

Further self-assessment of undergraduate ethnicity admissions gaps at the University of Cambridge

Executive summary

In 2019 the University of Cambridge conducted a self-assessment of undergraduate admissions (as part of the development of the current Access and Participation Plan). This included examining the collegiate University's current, and recent, admissions position for self-reported ethnicity group, which identified that there are some gaps between the collegiate University's entrant composition and the UK population, indicating that some ethnicity groups and subgroups are under-represented at the University of Cambridge. Following completion of this work the University of Cambridge made a commitment to understand the apparent undergraduate ethnicity admissions gaps better, and this paper summarises the work that has now been conducted to examine this further.

The self-assessment reported in this paper considers a number of different factors that might contribute to ethnicity admissions gaps at the University of Cambridge: application patterns, Key Stage 5 qualification choice, predicted and eventual academic attainment, and choice of undergraduate course. It also examines whether these factors might contribute to the variation in these gaps that is seen for different ethnicity groups.

The analyses conducted have found that a number of ethnicity subgroups are under-represented at the University of Cambridge compared to the 2011 English and Welsh 18 year old population (and remain so when more recent Department for Education data is used – see the addendum): the Bangladeshi and Pakistani subgroups, all three Black ethnicity subgroups (in particular Black Caribbean and Black Other), the Mixed White/Black subgroup, the Arab subgroup and (to a small extent) the White ethnicity group/subgroup. The University of Cambridge received fewer applications than might be expected (based on the national population) from almost all of these ethnicity subgroups, although for many subgroups application rates have been increasing in recent years. Some groups, such as the White ethnicity group, are known to be less likely to apply to any Higher Education institution, however individuals from the Black and Other ethnicity groups in particular appear less likely to apply to the University of Cambridge than to other Higher Education institutions.

In addition, current negative entry rate gaps (that is a lower proportion of applicants entering the collegiate University than would be expected) were identified for the Asian, Black and Other ethnicity groups. The analyses conducted have identified that the negative entry rate gap for the Asian ethnicity group appears to occur as a result of application course choice (these applicants are more likely to apply for more competitive courses than the overall UK-domiciled applicant population). The negative entry rate gap for the Black ethnicity group appears, for A Level takers, to occur predominantly as a result of A Level attainment. However these applicants are also less likely to apply with a standard UK Key Stage 5 qualification profile, and application course choice also contributes. The negative entry rate gap for the Other ethnicity group also appears, for A Level takers, to be contributed to by A Level attainment, but this does not appear to explain the gap entirely and therefore there are likely to be other factors at play too.

This further self-assessment has therefore increased our understanding of the ethnicity admissions gaps for UK-domiciled applicants to the University of Cambridge. These findings have been referred to appropriate committees of the collegiate University for consideration.

Introduction

Last year, as part of the development of the current Access and Participation Plan, the University of Cambridge conducted a self-assessment of undergraduate admissions, examining the collegiate University's current, and recent, admissions position for a number of characteristics. One of the characteristics examined was the ethnicity group, which individuals self-declare as part of their UCAS application (although currently the collegiate University does not receive this information as part of the application, only once the admissions cycle is complete).

The University of Cambridge's 2019 self-assessment identified that whilst there are considerable differences in the proportion of entrants from different ethnicity groups, there are also considerable differences in the relative size of these groups in the UK population.¹ However some gaps indicating under-representation do exist between the collegiate University's entrants and the UK population: in some cases for whole ethnicity groups (e.g. students who identify as Black) and in other cases for particular ethnicity subgroups (e.g. students who identify as Bangladeshi or Pakistani). As part of the self-assessment some initial research was conducted to examine what factors might be underlying these gaps between ethnicity groups. Prior academic attainment was shown to account for some of the differences;² unsurprising given the University of Cambridge's high entry requirements and research we have conducted examining the national attainment context, which found that the composition of the 18 year old UK population attaining A*AA or higher at A Level differs from the overall composition of the 18 year old UK population.^{1:3}

However as the self-assessment published in 2019 stated, differences in A Level attainment do not fully explain the gaps between ethnicity groups. In addition, the 2019 self-assessment focused solely on the differences between ethnicity groups, rather than also examining whether there was variation within single ethnicity groups due to differences between their respective subgroups. Additional analyses have therefore been conducted to look further at why there are differences in both the proportions of entrants, and entry rates, to the University of Cambridge for different ethnicity groups and (where group size permits) their subgroups. This paper summarises the results of these.

Methodology

Population used

Unless otherwise specified, the analyses reported in this paper were conducted using data for all UK-domiciled applicants to the University of Cambridge who applied to enter to an undergraduate course (applicants for the Graduate Course in Medicine were excluded) between the 2012/13 and 2018/19 academic years. Analyses are presented by intended entry year (i.e. 2012 to 2018) for comparability with the reporting format used by the Office for Students. Many of the analyses refer to entrants; these are the group of applicants who were successfully admitted to the collegiate University and took up their place.

¹ Access and Participation Plan 2020-21 to 2024-25
https://www.undergraduate.study.cam.ac.uk/files/publications/university_of_cambridge_app_2020_25.pdf

² R.Sequeira (August 2019) *Self-assessment for the 2020-21 to 2024-25 Access and Participation Plan*
https://www.cao.cam.ac.uk/sites/www.cao.cam.ac.uk/files/2019_entry_rate_self-assessment_paper.pdf

³ Analysis based on 2018 UCAS end of cycle applicant data (calculated for those who attained three or more A Levels)

Characteristics examined

As detailed in the introduction, this paper focuses on ethnicity. Table A lists the reported ethnicities received from UCAS and how these have been grouped for the analyses conducted in this paper. The five ethnicity groups were formulated to match the groups that the Office for Students used in the Access and Participation dataset; this includes the inclusion of individuals reporting their ethnicity as Chinese in the Asian ethnicity group, and the inclusion of those reporting their ethnicity as Gypsy in the White ethnicity group. The majority of the 14 ethnicity subgroups match reported ethnicity description. There are two exceptions to this: individuals reporting their ethnicity as Mixed White/Black African or Mixed White/Black Caribbean have been combined into a 'Mixed White/Black' subgroup in line with the 'Mixed White/Asian' subgroup (this also increases the size of this group, which has benefits for analysis), whilst individuals reporting their ethnicity as Gypsy were combined with those reporting their ethnicity as White at the subgroup level as well as the group level since individuals only had the option to report their ethnicity as Gypsy part way through the time period being analysed.

Table A

The descriptions that applicants to the University of Cambridge (for entry between 2012 and 2018) used to self-identify their ethnicity ('reported ethnicity') and how these have been grouped into 5 ethnicity groups and 14 ethnicity subgroups in the analyses reported in this paper.

Reported ethnicity	Ethnicity group	Ethnicity subgroup	Notes
Bangladeshi	Asian	Bangladeshi (A)	
Chinese		Chinese (A)	
Indian		Indian (A)	
Pakistani		Pakistani (A)	
Other Asian		Asian Other (A)	
Black African	Black	Black African (B)	
Black Caribbean		Black Caribbean (B)	
Other Black		Black Other (B)	
Mixed White/Asian	Mixed	Mixed White/Asian (M)	
Mixed White/Black African		Mixed White/Black (M)	Combined for consistency of the level of reporting (with the Mixed White/Asian subgroup)
Mixed White/Black Caribbean			
Other Mixed		Mixed Other (M)	
Arab	Other	Arab (O)	
Other		Other (O)	
Gypsy	White	White (W)	Combined as the Gypsy subgroup was only introduced during the period examined
White			
Data not provided	Missing (not included in analysis reported in this paper)	N/A	Not included in any of the analysis conducted in this paper (note, in the entry years examined in this paper these individuals account for 4.6% to 6.4% of applicants and 0.4% to 0.9% of entrants to the University)
Information refused			
Unknown			

A minority of applicants to the collegiate University (ranging from 4.6% to 6.4% across the seven entry years examined) and an even smaller minority of entrants (ranging from 0.4% to 0.9% across

the seven entry years examined) have missing ethnicity data – either because the individual refused to provide it, or because the data is otherwise unknown. Examination of the missing data suggests that applicants whose data is unknown appear (in their other characteristics) to be reasonably representative of the applicant population as a whole, whilst those who refused to provide ethnicity information appear to be a distinct subgroup. However since there are between-cycle differences in the proportions of applicants in each missing data category it is not possible to be entirely confident that these categories have been used consistently across the entry years examined; it was therefore decided to exclude all individuals with no reported ethnicity description from the analysis (including those who refused to provide ethnicity information), rather than just those with unknown data.

Factors considered

There are a number of different factors that might contribute to the admissions gaps between different ethnicity groups at the University of Cambridge:

- *application patterns* – patterns of application to the collegiate University (or the Higher Education sector more generally) may not reflect the composition of the UK population;
- *Key Stage 5 qualification choice* – applicants to the University of Cambridge are advised that certain types of Key Stage 5 qualifications, and in some case certain subject choices, are more suitable preparation for study at the collegiate University than others;
- *predicted and eventual academic attainment* – since the University of Cambridge has high academic admissions requirements;
- *choice of undergraduate course* – the typical number of applicants per place varies between courses, meaning that entry to some courses is more competitive than others.

This paper considers each of these in turn.

Analyses conducted

Since the analyses conducted varied depending on the factor being examined, brief descriptions are provided throughout the findings as relevant (these are in the ‘approach’ part of each section).

The small number of UK-domiciled applicants and/or entrants from some of the ethnicity groups or subgroups means that there is potential for considerable volatility in the data. Three year moving average data smoothing has therefore been used to remove the noise between entry years and enable any trends in the data to be identified more easily. Three year moving average data smoothing involves using the mean data from three consecutive entry years for the analysis (e.g. 2016, 2017 and 2018) rather than a single entry year; where data is reported over time data from each entry year will typically be used in more than one data point (e.g. 2016 entry year data will have been used to generate the 2014-16, 2015-17 and the 2016-18 data points).

When analyses were conducted to examine whether different factors might contribute to the admissions gap (and if so to what extent), two different populations were typically examined:

- applicants for entry into the collegiate University between the 2012 and 2018 entry years *combining several years of data increases group size, giving more confidence in the data;*
- applicants for entry into the collegiate University between the 2016 and 2018 entry years *these are the three most recent entry years examined, so provide a picture of the current situation.*

Findings

1 **Ethnicity admissions gaps at the University of Cambridge**

This section details the ethnicity admissions gaps at the University of Cambridge (the sections that follow then consider the extent to which different factors contribute to these gaps). As noted in the introduction these gaps have been described previously; however this paper provides further detail by also considering ethnicity at a more granular level.

It considers the following questions:

- Has the number and proportion of University of Cambridge entrants from different ethnicity groups and subgroups changed in recent years?
- Are there some ethnicity groups and subgroups that are under-represented at the University of Cambridge compared to in the UK population?
- Which ethnicity groups and subgroups have a lower entry rate than the overall entry rate for all University of Cambridge applicants?

1.1 *Has the number and proportion of University of Cambridge entrants from different ethnicity groups and subgroups changed in recent years?*

Approach

The number and proportion of the University of Cambridge's UK-domiciled entrants from different ethnicity groups and subgroups have been reported by entry year (Table 1.1); these proportions have also been summarised graphically using three year moving average data smoothing in order to enable trends in the entrant population to be observed (Figures 1.1a and 1.1b). The Black, Asian and Minority Ethnic (BAME) subgroups are considered both alongside the White ethnicity group and separately, due to considerable differences in scale.

Cautions: The small size of many of the ethnicity subgroups means there is considerable between-year volatility and it is difficult to determine whether year-on-year changes are due to trends or fluctuations. When considering the collegiate University's 'current' position it is therefore advisable to consider the three most recent entry years reported (here 2016 to 2018), not the most recent year in isolation.

Results

Table 1.1

The number and proportion (of those with known ethnicity data) of UK-domiciled undergraduate entrants to the University of Cambridge by self-identified ethnicity group and subgroup for each of the entry years between 2012 and 2018

Percentages reported to 1 d.p. ■ indicates very small group size (<25)

Ethnicity group or subgroup	Entry year													
	2012		2013		2014		2015		2016		2017		2018	
Asian	250	9.8%	242	9.2%	300	11.4%	315	12.1%	320	12.4%	304	11.9%	342	13.6%
Bangladeshi	12	0.5%	9	0.3%	13	0.5%	18	0.7%	10	0.4%	22	0.9%	20	0.8%
Chinese	85	3.3%	62	2.3%	66	2.5%	83	3.2%	89	3.5%	76	3.0%	73	2.9%
Indian	100	3.9%	121	4.6%	148	5.6%	153	5.9%	148	5.7%	134	5.3%	163	6.5%
Pakistani	20	0.8%	17	0.6%	22	0.8%	21	0.8%	36	1.4%	28	1.1%	32	1.3%
Asian Other	33	1.3%	33	1.2%	51	1.9%	40	1.5%	37	1.4%	44	1.7%	54	2.2%
Black	32	1.3%	28	1.1%	40	1.5%	41	1.6%	38	1.5%	58	2.3%	60	2.4%
Black African	21	0.8%	19	0.7%	38	1.4%	28	1.1%	30	1.2%	50	2.0%	52	2.1%
Black Caribbean	8	0.3%	9	0.3%	2	0.1%	12	0.5%	5	0.2%	6	0.2%	7	0.3%
Black Other	3	0.1%	0	0.0%	0	0.0%	1	0.0%	3	0.1%	2	0.1%	1	0.0%
Mixed	127	5.0%	142	5.4%	155	5.9%	146	5.6%	160	6.2%	170	6.7%	158	6.3%
Mixed White/Asian	78	3.1%	88	3.3%	95	3.6%	79	3.0%	87	3.4%	99	3.9%	95	3.8%
Mixed White/Black	13	0.5%	21	0.8%	20	0.8%	25	1.0%	27	1.0%	26	1.0%	22	0.9%
Mixed Other	36	1.4%	33	1.2%	40	1.5%	42	1.6%	46	1.8%	45	1.8%	41	1.6%
Other	33	1.3%	26	1.0%	25	1.0%	42	1.6%	39	1.5%	25	1.0%	32	1.3%
Arab	2	0.1%	8	0.3%	5	0.2%	10	0.4%	10	0.4%	8	0.3%	7	0.3%
Other	31	1.2%	18	0.7%	20	0.8%	32	1.2%	29	1.1%	17	0.7%	25	1.0%
White	2105	82.6%	2205	83.4%	2110	80.2%	2054	79.1%	2021	78.4%	1988	78.1%	1916	76.4%
All with known ethnicity data	2547	100.0%	2643	100.0%	2630	100.0%	2598	100.0%	2578	100.0%	2545	100.0%	2508	100.0%

Figure 1.1a

The three year moving average proportions of UK-domiciled undergraduate entrants (with known ethnicity data) to the University of Cambridge in different entry year periods, by self-identified ethnicity group

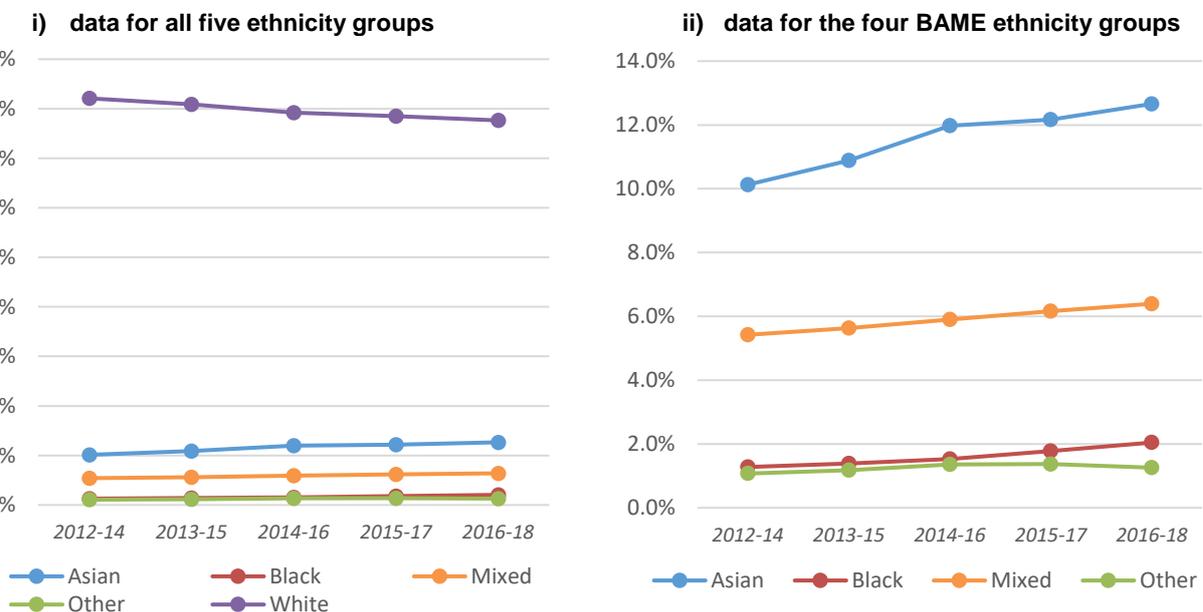
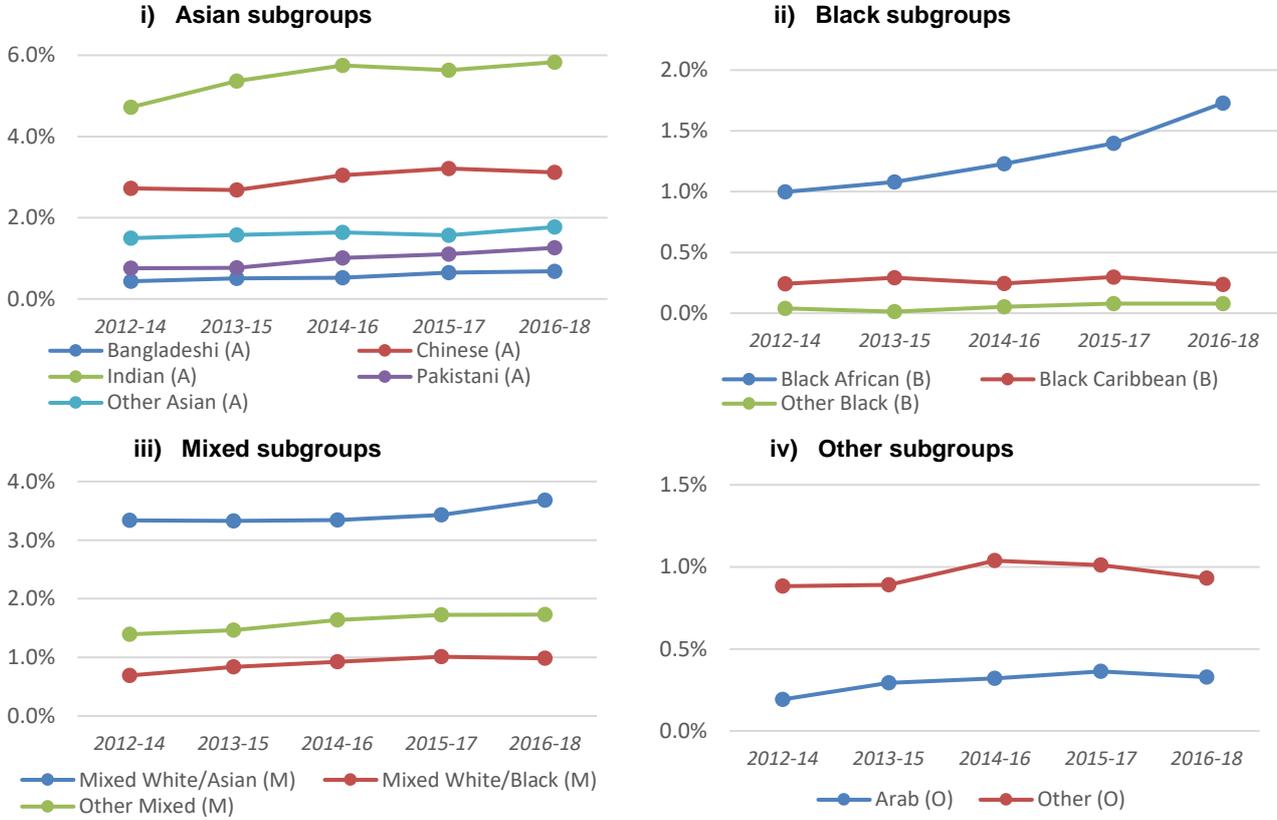


Figure 1.1b

The three year moving average proportions of UK-domiciled undergraduate entrants (with known ethnicity data) to the University of Cambridge in different entry year periods, by self-identified ethnicity subgroup



Interpretation

There are differences in both the number and the proportion of the University of Cambridge’s entrants from different ethnicity groups and subgroups. There have been changes with time: most notably the proportions of entrants who self-identify as Asian, Black or Mixed has been increasing, whilst the proportion of entrants who self-identify as White has been decreasing. However these ethnicity group changes may, in some cases, be being driven by greater changes in some ethnicity subgroups than others: for example the increase in entrants who self-identify as Black appears to have been almost entirely driven by an increase in entrants from the Black African subgroup.



1.2 *Are there some ethnicity groups and subgroups that are under-represented at the University of Cambridge compared to in the UK population?*

Approach

Interpreting whether differences in the number and proportions of entrants from different ethnicity groups and subgroups (as reported in Section 1.1) are due to ‘true’ admissions gaps that reflect under-representation of these groups at the University of Cambridge, as opposed to being a reflection of the UK population composition, requires University of Cambridge data to be considered alongside national data.

‘Observed to expected entrant ratios’ were calculated for each ethnicity group and subgroup based on both collegiate University and national data (Table 1.2). Previous analysis to identify under-represented ethnicity groups at the University of Cambridge used the 18 year old UK population estimates for ethnicity that were included in the Office for Students’ Access and Participation dataset (these estimates were derived from 2011 Census data for the four UK countries).⁴ However the Access and Participation dataset does not contain more granular breakdowns of the UK population by ethnicity subgroup and therefore the analyses reported in this paper are based on a different population: 18 and 19 year olds in England and Wales in the 2011 Census.⁵

Observed to expected entrant ratios

$$\text{Observed to expected entrant ratio for Group A} = \frac{\text{Number of University of Cambridge entrants from Group A}}{\text{Total number of University of Cambridge entrants} \times \% \text{ of Group A in national population}}$$

An observed to expected application ratio of 1.00 indicates that this group make up the same proportion of both populations, and thus their rate of entry is as expected.

Where the observed to expected entrant ratio is greater than 1.00 this indicates over-representation of the group (or subgroup) at the University of Cambridge compared to the national population, although if the group now account for a greater proportion of the national population than in 2011 this may not be ‘true’ over-representation. Where the ratio is less than 1.00 this indicates under-representation, although if the group now account for a lower proportion of the national population than in 2011 this may not be ‘true’ under-representation.

Cautions: It is important to note that all national ethnicity data is based on the 2011 Census and has not been updated since; it is therefore possible that the composition of the national population has changed in the intervening years. Caution is therefore required when interpreting the data: apparent differences between the composition of the University of Cambridge entrant population and the composition of the national population could be either exaggerated or masked if there have been recent changes in the size of particular ethnicity groups or subgroups nationally.

⁴ Access and Participation Plan 2020-21 to 2024-25
https://www.undergraduate.study.cam.ac.uk/files/publications/university_of_cambridge_app_2020_25.pdf

⁵ Only the 2011 England and Wales Census was considered here, since differences in the ethnicity groups included in the Census questions for Scotland and Northern Ireland mean that combining the data to examine these is not ideal. Since England and Wales account for the majority of the University of Cambridge’s UK-domiciled applicants and entrants this is likely to be a very reasonable representation of the applicable population.

Results

Table 1.2

A comparison of the national population (the 18 and 19 year old English and Welsh population at the time of the 2011 Census) and the University of Cambridge entrant population (in the seven entry years between 2012 and 2018, or the three most recent of those), by ethnicity group and subgroup

Percentages reported to 1 d.p; Observed to expected entrant ratios reported to 2 d.p

Ethnicity group or subgroup	% of the 18 and 19 year old England and Wales population in 2011 (national data)	% of UK-domiciled University of Cambridge entrants from the group		Ratio of the number of entrants observed to the number of entrants expected (based on the national data)	
		2012-2018 entry years	2016-2018 entry years	2012-2018 entry years	2016-2018 entry years
Asian	8.9%	11.5%	12.7%	1.29	1.42
Bangladeshi	1.0%	0.6%	0.7%	0.56	0.66
Chinese	1.2%	3.0%	3.1%	2.40	2.53
Indian	2.5%	5.4%	5.8%	2.15	2.35
Pakistani	2.5%	1.0%	1.3%	0.39	0.50
Asian Other	1.6%	1.6%	1.8%	0.98	1.07
Black	3.9%	1.6%	2.0%	0.42	0.52
Black African	2.2%	1.3%	1.7%	0.59	0.77
Black Caribbean	1.1%	0.3%	0.2%	0.25	0.21
Black Other	0.6%	0.1%	0.1%	0.09	0.13
Mixed	3.5%	5.9%	6.4%	1.68	1.84
Mixed White/Asian	0.9%	3.4%	3.7%	3.70	3.96
Mixed White/Black	1.9%	0.9%	1.0%	0.46	0.53
Mixed Other	0.7%	1.6%	1.7%	2.30	2.54
Other	1.2%	1.2%	1.3%	1.06	1.09
Arab	0.5%	0.3%	0.3%	0.54	0.63
Other	0.6%	1.0%	0.9%	1.49	1.46
White	82.5%	79.8%	77.6%	0.97	0.94

Interpretation

A number of ethnicity groups and subgroups are under-represented in the University of Cambridge entrant population compared to the national population of English and Welsh 18 and 19 year olds (at the time of the 2011 Census). The Black ethnicity group is considerably under-represented (representation has increased in recent entry years, but this group remain notably under-represented), although the White ethnicity group is also becoming increasingly under-represented

However when ethnicity subgroups are considered it is apparent that there is a mixed picture within many of the ethnicity groups. For example whilst the Asian ethnicity group appears increasingly over-represented this is predominantly due to a far larger number of entrants who identify as Indian or Chinese than might be expected based on the national population composition – individuals who identify as Bangladeshi or Pakistani are actually under-represented at the collegiate University. Similar variation is seen within the Mixed and Other ethnicity groups. All subgroups in the Black ethnicity group are under-represented, but whilst the extent of this has reduced considerably for the Black African subgroup in recent entry years, it has not for the other two Black ethnicity subgroups.

For most of the under-represented BAME subgroups the degree of under-representation appears to have reduced in recent years, but considerable differences nonetheless remain. The most notably under-represented ethnicity subgroups are Bangladeshi and Pakistani, all three Black subgroups (but especially Black Caribbean and Black Other), Mixed White/Black, and Arab.



1.3 Which ethnicity groups and subgroups have a lower entry rate than the overall entry rate for all University of Cambridge applicants?

Approach

The differences in the size of different ethnicity groups and subgroups within the national population mean that the University of Cambridge can expect to receive fewer applications from some groups/subgroups than others, and subsequently to admit fewer students from these groups/subgroups. Examining the number, and proportion, of entrants to the collegiate University in isolation is therefore of limited value. Examining entry rate (that is the proportion of applicants from a particular group that entered the University of Cambridge) allows variations in application rate to be accounted for, and thus subsequent variation in entrant group sizes that might well be expected, even if that group is not over or under-represented at the collegiate University.

$$\text{Entry rate for Group A} = \frac{\text{Number of University of Cambridge entrants from Group A}}{\text{Number of University of Cambridge applicants from Group A}}$$

The entry rate for each ethnicity group and subgroup has been calculated for each entry year (Table 1.3). Mean entry rates have been calculated for each three year period between 2012 and 2018, and these are reported graphically (Figures 1.3a and 1.3b). Entry rates for specific ethnicity groups or subgroups can then be compared to the ‘overall’ entry rate, in this paper this is the entry rate for all UK-domiciled undergraduate applicants to the University of Cambridge who have known ethnicity data. This enables the identification of entry rate admissions gaps – that is specific groups of applicants being more or less likely to enter the collegiate University than would be expected for the overall applicant population. This paper focuses on the negative entry rate gaps observed, where applicants from particular ethnicity groups or subgroups are less likely to be admitted than the overall applicant population.

Cautions: The small group sizes for many of the ethnicity subgroups means that there is considerable between-year volatility. Identification of ‘current’ ethnicity entry rate gaps at the collegiate University’s is therefore based on data from the three most recent entry years reported in this paper (2016 to 2018), not the most recent year in isolation. Even then, small group sizes mean that there is considerable between-year fluctuation in entry rate, and therefore identifying whether changes are the result of a fluctuations or a ‘true’ trend is challenging: mean entry rates should be considered alongside the by-year entry rates, and any interpretations made with suitable caution and caveats.



Results

Table 1.3

The number of UK-domiciled undergraduate applicants to the University of Cambridge, and their entry rate (that is the percentage of those applicants who entered the collegiate University) by self-identified ethnicity group and subgroup, for each of the entry years between 2012 and 2018

Percentages reported to 1 d.p. ■ indicates small applicant group size (<100)

Ethnicity group or subgroup	Entry year													
	2012		2013		2014		2015		2016		2017		2018	
Asian	1139	21.9%	1116	21.7%	1154	26.0%	1183	26.6%	1184	27.0%	1390	21.9%	1695	20.2%
Bangladeshi	74	16.2%	64	14.1%	59	22.0%	81	22.2%	70	14.3%	111	19.8%	155	12.9%
Chinese	296	28.7%	273	22.7%	274	24.1%	257	32.3%	272	32.7%	266	28.6%	283	25.8%
Indian	437	22.9%	435	27.8%	485	30.5%	515	29.7%	488	30.3%	553	24.2%	697	23.4%
Pakistani	128	15.6%	128	13.3%	144	15.3%	137	15.3%	141	25.5%	208	13.5%	240	13.3%
Asian Other	204	16.2%	216	15.3%	192	26.6%	193	20.7%	213	17.4%	252	17.5%	320	16.9%
Black	225	14.2%	217	12.9%	252	15.9%	254	16.1%	279	13.6%	315	18.4%	435	13.8%
Black African	175	12.0%	173	11.0%	211	18.0%	194	14.4%	209	14.4%	257	19.5%	373	13.9%
Black Caribbean	33	24.2%	36	25.0%	30	6.7%	51	23.5%	50	10.0%	47	12.8%	37	18.9%
Black Other	17	17.6%	8	0.0%	11	0.0%	9	11.1%	20	15.0%	11	18.2%	25	4.0%
Mixed	442	28.7%	537	26.4%	551	28.1%	542	26.9%	535	29.9%	662	25.7%	690	22.9%
Mixed White/Asian	234	33.3%	296	29.7%	315	30.2%	283	27.9%	287	30.3%	351	28.2%	374	5.4%
Mixed White/Black	82	15.9%	115	18.3%	99	20.2%	114	21.9%	107	25.2%	140	18.6%	137	16.1%
Mixed Other	126	28.6%	126	26.2%	137	29.2%	145	29.0%	141	32.6%	171	26.3%	179	22.9%
Other	141	23.4%	114	22.8%	126	19.8%	139	30.2%	135	28.9%	157	15.9%	186	17.2%
Arab	39	5.1%	42	19.0%	36	13.9%	38	26.3%	44	22.7%	58	13.8%	59	11.9%
Other	102	30.4%	72	25.0%	90	22.2%	101	31.7%	91	31.9%	99	17.2%	127	19.7%
White	7041	29.9%	7510	29.4%	7582	27.8%	7106	28.9%	7142	28.3%	7529	26.4%	7670	25.0%
All with known ethnicity data	8988	28.3%	9494	27.8%	9665	27.2%	9224	28.2%	9275	27.8%	10053	25.3%	10676	23.5%

Figure 1.3a

The three year moving average entry rates for UK-domiciled undergraduate applicants to the University of Cambridge in different entry year periods, by self-identified ethnicity group

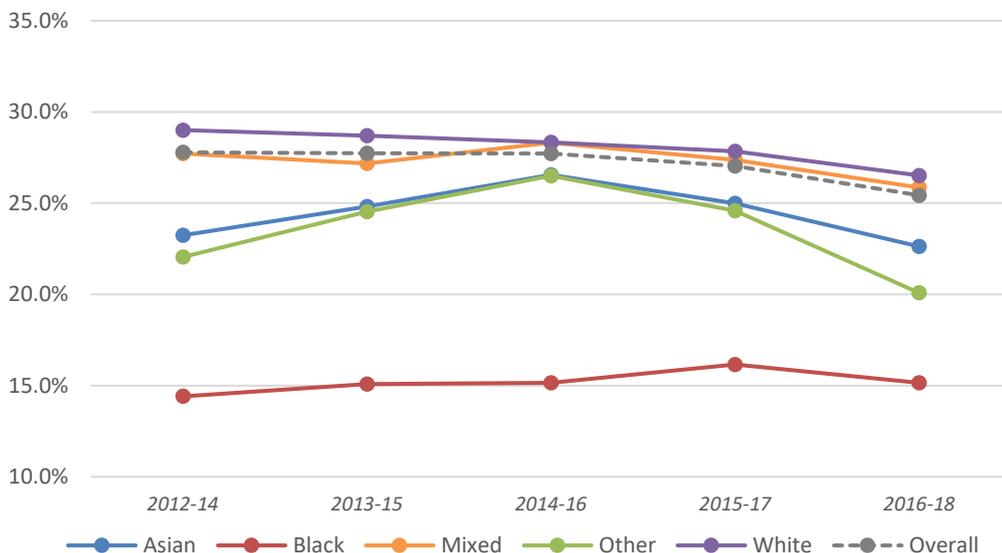
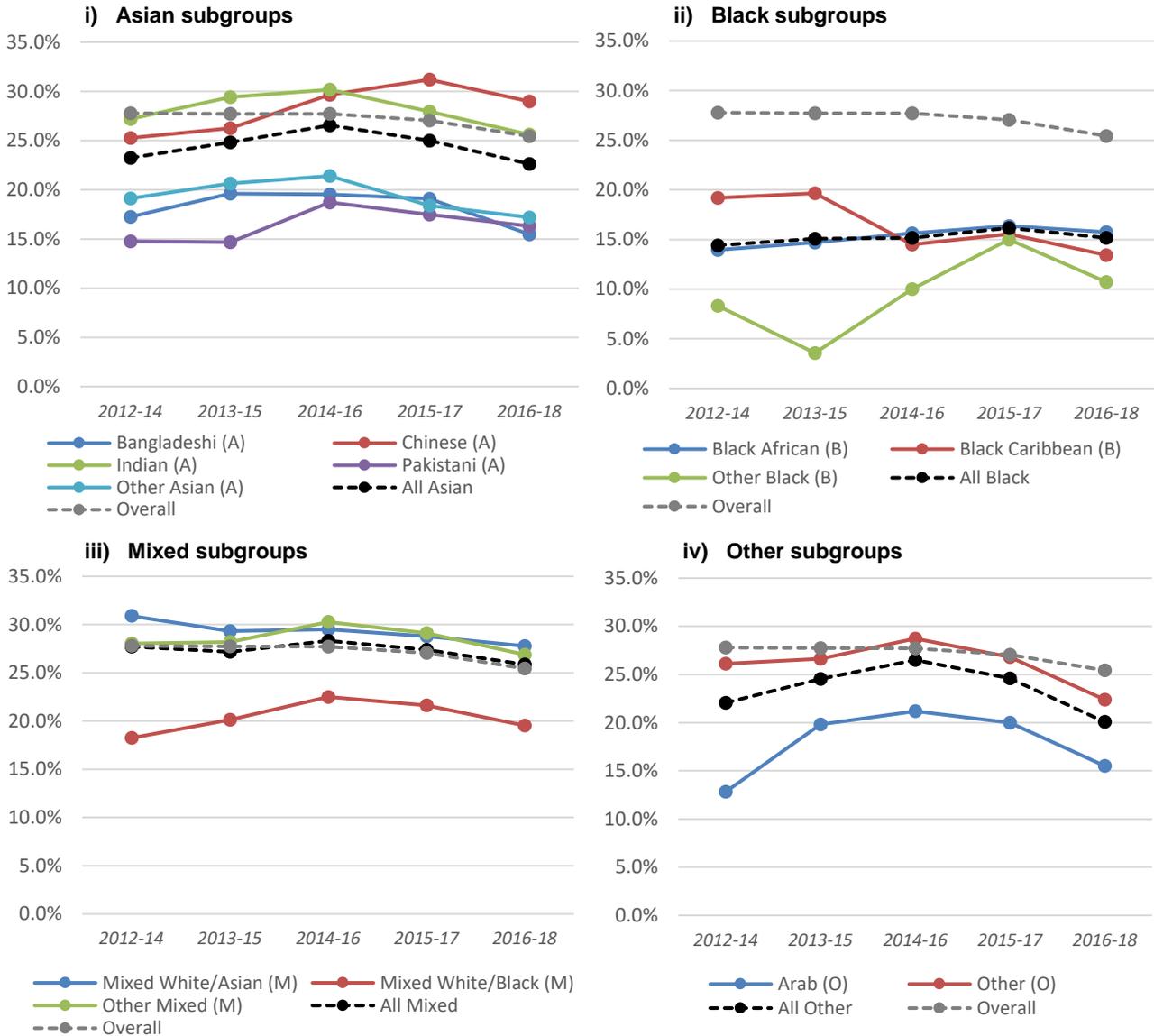


Figure 1.3b

The three year moving average entry rates for UK-domiciled undergraduate applicants to the University of Cambridge in different entry year periods, by self-identified ethnicity subgroup



Interpretation

There are negative entry rate gaps for University of Cambridge applicants who identify as being from the Asian, Black and Other ethnicity groups – that is a lower percentage of applicants from these groups went on to enter the collegiate University than would be expected based on the number of applicants from these groups who applied, and the overall entry rate for all UK-domiciled applicants. Across the 2016 to 2018 entry years the negative entry rate gaps for these groups were 2.8%, 10.3% and 5.3% respectively. Whilst the entry rate gap has consistently been largest for the Black ethnicity group, it appears to have started to narrow in the most recent entry years (although widened again in the 2018 entry year). By contrast the entry rate gaps for both the Asian and Other ethnicity groups, despite narrowing during the mid-2010 entry years, have most recently widened again.

Evaluating whether entry rate gaps exist for the ethnicity subgroups is more challenging, since the University of Cambridge has had very few applicants from some of these subgroups. However for most subgroups the entry rate gap has been consistently positive, negative or similar to the overall

applicant entry, even if its magnitude has varied considerably between entry years. There are negative entry rate gaps for University of Cambridge applicants from a number of subgroups: Bangladeshi, Pakistani, Asian Other, all three Black ethnicity subgroups, Mixed White/Black, and Arab.

For three of the ethnicity groups (Asian, Mixed and Other) there are considerable differences in entry rate for different subgroups within the group itself. For example within the Asian ethnicity group there was a positive entry rate gap (in the most recent entry years examined, 2016 to 2018) for applicants who identified as Chinese, a very similar entry rate to overall for applicants who identified as Indian, and negative entry rate gaps for the applicants who identified as Bangladeshi, Pakistani or Asian Other. Likewise whilst overall there has been a negligible entry rate gap for applicants who identified as Mixed or Other ethnicities, further investigation has shown that there has consistently been a negative entry rate gap for applicants who identify as Mixed White/Black or Arab.

2 Evaluating whether differences in patterns of application contribute to ethnicity admissions gaps at the University of Cambridge

This paper predominantly focuses on examining what factors underlie the negative ethnicity entry rate gaps observed in Section 1.3, since these gaps indicate that differences during the University of Cambridge admissions process (Figure 2) are contributing to the under-representation of the ethnicity groups and subgroups described in Section 1.2. However entry rate cannot be considered in isolation: even if the entry rate for a particular ethnicity group equals the entry rate for all UK-domiciled applicants, if fewer applicants from that group applied to the University of Cambridge than would be expected (based on the composition of the national population) then that ethnicity group will nonetheless be under-represented at the collegiate University.

Figure 2

The typical pathway for entry to an undergraduate course at the University of Cambridge



There are limitations to using the national population composition alone to determine the proportion of applicants that the University of Cambridge might expect to receive from each ethnicity group – not all individuals will choose to enter Higher Education, and when seeking to increase applications from under-represented groups different approaches may be effective for individuals who want to enter Higher Education but choose not to apply to the University of Cambridge and individuals who have chosen not to enter Higher Education. Considering the ethnicity composition of the collegiate University in the context of the national population who choose to apply to enter Higher Education is therefore also important.

This section therefore considers the following:

- How the ethnicity composition of the University of Cambridge applicant population compares to the ethnicity composition of the national population.
- How the ethnicity composition of the University of Cambridge applicant population compares to the ethnicity composition of the national population who apply to enter Higher Education.



2.1 *How the ethnicity composition of the University of Cambridge applicant population compares to the ethnicity composition of the national population*

Approach

Examining the extent to which the ethnicity composition of applicants to the collegiate University matches the ethnicity composition of the national population enables the identification of ethnicity groups and subgroups from which the University of Cambridge received fewer applications than might be expected, which could result in these groups being under-represented (whilst the collegiate University does not admit groups of students in the same proportions they applied, a smaller than expected proportion of applicants from a particular group means that there will be fewer individuals in consideration to be made an offer and admitted).

In order to identify ethnicity groups and subgroups less likely to apply to the University of Cambridge (based on their compositions in the national population) ‘observed to expected application ratios’ were calculated for each group and subgroup (Table 2.1). This used both collegiate University and national data. These analyses used the same source of national data as was used to determine under-representation in Section 1.2 – the population of 18 and 19 year olds in England and Wales in the 2011 Census.⁶

Cautions: It is important to note that all national ethnicity data is based on the 2011 Census and has not been updated since; it is therefore possible that the composition of the national population has changed in the intervening years. Caution is therefore required when interpreting the data: apparent differences between the composition of the University of Cambridge applicant population and the composition of the national population could be either exaggerated or masked if there have been recent changes in the size of particular ethnicity groups or subgroups nationally.

Observed to expected application ratios

$$\text{Observed to expected application ratio for Group A} = \frac{\text{Number of University of Cambridge applicants from Group A}}{\text{Total number of University of Cambridge applicants} \times \% \text{ of Group A in national population}}$$

An observed to expected application ratio of 1.00 indicates that this group make up the same proportion of both populations, and thus their rate of application is as expected.

A ratio **less than 1.00 indicates fewer applications** from this group than might be expected based on the population composition (which may be described here as a lower than expected application rate), whilst a ratio **more than 1.00 indicates more applications** from this group than expected (a higher than expected application rate).

⁶ Only the 2011 England and Wales Census was considered here, since differences in the ethnicity groups included in the Census questions for Scotland and Northern Ireland mean that combining the data to examine these is not ideal. Since England and Wales account for the majority of the University of Cambridge’s UK-domiciled applicants and entrants this is likely to be a very reasonable representation of the applicable population.

Results

Table 2.1

A comparison of the national population (the 18 and 19 year old English and Welsh population at the time of the 2011 Census) and the University of Cambridge applicant population (in the seven entry years between 2012 and 2018, or the three most recent of those), by ethnicity group and subgroup

Percentages reported to 1 d.p; Observed to expected application ratios reported to 2 d.p

Ethnicity group or subgroup	% of the 18 and 19 year old England and Wales population in 2011 (national data)	% of UK-domiciled University of Cambridge applicants from the group		Ratio of the number of applicants observed to the number of applicants expected (based on the national data)	
		2012-2018 entry years	2016-2018 entry years	2012-2018 entry years	2016-2018 entry years
Asian	8.9%	13.2%	14.2%	1.47	1.60
Bangladeshi	1.0%	0.9%	1.1%	0.88	1.08
Chinese	1.2%	2.9%	2.7%	2.31	2.22
Indian	2.5%	5.4%	5.8%	2.16	2.33
Pakistani	2.5%	1.7%	2.0%	0.66	0.78
Asian Other	1.6%	2.4%	2.6%	1.43	1.59
Black	3.9%	2.9%	3.4%	0.75	0.87
Black African	2.2%	2.4%	2.8%	1.05	1.25
Black Caribbean	1.1%	0.4%	0.4%	0.38	0.41
Black Other	0.6%	0.1%	0.2%	0.26	0.32
Mixed	3.5%	5.9%	6.3%	1.69	1.81
Mixed White/Asian	0.9%	3.2%	3.4%	3.42	3.63
Mixed White/Black	1.9%	1.2%	1.3%	0.63	0.68
Mixed Other	0.7%	1.5%	1.6%	2.23	2.40
Other	1.2%	1.5%	1.6%	1.28	1.38
Arab	0.5%	0.5%	0.5%	0.91	1.04
Other	0.6%	1.0%	1.1%	1.58	1.65
White	82.5%	76.6%	74.5%	0.93	0.90

Interpretation

In the seven entry years examined (2012 to 2018) the University of Cambridge received fewer applications than might be expected (compared to the national population of 18 and 19 year olds, as it was in 2011) from individuals who identify as Black or White, and more than might be expected from individuals who identify as Asian, Mixed or Other.

When this is examined at an ethnicity subgroup level the picture appears more complex - the collegiate University received fewer applications than might be expected from a number of ethnicity subgroups, many of these within ethnicity groups that, overall, had a higher application rate than might be expected. Over the seven year period examined the collegiate University received fewer applications than might be expected from the Bangladeshi, Pakistani, Black Caribbean and Black Other, Mixed White/Black and Arab subgroups, and the White ethnicity group. Care has to be taken when interpreting trends with time, since it is likely that at least some of the differences seen between the data for the full range of entry years examined (2012 to 2018) and the three most recent of these (2016 to 2018) are due to changes in the national population composition since the 2011 Census. However it appears that, be it due to population changes or application pattern changes, in recent years the proportions of applicants to the collegiate University from Bangladeshi and Arab subgroups may have become more representative of the 2011 Census population than they were previously.

2.2 *How the ethnicity composition of the University of Cambridge applicant population compares to the ethnicity composition of the national population who apply to enter Higher Education*

Approach

In order to identify ethnicity groups where individuals choosing to apply to the University of Cambridge were less likely to apply to the collegiate University than another Higher Education institution observed to expected application ratios were calculated for each group based on UCAS national applicant data (Table 2.2), using the same method as detailed in Section 2.1. UCAS applicant data is available on a cycle-by-cycle basis and therefore, unlike the 2011 Census data, will reflect changes in the UK population composition as well as changes in the application behaviour of different groups.

Results

Table 2.2

A comparison of the UK Higher Education applicant population (for courses recruited via UCAS) and the University of Cambridge applicant population (in the seven entry years between 2012 and 2018, or the three most recent of those), by ethnicity group

Percentages reported to 1 d.p; Observed to expected application ratios reported to 2 d.p

Ethnicity group	% of the UCAS applicant population from the group (national data)		% of UK-domiciled University of Cambridge applicants from the group		Ratio of the number of applicants observed to the number of applicants expected (based on the national data)	
	2012-2018 entry years	2016-2018 entry years	2012-2018 entry years	2016-2018 entry years	2012-2018 entry years	2016-2018 entry years
Asian	11.1%	11.7%	13.2%	14.2%	1.18	1.21
Black	8.2%	8.2%	2.9%	3.4%	0.36	0.42
Mixed	4.1%	4.4%	5.9%	6.3%	1.44	1.43
Other	1.6%	1.8%	1.5%	1.6%	0.92	0.90
White	75.0%	73.9%	76.6%	74.5%	1.02	1.01

Interpretation

When the University of Cambridge applicant population is compared to the UCAS applicant population, rather than the national population of 18 and 19 year olds, it appears that the lower than expected application rate for individuals from the White ethnicity group is not specific to the University of Cambridge. This could suggest that individuals who identify as White may be less likely to choose to enter Higher Education than individuals who identify as BAME, although it could also indicate that there have been considerable changes in the UK's ethnicity composition since the 2011 Census.

Individuals from the Black ethnicity group have a much lower observed to expected ratio when using UCAS data indicating that, despite the relatively large proportion of this group who apply to enter Higher Education (compared to their proportion in the 2011 Census data) most are, for as yet unknown reasons, not choosing to apply the University of Cambridge. Individuals from the Other ethnicity group also appear less likely to apply to the University of Cambridge than to Higher Education in general. Further investigation would be needed to examine whether these differences reflect self-selection (for example on the basis of qualifications offered or attained) or if other factors are at play.

3 Evaluating whether differences in Key Stage 5 qualification choice contribute to ethnicity admissions gaps at the University of Cambridge

Having examined how differences in application pattern may contribute to the under-representation of certain ethnicity groups and subgroups at the University of Cambridge, the rest of the analyses reported in this paper focus on examining whether a number of factors underlie the ethnicity entry rate gaps observed because, as Section 1.3 described, it appears that (regardless of the number of individuals applying) applicants from some ethnicity groups and subgroups are less likely to be admitted to the collegiate University than applicants from other groups.

This section examines whether differences in Key Stage 5 qualifications taken contribute to the ethnicity entry rate gaps at the University of Cambridge. The majority of UK-domiciled entrants to the University of Cambridge have one of the following Key Stage 5 qualification profiles:

- three or more A Levels (excluding General Studies or Critical Thinking);
- a combination of A Levels and Pre U (in at least three subjects);
- International Baccalaureate;
- Advanced Highers;
- another combination of the above.

For the purposes of this paper the qualification profiles listed above are described as ‘standard UK Key Stage 5 qualification profiles’ (standard for the collegiate University).

Whether differences in Key Stage 5 qualifications taken contribute to the ethnicity entry rate gaps at the University of Cambridge is examined by considering the following questions:

- Does not having a standard UK Key Stage 5 qualification profile contribute to the ethnicity entry rate gaps at the University of Cambridge?
- Does Key Stage 5 subject choice contribute to the ethnicity entry rate gaps at the University of Cambridge? (this analysis is restricted to A Levels)

3.1 *Does not having a standard UK Key Stage 5 qualification profile contribute to the ethnicity entry rate gaps at the University of Cambridge?*

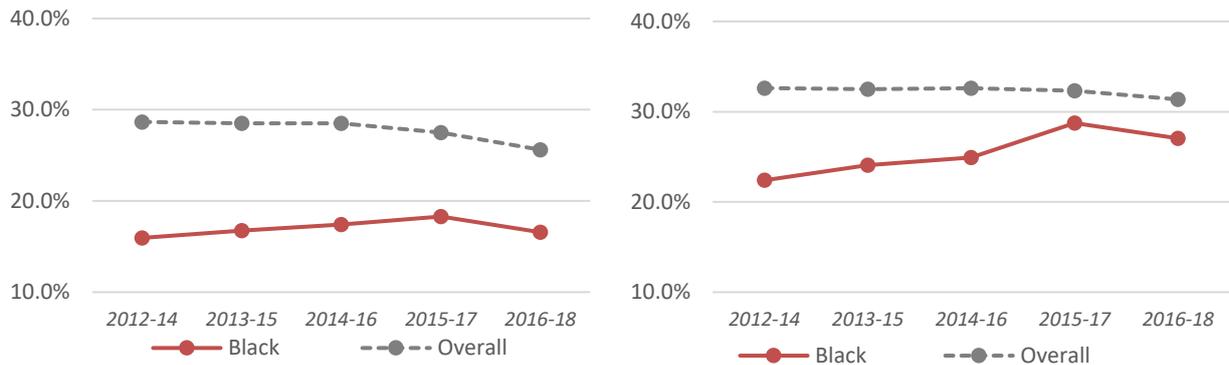
Approach

The proportions of UK-domiciled University of Cambridge applicants who did not have standard UK Key Stage 5 qualifications are reported by ethnicity group and subgroups (Table 3.1a). ‘Adjusted’ entry rates have been recalculated for the UK-domiciled applicant population with standard UK Key Stage 5 qualification profiles only (Figure 3.1), in order to examine the impact that having a non-standard qualification profile has on UK-domiciled applicants’ ethnicity entry rate gaps (by comparing the entry rates for the whole UK-domiciled University of Cambridge applicant population with the ‘adjusted’ entry rates). The between-ethnicity group differences in the types of Key Stage 5 qualifications taken by those University of Cambridge applicants with standard UK Key Stage 5 entry profiles have also been examined (Table 3.1b).

Comparing original and adjusted entry rates

The impact that a factor is having on entry rate gaps can be evaluated by comparing the size of the entry rate gap for all applicants (the 'original' entry rate gap) with the entry rate gap when that factor has been accounted for in the data examined (the 'adjusted' entry rate gap).

The graph on the left shows the 'original' entry rate gap in the 2016 to 2018 entry years. The graph on the right shows the 'adjusted' entry rate gap for the same entry year period.



Results

Table 3.1a

The percentage of UK-domiciled undergraduate University of Cambridge applicants from each self-identified ethnicity group or subgroup who did not have a standard UK Key Stage 5 qualification profile (in the seven entry years between 2012 and 2018, or the three most recent of those).

Percentages reported to 1 d.p.

Ethnicity group or subgroup	% applicants who did not have standard qualifications	
	Entry years 2012-18	Entry years 2016-18
Asian	4.6%	4.3%
Bangladeshi	5.4%	5.1%
Chinese	3.1%	3.0%
Indian	3.5%	2.9%
Pakistani	8.2%	7.6%
Asian Other	6.0%	5.9%
Black	13.7%	11.2%
Black African	13.4%	10.4%
Black Caribbean	14.1%	14.9%
Black Other	16.8%	14.3%
Mixed	7.0%	7.6%
Mixed White/Asian	5.3%	5.8%
Mixed White/Black	7.8%	8.3%
Mixed Other	10.0%	10.6%
Other	12.0%	11.1%
Arab	9.8%	9.3%
Other	13.0%	12.0%
White	5.0%	4.9%
All with known ethnicity data	5.4%	5.3%

Figure 3.1

The three year moving average entry rates for UK-domiciled undergraduate applicants to the University of Cambridge in different entry year periods, by self-identified ethnicity group

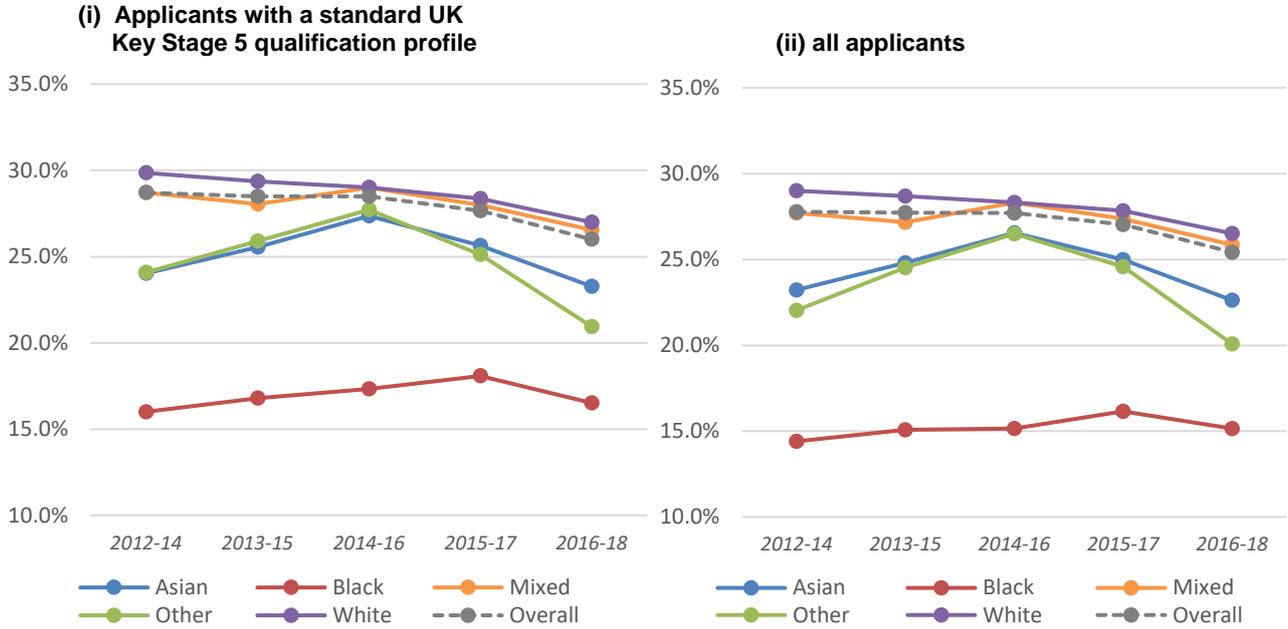


Table 3.1b

The Key Stage 5 qualification profiles for UK-domiciled undergraduate University of Cambridge applicants between the 2012 and 2018 entry years, by ethnicity group.

Percentages reported to 1 d.p.

Ethnicity group	Standard UK Key Stage 5 qualification profiles					Non-standard UK Key Stage 5 qualification profile
	3+ A Levels	A Levels and Pre U	International Baccalaureate	Advanced Highers	Other combination of these	
Asian	86.9%	3.7%	2.5%	2.1%	0.3%	4.6%
Black	80.2%	2.9%	2.7%	0.5%	0.1%	13.7%
Mixed	82.1%	5.4%	3.6%	1.7%	0.2%	7.0%
Other	81.1%	3.1%	2.1%	1.6%	0.1%	12.0%
White	85.5%	3.9%	2.3%	3.0%	0.3%	5.0%
All with known ethnicity data	85.3%	3.9%	2.4%	2.7%	0.2%	5.4%

Two-by-two Chi square (χ^2) testing

The two-by-two χ^2 test is used to test the association between two categorical variables.

In the example above these categorical variables are 'standard qualification profile' (applicants either have a standard profile, or do not) and 'entering the University' (applicants either enter, or do not).

The χ^2 test tests the null hypothesis that the two variables are independent of each other.

In the example above the χ^2 test therefore tests the null hypothesis that whether UK-domiciled applicants go on to enter the University is independent of whether they have a standard qualification profile or not: that is that the proportion of applicants with a standard qualification profile entering the University is the same as the proportion of applicants without a standard qualification profile entering the University.

In this paper the results of the χ^2 tests are reported as p-values: the probability that any association seen has occurred due to chance. A p-value less than 0.05 indicates that the null hypothesis can be rejected and that it is unlikely the association seen is due to chance: i.e. **a p-value less than 0.05 suggests that the association seen is statistically significant**. The smaller the p-value the more statistically significant the association.

Interpretation

Analysis using two-by-two χ^2 testing (both for all seven entry years examined in this paper combined, and for the three most recent of these) shows that, for UK-domiciled applicants, there is a significant association between having a standard UK Key Stage 5 qualification profile and entry to the University of Cambridge ($p < 0.01$), with UK-domiciled applicants who do not have a standard UK Key Stage 5 qualification profile less likely to enter. Further analysis has shown that this is not simply a consequence of these applicants' likelihood of meeting the conditions of any offer made: there is also a significant association between whether applicants have a standard UK Key Stage 5 qualification profile and being offered a place at the University of Cambridge ($p < 0.01$), with UK-domiciled applicants without a standard UK Key Stage 5 qualification profile also being less likely to be made an offer. It therefore follows that if individuals from some ethnicity groups and subgroups are less likely to have a standard UK qualification profile than those from other groups, this could contribute to the ethnicity entry rate gaps at the University of Cambridge.

These results show that there are sizeable ethnicity differences in the proportion of UK-domiciled University of Cambridge applicants presenting with non-standard UK Key Stage 5 qualification profiles. Between 2012 and 2018 a relatively large proportion of applicants who identified as Black or Other did not have a standard UK Key Stage 5 qualification profile (13.7% and 12.0% respectively), compared to just 4.6% of applicants who identified as Asian and 5.0% of applicants who identified as White. Within the ethnicity subgroups some further variation is seen, with more applicants who identify as Pakistani not having a standard UK Key Stage 5 qualification profile than applicants from the other Asian subgroups, and more applicants who identify as Mixed Other not having a standard UK Key Stage 5 qualification profile than applicants from the other Mixed subgroups. These ethnicity differences in the proportion of UK-domiciled University of Cambridge applicants presenting with standard UK Key Stage 5 qualification profiles may have reduced to an extent in the most recent entry years, but nonetheless differences remain.

When examining the impact that this variation in UK-domiciled applicants having standard UK Key Stage 5 qualification profiles has on the University of Cambridge ethnicity entry rate gaps (by comparing the entry rates for the whole UK-domiciled University of Cambridge applicant population with the 'adjusted' entry rates for those with standard UK Key Stage 5 qualification profiles only) it appears that being more likely to have non-standard UK Key Stage 5 qualification profiles may contribute a small amount to the negative entry rate gap for the Black ethnicity group. Further work to examine what (non-standard) Key Stage 5 qualifications this group are applying with, and what entry rate success these qualifications carry, may increase understanding of this.

There is also variation in the standard Key Stage 5 qualifications taken by University of Cambridge applicants from different ethnicity groups. In each of the seven entry years examined in this paper (2012 to 2018) A Level takers⁷ accounted for the majority of applicants from each ethnicity group; however a greater proportion of the applicants identifying as White or Asian were A Level takers than the proportion of applicants identifying as other ethnicities. Likewise, whilst the proportion of applicants taking an A Level/Pre U mix or the International Baccalaureate was a minority for all five ethnicity groups, a greater proportion of applicants identifying as Mixed had these qualification profiles than the overall applicant population (with ethnicity data). These differences could also contribute to the ethnicity entry rate gap, if applicants with particular Key Stage 5 qualification profiles have different likelihoods of entering the collegiate University (not examined in this paper).

⁷ A Level takers, or A Level-taking applicants, are defined here as individuals who attained three or more A Levels and no Pre U, Advanced Higher or International Baccalaureate qualifications.

It is also important to note the between-ethnicity group variation in the proportion of A Level takers when interpreting some of the other analysis reported in this paper: those examining applicants' A Level subject choice, predicted grades and attainment. These analyses were restricted to A Level takers, since this groups accounts for the majority of UK-domiciled applicants to the University of Cambridge; however this variation means that the proportion of the population included in such analyses will vary slightly for each ethnicity group.

3.2 Does Key Stage 5 subject choice contribute to the ethnicity entry rate gaps at the University of Cambridge? (the analyses reported here are restricted to A Levels)

Approach

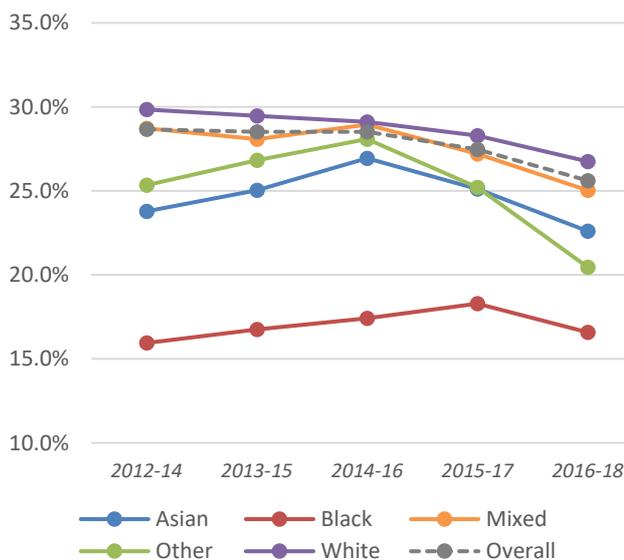
A number of the undergraduate courses at the University of Cambridge have specific A Level subject requirements for A Level-taking applicants.⁸ The proportions of A Level-taking, UK-domiciled University of Cambridge applicants who did not attain A Levels in any specific subject(s) in which they required them (based on their application course and any compulsory A Level subject requirements listed in the prospectus)⁹ are reported by ethnicity group and subgroups (Table 3.2). 'Adjusted' entry rates have been recalculated for the A Level-taking, UK-domiciled applicant population who met all the subject specific A Level requirements for their application course (if there were any), in order to examine the impact that not meeting the A Level subject requirements has on UK-domiciled applicants' ethnicity entry rate gaps (Figure 3.2).

Results

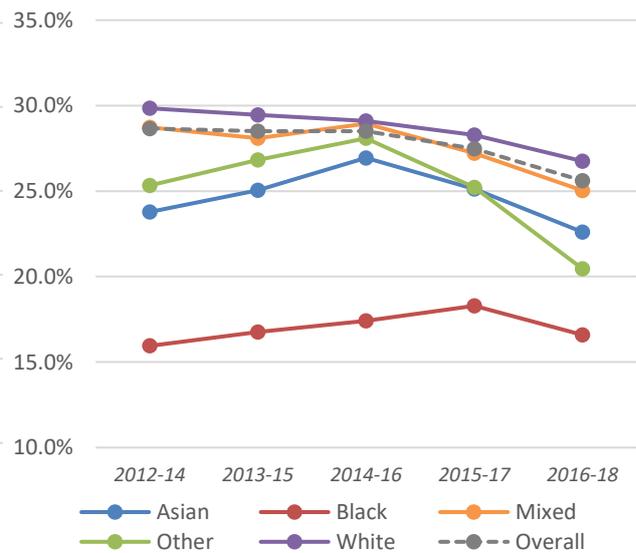
Figure 3.2

The three year moving average entry rates for UK-domiciled A Level-taking undergraduate applicants to the University of Cambridge in different entry year periods, by self-identified ethnicity group

(i) A Level-taking applicants who met the A Level subject requirements for their application course



(ii) all A Level-taking applicants



⁸ University of Cambridge website, Undergraduate Study, Entrance requirements <https://www.undergraduate.study.cam.ac.uk/applying-cambridge/entrance-requirements>

⁹ Where there are no compulsory A Level subject requirements for a course all applicants were considered to have attained A Levels in the required subjects.

Table 3.2

The percentage of A Level-taking UK-domiciled undergraduate University of Cambridge applicants from each self-identified ethnicity group or subgroup who did not attain A Levels in the required subjects (if any) for their application course (in the seven entry years between 2012 and 2018, or the three most recent of those).

Percentages reported to 1 d.p.

Ethnicity group or subgroup	% A Level taking applicants who did not meet any A Level subject requirements	
	Entry years 2012-18	Entry years 2016-18
Asian	0.5%	0.4%
Bangladeshi	0.9%	1.6%
Chinese	0.4%	0.1%
Indian	0.3%	0.1%
Pakistani	0.7%	0.4%
Asian Other	0.9%	0.9%
Black	1.3%	1.2%
Black African	1.1%	1.0%
Black Caribbean	2.5%	2.8%
Black Other	0.0%	0.0%
Mixed	0.6%	0.5%
Mixed White/Asian	0.5%	0.5%
Mixed White/Black	0.1%	0.0%
Mixed Other	1.1%	1.1%
Other	0.4%	0.0%
Arab	0.4%	0.0%
Other	0.4%	0.0%
White	0.7%	0.6%
<i>All with known ethnicity data</i>	0.7%	0.6%

Interpretation

Analysis using two-by-two χ^2 testing (both for all seven entry years examined in this paper combined, and for the three most recent entry years combined) shows that there is a significant association between whether A Level-taking UK-domiciled applicants attain A Levels in the required subjects (if any) for their application course and both being made an offer to, and entering, the University of Cambridge ($p < 0.01$ for both). A Level takers who did not meet any subject requirements for their course are less likely to be made an offer, and less likely to enter the University of Cambridge. It therefore follows that if A Level-taking individuals from some ethnicity groups and subgroups are less likely than those from other groups to have met any subject requirements (which can be taken as a proxy for not taking the subjects required for their application course), this could contribute to the ethnicity entry rate gaps at the University of Cambridge.

Only a very small proportion of UK-domiciled A Level-taking applicants to the University of Cambridge did not meet the A Level subject requirements for their application course, and this appears to have remained relatively stable over time. Comparing the entry rates for the whole A Level-taking UK-domiciled University of Cambridge applicant population with the 'adjusted' entry rates shows that failure to take required subjects at Key Stage 5 does not appear to contribute notably to the ethnicity group admissions gap (for A Level taking applicants), although this is

unsurprising given the very small number of A Level-taking applicants who did not attain A Levels in required subjects.

That said, there are a few ethnicity subgroups where more than 1.0% of UK-domiciled A Level-taking applicants did not attain A Levels in all of the subjects required for their application course in at least one of the two time periods examined. Whilst there is likely to be a degree of fluctuation due to some very small group sizes, nonetheless A Level-taking individuals identifying as Bangladeshi, Black African, Other Mixed, and in particular Black Caribbean may be less likely to be taking the subjects required for the course they are applying for (in the Black Caribbean subgroup 2.5% of A Level-taking applicants between 2012 and 2018 did not meet their application course entry requirements).

Therefore whilst not taking the required subjects at A Level appears rare, it may be more relevant for particular ethnicity subgroups (for example those identifying as Black Caribbean) and this should be monitored. Furthermore these analyses focus on subject requirements for all Colleges listed in the University of Cambridge prospectus. In practice some Colleges have additional requirements and there may also be subject combinations that, whilst not a requirement for entry, are felt to be more or less desirable than others – the analyses reported here have not been able to test these more nuanced hypotheses.

4 Evaluating whether differences in academic attainment contribute to ethnicity admissions gaps at the University of Cambridge

This section considers whether differences in academic attainment contribute to the ethnicity entry rate gaps at the University of Cambridge. There is suggestion that the accuracy of grade predictions may vary for different ethnicity groups.¹⁰ Predicted Key Stage 5 performance can also be expected to influence offer/entry rate: applicants who go on to attain higher results than they were predicted could therefore be at a disadvantage during the admissions process and be less likely to be made an offer, whilst applicants who attain lower results than they were predicted may (depending on those results) fail to meet the conditions of an offer and not be admitted to the collegiate University. In addition, previous research has shown that the ethnicity composition of the 18 year old UK population attaining A*AA or higher at A Level differs from the overall composition of the 18 year old UK population.¹¹ The University of Cambridge has very high A Level entrance requirements (A Level offers are typically A*A*A or A*AA depending on the course applied for); it is therefore logical that applicants' A Level attainment may contribute to some of the ethnicity admissions gaps seen.

This section therefore considers the following questions:

- Does predicted A Level attainment contribute to the ethnicity entry rate gaps at the University of Cambridge?
- Does A Level performance contribute to the ethnicity entry rate gaps at the University of Cambridge?

The analyses reported in this section focus on the attainment of A Level takers, who account for the majority of the UK-domiciled University of Cambridge applicant population. Since there is some variation in the proportion of A Level takers between ethnicity groups (as discussed in Section 3.1), the proportion of the population included in these analyses will vary slightly for each ethnicity group.

¹⁰ G.Wyness (2016) Predicted grades: accuracy and impact
https://www.uca.org.uk/media/8409/Predicted-grades-accuracy-and-impact-Dec-16/pdf/Predicted_grades_report_Dec2016.pdf

¹¹ Analysis based on 2018 UCAS end of cycle applicant data (calculated for those who attained three or more A Levels)

4.1 Does predicted A Level attainment contribute to the ethnicity entry rate gaps at the University of Cambridge?

Approach

Comparisons of A Level taking-applicants predicted grades and attained grades were undertaken, and it was recorded where applicants had exceeded their predicted grades and where they had met or failed to meet the prediction. Note that in the analyses reported in this paper, applicants best four A Level predictions and grades were considered (or best three for those applicants taking three A Levels), but it should be noted that the majority of A Level offers made by the University of Cambridge are for three A Levels only. The analyses conducted focused on the impact of applicants being predicted lower A Level results than they ultimately attained.

The proportions of A Level-taking UK-domiciled University of Cambridge applicants whose A Level performance exceeded their predicted grades are reported by ethnicity group and subgroups (Table 4.1). In order to examine the impact that unexpectedly high performing (based on their predicted grades) A Level-taking UK-domiciled applicants have on the ethnicity entry rate gaps at the University of Cambridge, 'adjusted' entry rates were recalculated to include only those whose predicted grades matched, or were lower than, their attained A Level grades (Figure 4.1).

Results

Table 4.1

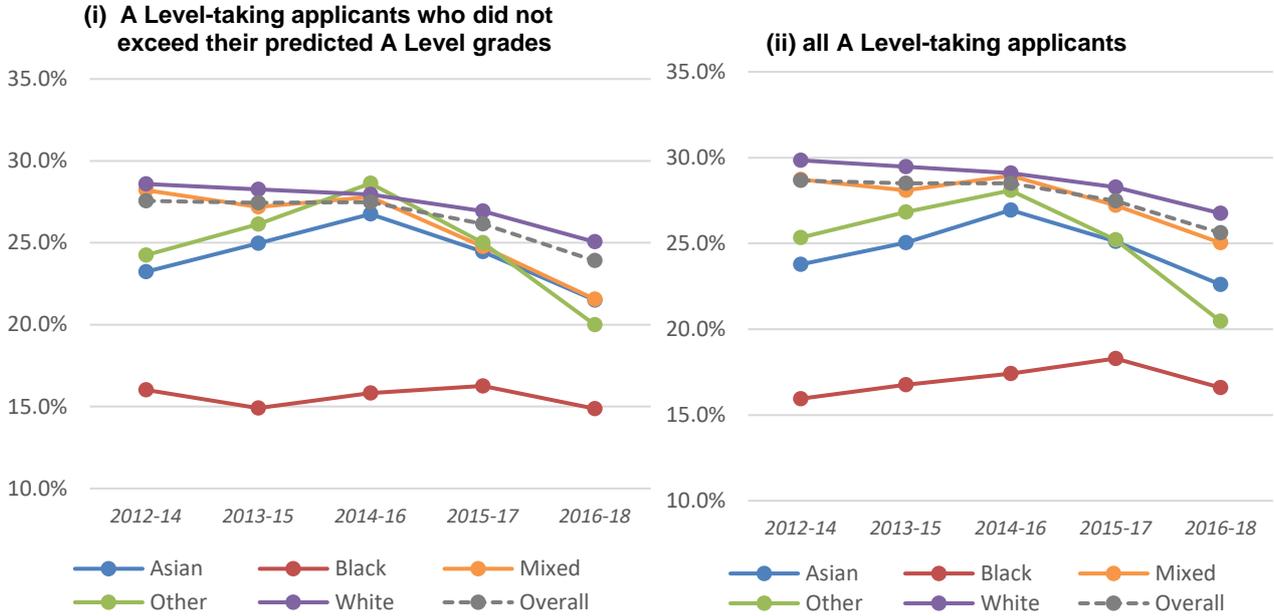
The percentage of A Level-taking UK-domiciled undergraduate University of Cambridge applicants from each self-identified ethnicity group or subgroup whose A Level performance exceeded their predicted A Level grades (in the seven entry years between 2012 and 2018, or the three most recent of those).

Percentages reported to 1 d.p.

Ethnicity group or subgroup	% applicants whose A Level performance exceeded their predicted results	
	Entry years 2012-18	Entry years 2016-18
Asian	10.9%	9.4%
Bangladeshi	7.6%	5.6%
Chinese	12.1%	9.8%
Indian	11.2%	9.8%
Pakistani	10.4%	9.1%
Asian Other	10.2%	10.2%
Black	8.7%	7.8%
Black African	8.3%	7.8%
Black Caribbean	10.6%	6.3%
Black Other	10.4%	10.0%
Mixed	11.2%	10.4%
Mixed White/Asian	12.8%	12.0%
Mixed White/Black	9.0%	7.2%
Mixed Other	9.8%	9.9%
Other	9.8%	7.4%
Arab	10.3%	9.2%
Other	9.5%	6.3%
White	11.0%	9.4%
All with known ethnicity data	10.9%	9.3%

Figure 4.1

The three year moving average entry rates for UK-domiciled A Level-taking undergraduate applicants to the University of Cambridge in different entry year periods, by self-identified ethnicity group



Interpretation

There are some ethnicity differences in the proportion of A Level-taking UK-domiciled University of Cambridge applicants whose A Level performance exceeded their predicted grades (this is unusual; for the majority of applicants A Level predictions are too high). Applicants who identify as Black or Other ethnicity are less likely to exceed their predicted A Level grades than applicants from the other ethnicity groups, with applicants who identify as Mixed the most likely to exceed their predicted A Level grades. Within the ethnicity subgroups there is some variation in the percentage of A Level-taking, UK-domiciled applicants exceeding their A Level predictions. For all five ethnicity groups the percentage of A Level-taking UK-domiciled applicants exceeding their predicted A Level grades appears to have decreased in the most recent years examined in this paper (when 2016 to 2018 entry years are compared to the full seven entry year period).

Comparing the entry rates for the whole A-Level taking UK-domiciled University of Cambridge applicant population to ‘adjusted’ entry rates (recalculated using only the A Level-taking UK-domiciled applicant population whose predicted grades matched, or were lower than, their A Level performance) has no impact on the current entry rate gaps for the Black or White ethnicity groups, and only minimally reduces the current entry rate gap for the Asian ethnicity group (based on the 2016 to 2018 entry years). However adjusting for A Level performance exceeding that predicted does reduce the negative entry rate gap for the Other ethnicity group, which suggests that some applicants from this ethnicity group may be being impacted by receiving lower A Level grades predictions than they ultimately went on to attain (although this alone by no means explains the entry rate gap for the Other ethnicity group). Performing this adjustment also increases the current negative entry rate gap for the Mixed ethnicity group, suggesting that for this group A Level-taking, UK-domiciled applicants who go on to exceed their A Level predictions are more likely to enter the collegiate University. However before drawing firm conclusions about these findings it would be useful to repeat the analysis using the best three A Levels (predicted and attained) only.

4.2 A Level performance

Approach

In order to examine the impact that A Level attainment has on the ethnicity entry rate gaps at the University of Cambridge the entry rate for the whole A Level-taking, UK-domiciled University of Cambridge applicant population were compared to with ‘adjusted’ entry rates recalculated using only the A Level-taking UK-domiciled applicant population who attained high A Level grades. This was examined first by considering those who attained AAA or higher (Figure 4.2a), and then those who met the typical A Level offer for their application course and any subject requirements listed in the prospectus, such as an A or A* in Maths A Level (Figure 4.2b) – Mathematics applicants were excluded from the latter analysis as their offers typically also include a condition based on STEP.

Results

Figure 4.2a

The three year moving average entry rates for UK-domiciled A Level-taking undergraduate applicants to the University of Cambridge in different entry year periods, by self-identified ethnicity group

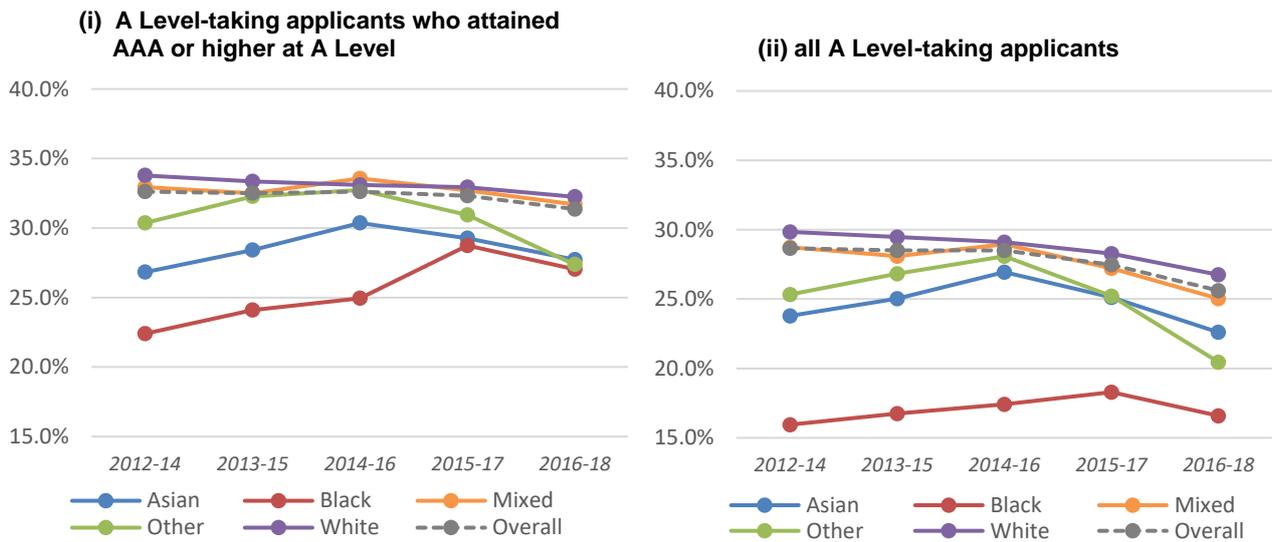
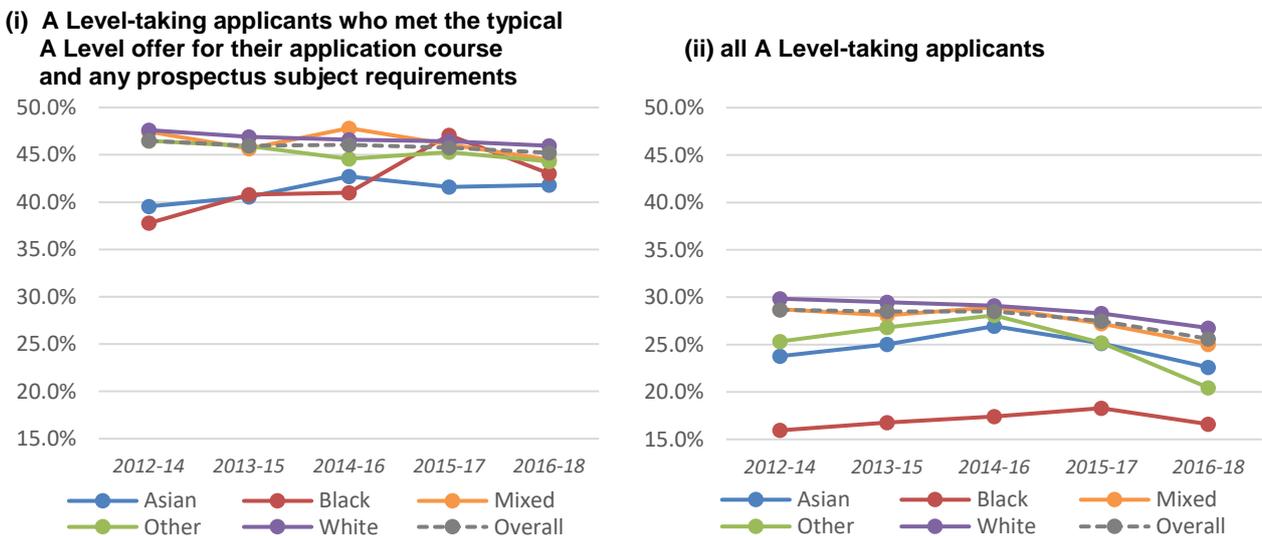


Figure 4.2b

The three year moving average entry rates for UK-domiciled A Level-taking undergraduate applicants to the University of Cambridge (except for Mathematics applicants) in different entry year periods, by self-identified ethnicity group



Interpretation

Adjusting entry rate to exclude UK-domiciled young A Level-taking applicants who did not attain AAA or higher at A Level shows that A Level attainment is contributing considerably to the negative entry rate gaps observed for University of Cambridge applicants from the Black and Other ethnicity groups. These applicants are less likely to receive the highest A Level grade profiles (be that AAA or higher or the typical A Level offer for their application course) – for those who do entry rate is comparable with the overall A Level-taking UK-domiciled applicant entry rate. However accounting for applicant A Level attainment (using either approach) does not reduce the negative entry rate gap for the Asian ethnicity group; this indicates that A Level attainment does not appear to explain the negative entry rate gap for individuals from the Asian ethnicity group.

5 Evaluating whether differences in undergraduate course choice contribute to ethnicity admissions gaps at the University of Cambridge

It is possible that applicants from certain ethnicity groups may be more, or less, likely to apply for particular courses at the University of Cambridge. This variation in the type of course applied for could be one of the factors underlying the ethnicity entry rate gaps at the University of Cambridge: if a particular group of applicants are more likely to apply for courses that are more competitive (and therefore less likely to enter the University than if they had applied for one of the less competitive courses) this will impact entry rate for the group. This section considers the following questions:

- Are applicants from different ethnicity group more/less likely to apply for particular University of Cambridge undergraduate courses?
- Do differences in course competitiveness (and different course application profiles) contribute to the ethnicity entry rate gaps at the University of Cambridge?

5.1 *Are applicants from different ethnicity group more/less likely to apply for particular University of Cambridge undergraduate courses?*

Approach

Data for all UK-domiciled University of Cambridge undergraduate applicants for entry between 2016 and 2018 (inclusive) was analysed to examine how the type of course chosen varies by ethnicity group (Figure 5.1a). ‘Type of course’ was based on the six University schools (see Table 5 on next page for details). The data was also analysed to examine whether there are differences between the ethnicity groups when courses are considered by whether or not they are vocational by name, since in some cases course name will be what applicants are using to make a decision (Figure 5.1b).

Table 5

Classifications used in this paper when the University of Cambridge undergraduate courses are grouped by University school, whether a course is vocational (in name), and by applicants per place (competitiveness)

Q = quintile (Q1 is lowest i.e. the least competitive, Q5 is highest i.e. the most competitive)

Code	Course Name	School	Vocational	Competitiveness
A100	Medicine	Clinical Medicine	Yes	Q3
BCF0 (B)	Natural Sciences - Biological	Biological Sciences	No	Q2
BCF0 (P)	Natural Sciences - Physical	Physical Sciences	No	Q2
C800	PBS (Psychological and Behavioural Sciences)	Biological Sciences	No	Q5 (most)
D100	Veterinary Medicine	Biological Sciences	Yes	Q2
G100	Mathematics	Physical Sciences	No	Q4
G400	Computer Science	Technology	No	Q5 (most)
H100	Engineering	Technology	Yes	Q4
H810	Chemical Engineering via Engineering	Technology	Yes	Q5 (most)
H813	Chemical Engineering via Nat Sci Physical	Physical Sciences	Yes	Q5 (most)
K100	Architecture	Arts & Humanities	Yes	Q5 (most)
KL41	Land Economy	Humanities & Social Sciences	No	Q2
L000	HSPS (Human, Social, and Political Sciences)	Humanities & Social Sciences	No	Q3
L100	Economics	Humanities & Social Sciences	No	Q5 (most)
L700	Geography	Physical Sciences	No	Q1 (least)
M100	Law	Humanities & Social Sciences	Yes	Q3
Q100	Linguistics	Arts & Humanities	No	Q1 (least)
Q300	English	Arts & Humanities	No	Q1 (least)
Q800	Classics - 3 year course	Arts & Humanities	No	Q1 (least)
Q801	Classics - 4 year course	Arts & Humanities	No	Q1 (least)
QQ59	ASNC (Anglo-Saxon, Norse, and Celtic)	Arts & Humanities	No	Q1 (least)
R800	MML (Modern and Medieval Languages)	Arts & Humanities	No	Q1 (least)
TT46	AMES (Asian and Middle Eastern Studies)	Arts & Humanities	No	Q1 (least)
V100	History	Humanities & Social Sciences	No	Q1 (least)
V350	History of Art	Arts & Humanities	No	Q2
V400	Archaeology	Humanities & Social Sciences	No	Q1 (least)
V500	Philosophy	Arts & Humanities	No	Q3
V600	Theology, Religion and Philosophy of Religion	Arts & Humanities	No	Q1 (least)
VL12	History and Politics	Humanities & Social Sciences	No	Q2
VR18	History and Modern Languages	Humanities & Social Sciences	No	Q1 (least)
W300	Music	Arts & Humanities	No	Q1 (least)
X300	Education	Humanities & Social Sciences	Yes	Q1 (least)

Results

Figure 5.1a

Graph showing the extent to which UK-domiciled University of Cambridge applicants (2016 to 2018 entry years) from different ethnicity groups apply for different courses, grouped by the six University schools

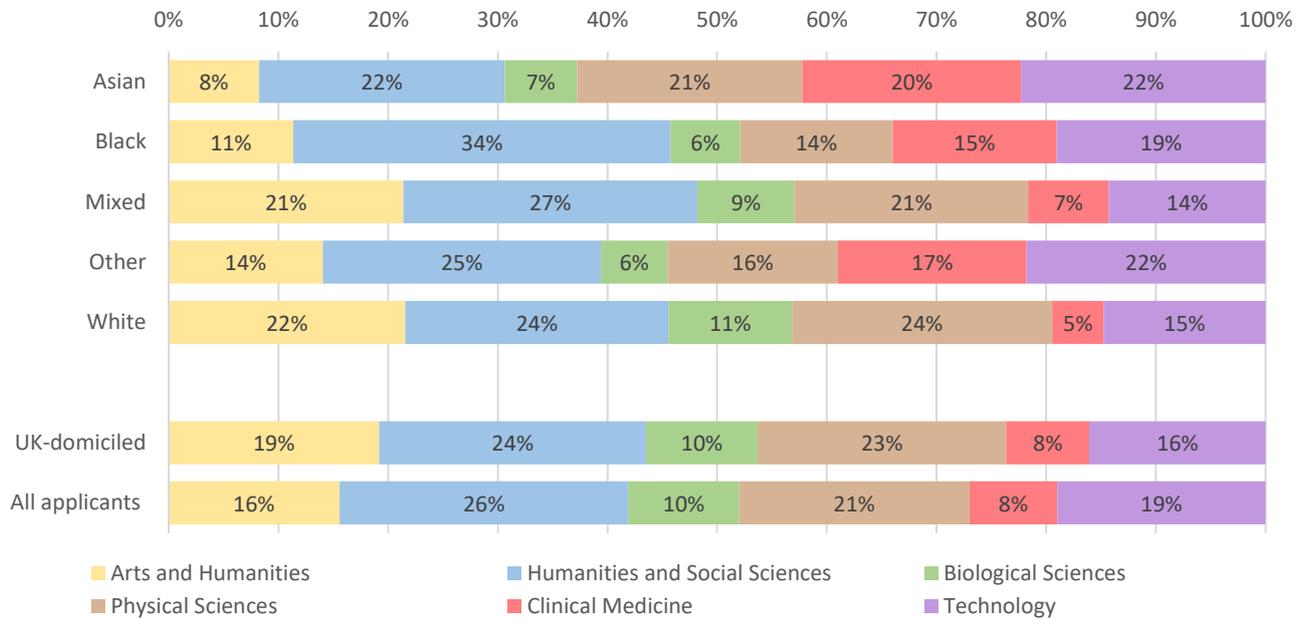
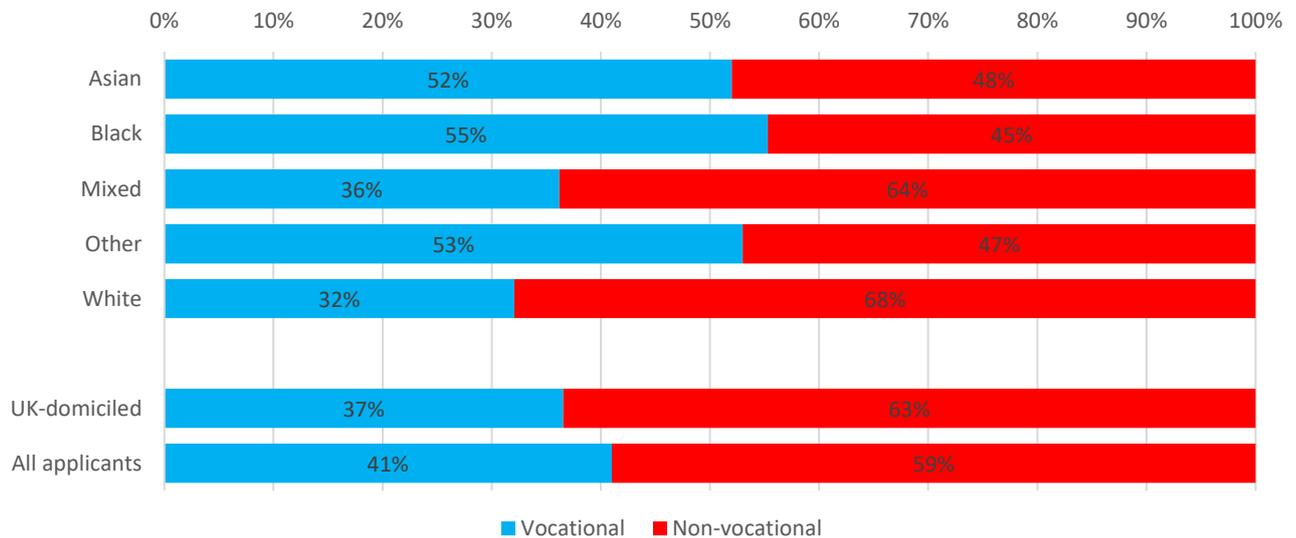


Figure 5.1b

Graph showing the extent to which UK-domiciled University of Cambridge applicants (2016 to 2018 entry years) from different ethnicity groups apply for courses that could be considered vocational



Interpretation

There are considerable differences in the types of undergraduate courses that applicants from different ethnicity groups apply for at the University of Cambridge. 20% of applicants in the Asian ethnicity group apply for a single course (A100, Medicine) compared to 8% of all UK-domiciled applicants with known ethnicity, but very few applicants from the Asian ethnicity group apply for Arts and Humanities courses (8%, compared to 19% of the UK-domiciled applicant population). A relatively large proportion of applicants in the Black and Other ethnicity groups apply for Medicine too (15% and 17% respectively); applicants in the Black ethnicity group are also considerably more likely than the overall UK-domiciled applicant population to apply for Humanities and Social Sciences

courses (34% of applicants in the Black ethnicity group apply for these courses, compared to 24% of all UK-domiciled applicants). Applicants from the Mixed and White ethnicity groups have similar patterns of application (when this is considered by University school); in both groups applicants are more likely than the other ethnicity groups to apply for Arts and Humanities courses, and less likely to apply for Technology courses (and Medicine, as discussed above).

There are also differences between the ethnicity groups when courses are considered by whether or not they are vocational by name, with a much larger proportion of applicants from the Asian, Black and Other ethnicity groups (52%, 55% and 53%) applying for 'vocational' courses than applicants from the Mixed and White ethnicity groups (36% and 32% respectively).

5.2 *Do differences in course competitiveness (and different course application profiles) contribute to the ethnicity entry rate gaps at the University of Cambridge?*

Approach

It is apparent that applicants from particular ethnicity groups are more likely to apply for some courses than others. However if the courses that they are more likely to apply to are more competitive than other courses (and therefore applicants applying for these courses are less likely to enter the University than if they had applied for a one of the less competitive courses) this will impact the entry rate for these ethnicity groups.

Calculating competitiveness

$$\text{Applicant to Entrant ratio} = \frac{\text{Total number of applicants to University course A in time period B}}{\text{Total number of entrants to University course A in time period B}}$$

Competitiveness has been determined by generating an applicant to entrant ratio for each course. This indicates the number of applicants for each single place at the University.

An applicant to entrant ratio **greater than 1.0 indicates that more applicants applied for the course than entered the course:** i.e. there were more applicants than entrants. The larger the ratio, the more competitive the course.

Therefore the 'competitiveness' of each University of Cambridge undergraduate course was calculated for each of the three entry year periods between 2012 and 2018 (five periods in total). These calculations used data for all University of Cambridge undergraduate applicants and entrants, not just those who were UK-domiciled, since applicants are competing for places with the full applicant cohort. The calculations for the 2016 to 2018 entry year applicant cohort were used to generate a rank order of course competitiveness in this three year period, and from this 'competitiveness quintiles' were assigned (five groups of courses were generated, each group accounting for as near to 20% of the full applicant population as possible – see Table 5 for details of the assignment). Data for all UK-domiciled University of Cambridge undergraduate applicants for entry between 2016 and 2018 (inclusive) was analysed to examine how the competitiveness of the application course chosen varies by ethnicity group (Figure 5.2a).

The impact that ethnicity group differences in course choice have on ethnicity entry rate gaps at the University of Cambridge was examined by weighting each ethnicity group's entry rate to account for course competitiveness (method described in the green box on the next page). Entry rates were calculated for each of the three entry year time periods between 2012 and 2018, and for each time period the course competitiveness data from the same time period was used for weighting (Figure 5.2b).

Weighting entry rate for course competitiveness

The entry rate for Group Y =: $\frac{\text{Total number of entrants from Group Y}}{\text{Total number of applicants from Group Y}}$
 is calculated as

In order to weight this by course competitiveness the following formula is used

(n. = number of entrants from Group Y; Comp = competitiveness ratio for all applicants)

$$\text{Weighted entry rate for Group Y} = \frac{(n.\text{Course A} \times \text{Comp.Course A}) + (n.\text{Course B} \times \text{Comp.Course B}) + [\text{etc}] + (n.\text{Course Z} \times \text{Comp.Course Z})}{\text{Total number of applicants from Group Y} \times \text{Overall Comp. for all Courses}}$$

Results

Figure 5.2a

Graph showing the extent to which UK-domiciled University of Cambridge applicants (2016 to 2018 entry years) from different ethnicity groups apply for more/less competitive courses

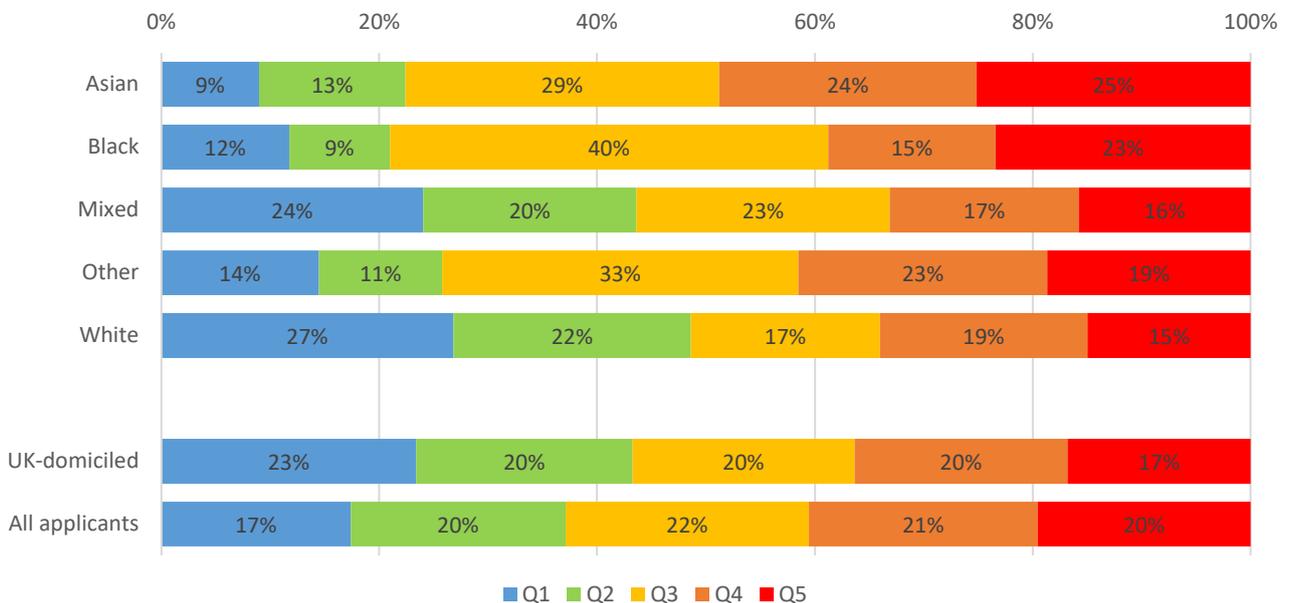
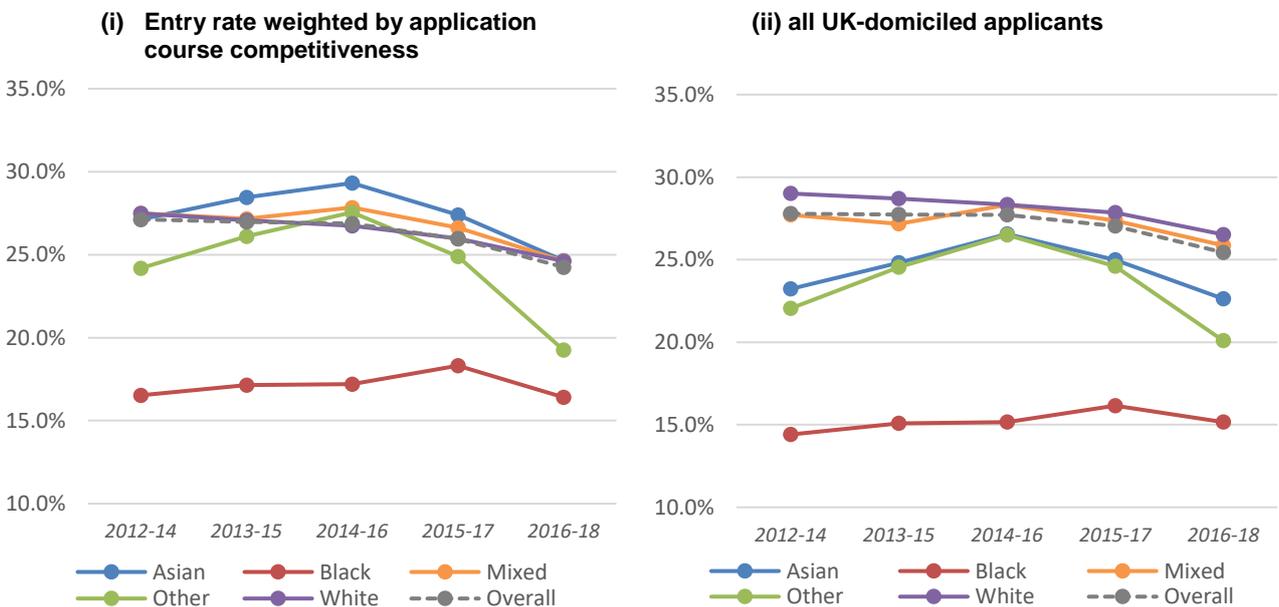


Figure 5.2b

The three year moving average entry rates for UK-domiciled undergraduate applicants to the University of Cambridge in different entry year periods, by self-identified ethnicity group



Interpretation

There are considerable differences in the proportion of applicants applying for the least, and most, competitive courses for different ethnicity groups. One would expect roughly 40% of an ethnicity group's applicants to apply for courses in the lowest two competitiveness quintiles, Q1 and Q2 (37% if we consider the proportion in the full applicant population on whom the competitiveness calculations were based). However as Figure 5.2a shows, just 22% of applicants in the Asian ethnicity group, 21% of applicants in the Black ethnicity group, and 25% of applicants in the Other ethnicity group applied for these courses in the 2016 to 2018 years. By contrast 49% of applicants in the White ethnicity group applied for courses in the lowest two competitiveness quintiles (Q1 and Q2). The Asian ethnicity group also has the greatest proportion of applicants applying for courses in the most competitive quintile (25% in Q5) and most competitive two quintiles (49% in Q1 and Q2).

When entry rate is weighted by application course competitiveness then the current (based on the 2016 to 2018 entry year data) negative entry rate gap for the Asian ethnicity group closes: This indicates that individuals from the Asian ethnicity group applicants' choice of course accounts almost entirely for the negative entry rate observed for this group – these individuals are more likely to apply for University of Cambridge courses that are more competitive, and less likely to apply for the least competitive courses. It is possible that other factors may also contribute to the gap, but course type applied to is clearly a very important factor for the Asian ethnicity group. Course type choice also accounts for some of the negative entry rate gap for individuals in the Black ethnicity group (the entry rate gap for the Black ethnicity group reduces slightly when weighting for course competitiveness), but it does not account for the negative entry rate for those who identify in the Other ethnicity group.

Conclusions

In this paper I set out to conduct further self-assessment of the ethnicity admissions gaps, in particular seeking to explain (where possible) what factors contribute to these gaps, and examining whether particular ethnicity subgroups are also under-represented at the University of Cambridge.

In Section 1.2 the following ethnicity subgroups were identified as being under-represented at the University of Cambridge (compared to the 2011 English and Welsh 18 year old population):

- the Bangladeshi and Pakistani subgroups;
- all three Black ethnicity subgroups (in particular Black Caribbean and Black Other);
- the Mixed White/Black subgroup;
- the Arab subgroup
- and (to a small extent) the White ethnicity group/subgroup.

The University of Cambridge received fewer applications than might be expected, based on the national population, from almost all of these ethnicity subgroups (all aside from the Black African subgroup) – although for some of these subgroups application rates have been increasing in recent years. When application to the collegiate University was compared to UCAS application to Higher Education (at an ethnicity group level) it appears that some of these differences are likely explained by applicants from these subgroups being less likely to apply to any Higher Education institution, for example the difference for the White ethnicity group. However individuals from the Black and Other ethnicity groups in particular do appear less likely to apply to the University of Cambridge than to Higher Education in general. It is possible this could reflect factors such as course choice and qualification profile, but further investigation would be needed to determine this.

In Section 1.3 of this paper negative entry rate gaps were identified for the following ethnicity groups:

- the Asian ethnicity group;
- the Black ethnicity group;
- the Other ethnicity group.

I have been able to identify some factors that appear to contribute to these negative entry rate gaps:

- The current negative entry rate gap for the **Asian** ethnicity group appears to occur as a result of application course choice, with applicants from this ethnicity group more likely (than the overall UK-domiciled applicant population) to apply for more competitive courses.
- The current negative entry rate gap for the **Black** ethnicity group appears, for A Level takers, to occur predominantly as a result of A Level attainment. However these applicants are also less likely (than the overall UK-domiciled applicant population) to apply with a standard UK Key Stage 5 qualification profile, which is also associated with a significantly lower entry rate. Finally application course choice also contributes to the negative entry rate gap for this ethnicity group.
- The current negative entry rate gap for the **Other** ethnicity group also appears, for A Level takers, to be contributed to by A Level attainment. In some cases these applicants may also be impacted by receiving lower A Level predictions than they ultimately went on to attain, however further investigation would be needed to confirm this.

The analyses reported in this paper focused on how applicant characteristics and behaviour contribute to the ethnicity admissions gaps at the University of Cambridge. However whilst examining whether organisational factors contribute to the collegiate University's ethnicity admissions gaps was beyond the scope of this paper, it is important to acknowledge that such factors may also be at play.

Whilst the analyses in this paper focus on ethnicity specifically, it is known that there are interactions between ethnicity and other applicant characteristics known to be associated with entry rate differences: for example individuals from certain ethnicity groups are known to be more (or less) likely to live in the most deprived neighbourhoods in England (based on the Index of Multiple Deprivation, IMD),¹² whilst the population of different ethnicity groups is known to vary across the UK.¹³ In order to examine how ethnicity and other characteristics interact, and the impact this has on admissions and admissions gaps at the University of Cambridge, additional analysis of the data would be required.

This further self-assessment has therefore considerably increased our understanding of the ethnicity admissions gaps for UK-domiciled applicants to the University of Cambridge, including providing an indication of what factors are likely to be contributing to these gaps.

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With thanks to Alexa Horner and Matt Wheatley

February 2020

¹² Gov.UK website: *People living in deprived neighbourhoods* (March 2018) <https://www.ethnicity-facts-figures.service.gov.uk/uk-population-by-ethnicity/demographics/people-living-in-deprived-neighbourhoods/latest>

¹³ UCAS file: <https://www.ucas.com/file/65651/download?token=Sv-zNKMr>

Addendum to the further self-assessment of undergraduate ethnicity admissions gaps at the University of Cambridge

Summary

This paper is an addendum to the February 2020 paper by Dr Sequeira ‘Further self-assessment of undergraduate ethnicity admissions gaps at the University of Cambridge’, and should be read in conjunction with that paper. It comprises two additions to the paper:

- (i) extending Cambridge data in Sections 1 and 2 to 2019;
- (ii) using Key Stage 5 (KS5) data as an alternative source of relevant national population proportions that is more recent than the 2011 Census and more inclusive than UCAS application data (although less inclusive than the Census).

Caution: Some of the data and findings in this paper are based on a single year of data (2019) and should be treated with caution, particularly given the small numbers of people in some of the ethnicity groups involved; further years of data would be needed to establish if any changes seen in 2019 are actual trends. One consequence of this is that little is said about any apparent changes in 2019 for ethnicity subgroups in the summary of findings below.

Please note that in July 2021, minor corrections were made to the 2019 data presented in this addendum. These did not require any changes to this summary, or affect any conclusions drawn.

The data presented here in relation to Cambridge entrants show that:

- **Extended tables 1.1a and 1.1b:** Compared to recent years (i.e. 2016-18), the proportions of Cambridge entrants that identify as Asian, Black, Mixed and Other ethnicities all increased in 2019, whilst only the proportion identifying as White decreased. The increase in those identifying as Black may have been driven by an increase in the Black African subgroup particularly.
- **Extended table 1.1b** Compared to national population proportions from the 2011 Census, the over-representation in recent years of the Asian, Mixed and Other ethnicity groups among Cambridge entrants increased in 2019. The White ethnicity group had been slightly under-represented in recent years, and was slightly more so in 2019. The Black ethnicity group had been very under-represented in recent years, with approximately half the number of Cambridge entrants that would be expected based on the 2011 Census; in 2019 the extent of under-representation appears to have narrowed such that it is now very similar to that for the White ethnicity. Further years of data will be needed to establish whether or not this is a trend that will be sustained.
- **New table A:** This table uses national population proportions from 2018-19 Department for Education (DfE) KS5 results tables as the basis for the expected proportions of entrants to Cambridge from each self-reported ethnicity group, instead of 2011 Census data as in Table 1.1b. The national proportions of every ethnicity group other than the White group are greater based on the 2018-19 DfE data than when based on the 2011 Census data, so basing expected entrant proportions on this DfE data increases the ratio of observed to expected entrants for the White ethnicity group and decreases it for all other groups. Consequently, the Asian, Mixed and Other ethnicity groups, which are all over-represented among Cambridge entrants when expectations are based on the 2011 Census, are much less so, although these groups were all still at least a little over-represented in 2019 (but in 2016-18 the Asian and Other groups were actually under-represented). The White ethnicity group which is under-represented among

Cambridge entrants when expectations are based on the 2011 Census is instead close to having the expected entrant proportion. The Black ethnicity group is much more severely under-represented when expectations are based on DfE data compared to when expectations are based on the 2011 Census; despite the increase in representation seen for this group in 2019 compared to recent years (which is subject to the caveat that it remains to be seen if this trend will be sustained), the entrant proportion for this group in 2019 was little more than half that expected.

The data presented here in relation to Cambridge applicants show that:

- **Extended table 2.1a:** Compared to recent years (i.e. 2016-18), the proportions of Cambridge applicants that identify as Asian, Black, Mixed and Other ethnicities all increased in 2019, whilst only the proportion identifying as White decreased – this mirrors what is seen for entrants. The increase in those identifying as Black may have been driven by an increase in the Black African subgroup particularly.
- **Extended table 2.1a:** Compared to national population proportions from the 2011 Census, the over-representation in recent years of the Asian, Mixed and Other ethnicity groups among Cambridge applicants increased in 2019. The White ethnicity group had been slightly under-represented in recent years, and was more so in 2019. The Black ethnicity group had been slightly under-represented among Cambridge applicants in 2016-18 (to an extent similar to the White ethnicity group), but in 2019 they became somewhat over-represented compared to expectations based on the 2011 Census; further years of data will be needed to establish whether or not this is a trend that will be sustained.
- **New table B:** This table uses national population proportions from 2018-19 DfE KS5 results tables as the basis for the expected proportions of applicants to Cambridge from each self-reported ethnicity group, instead of 2011 Census data as in Table 2.1a. Basing expected applicant proportions on the DfE data instead of the Census data increases the ratio of observed to expected applicants for the White ethnicity group and decreases it for all other groups. Consequently, the Asian, Mixed and Other ethnicity groups, which are all over-represented among Cambridge applicants when expectations are based on the 2011 Census, are much less so, although these groups were all still at least a little over-represented in 2019 (but in 2016-18 the Other group was actually under-represented). The White ethnicity group, which is under-represented among Cambridge applicants when expectations are based on the 2011 Census, instead had the expected applicant proportion in 2016-18, although they were still slightly under-represented in 2019. The Black ethnicity group - which compared to expectations based on the 2011 Census data was slightly under-represented in 2016-18 and somewhat over-represented in 2019 - was instead severely under-represented among Cambridge applicants in 2016-18 when expectations are based on the more recent 2018-19 DfE data, and still under-represented in 2019.

In conclusion, when expectations for the proportions of applicants and entrants to Cambridge from each ethnicity group are based on recent DfE KS5 data (which are more recent than the alternative Census data, and more inclusive than the alternative UCAS data), it is evident that the Black ethnicity group are under-represented among both applicants and entrants, and far more so than any other ethnicity group. This is still the case in 2019 despite the increases for this group seen in 2019 compared to 2016-18. Moreover, this is for the Black ethnicity group overall, and some of the Black ethnicity subgroups are even more severely under-represented.

Tables extended with 2019 data

Table 1.1a – extended to include 2019

The number and proportion (of those with known ethnicity data) of UK-domiciled undergraduate entrants to the University of Cambridge by self-identified ethnicity group and subgroup for each of the entry years between 2012 and 2019

Percentages reported to 1 d.p. ■ indicates very small group size (<25)

Ethnicity group or subgroup	Entry year															
	2012		2013		2014		2015		2016		2017		2018		2019	
Asian	250	9.8%	242	9.2%	300	11.4%	315	12.1%	320	12.4%	304	11.9%	342	13.6%	381	14.6%
Bangladeshi	12	0.5%	9	0.3%	13	0.5%	18	0.7%	10	0.4%	22	0.9%	20	0.8%	28	1.1%
Chinese	85	3.3%	62	2.3%	66	2.5%	83	3.2%	89	3.5%	76	3.0%	73	2.9%	92	3.5%
Indian	100	3.9%	121	4.6%	148	5.6%	153	5.9%	148	5.7%	134	5.3%	163	6.5%	156	6.0%
Pakistani	20	0.8%	17	0.6%	22	0.8%	21	0.8%	36	1.4%	28	1.1%	32	1.3%	34	1.3%
Asian Other	33	1.3%	33	1.2%	51	1.9%	40	1.5%	37	1.4%	44	1.7%	54	2.2%	71	2.7%
Black	32	1.3%	28	1.1%	40	1.5%	41	1.6%	38	1.5%	58	2.3%	60	2.4%	89	3.4%
Black African	21	0.8%	19	0.7%	38	1.4%	28	1.1%	30	1.2%	50	2.0%	52	2.1%	76	2.9%
Black Caribbean	8	0.3%	9	0.3%	2	0.1%	12	0.5%	5	0.2%	6	0.2%	7	0.3%	11	0.4%
Black Other	3	0.1%	0	0.0%	0	0.0%	1	0.0%	3	0.1%	2	0.1%	1	0.0%	2	0.1%
Mixed	127	5.0%	142	5.4%	155	5.9%	146	5.6%	160	6.2%	170	6.7%	158	6.3%	197	7.6%
Mixed White/Asian	78	3.1%	88	3.3%	95	3.6%	79	3.0%	87	3.4%	99	3.9%	95	3.8%	99	3.8%
Mixed White/Black	13	0.5%	21	0.8%	20	0.8%	25	1.0%	27	1.0%	26	1.0%	22	0.9%	35	1.3%
Mixed Other	36	1.4%	33	1.2%	40	1.5%	42	1.6%	46	1.8%	45	1.8%	41	1.6%	63	2.4%
Other	33	1.3%	26	1.0%	25	1.0%	42	1.6%	39	1.5%	25	1.0%	32	1.3%	51	2.0%
Arab	2	0.1%	8	0.3%	5	0.2%	10	0.4%	10	0.4%	8	0.3%	7	0.3%	15	0.6%
Other	31	1.2%	18	0.7%	20	0.8%	32	1.2%	29	1.1%	17	0.7%	25	1.0%	36	1.4%
White	2105	82.6%	2205	83.4%	2110	80.2%	2054	79.1%	2021	78.4%	1988	78.1%	1916	76.4%	1888	72.4%
All with known ethnicity data	2547	100.0%	2643	100.0%	2630	100.0%	2598	100.0%	2578	100.0%	2545	100.0%	2508	100.0%	2606	100.0%

Table 1.1b – extended to include 2019

A comparison of the national population (the 18 and 19 year old English and Welsh population at the time of the 2011 Census) and the University of Cambridge entrant population (in the seven entry years between 2012 and 2018, or the three most recent of those, or in 2019 only), by ethnicity group and subgroup

Percentages reported to 1 d.p.; Observed to expected entrant ratios reported to 2 d.p.

■ indicates small group size (<50), and ratios are not shown in these cases.

Ethnicity group or subgroup	% of the 18 and 19 year old England and Wales population in 2011 <i>(national data)</i>	% of UK-domiciled University of Cambridge entrants from the group			Ratio of the number of entrants observed to the number of entrants expected <i>(based on the national data)</i>		
		2012-2018 entry years	2016-2018 entry years	2019 entry year	2012-2018 entry years	2016-2018 entry years	2019 entry year
Asian	8.9%	11.5%	12.7%	14.6%	1.29	1.42	1.64
Bangladeshi	1.0%	0.6%	0.7%	1.1%	0.56	0.66	<i>Group <50</i>
Chinese	1.2%	3.0%	3.1%	3.5%	2.40	2.53	2.86
Indian	2.5%	5.4%	5.8%	6.0%	2.15	2.35	2.41
Pakistani	2.5%	1.0%	1.3%	1.3%	0.39	0.50	<i>Group <50</i>
Asian Other	1.6%	1.6%	1.8%	2.7%	0.98	1.07	1.65
Black	3.9%	1.6%	2.0%	3.4%	0.42	0.52	0.87
Black African	2.2%	1.3%	1.7%	2.9%	0.59	0.77	1.30
Black Caribbean	1.1%	0.3%	0.2%	0.4%	<i>Group <50</i>	<i>Group <50</i>	<i>Group <50</i>
Black Other	0.6%	0.1%	0.1%	0.1%	<i>Group <50</i>	<i>Group <50</i>	<i>Group <50</i>
Mixed	3.5%	5.9%	6.4%	7.6%	1.68	1.84	2.17
Mixed White/Asian	0.9%	3.4%	3.7%	3.8%	3.70	3.96	4.09
Mixed White/Black	1.9%	0.9%	1.0%	1.3%	0.46	0.53	<i>Group <50</i>
Mixed Other	0.7%	1.6%	1.7%	2.4%	2.30	2.54	3.55
Other	1.2%	1.2%	1.3%	2.0%	1.06	1.09	1.69
Arab	0.5%	0.3%	0.3%	0.6%	0.54	<i>Group <50</i>	<i>Group <50</i>
Other	0.6%	1.0%	0.9%	1.4%	1.49	1.46	<i>Group <50</i>
White	82.5%	79.8%	77.6%	72.4%	0.97	0.94	0.88

Table 1.2a – extended to include 2019

The number of UK-domiciled undergraduate applicants to the University of Cambridge, and their entry rate (that is the percentage of those applicants who entered the collegiate University) by self-identified ethnicity group and subgroup, for each of the entry years between 2012 and 2019

Percentages reported to 1 d.p. ■ indicates small applicant group size (<100)

Ethnicity group or subgroup	Entry year															
	2012		2013		2014		2015		2016		2017		2018		2019	
Asian	1139	21.9%	1116	21.7%	1154	26.0%	1183	26.6%	1184	27.0%	1390	21.9%	1695	20.2%	1970	19.3%
Bangladeshi	74	16.2%	64	14.1%	59	22.0%	81	22.2%	70	14.3%	111	19.8%	155	12.9%	191	14.7%
Chinese	296	28.7%	273	22.7%	274	24.1%	257	32.3%	272	32.7%	266	28.6%	283	25.8%	333	27.6%
Indian	437	22.9%	435	27.8%	485	30.5%	515	29.7%	488	30.3%	553	24.2%	697	23.4%	756	20.6%
Pakistani	128	15.6%	128	13.3%	144	15.3%	137	15.3%	141	25.5%	208	13.5%	240	13.3%	283	12.0%
Asian Other	204	16.2%	216	15.3%	192	26.6%	193	20.7%	213	17.4%	252	17.5%	320	16.9%	407	17.4%
Black	225	14.2%	217	12.9%	252	15.9%	254	16.1%	279	13.6%	315	18.4%	435	13.8%	579	15.4%
Black African	175	12.0%	173	11.0%	211	18.0%	194	14.4%	209	14.4%	257	19.5%	373	13.9%	483	15.7%
Black Caribbean	33	24.2%	36	25.0%	30	6.7%	51	23.5%	50	10.0%	47	12.8%	37	18.9%	72	15.3%
Black Other	17	17.6%	8	0.0%	11	0.0%	9	11.1%	20	15.0%	11	18.2%	25	4.0%	24	8.3%
Mixed	442	28.7%	537	26.4%	551	28.1%	542	26.9%	535	29.9%	662	25.7%	690	22.9%	820	24.0%
Mixed White/Asian	234	33.3%	296	29.7%	315	30.2%	283	27.9%	287	30.3%	351	28.2%	374	25.4%	434	22.8%
Mixed White/Black	82	15.9%	115	18.3%	99	20.2%	114	21.9%	107	25.2%	140	18.6%	137	16.1%	154	22.7%
Mixed Other	126	28.6%	126	26.2%	137	29.2%	145	29.0%	141	32.6%	171	26.3%	179	22.9%	232	27.2%
Other	141	23.4%	114	22.8%	126	19.8%	139	30.2%	135	28.9%	157	15.9%	186	17.2%	252	20.2%
Arab	39	5.1%	42	19.0%	36	13.9%	38	26.3%	44	22.7%	58	13.8%	59	11.9%	82	18.3%
Other	102	30.4%	72	25.0%	90	22.2%	101	31.7%	91	31.9%	99	17.2%	127	19.7%	170	21.2%
White	7041	29.9%	7510	29.4%	7582	27.8%	7106	28.9%	7142	28.3%	7529	26.4%	7670	25.0%	7931	23.8%
All with known ethnicity data	8988	28.3%	9494	27.8%	9665	27.2%	9224	28.2%	9275	27.8%	10053	25.3%	10676	23.5%	11552	22.6%

Table 2.1a – extended to include 2019

A comparison of the national population (the 18 and 19 year old English and Welsh population at the time of the 2011 Census) and the University of Cambridge applicant population (in the seven entry years between 2012 and 2018, or the three most recent of those, or in 2019 only), by ethnicity group and subgroup

Percentages reported to 1 d.p; Observed to expected application ratios reported to 2 d.p

■ indicates small group size (<50), and ratios are not shown in these cases.

Ethnicity group or subgroup	% of the 18 and 19 year old England and Wales population in 2011 <i>(national data)</i>	% of UK-domiciled University of Cambridge applicants from the group			Ratio of the number of applicants observed to the number of applicants expected (based on the national data)		
		2012-2018 entry years	2016-2018 entry years	2019 entry year	2012-2018 entry years	2016-2018 entry years	2019 entry year
Asian	8.9%	13.2%	14.2%	17.1%	1.47	1.60	1.91
Bangladeshi	1.0%	0.9%	1.1%	1.7%	0.88	1.08	1.59
Chinese	1.2%	2.9%	2.7%	2.9%	2.31	2.22	2.34
Indian	2.5%	5.4%	5.8%	6.5%	2.16	2.33	2.63
Pakistani	2.5%	1.7%	2.0%	2.4%	0.66	0.78	0.97
Asian Other	1.6%	2.4%	2.6%	3.5%	1.43	1.59	2.14
Black	3.9%	2.9%	3.4%	5.0%	0.75	0.87	1.27
Black African	2.2%	2.4%	2.8%	4.2%	1.05	1.25	1.86
Black Caribbean	1.1%	0.4%	0.4%	0.6%	0.38	0.41	0.57
Black Other	0.6%	0.1%	0.2%	0.2%	0.26	0.32	<i>Group <50</i>
Mixed	3.5%	5.9%	6.3%	7.1%	1.69	1.81	2.04
Mixed White/Asian	0.9%	3.2%	3.4%	3.8%	3.42	3.63	4.04
Mixed White/Black	1.9%	1.2%	1.3%	1.3%	0.63	0.68	0.71
Mixed Other	0.7%	1.5%	1.6%	2.0%	2.23	2.40	2.95
Other	1.2%	1.5%	1.6%	2.2%	1.28	1.38	1.89
Arab	0.5%	0.5%	0.5%	0.7%	0.91	1.04	1.37
Other	0.6%	1.0%	1.1%	1.5%	1.58	1.65	2.30
White	82.5%	76.6%	74.5%	68.7%	0.93	0.90	0.83

Tables using alternative national dataset

As an alternative to the Census and UCAS datasets used in the original paper to produce expected proportions of each ethnicity (sub)group, age 16 to 18 Key Stage 5 (KS5) results data that have been published by the Department for Education (DfE) as National Statistics¹⁴ were used here. Among many other types of information, the annual DfE 16 to 18 KS5 datasets include the numbers of students of relevant age in England that completed their age 16 to 18 studies and entered at least one level 3 qualification that is recognised in the DfE KS5 performance tables, split by ethnicity (sub)group. In 2019 there were 329,815 such students, of whom 283,532 were taking at least one A Level¹⁵. An important caveat to bear in mind is that c.25% of students in this dataset have unknown ethnicity and are not included in the figures presented (in contrast to our own data where only c.5% students had unknown ethnicity). DfE data for 2018 and 2019 were combined together for analysis.

New Table A (Entrants)

A comparison of the national population of students of relevant age in England that completed their age 16 to 18 KS5 studies including at least one recognised level 3 qualification in 2018 or 2019 and the University of Cambridge entrant population (in 2016-2018 entry years, or in 2019 only), by ethnicity group and subgroup

Percentages reported to 1 d.p; Observed to expected entrant ratios reported to 2 d.p.

■ indicates small group size (<50), and ratios are not shown in these cases.

Ethnicity group or subgroup	% of students in England that completed 16 to 18 KS5 studies including a level 3 qualification in 2018 or 2019 (national data)	% of UK-domiciled University of Cambridge entrants from the group		Ratio of the number of entrants observed to the number of entrants expected (based on the national data)	
		2016-2018 entry years	2019 entry year	2016-2018 entry years	2019 entry year
Asian	13.3%	12.7%	14.6%	0.95	1.10
Bangladeshi	2.1%	0.7%	1.1%	0.32	Group <50
Chinese	0.6%	3.1%	3.5%	4.91	5.56
Indian	3.9%	5.8%	6.0%	1.48	1.52
Pakistani	4.4%	1.3%	1.3%	0.29	Group <50
Asian Other	2.3%	1.8%	2.7%	0.78	1.20
Black	5.9%	2.0%	3.4%	0.35	0.58
Black African	4.1%	1.7%	2.9%	0.42	0.71
Black Caribbean	1.1%	0.2%	0.4%	Group <50	Group <50
Black Other	0.6%	0.1%	0.1%	Group <50	Group <50
Mixed	4.6%	6.4%	7.6%	1.39	1.64
Mixed White/Asian	1.2%	3.7%	3.8%	3.08	3.18
Mixed White/Black	1.6%	1.0%	1.3%	0.60	Group <50
Mixed Other	1.8%	1.7%	2.4%	0.99	1.38
Other	1.8%	1.3%	2.0%	0.69	1.07
White	74.4%	77.6%	72.4%	1.04	0.97

¹⁴ "Underlying data" csv files were accessed from www.gov.uk/government/statistics/a-level-and-other-16-to-18-results-2018-to-2019-revised on 20th February 2020.

¹⁵ See Figure 1 in: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/859515/2019_revised_A-Level_and_other_16_to_18_results_in_England.pdf

New Table B (Applicants)

A comparison of the national population of students of relevant age in England that completed their age 16 to 18 KS5 studies including at least one recognised level 3 qualification in 2018 or 2019 and the University of Cambridge applicant population (in 2016-2018 entry years, or in 2019 only), by ethnicity group and subgroup

Percentages reported to 1 d.p; Observed to expected applicant ratios reported to 2 d.p

■ indicates small group size (<50), and ratios are not shown in these cases.

Ethnicity group or subgroup	% of students in England that completed 16 to 18 KS5 studies including a level 3 qualification in 2018 or 2019 (national data)	% of UK-domiciled University of Cambridge applicants from the group		Ratio of the number of applicants observed to the number of applicants expected (based on the national data)	
		2016-2018 entry years	2019 entry year	2016-2018 entry years	2019 entry year
Asian	13.3%	14.2%	17.1%	1.07	1.28
Bangladeshi	2.1%	1.1%	1.7%	0.53	0.79
Chinese	0.6%	2.7%	2.9%	4.31	4.54
Indian	3.9%	5.8%	6.5%	1.47	1.66
Pakistani	4.4%	2.0%	2.4%	0.45	0.56
Asian Other	2.3%	2.6%	3.5%	1.15	1.55
Black	5.9%	3.4%	5.0%	0.58	0.85
Black African	4.1%	2.8%	4.2%	0.68	1.01
Black Caribbean	1.1%	0.4%	0.6%	0.39	0.54
Black Other	0.6%	0.2%	0.2%	0.29	Group <50
Mixed	4.6%	6.3%	7.1%	1.37	1.54
Mixed White/Asian	1.2%	3.4%	3.8%	2.82	3.14
Mixed White/Black	1.6%	1.3%	1.3%	0.78	0.81
Mixed Other	1.8%	1.6%	2.0%	0.93	1.14
Other	1.8%	1.6%	2.2%	0.87	1.19
White	74.4%	74.5%	68.7%	1.00	0.92

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 (with minor amendments to 2019 data in July 2021)