the applicants whose complete résumé was never requested and who consequently received no positive reactions.¹² Although the share of applicants that received no reactions at all is considerable among both groups, Arabic-named candidates more often fall into this category than Dutch-named applicants. Conversely, Dutch-named applicants are more likely than Arabic-named candidates to receive one or more reactions. On average, Arabic-named applicants received 0.47 positive reactions, compared to 0.76 for Dutch-named candidates. Hence, applicants with typically Dutch names are about 60 percent more likely to receive a positive reaction than Arabic-named candidates.

Figure 2. Number of positive reactions by applicants' name



Source: Internet-based field experiment ethnic discrimination in the Dutch labor market 2011.

Note: For presentation purposes the highest categories were combined (only in this figure). $N = 636$.

Regression Analyses

For our multivariate models, we use negative binomial regression analyses.¹³ Both dependent variables are count variables and, as shown in figures 1 and 2, deviate considerably from a normal distribution (the data are strongly skewed to the right). This makes ordinary least squares regression models unsuitable. Moreover, the distributions of both variables show signs of “overdispersion”: greater variance than might be expected in a Poisson distribution. Negative binomial regression analyses are therefore the most suitable method to analyze our data¹⁴ (Long and Freese 2006).

Table 2 presents regression analyses for the number of times that fictitious applicants’ full résumés were viewed. In order to estimate the effects of applicants’ features (and in particular applicants’ names) as accurately as possible, all résumé features that we coded are incorporated in these analyses. The results in this table confirm our descriptive analyses. They show that applicants’ names have a highly significant effect on the number of times that their complete résumés are viewed. After seeing short applicant profiles that prominently feature applicants’ names, employers and employment agencies are less likely to view the complete résumés of candidates with Arabic names than those of applicants with Dutch names. In other words, we find evidence of discrimination of Arabic-named applicants in this phase of the recruitment process.¹⁵

Although this is not the focus of the present article, table 2 also shows that females, younger applicants, applicants with a university degree, and those who do not mention additional competencies on average receive fewer views of their complete résumé compared to males, older applicants, those with intermediate vocational training, and those who mention additional competencies. Also, résumés of applicants in human resources, marketing and production management, or health care, as well as applicants living in The Hague and surroundings, are viewed less often than those of applicants in the transportation sector and those living in the Zwolle area. Finally, we find significant differences in the number of views of résumés between websites and waves. Full résumés of applicants in the second wave were in general (i.e., regardless of their ethnic background) less likely to be viewed than résumés of applicants in the first wave.

Table 3 presents regression analyses for the number of positive reactions that applicants received from employers or employment agencies. Note that, because an employer must have requested an applicants’ entire résumé in order to be able to contact the candidate, only those fictitious applicants whose résumé was viewed at least once are included in the analyses for this stage of the recruitment procedure. The 72 applicants whose résumé was not requested at all are excluded. This leaves 564 cases for the analyses for our second dependent variable (see table 3). Moreover, in order to accurately estimate the effect of applicants’ names on the number of positive reactions (that is, to assess whether candidates’ names have an influence on the number of reactions they receive *over and above* the effect that these names may have on the number of times their résumé is requested), we control for the number of times that each applicant’s complete résumé was viewed. As in table 2, the analyses presented here include all coded features of the résumé.

Table 2. Negative Binomial Regression Analysis of Number of Views of Complete Applicant Résumés

	Coef.	Std. err.	Sig.
Constant	2.120	0.190	**
Arabic-named	-0.416	0.072	**
Female	-0.141	0.010	*
Age	0.024	0.010	*
Education (intermediate vocational = ref)			
Higher vocational	0.111	0.083	
University	-0.251	0.105	*
Work experience (years)	-0.012	0.012	
Internship mentioned	-0.018	0.083	
Additional competencies mentioned	0.221	0.097	**
Additional courses mentioned	0.109	0.073	
Interruption occupational career	0.079	0.099	
Job during education mentioned	-0.037	0.085	
Partner mentioned	-0.044	0.082	
Hobby mentioned	-0.075	0.072	
Sector (transportation = ref)			
Finances and accounting	-0.110	0.103	
Human resources	-0.719	0.103	**
Marketing and production management	-0.738	0.103	**
Health care	-1.143	0.122	**
Region of residence applicant (Zwolle = ref)			
Amsterdam	0.188	0.157	
Apeldoorn	-0.014	0.179	
Breda	0.061	0.161	
The Hague	-0.487	0.172	*
Eindhoven	0.009	0.157	
Nijmegen	-0.124	0.153	
Roosendaal	-0.041	0.171	
Rotterdam	0.152	0.144	
Utrecht	-0.130	0.154	
Wave 2	-0.345	0.063	**
Website 2	0.812	0.065	**
N		636	
Log likelihood		-1,800.218	
Chi-square (df)		387.33 (28)	
Pseudo R-square		0.097	

Source: Internet-based field experiment ethnic discrimination in the Dutch labor market (2011). Significance (2-tailed): ** $p < .01$; * $p < .05$

Table 3. Negative Binomial Regression Analysis of Positive Reactions from Employers

	Coef.	Std. err.	Sig.
Constant	-1.245	0.441	
Arabic-named	-0.099	0.136	
Female	-0.196	0.157	
Age	0.001	0.023	
Education (intermediate vocational = ref)			
Higher vocational	0.049	0.175	
University	-0.021	0.231	
Work experience (years)	-0.009	0.026	
Internship mentioned	0.008	0.179	
Additional competencies mentioned	0.276	0.271	
Additional courses mentioned	0.012	0.159	
Interruption occupational career	-0.253	0.204	
Job during education mentioned	-0.146	0.183	
Partner mentioned	0.247	0.166	
Hobby mentioned	0.007	0.150	
Sector (transportation = ref)			
Finances and accounting	0.259	0.200	
Human resources	0.126	0.225	
Marketing and production management	-0.276	0.237	
Health care	0.019	0.271	
Region of residence applicant (Zwolle = ref)			
Amsterdam	0.420	0.321	
Apeldoorn	0.385	0.380	
Breda	-0.102	0.351	
The Hague	-0.077	0.379	
Eindhoven	0.242	0.338	
Nijmegen	-0.299	0.342	
Roosendaal	0.340	0.346	
Rotterdam	-0.029	0.310	
Utrecht	-0.131	0.331	
Wave 2	-0.138	0.137	
Website 2	-0.434	0.146	**
Number of views complete résumé	0.079	0.009	**
N		564	
Log likelihood		-543.564	
Chi-square (df)		184.80 (29)	
Pseudo R-square		0.145	

Source: Internet-based field experiment ethnic discrimination in the Dutch labor market (2011). Significance (2-tailed): ** $p < .01$

The results in table 3 show that, holding the number of times that applicants' complete résumés were requested constant, there is no significant difference between Dutch-named and Arabic-named job seekers regarding the number of positive reactions they receive from employers or employment agencies.¹⁶ Hence, these results provide no evidence of discrimination in this later phase of the recruitment procedure over and above any discrimination that may have occurred in the first phase.¹⁷

Finally, table 3 reveals that the number of views of their complete résumé has the expected positive effect on the number of reactions applicants receive. Controlled for the number of views of their résumé, only the website on which résumés are placed affects applicants' chances of receiving reactions; aside from names (ethnicity), none of the other predictors has a significant effect.¹⁸

Conclusions and Discussion

The present study examined discrimination of Arabic-named job applicants during online recruitment procedures in the Netherlands. It aimed to answer the following questions: are ethnic minority job applicants discriminated against in recruitment procedures via online résumé databases and, if so, is there a difference in the extent of discrimination between different phases of these procedures? We developed and implemented a new field experiment approach that entails creating profiles and posting résumés of fictitious applicants on online résumé databases. A crucial difference between the approach used in this experiment and prior field experiments is that we were able to study multiple subsequent phases in employers' decision processes during recruitment procedures. Like previous field experiment studies, we examined whether or not applicants received positive reactions from employers via telephone or email. However, we also studied the step preceding this phase by examining whether employers decide to view an applicant's complete résumé after seeing a short profile prominently featuring the candidate's name. This allowed us to investigate exactly at which point during the recruitment process discrimination arises.

The outcomes of the present study can be summarized in four main conclusions. First of all, our results provide strong evidence of discrimination against Arabic-named applicants in recruitment procedures via résumé databases on the internet in the Netherlands. In the first phase of the online recruitment procedure, employers turn out to be significantly less prone to view entire résumés of candidates with Arabic names than those of candidates with Dutch names. Résumés of Dutch-named candidates are about 50 percent more likely to be viewed than those of Arabic-named candidates. Regarding the second stage of the recruitment procedure, we found no overall significant effect of having an Arabic name on the number of positive reactions that candidates received when we controlled for the number of times applicants' résumés were viewed. Even so, discrimination in the first phase of the recruitment process does translate into a considerable difference in the average number of positive reactions received by Arabic-named and Dutch-named applicants. The cumulative difference between Dutch-named and Arabic-named applicants after these two stages is such that

Dutch-named job seekers are about 60 percent more likely to receive a positive reaction than their Arabic-named counterparts. Hence, the answer to the first part of our research question is affirmative.

One may ask how these results compare to those of previous field experiments on ethnic or racial discrimination in classical recruitment procedures. Based on their field experiment conducted in New York, [Pager, Bonikowski, and Western \(2009\)](#) concluded that African Americans were half as likely as whites to receive a callback. In a study on discrimination of African American job applicants in Boston and Chicago, [Bertrand and Mullainathan \(2004\)](#) showed that applicants with white-sounding names were about 50 percent more likely to receive a callback than those with black-sounding names. Based on a field experiment in Ireland, [McGinnity et al. \(2009\)](#) showed that Irish applicants were over twice as likely to be invited for an interview as candidates of African, Asian, or German origin. [Oreopoulos \(2011\)](#) found somewhat lower discrimination rates in his study on discrimination of applicants with Chinese-, Indian-, Pakistani-, and Greek-sounding names in the Toronto metropolitan area. Candidates with English-sounding names were on average 39 percent more likely to receive a callback. [Cediey and Foroni \(2008\)](#) found a discrimination rate of 54 percent against applicants of North African and Sub-Saharan African origin in France. In the Netherlands, [Andriessen et al. \(2010\)](#) found that native Dutch candidates were about 19 percent more likely to receive a positive reaction from an employer than applicants of Turkish, Moroccan, Surinamese, or Antillean origin. In a somewhat older experiment conducted in the Netherlands but focusing on a different minority group, [Bovenkerk, Gras, and Ramsoedh \(1994\)](#) found a discrimination rate of 18 percent against candidates of Surinamese origin. Finally, [Carlsson and Rooth \(2007\)](#) conducted a study on discrimination against a minority group that can be considered similar to the minority group in our experiment—namely, applicants with Middle Eastern names—in Stockholm and Gothenburg. In line with results of many other field experiments, they found that applicants with Swedish names were about 50 percent more likely to receive a callback than those with Middle Eastern names. Hence, the degree of discrimination we found in this study is quite comparable with findings from previous field experiments that focused on traditional recruitment procedures. The discrimination rate we found is stronger than rates found in some of these studies but by no means as strong as in others. Compared to previous field experiments in the Netherlands, the discrimination rate we found is rather high.

A second key conclusion, which provides an answer to the second part of our research question, is that discrimination of Arabic-named applicants takes place mainly in the very first stage of the recruitment procedure (when employers decide whether or not to request candidates' full résumé) and less so in the later phase (in which employers do or do not contact applicants). For the first phase, we found evidence of considerable discrimination. Yet, for the second phase we at first seemed to find no significant effect of having an Arabic name on the number of positive reactions *over and above* the negative effect of having an Arabic name on the number of times their complete résumé was viewed. That is, holding the number of times that their résumé was viewed constant, candidates with

Arabic names appeared no less likely to be contacted by employers than candidates with Dutch names. Outcomes of additional analyses, however, provided a more refined picture. Looking at differences across the two waves of our study, we did find evidence of *some* discrimination in the second phase, but *only* in the second wave of this study (below, we will discuss the difference between the two waves of this study in more detail). Nonetheless, our results clearly show that differences in success during recruitment procedures via online résumé databases between Arabic-named and Dutch-named applicants arise mainly in the first phase of such procedures. It appears that, upon seeing an Arabic name, employers often directly decide not to look into a candidate's full résumé to obtain more information on his or her skills. These results are consistent with the idea of a "lexicographic search" by employers (Bertrand and Mullainathan 2004; McGinnity et al. 2009). When evaluating applicants' profiles, but perhaps in particular when they have to assess a large number of potential candidates, employers use candidates' names as a quick heuristic upon which they base their decision. Consequently, employers often do not get to see information about Arabic-named applicants' background, skills, or experience. These results shed more light on the processes that lead to disparities in outcomes of recruitment procedures between ethnic minority and majority job seekers.

A third important conclusion concerns the overall uniformity of the degree of discrimination of Arabic-named applicants. We found no significant differences in the level of discrimination against Arabic-named applicants in the first phase of online recruitment procedures across ten geographical regions, five sectors of the labor market, and both websites included in this study. Likewise, we found no significant differences in discrimination of Arabic-named applicants across different age groups, educational levels, or between male and female applicants. Additional analyses showed that there were hardly any significant effects when we looked at interactions between applicants' names and these other predictors. In this sense, our findings are comparable to those of Bertrand and Mullainathan (2004, 1010), who found that the gap in callbacks between African American and white applicants was rather uniform "across occupations, job requirements, and, to a lesser extent, [...] industries." Likewise, in a study on discrimination in Ireland, McGinnity et al. (2009, 32) found "no difference in the incidence of discrimination by type of minority, time period, occupation or sector." Such uniform ethnic gaps are difficult to explain in terms of one of the most prominent theoretical approaches on discrimination: statistical discrimination models. Statistical discrimination models assume that employers have imperfect information about job applicants' abilities. They cannot observe everything they wish to know about candidates based upon the information provided, for example in résumés. Risk-averse employers therefore use group membership to try to improve their predictions (Phelps 1972; Arrow 1973). According to one class of statistical discrimination models, employers use information or (stereotypical) beliefs they have about group traits to make inferences about individuals. Another class of statistical discrimination models focuses on the precision of the information that employers have about individual productivity (Altonji and Blank 1999). In this class of models, employers believe that the same observable

signal is more precise for the ethnic majority than for ethnic minority group members. Therefore, even in the absence of clear beliefs or stereotypes about group averages, employers may treat minority candidates differently because they are better able to judge majority than minority workers (Aigner and Cain 1977). In our study, the level and type of skills required varied considerably across occupational levels and sectors. Hence, according to statistical models of discrimination, the degree of discrimination would vary across the occupational levels and sectors in our experiment. Yet, we found no differences between sectors or occupational levels in the extent of discrimination. Under the second class of statistical discrimination models, ethnic minority group members should receive lower returns to observable characteristics than majority group members do (such as found in Bertrand and Mullainathan [2004]). However, the insignificant results for the interaction terms of applicants' ethnicity with other productivity-related applicant features (included in additional analyses) provide no support for this type of explanation.

A fourth important conclusion concerns the exception to the abovementioned uniformity of the degree to which Arabic-named applicants are discriminated against. In additional analyses, we found a difference between the two waves of this study in the extent to which Arabic-named applicants are discriminated against. It is important to point out here that the number of times that résumés were viewed and the number of positive reactions applicants received was higher in the first wave (May to July 2011) than in the second wave (September to November 2011) for all candidates (both Dutch-named and Arabic-named). That employment opportunities during the second wave were worse for Dutch-named and Arabic-named applicants reflects the economically poorer conditions and lower demand for labor in the Netherlands during the second wave. Yet, our analyses showed that under these economically less prosperous circumstances, candidates with Arabic names are hit significantly harder than their Dutch-named counterparts. In short, under economically poorer conditions, employers seem more inclined to discriminate. A possible explanation for this result can be found in ethnic competition theory (or related models regarding intergroup competition; Blalock [1967]; Blumer [1958]; Coenders, Lubbers, and Scheepers [2008]), which assumes that intergroup competition over economic resources or conflicting values leads members of one group to perceive those of another group as threatening. This threat perception in turn is thought to lead to negative attitudes toward the other group. It is assumed that when economic circumstances are more precarious, real or perceived intergroup competition over resources is intensified. Note that although the position of native employers themselves may not be threatened when the economic situation deteriorates, they are still likely to defend the interest of their own ethnic group, native applicants. Hence, economic downturn is expected to lead to more negative interethnic attitudes, which may in turn lead to more discrimination. Another theoretical approach that may explain the difference between waves is the job competition model (Thurow 1975). According to this model, the labor market can be represented as consisting of two rows. One row contains jobs, with the most attractive jobs at the beginning and the least attractive jobs at the end of the row. The other

row contains job seekers, ordered from the most suitable to the most unsuitable candidates. Job seekers try to obtain the most attractive jobs, whereas employers aim to hire the most suitable employees. Consequently, the job seekers that are considered least desirable by employers are forced to accept the less attractive jobs. In economically less prosperous times, when the demand for labor is low relative to the supply of labor, the job queue will be shorter and the least attractive job seekers may not be able to find a job at all. Both of these theoretical approaches predict that worse economic circumstances lead to more discrimination.¹⁹ Our findings may thus be interpreted as an indication that the worsening economy in our second compared to our first wave motivates employers to defend the interests of their own ethnic group by favoring Dutch-named over Arabic-named applicants. Alternatively, these results may be interpreted as evidence that employers (always) rank applicants with Arabic names more toward the end of the queue than Dutch-named candidates. According to this line of reasoning, the relative length of the job queue had decreased in our second wave compared to the first wave, decreasing the employment chances of the less desired Arabic-named candidates.

To conclude, the results of this study also have important practical implications. They suggest that anonymous applications may contribute to more equal chances for equally qualified ethnic majority and minority job seekers. This conclusion is in line with the outcome of a recent pilot project conducted in Germany, in which anonymous applications were shown to lead to more equal chances of ethnic minority (and female) applicants (Krause et al. 2012). Anonymous applications would not only increase the employment opportunities for these ethnic minority candidates, but would also benefit employers by leading to more efficient (more merit-based) matching of candidates and jobs (McGinnity et al. 2009). In online recruitment procedures, anonymous applications would be especially easy to implement. Websites could simply make it a rule to not display candidates' names during the first stage(s) of the procedure. Some résumé databases, however, do show candidates' names very prominently when presenting search results to employers. What is more, when showing these search results, most websites provide very little other information about candidates. Compared to written applications, in which additional information about candidates is printed directly under candidates' names in their résumé, online recruitment requires employers to carry out an extra step to gain access to such information; they have to actively request the entire résumé. This may mean that online résumé databases negatively impact the chances of ethnic minority job seekers, instead of creating more equal chances as they could do.

Notes

1. Some previous research covered multiple stages of the recruitment process. Most notably, investigations of the International Labour Office (Bovenkerk 1992) and Urban Institute (Mincey 1993) cover discrimination during three stages: first contact (via telephone), invitations for interviews, and job offers. However, these studies do not provide insight into employers' (potentially crucial) first reactions after seeing résumés.

2. Turks are the largest non-Western ethnic minority group in the Netherlands (2.3 percent). However, they take a less prominent position in the political and public debate. Also, Moroccans more often file formal complaints regarding discrimination than Turks (see below).
3. There are some minor differences between Dutch-named and Arabic-named applicants (see table A1). Given their modest size, these are not expected to have a notable impact on our results.
4. Depending on the website, the costs range from 750 to 1000 euros for access to a résumé database per month.
5. Having a high-level educational degree and a high-level occupation could therefore appear unrealistic in the case of these older minority applicants. For example, male Arabic-named applicants who are 60 years old but have a university degree and work in accounting are very rare in the Netherlands and may therefore appear unlikely.
6. To determine which names were typical for each ethnic group, we used name registers, including information on the popularity of each name, and Internet forums aimed at the Moroccan-Dutch population where common and appropriate Moroccan names are discussed.
7. Names that are also popular among other ethnic groups, like Omar and Sara.
8. If employers reacted via postal mail, such reactions did not reach us and are therefore not included in the study.
9. Namely: career level (e.g., “starter,” “experienced”), educational attainment, function type, type of contract (e.g., “temporary”), preference for full-time or part-time, sector, availability (e.g., “directly available”), preferred salary, and the date at which a profile was last changed.
10. In additional analyses we examined whether the effect of applicants’ name on their likelihood of receiving reactions is different for different types of reactions. We ran separate analyses for reactions from employers and from employment agencies. Also, we distinguished between invitations for interviews and other types of positive reactions (requests for more information, requests to include the applicant in a database, and reactions mentioning possibly interesting jobs for an applicant). We found no differences between these additional analyses and the main analyses regarding the effect of applicants’ names.
11. Of this group of 72 applicants, 67 percent was female, 61 percent completed intermediate vocational training, 26 percent higher vocational training, and 13 percent university.
12. By including the applicants whose résumés were never requested and who were in fact not “at risk” of receiving a positive reaction in this figure, we are able to compare the descriptive results presented here to outcomes of prior field experiments that did not distinguish between different phases of the recruitment process.
13. Using the `nbreg` command in Stata 12.
14. Vuong tests show that zero-inflated negative binomial models are not a significant improvement over standard negative binomial models.
15. A model that includes only applicants’ ethnicity leads to the same conclusion.
16. Importantly, a model in which we do not control for the number of times that an applicant’s full résumé was viewed leads to the conclusion that Arabic-named applicants *are* discriminated against in terms of the number of reactions they receive from employers or agencies. A model that includes only applicants’ ethnicity also leads to that conclusion.

17. To assess how consistent our findings are across waves, regions, sectors, occupational levels, and categories of applicants, we estimated a series of models including interaction effects of names with the other applicant features as well as with wave and website (results are available on request). Findings for the first dependent variable, number of views, show that all but one of the interaction effects are statistically insignificant. That is, we found no significant differences in discrimination across websites, regions, or sectors, nor according to applicants' level of education, gender, age, or other personal features. There is only one exception. Although the effect of applicants' names on views of the complete résumé is highly significant in both waves, discrimination of Arabic-named applicants is stronger in the second wave than in the first wave. The demand for labor during the second wave was low compared to the demand during the first wave; the average number of times that résumés were viewed and the average number of positive reactions were lower in the second wave than in the first wave for *all* candidates. Hence, results indicate that discrimination is stronger when demand for labor is lower. For the second dependent variable, positive reactions, there are only a few (mostly marginally) significant interaction effects. Most importantly, we again find a significant difference in the effect of applicants' names between waves. Here, there is no significant influence of applicants' names on the likelihood of receiving a positive reaction in the first wave, whereas there *is* in the second wave. In other words, we find some evidence of discrimination against Arabic-named applicants in the second phase of the recruitment procedure (over and above any discrimination in the first phase) but *only* in the second wave.
18. We conducted two types of additional analyses to check whether our results are biased due to the interdependency of the two recruitment phases we study (results available on request). First, we ran seemingly unrelated regression analyses (we can only estimate linear models here). Results were very similar to outcomes of our main analyses and the analyses with interactions. Discrimination of Arabic-named applicants during the first phase of the recruitment procedure (number of views) occurred in both wave 1 and wave 2, whereas discrimination of Arabic-named applicants during the second phase of the recruitment procedure (number of reactions) occurred only in wave 2. Second, we estimated Heckman two-step sample selection models using wave as selection variable (Heckman 1979). We dichotomized the dependent variables, as these Heckman models cannot take the negative binominal distribution of our dependent variables into account. The pattern of results is the same as for the seemingly unrelated regression analyses.
19. These approaches differ in their assumptions about the processes that take place at the individual level. Ethnic competition theory assumes that in economically less prosperous times, employers' attitudes toward ethnic minorities become more negative. The job competition model, by contrast, assumes that employers' attitudes toward (or beliefs about) ethnic minorities remain the same, but the circumstances lead to different outcomes. In this study, we are unable to distinguish between the two approaches, as they lead to the same prediction about the effect of economic circumstances on discrimination.

Appendix

Table A1. Randomization Check: Mean Scores on Independent Variables by Applicant Ethnicity in Wave 1^a

	Dutch-named	Arabic-named
Female	0.47	0.50
Age	30.42	30.88
Education		
Intermediate vocational	0.49	0.50
Higher vocation	0.32	0.31
University	0.19	0.19
Work experience (years)	6.71	7.54
Internship mentioned	0.53	0.40
Additional competencies mentioned	0.81	0.85
Additional courses mentioned	0.49	0.64
Interruption occupational career	0.10	0.21
Job during education mentioned	0.73	0.70
Partner mentioned	0.32	0.19
Hobby mentioned	0.58	0.52
Sector		
Finances and accounting	0.20	0.20
Human resources	0.20	0.20
Marketing and production management	0.19	0.19
Health care	0.20	0.20
Transportation	0.20	0.20
Region of residence applicant		
Amsterdam	0.06	0.19
Apeldoorn	0.09	0.03
Breda	0.08	0.11
The Hague	0.09	0.09
Eindhoven	0.10	0.09
Nijmegen	0.15	0.10
Roosendaal	0.09	0.05
Rotterdam	0.18	0.14
Utrecht	0.11	0.06
Zwolle	0.05	0.14

Source: Internet-based field experiment ethnic discrimination in the Dutch labor market (2011). $N = 318$.

^aEvery résumé to which an Arabic name was assigned a name in wave 1 was assigned a Dutch name in wave 2 and vice versa. Therefore, all features are automatically fully balanced across ethnic groups for waves 1 and 2 combined. For that reason, this table presents mean scores for one wave.

Table A2. Native Dutch and Arabic First Names and Surnames Used in Experiment

Native Dutch first names		Native Dutch surnames	Arabic first names		Arabic surnames
Female	Male		Female	Male	
Anke	Bas	Aalbers	Aisha	Adil	Abdellah
Boukje	Bob	Bakker	Bahar	Ahmed	Achahbar
Eline	Bram	Blom	Fatima	Ali	Adlouni
Femke	Daan	Brinkman	Hakima	Driss	Aissati
Fleur	Jeroen	Brouwer	Hanane	Hamza	Ait Haddou
Jasmijn	Joost	De Bruin	Imane	Jamal	Aknouch
Judith	Joris	De Groot	Karima	Kamal	Alami
Kathelijne	Lucas	De Jong	Laila	Mohammed	Alaoui
Lieke	Maarten	De Jong	Nadia	Munir	Ammi
Lotte	Matthijs	De Vries	Naima	Murad	Amrani
Maartje	Michiel	De Wit	Nora	Naima	Attahir
Marieke	Remco	Dekker	Rabiah	Omar	Aynan
Marleen	Roel	Hamer	Safia	Rashid	Azougagh
Marloes	Sander	Janssen	Samira	Said	Azouzi
Renske	Teun	Jonker	Siham	Samir	Bakkali
Roos	Thijs	Koster	Yasmina	Samir	Ben Allal
Sanne	Thomas	Kramer	Youssra	Tarik	Ben Saleh
Sara	Wouter	Kuipers	Zainab	Youssef	Benali
		Meijer			Bennani
		Meijerink			Bouzian
		Ouwehand			El Morabet
		Schipper			El Moussaoui
		Smits			El Zhar
		Timmer			Et-Tahiri
		Toorenborg			Haddou
		Van den Brink			Hadouchi
		Van den Broek			Hamdaoui
		Van Dijk			Idrissi
		Van Leeuwen			Loukil
		Van Linden			Mahmoud
		Van Veen			Mohim
		Van Vliet			Sliman
		Vermeulen			Tahiri
		Vos			Tawmat
		Willemse			Yacoubi
		Zijlstra			Yassir

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