Cambridge Assessment

How does A-level subject choice and students' background characteristics relate to Higher Education participation?

Conference Abstract

Carmen Vidal Rodeiro

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Author contact details:

Carmen Vidal Rodeiro
Assessment Research and Development
Research Division
Cambridge Assessment
The Triangle Building
Shaftesbury Road
Cambridge
CB2 8EA
UK

vidal.c@cambridgeassessment.org.uk

http://www.cambridgeassessment.org.uk

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Abstract

Over the past few years, policy makers and the general public have become increasingly concerned about the extent to which different qualifications/subjects prepare young people for careers or further study. Despite policy efforts and claims of equivalence, multiple studies have identified ways in which students' progression differs depending on the qualifications/subjects studied, even after controlling for their background characteristics. Such studies have also shown that students from less privileged backgrounds and from state schools are under-represented at high-status universities.

In England, the principal measure of academic attainment for pre-university students is the A-level. Choosing A-levels, however, is not straightforward as some subjects ('facilitating subjects') are seen as providing better grounding for Higher Education (HE) than others. In addition, many HE courses require particular subjects and there is a disparity in the attitudes of admissions staff towards certain A-levels.

This research aimed to provide a better understanding of how useful A-level subjects are for gaining admission to HE. In particular, it investigated the A-levels (and combinations of A-levels) that students in HE took previously and how students' background, in particular gender and school type, interacted with their A-level choices to influence the type of HE institution attended.

The study followed a cohort of 18 year-olds from school/college through their first year in HE (2016/17) using data from two different sources. National Pupil Database (NPD) extracts had information on A-level subjects and attainment, prior attainment (e.g., GCSEs) and students' characteristics such as gender, school type and income-related deprivation. Data from the Higher Education Statistics Agency, including HE institution and subject of HE course for all full-time first-year undergraduates, was linked to the NPD.

Together with descriptive statistics, which showed the popularity of A-level subjects and combinations of A-level subjects in relation to HE participation, multilevel logistic regression analyses were carried out to investigate the relationship between enrolment in HE and A-level specialism (two or more A-levels in a subject area), controlling performance at A-level and students' characteristics (e.g., gender, prior/concurrent attainment, previous institution type, socio-economic background).

Some key findings from this research are summarised below.

- The most popular A-levels amongst university students were mathematics, psychology, biology, history, chemistry and English literature. However, these subjects were represented in different proportions in HE and, particularly, in different institutions. Students with academic subjects were more likely to go to universities in the Russell Group and those holding applied or expressive A-levels were more likely to study in other types of universities. Just below half of the students in Russell Group institutions were specialists in STEM and the percentages of specialists in STEM and language subjects increased with the increasing ranking of the HE institutions. On the contrary, the percentage of specialists in humanities decreased with the increase in ranking.

  These uptake figures show that subject choice has a significant effect on the type of HE institution attended, which supports the view that careful choice of subjects post-16 is crucial to avoid students closing their options down prematurely.

- Schools and colleges offer a wide range of A-levels and, in theory, many subject combinations are possible. In this research, there were 17923 different combinations of at least three A-levels. The most common combinations were those involving

science subjects (biology, chemistry and mathematics was, by far, the most popular combination). The most common combination consisting of humanities subjects only was English literature, history and psychology (in seventh position).

The number of A-levels held by students varied across the different HE institutions. Students at Russell Group institutions held the highest number of A-levels and students attending low ranking institutions the lowest. Similar patterns were found for A-levels in facilitating subjects. For example, students attending Russell Group institutions held the highest number of facilitating subjects and those attending institutions with a low research quality ranking, or institutions with low graduation prospects, the lowest.

- The multilevel logistic regression analyses showed that there was a significant gender effect on the probability of enrolling in HE: males were significantly less likely than females with the same prior attainment and background characteristics to enrol. However, if they enrolled at all, males were significantly more likely than females to attend institutions in the Russell group, institutions in the Sutton Trust Top-30, and institutions with a high overall ranking. Gender also interacted with A-level subject choice to influence HE enrolment. For example, amongst specialists in STEM, males were more likely than females to enrol in a high ranked institution. However, females were more likely to enrol in Russell Group institutions than males if they specialised in languages or if they had multiple specialisms.

  Although, all else being equal, students in independent schools were less likely to enrol HE immediately after completing their A-levels, the probability of attending prestigious or high ranked institutions was higher for them when compared to similar students in state-maintained schools. This is important from a widening participation point of view, as it supports other research findings in providing evidence that young people from state, rather than independent, schools continue to be under-represented at high-status universities. The interaction between school type and A-level specialism was also significantly associated with the type of HE institution attended. For example, STEM specialist were more likely to attend Russell group institutions if they took their A-levels in an independent school than if they did so in a state school.

The above results show that, although careful choice of subjects/specialisms is crucial for enrolling in HE and, in particular, for enrolling in specific institutions, background characteristics such as gender and school type are still part of the explanation for differential HE participation. While the access gap between students from different backgrounds has narrowed in recent years due to widening participation activities, the gap in the most selective institutions remains. Contextualising admissions (i.e., taking into account candidates' backgrounds when making decisions) might be one way to make progress towards narrowing this gap.

Full paper

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