

Success stories and continuing challenges: A longitudinal analysis of gender-ethnic wage gaps in the UK

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Abstract

This paper investigates the evolution of ethnic wage gaps among men and women in the UK over the period 1993–2023. The results show reductions in wage gaps among all South Asian groups, which are driven by higher educational attainment and occupational advancement. In contrast, wage gaps persist for Black ethnic groups. While for Black Caribbeans a key issue is lower levels education, for Black Africans the high proportion of foreign-born individuals limits their returns on education. These trends suggest a reordering of the wage gap hierarchy over time, with Black groups expected to experience the largest disparities in the future, instead of the historically disadvantaged Pakistani and Bangladeshi groups.

Keywords: ethnic wage gaps; gender wage gaps; wage gap trends; impact of characteristics; labour force participation

JEL Classification: J31; J71

1. Introduction

The extensive literature on ethnic and racial wage differentials consistently finds that most minority groups are paid on average less than the white majority (Lang and Kahn-Lang Spitzer, 2020; Longhi, 2020b). In the UK, for example, Pakistani and Bangladeshi men experience the largest wage gaps compared to white British men, Indian men experience the smallest gaps, with Black African and Black Caribbean men in between (Brynin et al., 2019; Forth and Theodoropoulos, 2023). Ethnic wage gaps are smaller among women than among men, and gender wage gaps are smaller among ethnic minorities than among whites (Epstein

et al., 2015; Forth et al., 2023; Greenman and Xie, 2008; Kim, 2009). As most of the UK literature pools data for various years, the current evidence does not give any indication on whether wage gaps are decreasing for any of the groups analysed. Evidence on trends is crucial to highlight progress and stagnation and to reveal which groups are consistently disadvantaged. The main contribution of this paper is the first in-depth analysis of how wage gaps of ethnic minority men and women have evolved in the UK in the last 30 years (1993-2023) and of possible mechanisms behind the observed trends. By analysing the effects of structural changes in the labour market, such as the impact of educational advancements and demographic shifts, this paper shows and explains new emerging patterns of inequalities. The trends highlighted are useful for policy as they provide a foundation for predicting future disparities and design more targeted policies.

The Deaton Review on race, ethnicity and immigration (Mirza and Warwick, 2024) is one of the few studies that examines trends in ethnic wage gaps in the UK. The review provides an extensive analysis of ethnic differences in the UK which spans multiple domains, including education, the labour market, health, and political preferences. In terms of wage inequalities, the review finds that for many ethnic groups gaps in weekly wages have remained largely unchanged over time. A key limitation of focusing on weekly wages is that this measure conflates changes in wages with changes in hours worked (Mirza and Warwick, 2024). This paper improves on Mirza and Warwick (2024) by focusing on wage gaps in hourly – rather than weekly – wages. Gaps in hourly wages represent a more precise and widely accepted measure of wage gaps in the UK, which aligns with the methodology used in gender wage gap reporting, as mandated by the UK government.¹ The distinction between weekly and hourly wages is critical when including women in wage comparisons, due to their heterogeneity in working hours. Consistent with Mirza and Warwick (2024), this paper confirms the lack of progress in closing the wage gaps for Blacks; however, it also shows improvements for all South Asian groups, thus highlighting a shift in the wage gap hierarchy, with the Black groups moving to the bottom instead of Pakistani and Bangladeshi groups, as commonly highlighted by the cross-sectional evidence.

The additional contribution of this paper is an in-depth analysis of the intersectionality between ethnicity and gender (Crenshaw, 1989; Holvino, 2010). Similarly to Mirza and Warwick (2024) many studies estimate ethnic wage gaps separately for men and women

¹ <https://www.gov.uk/government/publications/gender-pay-gap-reporting-guidance-for-employers/preparing-your-data> last accessed: 26 November 2024.

(Forth et al., 2023; Kim, 2009; Mandel and Semyonov, 2016; Zwysen and Longhi, 2018); thus limiting our ability to compare wages of ethnic minority women to those of white British men and co-ethnic men. This direct comparison is important since rapidly decreasing gaps in workforce participation among ethnic groups over time, and especially between men and women, will likely affect trends in wage gaps. Although Brynin et al. (2019) for the UK, and Greenman and Xie (2008) for the US, study intersectionality by using interactions terms between gender and ethnicity; this paper goes beyond the previous literature by using more recent data and by providing a new and in-depth analysis of trends. Similarly to the previous literature, this paper confirms that ethnic wage gaps are consistently smaller among women than among men, but also reveals that trends towards decreasing wage gaps are much flatter among women than among men, and that only Indian and Bangladeshi women clearly show decreasing trends in wage gaps. This indicates a convergence in wage gaps between men and women, and that the smaller ethnic wage gaps among women than among men may be a temporary phenomenon.

The final contribution of this paper is an analysis of how changes in workforce characteristics vary across gender-ethnic groups and whether these changes drive the observed trends. It is well-documented that educational attainment has been increasing among ethnic minorities, and particularly among second-generations (Mirza and Warwick, 2024). Education, together with factors such as birthplace (whether UK-born or not) and geographic location are important determinants of wage outcomes (Longhi, 2020a; Mirza and Warwick, 2024), and changes in these factors over time are likely to contribute to changes in wage gaps. The effect of characteristics on the wage gaps have been analysed extensively, but only cross sectionally. This paper documents substantial heterogeneity across gender-ethnic groups in the evolution of individual and job-related characteristics, which directly influence the observed wage gaps. For example, this paper highlights the key role of education, and how it affects minority groups differently: while for South Asians the increasing educational attainment contributes to the narrowing of the wage gaps, Black Caribbeans are left behind due to lack of improvement in their educational attainment, and for Black Africans the high proportion of immigrants means that their high educational attainment does not translate in wage parity. The paper also shows that as education improves over time, its importance in explaining the wage gaps reduces in favour of occupation, which becomes more important. While ethnic minority women experience occupational upgrading over time, which helps narrow gender wage gaps, ethnic minority men in most groups, especially Black African and Bangladeshi, remain more persistently

overrepresented in low-wage occupations. In addition, the comparatively higher wage gaps for Pakistani and Bangladeshi groups is partly related to their historical geographical location, with comparatively smaller proportions concentrating in London (compared to Blacks and Indians), where wages are higher. Related to this, the increasing geographical dispersion in recent years away from London, partly accounts for the relatively worse performance of Blacks compared to South Asians.

Besides a direct effect on wages and wage gaps, changes in characteristics over time are also directly and indirectly related to changes in labour force participation (selection into the labour force). The literature on selection into the labour force suggests that individuals who do not participate are those who would earn lower wages compared to those who do participate (Altonji and Blank, 1999; Heckman, 1979). Since labour force participation is lower among ethnic minorities and particularly among women, the increase in their labour force participation over time – whether the result of a secular trend or of legislations to increase participation – has the potential to decrease average wages for these groups and increase their wage gaps. Most of the literature on the effect of changes in labour force participation on trends in wage gaps focuses on gender (Blau et al., 2024; Foliano et al., 2024); almost all studies analysing the relevance of labour force participation for racial wage gaps focus on the US, and generally estimate racial wage gaps separately for men and for women (Albrecht et al., 2015; Pettit and Ewert, 2009; Richey and Tromp, 2021). This paper provides new evidence for UK ethnic groups, finding that selection has a limited effect on the gender and ethnic wage gaps. Only for white British women wage gaps that account for selection are slightly smaller than the ones computed on the working population, while for all ethnic minority groups (men and women) the wage gaps accounting for selection are either larger than – or similar to – those computed on the working population.

The paper proceeds as follows. Section 2 discusses theoretical expectations on the effect that characteristics have on wage gaps directly, and indirectly via differential selection in the labour force. The data are discussed in Section 3, the method in Section 4, and the results in Section 5. Section 6 concludes with some implications for policy and future research.

2. Direct and indirect effect of characteristics

The choice to participate in the labour force is the result of an optimisation problem, where individuals weigh the advantages of labour force participation, which include income and its

associated consumption, against the costs, which include loss of leisure time, commuting costs, and other related factors Altonji and Blank (1999) and Heckman (1979). Individuals participate in the labour force when the benefits equal or exceed the costs, and choose to remain inactive otherwise (Altonji and Blank, 1999). Hence, the higher the wage an individual is offered, the higher the probability of participation in the labour force. Family circumstances such as marital status and the presence of children in the household affect participation by changing constraints and the outside option, but not wages directly. Other factors, such as education and skills, affect participation by directly affecting individual productivity and therefore the wage offered. It is plausible that the costs and benefits of participating in the labour force, and therefore the selection process, differs by gender and by ethnic groups.

Empirically, information on wages is only available for individuals who participate in the labour force and have a paid job, while for those who do not participate and for those who do not have a paid job (the unemployed and the self-employed), there is no wage data. If those who choose not to participate in the labour force are systematically different and would receive different wage offers compared to those who do participate, and if the decision to participate differs by gender and ethnicity, it is likely that gender and ethnic wage gaps that consider selection differ from those focusing solely on employed individuals (Altonji and Blank, 1999).

The literature suggests several factors that may play a role in influencing the costs and benefits of labour force participation, and may impact participation rates differently for men and women as well as for whites compared to ethnic minorities (Greenman and Xie, 2008; Neal, 2004). Social norms, particularly gender role attitudes, play an important role in influencing labour force participation, often interacting with demographic factors such as marital status and the presence of young children (Capavozzi et al., 2021; Giuliano, 2017). The concept of female homemakers and male breadwinners, associated with more conservative gender role attitudes, places expectations on women not to participate in the labour force. This expectation carries a psychological cost for those who do not conform, which tends to be higher for married women, especially when they have young children. While the financial cost of outsourcing housework or childcare is the same for both men and women, in societies or households with more traditional gender roles, women may experience a greater psychological cost than men. However, for those ethnic minority groups who are more likely to reside in extended or multigenerational households (Burgess and Muir, 2020), it is possible that childcare can still be managed within the family rather than being

outsourced to strangers, thus reducing the psychological (besides the financial) costs women may associate with labour force participation. As the ethnic groups compared in this paper differ in terms of cultural and religious background, they also differ – on average – in terms of gender role attitudes and expectations; it is likely that these average differences will result in differences in the selection process.

Factors such as education are also crucial in the decision to participate in the labour force, as higher levels of education tend to be associated with higher wages. While historically white men had higher levels of education compared to women and ethnic minorities, in recent years there has been a notable increase in the average educational attainment both among women and ethnic minorities (Blau and Kahn, 2017; Mirza and Warwick, 2024; Richardson et al., 2020), which has opened opportunities for employment in occupations and sectors that offer better pay on average. This increases the gains from labour force participation for the average woman and the typical member of an ethnic minority more than for the average white men and, in contrast with the theory, it also implies that a large proportion of these new entrants will receive comparatively high wage offers. In addition, if minority individuals are more likely to obtain a university degree in order to enhance their employment prospects, we can infer that they have greater ambition and motivation. As a result, when controlling for education in wage equations, we are partially accounting for some of the determinants of selection.

For each gender-ethnic group, this paper discusses new evidence on trends in “raw” wage gaps (i.e. wage gaps that do not account for individual characteristics) estimated on the sample of those who are in a paid job. It then analyses the importance of selection into the labour force by comparing trends in the raw wage gaps estimated on the sample of those who are in a paid job, to those estimated on a larger sample accounting for selection. The mechanisms driving the trends are then analysed by comparing raw and “adjusted” wage gaps (i.e. wage gaps that control for characteristics such as education) for the sample of those who are in a paid job, to identify changes in the relative importance of individual and job characteristics across groups and over time.

3. Data

To analyse trends in wage gaps, this paper uses the UK Quarterly Labour Force Survey (LFS) (Office for National Statistics, 2024), which is a household survey containing a wide range of information on people’s demographic characteristics, labour force participation, and job

characteristics. The LFS has two main advantages compared to other datasets. The first is the length of the survey: since information on wages has been collected from the fourth quarter of 1993, these data allow the analysis of wage gaps over a period of about 30 years. The second advantage is the sample size, which allows the analysis of wage gaps for men and women who identify as white British, Indian, Pakistani, Bangladeshi, Black Caribbean and Black African, in comparison to white British men. Men and women from all other minority groups, including “other whites” are excluded from the analysis.

To allow large enough sample sizes when analysing trends, the data are grouped in 5-year periods: 1993-1998, 1999-2003, 2004-2008, 2009-2013, 2014-2018, and 2019-2023. Although the aim of this paper is not to analyse the effect of shocks or policies, it is worth noting that the Equality Act 2010 falls within the 2009-2013 period, while the Covid-19 pandemic falls within the 2019-2023 period. The LFS sample size steadily decreases over time, starting from about 150,000 respondents overall in the last quarter of 1993 to less than 45,000 respondents in the last quarter of 2023. The smallest sample size for those in paid employment and with information on wages is for Bangladeshi women, starting with a sample size of 48 in the first period (1993-1998), and increasing to 174 in the last period (2019-2023) due to an increase in the size of the minority groups in the population and in their labour force participation and employment.

In line with Brynin et al. (2019) and with Mirza and Warwick (2024), the sample is restricted to individuals of working age (16-65); this is a wider age range compared with other studies, for example Blau et al. (2024) or Greenman and Xie (2008), who restrict the estimation sample to people aged 25-54/55. Workers younger than 25 are more likely to have lower levels of education, comparatively lower wages and at the age of 20-25 already have a few years of wage growth due to increasing work experience. The upper limit age of 65 reflects the age at which, in 2019, men and women in the UK become eligible to receive state pension. It is important to include younger people and people closer to retirement age to capture the full range of experiences of different groups, especially given the increasing levels of education (and changing characteristics) over time that affect gender and ethnic groups differently.

The LFS is a rotating panel survey, where individuals are interviewed for up to five successive quarters. Up to 1996, wage data have been collected only in the fifth interview, while from 1997 they have been collected both in the first and fifth interview. This paper uses data from the fifth interview up to 1996, and from the first interview from 1997 to avoid

issues of attrition and to increase sample sizes. Data on hourly wages are provided with the data and combine information on basic and overtime pay.

4. Method and variables

4.1. Trends in wage gaps

To estimate the gender-ethnic wage gaps, this paper uses log linear regressions where the dependent variable is the natural logarithm of hourly wages of individual i (LnW_i), and the main explanatory variable is a full set of interaction terms identifying both the sex and the ethnicity of each respondent (E_i'); the comparison group is that of white British men.

$$LnW_i = E_i'\beta_1 + X_i'\beta_2 + \varepsilon_i \quad (1)$$

Ethnic wage gaps among men as well as the gender wage gap among white British are measured directly from the regression coefficients (β_1). Ethnic wage gaps among women can be retrieved by comparing the coefficient of the dummy for white British women with those for ethnic minority women, while the gender wage gap for each minority group can be retrieved by comparing the coefficients of the dummies for men and women from the same ethnic group.

The model is estimated by OLS with robust standard errors, and separately for the six periods to show trends over time. As the initial focus is on the raw gaps, in this initial set of regressions X_i' includes only dummies for the year and for the quarter of the interview, and no other explanatory variable. The advantage of this approach is that (pre-)labour market inequalities, which may result for example in different levels of education, different occupational choices, or a different probability of being in a paid job, are captured by the gender-ethnic dummies.

4.2. The effect of changes in labour force participation

The literature has proposed various methods to account for selection; these are comprehensively reviewed in Blau and Kahn (2017) and in Blau et al. (2024). The most recent literature uses data-driven approaches to impute wages of individuals who are not in a paid job by imputing wages from average wages of similar people, such as Neal (2004) and

Blau et al. (2024), or using methods such as nearest neighbour matching (Foliano et al., 2024), or probability weighting (Blau et al., 2024; Olivetti and Petrongolo, 2008). This paper uses a nearest neighbour matching method as in Foliano et al. (2024): for those respondents who do not have a paid job and therefore have no wage data, a series of probit models is estimated to predict the probability of the respondent being employed.

$$Pr(Empl_i = 1|z) = \Phi(Z_i'\gamma) \quad (2)$$

Where the dependent variable ($Empl_i$) is 1 for those who have a paid job, and 0 otherwise, and where respondents who have a long-term disability, are full-time students or are self-employed are excluded from the analysis.² Φ is the cumulative normal distribution and the explanatory variables in Z_i' are age and its square, a dummy for married or cohabiting, a dummy for the presence in the household of children aged 0-4, one for children aged 5-15, as opposed to having no children in these age groups. Z_i' also includes two educational qualification dummies (university degree or higher, and less than a university degree, with no or other qualifications as reference group), together with year and quarter dummies. The models are estimated separately by period and gender-ethnic groups, thus allowing gender-ethnic specific slopes.

The probit models are used to predict the employment probability of every respondent, regardless of whether they have a job or not. Respondents who are not employed are assigned the wage of the worker with the same gender-ethnicity who is the nearest neighbour in that period in terms of predicted employment probability. When there is more than one nearest neighbour with a paid job, the imputed wage is the average wage of all nearest neighbours. Matching only within gender-ethnic groups acknowledges the existence of gender-ethnic wage gaps. Similarly to Foliano et al. (2024), the common support is implemented by excluding from the imputation all those respondents whose predicted

² The empirical literature dichotomises labour force participation between individuals who have a paid job and everybody else. It is tempting to include everybody who do not have a paid job in the group of those for whom a wage could be computed or imputed. However, this is not necessarily appropriate. Those who are inactive because of long term disability may not be able to work, even when wage offers are high. While some suggest that self-employment may be a second-best choice for those who cannot find a paid job, it is more likely that self-employed individuals do not want a paid job (Blanchflower and Oswald, 1998), for example, because they value the freedom of being their own boss and the responsibility of creating their own income. Based on these considerations, this paper excludes respondents with a long-term disability who are inactive and the self-employed from the population of interest. Although this choice slightly affects the trends for some of the groups, for example Pakistani, Bangladeshi and Black Caribbean, they do not change the main conclusions in this paper. These results are available on request.

probability of having a paid job is lower than the lowest predicted employment probability of respondents who do have a paid job in their gender-ethnic group for that specific period. The wage gaps are then estimated on the data including both observed and imputed wages using Equation (1) discussed above.

It is worth mentioning that there are two ways to interpret the difference between regression results that do and do not account for selection. Recently, Baltagi et al. (2023) discuss consistency of various types of estimators with and without ‘correction’ for selection. The underlying assumption in Baltagi et al. (2023) is that the interest is on the universe of job offers, which are observed for those who have a paid job and unobserved for those who do not have a paid job. In contrast, this paper interprets the issue of selection as a comparison between two scenarios: the first is the one which is observed, and which only includes people who have a paid job; the second is the hypothetical one based on the counterfactual where all those individuals who do not work would get a job paid according to the current set of observed wage offers. In this interpretation there is no issue of consistency in the observed scenario that does not model selection.

4.3. The effect of changes in characteristics

A common way to estimate the effect of characteristics on the wage gaps is to estimate adjusted gaps, where additional covariates are included in X_i' in Equation (1). The coefficients of the gender-ethnic dummies can then be interpreted as the (average) wage gaps for individuals with similar characteristics. As this paper is interested in the combined effect of individual and job characteristics, in addition to the year and quarter dummies, these models also include in X_i' age and its square, years of tenure in the current job and its square, dummies for educational qualifications (less than a university degree, or no qualification, with university degree as reference group), a dummy for working part-time (less than 30 hours per week), one for those who work in the public sector, as well as a full set of occupation dummies.³ Since wage gaps tend to be larger among immigrants than UK-born

³ The occupational classification has changed various times over the period and successive classifications are not always comparable. Since respondents are classified based on only one of the occupational classifications, one straightforward option is to include a full set of dummies with values of zero in those years where the classification was not used. Hence the regression estimated for the period:

- 1993-1998 includes dummies for the SOC1990, with “other occupations” as reference group;
- 1999-2003 includes dummies for the SOC1990 and for the SOC2000 with “elementary occupations (SOC2000)” as the reference group;
- 2004-2008 includes dummies for the SOC2000 with “elementary occupations (SOC2000)” as the reference group;

minorities (Longhi and Brynin, 2016; Mirza and Warwick, 2024), X_i' also includes a dummy for those who are immigrants vs. born in the UK (the dummy is zero for white British). Finally, since ethnic minorities are overrepresented in London, where wages are comparatively higher (Longhi, 2020a; Mirza and Warwick, 2024), X_i' includes one dummy for London and one for the South East, with the rest of the UK as reference group.

Many of these additional covariates may be considered endogenous. For example, although educational qualifications are generally gained before entering the labour market, there is a possibility that some individuals may decide to gain additional qualifications as a signal of quality to counteract expected discrimination in the labour market. Similarly, higher levels of educational qualifications open up a wider range of jobs and of occupational choices, which may affect individual wages and wage gaps. Since the aim here is not to estimate the causal impact of education or occupation, but to analyse whether individual choices and situations translate in lower average adjusted wage gaps, this paper does not attempt to control for endogeneity. This should be born in mind when interpreting the results.

After analysing trends in adjusted wage gaps, this paper uses a Oaxaca-Blinder decomposition (Blinder, 1973; Oaxaca, 1973), which separates the contribution of each (set of) explanatory variables to the raw gap into two components.⁴ The first component measures how much of the wage gap can be attributed to differences in characteristics (e.g., education, occupation, etc.) across the groups. This is often called the “explained” part. The second component is often called “unexplained” and measures differences in returns to characteristics (the coefficients) across groups (Blinder, 1973; Oaxaca, 1973), and may also include the effect of omitted explanatory variables. In this paper, the decomposition is estimated using the coefficients from a pooled model, with the coefficients of the categorical variables transformed so that the results of the decomposition are invariant to the choice of the reference group (Jann, 2008; Yun, 2005).

As the decomposition is based on pairwise comparisons (in our case white British men compared to each of the gender-ethnic groups in turn), the raw wage gaps estimated by the Oaxaca model may be slightly different than the ones estimated including all gender-ethnic groups.

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- 2009-2013 includes dummies for the SOC2000 and for the SOC2010 with “elementary occupations (SOC2010)” as the reference group;
 - 2014-2018 includes dummies for the SOC2010 with “elementary occupations (SOC2010)” as the reference group;
 - 2019-2023 includes dummies for the SOC2010 and for the SOC2020 with “elementary occupations (SOC2020)” as the reference group.

⁴ Decompositions over the wage distribution are outside the scope of this paper and are left for future research.

5. Results

5.1. Trends in wage gaps

Figures 1 and 2 show trends in ethnic wage gaps among men and among women, compared to white British men (the line at zero). The full set of regression coefficients, from which the gaps are derived, is in the Supplementary Material, Table A1.

The results confirm the findings in the literature of smaller wage gaps among Indian men, largest wage gaps for Pakistani and Bangladeshi men, with the Black groups in between, but also reveal important trends. In 1993-1998 the gaps among men range from almost 50% for Bangladeshi to 6% for Indian and Black African men; by 2019-2023 the largest gap halves to almost 23% for Bangladeshis while Indians now experience a wage advantage of almost 13% (Figure 1). All South Asian groups show clear improvement, particularly Indians who, initially at a small disadvantage, made significant gains to reach a position of relative advantage. The positive trends towards smaller wage gaps are clear also among Pakistani and Bangladeshi men, with Pakistanis catching up to wage gaps of the Black groups. In contrast, there is no clear trend over time for the two Black groups, and the gaps they experience in 2019-2023 are similar to those experienced in 1993-1998. This suggests potential future progress for Pakistani and Bangladeshi men, who may eventually surpass the Black groups if these trends persist.

To facilitate comparison, Figure 2 for women uses the same scale as Figure 1. The gaps among women are more compressed than those among men, and with less pronounced trends. There is a clear trend in decreasing wage gaps for Indian women, Bangladeshi women, and to a lesser extent White British women. There is no clear trend for Pakistani women after 1993-1998, while for the two Black groups there may be small increases in wage gaps compared to white British men.

These results contrast with Mirza and Warwick (2024), who find a lack of trends for men and relatively stable differences over time; these differences are likely to be due to different ways of measuring wages: as Mirza and Warwick (2024) use weekly earnings, trends in wage gaps are partially influenced by variations in average hours worked. Mirza and Warwick (2024) also find more pronounced trends among women than among men, and this is likely due to the choice of using white British women as the reference group, while this paper uses white British men.

Figures A1-A3 in the Supplementary Material show trends in the gender wage gaps among each ethnic group. For White British women, the gender wage gap has been slowly but steadily decreasing over time, from almost 25% in 1993-1998, to less than 19% in 2019-2023. For all ethnic minority groups, the gender wage gap is smaller than among white British, but also show a tendency to increase, at least in the last few periods. Among Indians, the gender wage gap decreased from 20% to 14% in 2009-2013, but increased to 19% (similar to the gender wage gap among white British) in 2019-2023. Among Pakistanis, the decrease in gender wage gaps stopped in 1999-2003, when there was virtually no gap, and was followed by a sharp increase to more than 17% in 2019-2023. The decrease in gender wage gaps stopped in 2004-2008 for Black Africans and in 2014-2018 (when there was a slight gender wage advantage) among Black Caribbeans. By 2019-2023, gender wage gaps are similar among white British, Indian, and Pakistani, while they remain smaller for the two Black groups and for Bangladeshi women.

To summarise, trends in wage gaps differ across gender-ethnic groups over time, showing improvement among South Asian men, and persistent gaps among the Black groups. For women, wage gaps are smaller and more stable than among men, with Indian and Bangladeshi women showing the most consistent improvements. Pakistani women show stagnation after early gains, and Black women show slight increases in wage gaps over time. Although gender wage gaps are smaller among ethnic minorities compared to white British, recent periods show an increasing trend in gender wage gaps, particularly for Indians and Pakistanis. It is likely that such differences in trends are partly related to selection in the labour force and to characteristics, which are discussed in the next sections.

5.2. The effect of changes in labour force participation

Between 1993 and 2023 the proportion of white British men in paid jobs has remained relatively stable, while it has increased among all minority groups, resulting in smaller group differences in 2019-2023 compared to 1993-1998. Since 2009-2013, the proportion of Indian men in paid jobs is higher than that of white British men, while Pakistani men are the group with the lowest proportions in paid jobs (Figure 3). Among women, these changes are even more remarkable (Figure 4). While in 1993-1998 the proportion of women in a paid job was largest for white British and smaller for all minority groups, by 2019-2023 white British, Black Caribbean, Indian and Black African women all have similar proportions. Only Bangladeshi and Pakistani women still lag behind, but catching up. As shown in Figures A4

to A9 in the Supplementary Material, these differences in the proportion of individuals in paid jobs hide major differences in labour force participation. The increase in paid employment is generally accompanied by a decrease in the proportion of individuals who are either unemployed or inactive. These decreasing trends are more pronounced among women than men, and among South Asian ethnic minorities compared to whites. The trends among the Black groups are much less pronounced, and among Black Caribbean only, women are consistently slightly more likely to be in a paid job than men. Only for Pakistani and Bangladeshi women in 2019-2023 the proportion of those in paid jobs is still smaller than the proportion of those who are unemployed/inactive.

Based on the selection theory, this increase in labour force participation and convergence across groups should lead to a partial offsetting of the positive trends discussed above. In practice, however, because changes in selection and characteristics also affect white British men, the overall effect of selection on the wage gaps and their trends is difficult to predict a priori. Figure 5 shows the differences in wage gaps estimated from the original and from the imputed samples (the full set of regression coefficients, from which the gaps are derived, is in the Supplementary Material, Table A1 for the original sample of those in work, and Table A2 for the sample including imputed wages). For ease of interpretation, the graphs are shown separately by ethnic group and show that the effect of selection is relatively small and differs by group. Wage gaps and the convergence to wages of white British men is underestimated for white British women (the gaps estimated on the original sample are smaller and the trend is less steep than for the wage gaps estimated on the sample with imputation) but overestimated for all minority groups. For Indian men, the overestimation of the gaps is shown in lower wage advantages on the sample with imputation, while for the other groups it is shown in higher wage gaps in the sample with imputation; this is the case for Indian women, and all Black groups. For Pakistani women, and Bangladeshi men and women, the trends in the wage gaps estimated on the original and on the imputed sample intersect, suggesting that selection has an ambiguous effect on the wage gaps and on their trends. This is likely due to the interplay between increasing workforce participation and improvements in characteristics such as levels of education, which affects both participation and wages.

5.3. The effect of changes in characteristics

Descriptive statistics of the changing characteristics of each gender-ethnic groups over time (Tables A3-A14 in the Supplementary Material) show an increase in the proportion of

individuals with university degrees across all groups, with minority groups experiencing greater gains than white British individuals. Most minority groups begin with proportions of degree holders that are either lower or comparable to those of white British but surpass them by the end of the period; the only exceptions are Black African men and women, who consistently have higher proportions of degree holders than white British throughout the entire period, and Black Caribbean men, who, in contrast, have persistently lower proportions. There does not appear to be significant gender differences among Indian, Pakistani, and Black African groups, whereas Black Caribbean and white British, women show a more substantial increase in degree holders over time compared to men.

Minority groups tend to be younger and have shorter job tenure compared to white British men, with the exception of Black Caribbean men and women and White British women. These differences are particularly pronounced among Pakistani and Bangladeshi individuals, especially women, who have the youngest age profiles and shortest job tenures. These differences gradually narrow over time. Part-time employment and public sector work are more prevalent among women than men across all ethnic groups; part-time is also more common among minorities compared to white British individuals. Minority men are generally less likely to work in the public sector than white British men, with the exception of Black African men, who have higher proportions of public sector employment.

The proportion of UK-born (second generation) individuals among ethnic minorities has been increasing across all groups throughout the period. Among Black Caribbeans, over half were second generation at the beginning of the period, and their age profile closely resembles that of white British individuals. Among Bangladeshis and to a lesser extent Pakistanis, the proportion of second generations among those who have a paid job is higher among women than men, and this may partly be due to generational shifts in women's workforce participation, as is reflected by age differences across groups. Black Africans have the lowest proportion of second generation individuals, with little indication of an increase over time. Finally, minority groups are overrepresented in London, especially the Black groups and Indians. Overrepresentation in London decreases over time for all groups except for Bangladeshis, who show no trends, and for Black Caribbeans, for whom the overrepresentation increases.

Figures 6 and 7 show the trends in the adjusted wage gaps among men and among women, in comparison with white British men; the full set of regression coefficients is in the Supplementary Material, Table A15. For both men and women, the adjusted wage gaps present a similar picture as the raw wage gaps, but with smaller differences across groups and

less pronounced trends. Overall, among men, the adjusted wage gaps range from 35% for Bangladeshi in 1993-1998 (the raw gap was 50%) to a wage advantage of 5% for Indians in 2019-2023 (the raw wage advantage was 15%). For women, the adjusted wage gaps range from slightly below 25% (the raw gaps were nearly 40%) to 10% (the raw wage gaps were occasionally less than 10%). This indicates that a portion of the observed raw wage gaps can be attributed to differences in characteristics across groups, and that characteristics may have a larger explanatory power among men than among women.

Figure 8 provides a direct comparison of the raw and adjusted wage gaps for the different gender-ethnic groups. For white British women, the adjusted wage gaps are closer to zero than the raw wage gaps, suggesting that group-specific characteristics account for part of the observed gaps. However, the effect of characteristics in explaining the gaps seems to decrease over time, since the difference between the adjusted and raw gaps reduces. In contrast, for Indian women at the start of the period characteristics explain a portion of the wage gaps, while in more recent years the adjusted gaps appear larger than the raw gaps, indicating the presence of advantageous characteristics that may not be properly rewarded in the labour market. For Indian men, the adjusted gaps present a far less pronounced trend than the raw wage gaps; the wage advantage observed in the raw gaps in 2019-2023 diminishes to nearly zero in the adjusted wage gaps.

For Pakistani and Bangladeshi men and women, the adjusted wage gaps are closer to zero than the raw gaps, with the exception of Pakistani men in 2019-2023; this is consistent with characteristics explaining the wage gaps. Among Pakistani women, the raw wage gaps show no clear trend, whereas the adjusted gaps indicate a gradual trend toward larger disparities. In addition, for all these groups the difference between the raw and adjusted gaps decreases over time; this is due to improved characteristics over time, such as higher education levels. The patterns are much less clear for the Black groups. For Black African men and women the adjusted wage gaps generally remain closer to zero than the raw gaps, particularly in recent years, while for Black Caribbean men and women the adjusted gaps are consistently similar to the raw gaps, indicating that characteristics do not explain the observed disparities.

The full set of the Oaxaca decompositions estimated separately by gender-ethnic group and by period are in the Supplementary Material Tables A16-A26. Table 1 summarises the percentage of the wage gaps that are explained by the characteristics included in the model. For Indian men, the explained percentages are higher than 100%, indicating that this group has characteristics that are associated to higher wages, that are negatively correlated to

the gap and therefore offset the estimated wage gaps. When the negative contributions to the gaps prevail over the positive ones, the overall explained part may be negative. Among Indian women, in contrast, characteristics appear to explain the gaps, but only in the first period, while in the more recent years the explained part becomes very small and at times negative.

While average wages of Indian men and women are lowered by a relatively high proportion of immigrants, they are also comparatively high due to their overrepresentation in London. As the proportion of immigrants and the overrepresentation in London have been decreasing over time, these factors are losing importance in favour of qualifications and occupations, which are becoming more important explanations of the wage advantage in more recent years. Particularly important are the increasing proportion of university graduates, which has increased much faster than among white British men, the decreasing concentration in low-wage occupations among men (such as “plant and machine operatives”) and the increasing concentration in high-wage occupations (such as “professional occupations”) among both men and women.

For the Black groups, characteristics provide almost no explanation for the wage gaps, often with negative values in Table 1. Overrepresentation in London, where wages are comparatively higher, contributes negatively to the explanation of the gaps. Although overrepresentation in London has been decreasing over time, its effect on the wage gaps has remained important throughout the period and contributes to the small percentage for the explained gap. Aside from overrepresentation in London, the experiences of Black Caribbean and Black African groups differ significantly, reflecting their distinct immigration histories. For Black Africans, the proportion of second generations remains low throughout the period, with a high proportion of foreign born playing a significant role in explaining wage gaps. In the Oaxaca decompositions, education has consistently a negative sign, suggesting limited returns to their high levels of education. Overrepresentation in low-wage occupations (such as “elementary occupations”) contributes to explaining the gaps, especially at the beginning of the period. In contrast to men, who remain more persistently segregated in low-wage occupations, in recent years Black African women show a trend toward high-wage occupations (e.g., “professional” and “associate professional” occupations).

For Black Caribbeans, lower levels of education explain the wage gaps at the beginning of the period, but this factor becomes less relevant as education levels slightly increase over time. A significant proportion of Black Caribbeans are second generations, and the decreasing proportion of foreign born individuals is an important factor explaining the

wage gaps, but only in the first period. Overrepresentation in low-wage occupations is more pronounced among men than among women. Similarly to Black African women, in the most recent years Black Caribbean women show overrepresentation in high-wage occupations such as “professional” and “associate professional” occupations. This may explain the small gender wage gaps among this group.

Also for white British women the proportion of the wage gap which is explained by characteristics is consistently low. For this group, the most important factors appear to be the shorter job tenure at the beginning of the period, the much higher proportion of individuals working part-time and the overrepresentation in “caring and service” and “administrative and secretarial” occupations.

For the remaining groups, characteristics explain a larger proportion of the gap, especially at the beginning of the period. Among Pakistani and Bangladeshi men, wage gaps are explained by the high but decreasing proportion of foreign born individuals and overrepresentation in low-pay occupations such as “process, plant and machine operatives” and “elementary” occupations. The decrease in the explained part of the gaps over time is likely due to the increase in education levels. Among Pakistani and Bangladeshi women the most important explanatory factors appear to be their younger age and shorter job tenure; both their average age and job tenure, however, increase significantly towards the end of the period, thus leading to a convergence between raw and explained gaps. Over time, their overrepresentation in low-wage occupations (“administrative and secretarial”, “sales and customer service” and “elementary” occupations for Pakistani, and “caring, leisure, and other service”, and sales and customer service” occupations among Bangladeshis) becomes the most important factor explaining the wage gaps. For Bangladeshi men and women the relative underrepresentation in London also has a negative effect on the explanation of the wage gaps.

To summarise, the increasing educational attainment is a common trend, especially among minority groups, contributing to narrowing wage gaps for some (e.g., Indians, Pakistanis, Bangladeshis). While for Black Caribbeans the slower improvement in education remains an important explanation of the wage gaps, for Black Africans high levels of education do not translate into wage parity. Across ethnic groups, women show a trend toward high-wage occupations, which helps narrow gender wage gaps, while ethnic minority men in most groups, especially Black African and Bangladeshi, remain more persistently overrepresented in low-wage occupations. Finally, overrepresentation in London across all

minority groups, generally contributes positively by associating with higher wages but does not always eliminate the gaps.

6. Conclusions

This paper has discussed trends in wage disparities among the five largest ethnic minority groups in the UK (Indian, Pakistani, Bangladeshi, Black African, and Black Caribbean) over three decades (1993–2023), including both men and women, and enabling an exploration of the intersectionality between gender and ethnic wage gaps.

Building on the findings of Mirza and Warwick (2024) on trends in weekly wages, this paper has used a measure of wages which is unaffected by variations in hours worked to investigate both the direct and indirect impacts of changes in individual and job characteristics on the trends in wage gaps. In contrast to Mirza and Warwick (2024), this paper has shown an improvement in wage gaps for all South Asian groups but has confirmed a persistent lack of progress for the Black groups. While ethnic wage gaps are smaller among women than men, the trends towards narrowing the gaps (relative to hourly wages of white British men) are less pronounced among women than among men. Among women, only Indian and Bangladeshi show noticeable reductions in wage gaps over time. Selection into the labour market plays only a limited role in shaping gender and ethnic wage gaps and their trends: only for white British women, wage gaps that account for selection are slightly smaller than those measured on the working population.

This paper has also shown significant heterogeneity in the evolution of individual and job-related characteristics across gender-ethnic groups, which directly influence the wage gaps. For instance, the increasing educational attainment of ethnic minority groups has contributed to narrowing the gaps for all groups, with the exception of the two Black groups. For Black Caribbeans the persistent gaps are related to the lack of convergence to the level of education of white British men; for Black Africans the constantly higher level of education does not translate into wage parity, and this is likely due to the high proportion of immigrants, who may fail to see their qualifications recognised.

Over time, the explanatory power of education in reducing wage gaps has diminished, while the importance of occupation has increased. Ethnic minority women have experienced occupational upgrading, which has mitigated their gender wage gaps compared to co-ethnic men. In contrast, many ethnic minority men – especially Black African and Bangladeshi men

– remain disproportionately represented in low-wage occupations. Additionally, the geographic concentration of ethnic minorities in London, particularly among Black and Indians, positively impacts wages, thus contributing to comparatively lower wage gaps for these groups. These results suggest that key drivers of narrowing wage gaps are increasing educational qualifications for most groups and occupational upgrading for women; these improvements, however, are often weakened by the opposing effect of residential location.

The results in this paper point to the need to focus future policy attention on the two Black groups. Lower levels of education are no longer a driver of wage gaps for most groups, except Black Caribbeans. For Black Caribbeans, improving education levels is likely to remain crucial for achieving occupational upgrading and reducing wage gaps (although a focus on occupational upgrading is likely to be relevant for all minority men). For Black Africans, an essential initial step to reduce wage gaps is likely to be the recognition of foreign educational qualifications. For all groups, and especially among men, the next step requires more in-depth understanding of differences in occupational choices – or of barriers in entering certain types of occupations – and career progression within occupations.

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Figures and Tables

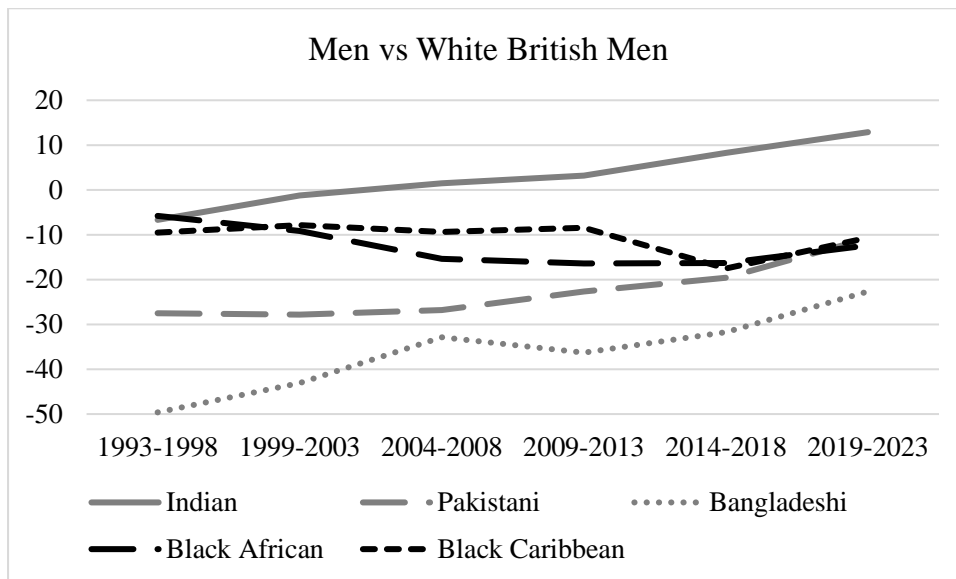


Figure 1: Trends in raw ethnic wage gaps among men and women.

Note: The full set of regression coefficients can be found in Table A1 in the Supplementary Material.

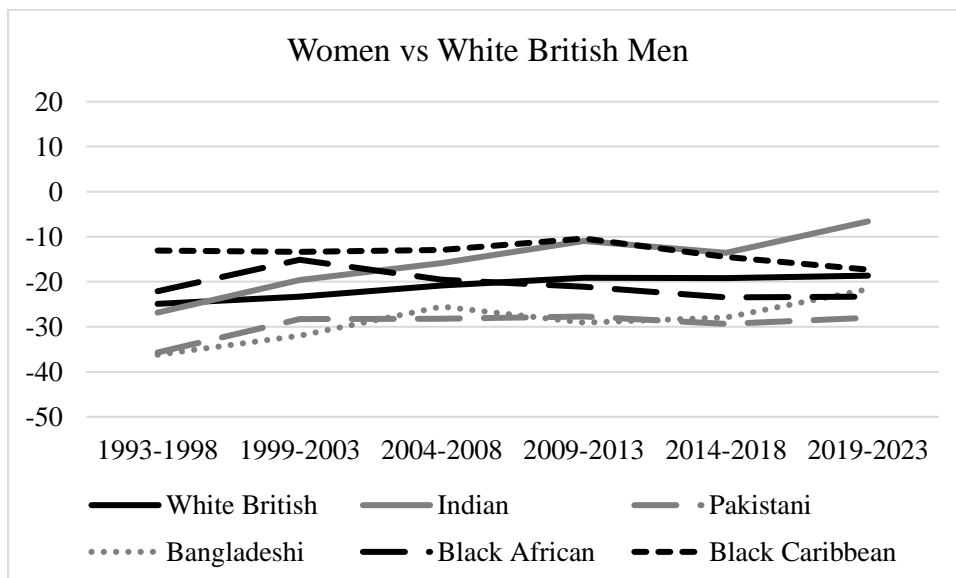


Figure 2: Trends in raw ethnic wage gaps among women, compared to white British men

Note: The full set of regression coefficients can be found in Table A1 in the Supplementary Material.

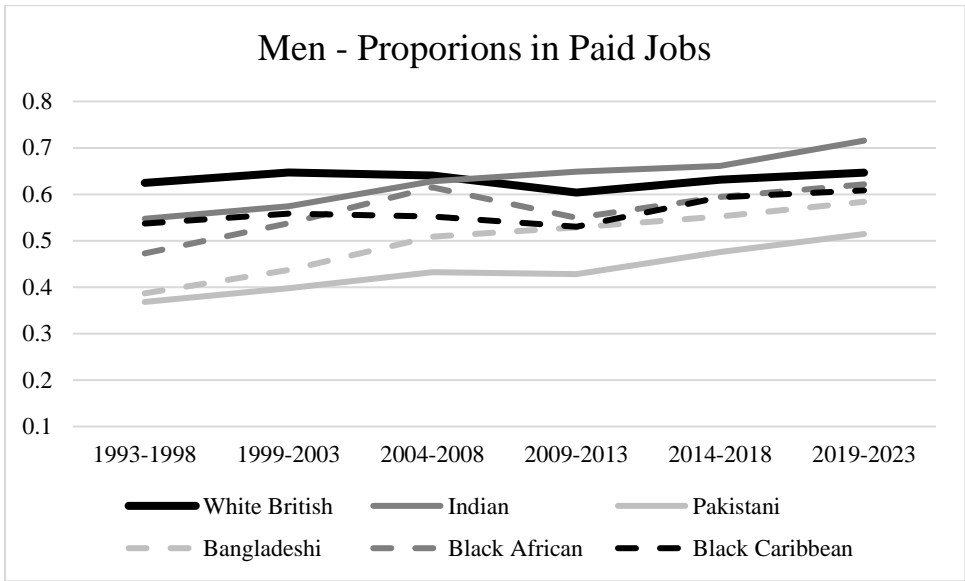


Figure 3: Trends employment (paid jobs) among men

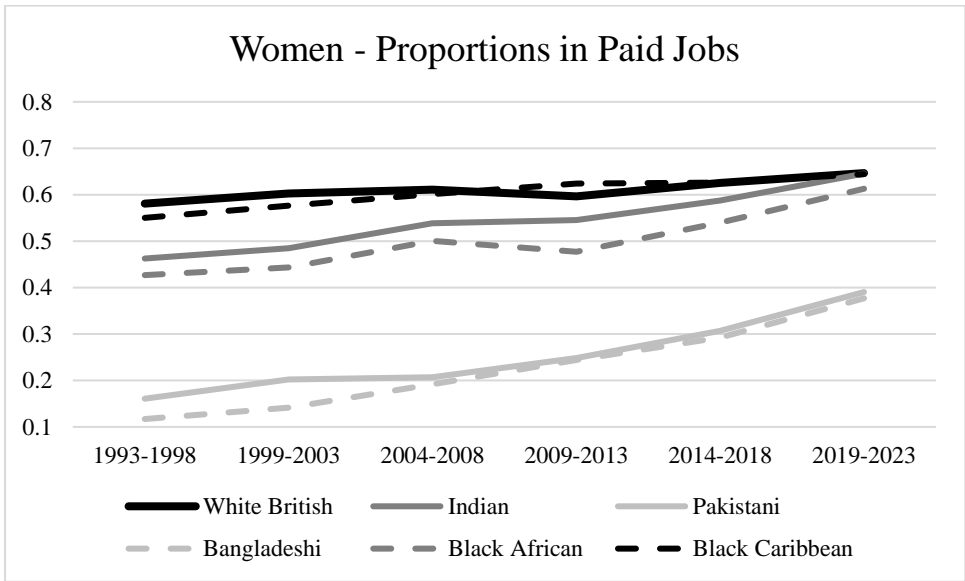


Figure 4: Trends employment (paid jobs) among women

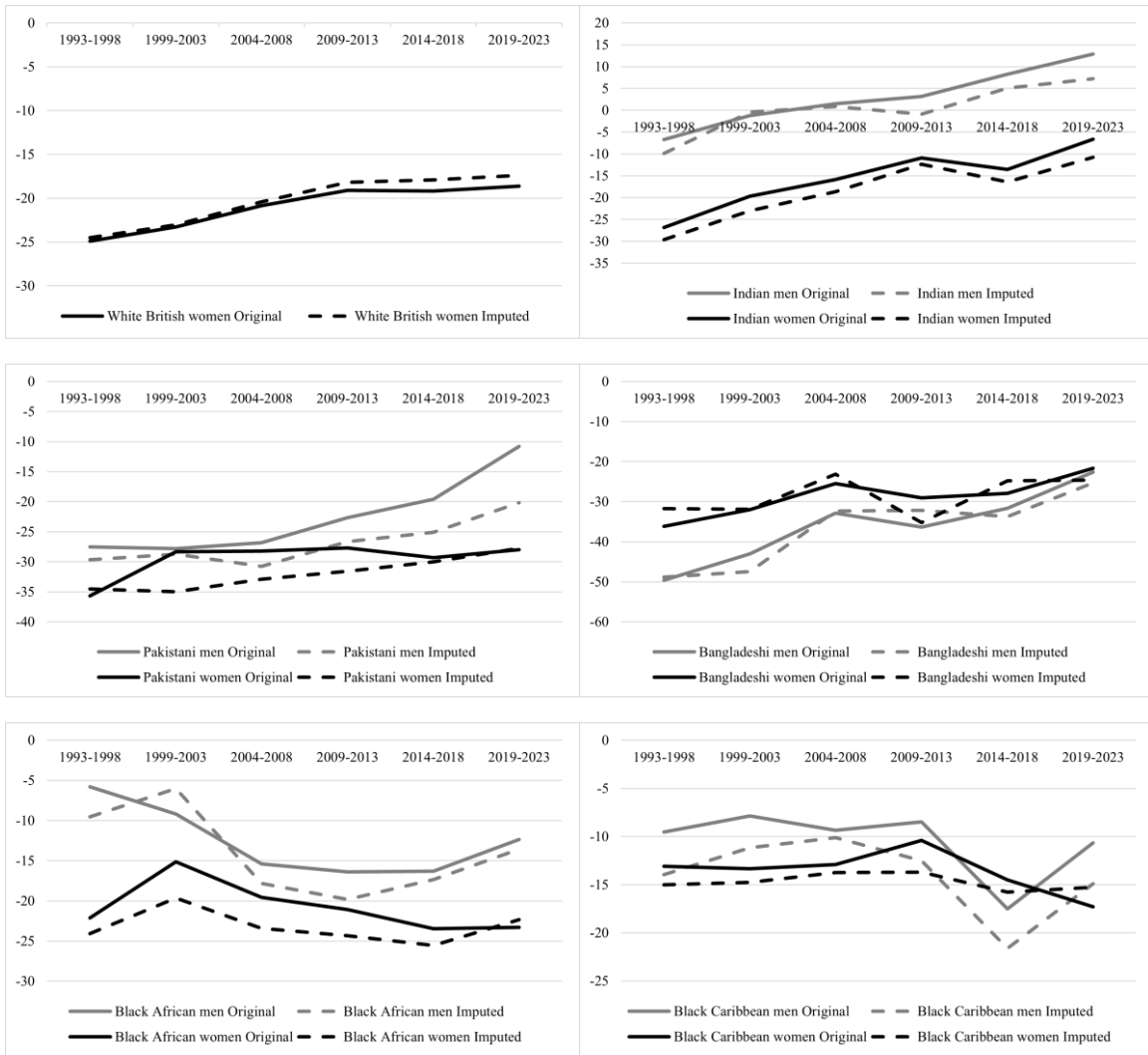


Figure 5: Effect of selection on gender-ethnic wage gaps

Note: The full set of regression coefficients can be found in Tables A1 and A2 in the Supplementary Material.

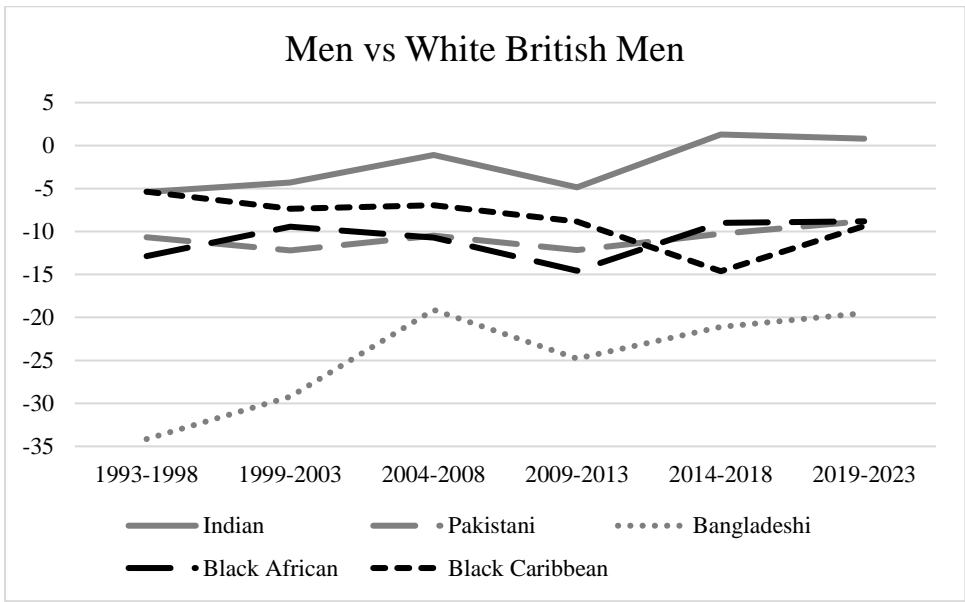


Figure 6: Trends in adjusted ethnic wage gaps among men
 Note: The full set of regression coefficients can be found in Table A15 in the Supplementary Material.

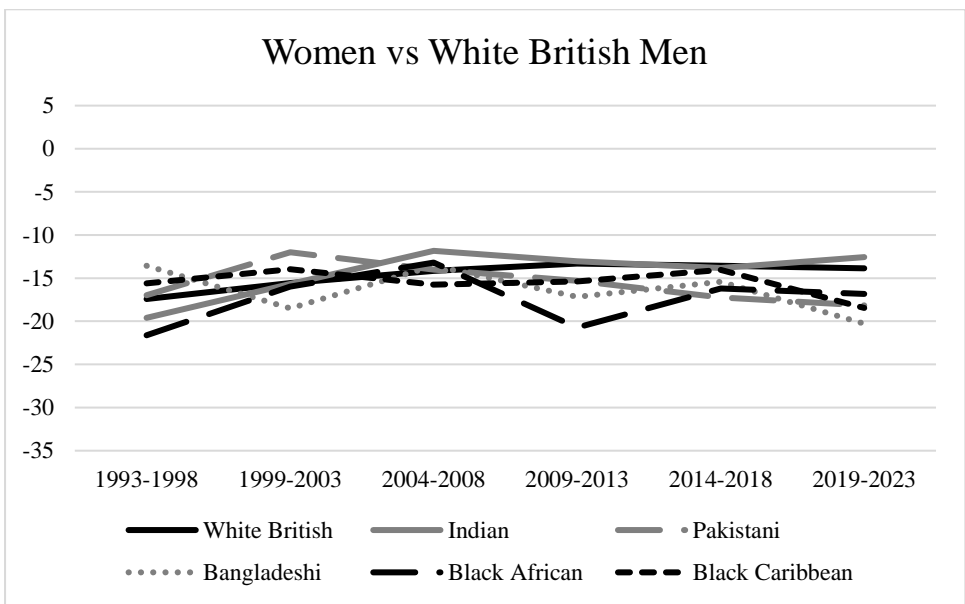


Figure 7: Trends in adjusted ethnic wage gaps among women, compared to white British men
 Note: The full set of regression coefficients can be found in Table A15 in the Supplementary Material.

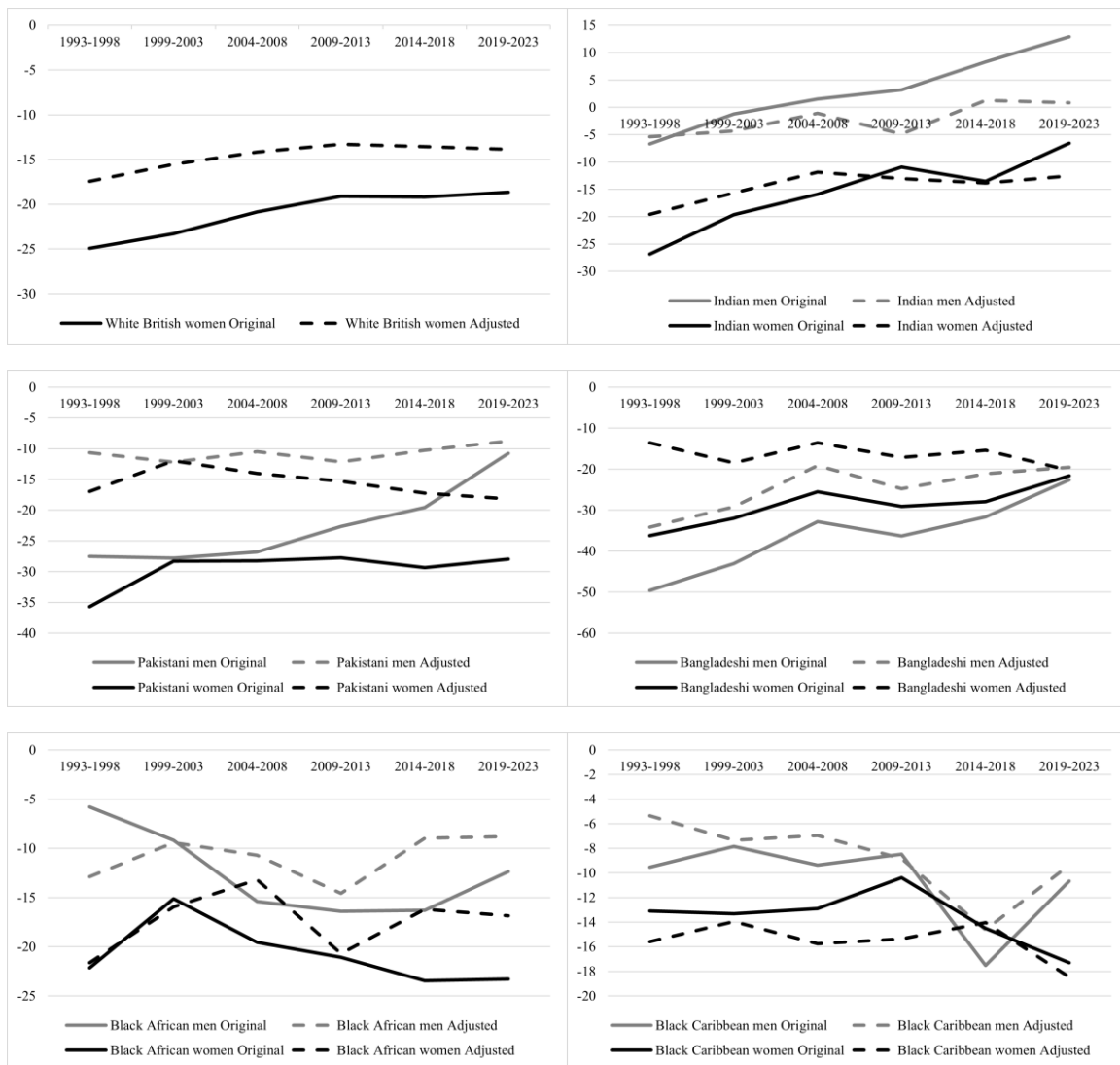


Figure 8: Effect of characteristics on gender-ethnic wage gaps

Note: The full set of regression coefficients can be found in Table A15 in the Supplementary Material.

Table 1: Percentage of wage gaps explained by characteristics

Percentages explained	1993-1998	1999-2003	2004-2008	2009-2013	2014-2018	2019-2023
White British Women	33.34	36.27	35.17	32.90	32.14	28.40
Indian men	111.81	283.14	213.39	324.28	78.37	120.58
Indian women	74.30	58.79	65.56	-8.06	27.15	-9.24
Pakistani men	63.97	67.85	92.00	69.78	59.76	35.56
Pakistani women	65.54	90.33	65.54	64.02	59.85	45.79
Bangladeshi men	58.22	79.24	100.09	70.46	60.22	60.95
Bangladeshi women	94.82	78.82	62.62	75.47	38.17	12.90
Black African men	-210.08	-1.11	32.12	10.18	83.88	52.63
Black African women	29.49	-24.94	30.82	27.30	28.68	35.01
Black Caribbean men	45.76	-43.94	-0.50	-28.55	-3.22	-3.98
Black Caribbean women	-0.69	15.20	-16.29	-37.00	2.89	-7.87

Percentages of the raw gaps explained by characteristics. Each cell in the table is the result of a separate Oaxaca decomposition. The full set of results can be found in Table A16 in the Supplementary Material.