



ACADEMIC MATCH AND THE INTERACTION BETWEEN ACCEPTANCE ROUTE AND APPLICANT CHARACTERISTICS

KEY POINTS

- ▶ A placed applicant's academic match is defined as the difference between the average attainment of applicants on their course and the applicant's own attainment. Negative values mean the course average attainment is lower than the applicant's; positive values mean it is higher.
- ▶ Acceptance route matters: academic match differs between firm, insurance and Clearing, and the size of the difference varies by applicant characteristics.
- ▶ For those placed at their firm choice, the following groups have lower academic match:
 - Those with five 'local choices'
 - Those from the White ethnic group
 - Those from advantaged areas (IMD Quintile 5)
 - Women
- ▶ Comparing main scheme routes (firm and insurance) with Clearing, the declines in academic match are larger for applicants:
 - from the Asian and Black ethnic groups
 - from disadvantaged areas (IMD Quintiles 1 and 2)

CONTENTS

Key points	2
Introduction	3
Methodology	4
- Modelling population	4
- Dependent variable	5
- Independent variables	6
- The model	6
Results	7
- Differences in academic match for applicants placed at their firm choice	7
- Difference in academic match between routes	8
- How route differences vary by applicant group	9
- Model estimates	11
Limitations and sensitivity analysis	12
- Limitations	12
- Sensitivity analysis	12
References	13
Appendix 1	14

INTRODUCTION

In a hypothetical admissions system in which applicants are assigned to courses based only on their Level 3 results, all applicants on the same course would have similar attainment. Consequently, there would be little variation in the gap between the average attainment of applicants on a course (course tariff) and each individual applicant's attainment.

However, choice is a key element of UK Higher Education (HE) admissions. Applicants select where to apply, and providers decide which applicants receive offers and confirmed places. Additionally, applicants enter courses through different acceptance routes, which introduces additional complexity into the relationship between attainment and course tariff. Table 1 introduces the acceptance routes considered in this report.

Table 1: Acceptance routes included in this analysis

Acceptance Route	Definition
Firm choice	The applicant is accepted at their first (firm) choice course ¹ .
Insurance choice	The applicant is accepted to their back-up (insurance) choice course.
Clearing (not applicant decision)	The applicant was rejected from their firm choice, and their insurance choice (if they had one), and is accepted onto a new course via Clearing.
Clearing (applicant decision)	The applicant was accepted at their firm choice or their insurance choice but decided to decline these choices and instead found a new course through Clearing. This route includes applicants using Decline My Place.

This research seeks to understand how the difference between course tariff and applicant attainment - referred to as academic match - varies by applicant characteristics and acceptance route.

The focus is on two key questions:

1. For those placed at their firm choice, how does academic match differ between applicant groups?
2. How does academic match differ between those placed via the main scheme (firm or insurance) and those placed via Clearing (not applicant decision), and is this difference consistent across applicant groups?

These are addressed using statistical modelling techniques to understand the relationship between academic match, acceptance route, and applicant characteristics.

It is acknowledged that this research analyses 'match' by looking at the alignment of a student's grades with their choices, and assumes this is how decisions are made. However, other UCAS research and insight suggest that what students are seeking is 'fit'—a course and institution that meet their individual needs and motivations—and that student decision-making is much broader than grades and entry requirements.

¹ The applicant's firm and insurance choice courses are taken on 30 June.

METHODOLOGY

Modelling population

The modelling focused on 18-year-old accepted applicants domiciled in England who applied originally via the main scheme in the 2025 cycle, and who achieved at least three A levels. Applicants with other qualifications were excluded to ensure the population was homogenous. This means findings may not generalise to other UK nations and other qualifications.

The following criteria were applied:

1. Base population criteria

- 18-year-old applicants domiciled in England who applied via the UCAS main scheme in 2025.
- Applied through an apply centre in England.
- Held a firm choice on 30 June.
- Applied with no achieved A levels at application and went on to achieve three or more A levels at E or above in their application year.
- Accepted via their firm or insurance choice, or a Clearing choice.

2. Course criteria

- The applicant was accepted onto a course with at least 10 accepted applicants aged 18 domiciled in England, Wales or Northern Ireland with 3 or more A levels. This is applied to make the course tariff calculation reliable.

3. Model terms criteria

- No missing data for any of the model terms listed below.

There were 136,635² applicants in the base population. Due to the necessary additional restrictions, 78% of them (106,425 applicants) were used to build the model. Figure 1 shows the proportion of the base population remaining after each restriction.

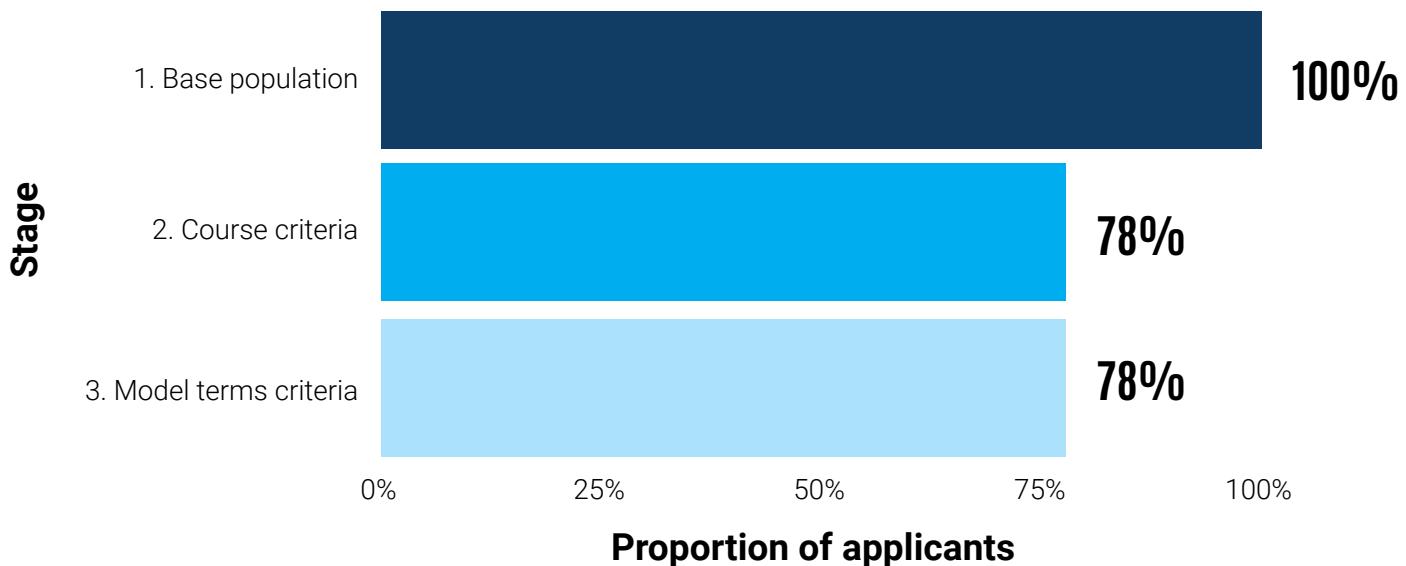


Figure 1: The proportion of the base population remaining after each restriction is applied.

For more information on the impact of the modelling population selected see the [Limitations and Sensitivity Analysis](#) section.

² Counts are rounded to the nearest multiple of five. Percentages are rounded to the nearest whole number. All other figures (for example, model coefficients, adjusted means, and their differences) are rounded to two decimal places.

Dependent variable

The dependent variable is academic match, defined here as the difference between the course tariff, and the applicant's own attainment at A level.

Course tariff is defined as the median total points from the top three A level grades of 18-year-old applicants from England, Northern Ireland and Wales accepted onto the course in the same cycle via any route. The applicant's attainment is defined as total points of the applicant's top three A level grades. The following grade to point conversions are used: A*=6, A=5, B=4, C=3, D=2, E=1.

The variable values range from -10 to 9. Lower values indicate lower (relative) course tariff; the course tariff is further below the applicant's own attainment. For example, the value of the dependent variable for an applicant achieving 15 points (equivalent to AAA) placed on a course with tariff 12 points (equivalent to BBB) is -3. In essence, a negative value means the average attainment on the course is lower than that of the applicant, whereas a positive value means it is higher.

The distribution of the dependent variable is shown in figure 2. The distribution of the dependent variable split by acceptance route is shown in [Appendix 1](#).

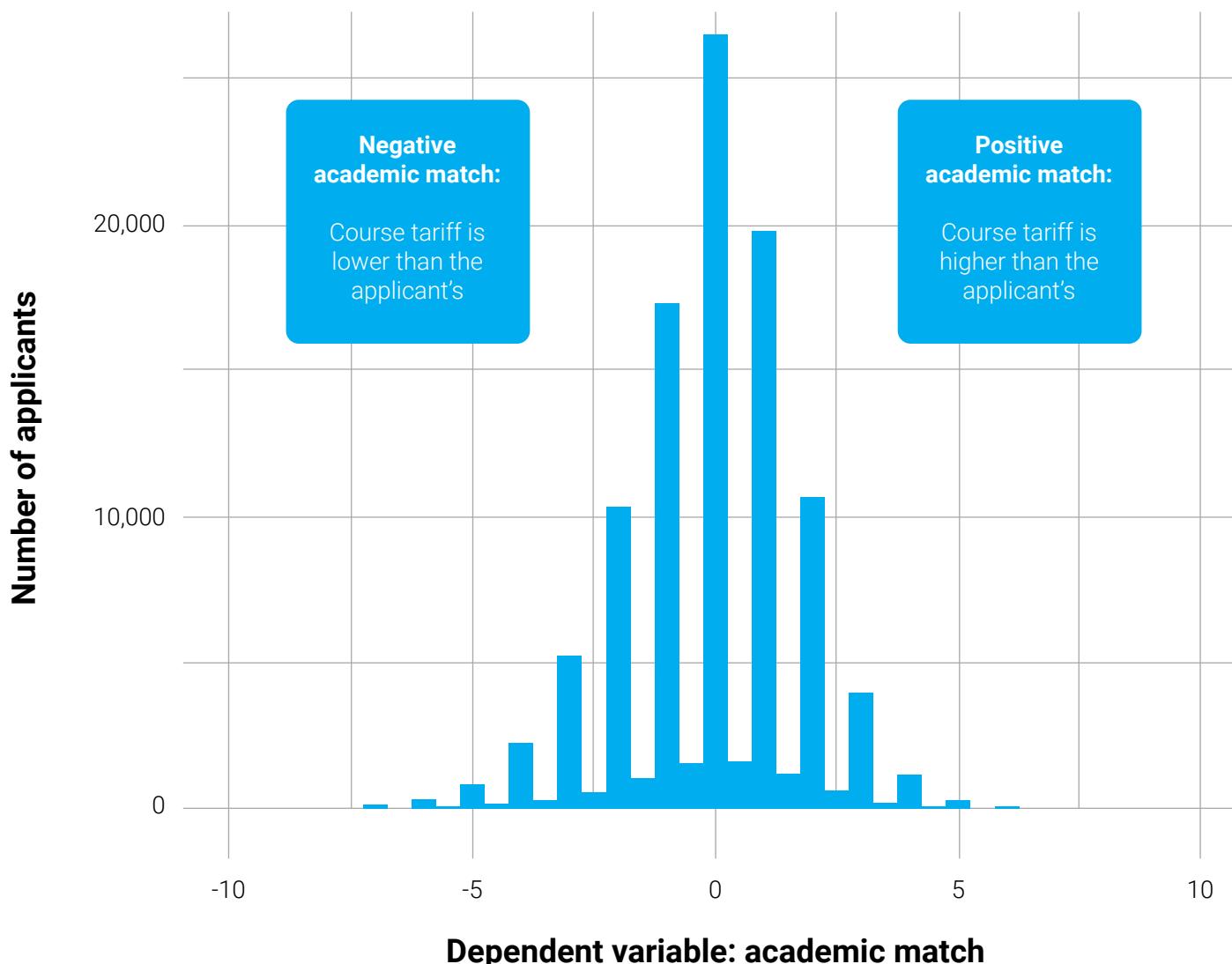


Figure 2: The distribution of the dependent variable.

The mean of the dependent variable is -0.10. It is not exactly zero as the population used to calculate course tariff is wider than the modelling population.

Independent variables

Table 2 lists the independent variables included in the model. The proportion of applicants in each category is shown in the data tables accompanying this report. To investigate how the effect of the variables of interest on academic match varied with acceptance route, interaction terms between acceptance route and each other independent variable were included in the model.

Table 2: The independent variables included in the model formulation.

Variable	Description
Acceptance route	The route through which the applicant was placed on their course. Categories: firm choice, insurance choice, Clearing (applicant decision), Clearing (not applicant decision). The model was formulated with each of these four routes used as the reference category to aid interpretation.
Achieved A level points	Total A level points achieved from the applicant's best 3 A level grades. Uses the following grade to point conversions: A*=6, A=5, B=4, C=3, D=2, E=1. Value range (prior to centring) was 3 to 18. The variable is centred on 12 points (the median), and the value range post centring is -9 to 6. The reference category is 0.
Ethnic group	High level ethnic group as declared by the applicant. Categories: Asian, Black, Mixed, Other, Unknown/Prefer not to say, White. The reference category is White.
Gender	Gender as declared by the applicant. Categories: I prefer not to say, I use another term, Man, Woman. The reference category is Man.
IMD	The Index of Multiple Deprivation for 2019 identifies small area concentrations of multiple deprivation across all of England, providing a relative measure of deprivation amongst small areas (lower layer super output area). There are approximately 34,000 LSOAs in England. The IMD2019 variable is calculated by linking the home postcode supplied to UCAS as part of an applicant's application with the associated lower super output area. The Office for National Statistics Postcode Directory (August 2020 version) is used for this linking process. These lower super output areas are then linked to the relevant IMD2019 quintile. Categories: Quintile 1 (most deprived), Quintile 2, Quintile 3, Quintile 4, Quintile 5 (least deprived). The reference category is Quintile 5.
Local choices	Number of main scheme choices within one hour's drive of the applicant's home address. Categories: 0, 1, 2, 3, 4, 5. The reference category is 0.
Region	Government office region of applicant domicile. Categories: East Midlands, East of England, London, North East, North West, South East, South West, West Midlands, Yorkshire and The Humber. The reference category is South East.

Role of achieved A level points

Including achieved A level points in the model adjusts for ceiling effects. For example, an applicant with 18 points (A*A*A*) cannot have academic match above zero because no course median exceeds 18 points. Consequently, applicants with higher A level points will likely have lower academic match. Since A level attainment varies across acceptance routes and applicant characteristics, including this variable means modelled effects are independent of attainment differences between groups.

The model

A linear regression model was fitted using the `feols` function from the `fixest` package (version 0.13.2) in R version 4.5.2 with R^2 of 0.31 and adjusted R^2 of 0.31. Since applicants are grouped in apply centres (schools and colleges), cluster robust standard errors are included on apply centre. This adjustment affects the standard errors only and does not change the point estimates.

RESULTS

Modelling was used to identify applicant groups placed on courses with higher or lower academic match. Table 3 reiterates the definition of academic match.

Table 3: Definition of academic match

Academic match	Course tariff
Higher	Course tariff is higher relative to the applicant's A level attainment
Lower	Course tariff is lower relative to the applicant's A level attainment

The model includes controls for applicant A level attainment, acceptance route and other characteristics. Consequently, the outcomes in academic match shown here are relative to other applicants with the same attainment, placed through the same route, with similar characteristics.

Outcomes in this section are reported using adjusted mean academic match³ for each group unless otherwise specified, as these provide the most interpretable comparisons. This is particularly important because the model includes interaction terms between acceptance route and each other independent variable. These adjusted means incorporate the combined effects of the main terms, interactions, and the observed distribution of other covariates. As a result, the adjusted mean differences between acceptance routes and the raw coefficient contrasts may not be numerically identical.

Given the large number of comparisons the focus is on differences that are statistically significant at the 0.01 level.⁴

The **Sensitivity analysis** section of the report addresses how specific modelling decisions influence estimated effects. It summarises the impact of choices such as including the Local choices variable in the model and the choice of disadvantage measure.

Differences in academic match for applicants placed at their firm choice

Nearly three quarters of applicants (74%) in the modelling data were placed at their firm choice. Figure 3 shows the adjusted mean academic match for these applicants by key characteristics. Among those placed at their firm choice, the following groups have significantly lower adjusted mean academic match:

- ▶ **Applicants with five local choices:** This group has an academic match of -0.76, which is **0.95 points lower** than applicants with no local choices.
- ▶ **White ethnic group:** Applicants from this group have an academic match of -0.15, which is **0.54 points lower** than applicants from the Asian ethnic group, and also lower than all other ethnic groups.
- ▶ **Applicants from advantaged areas (IMD Quintile 5):** This group has an academic match of -0.03, which is **0.25 points lower** than those from the most disadvantaged areas (IMD Quintile 1), and 0.10 points lower than those from IMD Quintile 2.
- ▶ **Women:** They have an academic match of -0.08, which is **0.22 points lower** than men.

3 The adjusted mean academic match reported throughout this section were calculated using the avg_predictions function from the marginaleffects package (version 0.30.0). This creates a counterfactual dataset for each value of the variable of interest (for example, number of local choices). Predicted probabilities are produced for each observation, then mean probabilities for each value. So, for example, the value of -0.76 for '5 local choices' is generated by first setting the value of this variable to '5 local choices' for all applicants in the sample. It then calculates the mean academic match for every applicant in the sample. Finally, it produces the mean across this distribution of gaps, which is -0.76.

4 The significance of gaps between groups within an acceptance route is assessed using the p value of the main effect coefficient with the route in question set as the reference category. Due to the large number of comparisons, a p value below 0.01 is taken to indicate a statistically significant difference. For example, this section uses the p values for main effects in the model with firm as the reference category.



Figure 3: The adjusted mean academic match for applicants placed at their firm choice split by certain characteristics. Small groups have been excluded.

There are also regional differences in adjusted mean academic match. Applicants from London are placed on courses with the highest academic match and those from the East Midlands the lowest. The gap between these two regions is 0.39 points. However, interpretation is complex for two reasons. First, the inclusion of Local choices in the model as an independent variable and the strong relationship between Region and Local choices; in the modelling population 16% of applicants in London have five local choices compared to 1% in the South West. Second, in regions with fewer providers results may reflect individual provider behaviour. The [Sensitivity analysis](#) section of this report provides further detail.

As described in the [Independent variables](#) section, achieved A level points are included in the model to address ceiling effects. As expected, amongst those accepted via their firm choice, applicants with higher achieved A level points are placed on courses with lower academic match on average. The effect is large, with a difference of 1.74 points between those with 18 points (A*A*A*) and those with 12 (BBB).

Difference in academic match between routes

Academic match also varies by the route through which applicants are placed.

Throughout this section, for brevity, 'Clearing' refers only to those placed via 'Clearing (not applicant decision)'. In the modelling population 6% of applicants are accepted via this route, compared to 74% via their firm choice and 12% via their insurance choice.

Table 4 shows the unadjusted mean academic match, as well as the adjusted mean values for each acceptance route.

Table 4: Mean academic match by acceptance route

Acceptance route	Unadjusted mean academic match	Adjusted mean academic match
firm choice	-0.21	0.02
insurance choice	0.25	-0.07
Clearing	0.48	-0.16

The unadjusted and adjusted means show different trends across acceptance routes. The unadjusted mean academic match for those accepted via their firm choice is the lowest, and for those accepted via Clearing is the highest. This is reversed for the adjusted mean academic match.

This highlights the importance of examining acceptance route trends using a model that includes achieved A level results to address ceiling effects. As mentioned previously, an applicant with 18 points (A*A*A*) cannot have academic match above zero because no course median exceeds 18 points. Consequently, applicants with higher A level points will likely have lower academic match. The lower unadjusted mean academic match for applicants accepted via their firm choice is, at least in part, related to their higher attainment; the average achieved A level points for those accepted at their firm choice is 13.28, compared to 9.78 for those accepted via Clearing.

These attainment differences are the main reason for the difference in trend of the adjusted mean academic match by acceptance route.

How route differences vary by applicant group

Examining the adjusted mean academic match, there is a small but significant difference between the academic match for those accepted via firm choice and Clearing. However, the gap is larger for certain groups.

The following groups experience a significantly greater decrease in academic match between acceptance via the main scheme (both firm and insurance) and acceptance via Clearing:

- ▶ Applicants from **the Asian and Black ethnic groups**, compared to the White ethnic group.
- ▶ Applicants from **disadvantaged areas** (IMD Quintiles 1 and 2), compared to those from advantaged areas (IMD Quintile 5).

Figure 4 shows the adjusted mean academic match by route for selected ethnic groups and IMD Quintiles.

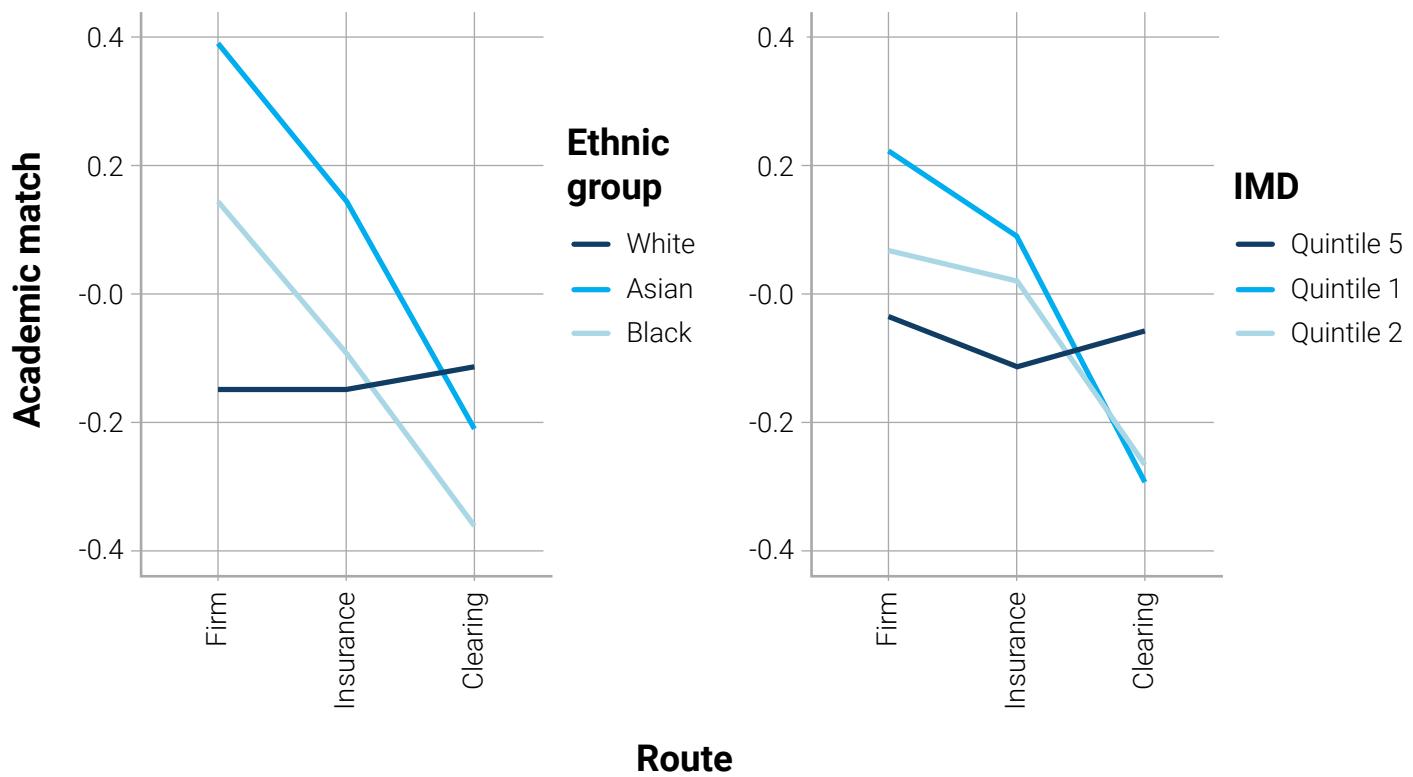


Figure 4: Adjusted mean academic match by route and IMD and Ethnic group. Clearing refers specifically to those accepted via Clearing (not applicant decision).

Previously, Figure 3 showed that applicants from the White ethnic group placed at their firm choice have the lowest academic match. However, Figure 4 reveals this pattern does not hold across all routes. In Clearing, applicants from the White ethnic group no longer have the lowest academic match, with adjusted mean academic match for applicants from the Black ethnic group now 0.25 points lower.

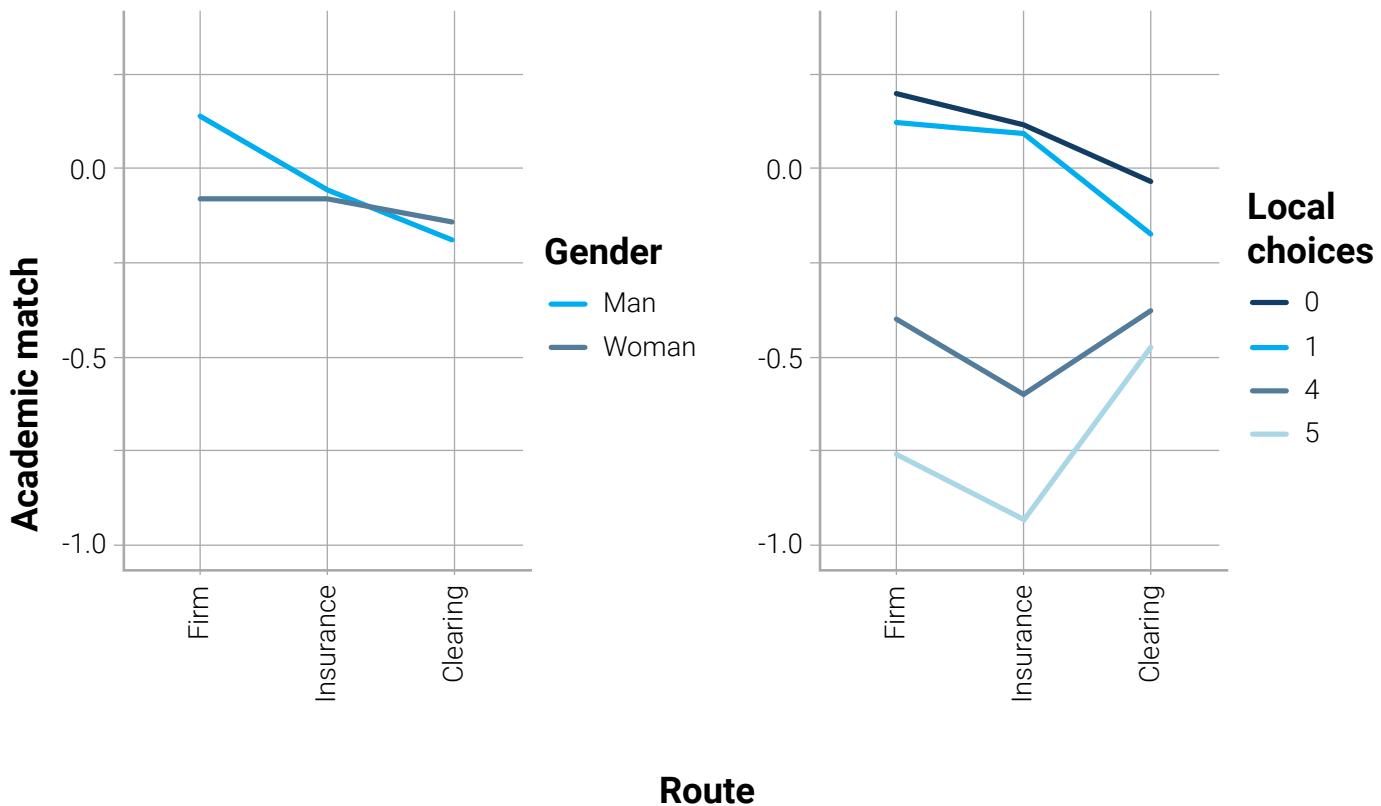
This shift occurs because applicants from the Asian and Black ethnic groups experience significantly larger declines in academic match⁵ than the White ethnic group when comparing acceptance via main scheme routes (firm or insurance) to acceptance via Clearing:

- ▶ From **firm to Clearing**, adjusted mean academic match drops by 0.60⁶ for applicants from the Asian ethnic group and 0.51 for applicants from the Black ethnic group, compared to no meaningful change for the White ethnic group.
- ▶ From **insurance to Clearing**, the drop is 0.35 for applicants from the Asian ethnic group and 0.27 for applicants from the Black ethnic group, while applicants from the White ethnic group again experience no meaningful change.

For IMD, the higher adjusted mean academic match seen at firm choice for Quintiles 1 and 2 also reverses in Clearing. Disadvantaged applicants (Quintiles 1 and 2) placed through Clearing have lower adjusted mean academic match than advantaged applicants (Quintile 5), with a gap of 0.24 between Quintiles 1 and 5 in Clearing. Again, this is because of differences in the drop between main scheme (firm and insurance) outcomes and Clearing, with disadvantaged applicants experiencing significantly larger decreases:

- ▶ From **firm to Clearing**, Quintile 1 drops by 0.52, Quintile 2 by 0.34, while Quintile 5 there is no meaningful change.
- ▶ From **insurance to Clearing**, Quintile 1 drops by 0.38, Quintile 2 by 0.29, and Quintile 5 again, there is no meaningful change.

Figure 5 shows the adjusted mean academic match by route by gender and number of local choices for selected categories.



5 The significance of the differences between applicant groups in their drop in academic match between routes is taken from the p values of the interaction coefficients in the model summaries. Differences are treated as statistically significant where the p-value is below 0.01.

6 Drops in adjusted mean academic match between acceptance routes are reported here to aid understanding of the difference in the effect of acceptance route between applicant groups. However, the significance of the effects is taken from the significance of the interaction term (for example firm choice * Asian ethnic group). This means that a drop for a single group may not itself be significant; rather, it is the contrast with other groups that defines significance. So, for example, the drop for the Asian ethnic group between firm and Clearing is not itself described as significant; however, it is described as 'significantly larger' than the drop for the White ethnic group

Figure 5 shows that the slightly higher adjusted mean academic match for men at their firm choice narrows for insurance and Clearing, where differences between genders are not significant. Men experience a significantly greater drop from firm outcomes to Clearing outcomes:

- ▶ From **firm to Clearing**, the academic match of men drops by 0.33, while for women it remains broadly similar.
- ▶ There is no significant difference between the genders in the change from **insurance to Clearing** outcomes.

Figure 5 shows that there are some strong trends relating to number of local choices and acceptance route. More local choices could potentially indicate a stronger preference to live at home or greater availability of courses.

Applicants with no local choices see a significantly greater drop in adjusted mean academic match when comparing the main scheme (firm or insurance) and Clearing than those with four or five local choices. However, because local choices data is derived from main scheme choices (i.e. it is the number of main scheme choices an applicant has close to home), its relevance for analysis with Clearing outcomes may be more limited, for example if an applicant with five local main scheme choices has chosen a non-local choice in Clearing.

The interaction between Clearing and Region is not statistically significant⁷. This means the relationship between academic match and the difference between acceptance via main scheme routes (firm or insurance) and Clearing is fairly consistent across regions.

Model estimates

The coefficients and associated p values from the model can be found in the accompanying data tables. Additionally, the model coefficients and associated p values are included for the model formulated with each of the four acceptance routes as the reference category. This is to enable easier interpretation of statistical significance.

No overview of results for applicants placed through Clearing (applicant decision) has been included within this document. This route includes applicants using Decline My Place to remove themselves from a main scheme choice. In the modelling population 7% of applicants are accepted via this route. The coefficients for the interaction terms between each variable and this route are included in the model estimates.

7 Across the models with firm and insurance as the reference categories.

LIMITATIONS AND SENSITIVITY ANALYSIS

Limitations

The following points outline key constraints that should be considered when interpreting the findings:

- 1. Base population:** The base population chosen means the results may not generalise to other UK nations and qualifications other than A levels.
- 2. Limit on course size:** The 'course tariff' variable is based on a minimum of 10 placed applicants, meeting specified criteria. Consequently, some courses, and applicants placed on them, are excluded from the analysis. The excluded applicants are more likely to be at lower tariff providers (15% of the base population are accepted onto courses at lower tariff providers vs. 10% after the restriction). The results will therefore not generalise fully to the base population. However, the impact of this limitation is likely small given the findings from the course size sensitivity analysis carried out as referenced in the following section.
- 3. Reasons for differences in academic match:** The model does not address the reasons for the differences in academic match between acceptance routes and applicant groups. There are many reasons why there might be differences in academic match, including but not limited to: predicted grades, aspiration, offer conditions, and different subject preferences.
- 4. Interpretation of academic match:** No conclusion is drawn on whether higher or lower academic match is inherently preferable. Previous research (Belfield et al. 2021) suggests being placed on a course with higher academic match may be beneficial as it is associated with higher salary outcomes independent of the individual applicants' attainment and characteristics. However, being placed on a course with very high academic match may carry risks (potentially including higher risk of drop out, or lower degree classification). It is also acknowledged that positive outcomes for an applicant are not linearly related to the academic match of their course, and there may be other reasons why a course is a good fit for a particular applicant independent of the attainment of other applicants on their course.

Sensitivity analysis

To check the robustness of the findings, the model was tested under alternative specifications and data conditions. The key variations explored were:

- 1. Inclusion of Local Choices variable:** Removing the Local Choices variable from the model decreased the magnitude of some effects (relating to Ethnic group and IMD) slightly. However, all headline findings were unchanged. The impact of removing Local Choices on the regional effect was more complex, with the differences between some regions changing.
- 2. Measure of disadvantage:** The model was tested using Key Stage 4 Free school meal status (KS4 FSM6 variable from the National Pupil Database; Department for Education, 2025) and POLAR4 as alternatives to IMD. Effects for POLAR4 were slightly smaller but similar to IMD. KS4 FSM6 was not found to be a granular enough measure of disadvantage.
- 3. Course size:** Expanding the course size criterion to include courses with at least 5 applicants aged 18 from England, Wales or Northern Ireland with 3 or more A levels did not impact the headline findings.
- 4. A level subjects:** Adding flags for whether the applicant held different A level subject groups in the model slightly decreased the magnitude of some effects (namely Gender and Ethnic group) but did not materially change the headline findings.
- 5. Previous cycle:** Modelling using equivalent data from the 2024 cycle admissions cycle slightly decreased the magnitude of some effects (namely Ethnic group and Local choices) but did not materially change the headline findings.
- 6. Attainment control:** Including centred A level points as a continuous rather than a factor variable did not impact the headline findings or their magnitudes.

This report benefited from expert peer review by George Leckie, Professor of Social Statistics and Co-Director of the Centre for Multilevel Modelling (CMM) at the School of Education, University of Bristol, UK

REFERENCES

Arel-Bundock, V., Greifer, N., Heiss, A. (2024). How to interpret statistical models using marginaleffects for R and Python. *Journal of Statistical Software*, 111(9), 1–32.

[doi:10.18637/jss.v111.i09](https://doi.org/10.18637/jss.v111.i09)

Belfield, C., Britton, J., Buscha, F., Dearden, L., Dickson, M., Sibeta, L., van der Erve, L., Vignoles, A., Walker, I., & Zhu, Y. (2021). How much does degree choice matter? London: Institute for Fiscal Studies.

<https://ifs.org.uk/publications/how-much-does-degree-choice-matter>

Berge, L. (2018). Efficient estimation of maximum likelihood models with multiple fixed-effects: the R package FENmlm. *CREA Discussion Papers*.

Department for Education. (2025). National pupil database.

https://www.find-npd-data.education.gov.uk/data_elements/00cd334b-f819-4ea9-b745-9a5fc14a30dd

R Core Team (2025). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria.

<https://www.R-project.org/>

APPENDIX 1

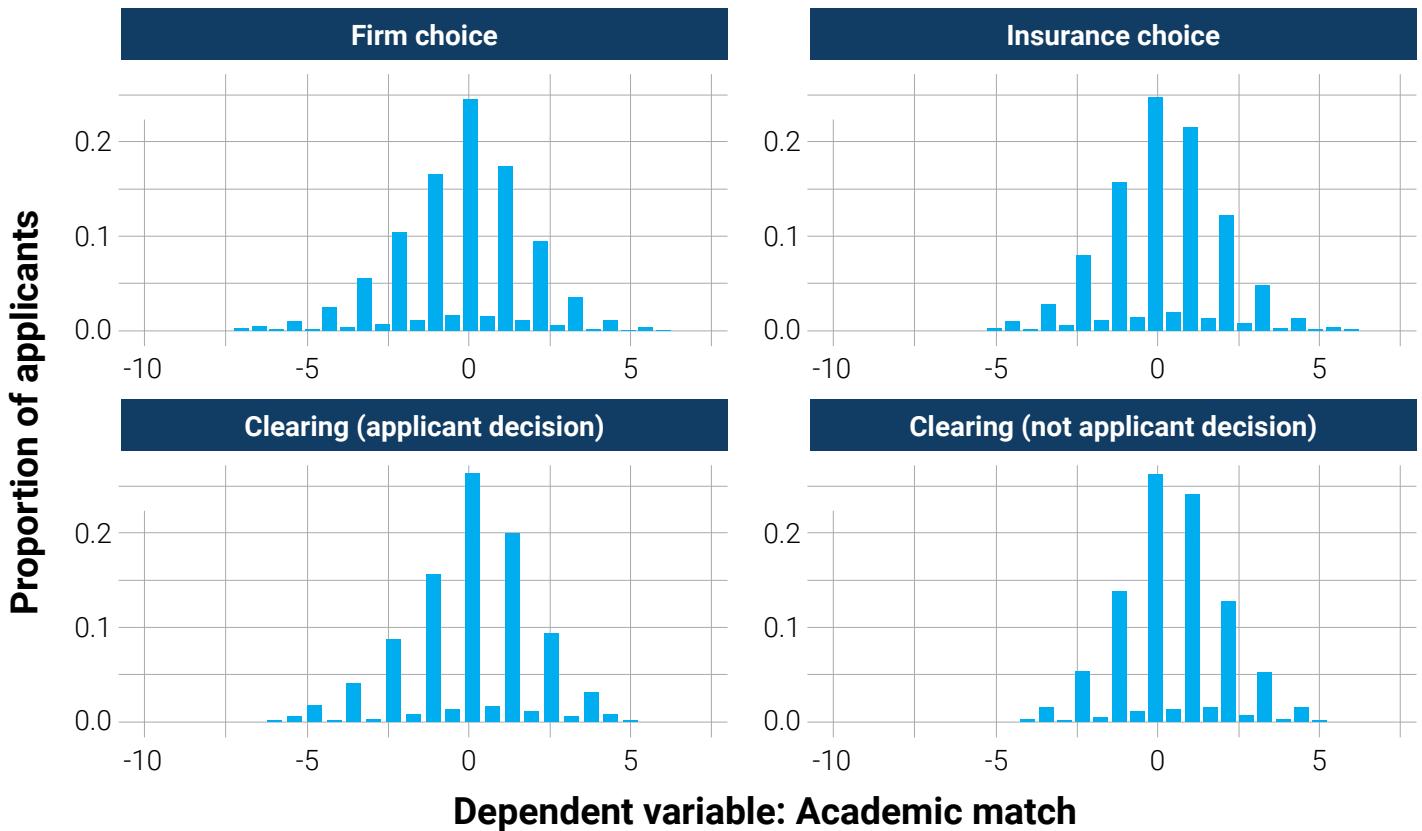


Figure 6: The proportion of applicants with each level of academic match accepted via each acceptance route. Values with fewer than 10 observations are excluded.

As mentioned in the [Results section](#), without model adjustment there are some differences in the mean academic match by acceptance route. Those accepted via Clearing (not applicant decision) have the highest unadjusted mean academic match (0.48), and those accepted via their firm choice have the lowest (-0.21). However, the median academic match through each acceptance route is 0, and as figure 6 shows, each route has a spread of academic match. These figures are unadjusted, the [Results section](#) has details of adjusted differences by acceptance route.

