Ethnic Discrimination in Hiring Decisions: A Meta-Analysis of Correspondence Tests 1990–2015

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Abstract

For almost 50 years field experiments have been used to study ethnic and racial discrimination in hiring decisions, consistently reporting high rates of discrimination against minority applicants – including immigrants – irrespective of time, location, or minority groups tested. While Peter A. Riach and Judith Rich [2002. "Field Experiments of Discrimination in the Market Place." *The Economic Journal* 112 (483): F480–F518] and Judith Rich [2014. "What Do Field Experiments of Discrimination in Markets Tell Us? A Meta Analysis of Studies Conducted since 2000." In *Discussion Paper Series*. Bonn: IZA] provide systematic reviews of existing field experiments, no study has undertaken a meta-analysis to examine the findings in the studies reported. In this article, we present a meta-analysis of 738 correspondence tests in 43 separate studies conducted in OECD countries between 1990 and 2015. In addition to summarising research findings, we focus on groups of specific tests to ascertain the robustness of findings, emphasising differences across countries, gender, and economic contexts. Moreover we examine patterns of discrimination, by drawing on the fact that the groups considered in correspondence tests and the contexts of testing vary to some extent. We focus on first- and second-generation immigrants, differences between specific minority groups, the implementation of EU directives, and the length of job application packs.

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Abstract

For almost 50 years field experiments have been used to study ethnic and racial discrimination in hiring decisions, consistently reporting high rates of discrimination against minority applicants – including immigrants –, irrespective of time, location, or minority groups tested. While Riach and Rich (2002) and Rich (2014) provide systematic reviews of existing field experiments, no study has undertaken a meta-analysis to examine the findings in the studies reported. In this article we present a meta-analysis of 730 correspondence tests in 42 separate studies conducted in OECD countries between 1990 and 2015. In addition to summarizing research findings, we focus on subgroups to ascertain the robustness of findings, emphasizing differences across countries, gender, and economic contexts. Moreover we test hypotheses with regard to taste-based and statistical discrimination. To this end, we draw on the fact that the groups considered in correspondence tests and the contexts of testing vary to some extent. We focus on first- and second generation immigrants, differences between specific minority groups, the implementation of EU directives, and the length of job application packs. There are many indications that ethnic discrimination in hiring decisions reflects taste-based discrimination, although in some cases statistical discrimination seems to occur.

Keywords: ethnic discrimination, hiring, correspondence test, meta-analysis

Introduction

Whenever members of one minority group are less likely to obtain paid work, or do so under unfavourable conditions, some people are quick to shout 'discrimination'. Social scientists tend to be more cautious and highlight that there are many reasons why one group is more likely to obtain paid work than others apart from discrimination (Pager 2007). To rule out these alternative explanations, field experiments have been devised in the United Kingdom in the 1960s, allowing researchers to draw inferences about racial discrimination in hiring decisions (Daniel 1968, Jowell and Prescott-Clarke 1970). 50 years after the first Race Relations Act of 1965, prohibiting racial discrimination in public places, interest in discrimination and hiring decisions remains high. Indeed, in recent years numerous studies using field experiments have been carried out to test whether discrimination in terms of race, ethnicity, immigration background, or other minority statuses remains a problem (Bendick 2007, Pager 2007, Pager and Shepherd 2008, Riach and Rich 2002, Rich 2010, 2014).

Despite anti-discrimination legislation prohibiting ethnic and racial discrimination, there is evidence for considerable discrimination in hiring decisions. This suggests that current legislation is inefficient and discrimination remains commonplace. At first sight, there are no apparent differences across time, location, and minority group tested. These findings suggests that while overt racial and ethnic discrimination is no longer practised as much as it was in the past – consider racial segregation in the US –, ethnic and racial discrimination remains a common phenomenon, albeit a more subtle and covert one (Arrow 1998). Scholars in fields like economics, sociology, or social psychology have addressed ethnic and racial discrimination by analysing differences in labour market outcomes, such as wages or unemployment rates, court proceedings, complaints lodged about discriminatory treatment, or interviews and surveys with victims of discrimination (e.g.Bovenkerk 1992).

Field experiments offer stronger evidence of discrimination in the labour market, using either in-person audit tests or written correspondence tests. Since discrimination in hiring decisions usually cannot be observed directly, researchers resort to fictitious candidates with equivalent and thus exchangeable qualifications. One employer is presented with two substantially identical job applications. The only difference is the characteristic of interest: the ethnic or racial group of the applicant. This results in controlled experiments on discrimination in hiring decisions in a real world setting. It can plausibly be argued that differences in call-back rates of equally qualified minority and majority candidates can be attributed to discrimination (Jackson and Cox 2013, Midtbøen and Rogstad 2012). As is common with experiments, however, a single audit or correspondence test is unable to explain *why* discrimination occurs. To overcome this limitation, studies increasingly resort to finer distinctions of carefully chosen subgroups, or seek other methods. In this article we draw inferences from various studies by contrasting comparable subgroups from different studies. The central thesis is that there are differences between subgroups that point towards the presence of taste-based or statistical discrimination in hiring processes.

Theory and Background

Racial or ethnic discrimination can be defined in various ways, often depending on the research question and scientific tradition of the study. For this meta-analysis we use the US National Research Council's definition, which focuses on '*differential treatment on the basis of race* that disadvantages a racial group and *treatment on the basis of inadequately justified factors other than race* that disadvantages a racial group (differential effect)' (Blank, Dabady, and Citro 2004, 39) thus covering groups such as immigrants. This definition is similar to the one used in the European Union's Directive 2000/43/EC, commonly known as the 'Race Directive', which differentiates between direct and indirect discrimination (Art. 2) and prohibits both forms.

Given that racial and ethnic discrimination are outlawed in many jurisdictions and thus hidden, questions of how to measure discrimination have taken centre stage in recent years (Quillian 2006). We refer readers to Veenman (2010) for a thorough review of the approaches used in different disciplines. Many researchers have become more cautious, preferring terms such as 'ethnic penalty' to describe differential treatment on the basis of race and ethnicity simply because the act of discrimination or the intention to discriminate are not observed. For instance, Heath and Cheung (2006) highlight that certain differentials between ethnic minority groups and majority groups in the labour market cannot be explained by age, education, or country of origin.

The literature offers different explanations why discrimination occurs in hiring processes. A classic distinction is that between taste-based discrimination and statistical discrimination (Becker 1957). Taste-based discrimination describes the situation where the employer has racial or ethnic preferences. This includes xenophobia and racism, but also personal preferences of other kinds; the employer will discriminate against a group irrespective of other information he or she has about the applicants. Because of racial or ethnic preferences, the employer is willing to pay a higher price to hire a person who matches the desired racial or ethnic profile. Put differently, employers do not act in a purely profit-maximizing manner, but 'an avoidance of the psychic cost of contact with the "wrong" race […] takes precedence' (Riach and Rich 1991, 247). Following this logic, employers without racial preferences have a competitive advantage, which, in the long-run, should lead to the elimination of racial discrimination in the market place. By contrast, statistical discrimination describes the situation where members of a specific group are discriminated against because the employer is lacking information (Phelps 1972, Arrow 1972).

> The employer who seeks to maximize expected profit will discriminate against blacks or women, if he believes them to be less qualified, reliable, long term, etc. on the average than whites and men, respectively, and if the cost of gaining information about the individual applicant is excessive (Phelps 1972, 659).

This is a characteristic of the hiring process where the employer will never be able to obtain all the information about the candidate, or obtaining such information is too costly. The employer will thus rely on signals and other cues from the application and CV (Pager 2007). Ethnic minority status may be such a signal that members of a particular group are less skilled or otherwise unsuited – or in some cases more skilled, harder working, and so on. Drawing on stereotypes, hearsay, or previous experience with a small number of group members, the employer discounts the applicant because of his or her ethnicity – ethnicity acts as a proxy for unobserved information. With more information, the employer would not discriminate against

the minority candidate. As a consequence of statistical discrimination, an employer will not always succeed in hiring the most qualified applicants, but if hiring decisions are taken on a regular basis statistical discrimination may be regarded as an acceptable trade off (Bursell 2007).

Besides these predominant economic theories of discrimination, other explanations analyse discriminatory treatment of minority groups more generally. Human capital theory focuses on the often lower human capital of members of minority groups compared to their majority competitors to explain their disadvantaged position on the labour market, looking at factors such as age, education level, work experience, or health (e.g. Andriessen, Dagevos, and Iedema 2008). It is argued that members of ethnic minority groups on average are less educated, are unfamiliar with host-country institutions, are not fluent in the language, or lack the networks which might help them in their search for employment. However, differences in economic outcomes also persist when human capital differences are controlled for (Blommaert, Coenders, and van Tubergen 2014).

Theories of social dominance offer a different approach, highlighting that groups are not only distinguished but also ranked according to their social position and negative stereotypes connected with these groups, resulting in status hierarchies. Men tend to be 'ranked' higher than women, and natives are usually ranked higher than immigrants (Andriessen et al. 2010). Closely related to this theory, the notion of ethnic hierarchies is often discussed in the Dutch context in particular, where Moroccans are consistently 'ranked' at the bottom and Surinamese immigrants are regarded more favourably (Andriessen et al. 2012). To some extent, ethnic hierarchies draw on cultural distance, where groups perceived as 'more different' tend to have less status and thus rank lower in the hierarchy. Such cultural distance can reflect social distance (Parrillo and Donoghue 2005), but it frequently draws on visible markers such as skin colour and dress that signal cultural distance (Fetzer 2013). Ethnic hierarchies may play a role in taste-based discrimination and statistical discrimination, and they serve to remind us that discrimination in the hiring process is not a binary decision: the hiring decision may depend on the other applicants for the same job. Put differently, both taste-based discrimination and statistical discrimination can be context dependent.

The literature further highlights factors like the size and composition of the minority population, the economic situation and outlook, policies, media reporting, as well as attitudes in the population. Here, the way minorities are presented in the media and how they are politicized in public debates is likely to play an important role (van der Brug et al. 2015, Klingeren et al. 2014). On the one hand, the mediatized debate provides and reinforces stereotypes that can be used as shortcuts in statistical discrimination. On the other hand, with an increased politicization of immigration, it may be more likely that employers gain additional knowledge about different minority groups – making them less likely to (have to) resort to such shortcuts. Taste-based discrimination may also be affected by the public debate and attitudes in the population (Pecoraro and Ruedin 2015, Pettigrew and Tropp 2006). Similarly, because of 'in-group loyalty' and 'out-group rejection', it can be expected that applicants from one's in-group are more likely to be invited for a job interview (c.f. Ford 2015).

Hypotheses

Based on the existing theories outlined, we have developed five hypotheses. The list of potential hypotheses is obviously much longer, given the numerous variables that could be taken into consideration, but in this article we will focus on the following hypotheses, most of which with the purpose of differentiating taste-based from statistical discrimination:

> H1: Because of taste-based and statistical discrimination it can be expected that *minority candidates are discriminated against across all countries and time*.
>
> H2: According to statistical discrimination theory, it can be assumed that employers react to signals like education completed in the country under study when hiring. What is more, children of immigrants – second generation immigrants – tend to have more social ties in the country under study. They are thus likely to be perceived more positively, with generation serving as a signal for civic integration. It can therefore be expected that *discrimination is lower for second generation immigrants than first generation immigrants*.
>
> H3: Taking taste-based discrimination seriously, it can be assumed that *more distant and visible minority groups are discriminated against more than other groups*. Ostensible difference is used as a reason to discriminate. Such difference may also be related to the degree to which a particular minority group is established in a country. For established groups information can be expected to be relatively higher, probably translating into lower rates of statistical discrimination, too.
>
> H4: The 2000 EU directives were designed to reduce discrimination. Irrespective of the effectiveness of the ensuing policies, it can be assumed that awareness of discrimination in hiring and the labour market has increased due to the political and public debates at the time. Hence *discrimination is likely to be lower after 2000 than before*.
>
> H5: Depending on the country, job applications require different details. If statistical discrimination prevails, it can be expected that discrimination is lower in countries where more details are the norm in job applications, like photos, diplomas, or transcripts. In these contexts employers have less need to resort to mechanisms that can result in statistical discrimination (Weichselbaumer 2015). It can therefore be expected that *discrimination rates are lower in German-speaking countries than in other European countries*.

Methods and Data

Correspondence tests are well suited for identifying discrimination in hiring, especially because they are able to minimize other influences (Jackson and Cox 2013, Bendick and Nunes 2012, Midtbøen and Rogstad 2012). In correspondence test researchers apply in writing for actual positions at real companies, and thus capture real hiring decisions. They are much easier to implement than in-person audits, and allow more control over the application process. Correspondence tests usually rely exclusively on the name to convey information about race or ethnicity, which may have important repercussions: stereotypical ethnic names may lead to different responses than lesser known names from the same group, some ethnic names may not be perceived correctly and misattributed to other ethnic groups, and the chosen names may have connotations of class or socio-economic status the researcher is unaware of (Bertrand and Mullainathan 2004, Pager 2007). Put differently, the reliance on names to differentiate between groups may introduce confounding effects beyond the control of the researcher. By contrast, correspondence tests can be repeated in relatively great numbers – especially now that electronic applications are commonplace –, and thus allow some generalizations about discrimination in the hiring process more generally.

Being based on written applications, correspondence tests are only suited for occupations where such written applications are the norm. This excludes many entry-level and unskilled jobs where applications are typically made in person. Furthermore, they can only be used for publicly announced jobs, and thus exclude informally or internally filled vacancies. At the same time, correspondence tests face ethical challenges – in some cases also legal constraints –, since correspondence tests rely on deception to obtain results. Contemporary views are more cautious than previously and rightly researchers increasingly undertake serious ethical clearance. By design, correspondence tests only cover the first step of the hiring process and it is impossible to observe the behaviour of employers like it is done in in-person audit studies. Particularly with the distinction between taste-based and statistical discrimination in mind, this second step is not unimportant, but estimates suggest that the first step may account for as much as 90 per cent of the discrimination levels measured (Riach and Rich 2002). The discrimination rates revealed by correspondence tests indicate the lower end of the rate of discrimination. Like other experimental designs, however, correspondence tests are good at identifying the gap between the minority and majority population, but much weaker at identifying the reasons behind the observed differences. In this article we will benefit from the fact that correspondence tests are carried out for different kinds of groups and sub-groups to draw inferences about the presence of taste-based and statistical discrimination where possible.

In this article, we will use meta-analysis to summarize existing research in a systematic manner, drawing on the fact that all correspondence tests are conducted in a similar fashion (Weichselbaumer and Winter-Ebmer 2005). Meta-analyses offer a systematic means to summarize findings by combining results relying less on the subjective assessment of the reviewing authors (Wolf 1986, Petticrew and Roberts 2006). Meta-analysis makes use of statistics to combine the reported findings across studies – a quantitative method for synthesizing research. We carried out systematic searches using *Web of Knowledge* and *Google Scholar,* limiting the search to ethnic and racial discrimination in hiring and correspondence tests, which includes the discrimination of immigrant groups. We further narrowed down the focus on correspondence studies conducted in OECD countries between 1990 and 2015 to increase comparability. The following keywords were used: 'discrimination', 'correspondence test', 'ethnic discrimination', 'racial discrimination', 'discrimination in hiring', 'discrimination and labour market' 'discrimination AND field experiment' and 'discrimination AND employment'. We also relied on the often extensive bibliographies provided in the literature, especially in the systematic reviews conducted by Riach and Rich (2002) and Rich (2014). Furthermore, we also carefully checked the bibliographies of every correspondence study we found and broadened our search from there. We were able to include studies published in English, French, German, and Dutch.

We chose not to include in-person audit studies and focus on written correspondence tests, as written correspondence tests have become the dominant method in recent years. We note that there is no standard for reporting the results of correspondence tests and a wide variety of approaches are found (see supplementary material S4). Many studies report discrimination using relative call back rates as the sole measure, other studies focus on net discrimination rates. Often only absolute numbers or only percentages are presented; we recalculated the absolute numbers wherever possible because this allows the calculation of corresponding call back rates and odds

ratios, drawing on four categories: 'positive treatment minority', 'negative treatment minority', 'positive treatment majority', 'negative treatment majority'. The vocabulary here reflects the fact that meta-analyses are more established in the medical sciences (Petticrew and Roberts 2006). Majority applicants constitute our control group, while minority applicants are considered the treatment group. In studies that combine in-person audit tests with correspondence test we singled out the results from the written correspondence tests and included them in our database. We are unable to identify a reason how a subsequent in-person test could affect the preceding correspondence test. Generally speaking, we note that the level of data provided in the studies is often incomplete, and for that reason often rely on relative call back rates to maximize the number of cases considered (see supplementary material S6 to S10 for odds ratios).

Data and Variables

The present article includes data from 42 studies from 18 countries, looking at over 20 minority groups.[1] In Table 1 each study presents one data-point. For most analyses, each study can be broken down into several subgroups, namely specific minority or immigrant groups, depending on the level of detail provided in the data included in the articles. We treat Akintola (2011) as two separate studies because it covers both Canada and Sweden. There are in total 730 subgroups, and to some extent each can be treated as an independent experiment, given that hiring decisions were made by different employers and are thus unlikely to influence each other. With this, the number of cases increases substantially, and we gain some variance in the otherwise relatively homogeneous setup. On the one hand this variance is used as a test of robustness for the overall meta-analysis, on the other hand, this variance is used to test hypotheses related to the nature of discrimination. The supplementary material includes considerations of publication bias (S12).

Table 1: Data for Ethnic and Racial Discrimination in Hiring Decisions

	1990-95	*1996-2000*	*2001-05*	*2006-10*	*2011-15*	*Total*
Number of studies	6	2	3	11	20	42
Number of subgroups	78	4	66	198	384	730
Geographic location						
North America	1		2	1	8	12
European Union	4	2		10	9	25
Other European			1		1	2
Other OECD	1				2	3
Mean call back ratio	1.29	1.50	1.47	1.98	1.45	1.55

Notes: Unless otherwise indicated, the numbers refer to the number of cases included; the mean call back ratio refers to the study level

The variable of interest in this article is discrimination in hiring decisions. Two variables are available: relative call back ratios and odds ratios. The relative call back ratio compares how often a member of the minority group is called back for a job interview (treatment) to how often a member of the majority group is called back for a job interview (control). The call back ratio is available for most subgroups included. Odds ratios compare the odds of being invited for a job

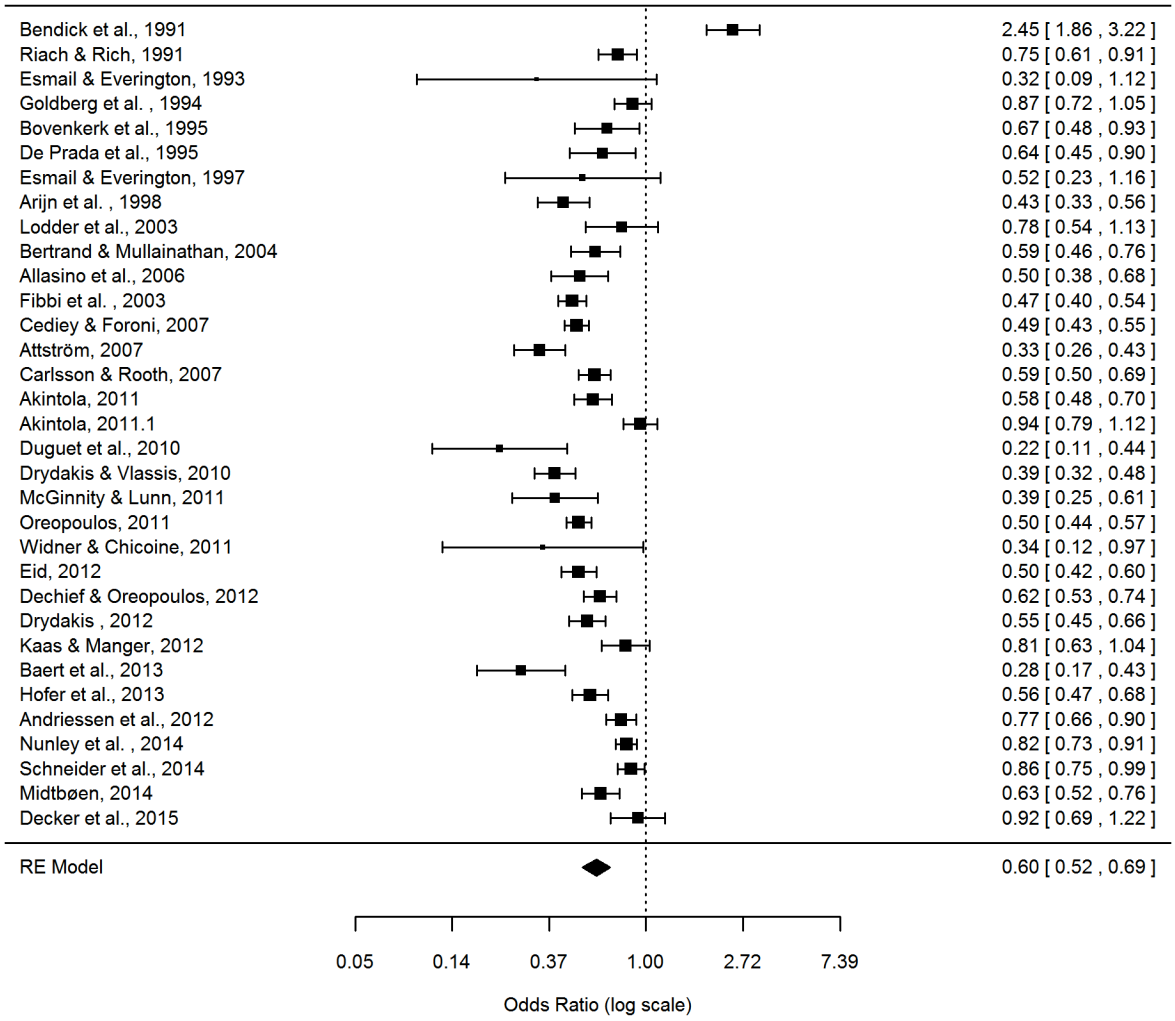
[1] We also note the studies by Agerström (2012) and Adida et al. (2010), but their measurements are not comparable to the other studies. See supplementary material S1 for a complete list of studies included.

interview, drawing on a different means to express probabilities. By necessity, we were forced to accept that definitions of race and ethnicity vary across studies. For the comparisons across specific minority groups it was necessary to reclassify some of these groups, like when we included 'Swedes of middle eastern origin' in the category 'Arabs and people of middle eastern origin'. These coding decisions are apparent in the supplementary material (S2, S3).

Discrimination across Studies

As a first step a meta-analysis of all studies is presented. Using a random effects model, the forest plot in Figure 1 presents the odds ratios for the studies for which the data to calculate odds ratios was available on a log scale. With the exception of Bendick et al. (1991) in the US, who used CVs with enhanced credentials for Latino applicants, but not for Anglo-Saxon applicants, most studies found significant evidence of discrimination in hiring against the minority applicants. Notable are also Akintola (2011) who found only little discrimination for minority applicants in Canada, and Decker et. al (2015) who reported very low rates of discrimination against black minority applicants in their US study. These are among the few studies where the two standard deviations cross the line at 1, indicating that the interpretation of 'no discrimination' cannot be ruled out. Across all studies for which sufficient details are available to calculate odds ratios, the odds ratio is 0.60, indicated by the rhomboid at the bottom of the figure: minority applicants have 40% lower odds to be invited for an interview, compared to the equally qualified majority candidate. Given that each study covers several subgroups, the result of a model on subgroups is of equal interest: the odds ratio in this case is 0.54, around the same order of magnitude (supplementary material S6).

Figure 1: Ethnic and Racial Discrimination in Hiring Decisions

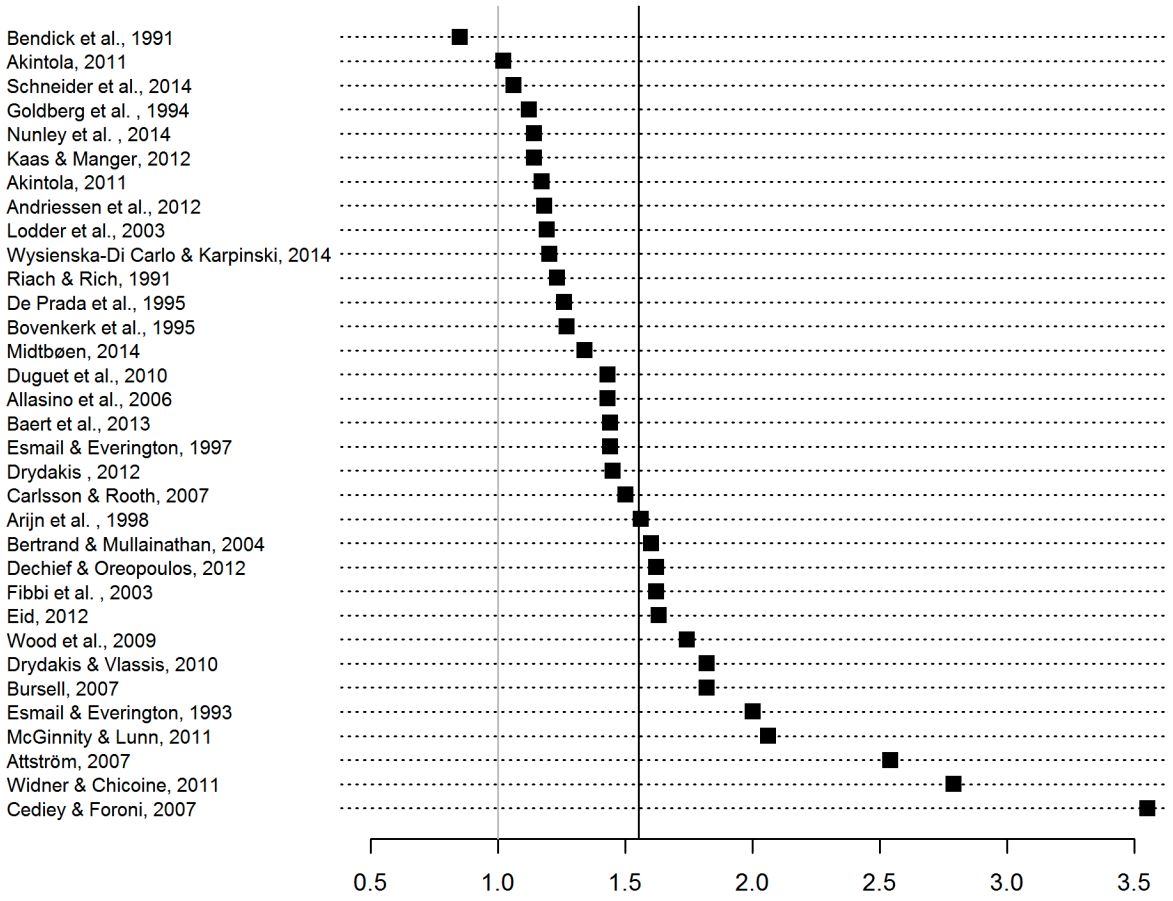


Notes: given are the odds ratios of each study (point estimate as square, two standard errors as lines) on the left, along with the numerical representation on the right. At the bottom, the rhomboid summarizes the effect size across studies. N= 33 studies (study level).

In some studies insufficient details are reported to calculate odds ratios, so a comparison of the relative call back rates is necessary to cover more studies. Figure 2 shows the relative call back rates reported in the studies. It ranges from Bendick et al. (1991) in the US to Cédiey and Foroni (2007) in France, where the highest relative call back rates were measured. The mean relative call back rate is 1.55 at the study level (indicated with a straight black line in the figure) and 1.75 at the level of subgroups. The median values are 1.44 for studies and 1.49 at the subgroup level. This means that minority applicants have to write around 50 per cent more applications to be invited for a job interview. When interpreting these numbers, however, it must be borne in mind that the ethnic groups studied in correspondence tests are rarely chosen at random: Often researchers suspect discrimination for specific groups, or they examine the most salient minority groups – usually groups considered 'different' or with historical ties to the country, and not

necessarily the largest minority groups in society. This may mean a focus on visible minority groups while ignoring immigrants from other European countries. The studies may thus overestimate the rate of discrimination.

Figure 2: Relative Call Back Rates for Studies



Notes: N=33 studies; the grey line at 1 indicates equal treatment, the black line gives the mean relative call back rate across all studies

In a second step, the robustness of the meta-analysis is tested by examining specific subgroups. For instance, legislation and policies against discrimination have a longer tradition in North America than in Europe (except for the UK). This generally translates into greater awareness of discrimination (Ziller 2015), and it can be expected that levels of discrimination are higher in Europe than in North America. Comparing correspondence tests in Europe and the US/Canada makes it clear that discrimination occurs on both sides of the Atlantic. Relative call back rates are slightly higher in Europe showing that minority applicants may be facing more discrimination in Europe than in the US/Canada, as far as groups can be compared. At the subgroup level, the relative call back rate is 1.84 in Europe and 1.69 in the US/Canada. These results, however, do not take into consideration that in-person audits are still prevalent in the US and often report high rates of discrimination (Pager 2007, 113).

Another dimension is gender. Stereotypes and media images of immigrant women tend to be less radical than those of immigrant men (Bovenkerk 1992, 15, Andriessen et al. 2012, 244). This may lead to women being perceived as better integrated into and less threatening to society than immigrant men, and thus lower discrimination for women. The opposite expectation can be drawn from status hierarchies, where men tend to be ranked 'higher' (Andriessen et al. 2010). Indeed, women seem to fare slightly worse than men (relative call back rate 1.76 for women and 1.63 for men). However, these small differences may be related to the particular occupations and positions chosen in the correspondence test, where gender stereotypes of 'typical' male or female jobs may influence the results. Substantively, there is no indication of systematic gender differences on a large scale.

A third dimension in which studies may be differing in a systematic way is the economic context. During times of economic boom and labour shortage, employers are likely to take more risks when hiring. It can be assumed that this affects statistical discrimination: employers become more likely to 'give a candidate a chance', irrespective of past experience with other members of the same group or prevailing stereotypes. It can therefore be expected that discrimination is lower during times with low unemployment and high GDP growth (Baert et al. 2013). Focusing on GDP growth and unemployment rates we find no systematic association between the economic situation and ethnic discrimination in hiring. While a higher level of discrimination can be observed at times of high unemployment (mean call back rates of 2.19 and 1.69), when considering median call back rates, the differences disappear (supplementary material S11). Looking at the correlation between unemployment rates and call back rates, there is no clear association ($r=-0.05$, $p>0.1$). Similarly, the correlation between annual GDP growth rates and call back rates is not significant ($r=0.04$, $p>0.1$). Taken together, there is no evidence that rates of discrimination vary according to the national economic situation – although the relevant level of analysis may be occupation-specific and region-specific and unattainable in this analysis.

Rather than looking at the influence of individual factors, the supplementary material also includes multivariate regression meta-analysis to examine the influence of different factors (S13). In particular, the skills level may be of interest, and the regression coefficient for high skills is positive (0.28, $p<0.05$), while the regression coefficient for low skills is negative (−0.16, $p<0.05$). The substantive patterns reported in this section remain unchanged when controlling for gender or whether first or second generation applicants are considered, suggesting that the reported findings are robust.

Taste-Based versus Statistical Discrimination

Having established that ethnic discrimination in hiring exists across contexts in a fairly robust manner, we now make use of the variation in the studies to draw inferences about taste-based and statistical discrimination as far as possible. First we focus on the difference between first and second generation immigrants. While some studies explicitly mention if their candidates belong to the first or second generation, most studies just mention that both applicants have been schooled in the country where the testing is conducted. We also treat these minority applicants as second generation immigrants. As summarized in Table 2, the relative call back rate for first generation immigrants on the subgroup level is 1.93 (mean), while these are 1.71 for second

generation immigrants. There is no clear pattern across studies, and no evidence that discrimination would be generally be lower for the second generation in substantive terms – suggesting a strong component of taste-based discrimination. In the multivariate models presented in the supplementary material (S13), the coefficient for the second generation is negative (−0.35, $p<0.05$), suggesting that statistical discrimination may also play a role.

Table 2: Relative Call Back Rates for First and Second Generation Applicants

	Mean	*Median*	*N*
First generation	1.93	1.64	97
Second generation	1.71	1.46	448
Second generation (explicit only)	1.82	1.62	184

Notes: N indicates the number of cases included

The minority groups selected for testing have become more diverse in recent years, but there are some groups which are included frequently, especially in European correspondence tests. By focusing on specific groups, we are able to minimize the influence of unobserved variables on call back rates. We focus on the groups most commonly studied: Arabs and people of Middle Eastern origin; Chinese; Indians, Pakistani, and Bangladeshi; and Turks. The results in Table 3 make apparent a clear hierarchy of minority groups: Discrimination is highest for Arabs and people of Middle Eastern origin, followed by Chinese, followed by Indians, Pakistani, and Bangladeshi; it is lowest for Turks. This hierarchy can be observed at the study level and the subgroup level. Similar results are reported in individual studies where more than one minority group was included. For instance, in Austria Serbs face the lowest relative call back rate (1.31), followed by Chinese (1.37), Turks (1.46) and Nigerians (1.98) (Hofer et al. 2013). In Australia, Italian immigrants encounter the lowest discrimination with a relative call back rate of 1.09, followed by indigenous Aborigine candidates (1.35), Middle Eastern applicants (1.59) and Chinese (1.67) (Booth, Leigh, and Varganova 2012). In Ireland, Asian immigrants have the best chances to be invited for an interview (relative call back rate 1.8), compared to Germans (2.07) and Africans (2.44). McGinnity and Lunn (2011, 704) explain these differences with a strong in-group favouritism in Ireland rather than prejudice against specific groups. Multivariate regression analysis in the supplementary material suggests that these differences are robust to differences in skills levels (S13). Taken together, the results suggest clear ethnic hierarchies and thus taste-based discrimination, but hierarchies that are specific to a place and probably time.

Table 3: Relative Call Back Rates for Specific Groups

Specific Group	*Mean*	*Median*	*N*
Arabs and people of Middle Eastern origin	2.35	2.13	68
Chinese	1.64	1.57	39
Indians, Pakistani, and Bangladeshi	1.77	1.69	42
Turks	1.32	1.20	69

Notes: N indicates the number of cases included

As the issue of racial and ethnic discrimination appeared on the European political agenda at the end of the last century, two EU directives where adopted in record time (Directive 2000/43/EC and 2000/78/EC). Table 4 presents the discrimination rates in the European Union (thus excluding Switzerland and Norway) before and after the adoption of these directives. Interestingly, the reported level of discrimination has increased since the adoption of the EU

directives, with the relative call back rate rising from 1.36 to 1.97, suggesting taste-based discrimination. The observed increase is probably a reflection of the groups included in the correspondence tests, but there is certainly no evidence that the EU directives would have led to a direct reduction in discrimination.

Table 4: Relative Call Back Rates in Europe Before and After EU Directives

Time	*Mean*	*Median*	*N*
Before	1.36	1.21	47
After	1.97	1.65	319

Notes: N indicates the number of cases included

Rather than looking at the EU directives, the level of discrimination in German-speaking countries is of particular interests because it allows direct inferences about statistical discrimination. German-speaking countries are known for their extensive application packs, requiring detailed documentation about job candidates (Kaas and Manger 2012, Schneider, Yemane, and Weinmann 2014, Weichselbaumer 2015). This provides employers with more information than in other contexts, and is thus likely to reduce statistical discrimination. The results in Table 5 suggest that this is the case, with levels of discrimination lower in German-speaking countries than elsewhere. Multivariate regression analysis in the supplementary material shows that this difference is robust and not just a reflection of the skills level tested (S13). The implications are two-fold. On the one hand, the difference suggests that statistical discrimination indeed plays a role, something that could be addressed with more information or different application packs. On the other hand, the call back rates in the German-speaking countries suggest that there is a high degree of discrimination even where application packs are more substantial, indicating that taste-based discrimination also plays a role in hiring decisions. In this case we are looking at preferences and attitudes, and remedies are less obvious.

Table 5: Relative Call Back Rates in German-Speaking Countries

Country	*Mean*	*Median*	*N*
German-speaking	1.43	1.29	115
Other	1.84	1.55	420

Notes: N indicates the number of cases included

In several studies using correspondence tests it is suggested that discrimination is higher in private companies and that the chances of minority applicants to be invited for a job interview are greater in public companies (e.g. Wood et al. 2009, Eid 2012, Midtbøen 2014). Our analysis confirms the assumption that public employers are less likely to discriminate against minority applicants, with the mean call back rate for private employers at 1.65, and a corresponding call back rate for the public sector at 1.19. However, the number of studies included is relatively small and further research is needed to confirm this relationship. Public employers bear a special responsibility and are often bound by specific procedures to ensure equal opportunities during employment (e.g. the use of standardized application forms (Wood et al. 2009, 40). At the same time, because these procedures often involve more careful checks on job candidates, statistical discrimination cannot be ruled out completely as an explanation.

Discussion

Across OECD countries, members of ethnic and racial minority groups face discrimination in the hiring process. Most studies report discrimination of minority groups, and across studies the difference amounts to minority groups having 40 per cent lower odds to be invited for a job interview than their majority competitor. Looking at relative call back ratios, members of minority groups need to send around 1.5 applications for every application a member of the majority group needs to send in order to be called back for an interview. These patterns of discrimination are relatively robust across countries and economic situation. From an economic point of view, discrimination in the labour market – be it taste-based or statistical in nature – is a waste of talents. The fact that discrimination is still prevalent in all countries where testing has been conducted, despite the adoption of anti-discrimination legislation, shows that there is still much room for future research, especially concerning the underlying reasons for discrimination and how the reported differentials come into existence.

For instance, many more correspondence tests focus on male candidates than on female candidates, something in part attributable to the ILO studies of the 1990s (Goldberg, Mourinho, and Kulke 1995, Bovenkerk et al. 1995, Arrijn, Feld, and Nayer 1998, de Prada et al. 1995). Recent Scandinavian studies (e.g. Arai, Bursell, and Nekby 2011, Bursell 2014) suggest that men with foreign names are less likely to be invited for a job interview than women with foreign names. It is unclear whether women are perceived as being lower qualified and thus are considered for lower quality work, or men are discriminated against because they are perceived as more threatening (Bovenkerk 1992). While across studies there appear to be no systematic differences between the discrimination of minority men and minority women, further research in this area is warranted to identify relevant mechanisms, especially because most existing studies were not designed to test the stipulated gender differences.

We have also used the variation across studies and particularly subgroups tested to draw inferences about taste-based and statistical discrimination in hiring decisions. There is no systematic difference between the relative call back rates for first and second generation applicants, suggesting that taste-based discrimination dominates given that second generation candidates will have local qualifications so the scope for statistical discrimination is much reduced. As Carlsson (2010, 272) highlighted, 'the factor driving discrimination seems to be ethnicity *per se*'. In this case, as Heath and Cheung (2006) emphasize, disadvantage is unlikely to disappear between generations. There is some evidence that levels of discrimination decrease over time, but the lack of a clear substantive difference between the first and second generation candidates is problematic in as much as many immigrant integration policies in Western Europe are based on what is perceived as a meritocratic society, where qualifications and language skills should allow for equal chances. This is also the case for the EU directives that do not appear to have lowered discriminatory practices in hiring directly. More research is needed to understand how these policies fail to make a dent on taste-based discrimination in hiring, including considerations of indirect and lagged effects.

Further evidence for taste-based discrimination comes from the fact that different minority groups fare differently in hiring decisions. Further research is necessary to make sense of patterns of ethnic hierarchies, given that correspondence tests often contrast more established

minority groups with more recent arrivals, an approach recommended by Bovenkerk (1992, 17). By so doing, different mechanisms may be confounded, yet numerous explanations are provided in the different studies, ranging from ethnic hierarchies, to social distance between the minority groups tested and the majority (e.g. Andriessen et al. 2010). While these all point towards status hierarchies, the differences across countries and time indicate that these hierarchies are neither universal nor purely based on skin-colour. The fact that applicants with Arab names turned out most likely to be discriminated against may simply reflect that most studies including individuals with Arab names have been conducted in Scandinavia after 2006, thus at a time when islamophobia has become more widespread (Helbling 2014, Dolezal, Helbling, and Hutter 2012, Ruedin and Berkhout 2012). Research linking discriminatory behaviour towards certain immigrant or minority groups with attitudes towards these minority groups would be fruitful to further understand what characteristics of the minority candidates lead to discrimination.

Evidence that statistical discrimination is not irrelevant comes from German-speaking countries where more extensive application material is the norm and from public sector employers where non-discriminatory hiring practices are often explicitly sought. Discrimination is higher in the private sector and countries without the extensive application packs commonplace in German-speaking countries. With more information, there is less room for statistical discrimination, while taste-based discrimination remains. The situation is somewhat different in the public sector where more careful selection of candidates with regard to diversity may play a role – possibly deliberate demonstration effects and political projects –, aspects perhaps less valued in the private sector where efficiency and productivity may be overruling other concerns. Moreover, standardized application procedures are more widespread in the public sector (Wood et al. 2009). The introduction of standardized procedures and requirements for more detailed application packs or other means to increase the information employers receive – for example by officially vetting foreign qualifications – are readily actionable.

Conclusion

This article provided a meta-analysis of ethnic discrimination in hiring decisions, showing that such discrimination has remained widespread across OECD countries in the last 25 years. Correspondence tests clearly indicate that the discrimination of ethnic and racial minority groups in hiring decision is commonplace: Equivalent minority candidates need to send around 50 per cent more applications to be invited for an interview than majority candidates. In a second step we used the variation across studies to draw inferences on the presence of taste-based and statistical discrimination as far as possible. There are many indications that taste-based discrimination remains dominant, although in some instances there is evidence that statistical discrimination also plays a role. This is important since the two forms of discrimination require different interventions: more extensive and standardized procedures seem to reduce statistical discrimination, albeit at the cost of adding bureaucracy, while awareness and consciousness may help reduce taste-based discrimination.

It lies in the nature of a meta-analysis that no detailed examination of discrimination can be provided. We identified much scope for further research, particularly with regard to identifying the underlying mechanisms that lead to discriminatory practices: *how* it is that discrimination takes place. Carefully designed correspondence tests may play a role here, and differences in

response rates across minority groups merit further examination, given that these differences seem to follow patterns, albeit complex patterns that seem to depend on time and place. It is likely that insights from work on attitudes towards foreigners and minority groups and other related research can help understand why there are differences in discrimination and which groups are likely to be discriminated. With discrimination found across countries and time, there seems to be plenty of research material out there, so to speak. What is needed are studies that go beyond showing that ethnic discrimination in hiring exists to identify the exact mechanisms and how more equitable hiring can be achieved – unless we want to keep wasting talents for no good reason.

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