Department for Education

Labour Market Outcomes: Chapter 1

Ethnicity

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Chapter summary

The first chapter in this three-part series focuses on the impact of **ethnicity** on labour market outcomes. Here we are focusing on seven ethnic groups: white British, Bangladeshi, Indian, Pakistani, black African, black Caribbean and Chinese. The other chapters look at socioeconomic status (SES) and special educational needs (SEN).

Key findings

The analysis in this chapter looks at how the labour market outcomes of minority ethnic groups compare to white British (as the majority ethnicity in England) labour market outcomes. There are four overarching findings:

1. Labour market outcomes differ by ethnic group and by gender

Males and females from the Indian and Chinese ethnic groups are the most likely to be in a **good** outcome: 28 per cent of females from both the Indian and Chinese ethnic groups are in good outcome, 22 per cent of Indian males and 20 per cent of Chinese males. Black Caribbean males are the least likely to be in a good outcome, closely followed by males from the Pakistani ethnic group (8 per cent and 9 per cent, respectively, in a good outcome). For females, those from the Pakistani ethnic group are least likely to be in a good outcome (10 per cent).

Males and females from the Indian and Chinese ethnic groups are also the least likely to be in a **poor** outcome (each have between 2 and 4 per cent in poor outcome) and black Caribbean males and females are the most likely. 15 per cent of males and 19 per cent of females from the black Caribbean ethnic group are in poor outcome.

Females from all ethnic groups except white British are more likely to be in a good outcome than males from the same ethnic group, and also more likely to be in a poor outcome, except Indian. The largest gender gap for poor outcome is within the white British group, with a gap of 5 percentage points between males and females. Conversely, this group has the smallest gender gap for good outcome (less than one percentage point).

2. Socioeconomic, demographic and education factors impact labour market outcomes in different ways for ethnic groups

Lower socioeconomic status is associated with poorer labour market outcomes, however the disparity between socioeconomic groups varies across ethnic groups. The white British and Indian groups have large gaps in good outcome between the highest and lowest socioeconomic groups (17 and 20 percentage point gaps, respectively), but the black African group has much smaller differences at 7 percentage points.

The white British group has, by far, the largest disparity in poor outcome between socioeconomic groups at 16 percentage points, while other ethnic groups show smaller differences: the next largest SES gap is 8 percentage points for the black Caribbean ethnic group.

For males from all ethnic groups except white British, achieving a degree is associated with a much higher chance of good outcome. For white British males, however, higher chances of good outcome are seen for those achieving level 3 or above. For females, the association between education levels and good outcome is more consistent across ethnic groups.

3. **The most important factors in explaining the gaps in labour market outcomes vary by ethnic group**

The importance of socioeconomic status, demographic and education factors in driving the differences in outcomes varies across different ethnic groups. For example, having a degree is very important in explaining the gap in good outcome between Indian and white British males, but has very little importance for the gap in good outcome between black Caribbean and white British males. Other important factors are pre-16 attainment, which positively contributes to the gap in good outcome between Indian and white British ethnic groups and between the white British and black Caribbean groups, and region of school, which is associated with an increase in the gap in good outcome between Indian and white British males, but a decrease in the gap in good outcome between white British and black Caribbean males.

4. **The size of the gap we can explain with socioeconomic, demographic and education factors differs for different ethnic groups**

The extent to which the observed differences in outcomes between the groups can be explained by the socioeconomic, demographic and education control variables varies across the ethnic groups. For example, when looking at good outcome in males, all the gap between the Indian and white British groups is explained by socioeconomic, demographic and education factors, but these explain only about a quarter of the gap between white British and black Caribbean males.

In some cases, such as males and females from the Chinese ethnic group and black African females, these factors explain **more** than the observed difference in outcomes relative to white British. As a result, on average, these ethnic groups have better labour market outcomes due to a more favourable composition of socioeconomic, demographic and education profiles. However, due to the lower returns from these profiles compared to white British, individuals with similar characteristics would be more likely to have poorer labour market outcomes.

For black Caribbean males, the socioeconomic, demographic and education factors explain more than half of the observed gap in poor outcome from white British: this is one of the largest gaps which cannot be explained using the administrative data.

Methodology

The differences in the composition of the ethnic groups regarding demographic and education variables mean that it is difficult to compare labour market outcomes fairly. The report uses probit regression methods to hold the socioeconomic, demographic and education factors associated with labour market outcomes constant so we can compare ethnic groups on a like for like basis to determine how much of the differences in labour market outcomes can be explained by these factors. The regression results show the chance of good or poor labour market outcome for each ethnic group compared to white British i.e. the gap, or difference, in outcomes between white British and minority ethnic groups.

Decomposition analysis is then used to apportion the explanatory power of each socioeconomic, demographic and education factor in explaining the gap in good (and poor) labour market outcomes between males and females from each minority ethnic group and white British to shed light on the most important factor or factors.

Conclusions

When compared to the white British group, in general we find that labour market outcomes are worse for most ethnic groups (lower chance of good outcome, and higher chance of poor outcome), but that the socioeconomic, demographic and education factors which account for these differences vary in importance for different ethnic groups. This means that any measures to try to improve the outcomes of ethnic groups need to take these into account: a one size fits all approach may cause further disparity.

Whilst this analysis offers some insight into the drivers of labour market outcomes between different ethnic groups, the socioeconomic, demographic and education factors in the administrative data do not fully explain these. Further work would be required to shed light on what these factors are and their relative importance, by linking to other datasets or including labour market data as controls.

Introduction

This chapter is the first in a series of three exploring the early labour market outcomes of individuals from different backgrounds and how these outcomes differ across these groups. This chapter focuses on ethnicity; the others look at socioeconomic status (SES) and special educational needs (SEN).

The Department for Education (DfE) previously published analysis[1] documenting the differences in post-16 education and labour market outcomes for a number of different socioeconomic, demographic and education sub-groups, including ethnicity. This new series uses more sophisticated methods to build on the analysis for some of these groups in combination with other factors. Specifically, the analysis in this chapter aims to answer the following questions:

- How is ethnicity linked with different early career labour market outcomes when socioeconomic, demographic and education factors are taken into account?
- Which of these socioeconomic, demographic and education factors are most important for explaining differences in early career labour market outcomes between ethnic groups?

The research uses the Longitudinal Education Outcomes (LEO) administrative data set which links information about individuals, including:

- personal characteristics such as gender, ethnic group, special educational needs, free school meals eligibility
- education: including schools, colleges and higher education institutions attended, courses taken and qualifications achieved
- income and employment status
- claims for out-of-work benefits

By combining these sources, we can look at the progress of individuals doing their GCSEs into post-compulsory education and the labour market. Further information on the LEO dataset can be found in the accompanying technical report, which includes information on the data quality and match rates.

The chapter is split into four sections:

1. context on the socioeconomic, demographic and education characteristics of different ethnic groups from published literature (Section 1)

[1] Post-16 education and labour market activities, pathways and outcomes (LEO) - GOV.UK (www.gov.uk). The accompanying dashboard is available here Longitudinal Education Outcomes (LEO): post-16 education and labour market activities and outcomes (shinyapps.io)

2. descriptive analysis on the labour market outcomes of different ethnic groups showing the association with socioeconomic, demographic and education factors (Section 2)
3. regression analysis to control for socioeconomic, demographic and education factors to determine how much these account for differences in labour market outcomes between ethnic groups (Section 3)
4. analysis to shed light on the relative importance of these socioeconomic, demographic and education factors when comparing labour market outcomes of white British individuals with other ethnic groups (Section 4)

This results in this chapter are concerned with statistical measurement of the relationship between socioeconomic, demographic and education factors and ethnicity and do not imply any causality.

Coverage

The analysis in this chapter looks at 4.5 million individuals who finished key stage 4 (KS4), i.e. took their GCSEs, in a state-funded[2] school in England between the 2001/02 to 2008/09 academic years. Labour market outcomes are measured in the 2017-18 tax year[3]. For the oldest cohort, we therefore look at outcomes 15 years after GCSEs (age 31), and for the youngest, 8 years after GCSEs (age 24). See the accompanying technical report for further details.

All labour market figures are based on UK tax and out-of-work benefits[4] records only, further education data is from English institutions only, and higher education figures are from UK institutions.

The eight cohorts of individuals who completed KS4 in England between 2002 and 2009 have been combined to produce a more representative and robust picture of people's labour market outcomes. This is particularly important when looking at smaller ethnic groups. Combining several cohorts of individuals completing their GCSEs at the same age means any changes or patterns are more likely to be real differences and not reflective of variations between year groups. Although this means they are different ages

[2] State-funded schools in those academic years were: sponsor-led academies; city technology colleges; LA maintained mainstream; and LA maintained special schools.
[3] Although more recent employment, earnings and benefits data was available, 2017-18 tax year data was used for consistency with Post-16 education and labour market activities, pathways and outcomes (LEO) - GOV.UK (www.gov.uk).
[4] Northern Ireland benefits system is not covered by DWP. Although the benefits have the same criteria and payments, we do not hold benefits claims for Northern Ireland.

when their outcomes are measured[5], this maximises the number of years in the labour market available for each cohort.

This chapter looks at labour market outcomes for different ethnic groups. As major groupings (e.g. black, Asian) hide differences in the socioeconomic, demographic, education and labour market variables within them, and to make the most of the granularity of the data available in the LEO dataset, findings are only presented for minor ethnic groups. For clarity, labour market outcomes are discussed in the results sections for those ethnic groups shown in **bold** in Table 1 (white British, Bangladeshi, Indian, Pakistani, black African, black Caribbean and Chinese), but results for all ethnic groups are presented in the data tables published alongside the report.

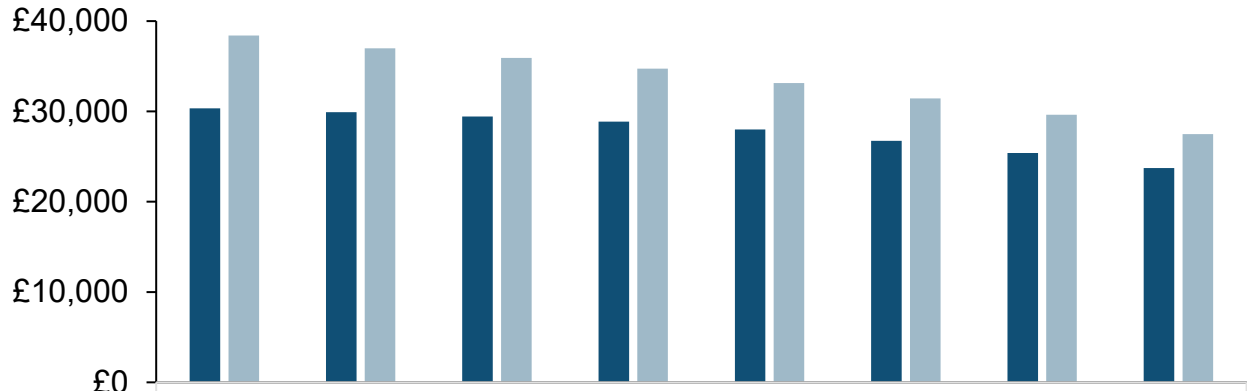
Definitions

Two different measures of labour market outcomes have been defined for the analysis in this report:

Good labour market outcome – the individual was in paid[6] employment for at least one day in each of the 12 months of the 2017-18 tax year **and** had upper quartile earnings. Earnings quartiles have been calculated separately for males and females[7] and for each GCSE cohort (to allow for different earnings profiles at different ages). The upper quartile earnings thresholds are shown in Figure 1. Around 60 per cent of males and females in each cohort meet the employment threshold above. Taking the top quartile earners means that those in good outcome represent around 15 per cent of each cohort and gender.

[5] Robustness checks performed on all eight cohorts at age 24, and three cohorts at age 29 produce very similar results to those produced using the 2017-18 tax year. See technical report for further information.
[6] Excludes earnings from self-employment.
[7] Information on hours worked is not available. Female earnings are likely to be affected by lower earnings due to part-time working.

Figure 1: Upper quartile earnings thresholds in 2017-18 tax year: females and males by KS4 cohort



	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Females	£30,333	£29,915	£29,445	£28,866	£27,999	£26,744	£25,399	£23,722
Males	£38,400	£36,984	£35,928	£34,731	£33,138	£31,444	£29,627	£27,494

Source: Authors' analysis using Longitudinal Education Outcomes data

Poor labour market outcome – the individual was claiming out-of-work benefits for at least one day in each of six or more consecutive months of the 2017-18 tax year. Details on the types of benefits included can be found in the technical report. This represents around 8 per cent of the males and around 12 per cent of the females in each cohort.

The good outcome and poor outcome definitions are such that each outcome is mutually exclusive, where an individual cannot appear in multiple categories. However, the majority of individuals (around 75 per cent) sit within neither category.

These measures are used to categorise groups of individuals into those who are observed to have labour market outcomes which could be considered good in an **economic** sense (the individual has steady employment, is well paid and contributing to the exchequer) and those who may be reliant on the state with a low income, and therefore in a poor economic outcome.

This does not intend to negate any individual's labour market choices, contribution to society or personal well-being, or whose economic contribution may be lower due to no fault of their own.

The socioeconomic, demographic and education variables used in the descriptive analysis and as controls in the regression analysis in this chapter include:

- pupil characteristics as collected in the GCSE year[8]: ethnicity, first language, special educational needs (SEN) status
- socioeconomic status during GCSE year (indicator derived from an individual's free school meals (FSM) eligibility, combined with local area statistics (deprivation, occupation, education and housing tenure) to give a combined household income and place based measure)
- school measures: type of school attended in the GCSE year, demographics (proportion of pupils eligible for FSM and with SEN), cohort attainment and school effectiveness (progress measure)
- school attainment: maths and English at key stage 2 (KS2), key stage 4 performance points, A level total points and subjects studied
- higher education: classification of degree, subject studied, type of institution
- further education: subject of apprenticeship or classroom learning
- highest level of achievement[9] by tax year 2017-18
- local authority of residence in GCSE year and during tax year 2017-18

For further information on the sources and derivation of these variables, please see the technical report.

[8] Some missing characteristics have been backfilled using earlier School Censuses, the Individualised Learning Record (ILR) and Higher Education Statistics Agency (HESA) data. See technical report for more details.

[9] What qualification levels mean: England, Wales and Northern Ireland - GOV.UK (www.gov.uk)

Section 1: Review of ethnicity in the literature

The analysis in this chapter looks at differences in demographics, socioeconomic status and a variety of education factors to explore how they relate to different labour market outcomes. There are large differences in socioeconomic, demographic and education factors between ethnic groups and there is a wealth of statistics and literature. This section summarises the evidence base relating to ethnicity and these factors to help build a picture of the variation between ethnic groups. This provides some background information which may aid understanding of some of the differences observed in the labour market.

Demographics

The individuals in this report represent the population completing education in English state-funded schools between 2002 and 2009. Table 1 shows the proportion of each ethnic group based on the individuals included this analysis.

Table 1: Ethnicity breakdown for analytical population

Ethnic group	Number of individuals	Percentage of individuals
Bangladeshi	**41,000**	**0.9%**
Indian	**106,000**	**2.4%**
Pakistani	**108,000**	**2.4%**
Asian other	30,000	0.7%
Black African	**74,000**	**1.7%**
Black Caribbean	**65,000**	**1.5%**
Black other	22,000	0.5%
Chinese	**17,000**	**0.4%**
White British	**3,743,000**	**83.8%**
White Irish	15,000	0.3%
White other	100,000	2.3%
Traveller, Gypsy and Roma	3,000	0.1%
Mixed white Asian	18,000	0.4%
Mixed white black African	9,000	0.2%
Mixed white black Caribbean	36,000	0.8%
Mixed other	33,000	0.7%
Any other ethnic group	44,000	1.0%
All	**4,464,000**	**100.0%**

Source: Authors' analysis using Longitudinal Education Outcomes data

Those shown in **bold**[10] in the table are the ethnic groups examined throughout this chapter. These are the largest 'single' ethnic groups. Coverage of the mixed and other ethnic groups is not consistent across academic years (see technical report). As the white British group makes up around 84 per cent of the school population for those cohorts of interest, this means that 16 per cent are from ethnic minority groups. The Indian and Pakistani ethnic groups comprise around 2.5 per cent each, black African and black Caribbean are the next largest ethnic groups, with Bangladeshi and Chinese the smallest (at less than one per cent).

For context, in the 2023/24 academic year, 37.0 per cent of the state-funded school population in England[11] are from a minority ethnic background; more than double the proportion for the cohorts used in this study.

Location

Around 15 per cent of the population in England live in London[12] according to Census 2021 data; all ethnic groups are overrepresented in this region apart from white British (and the Gypsy and Irish traveller group), with over half of black Caribbean individuals living there, as well as around half the Bangladeshi ethnic group and almost half of black African individuals. Some minority ethnic groups are spread across the country, such as Pakistani (with around 18 per cent in London, 20 per cent in the West Midlands and around 19 per cent in the North West and Yorkshire and the Humber).

Socioeconomic status

There are large differences in the socioeconomic status of ethnic groups and there are several ways of measuring this.

When looking at the occupational status of adults[13], the Chinese and Indian ethnic groups have the largest proportions in the highest socioeconomic (higher managerial and professional) group[14]. The black Caribbean and white British groups have the highest proportions in the lower managerial and professional group, but both have higher than average proportions in routine and semi-routine occupations. The Pakistani and

[10] Bangladeshi, Indian, Pakistani, black African, black Caribbean, Chinese and white British
[11] Schools, pupils and their characteristics, Academic year 2023/24 - Explore education statistics - GOV.UK (explore-education-statistics.service.gov.uk)
[12] Regional ethnic diversity - GOV.UK Ethnicity facts and figures (ethnicity-facts-figures.service.gov.uk)
[13] The National Statistics Socio-economic Classification (NS-SeC) from 2011 Census provides an indication of the socio-economic position of people based on their occupation title, combined with employment status, whether they are employed or self-employed, and whether they supervise other employees
[14] Socioeconomic status - GOV.UK Ethnicity facts and figures (ethnicity-facts-figures.service.gov.uk)

Bangladeshi groups have the highest proportions in ‘Never worked or long-term unemployed’.

Another commonly used indicator of socioeconomic status is eligibility for free school meals (FSM). The Indian and Chinese ethnic groups have the lowest percentage eligible for FSM[15] (7.3 and 7.5 per cent, respectively). The black Caribbean ethnic group has the highest proportion at 44.7 per cent. White British, Pakistani, black African and Bangladeshi lie between these two (23.8, 26.6, 30.6, 31.8 per cent, respectively).

Looking at Indices of Multiple Deprivation (IMD)[16],[17], the Indian, Chinese and white British ethnic groups have the lowest proportions living in the 10% most deprived areas (at 7.6, 8.4 and 9.1 per cent, respectively). Black Caribbean and black African are overrepresented at 14.1 and 15.6 per cent, then the Bangladeshi ethnic group with 19.3 per cent. The Pakistani group has the highest proportion living in the most deprived areas, at 31.1 per cent of this ethnic group.

Taking FSM and IMD together, we can see that although the black Caribbean ethnic group has very high proportions of FSM eligibility (household deprivation), they have one of the lowest proportions living in deprived areas. Conversely, the Pakistani ethnic group has the highest proportions living in deprived areas, but relatively low proportions eligible for FSM.

Education

Gaps in the educational achievement and attainment of ethnic groups in England start from an early age, with above average proportions of the Indian and Chinese ethnic groups meeting the expected standard in early learning goals at the end of reception and Pakistani and black Caribbean groups having some of the lowest proportions achieving the expected standard[18]. These trends persist through ages 7[19], age 11[20] and into GCSE results at the end of compulsory schooling[21].

[15] Schools, pupils and their characteristics, Academic year 2023/24 - Explore education statistics - GOV.UK (explore-education-statistics.service.gov.uk)
[16] English indices of deprivation - GOV.UK (www.gov.uk) English indices of deprivation - GOV.UK (www.gov.uk)
[17] People living in deprived neighbourhoods - GOV.UK Ethnicity facts and figures (ethnicity-facts-figures.service.gov.uk)
[18] Development goals for 4 to 5 year olds - GOV.UK Ethnicity facts and figures (ethnicity-facts-figures.service.gov.uk)
[19] Maths results for 6 to 7 year olds - GOV.UK Ethnicity facts and figures (ethnicity-facts-figures.service.gov.uk)
[20] School results for 10 to 11 year olds - GOV.UK Ethnicity facts and figures (ethnicity-facts-figures.service.gov.uk)
[21] GCSE results (Attainment 8) - GOV.UK Ethnicity facts and figures (ethnicity-facts-figures.service.gov.uk)

After GCSEs, only 84 per cent of white British individuals go on to sustained education destinations[22]. For the black Caribbean and Pakistani ethnic groups, this figure is 90 and 92 per cent, respectively. All other ethnic groups are over 95 per cent, with 98 per cent of the Chinese ethnic group going straight into post-16 education. Almost 5 per cent of white British individuals move into apprenticeships and a further 5 per cent into employment destinations. All other ethnic groups have 1 per cent or less moving into apprenticeships and up to 2 per cent in employment. The white British and black Caribbean ethnic groups have the highest proportions without a sustained destination (around 5 to 6 per cent each) after finishing key stage 4.

Of those that go on to study A levels[23], the Chinese ethnic group has the highest average grade (B) and highest proportion achieving at least 2 A levels (95 per cent), closely followed by Indian (B-[24], 92 per cent). Black African, Pakistani and black Caribbean all have an average grade of C and lower proportions achieving at least two A levels (84, 83 and 79 per cent, respectively).

Post-16, a higher proportion of white individuals go on to further education[25] and apprenticeships[26] than other ethnic groups.

White British individuals have the lowest progression rate from English state-funded schools to higher education[27] at around 41 per cent, followed by black Caribbean (46 per cent) and Pakistani (61 per cent). Chinese has the highest progression rate at 84 per cent. Over half of those who do progress to higher education are at High Tariff (based on the mean UCAS tariff score of their intake) providers for Chinese, 36 per cent for Indian, and 28 and 29 per cent for Bangladeshi and white British. Only 15 per cent of black Caribbean entrants attend a High Tariff institution (equivalent to 7 per cent of black Caribbean school leavers).

On graduation, 17 per cent of black students, 28 per cent of Asian students[28] and 36 per cent of white students achieved a first class degree. All ethnic groups had similar

[22] Key stage 4 destination measures, Academic year 2021/22 - Explore education statistics - GOV.UK (explore-education-statistics.service.gov.uk)
[23] A level and other 16 to 18 results, Academic year 2022/23 - Explore education statistics - GOV.UK (explore-education-statistics.service.gov.uk)
[24] An average grade of B- is the equivalent of a low B grade – see 16 to 18 accountability headline measures - GOV.UK (www.gov.uk)
[25] Further education participation - GOV.UK Ethnicity facts and figures (ethnicity-facts-figures.service.gov.uk)
[26] Participation in apprenticeships - GOV.UK Ethnicity facts and figures (ethnicity-facts-figures.service.gov.uk)
[27] Widening participation in higher education, Academic year 2021/22 - Explore education statistics - GOV.UK (explore-education-statistics.service.gov.uk)
[28] Undergraduate degree results - GOV.UK Ethnicity facts and figures (ethnicity-facts-figures.service.gov.uk)

proportions getting an upper second class (around 45-47 per cent), but more than a third of black students achieved a lower second class or third class degree.

Labour market

Employment rates[29] and income[30] also differ by ethnic group. The Indian ethnic group has the highest earnings, with black and a combined Pakistani and Bangladeshi group having the lowest. Indian also has one of the highest employment rates, and black and combined Pakistani and Bangladeshi some of the lowest. Information on employment and earnings are based on survey data and are only available for larger ethnic groups. For example, black is treated as a single group, but there are marked differences within this group in employment rates and earnings as LEO data shows[31], with black African having similar employment rates to black Caribbean but higher earnings. Information on out-of-work benefits broken down by ethnic group is limited. The black and Bangladeshi ethnic groups are most likely to claim income-related benefits[32], with 24 per cent of families claiming. Only 8 per cent of Chinese and Indian families claim these, with white British at 16 per cent. Chinese families are the least likely to claim non-income related benefits (at 23 per cent), while around half of white British families claim.

LEO data has also been used to estimate returns to higher education by ethnicity[33], showing that women from Indian, Pakistani and Bangladeshi ethnic groups have the highest returns, but black Caribbean women have very low returns. For men, returns for Pakistani men are particularly high, while white British men have some of the lowest.

Contribution of this series

The analysis presented in the three chapters of this report uses LEO administrative data. The completeness and size of this dataset allows for robust analysis, particularly for smaller characteristics groups that cannot be obtained using survey data. The Institute for Fiscal Studies (IFS) has previously used LEO data to show returns for graduates, but no studies cover the whole range of post-16 education and the relationship with earnings and employment for ethnic groups. In this analysis, labour market outcomes data has been linked to DfE's administrative data to utilise an unprecedented range of socioeconomic and demographic factors during GCSEs as well as prior attainment, achievements at age 16 and post-16. Individuals are tracked through from the end of compulsory education rather than examining the population as a whole. In addition, novel analysis of the relationship between education, socioeconomic and demographic factors

[29] Employment - GOV.UK Ethnicity facts and figures (ethnicity-facts-figures.service.gov.uk)
[30] Average hourly pay - GOV.UK Ethnicity facts and figures (ethnicity-facts-figures.service.gov.uk)
[31] Post-16 education and labour market activities, pathways and outcomes (LEO) - GOV.UK (www.gov.uk)
[32] State support - GOV.UK Ethnicity facts and figures (ethnicity-facts-figures.service.gov.uk)
[33] Undergraduate degrees: labour market returns by background characteristics - GOV.UK (www.gov.uk)

and out-of-work benefits is presented. Together the three chapters (ethnicity, socioeconomic status and special educational needs) provide extensive insight into the outcomes across different aspects of disadvantage.

Section 2: Observed labour market differences

Section 1 shows that there are important differences in socioeconomic, demographic and education factors between ethnic groups and that their labour market outcomes are varied. This section presents descriptive statistics on how different labour market outcomes are related to some of these attributes for selected ethnic groups. See the Coverage section for more information on the individuals included and the Definitions section for details of the definitions and derivation of the data provided here.

Methodology

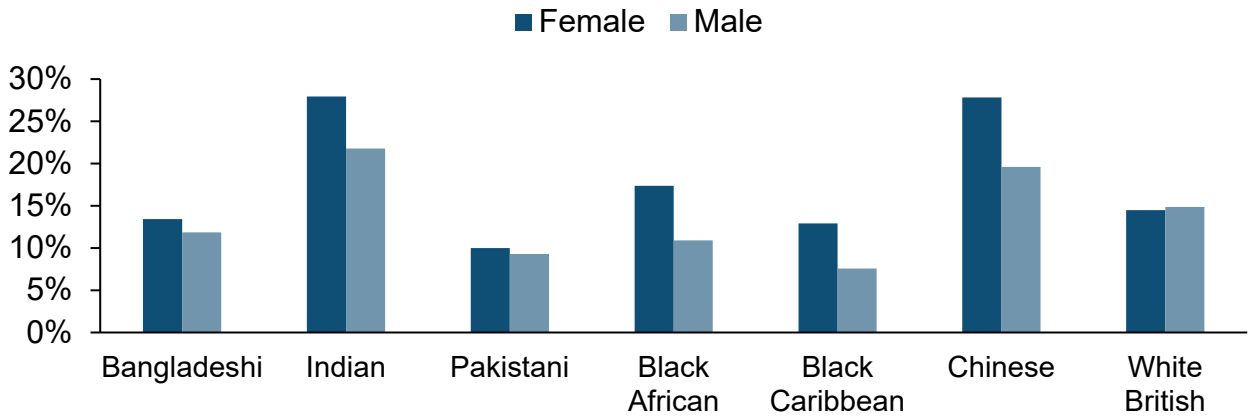
The percentage of individuals in each ethnic group in the good labour market outcome category has been calculated for males, females, and males and females combined for each of the factors listed in the Definitions section. A selection of these has been presented, for the specified ethnic groups, in this section of the chapter.

This process has been repeated for poor labour market outcome. Full results are shown for all ethnic groups in the accompanying data tables.

Gender

A good outcome has been defined as being in sustained employment and an upper quartile earner (see Definitions for more detail). Figure 2 shows that Chinese and Indian men and women and black African women are more likely to be in a good outcome than other ethnic groups. The black Caribbean and Pakistani ethnic groups are least likely to be in a good outcome. For all groups except white British, women are more likely to be in a good outcome than men. The biggest gaps between men and women are seen in the black Caribbean, black African and Chinese ethnic groups.

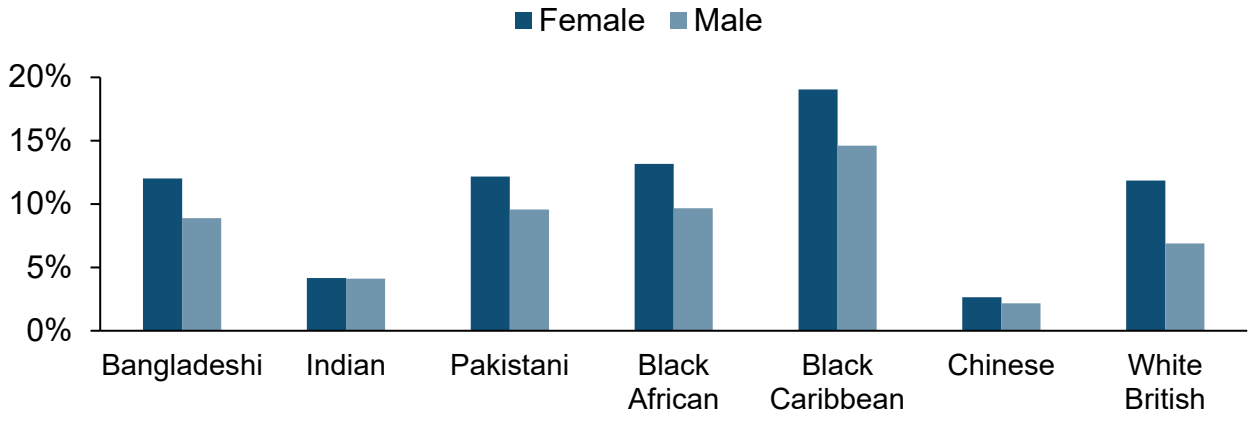
Figure 2: Proportions in Good Outcome by ethnic group and gender



Source: Authors' analysis using Longitudinal Education Outcomes data

For the purposes of this analysis, a poor outcome has been defined as claiming out-of-work benefits for at least a six month period (see Definitions for more detail). Figure 3 shows us that, for both men and women, the Chinese and Indian ethnic groups are much less likely to be in a poor outcome than other ethnic groups, and black Caribbean the most likely. For all groups except Indian, women are more likely to be in a poor outcome than men, with white British showing the biggest gender gap. Indian and Chinese ethnic groups have very small differences in likelihood between men and women.

Figure 3: Proportions in Poor Outcome by ethnic group and gender



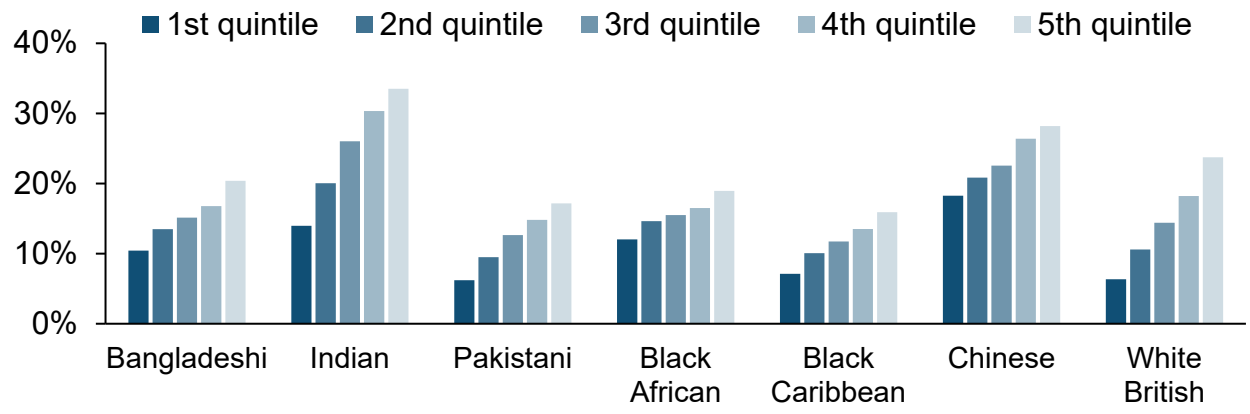
Source: Authors' analysis using Longitudinal Education Outcomes data

Looking at good and poor outcome together, for most ethnic groups women are more likely to be in a good outcome **and** more likely to be in a poor outcome than males. White British has the biggest poor outcome gender gap of all the ethnic groups examined but is also the only group for which women are less likely to be in a good outcome.

Socioeconomic status

Socioeconomic status during GCSE years is associated with profound differences in early career labour market outcomes, but the relationship is not consistent across ethnic groups (see Figure 4).

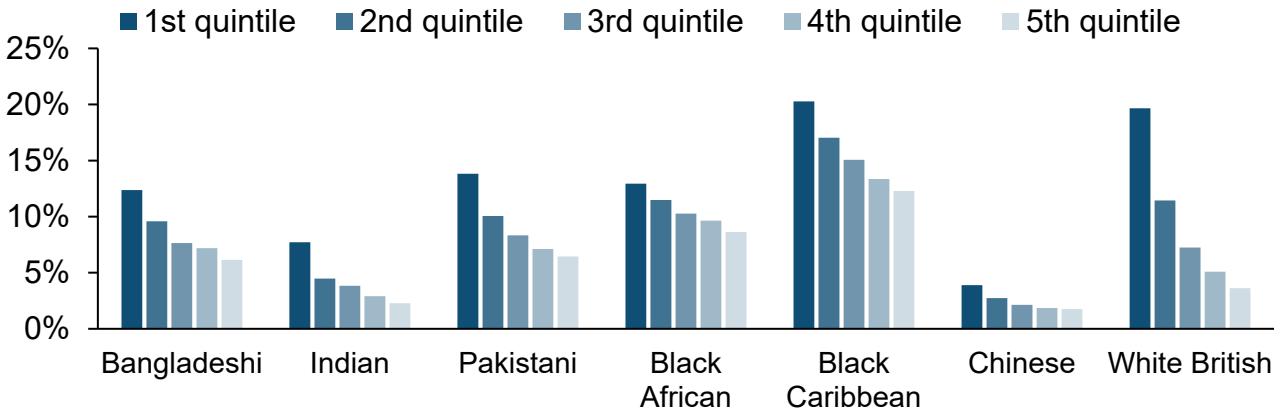
Figure 4: Proportions in Good Outcome by ethnic group and socioeconomic status



Source: Authors' analysis using Longitudinal Education Outcomes data

The first SES quintile includes those from the lowest socioeconomic backgrounds and the fifth quintile is those from the highest socioeconomic background. For white British, for example, the chances of being in a good outcome for those in the highest socioeconomic group is four times that of those in the lowest: the greatest disparity for all ethnic groups shown here. Differences between the highest and lowest socioeconomic groups are smallest for the Chinese and black African ethnic groups.

Figure 5: Proportions in Poor Outcome by ethnic group and socioeconomic status



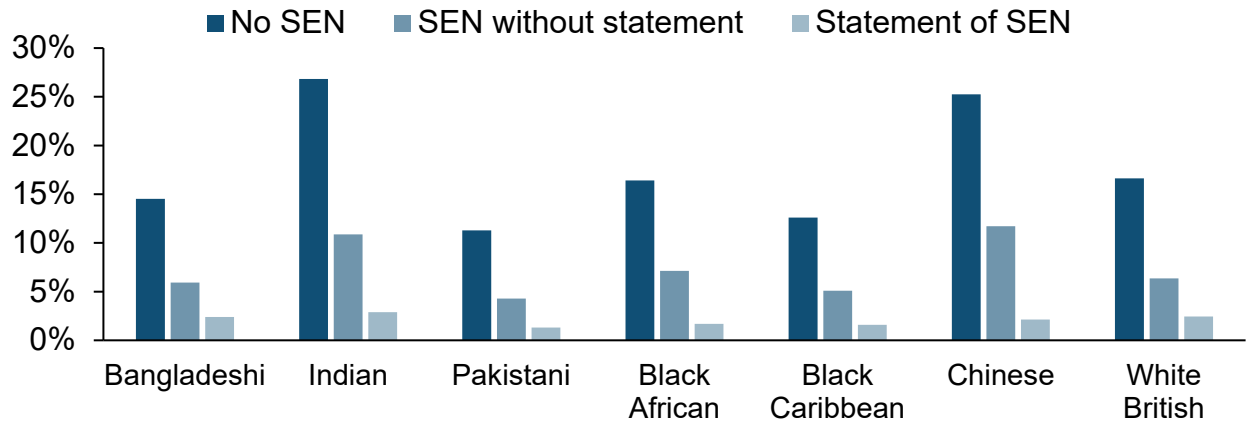
Source: Authors' analysis using Longitudinal Education Outcomes data

Socioeconomic status during GCSE years also shows a strong association with likelihood of a poor labour market outcome (Figure 5), and the strength of this association varies across ethnic groups. In every case, the chance increases as socioeconomic status gets lower. For Indian, Bangladeshi, Pakistani and black Caribbean there is a sharp increase for those from the lowest socioeconomic quintile. White British has the largest disparity between highest and lowest quintiles, with those from the highest socioeconomic group having one of the lowest chances for all ethnic groups of being in a poor outcome, and those from the lowest socioeconomic group having one of the highest chances.

Special educational needs

The analysis on special educational needs in this report uses the SEN Code of Practice[34] which came into effect on 1 January 2002, before the introduction of Education, Health and Care (EHC) plans. Under this Code of Practice, a child or young person could be identified in one of three categories: statement of SEN, School Action or School Action Plus. A statement of SEN is when a formal assessment has been made which sets out the child's need and the extra help they should receive. For this analysis, the SEN categories School Action and School Action Plus are combined into 'SEN without statement'.

Figure 6: Proportions in Good Outcome by ethnic group and special educational needs (SEN)



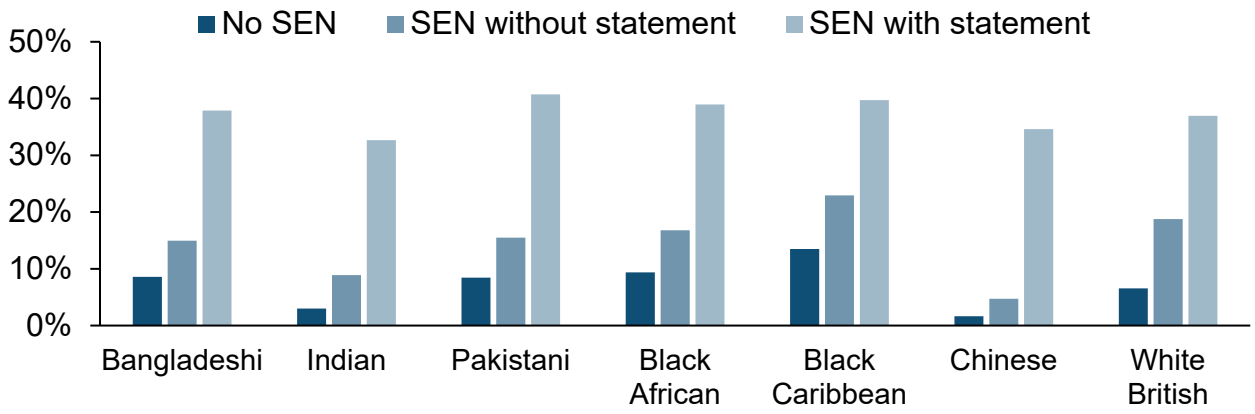
Source: Authors' analysis using Longitudinal Education Outcomes data

The proportion of individuals with SEN in a good outcome is very low, particularly for those with a statement. We can see from Figure 6 that the difference in good outcome for those with special educational needs are similar across ethnic groups, relative to those

34 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/273877/special_educational_needs_code_of_practice.pdf

with no special educational needs. However, because of the significant differences in good outcome across ethnic groups, there remain key differences when we break down by SEN status. For example, the Indian ethnic group with SEN without a statement has comparable outcomes to the Pakistani group who have no identified SEN.

Figure 7: Proportions in Poor Outcome by ethnic group and special educational needs (SEN)



Source: Authors' analysis using Longitudinal Education Outcomes data

Having a statement of special educational need is particularly associated with poor outcome, with proportions between 35 and 41 per cent for all ethnic groups (Figure 7), even for those groups with (overall) very low incidence of poor outcome such as Chinese and Indian. This is not unexpected as the out-of-work benefits used to define poor outcome in this analysis include benefits to help those with a disability or health conditions which affect how much they can work.

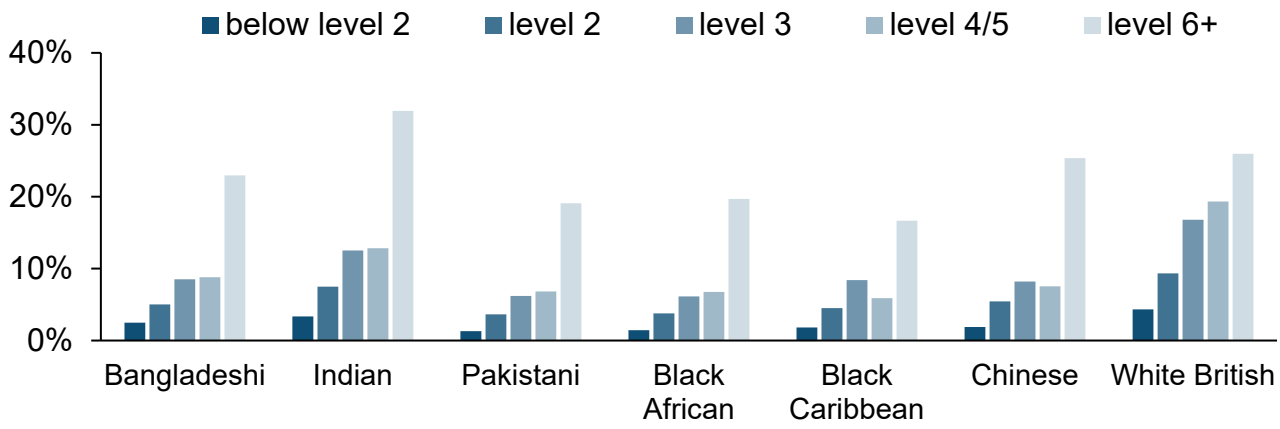
Highest level of education

In general, the trends of males and females from different ethnic groups in good outcome or in poor outcome when looking at different factors are very similar. However, this is not true for highest level of education so this section includes charts for both genders.

Figure 8 and Figure 9 show the relationship between ethnicity and good outcome by highest level of education. They show that, in general, the proportions in good outcome vary less across ethnic groups by highest level[35] of education than for some other factors.

[35] What qualification levels mean: England, Wales and Northern Ireland - GOV.UK (www.gov.uk)

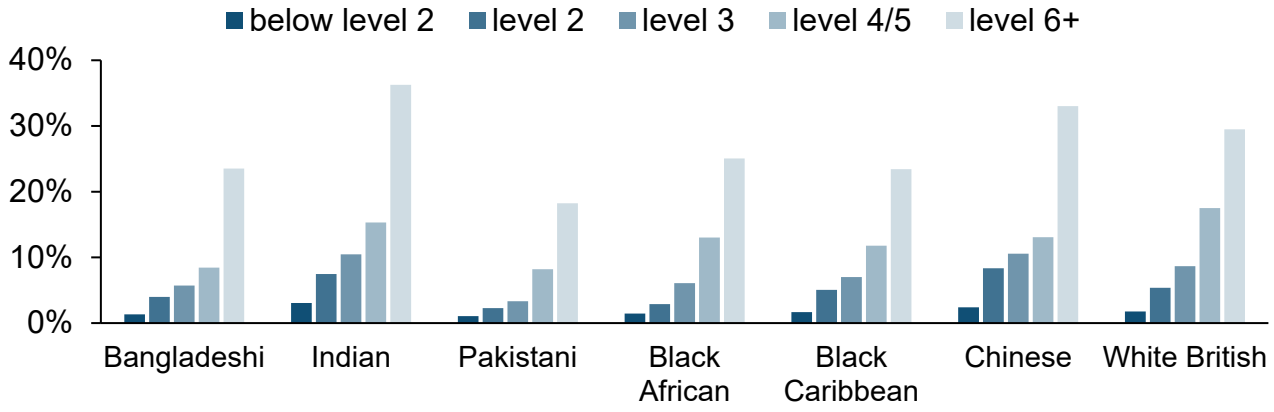
Figure 8: Proportion of males in Good Outcome by ethnic group and highest level of education



Source: Authors' analysis using Longitudinal Education Outcomes data

For males, white British shows a different pattern to other ethnic groups: good outcome proportions for levels 3 to 5 (A levels and above, but below degree level) are much closer to those for level 6 and above (at least degree level). This is not true for other ethnic groups, where at least a degree level qualification must be achieved to have a higher chance of good outcome.

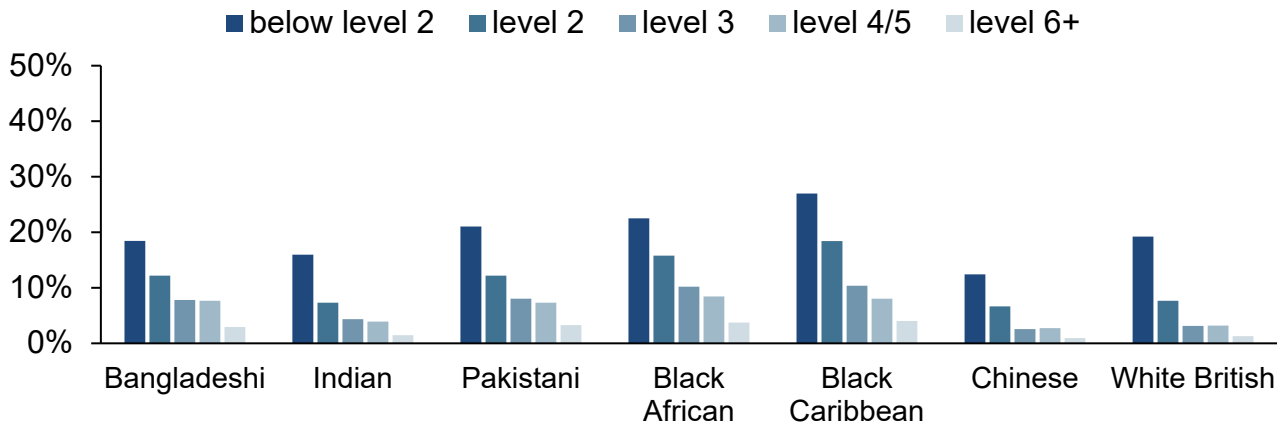
Figure 9: Proportion of females in Good Outcome by ethnic group and highest level of education



Source: Authors' analysis using Longitudinal Education Outcomes data

For females, the difference between achieving at least a degree level qualification and not is much stronger than for males. The exception here is females from the Pakistani ethnic group for whom we do not see such a large increase in good outcome from degree level qualifications.

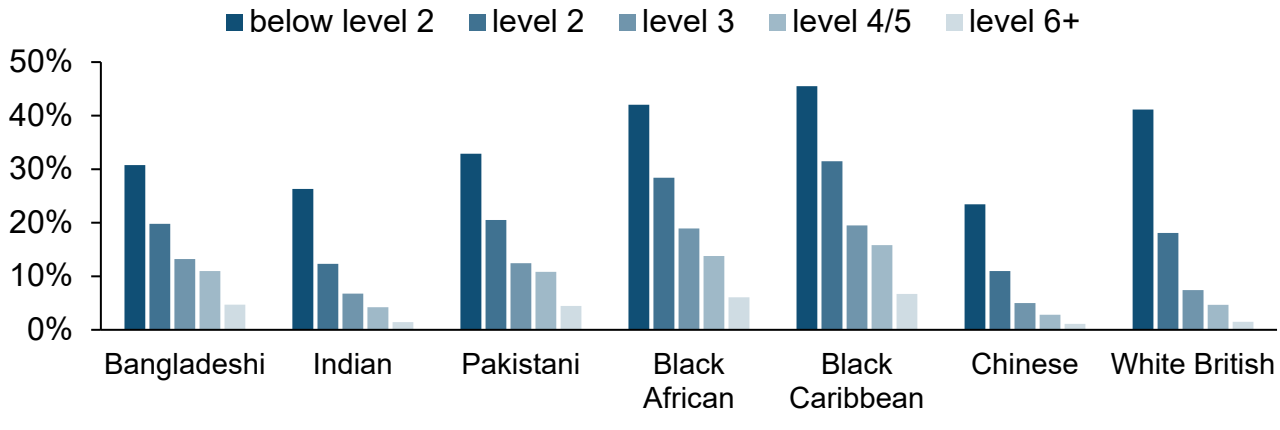
Figure 10: Proportion of males in Poor Outcome by ethnic group and highest level of education



Source: Authors' analysis using Longitudinal Education Outcomes data

For males, not achieving at least 5 A*-C GCSEs or equivalent (full level 2 achievement) is strongly associated with higher likelihood of being in a poor outcome (Figure 10), as is not achieving level 3 (equivalent to 2 A levels), but to a lesser extent. The relative effect of this is similar across ethnic groups. The lowest proportions claiming benefits for 6 months are seen for those achieving degree level or above.

Figure 11: Proportion of females in Poor Outcome by ethnic group and highest level of education



Source: Authors' analysis using Longitudinal Education Outcomes data

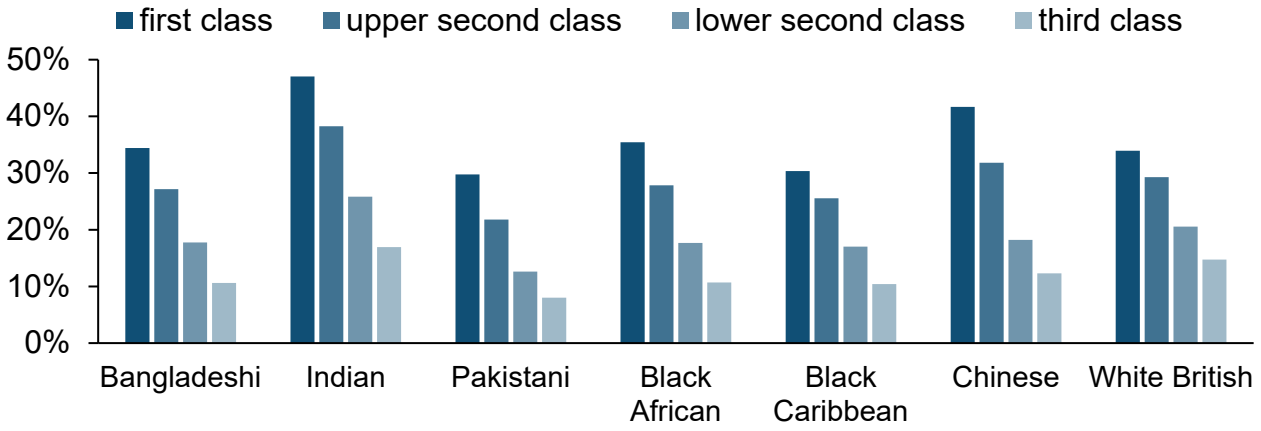
For females (Figure 11), the effect of not achieving a level 2 or level 3 qualification is more marked than for males across all ethnic groups. For some groups (Bangladeshi,

Pakistani, black African and black Caribbean) the rates of poor outcome are high for all levels of achievement below degree level.

Higher education: degree classification

Achieving a degree is associated with higher chances of good outcome, but large differences are also seen with the classification of that degree.

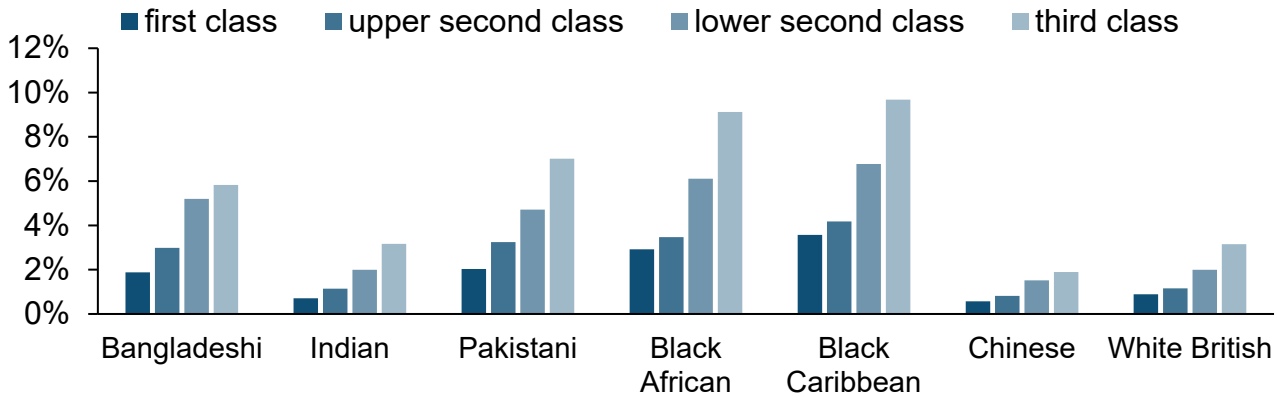
Figure 12: Proportions in Good Outcome by ethnic group and classification of first degree



Source: Authors' analysis using Longitudinal Education Outcomes data

For all ethnic groups, a higher classification is associated with higher proportions of good outcome (see Figure 12), but there is less of premium to this for some groups, such as black Caribbean.

Figure 13: Proportions in Poor Outcome by ethnic group and degree classification



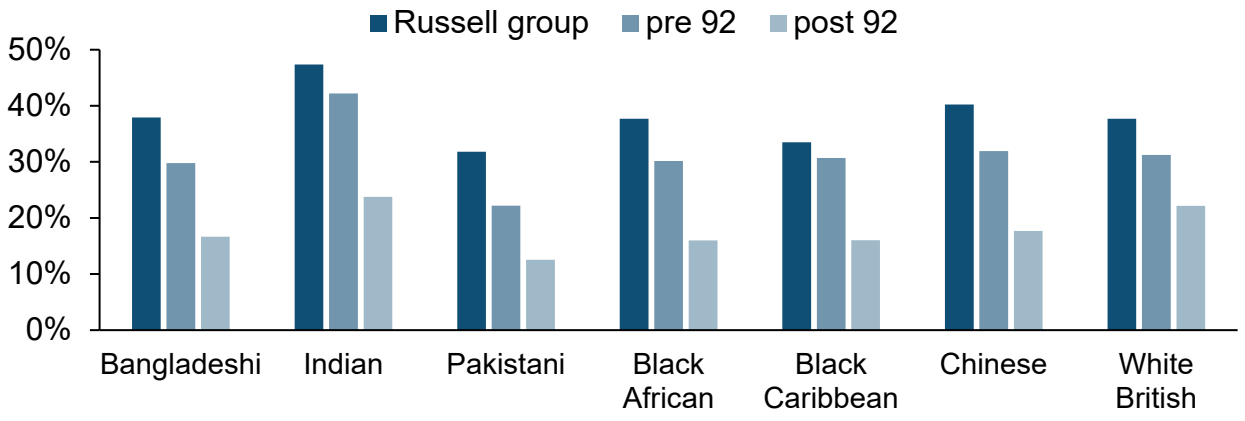
Source: Authors' analysis using Longitudinal Education Outcomes data

Achieving a degree is associated with low chances of poor outcome, and the higher the classification of the result, the lower the chance across all ethnic groups. For the Bangladeshi, black African and black Caribbean ethnic groups, there is a marked increase in the chance of poor outcome for those with lower second and third class degrees, in addition to a higher chance for graduates from these ethnic groups compared to white British, Indian and Chinese (Figure 13).

Higher education: type of institution

The type of institution attended to study a first degree also affects good outcome differently across ethnic groups. For all, attending a Russell group university is associated with the highest chance of good outcome, followed by pre-92 institutions, and then post-92 institutions with the lowest chance (Figure 14).

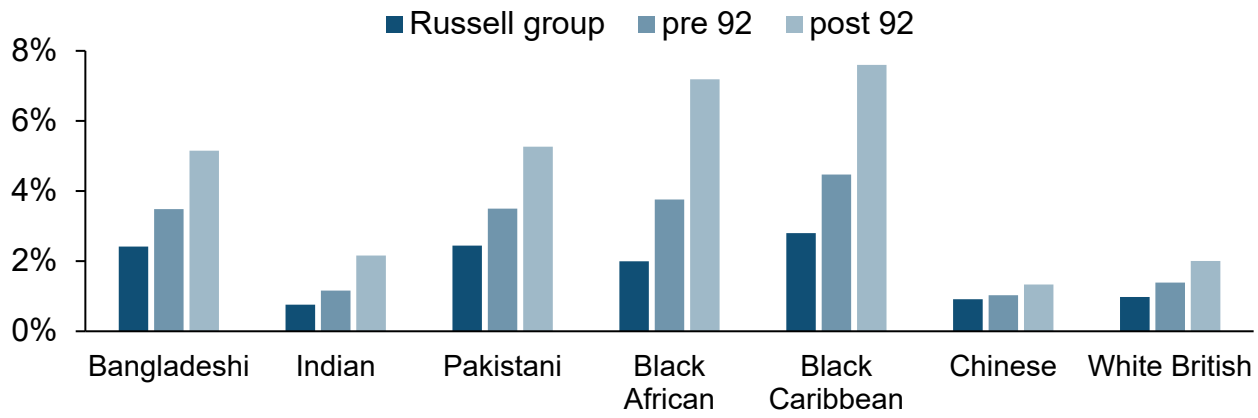
Figure 14: Proportions in Good Outcome by ethnic group and type of higher education institution (first degree)



Source: Authors' analysis using Longitudinal Education Outcomes data

Almost half (47 per cent) of Indian Russell group graduates are in a good outcome, compared to only a third (32 per cent) of Pakistani graduates. This is a similar rate as for black Caribbean and Russell group, but in this case, outcomes for pre-92 are almost as high.

Figure 15: Proportions in Poor Outcome by ethnic group and type of higher education institution (first degree)



Source: Authors' analysis using Longitudinal Education Outcomes data

With regard to the type of institution attended (Figure 15), post-92 institutions are associated with the highest chance of poor outcome for graduates. For Chinese, white British and, to a lesser extent Indian, the type of institution makes little difference. The most marked difference between Russell group and post-92 institutions is for black African, with black Caribbean having the highest chances of poor outcome regardless of type of institution.

Section 3: Effect of introducing controls

The analysis in Section 2 shows us that labour market outcomes differ markedly for different ethnic groups and that within this there is also wide variation across different education, socioeconomic and demographic characteristics. In Section 1 we saw that the proportions of these characteristics also vary widely between ethnic groups. Regression analysis enables us to control for the factors found in the LEO administrative data to determine the extent to which the disparity between ethnic groups is due to the differences in these factors. For example, looking at Figure 8 we can see that when we take highest level of education into account, the differences in good outcome for males between ethnicities are much less noticeable. This approach allows us to hold these socioeconomic, demographic and education factors (covered in the previous section and mentioned in the Definitions section) constant at once, so we can compare the outcomes of different ethnic groups on a like for like basis and isolate the relationship between ethnicity and labour market outcomes.

Methodology

Probit regression methods have been used to estimate the probability that an individual with particular characteristics will fall into the measured outcome category (e.g. good outcome).

A brief description of the method used is provided in this section. Full details can be found in the technical report.

Different ethnic groups have different labour market outcomes, but this could be driven by differences in underlying socioeconomic, demographic and educational factors which vary between ethnic groups and which we know influence labour market outcomes. Regression analysis allows us to hold these factors constant so we can compare on a more like for like basis. This enables us to isolate the relationship between ethnicity and different labour market outcomes by calculating how much of the observed difference between ethnic groups is due to the factors we can observe in the administrative data, and how much cannot be explained by these factors. When referring to controls, it is a reference to these socioeconomic, demographic and education factors that are held constant, allowing more like for like comparisons.

The dependent variable (good labour market outcome, or poor labour market outcome) is binary (an individual is either in a good outcome, or is not) so a binary regression model is used. Probit regression has been used which estimates the probability of an individual falling into the outcome category i.e. having a good (or poor) labour market outcome.

The average marginal effect is then calculated: this is the average change in the probability of having a good or poor outcome compared to a baseline (or reference) group. For this chapter we measure the average difference in probability of good (or poor) outcome for each ethnic group compared to white British. For example, if the average marginal effect for good outcome for Indian males is 6.9, then the probability of achieving a good outcome for an Indian male is 6.9 percentage points higher, on average, than for white British males.

The regression was run twice, once without any controls and once with all socioeconomic factors, demographics, and education controls. The first results show the raw differences between ethnic groups in the labour market (i.e. the observed differences in outcomes between groups, before controlling for any other factors). The second results show the differences between ethnic groups after controlling for the factors in the model. These differences are what you would see if you looked at the data and accounted for a wide range of other factors that could affect labour market outcomes and differ across ethnic groups.

Results

The charts show the marginal effects of each ethnic group on labour market outcomes, both with and without controls[36].

For groups where the likelihood of the outcome is significantly different from white British (or the change in probability is significantly different from zero), the bars in the chart are shown with solid shading. Hatched bars are used where there is no significant difference in outcome from white British.

Error bars show 95% confidence intervals. Confidence intervals provide an indication of the uncertainty of the estimates produced. Large intervals mean less precise estimates and smaller intervals indicate more certainty. There is a 95% chance that the true value for the population will fall between the upper and lower confidence limits.

Results of the regression are shown as a percentage point change in outcome from white British for the group of interest (full results for all groups can be found in the accompanying data tables). For good outcome, a positive margin means the group of interest are, on average, more likely to be in a good outcome than white British. The uncontrolled values are equivalent to the differences we observe in the previous section. Adding the controls to the regression allows us to consider the differences in level of education, subjects studied, socioeconomic status, geography etc between ethnic groups.

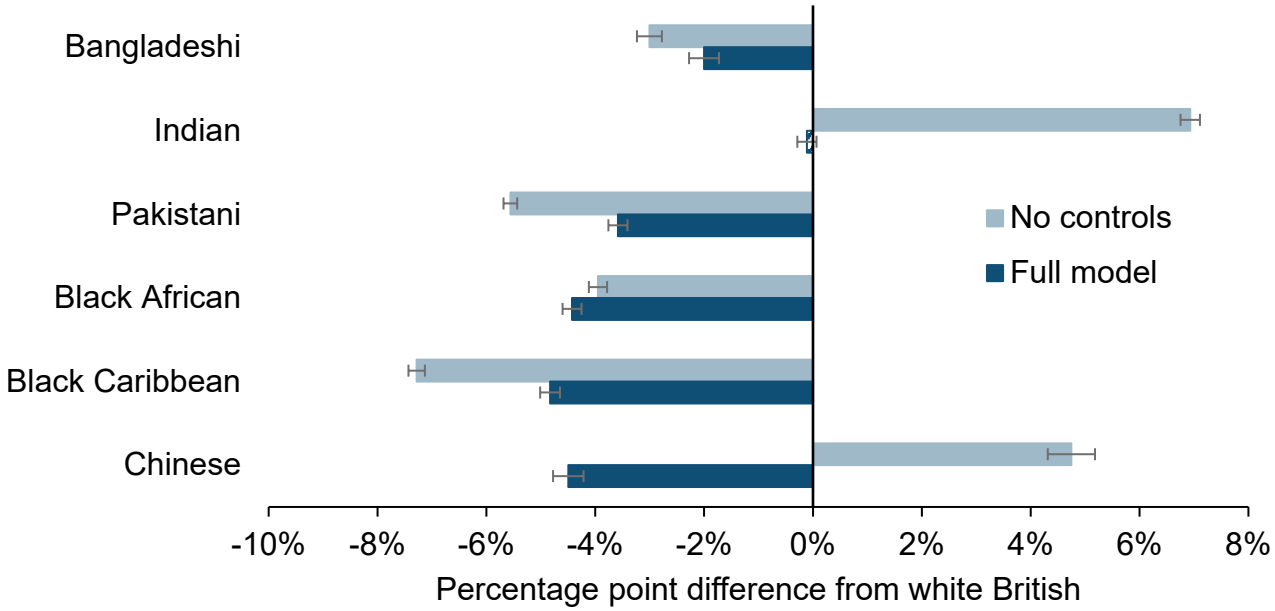
[36] See Figure 16 for an example

Good outcome

Males

Results from the regression on males in a good labour market outcome for selected ethnic groups are shown in Figure 16. Before controlling for the aforementioned factors, we observe that Indian and Chinese males are more likely to achieve a good labour market outcome than white British, with other ethnic groups less likely.

Figure 16: Males - Marginal effects of ethnic group on good labour market outcome



Error bars represent 95% confidence intervals
Hatched shading denotes not significantly different from zero

Source: Authors' analysis using Longitudinal Education Outcomes data

After controlling for the range of socioeconomic, demographic and education factors in the full model, we see that males from all ethnic groups except Indian are less likely to achieve a good labour market outcome than white British men i.e. men with similar characteristics and education profiles from all ethnicities included are less likely to be employed and have earnings in the upper income quartile than white British males.

After controlling for socioeconomic, demographic and education factors, the increased chance for Indian compared to white British disappears and like for like, white British and Indian males are equally likely to be in a good outcome despite males from the Indian ethnic group typically having characteristics associated with better labour market outcomes.

For Chinese males, we observe that this group are over 4.5 percentage points more likely to be in good outcome, but after adding controls, they are 4.5 percentage points **less** likely to be in a good outcome than similar white British males. Males from the Chinese ethnic group typically have characteristics associated with better labour market outcomes, so this effectively means that when we take these into account, this group are performing far more poorly than we would expect.

Controlling for these factors brings the likelihood of Bangladeshi, Pakistani and black Caribbean men achieving a good outcome closer to that of white British men, but it is still lower. The difference from white British reduces by around a third for each, but these ethnic groups are still between 2 and 5 percentage points lower. For black African males, the chance of being in a good outcome is lower than that for white British, and the difference between the two groups increases slightly when comparing like for like.

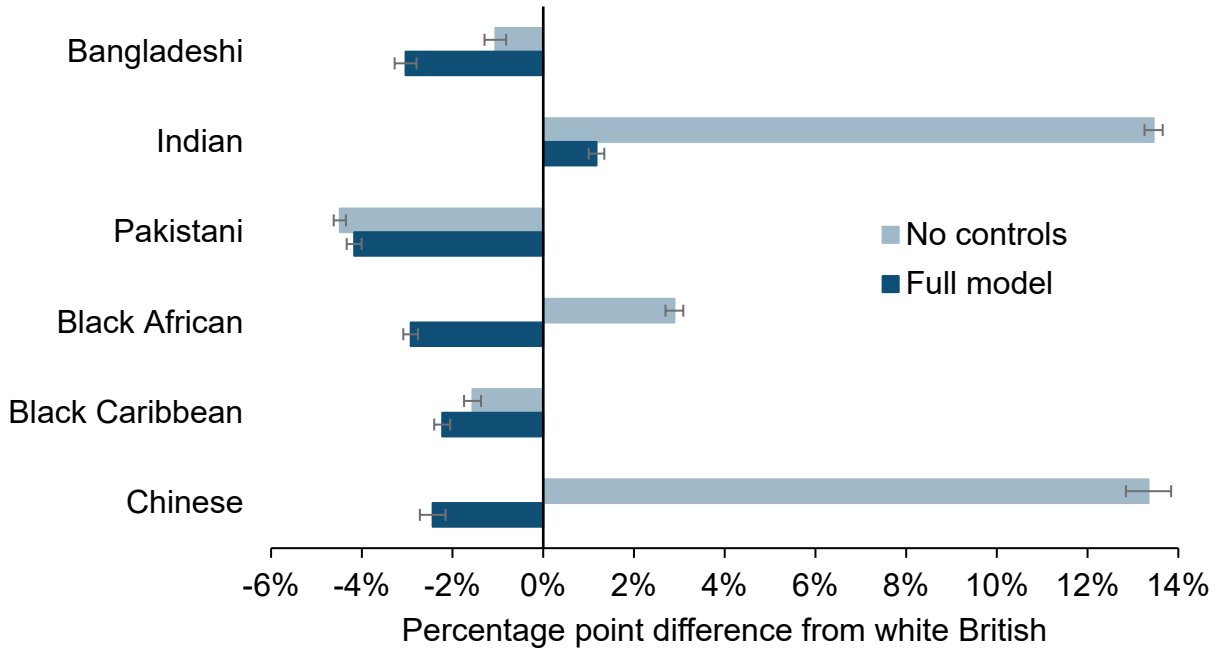
Females

For females and good outcome, the picture is slightly different (Figure 17). Again, we see that before we add the socioeconomic, demographic and education controls, women from the Indian and Chinese ethnic groups are more likely to be in a good outcome than white British, although the differences are much bigger than for men. Unlike males, black African women, too, are observed to have higher chances of good outcome, with other groups being less likely than white British.

As with men, after controlling for the full range of socioeconomic, demographic and education factors, all ethnic groups except Indian are less likely to be in a good outcome than white British. This means that women from Bangladeshi, Pakistani, black Caribbean, black African and Chinese ethnic groups are less likely to be employed and upper quartile earners than similar white British women.

For those ethnic groups that are observed to have a higher chance of good outcome (Indian, Chinese and black African) we see a similar effect for women as we did for men. For Indian women, the increased chance of being in a good outcome becomes much smaller (around one percentage point) when comparing like for like, so that Indian women are only slightly more likely to be in a good outcome than white British women. For Chinese and black African women, once we take into account their characteristics and education levels, they are less likely (2.5 and 3 percentage points, respectively) to be in a good outcome than white British women i.e. despite having more favourable characteristics for good outcome.

Figure 17: Females - Marginal effects of ethnic group on good labour market outcome



Error bars represent 95% confidence intervals

Source: Authors' analysis using Longitudinal Education Outcomes data

The remaining ethnic groups (Bangladeshi, Pakistani and black Caribbean) are observed to have a lower chance, on average, of good outcome compared to white British, with Bangladeshi and black Caribbean being only slightly lower (1 percentage point and 1.5 percentage points respectively). However, when all controls are added, the comparative likelihood is lower still, increasing to 3 percentage points less likely for Bangladeshi women and 2 percentage points for black Caribbean women. Pakistani women are the least likely to be in a good outcome, at around 4 percentage points less likely than white British; controlling for these factors makes little difference.

Poor outcome

When looking at poor outcome, a positive percentage difference indicates higher proportions claiming out-of-work benefits for six months in a year, which means worse labour market outcomes. The trends for poor outcome for males are broadly consistent with those for good outcome, in that the white British group are less likely to have a poor labour market outcome than most other ethnic groups after controlling for socioeconomic, demographic and education factors. The picture is more varied for females.

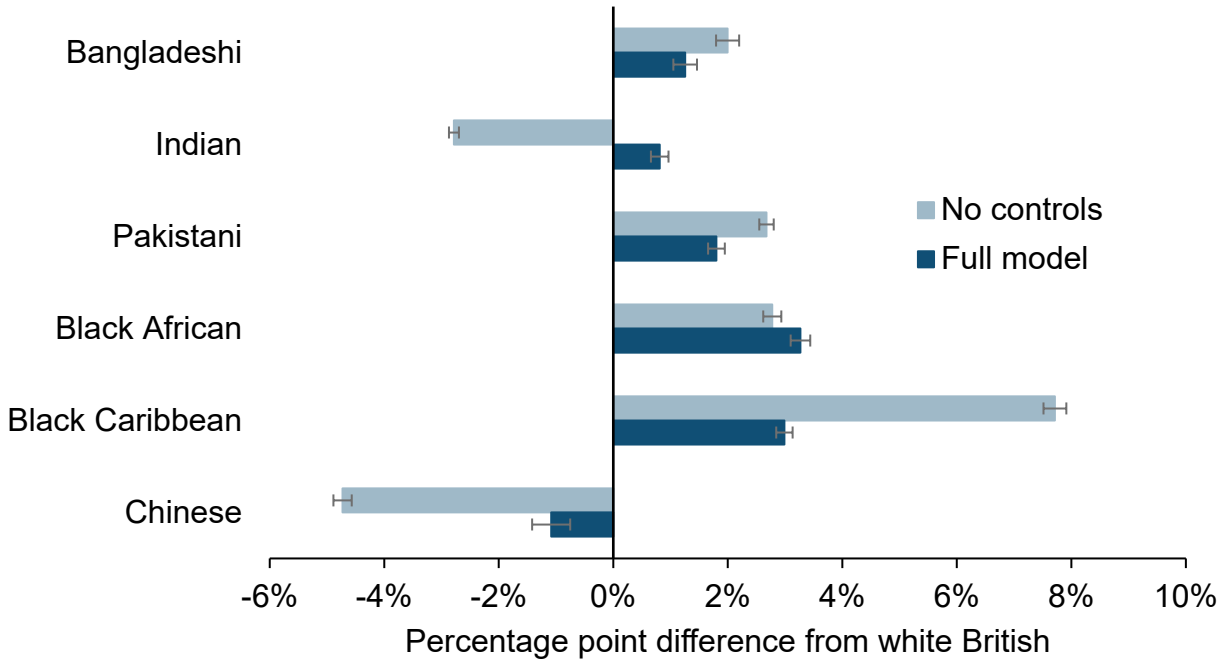
Males

Indian and Chinese men are less likely to be in a poor outcome than white British (Figure 18) by nearly 5 percentage points and nearly 3 percentage points, respectively. Black Caribbean men are the mostly likely to have a poor labour market outcome (7.6 percentage points higher than white British); with Bangladeshi, Pakistani and black African men also having a higher chance (each around 2 to 3 percentage points) than white British, but to a lesser extent.

When we add the socioeconomic, demographic and education controls, most of the differences from white British are reduced, and to a larger extent for black Caribbean and Chinese than for other ethnic groups. Black African males have a slightly increased chance of poor outcome than white British after controlling for wider factors. The Chinese ethnic group is the only one that remains less likely to be in a poor outcome (just over 1 percentage point lower than white British).

As we saw for good outcome, males from the Indian ethnic group typically have characteristics associated with better labour market outcomes (i.e. a lower chance of poor outcome), but do not do as well as we'd expect when we take these socioeconomic, demographic and education factors into account.

Figure 18: Males - Marginal effects of ethnic group on poor labour market outcome



Error bars represent 95% confidence intervals

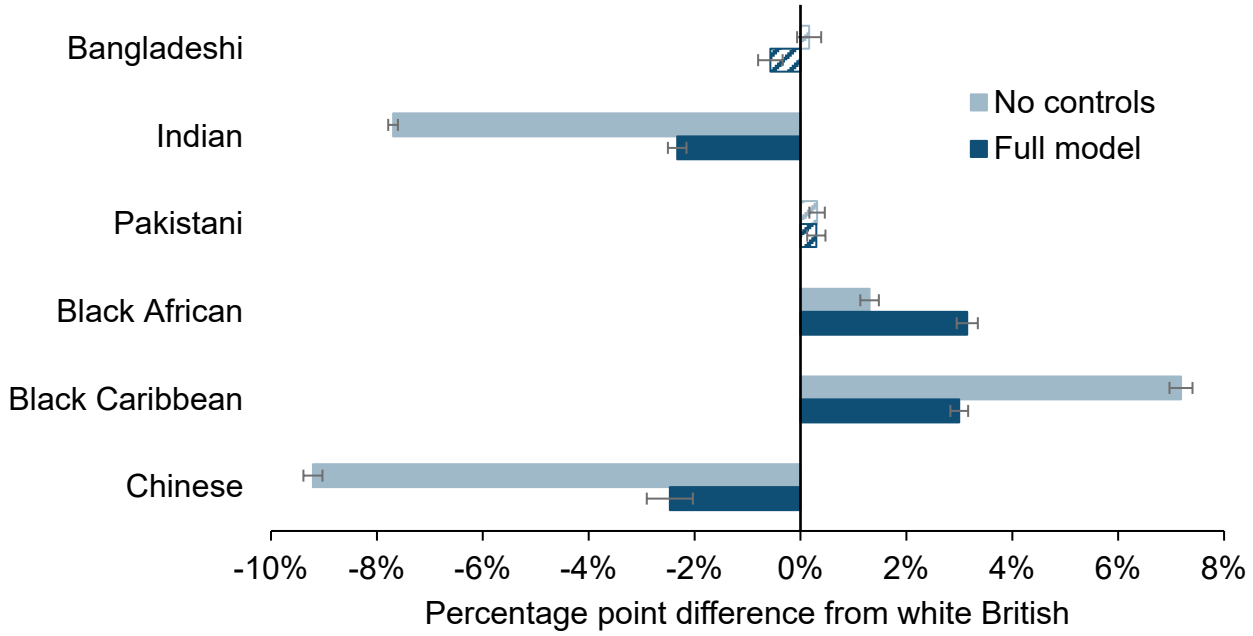
Source: Authors' analysis using Longitudinal Education Outcomes data

This means that when we compare males with similar characteristics and education levels, all ethnic groups other than Chinese are more likely to be claiming out-of-work benefits for at least 6 months than their white British counterparts.

Females

For females, we find that there is some parity in the probability of poor outcome to white British for both the Bangladeshi and Pakistani groups (Figure 19), which remain largely unchanged after controlling for socioeconomic, demographic and education factors.

Figure 19: Females - Marginal effects of ethnic group on poor labour market outcome



Error bars represent 95% confidence intervals
Hatched shading denotes not significantly different from zero

Source: Authors' analysis using Longitudinal Education Outcomes data

As seen for men, Indian and Chinese women have a lower chance of being in a poor outcome than white British women, and black Caribbean women a higher chance. The difference in relative probabilities between these groups and white British shrink when we control for the wider factors.

The chances of black African women being in a poor outcome is slightly higher than for white British and even more likely after controlling for all factors i.e. black African women are more likely to be claiming out-of-work benefits than white British women with the same education level and characteristics, despite having characteristics which are generally less associated with poor labour market outcomes.

In summary, for both men and women and for good and poor outcome, we observe equality (or better) in the labour market for Indian, Chinese and (to a lesser extent) black African groups but when we compare on a like for like basis this does not hold. Holding these socioeconomic, demographic and education factors constant brings some ethnic groups e.g. black Caribbean closer to white British, but outcomes are, on the whole, poorer.

Section 4: Relative importance of controls

The regression results in Section 3 illustrate that the gaps in good and poor labour market outcomes between white British and minority ethnic groups differ for each ethnic group. In addition, the component of these gaps which can be explained by the socioeconomic, demographic and education control varies by ethnic group. For example, when looking at good outcome in males, all the observed gap between the Indian and white British groups is explained by these factors, but only about a quarter of the gap between white British and black Caribbean males.

These factors all play a part in determining the probability of someone being employed, how much they earn, and whether they claim benefits. The information in Sections 1 and 2 shows us that the importance of these factors differ for each ethnic group. In addition, ethnic groups vary in the composition of these factors, as does the impact they have on labour market outcomes.

This section presents the use of decomposition methodology to attempt to quantify the contribution each socioeconomic, demographic and education factor makes towards the gaps in outcomes between white British and other minority ethnic groups.

Decomposition analysis is a way of isolating the importance of each factor: to determine how much of the gap between two ethnic groups is explained by each factor (or group of factors). A discussion follows on the multivariate decomposition methodology used and interpretation of results to provide further insight into this.

The results presented here are exploratory and this methodology has only been partly successful for looking at differences in labour market outcomes by ethnic group (see All ethnic groups in the Results section for more information).

Methodology

Multivariate decomposition analysis is used to give insight into the importance of factors explaining the difference in average outcomes between two groups. For this analysis, it is used to look at the difference in probability of a good labour market outcome (or poor labour market outcome) between two ethnic groups (e.g. white British and Indian) and to quantify the contribution of each of the factors that may be driving this difference.

A brief description of the method used is provided in this section. Full details can be found in the technical report.

Each (other) ethnic group is compared pairwise with white British. The *mvdcmp*[37] command in STATA is used to run a probit regression model on each pair and then 'decompose' or split the raw difference in outcomes between the groups into two parts:

- **Characteristics**: the proportion of difference due to the different compositional makeup (socioeconomic, demographic and education) of the two groups
- **Returns**: the proportion of difference which cannot be explained by accounting for the differences in characteristics, i.e. due to the different behaviours, experiences and returns to those behaviours, of individuals in these two groups with the same characteristics

Each of these parts is then further broken down to show the proportion of the difference explained by **each factor** in the model. The **Returns** component also includes the contribution from the constant term: this is the difference in outcomes which cannot be explained by the factors in the model. This will be referred to as the **Unexplained** component in this chapter.

The decomposition analysis is carried out six times using good labour market outcome as the dependent variable (each of the six other ethnic groups paired with white British) and for males and for females separately. The explanatory variables (or factors) used in the model are based on those used as controls in the full probit regression model discussed in Section 3 (as we want to ascertain the importance of each of these in explaining the differences between ethnic groups). For ease of presentation and interpretation, some of the factors have been grouped together in the results charts to indicate the total contribution from related factors.

The groups of variables presented in the charts are (see Definitions):

- Socioeconomic status – total contribution from differences in all SES quintiles
- SEN - total contribution from special educational need
- English as an additional language (EAL)
- Region of key stage 4 school - local authority is used as a control in the probit regression, however the breakdowns for some ethnic groups are too small for local authority to be used
- Pre-16 attainment – key stage 2 maths level, key stage 4 performance points
- School factors (school type, progress, demographics and attainment)
- Variables on level and type of educational achievement, as well as institution type, classification and subject studied at degree or above have been combined to give

[37] Mvdcmp: Multivariate Decomposition for Nonlinear Response Models (sagepub.com)

the following post-16 education factors (presented separately). Below level 2 learning is the reference value for these:

- Below degree level – achievements at levels 2 to 5
- Lower second class, third class or unclassified degree
- 1st class or upper second class degree
- Postgraduate level achievements

This process is repeated using poor labour market outcome as the outcome variable of interest.

The assumptions and methodology for the probit regression and decomposition differ, and the explanatory variables in the decomposition differ slightly from the controls used in the probit regression (such as using region rather than local authority). This results in slight differences in the explanatory power of these models.

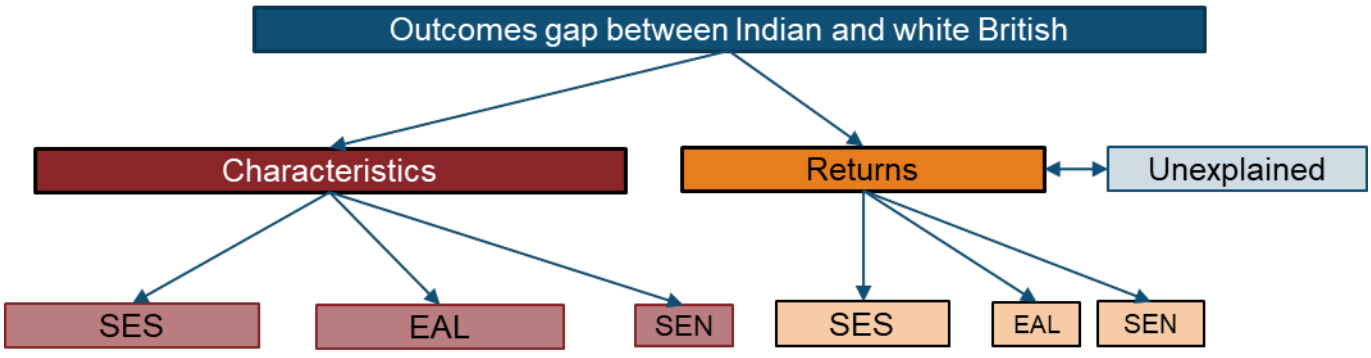
Full results for individual variables are shown in the accompanying data tables. Further details on the explanatory variables and more detail on the decomposition methodology can be found in the technical report.

Interpretation

The gap in outcomes between the two groups of interest (e.g. the difference in probability of good outcome between Indian and white British males) is broken down to show the relative contribution of each factor.

To illustrate this, Figure 20 shows a simplified representation of a model with three explanatory variables.

Figure 20: Representation of decomposition analysis



Each factor in the **Characteristics** component, the **Returns** component and the **Unexplained** term makes up a percentage of the total gap (100 per cent) in outcomes

between these two groups. The percentage contribution from a factor can be either positive or negative depending on its association with the outcome variable.

This model is complex and includes a large number of factors which, taken together, have quite different impacts on the labour market outcomes of different ethnic groups. The decomposition methodology does not do well with extremes and some of the results for the decompositions are less clear than others, particularly in cases where adding controls to the regression results in a larger gap compared to white British, or where observed outcomes are higher than white British but are lower when comparing like for like. However, we believe that these results still provide valuable insight into what is important for labour market outcomes, and how much of the gap is explained by the administrative data in the model, and how much these can vary between ethnic groups.

Results

There are 24 sets of pairwise results for the decomposition analysis. The first part of this section will look in depth at two pairwise comparisons of good outcome in order to illustrate how these two ethnic groups compare differently to white British: Indian males compared to white British males, and black Caribbean males compared to white British males. This will first look at the contributions of the components at a summary level, then examine more closely the contributions of the individual groups of factors. The interpretation of the results is explained in the context of the two examples and can then be applied to comparisons of other ethnic groups.

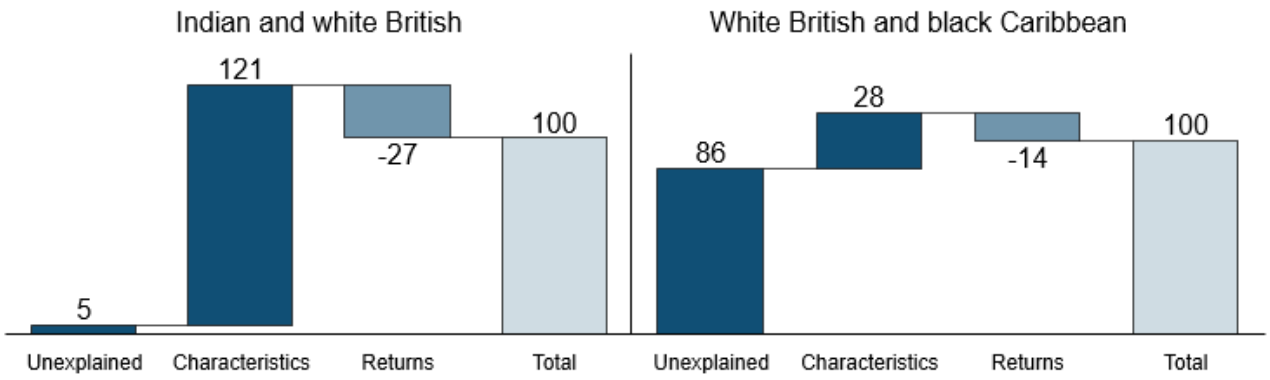
Summary decompositions

For males, the chance of being in a good outcome is around 7 percentage points higher for Indian than white British, and 7 percentage points higher for white British than black Caribbean (see Figure 16).

The decomposition methodology assigns a high outcome group and compares this to the low outcome (reference) group. As Indian males have a higher chance of good outcome than white British males, Indian males are treated as the high outcome group and white British as the reference. White British males have a higher chance of good outcome than black Caribbean males, so for that comparison white British males are the high outcome group.

The results from the first stage of decomposition can be seen in Figure 21 which shows the total percentage contribution from the Unexplained, Characteristics and Returns components for both pairwise comparisons.

Figure 21: Gaps in Good Outcome – component totals



Components with a positive percentage are associated with an increase in the gap; those with a negative percentage are associated with a decrease in the gap.

Source: Authors' analysis using Longitudinal Education Outcomes data

The **Unexplained** component (constant term in the regression) accounts for that that part of the gap in the outcomes of the two ethnic groups which cannot be explained by the socioeconomic, demographic and education data included in the model. This can have either a positive or negative percentage, dependent on whether (overall) unmeasured factors have a positive or negative effect on outcomes (or are associated with an increase or decrease in the gap between groups).

For the Indian and white British males comparison, the **Unexplained** component only makes up 5 per cent of the gap i.e. 95 per cent of the difference in good outcome between these two groups is explained by the socioeconomic, demographic and education variables in the model. This is a positive percentage and therefore provides a small contribution to the higher outcomes seen for Indian males.

The **Characteristics** component accounts for most of the gap between these two groups. In fact, this is over 100 per cent, suggesting that if we only looked the **composition** of their socioeconomic, demographic and education characteristics, good outcome for Indian males would be even higher compared to white British. The negative percentage for the **Returns** component, however, suggests that the behaviours or returns to behaviours for those with the same characteristics are, overall, less likely to result in good outcome for Indian males than white British males. So even though the characteristics of Indian males are typically more favourable for labour market success, the difference in outcomes between these two groups is not as large as we might expect.

In contrast, for white British and black Caribbean males, a large proportion (86 per cent) of the gap in good outcome is not accounted for by the socioeconomic, demographic and education factors in the model (the Unexplained component). Overall, this (positive percentage) contributes to the gap between these two ethnic groups i.e. the higher

chance of good outcome observed for white British males. We can account for the differences that the Characteristics of these two groups make overall and this also leads to a widening of the gap of white British over black Caribbean males. Once we account for the Returns of those with the same characteristics, however, the gap between the two groups is reduced, suggesting that these characteristics are less instrumental for achieving good outcome for white British males.

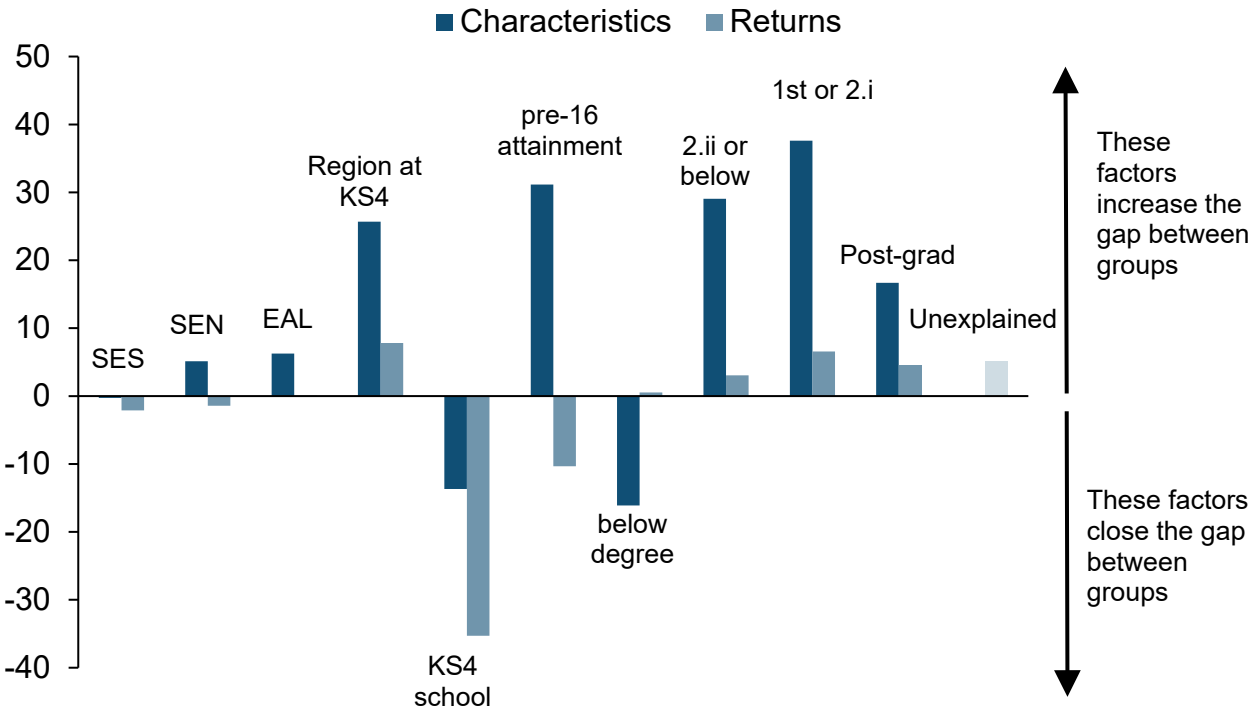
Decomposition: Indian and white British males

The results of the detailed decomposition for Indian and white British males and good outcome are shown in Figure 22 with contributions towards the gap for each factor or group of factors. The further breakdown of the Characteristics and Returns components allows us to better understand which of these are driving observed differences in outcomes.

We saw from the summary decomposition in Figure 21 that the differences in **Characteristics** for these two groups accounts for most of the gap in good outcome. Further decomposition shows us that much of this disparity is explained by differences in education levels across the two ethnic groups. The percentage contribution from a factor can be either positive or negative depending on its association with the outcome variable. The three higher education factor groups, '2.ii or below', '1st or 2.i' and 'Postgraduate' have positive values suggesting that the distributions of these factors positively contribute to the differences between these two groups. Specifically, it implies that if Indian males were given the same distribution of higher education as white British males have, this would lower Indian males' outcomes - resulting in a decrease in the gap between the two groups.

The 'below degree' factor, which includes academic and vocational qualifications below degree level, has a negative value in the Characteristic component, which suggest that the distribution of this factor negatively contributes to the gap between the two groups. Specifically, it implies that giving Indian males the distribution of below degree level achievements as white British males has, this would increase good outcome of Indian males and hence increase the gap between the two groups.

Figure 22: Decomposition analysis of Good Outcome for white British compared to Indian males: percentage of gap explained by each factor or group of factors



Source: Authors' analysis using Longitudinal Education Outcomes data

The region during GCSEs further increases the gap between Indian and white British males, due to the differences in distribution of these ethnic groups across England (higher proportions of the Indian ethnic group in the South and London, lower proportions in the North). The positive percentage in the **Returns** component for region suggests that the behaviours or returns to that behaviour of those in the same region of England positively contribute to the differences between the groups. Specifically, if white British males had the same behaviours or returns to behaviours as Indian males growing up in the same regions, the gap would between the groups would become smaller, as white British would have higher outcomes.

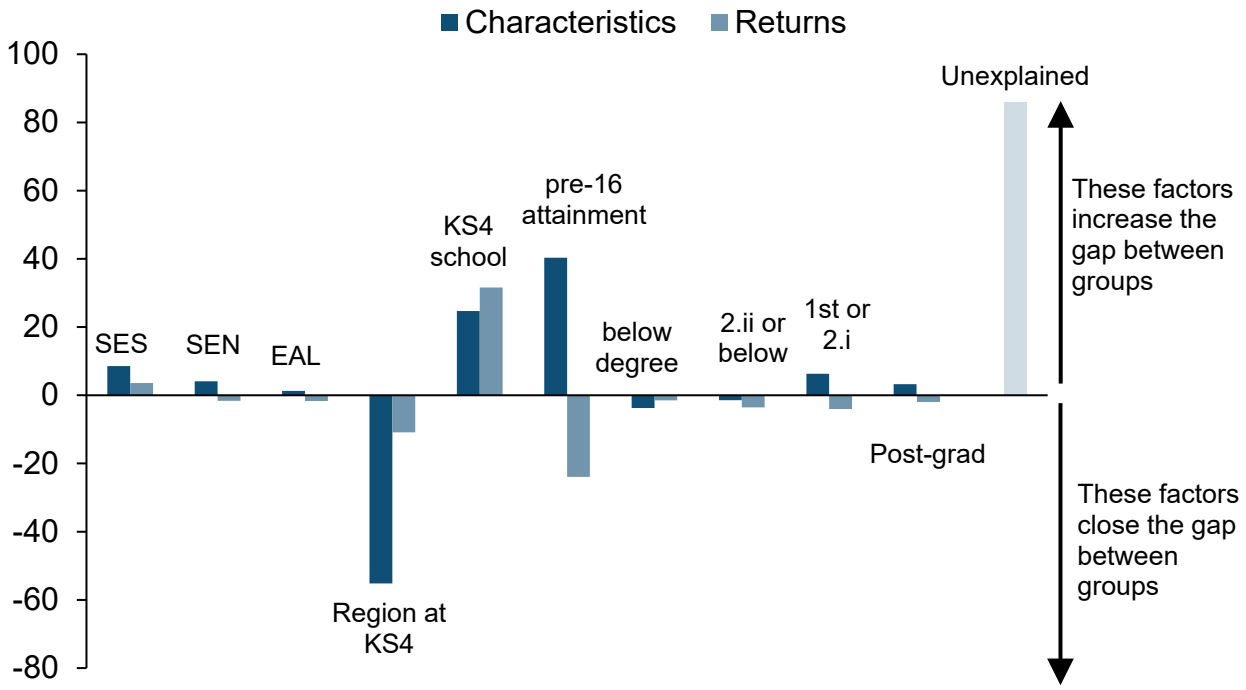
The Returns component (which, overall, reduces the good outcome gap between Indian and white British males) is mostly comprised of pre-16 education factors (pre-16 attainment and factors related to the KS4 school). The large negative percentage for this group of factors indicates that, overall, the behaviours or returns to behaviours of those in similar schools and achieving similar levels in school, while taking into account later educational achievements, reduce the gap in good outcome between Indian and white British males. Specifically, if white British males had the same behaviours or returns to behaviours as Indian males for these factors, the gap would between the groups would become bigger, as white British males would have lower outcomes.

Decomposition: white British and black Caribbean males

Figure 23 shows the detailed decomposition for good outcome for white British and black Caribbean males. In this case, white British is the high outcome group, so positive percentages are associated with better outcomes for white British males.

We saw at the summary level that the socioeconomic, demographic and education controls from administrative data included in the model did not explain most of the difference in good outcome between white British and black Caribbean males, but it is still useful to know what comprises that part of the gap we can account for.

Figure 23: Decomposition analysis of Good Outcome for black Caribbean compared to white British males: percentage of gap explained by each factor or group of factors



Source: Authors' analysis using Longitudinal Education Outcomes data

In contrast to the position for Indian and white British males, in this case very little of the gap is explained by differences in post-16 education levels. Higher proportions of white British males achieve a better class of degree leading to higher outcomes due to the Characteristics component, but this is offset by the behaviours, or returns to behaviours, for those black Caribbean males with degrees.

Higher pre-16 attainment (at KS2 and KS4) for white British males and differences in school factors are associated with increasing the gap between white British and black

Caribbean males. This is offset, however, by the distributions of the two populations across England: the larger proportion of the black Caribbean ethnic group going to school in London, where labour market conditions are better, (or indeed, lower proportions in the North) may account for this.

Socioeconomic status also has a role to play here, with the Characteristics component increasing the gap of white British over black Caribbean (on average, white British individuals have a higher socioeconomic status), and those white British males in the same socioeconomic quintile achieving better Returns than black Caribbean.

All ethnic groups

The previous sections have examined the detail of the comparisons between good outcome in Indian and white British males, and between white British and black Caribbean males. This section presents the findings for good outcome for males from the other ethnic groups of interest, and for poor outcome.

The regression results showed us that comparing socioeconomic, demographic and education factors like for like has varied effects on different ethnic groups compared to white British. Some of these are quite extreme, such as the change from higher good outcome for Chinese males compared to white British to lower good outcome. The decomposition methodology does not seem to perform well in those circumstances, often resulting in quite large percentages for the Characteristics component, the Returns component, or both. This makes direct comparisons of the pairwise decompositions difficult. These issues may be due to the complexity of the differences between ethnic groups. White British, as the majority, is fairly well distributed across most of the variables used in the analysis but the other ethnic groups are relatively small and have quite different distributions. For example, some groups are mainly located in London or the South East and are often located, within these regions, in more deprived areas. With so many factors involved in the decomposition, this means that some breakdowns for ethnic groups other than white British are relatively small, but simplifying or removing these variables takes away from the explanatory power of the model.

This difficulty aside, the decomposition results for males for good outcome and for poor outcome have been presented in table form so that the relative importance of groups of factors can be examined, and the extent to which the socioeconomic, demographic and education factors in the model accounts for the gaps. Those groups for which we can be less confident of the findings have been highlighted in the results tables. Results for good and poor outcome for females are available in the accompanying data tables.

Good outcome

Table 2 shows the full results for all ethnic group pairwise decompositions for males and good outcome. A positive percentage for a factor represents a factor which is associated with increasing the gap between the high outcome and low outcome group. For some pairwise comparisons, the high outcome group is white British (e.g. white British and black Caribbean males), but for others, white British is the low outcome group (e.g. Indian and white British males). To aid interpretation, conditional formatting is used to help identify which ethnic group is associated with better outcomes for each factor, but also to draw attention to the most important factors for each ethnic group, to help enable comparisons to be made between pairwise decompositions.

Blue shading is used for a factor which is driving increased outcomes for white British i.e. increasing the gap where white British is the high outcome group or decreasing the gap where white British is the low outcome group. These can be thought of as drivers of good outcome for white British. **Red** shading is used for a factor which is driving increased outcome for the other ethnic group i.e. increasing the gap where white British is the low outcome group, or decreasing the gap where white British is the high outcome group. These can be thought of as drivers of good outcome for the other ethnic group.

Darker shading indicates a larger percentage. Where there is less confidence in the magnitude of the results (for the reasons mentioned above) the column for that ethnic group has been italicised.

As an example to illustrate this, the columns headed ‘Indian’ give the characteristics and returns components for the decomposition of the good outcome gap between Indian and white British males. Males from the Indian ethnic group are the high outcome group because they have higher proportions in the good outcome category. The characteristics components for ‘Pre-16 attainment’ increases the gap between white British and Indian males by 31.2 percentage points, but white British males experience stronger returns to possessing those qualifications, reducing the gap by 10.3 percentage points.

Table 2: Decomposition analysis of Good Outcome for all ethnic groups compared to white British males: percentage of gap explained by each factor or group of factors

Chars: Characteristics component

Blue shading - factor is driving increased **good** outcome for white British

Red shading - factor is driving increased **good** outcome for the other ethnic group

Italicised - low degree of confidence in magnitude of results

Ethnic group	**Bangla-deshi**	**Bangla-deshi**	**Indian**	**Indian**	**Paki-stani**	**Paki-stani**	***Black African***	***Black African***	**Black Carib-bean**	**Black Carib-bean**	***Chinese***	***Chinese***
Outcome group	**Low**	**Low**	**High**	**High**	**Low**	**Low**	***Low***	***Low***	**Low**	**Low**	***High***	***High***
Component	Chars	Returns	Chars	Returns	Chars	Returns	*Chars*	*Returns*	Chars	Returns	*Chars*	*Returns*
SES	27.7	7.0	-0.3	-2.1	11.0	7.3	*14.6*	*18.6*	8.5	3.6	*-0.5*	*-37.5*
SEN	-0.8	0.9	5.1	-1.4	0.2	-2.3	*-0.7*	*-0.3*	4.1	-1.6	*10.6*	*-7.0*
EAL	40.8	-19.2	6.3	0.1	19.5	-18.2	*19.6*	*-8.1*	1.3	-1.7	*-35.4*	*0.0*
Region at KS4	-82.2	18.4	25.7	7.8	-7.3	13.6	*-84.4*	*-16.3*	-55.2	-10.9	*27.4*	*28.6*
KS4 school	84.3	32.0	-13.7	-35.3	23.9	-12.8	*34.6*	*13.2*	24.7	31.6	*-7.3*	*-57.5*
Pre-16 attainment	25.0	34.1	31.2	-10.3	21.9	-44.0	*22.2*	*-66.3*	40.3	-23.9	*90.4*	*168.7*
Below degree	14.8	7.8	-16.1	0.5	6.7	-5.5	*5.0*	*0.2*	-3.7	-1.5	*-35.0*	*-9.5*
2.ii or below	-20.1	-7.4	29.1	3.1	-11.2	-7.4	*-15.9*	*-25.9*	-1.4	-3.5	*38.5*	*3.1*
1st or 2.i	-19.8	-7.2	37.6	6.6	-6.1	-5.9	*-10.1*	*-17.0*	6.3	-4.0	*54.4*	*6.1*
Postgraduate	-3.2	-7.9	16.7	4.5	-2.4	-8.0	*-5.0*	*-16.5*	3.2	-2.0	*56.0*	*6.2*
Component total	67	58	121	-27	56	-83	*-20*	*-118*	28	-14	*199.1*	*101*
Unexplained		-25		5		127		*238*		86		*-200*

Source: Authors' analysis using Longitudinal Education Outcomes data

The table lets us see some overarching trends: post-16 education is very important and in almost all cases, the proportions and experiences of those with at least degree level qualifications contribute to increased good outcome for the ethnic group being compared to white British. It is more of a mixed picture for level 3 and below qualifications, and in most cases these percentages are relatively low. The region during KS4 generally works in favour of the ethnic group other than white British, in both distributions and behaviours of those in the same region. The exception to this is Bangladeshi males, where the Returns component increases the gap between white British and Bangladeshi good outcome.

Poor outcome

Table 3 shows the full results for all ethnic group pairwise decompositions for males and poor outcome. The higher education factors presented in these tables differ slightly from those for good outcome. Here higher education institution type (for first degree level qualifications) is shown instead of degree classification. The descriptive analysis in Section 2 suggests that there may be bigger disparities across ethnic groups in poor outcome by institution type than for degree classification. It is also interesting to consider different ways to interpret the data.

A positive percentage for a factor represents one which is associated with increasing the gap between the high outcome and low outcome group. **Note that for poor outcome, the high outcome group has a higher chance of poor outcome, therefore this group has poorer labour market outcomes.** For some pairwise comparisons, the high outcome group is white British (e.g. Indian and white British males), but for others, white British is the low outcome group (e.g. white British and Bangladeshi males). As with the good outcome results tables, conditional formatting is used to help identify which ethnic group is associated with higher poor outcome for each factor, but also to draw attention to the most important factors for each ethnic group, to help enable comparisons to be made between pairwise decompositions.

Red shading is used for a factor which is driving increased poor outcome for white British i.e. increasing the gap where white British is the high outcome group or decreasing the gap where white British is the low outcome group. These can be thought of as drivers of poor outcome for white British. **Green** shading is used for a factor which is driving increased poor outcome for the other ethnic group i.e. increasing the gap where white British is the low outcome group, or decreasing the gap where white British is the high outcome group. These can be thought of as drivers of poor outcome for the other ethnic group.

Darker shading indicates a larger percentage. Where there is less confidence in the magnitude of the results (for the reasons mentioned above) the column for that ethnic group has been italicised.

To illustrate this, the columns headed ‘Black Caribbean’ give the characteristics and returns components for the decomposition of the poor outcome gap between black Caribbean and white British males. Males from the black Caribbean ethnic group are the high outcome group because they have higher proportions in the poor outcome category. The characteristics components for ‘Pre-16 attainment’ increases the gap between white British and black Caribbean males by 15.3 percentage points, but white British males experiencing stronger returns to possessing those qualifications further increases the gap by 28.5 percentage points.

The overarching trends are less clear cut than for good outcome, but we can see that region at KS4 is important for most ethnic groups (compared to white British); in most cases working to increase poor outcome for white British rather than the other ethnic group. Looking at higher education institution type, however, in some cases this works to increase white British chances of poor outcome, but in others increases the chances of poor outcome for the other ethnic group.

Table 3: Decomposition analysis of Poor Outcome for all ethnic groups compared to white British males: percentage of gap explained by each factor or group of factors

Chars - characteristic component

Italicised - low degree of confidence in magnitude of results

Green shading - factor is driving increased **poor** outcome for the other ethnic group

Red shading - factor is driving increased **poor** outcome for white British

Ethnic group	**Bangla-deshi**	**Bangla-deshi**	***Indian***	***Indian***	**Paki-stani**	**Paki-stani**	***Black African***	***Black African***	**Black Carib-bean**	**Black Carib-bean**	**Chinese**	**Chinese**
Outcome group	**High**	**High**	***Low***	***Low***	**High**	**High**	***High***	***High***	**High**	**High**	**Low**	**Low**
Component	Chars	Returns	*Chars*	*Returns*	Chars	Returns	*Chars*	*Returns*	Chars	Returns	Chars	Returns
SES	-62.3	37.8	*-0.3*	*-9.5*	-16.2	24.7	*4.7*	*59.6*	2.3	22.6	1.5	-21.2
SEN	5.2	-3.3	*9.0*	*7.4*	0.9	-6.3	*-1.6*	*-9.2*	1.3	-6.0	5.3	-4.1
EAL	86.7	-0.2	*-17.3*	*263.2*	42.4	-0.2	*-16.0*	*-0.1*	0.2	0.0	-8.1	13.6
Region at KS4	-65.4	-66.6	*16.3*	*112.6*	-21.5	-32.7	*44.4*	*-76.9*	2.2	-20.1	7.1	13.2
KS4 school	-74.2	-64.9	*-25.8*	*254.9*	-14.0	-9.7	*18.3*	*-51.8*	8.2	-37.8	-9.6	-28.8
Pre-16 attainment	16.7	91.1	*57.6*	*-860.6*	-12.3	74.5	*-16.3*	*111.9*	15.3	28.5	50.5	-101.7
below degree	-26.4	30.2	*-27.5*	*13.7*	-10.1	14.7	*3.7*	*13.0*	-1.1	4.3	-19.9	-4.0
Post-92 institution	97.7	-2.8	*34.5*	*44.8*	21.0	-2.3	*-69.3*	*-13.2*	-1.7	-5.6	17.1	1.1
Pre-92 institution	9.6	-2.0	*17.9*	*65.5*	9.9	-1.2	*-19.9*	*-4.8*	1.2	-1.6	8.7	0.1
Russell group	2.4	-1.3	*15.2*	*76.8*	0.7	-2.0	*3.4*	*-12.3*	5.5	-4.2	20.1	5.7
Other HE	1.5	-0.1	*0.0*	*2.1*	0.1	0.3	*-1.3*	*-0.4*	-0.1	-0.4	0.0	0.0
Component total	-9	18	*80*	-29	1	60	*-50*	*16*	33	-20	73	*-126*
Unexplained		91		49		39		*134*		87		*154*

Source: Authors' analysis using Longitudinal Education Outcomes data

Discussion

Summary of key findings

The information presented in Section 1 summarises how ethnic groups differ in the socioeconomic status, demographics and education factors which affect labour market outcomes. The descriptive analysis in Section 2 then shows that good and poor labour market outcomes for individuals with each of these factors differ by ethnic group. The combination of different composition and differing outcomes for a factor can be quite profound. For example, the black Caribbean ethnic group has the lowest proportion of school leavers going on to the highest quality higher education institutions, but for those that do, their labour market outcomes are poorer than almost every other ethnic group (lower chance of good outcome, and higher chance of poor outcome).

This suggests there are multiple factors at play for each ethnic group and the regression analysis seeks to shed light on this by comparing ethnic groups on a like for like basis, taking into account socioeconomic, demographic and education differences so we are comparing similar individuals of different ethnicity.

We find that males and females from each ethnic group, except Indian, have a lower chance of a good labour market outcome (employed and upper quartile earner) than white British. Males of all ethnic groups (except Chinese) are more likely than white British to be in a poor outcome (on out-of-work benefits for six months or longer). For females this is more mixed, with some ethnic groups having a higher chance of poor outcome, some lower and some show no significant difference from white British.

We also see that, for some ethnic groups, much of the gap compared to white British is explained by the administrative data, but for others there is a large unexplained part.

The decomposition analysis provides further insight into this, showing that the distribution of factors (i.e. the compositional makeup of each ethnic group) can account for a large part of the gap between white British and each ethnic group, but that the returns to having each of these socioeconomic, demographic and education characteristics differs too – often adding to the gap associated with compositional differences, but sometimes working in the opposite direction and helping to close the gap.

A one size fits all approach to improving or equalising labour market outcomes for all ethnicities will not work: the factors which are important differ for each ethnic group as does their relative importance. Within ethnicities too, there are important gender differences.

The decomposition analysis for the Indian and Chinese ethnic groups in particular suggests that their higher levels of education should result in even better labour market

outcomes compared to white British but differences in other characteristics and the behaviours or experiences of those with those characteristics are detrimental. The white British ethnic group has some of the lowest levels of achievement and so policies which increase achievement generally could result in increased disparity on a like for like basis. Consideration of the other factors involved is therefore also important.

Socioeconomic status could be considered a reason for some of the disparities in labour market outcomes between white British and some ethnic groups with higher levels of deprivation. While we can see that compositional differences in socioeconomic status between white British and ethnic groups other than Chinese and Indian are having some effect, differing behaviours and experiences of those from the same socioeconomic bandings are also associated with differences in outcomes between the groups and are potentially more difficult to address.

The regression and decomposition analyses show that in many cases, particularly for those groups with a lower chance of good outcome than white British, there is a large residual component not measurable in the administrative data and this generally works against the ethnic minority group (or in favour of white British). The analysis accounts for school attainment and school effects, as well as achievement in post-16 education, individual characteristics and geography meaning that the remaining differences are explained by factors other than the aforementioned ones. These could be sociocultural factors (such as family/social or societal circumstances, aspirations and expectations, personal choice) and/or discrimination in the labour market.

This chapter highlights the socioeconomic, demographic and education factors which are most important in understanding the different labour market outcomes observed for ethnic groups. The analysis in this series provides valuable insight into the labour market outcomes of different groups, which is a fundamental part of delivering the government's mission to break down barriers of opportunity for all.

Next steps

Further work is needed to try to determine what some of these remaining factors are in order to fully understand the differences leading to unequal outcomes in the labour market. Including more detailed labour market information, for example experience and occupation, would be one way to investigate labour market discrimination further. Employment spells and earnings (capturing experience) and industry sector worked is available in LEO, but not occupation data. There may be other opportunities as more administrative datasets are linked together. In terms of investigating the importance of sociocultural factors, linking to survey and cohort study data would be the best approach. For example, the annual survey of hours and earnings (ASHE) contains information on working patterns which could be important, especially when looking at gender

differences. Equally, the Longitudinal Study of Young People in England (and other cohort studies) or PISA have information on family circumstances, motivations, wellbeing, parental aspirations etc.

Other follow up analysis such as heterogeneity analysis could be used to investigate whether the patterns hold or differ for sub groups, for example different locations, different socioeconomic status or other demographic variables or different education outcomes.

This work does not seek to answer definitively the question of the relative importance of the socioeconomic, demographic and education factors which are included in the analysis, but instead presents a method which contributes in some way to this understanding. The decomposition methodology shows some potential and may be more useful in ‘simpler’ analyses. As we have seen throughout, the ethnic groups of interest are very different from each other and from the white British majority. The size of this majority means that the breakdowns of each factor for the white British population are still very large, but for many of the other ethnic groups their distributions are uneven which may result in some very small comparisons. Further work could be done to consolidate some of these results (particularly those we have less confidence in) by simplification or removal of some of these factors, or other types of decomposition.

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