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Racial discrimination in Britain, 1969–2017: a meta-analysis of field experiments on racial discrimination in the British labour market[1]

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Abstract

Field experiments represent the gold standard for determining whether discrimination occurs. Britain has a long and distinguished history of field experiments of racial discrimination in the labour market, with pioneering studies dating back to 1967 and 1969. This article reviews all the published reports of these and subsequent British field experiments of racial discrimination in the labour market, including new results from a 2016/17 field experiment. The article finds enduring contours of racial discrimination in Britain. Firstly, there is an enduring pattern of modest discrimination against white minorities of European heritage in contrast to much greater risks of discrimination faced by the main non-white groups, suggesting a strong racial component to discrimination. Secondly, while there is some uncertainty about the magnitude of the risks facing applicants with Chinese and Indian names, the black Caribbean, black African and Pakistani groups all face substantial and very similar risks of discrimination. Thirdly, there is no significant diminution in risks of discrimination over time either for Caribbeans or for South Asians as a whole. These results are broadly in line with those from the ethnic penalties literature, suggesting that discrimination is likely to be a major factor explaining the disproportionately and enduringly high unemployment rates of ethnic minorities.

Keywords: Discrimination; ethnic minorities; labour market; trends over time; ethnic penalties

Introduction

Discrimination matters. It contravenes British values of fair play and equal opportunity; it is economically inefficient and wastes human resources (Pager 2016); it has harmful psychological consequences for the victims (Schmitt,

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Branscombe, Postmes and Garcia 2014); it is a potential source of grievance and of lower attachment to Britain (Maxwell 2009). While discrimination can occur on the basis of many different stigmatized criteria (old age, disability, disadvantaged social class), one major focus of government legislation has been racial discrimination, with a long series of Acts dating back to 1965 designed to curb racial discrimination and promote good race relations.

Britain also has a long and distinguished history of field studies of racial discrimination, dating back to 1967. To the best of our knowledge, this is the longest such series in the world. This article provides a systematic review of these studies together with results from a new British study conducted in 2016/17. We investigate the contours of racial discrimination in Britain and the extent of change over time.

Racial discrimination in employment has been illegal in the UK since 1968. The 1968 Act specified that:

> For the purpose of this Act a person discriminates against another if on the grounds of colour, race or ethnic or national origins he treats that other in any situations less favourably than he treats or would treat, other persons ….

Discrimination, from a legal point of view, therefore depends on the outcome – less favourable treatment – not on the intention.

Field experiments have become the gold standard research method for establishing risks of discrimination (National Research Council 2004).[2] To be sure, alternative sources such as the Office for National Statistics labour force surveys can provide authoritative evidence on the magnitude of ethnic disparities with respect, for example, to unemployment. However, it cannot be assumed that any disparities found in rates of unemployment are due specifically to discrimination, since alternative mechanisms – minorities' lack of social capital or information about job openings, or differences in job search strategies – could in principle explain the disparities in whole or part. Field experiments, in contrast, are able to focus on the specific mechanism of discrimination by ensuring that other potential mechanisms are by design held constant.

Thus in labour market field experiments, matched fictitious applications differing solely in the ethnicity of the applicants (typically signalled by identifiably ethnic minority and ethnic majority names) are sent to advertised job vacancies. The responses from the firms indicate whether the minority applicants receive equally favourable treatment as the majority applicants. Field experiments, like the legal approach to discrimination, thus focus on disparities in the outcomes for different but equally qualified groups of applicants. The outcomes examined are typically invitations to interview or expressions of interest in the candidate more generally; that is the first stage of the hiring process. They also tend to focus on applicants at a relatively early career stage.

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Britain was one of the pioneers in developing anti-discrimination legislation and was also the pioneer in using field experiments to monitor discrimination. Indeed, the two were not unconnected. The results from the very first field experiment in 1967, conducted by Political and Economic Planning (PEP), was a crucial piece of evidence showing that complaints about the occurrence of discrimination in employment had a real basis and that legislation was needed (Gaddis 2018).

The pioneering 1967 field experiment was a follow-up to a survey of migrants from Commonwealth countries (Daniel 1968). Many of the migrants interviewed spoke of the discrimination they had experienced when applying for jobs. The field experiment was intended to investigate these claims and determine whether the firms mentioned were indeed discriminating. Male testers, belonging to different ethnic groups and matched in all job-relevant criteria, applied for vacancies at the firms accused of discrimination. Three testers – one white English, one Hungarian and one non-white (West Indian or Asian) – applied in person for each vacancy; the non-white tester applied first, followed by the Hungarian and then by the white English tester. Out of the 40 white testers, 15 were given a positive response (either offered the job or invited to apply), compared with 10 out of the 40 Hungarian testers, but only 1 out of the 40 West Indian or Asian testers.

Since this pioneering study, further field experiments on discrimination in recruitment have been conducted in Britain. Altogether there have been thirteen further published studies, most recently one in 2016/17, covering a timespan of nearly fifty years (see Table I).

The first aim of this paper is to compare the risks of discrimination faced by different ethnic minorities in Britain. Do we still find, as the pioneering 1967 study found, that there is a racial divide with white minorities experiencing less discrimination than non-white minorities? Surveys of the labour market have shown that black and Muslim minorities tend to have higher rates of unemployment than do similarly qualified white minorities (Khattab and Modood 2015) but survey research cannot demonstrate that this pattern is the result of discrimination rather than of differences in social capital, information or job-search strategies.

The second aim is to investigate whether risks of discrimination have declined over time. There are several reasons why a reduction might be anticipated. Firstly, the legislation was strengthened: the 1976 Race Relations Act outlawed all forms of discrimination in employment and established the Commission for Racial Equality (CRE) to address racial discrimination and to promote racial equality; the 2000 Race Relations (Amendment) Act placed a duty on public bodies to promote race equality; the 2006 Equality Act outlawed discrimination on the grounds of religion or belief. This series of acts, together with arrangements for complainants to seek redress from employers through labour tribunals, might be expected to have deterred employers from

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Table I: *British field experiments on racial discrimination in the labour market*

Study	Dates of fieldwork	Methodology	Ethnic groups
Daniel (1968)	1967 follow-up to a 1966 survey	In-person tests for manual vacancies, 3 matched applications per vacancy at firms where discrimination had been reported	Hungarian and 'coloured' (West Indian, Indian and Pakistani) *N* = 40 for each group
Jowell and Prescott-Clarke (1970)	Spring/Summer 1969	Correspondence tests for white-collar vacancies, 2 matched applications per vacancy	Australian, Cypriot, West Indian, Asian (Indian and Pakistani) *N* = 32 for each group
McIntosh and Smith (1974)	Late 1973–early 1974	Correspondence tests for white-collar vacancies, 2 matched applications per vacancy	Italian, West Indian, Indian, Pakistani *N*s range from 71 to 85 for each group
		In-person tests for unskilled manual vacancies and telephone tests for skilled manual, 2 matched applications per vacancy	Greek, West Indian, Indian, Pakistani *N*s range from 57 to 77 (skilled and unskilled manual combined)
Hubbuck and Carter (1980)	Mid 1977–mid 1979	Correspondence tests for white-collar vacancies, 3 matched applications per vacancy	West Indian and Asian (Indian and Pakistani) *N* = 161 for each group
Firth (1981)	October 1977–March 1978	Correspondence tests for accountancy posts, 7 matched applications per vacancy	Australian, French, African, Indian, Pakistani, West Indian *N* = 282 for each group
Brown and Gay (1985)	February 1984–March 1985	Correspondence tests for white-collar vacancies, 3 matched applications per vacancy	West Indian and Asian (with Hindu name) *N* = 267 for each group
		Telephone tests for skilled manual vacancies, 3 matched applications per vacancy	West Indian and Asian (Hindu or Sikh name) *N* = 68 for each group

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Table I: *(Continued)*

Study	Dates of fieldwork	Methodology	Ethnic groups
Esmail and Everington (1993)	1992	Correspondence tests for SHO posts, two matched applications per vacancy	Asian $N = 23$
Noon (1993)	1992	Speculative correspondence requests for information, 2 matched requests per firm	Asian, in final year of MBA $N = 100$
CRE (1997)	June–September 1996	Correspondence tests, 2 matched applications per vacancy	Irish, Chinese, Asian and Black, school and college leavers, $N = 48$ for each group
Esmail and Everington 1997	March, April 1997	Correspondence tests for SHO posts, two matched applications per vacancy	Asian $N = 50$
Hoque and Noon (1999)	1997	Speculative correspondence requests for information, 2 matched requests per firm	Asian, in final year of MBA $N = 100$
Wood et al (2009)	2008–9	Correspondence tests (predominantly online), 3 matched applications per vacancy	black African, black Caribbean, Indian, Pakistani/Bangladeshi and Chinese *N*s range from 56 to 71 for each group
Bagley and Abubaker (2017)	2016	Correspondence test, real application by genuine jobseeker, 1 application per vacancy	Muslim of Pakistani background $N = 516$, $N = 527$ for comparison group
Lancee et al. (2019)	August 2016–December 2017	Online correspondence tests, 1 application per vacancy	West and South European, East European, Caribbean, African, Pakistani, East Asian *N*s range from 43 (Indian) to 462 (African), $N = 676$ for comparison group

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engaging in discriminatory practices. There is also evidence of substantial ethnic minority progress in the labour market, with an increasing proportion of minorities (especially those with a Chinese or Indian background) securing professional and managerial jobs (Li and Heath 2010), and of declining racial prejudice among the British population (Ford 2008). On the other hand, there also appears to have been marked Islamophobia since 9/11, perhaps leading to increased difficulties for Muslims in the labour market (Storm, Sobolewska and Ford 2017).

However, we cannot simply read off changes in risks of discrimination from trends in measured attitudes, labour market situations, or the legislation on the statute book. Minority progress in the labour market, for example, could occur as a result of the increasing proportion born in Britain with British qualifications and fluency in English, even in the continuing presences of discrimination. Instead, direct measures of discrimination, such as those provided by field experiments, are needed. As Ross observes, 'it is very attractive to view the population of existing testing studies for a market as observations essentially randomly drawn from the [US] economy over space and time, so that trends in the findings of those studies can be viewed as evidence of trends in discrimination' (Ross 2017: 10815).

Our aims in this paper, therefore, are to see what light the British series of field experiments can shed on patterns of racial discrimination in Britain and how these have changed over the last fifty years. We proceed as follows. We begin with a description of the British field experiments of racial discrimination in the labour market. We discuss the methodological issues which might hinder comparability over time and between studies and address which statistical measures to employ in order to generate comparable metrics. We then report our results before finally discussing their interpretation.

The studies

In this section we review the published field experiments which have been conducted in Britain and draw attention to differences that are likely to affect comparability. (Further methodological details of the studies are provided in the supplementary material.) Table I provides a summary of the 14 studies.

Before moving on to describe the studies, however, we should note the issue of publication bias: studies which find null results are generally less likely to be published in the literature, thus biasing upwards estimates based on the published literature (Borenstein, Hedges, Higgins and Rothstein 2009). We have searched for unpublished studies (finding one which unfortunately did not provide sufficient details to be included)[3] but there is always the possibility that there may be others which our search failed to reveal. We return to this issue in the section on methods of statistical analysis.

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As noted above, the very first, 1967, study involved in-person tests, with male testers applying for manual jobs (Daniel 1968). However, since the testers were sent only to firms which had been accused of discrimination by survey respondents (36 per cent of the respondents), the study likely overstates the risk of discrimination compared with later studies which tested more representative samples of firms. With great regret we therefore exclude this study from the statistical analysis which follows, while recording our recognition of its landmark status.

The next study, carried out in 1969 by Social and Community Planning Research (SCPR) pioneered a different method – the correspondence test. Rather than in-person applications, matched written application letters were sent to vacancies for white-collar jobs. Among the goals was the 'need for reliable baseline information which could be used for purposes of monitoring levels of discrimination over time' (Jowell and Prescott-Clarke 1970: 400) and this study is indeed our baseline.

PEP then carried out a second study in 1973/4 (McIntosh and Smith 1974). This used both the in-person method of the 1967 study and the correspondence method of the 1969 study. The in-person method was used for (male) applications to less-skilled manual jobs and the correspondence method for white-collar vacancies (both male and female applicants). Telephone applications were also made for skilled manual jobs. These choices reflected the realities of the labour market at that time. In view of the differences in methods and jobs applied for, we report the results of the in-person and correspondence tests separately.

The CRE then in 1977–9 helped the Nottingham and District Community Relations Council to undertake a study in the Nottingham area following claims from local employers to the Community Relations Council that formal equal opportunities policies were not needed since applicants were already treated equally on their merits (Hubbuck and Carter 1980). The study followed the correspondence method with written applications to white-collar jobs (including both men and women applicants).

The correspondence method was also used for a 1977/8 field experiment which focused on positions in accountancy (Firth 1981). Seven matched applications were sent to each vacancy (with minor variations in each application to avoid suspicion). Seven applications per vacancy is very unusual, although Firth stated that 'Prior consultation with personnel officers had established that accounting vacancies typically draw many responses and thus the arrival of the seven letters used in the research was not expected to lead to an employer receiving a suspiciously large number of applications' (Firth 1981: 268).

The Policy Studies Institute (PEP's successor) then conducted their third field experiment (Brown and Gay 1985). As with the 1973/4 study, it used the correspondence method for white-collar vacancies (men and women) and

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telephone applications for skilled manual jobs (men only). We report the estimates for the white collar and manual jobs separately.

The next study in 1992, by Esmail and Everington (1993) investigated racial discrimination against doctors from ethnic minorities, following up a survey of doctors graduating from British medical schools which had suggested that ethnic minority applicants experienced disproportionate difficulty in obtaining hospital posts. It used the correspondence method, sending applications from (fictitious) newly qualified doctors for their first senior house officer post. The study originally planned to cover all hospital specialties but had to be curtailed after the authors were arrested by the fraud squad and charged with making fraudulent applications (Esmail and Everington 1993: 692). Undeterred, they conducted a second study in 1997, using the same methods but without being arrested (Esmail and Everington 1997).

A rather different sort of field experiment was conducted by Noon in 1992. Speculative applications asked for information about the company's graduate training, requesting advice and a contact name. The applications were sent to the top 100 UK companies 'because they were considered more likely to have the time and resources to spend on fair recruitment practices (Noon 1993: 37). A second study on the same lines was conducted five years later in 1997 (Hoque and Noon 1999). The low-stakes outcome measured in these two studies – whether or not the applicant received information – is not therefore comparable with the other field experiments. We report the results for completeness sake but discard them in our statistical analysis.

In 1996 the CRE conducted a field experiment, similar to the 1977–9 Nottingham study. The 1996 study focused on school and college leavers in Scotland and the north of England, using correspondence tests for entry-level white-collar positions (CRE 1997).

NatCen (formerly known as SCPR) then conducted a study for the Department of Work and Pensions in 2008/9 (Wood et al. 2009), following a recommendation from the National Employment Panel. This study used the standard correspondence method for white-collar jobs, but was the first to move largely to online applications.

In 2016 Bagley and Abubakr conducted an innovative field experiment which involved sending applications from a genuine applicant (a Muslim young woman of Pakistani background) who was looking for an accountancy job in the Manchester area. Rather than sending paired applications to the same firm, the study used an unpaired design with applications sent to different, randomly chosen firms. This unpaired design requires a larger number of applications to be sent than does the paired design but reduces the risk of detection (Weichselbaumer 2015). Results can be directly compared with those from the traditional paired design (Vuolo, Uggen and Lageson 2016).

The final study in our series is part of a cross-national project with standardized procedures implemented in Britain, Germany, the Netherlands,

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Norway and Spain in 2016/17 (Lancee et al. 2019). Like the study by Bagley and Abubakr, this cross-national study employed the unpaired method of one application per vacancy. It covered both manual and non-manual jobs and was conducted solely online (reflecting the increased use of online recruitment). For comparability with previous studies we report the estimates for the non-manual jobs only. The study was also unusual in the number of ethnic groups which it covered. Instead of the two or three groups usual in British field experiments, it included 33. Two of these – Nigerian and Pakistani – were designed to have sufficiently large numbers of applications for separate analysis. The other groups had small numbers of applications and we therefore combine them into five broader groupings. However, because of their substantive interest, we report separately the results for the small Indian category as well as for the larger Pakistani group.

In addition to these methodological differences, the studies also vary in their precise outcome measures. Some studies only count invitations to a job interview or actual job offers as a positive outcome, but the majority include other positive responses, such as requests to provide additional information, which signal an interest in the candidate. There are also differences in the occupations covered, the seniority of the applicants (all studies however involving applicants at relatively early stages of their career), the gender of the applicants, their migration status, the geographical coverage, and the state of the labour market at the time of the study. (See supplementary material for details.) In several cases the original reports describe supplementary analyses by gender, region and occupation, typically finding differences to be rather small and generally non-significant. An international meta-analysis by Zschirnt and Ruedin (2016) also found that gender differences tended to be small, that the state of the labour market had a non-significant relationship with risks of discrimination, and that generational differences were non-significant. On the other hand their meta-analysis did find significant associations with method (higher discrimination with in-person studies than with correspondence tests) and with the applicants' educational level (lower discrimination against more highly qualified applicants). In our analysis, therefore, we distinguish results for correspondence and in-person tests and for manual and non-manual occupational status (the closest we can get to the qualification level of the applicants).

Statistical methods

To determine whether risks of discrimination faced by ethnic minorities vary across groups or over time, we collated estimates found in the different studies. For the reasons described above, we exclude the studies by Daniel (1968), Noon (1993) and Hoque and Noon (1999), leaving us with eleven studies for analysis. We exploit the fact that many of these studies compared two or more

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minorities with the white British majority group. We treat each comparison as a separate observation yielding in total 43 observations in the 11 studies,[4] with 9 observations for white minorities, 10 for West Indian or black Caribbean minorities, 3 for black African, 18 for South Asian minorities (including those described as Indian, Pakistani or simply 'Asian'), and 3 for Chinese/East Asian minorities.

The outcome of interest in field experiments on hiring discrimination is the difference in positive responses received by minority and majority applicants. Many of the earlier studies reported net discrimination rates (NDRs) – the percentage-point difference in the positive responses received by the white British and the ethnic minority applicants. While this is straightforward to calculate and to interpret, it has some drawbacks. In particular, the NDR will tend to vary according to the number of cases where both applicants are rejected. If a high proportion of both minority and majority applications are rejected (perhaps because the investigators did not design sufficiently strong applications to meet employers' requirements), the NDR may be misleadingly small (Quillian, Pager, Hexel and Midtbøen 2017). Furthermore, investigators have differed in their treatment of cases where both applicants were rejected, sometimes excluding them as 'invalid'.

Instead of the NDR, therefore, it has become customary for scholars to report the relative risk ratio (also known as the disparity ratio). This is the ratio of positive responses received by the white British applicants to those received by the minority applicants. One advantage of this statistic is that, in a paired design, it does not depend mathematically on the number of cases where both applicants are rejected.[5] We can therefore estimate the risk ratio statistic for all the published British field experiments. A further advantage is that it has an intuitive interpretation. A risk ratio of 1:1 indicates parity of treatment while a ratio of 2:1 indicates that the minority applicant has to make twice as many applications as does the white British applicant in order to get a positive response. We shall use this measure throughout, terming it the discrimination ratio.[5]

As well as calculating the risk ratio for all the majority/minority comparisons, we also calculate the variances. These enable us to determine whether estimates from different studies or for different ethnic groups are significantly different from each other. There are different formulae for calculating the variance depending upon whether the study has a paired or an unpaired design. We use the formula provided by Zou (2007: 27) for paired designs and that by Borenstein et al. (2009: Formula 5.3) for unpaired designs.[6]

The studies vary in the number of applications sent and thus in their statistical power, and will therefore need to be weighted. We weight estimates according to the inverse of the variance of the log risk ratio. Estimates with greater uncertainty about their value thus receive less weight.

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Since we entertain the hypothesis that the true effect sizes may differ across time, we cannot assume that all the studies included in our analyses share a common (true) effect size. We therefore employ a random effects specification which takes into account both the variance within studies and the variance between studies. The random effects specification will tend to yield larger confidence intervals for the summary effect than will a fixed effects specification but is much more realistic when comparing disparate studies (Borenstein et al. 2009).

Statistical analysis of the results of the published reports which we consider indicates that there is a risk of publication bias: there is an asymmetry with several small (imprecisely measured) studies showing larger-than-average discrimination ratios but very few such studies showing smaller-than-average ratios, suggesting that we may be missing some small unpublished studies which had found relatively low discrimination ratios. This means that our summary statistics may be somewhat biased upwards. In making comparisons between discrimination ratios, we have therefore checked our conclusions using the 'trim and fill' methods recommended in the technical literature.[7] These checks suggest that the problem particularly affects the black Caribbean and Asian estimates but does not alter our substantive conclusions (see supplementary material for details).

Results

We begin by examining the overall patterns of discrimination experienced by the different ethnic minorities which were identified in the field experiments. Our first question is whether there is indeed a racial divide in the British labour market, with white minorities significantly less likely to experience discrimination than black and Asian minorities, and whether there are significant differences between the various black and Asian minorities in their risks of discrimination.

Differences between ethnic groups

The studies distinguish various white groups (explicitly identified as Australian, Greek and so on); they also distinguish West Indian/black Caribbean and black African groups (most studies making no distinction between different origins such as Jamaican, Trinidadian and so on), and various South and East Asian groups, sometimes distinguished specifically as Indian or Pakistani and in other cases simply described as Asian. In II we label the ethnic groups in the same way as the original investigators did in their reports. We show the estimated discrimination ratio for each observation, together with the 95 per cent confidence interval around each ratio. We also present, at the bottom of

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Table II: *Risks of discrimination faced by ethnic and racial minorities in Britain, 1969–2016/17 (relative risk ratios with 95% confidence intervals)*

Year of data collection		White	West Indian/black Caribbean	black African	Asian	Indian	Pakistani	Chinese
1969	1.0 0.96–1.12 Australian	1.13 0.94–1.36 Cypriot	1.13 0.94–1.36		2.27 1.42–3.65			
1973/4 white collar vacancies		1.14 0.99–1.30 Italian	1.52 1.27–1.82			1.38 1.18–1.65	1.53 1.24–1.89	
1973/4 manual vacancies		1.10 0.99–1.23 Greek	1.59 1.27–1.99			1.31 1.02–1.69	1.48 1.16–1.89	
1977/8	1.14 1.08–1.20 Australian	1.25 1.17–1.34 French	1.76 1.57–1.98	1.60 1.44–1.78		1.94 1.71–2.19	1.95 1.72–2.21	
1977/8/9			1.81 1.49–2.21		1.76 1.43–2.15			
1984/5 white collar vacancies			1.49 1.34–1.66		1.47 1.32–1.64			
1984/5 skilled manual vacancies			1.32 1.13–1.54		1.35 1.1–1.58			
1992 speculative applications					1.15 0.99–1.34			
1992					2.00 1.14–3.52			

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Table II: *(Continued)*

Year of data collection	White		West Indian/black Caribbean	black African	Asian	Indian	Pakistani	Chinese
1996	1.26 0.87–1.83 Irish		4.83 2.21–10.57		2.64 1.50–4.65			1.53 1.01–2.32
1997					1.44 1.03–2.03			
1997 speculative applications					0.93 0.8–1.07			
2008/9			1.86 1.27–2.72	1.65 1.22–2.22		1.91 1.32–2.77	1.48 1.02–2.15	1.86 1.28–2.71
2016							1.98 1.70–2.31 Muslim	
2016/17 white-collar vacancies	1.16 0.88–1.54 West and South European	1.34 0.95–1.90 East European	1.70 0.96–3.01	1.76 1.32–2.35		0.93 0.51–1.58	1.62 1.20–2.19	1.17 0.90–1.79 East Asian
Summary statistic	1.15 1.08–1.21		1.56 1.39–1.77	1.62 1.48–1.78	1.61 1.40–1.84	1.51 1.20–1.90	1.73 1.54–1.94	1.48 1.12–1.95

Notes: The Asian summary statistic excludes the 1992 and 1997 estimates for the speculative applications to top 100 firms.
In 2008/9 Pakistani includes Bangladeshi.
In 2016/17 West and South European is a composite group including French, German, Greek, Irish, Italian, Dutch, Norwegian and Spanish; East European includes Albanian, Bulgarian, Polish, Romanian and Russian; black Caribbean includes Jamaican and Trinidadian and Tobagan; black African includes Ethiopian, Nigerian, Somali and Ugandan; East Asian includes Chinese, Japanese, South Korean and Vietnamese.

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the table, summary statistics calculated over each column and indicating the weighted average discrimination ratio.

One finding is very clear: white groups (predominantly of European heritage) face only modest risks of discrimination. The nine estimates for the white minorities vary from 1.0 for Australians in the 1969 study to 1.34 for the East European group in the 2016/17 study – much lower than most of the discrimination ratios found for non-white ethnic groups.

While individually many of the nine observations are not significantly different from the equal treatment ratio of 1:1, the pooled summary ratio of 1.15 has a 95 per cent confidence interval from 1.08:1 to 1.21:1. Since this interval does not include 1:1, we can conclude that in general white minorities were at risk of unequal treatment relative to white British applicants ($Z = 4.81, p < 0.0001$).[8]

While we should not rule out the possibility that discrimination varies between white groups or over time, the observed variation between the white minority estimates is no larger than would be expected by chance. In other words the observed variation between estimates is what might be expected given that each of the individual estimates has a substantial confidence interval.[9] Overall, then, we conclude that there has been significant bias against white minorities in favour of white British applicants, but the magnitude of the bias has been substantively modest and fairly similar for the different white minorities. We can interpret the overall discrimination ratio of 1.15:1 as telling us that white minorities needed to make 15 per cent more applications than did the white British in order to obtain a positive response from employers.

Next, we have ten observations for West Indians/black Caribbeans. (The earlier studies tended to use the term West Indian while later ones used the term black Caribbean in their reports.) In the few cases where specific origins were identified, the origin country was typically named as Jamaica. The estimated ratios show the largest variability of all the groupings, ranging from a (non-significant) discrimination ratio of 1.13 in the pioneering 1969 study to a high of 4.83 in the 1996 CRE study. We cannot exclude the possibility that this large variability is due to the difficulty in conveying black Caribbean ethnicity with names. Black Caribbean names often have white European roots and, in an online survey of name recognition, only around half of the sample correctly attributed black Caribbean names (Wood et al. 2009). This could lead to an underestimation of the true level of discrimination.

Despite this variability, the summary discrimination ratio is a substantial and highly significant 1.56 (1.47 after trim and fill adjustment) and most of the estimated discrimination ratios are significantly different from the equal treatment ratio of 1:1. In this series of studies, black Caribbean applicants had to make about 50 per cent more applications than their white British counterparts in order to receive a positive response.

It is also clear that, in general, black Caribbeans have faced significantly greater risks of discrimination than have white minority groups. A strict test is

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to compare observations for the white and black Caribbean minority groups from those studies which included both minorities (the 1969, 1973/4, 1977/8, 1996 and 2016/17 studies). These comparisons will be internally consistent with respect to methods, dates, occupations and geographical coverage, thus reducing measurement error. When we make this comparison, we find that black Caribbean minorities were significantly more likely to face discrimination than were white minorities and had to make 28 per cent more applications than white minority applicants in order to obtain a positive response.[10]

Next, it is striking that discrimination ratios in the case of the three black African observations are very close to the black Caribbean ratios in the same studies. In none of the three studies is the Caribbean/African difference significant, and pooling the three studies confirms that there is no significant difference between them in risks of discrimination. We therefore conclude that the two black groups have likely faced the same risks of discrimination.

We turn next to consider discrimination against South Asian applicants with Indian or Pakistani names. The nomenclature of some of the earlier studies is somewhat confusing. The 1969 study, for example, included applicants with both Indian and Pakistani names but, because of the small numbers involved, reported them together in a single 'Asian' category. The 1984/5 study tells us that their applicants had Hindu names but describes the category as 'Asian' rather than Indian. Other studies simply report results for Asians and give no further details of the names or origins of the notional applicants.[11] For the moment, we keep the three categories of Asian, Indian and Pakistani separate.

As we can see from II, the summary discrimination ratios for the three categories are fairly similar, 1.51 for the Indian names, 1.73 for the Pakistani names, and the Asian group lying in between at 1.61 (1.52 after trim and fill adjustment). While it does appear that applicants with Indian names may have experienced somewhat less discrimination than those with Pakistani names, the overlapping confidence intervals suggest that the difference is not statistically significant. If we carry out a strict test, limiting ourselves to the studies which included both Indian and Pakistani-named applications, we find that the overall difference between the two groups is not significant ($Z = 0.875$, $p > 0.10$). In the most recent 2016/17 study, however, the risks facing Indian-named were significantly lower than those facing Pakistani-named applicants.

We can also compare the risks of discrimination faced by black Caribbean and South Asian applicants. Since a number of the Asian observations come from studies with distinctive objectives – for example the 2016 study of Muslim applications for accountancy positions and the 1992 and 1997 studies which investigated Asian applications for medical posts, it is once again preferable to restrict the analysis to studies which included both groups. We have a total of ten studies which measured discrimination against both black and South Asian applicants (i.e., Asian or Indian and Pakistani).[12] If we directly compare the relative risks in these ten studies, the difference turns out to be minuscule.

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The Caribbean/South Asian discrimination ratio is only 1.02, not remotely significant ($Z = 0.36, p = 0.64$). We can conclude that, over the period as a whole covered by the studies, the two groups faced similar risks of discrimination.

Finally, we turn to the three studies which included Chinese or East Asian applicants. The three observations yield an average discrimination ratio of 1.48, significantly different from parity with the white British majority group and quite similar to the estimate for applicants with Indian names. However, the Chinese summary estimate has a large confidence interval, requiring us to be cautious about the magnitude of the risks they face.

Our overall conclusion on the ethnic differences, then, is that white minority groups tend to face only modest risks of discrimination, whereas applicants with black Caribbean, black African and Pakistani names all experience much greater, and more or less equally high, risks of discrimination. In short, the pattern of the discrimination ratios shows a largely racial pattern with white groups facing much lower risks than the non-white minorities.

Changes over time

We turn next to consider changes over time. The key questions are whether there has been any tendency for overall risks of discrimination to decline, and whether trajectories vary between the different main ethnic groups. We focus on the black and South Asian groups as there are no observations for Chinese in earlier decades and only two for white minorities in more recent decades. As shown above, black and South Asian groups are those suffering the greatest disadvantage and it is therefore particularly relevant to examine whether there has been any sign of progress over time.

In order to compare like with like we restrict our attention to white-collar jobs. We therefore exclude the 1973/4 and the 1984/5 sets of applications for manual jobs (which also used in-person methods, further reducing their value for overtime comparisons). Figure I shows the results for the applicants with West Indian/black Caribbean names, where we have eight observations once manual jobs are excluded. For technical reasons the figure shows the relationship between the year of the study and the log of the discrimination ratio. The size of the circles indicates the relative weight attached to each study (reflecting its statistical power).

A formal statistical analysis indicates that the variation between the eight observed discrimination ratios is greater than would be expected on the basis of sampling error (Q value = 25.6, 7 df, $p < 0.001$). As we can see, some of this variation is due to the striking outlier of the 1996 CRE study. Recall that the 1996 study was somewhat anomalous with its restricted geographical range and focus on school and college leavers. This study has, however, relatively little weight in the analysis by virtue of its small sample size.

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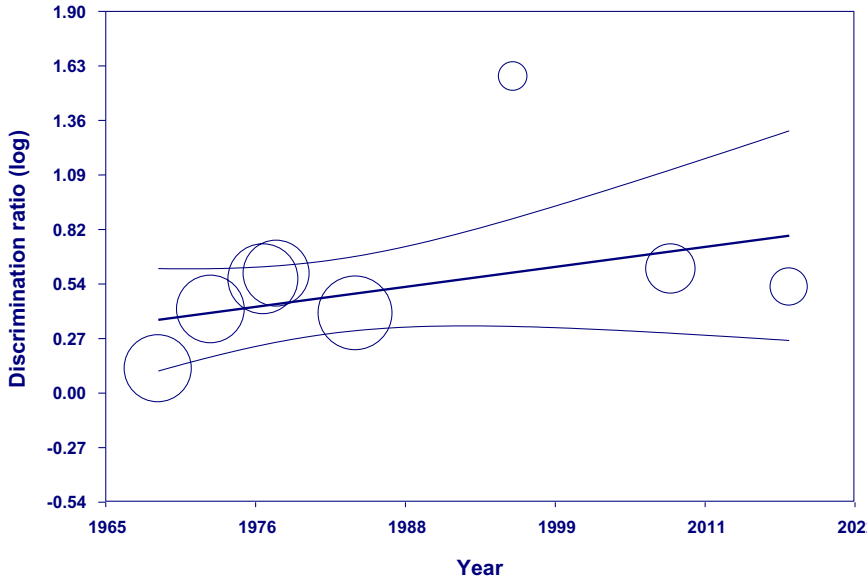
Figure I: *Discrimination against black Caribbeans over time*
[Colour figure can be viewed at wileyonlinelibrary.com]



At first sight Figure I suggests that risks of discrimination facing black Caribbeans may have increased over time. However, if we fit a linear regression line to test this, we find that the slope is not significantly different from zero ($B = 0.0087$, standard error = 0.0057, $p = 0.11$; see the supplementary material for further technical details). We cannot therefore be sure that discrimination against Caribbeans has increased but we can confidently reject the hypothesis that the risks have declined.[13]

We follow the same approach with the South Asian observations.II shows all eleven cases where we have either an 'Asian', an Indian or a Pakistani estimate for non-manual jobs. (Where there are both Indian and Pakistani estimates in a given study we use the weighted average of the two.) While there is considerable fluctuation from study to study, there is no obvious trend over time in either direction. Once again, the 1996 observation is a striking outlier. If we fit a linear regression line to test change over time, we obtain a more or less flat slope ($B = 0.0007$, standard error = 0.0033, $p = 0.82$).[14]

We also need to check whether this overall Asian stability is a result of diverging trends among Indian and Pakistani minorities, possibly as the result of rising Islamophobia after 9/11. We have five studies where applicants had Pakistani names. III shows that there was virtually no change over time: the studies from the 1970s and from the twenty-first century show almost identical patterns of discrimination against applicants with Pakistani names despite being almost forty years apart ($B = 0.0005$. standard error = 0.0037, $p = 0.89$.)

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Figure II: *Discrimination against Asians over time*
[Colour figure can be viewed at wileyonlinelibrary.com]

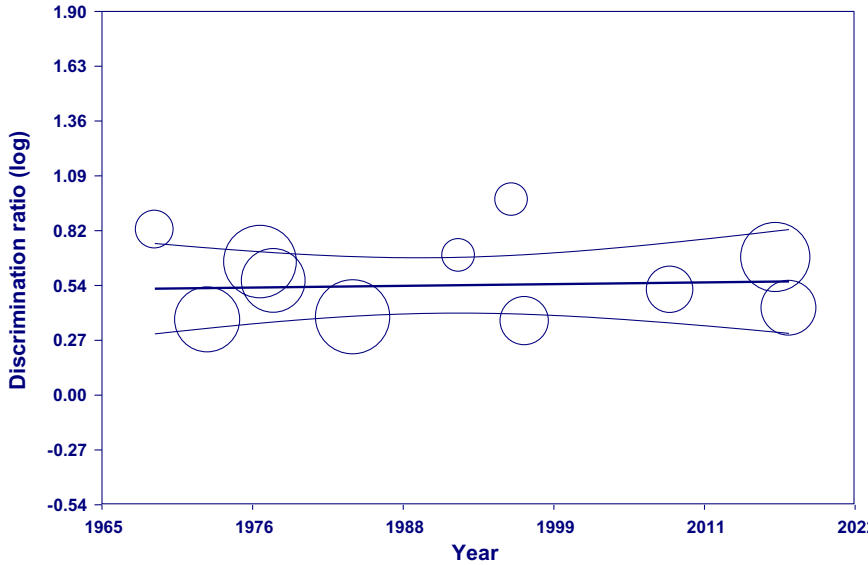
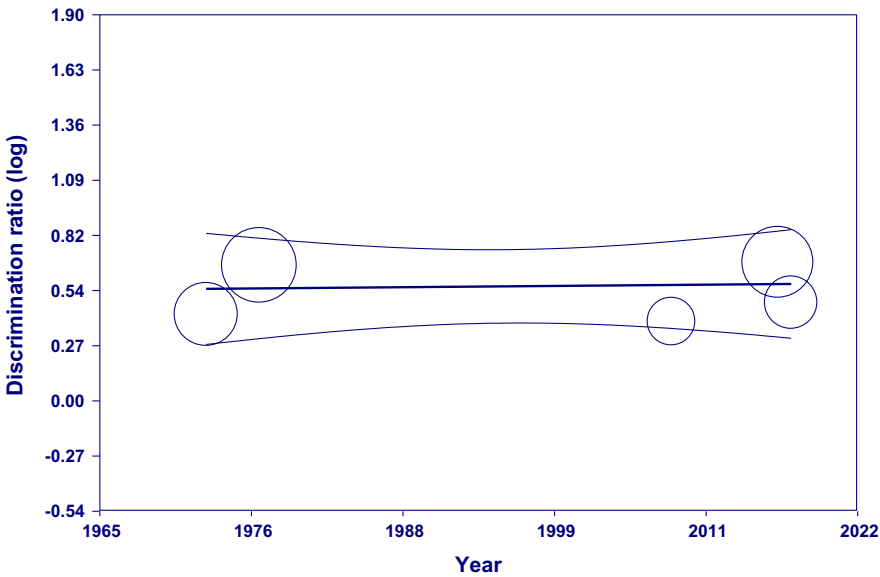


Figure III: *Discrimination against Pakistanis over time*
[Colour figure can be viewed at wileyonlinelibrary.com]



We can carry out a similar analysis for applicants with Indian names. We have five studies which can be included, the fifth being the 2016/17 study which found no discrimination (although it contained a very small sample

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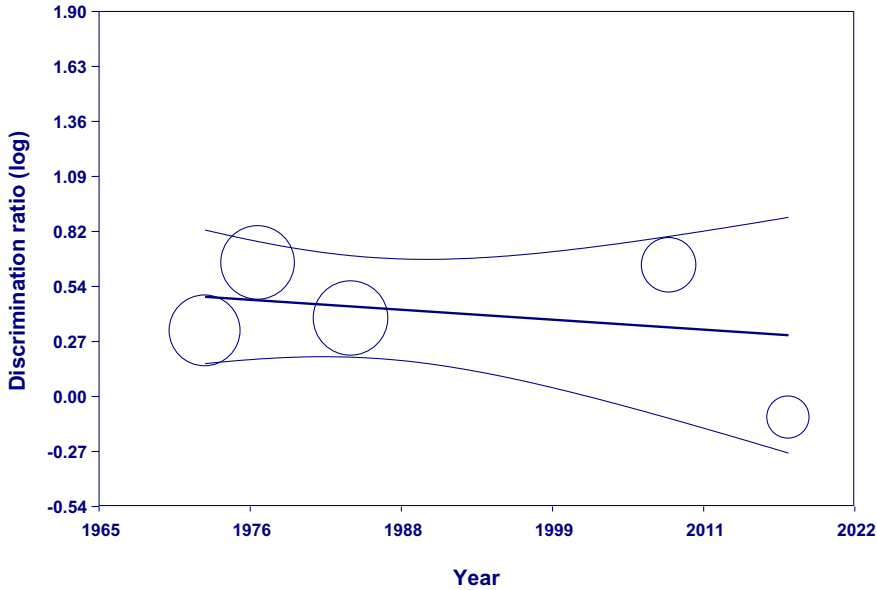
Figure IV: *Discrimination against Indians over time*
[Colour figure can be viewed at wileyonlinelibrary.com]



of Indians and hence a very large confidence interval). IV shows the trend over time. This time we do see a downwards slope, largely driven by the low estimate for 2016/17. However, the slope is far from statistically significant (B = –0.0043, standard error = 0.0069, p = 0.55) due to the lack of statistical power in 2016/17.

Overall, then, we find no evidence of increased discrimination against applicants with Pakistani names after 9/11, despite the rise of Islamophobia. Similarly to the situation facing black Caribbeans, the risks of discrimination facing people with Pakistani names have not materially changed over forty years. On the other hand, there are hints from the 2016/17 study that discrimination against Indians may be in decline. However, a larger sample of Indians than that available in the 2016/17 study is needed in order to gain greater statistical power and to be able to draw firm conclusions about the trend.

Summary and discussion

Our review of British field experiments shows some enduring contours of racial and ethnic discrimination in Britain, contours which have shown little sign of erosion over time. Firstly, there is an enduring pattern of modest discrimination against white minorities in contrast to the much greater risks of

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discrimination faced by the main non-white groups. In general, white minorities are much closer to the white British than to the non-white groups in their risks of discrimination, suggesting a strong racial component to discrimination.

Secondly, differences between the main non-white groups are small and not statistically significant. There is some uncertainty about the situation facing Chinese and Indians (due to lack of statistical power), but the black Caribbean, black African and Pakistani groups all face substantial and very similar risks of discrimination. It is particularly striking that the black Caribbean and Pakistani groups face such similar risks despite their very different patterns of social and economic integration in Britain (Maxwell 2010).

Thirdly, we found no significant diminution in risks of discrimination over time either for Caribbeans, for South Asians as a whole or for Pakistanis in particular. This is particularly striking as many of the earlier studies explicitly included applicants born abroad with some foreign education whereas applicants in the most recent studies received all their education in Britain. Discrimination does not therefore appear to have declined after the 1976 Act although equally there is no evidence of increased discrimination against applicants with Pakistani names after 9/11 and the subsequent Islamophobia.

These British results are in line with studies mapping over-time trends in discrimination in other countries. Thus Zchirnt and Ruedin (2016), in their cross-national meta-analysis of post-1990 field experiments, found no change in risks of discrimination in EU countries after the 2000 European directives on racial discrimination (2000/43/EC and 2000/78/EC). Quillian et al. (2017) found a similar lack of change over time in the US.

Our results also have strong similarities with those found in the ethnic penalties literature. For example Cheung and Heath (2007) found no penalties with respect to employment against the white Irish but highly significant and similarly large penalties against black Caribbeans, black Africans, and the Pakistani/Bangladeshi group, and mixed results for Indians. More recent research has also found that the relative risks of unemployment faced by black and Pakistani/Bangladeshi groups show little sign of a downward trend over time, although Indians' relative risks of unemployment do appear to be lower and to have reduced (Heath, Li and Garratt, 2018: Figure 6.6). While statistical studies of ethnic penalties and field experiments of discrimination are tackling distinct concepts,[15] these parallels suggest that discrimination may well be a major driver of non-white minorities' enduringly elevated risks of unemployment.

We must, however, acknowledge several limitations of our analysis. While field experiments have a high degree of validity, the methodology employed has varied from one study to another, potentially limiting comparability (although also partly reflecting changing recruitment practices in the labour market). As well as the noise due to the methodological differences between studies, lack of statistical power limits our ability to detect significant differences between

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ethnic groups. One also suspects that employers may have some difficulty in distinguishing Indian from Pakistani names, and Caribbean from British names. In general, noise will tend to blur differences and so is unlikely to have a major impact on our principal findings of significant and substantial continuing discrimination against both black and Pakistani minorities.

What are the wider implications for theory? Perhaps the biggest challenge is to make sense of the temporal stability of racial discrimination in the labour market given the legislative changes, increasing diversity, increased intermarriage and inter-group contact, and declining prejudice apparent in British society. The failure of legislation to reduce discrimination is not perhaps altogether surprising: there has been weak enforcement, little financial incentive for employers to change, and lack of monitoring. Racial equality has not been a priority for firms or governments, contrasting with the much stricter enforcement of the Fair Employment legislation in Northern Ireland (Muttarak, Hamill, Heath and McCrudden 2013).

Nevertheless, it is somewhat paradoxical that survey research finds declining racial prejudice among the public (Ford 2008; Storm et al. 2017) whereas our results show continuing racial discrimination in the labour market. In this context, psychologists' distinction between blatant and subtle racism may be relevant (Pettigrew and Meertens 1995). Pettigrew and Meertens argue that subtle racism may be on the rise as expressions of blatant racism become less acceptable. Subtle racism can take a variety of forms. Our hypothesis is that one form it might take is negative employer beliefs about the linguistic and work-related skills and motivations of minorities with a migration background from less-developed countries.

One illustration of the kind of process that might be at work comes from Midtbøen's follow-up interviews (in Norway) with employers who had been subject to a field experiment. In the field experiment the minority applicants had been clearly identified as born in Norway, with Norwegian qualifications and application materials indicating fluent Norwegian language skills (Midtbøen 2014). Nevertheless some employers, when explaining their rejection of the minority candidates, indicated that they thought the applicants were foreign-born and likely to have a poor command of Norwegian. The presence of such negative beliefs may explain why racial discrimination persists despite the decline of blatant racism. Somewhat similarly, in their US research Pager and Karafin (2009) found that employers failed to update their negative general beliefs about African Americans' work ethic despite positive experiences of African Americans in their own work force, who were regarded as 'exceptions' to the general rule.

Persisting negative stereotypes of non-white minorities in Britain may well be a result of the well-known high rates of school exclusion for black youngsters, disproportionate rates of 'stop and search', and over-representation of black and Muslim young men in prison. While the absolute number of young

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men involved is very small (and may well be a product of prejudice in the first place), stereotyping may lead to the unwarranted generalization of negative characteristics to the ethnic group as a whole. These negative stereotypes may thus act as a kind of tie-breaker when deciding between otherwise equally qualified applicants.

The persistence, then, of subtle racism in the form of negative stereotypes and beliefs about non-Europeans' aptitudes and skills might help to explain the stability over time of the risks of discrimination faced by these groups.

(Date accepted: April 2019)

Notes

1. We would like to thank Didier Ruedin, David Cox, Bent Nielsen, Lincoln Quillian, the two anonymous referees, our research assistants Anna Barbuscia, Joana Lima and Isabel Raabe, and our colleagues at the Centre for Social Investigation and at ERCOMER for their help and support. We would also like to thank the GEMM team who collaborated on the 2016/17 study, and in particular Neli Demireva and Bram Lancee who led the project. The GEMM project received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 649255. Our especial thanks are due to Viktor Duo who undertook the computer programming, without which the study could not have been undertaken.

2. Field experiments are not, however, immune from criticism. Thus, in the case of in-person audit studies, the testers will not be blind to the nature of the experiment and may act in ways that compromise validity. Furthermore, applications may be unrealistic and thus be discounted by employers, while some ethnic names may have distinctive class connotations, introducing a non-ethnic factor. Gaddis (2018) provides an overview of the issues involved.

3. This study was conducted by the BBC in 2017 and found that an applicant called Mohammed received only 4 offers to interview out of 100 applications compared with 12 offers received by Adam (BBC News, 6 February 2017, https://www.bbc.com/news/uk-england-london-38751307).

4. For these purposes we treat the in-person and correspondence tests of the 1973/4 and 1984/5 studies as providing separate observations.

5. In a paired design, where a minority and a majority application is sent to each advertised job vacancy, the risk ratio is given by the ratio of the *absolute* numbers (the raw counts) of positive responses received by the majority and minority applicants. Because N is the same for both sets of applicants, we do not need to know what *proportion* of each set was rejected. (In the standard formula, N simply cancels out.) However, in the case of unpaired designs, where the Ns typically differ, we do need to know the number of rejections.

6. Three studies employing paired designs (CRE 1997, Hoque and Noon 1999, and Wood et al. 2009) do not report the information needed to calculate the variance correctly. We have therefore used the formula for unpaired designs, which can be calculated from the data supplied but will overestimate the variance.

7. We use the Comprehensive Meta-analysis package designed by Borenstein and his colleagues for all analyses (https://www.meta-analysis.com). This package implements Duval and Tweedie's (2000) trim and fill procedure. The supplementary materials show the results.

8. Multiple observations from the same study (as with the 1969, 1977/8, and 2016/17 studies) are not independent of each other, violating the assumptions of our statistical

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test. However, adjusting for this, the summary remains significantly different from equality of treatment.

9. A formal test shows that we cannot reject the null hypothesis that the variation between the estimates can be accounted for by the within-study errors ($C = 13.35$ with 8 df, $p > 0.20$).

10. In making this comparison we select only one European group from each study – Cypriot in the 1969 study, French in the 1977/8 study and South and West European in the 2016/17 study, in order to avoid issues of dependence. The resulting Caribbean:European summary log discrimination ratio is 0.248, variance 0.0071, $p < 0.001$.

11. The term Asian was used to describe people with an Indian or Pakistani background, including the 'twice migrants' coming from East Africa after the former colonies achieved independence in the 1960s.

12. Where there are both Indian and Pakistani estimates in a given study we use the weighted average of the two.

13. We can also calculate an alternative outcome measure for the 2016/17 study, namely the relative risks of receiving an invitation to an interview (rather than the relative risks of receiving any kind of positive response). This alternative measure yields a lower discrimination ratio for Caribbeans in 2016/17 of 1.23, although with a larger confidence interval. If we use this alternative measure, the fitted regression coefficient declines to 0.0069 with an increased standard error of 0.0061.

14. If we use the alternative outcome measure for the 2016/17 study, we again find a lower ratio – 1.42 – but the regression slope barely changes, becoming 0.0006, standard error .0035.

15. Thus the statistical surveys cover the whole of the economically active population, including the self-employed, whereas self-employment by necessity is excluded in field experiments of employers' behaviour. Furthermore, field experiments cannot show the actual prevalence of discrimination in the labour market, since they are based on hypothetical applicants applying for a specific set of jobs. In the real world, actual applicants may avoid applying for jobs where they are particularly likely to experience discrimination, or may seek self-employment. Labour market surveys do, however, show the actual prevalence of unemployment.

Bibliography

Bagley, C.A. and Abubakr, M. 2017 'Muslim Woman Seeking Work: An English Case Study with a Dutch Comparison, of Discrimination and Achievement', *Social Sciences* 6(1): 17.

Borenstein, M., Hedges, L.V., Higgins, J.P.Y. and Rothstein, H.R. 2009 *Introduction to Meta-Analysis*, Chichester: Wiley.

Brown, C. and Gay, P. 1985 *Racial Discrimination: 17 Years after the Act*, London: Policy Studies Institute.

Cheung, S.-Y. and Heath, A. 2007 'Nice Work if You Can Get It', in A.F. Heath and S-Y. Cheung (eds) *Unequal Chances*, Oxford: Oxford University Press.

Commission for Racial Equality 1997 *We Regret to Inform You: Testing for Racial Discrimination in Youth Employment in the North of England and Scotland*, London: CRE.

Daniel, W.W. 1968 *Racial Discrimination in England*, London: Penguin.

Duval, S. and Tweedie, R. 2000 'Trim and Fill: A Simple Funnel-plot-based Method of Testing and Adjusting for Publication Bias in Meta-analysis', *Biometrics* 56: 455–63.

Esmail, A. and Everington, S. 1993 'Racial Discrimination against Doctors from Ethnic Minorities', *British Medical Journal* 306: 691–2.

Esmail, A. and Everington, S. 1997 'Asian Doctors Are Still Being Discriminated Against', *British Medical Journal* 314: 1619.

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Firth, M. 1981 'Racial Discrimination in the British Labor Market', *Industrial & Labor Relations Review* 34: 265–72.

Ford, R. 2008 'Is Racial Prejudice Declining in Britain?' *British Journal of Sociology* 59: 609–36.

Gaddis, S.M. (ed.) 2018 *Audit Studies: Behind the Scenes with Theory, Method, and Nuance*, London: Springer.

Heath, A.F., Li, Y. and Garratt, E. 2018 'The Fight against Idleness: Unemployment and Discouraged Workers', in A.F. Heath, *Social Progress in Britain*, Oxford: Oxford University Press.

Hoque, K. and Noon, M. 1999 'Racial Discrimination in Speculative Applications: New Optimism Six Years On?' *Human Resource Management Journal* 9: 71–82.

Hubbuck, J. and Carter, S. 1980 *Half a Chance? A Report on Job Discrimination against Young Blacks in Nottingham*, London: Commission for Racial Equality.

Jowell, R. and Prescott-Clarke, P. 1970 'Racial Discrimination and White-collar Workers in Britain', *Race and Class* 11: 397–417.

Khattab, N. and Modood, T. 2015 'Both Ethnic and Religious: Explaining Employment Penalties across 14 Ethno-religious Groups in the United Kingdom', *Journal for the Scientific Study of Religion* 54: 501–22.

Lancee, B. et al. 2019 *The GEMM study: A Cross-National Harmonized Field Experiment on Labour Market Discrimination: Technical Report*. Available at: http://gemm2020.eu/wp-content/uploads/2019/02/GEMM-WP3-technical-report.pdf [Accessed on 10 May 2019].

Li, Y., Heath, A.F., et al. 2010 Struggling onto the Ladder, Climbing the Rungs: Employment and Class Position of Minority Ethnic Groups in Britain. In: Stillwell, J. (Ed.) *Spatial and Social Disparities*. London: Springer

Maxwell, R. 2009 'Caribbean and South Asian Identification with British Society: The Importance of Perceived Discrimination', *Ethnic and Racial Studies* 32: 1449–69.

Maxwell, R. 2010 *Ethnic Minority Migrants in Britain and France: Integration Trade-Offs*, Cambridge: Cambridge University Press.

McIntosh, N. and Smith, D.J. 1974 *The Extent of Racial Discrimination*, PEP Broadsheet no. 547. London: PEP.

Midtbøen, A.H. 2014 'The Invisible Second Generation? Statistical Discrimination and Immigrant Stereotypes in Employment Processes in Norway', *Journal of Ethnic and Migration Studies* 40: 1657–75.

Muttarak, R., Hamill, A., Heath, A.F. and McCrudden, C. 2013 'Does Affirmative Action Work? Evidence from the Operation of Fair Employment Legislation in Northern Ireland', *Sociology* 47: 560–79.

National Research Council 2004 *Measuring Racial Discrimination*. Panel on Methods for Assessing Discrimination. Washington, DC: The National Academies Press.

Noon, M. 1993 'Racial Discrimination in Speculative Application: Evidence from the UK's Top 100 Firms', *Human Resource Management Journal* 3: 35–47.

Pager, D. and Karafin, D. 2009 'Bayesian Bigot? Statistical Discrimination, Stereotypes, and Employer Decision Making', *Annals of the American Academy of Political and Social Sciences* 621: 70–93.

Pager, D. 2016 'Are Firms that Discriminate More Likely to Go Out of Business?' *Sociological Science* 3: 849–59.

Pettigrew, T.W. and Meertens, R.W. 1995 'Subtle and Blatant Prejudice in Western Europe', *European Journal of Social Psychology* 25: 57–75.

Quillian, L., Pager, D., Hexel, O. and Midtbøen, A.H. 2017 'Meta-analysis of Field Experiments Shows No Change in Racial Discrimination over Time', *Proceedings of the National Academy of Sciences* 114: 10870–5.

Ross, S.L. 2017 'Measuring Trends in Discrimination with Field Experiment Data', *Proceedings of the National Academy of Sciences* 114: 10815–7.

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Schmitt, M.T., Branscombe, N.R., Postmes, T. and Garcia, A. 2014 'The Consequences of Perceived Discrimination for Psychological Well-being: A Meta-analytic Review', *Psychological Bulletin* 140: 921–48.

Storm, I., Sobolewska, M. and Ford, R. 2017 'Is Ethnic Prejudice Declining in Britain? Change in Social Distance Attitudes among Ethnic Majority and Minority Britons', *British Journal of Sociology* 68: 410–34.

Vuolo, M., Uggen, C. and Lageson, S. 2016 'Statistical Power in Experimental Audit Studies: Cautions and Calculations for Matched Tests with Nominal Outcomes', *Sociological Methods and Research* 45: 260–303.

Weichselbaumer, D. 2015 'Testing for Discrimination against Lesbians of Different Marital Status: A Field Experiment', *Industrial Relations* 54: 131–61.

Wood, M., Hales, J., Purdon, S., Sejersen, T. and Hayllar, O. 2009 *A Test for Racial Discrimination in Recruitment Practice in British Cities*. Research Report 607, London: DWP.

Zou, G.Y. 2007 'One Relative Risk Versus Two Odds Ratios: Implications for Meta-Analyses Involving Paired and Unpaired Binary Data', *Clinical Trials* 4: 25–31.

Zschirnt, E. and Ruedin, D. 2016 'Ethnic Discrimination in Hiring Decisions: A Meta-analysis of Correspondence Tests 1990–2015', *Journal of Ethnic and Migration Studies* 42: 1115–34.

Supporting Information

Additional supporting information may be found in the online version of this article at the publisher's web site:

Table A.I: British field experiments of racial discrimination

Table A.II: Comparison of the unadjusted summary statistics with adjusted estimates using the trim and fill procedure (relative risk ratios with 95% confidence intervals, log scale)

Table A.III: Meta Regressions of Log Discrimination Ratio over time (coefficients and standard errors)

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