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Socioeconomic divides in curricular pathways: Unpacking decision-making mechanisms and peer effects

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ABSTRACT

This study develops and tests a comprehensive framework to explain socioeconomic inequalities in curricular choices, using England as a test case. Drawing on rational choice theory, bounded rationality, behavioural science, and culturalist perspectives, we evaluate a broad set of explanatory mechanisms. Linking rich survey data to administrative records, we examine both individual-level factors and peer effects, employing for the latter an instrumental variable approach based on the peer-of-peer methodology. We find that a parsimonious model incorporating prior academic performance, a composite measure of subjective occupational returns capturing the perceived accessibility of higher education and decision uncertainty, and peer influences fully accounts for observed socioeconomic disparities in curricular choices. Leveraging longitudinal data, we demonstrate that the balance between expressive and instrumental motivations for curricular choices shifts over time, with growing importance accorded to the latter at later educational transitions.

1. Introduction

Curricular differentiation in secondary education is a universal feature of contemporary school systems. Whether it occurs within schools through subject choice or ability grouping, or between schools via the provision of distinct educational tracks, curricular differentiation leads to the institutional separation of students into more or less academically oriented pathways. Moreover, high-SES students are systematically overrepresented in academically oriented pathways, which facilitate both access to and completion of higher education. As such, curricular differentiation functions as an institutional process contributing to the intergenerational reproduction of social inequalities (Boudon, 1974; Schindler et al., 2023). Understanding the mechanisms underlying the unequal distribution of students across curricular pathways is therefore a key task, which holds major implications for both social stratification theory and educational policies.

Academic performance is a well-established mediator of socio-economic gaps in curricular choice (so-called 'primary effects'). Academically oriented curricula are typically regarded as more demanding, and since high-SES students tend to exhibit higher academic performance, they are disproportionately recruited into these pathways (Hallinan, 1994). However, even among students with comparable levels of academic performance, those from high-SES backgrounds are more likely to pursue academically oriented curricula (so-called 'secondary effects') (Jackson, 2013).

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Rational choice theory is a prominent framework to explain these secondary effects (Gambetta, 1987; Erikson and Jonsson, 1996; Breen and Goldthorpe, 1997). The key assumption underlying this framework is that curricular choices in secondary education are made in anticipation of students' intentions to pursue higher education. Students who expect to continue their studies after high school are more likely to take academically oriented curricula, as these provide better preparation for higher education. Several empirical studies report that high-SES students hold higher expectations of continuing to higher education (Morgan, 2005; Barone et al., 2021). Rational choice models explain this pattern in terms of the anticipated costs and benefits of pursuing higher education (Gambetta, 1987; Boudon 1979). In particular, status maintenance models suggest that high-SES families perceive lower relative costs and higher expected benefits, as higher education credentials are instrumental in preventing downward mobility (Breen and Goldthorpe, 1997; Bree, Yaish 2006). However, some empirical studies report that, while cost–benefit considerations do influence curricular choices, they do not account for the related socio-economic gaps (Stocké, 2007; van de Werfhorst and Hofstede, 2007; Gabay-Egozi et al., 2010; Valdes, 2022). Although further research is needed to improve the operationalization of these proposed mechanisms, it is also possible that other less explored factors contribute to SES gaps in curricular choice.

In this study, we address this issue by investigating three complementary explanatory mechanisms of SES gaps in curricular choices in England. By integrating these three mechanisms in a cost–benefit framework, we aim to broaden its theoretical scope to include both instrumental and expressive motivations of educational choices, thereby providing a more comprehensive account of decision-making processes. First, we suggest that low-SES families experience greater uncertainty regarding plans for higher education. They tend to overestimate the selectivity of higher education and they perceive that they exert less control over the factors required to succeed in education. Because these families live in more unstable and unpredictable environments, parents and children have a weaker internal locus of control. As a result, they may feel less confident in their ability to shape their future and they may be less likely to formulate and pursue long-term educational goals. The second proposed mechanism concerns the role of expressive preferences. Various theoretical perspectives converge on the idea that low-SES students tend to exhibit lower levels of school engagement and stronger intrinsic motivations for vocationally oriented subjects. If these attitudes influence the selection of more demanding academic curricula, they may contribute to socio-economic gaps in curricular choices. The third explanatory mechanism we examine concerns the role of school peers. Due to socio-economic segregation between schools, high-SES students are more frequently surrounded by peers who make more ambitious curricular choices. If students are influenced by the choices of their peers, these peer effects could mediate SES gaps in curricular decisions.

This study examines whether these three mechanisms, along with academic performance and standard cost–benefit considerations, explain socioeconomic disparities in curricular choices in England. Moreover, we investigate whether the weight of distinct decision-making mechanisms varies across educational transitions. Specifically, we assess whether the relative importance of instrumental and expressive motives shifts between the two main curricular choices made in secondary education. Given the limited empirical evidence on how the determinants of curricular decisions evolve over time, our analysis provides a novel contribution in this regard. We find that prior academic performance, peer influences and subjective occupational returns jointly account for socio-economic disparities in curricular choices and are able to explain these disparities fully. To our knowledge, this study is the first to have accomplished such a comprehensive explanation of the social background effect.

This article is organised as follows. Section 2 outlines our theoretical framework and reviews the relevant literature, while Section 3 provides contextual background on the English school system. In Section 4, we present the data and variables used in the analysis, followed by a description of our modelling strategy in Section 5. Section 6 illustrates the empirical results, and Section 7 concludes.

2. Theoretical framework and research hypotheses

Our theoretical framework builds upon cost–benefit models of educational decisions as a starting point. We extend this framework in three ways. First, we incorporate behavioral insights by considering SES-related differences in locus of control and the perceived selectivity of higher education, arguing that they shape the responsiveness to the actual occupational benefits of curricular choices (Section 2.1). Second, we complement the analysis of instrumental motivations with a focus on expressive study motivations that influence curricular choices (Section 2.2). Finally, we integrate peer effects as a contextual mechanism that amplifies SES disparities in curricular choices (Section 2.3).

2.1. The costs and benefits of curricular choices

A key assumption of rational choice models is that individuals choose between different courses of action on the basis of the anticipated positive (benefits) and negative (costs) consequences of these options. Educational decisions involve both direct costs, such as tuition fees and study materials, and indirect costs, namely the earnings foregone by choosing to pursue education instead of entering the labour market. The resulting total costs can be far from negligible, particularly in the case of higher education. For low-SES families, whose economic resources are more limited and unstable, these investments constitute a comparatively heavier burden. In other words, they face higher relative costs, defined as absolute costs relative to household income (Boudon 1979; Gambetta, 1987; Daniel and Watermann, 2018). This could explain their lower propensity to select academically oriented curricula as a pathway to higher education. Hence, we hypothesize that *higher relative costs reduce the likelihood of selecting academically oriented curricula (H1a) and mediate SES-related disparities in curricular choices (H1b)*.

In rational choice models dominant in economics, individuals are assumed to possess perfect information and use their unlimited cognitive capacities to pursue the highest economic return possible. Accordingly, these models focus on the objective costs and benefits associated with educational choices. By contrast, bounded rationality models, more prevalent in sociology, relax the assumption of

perfect rationality, while retaining the assumption that individuals act coherently with their chosen goal. Therefore, this approach focuses on the subjectively perceived costs and benefits of educational investments. Within this approach, status maintenance models conceptualize the role of the subjective benefits of educational decisions with reference to expected occupational destinations (Breen and Goldthorpe, 1997; Breen and Yaish, 2006).[1] Drawing on prospect theory, these models introduce three key assumptions: (a) families evaluate the potential occupational destinations of their children relative to their current social position, which serves as a reference threshold: outcomes are thus perceived as either gains (upward mobility) or losses (downward mobility); (b) families are loss-averse, meaning they prioritize avoiding downward mobility over achieving upward mobility; and (c) educational decisions are (perceived as) inherently risky, in that educational options associated with greater potential gains also carry greater potential losses. If these three assumptions hold, it follows that high-SES families are more inclined to select academically oriented curricula to minimize the risks of downward mobility (Breen and Goldthorpe, 1997). A direct implication of status maintenance models is that high-SES students are more likely to aspire to high-status occupations in order to maintain their social position (Valdes, 2022). This career goal encourages them to pursue academically oriented curricula, which provide better preparation for higher education (Breen and Goldthorpe, 1997). Hence, we hypothesize that *preferences for high-status occupations increase the likelihood of selecting academically oriented curricula (H2a) and mediate SES-related disparities in curricular choices (H2b)*.

Measures of relative financial costs and occupational aspirations should therefore mediate SES gaps in curricular choices among students with comparable levels of academic performance (secondary effects). However, previous empirical studies report that this prediction is not supported, that is, the observed gaps remain largely unexplained by the available measures of these explanatory factors (Valdes, 2022; Lievore and Triventi, 2022; Stocké, 2007; van de Werfhorst and Hofstede, 2007; Gabay-Egozi et al., 2010). This may reflect, at least in part, the difficulty of collecting valid and reliable measures of these two mechanisms, particularly for status maintenance motives (Barone et al., 2018). However, these results may also point to certain limitations of this theoretical framework.

With regard to status maintenance motives, recent empirical studies challenge the assumption that academic tracks entail greater occupational risks than vocational tracks. In particular, students who obtain academic secondary qualifications but fail to complete tertiary education do not experience worse labour market outcomes than those graduating from vocational pathways (Schindler et al., 2023). Accordingly, students and parents do not perceive academic secondary tracks as riskier than vocational ones (Barone et al., 2021). Hence, the predictions of this approach may not hold, as its riskiness assumption is not met.

As regards relative costs, financial constraints may not represent a major hurdle to take academic pathways in educational systems that provide adequate financial support to low-income students at both the secondary and tertiary levels. A meta-analysis by Cooper and Stewart (2021) indicates that the causal effect of family income on educational attainment is relatively modest in high-income countries. Furthermore, this effect is largely concentrated at the lower end of the income distribution, that is, among families facing the most severe material deprivation. If children from these families also exhibit lower academic performance (primary effects), then family income may add limited explanatory power for secondary effects, due to the overlap between ability-related and financial constraints.[2]

In this study, we complement the cost-benefit framework with a novel hypothesis grounded in insights from behavioural research. The underlying premise is that low-SES families live more often in environments marked by heightened unpredictability, which arises from a range of factors, including precarious employment, economic instability, housing insecurity, increased exposure to deviance and crime, and inconsistent access to institutional support (Mani et al., 2013; Pepper and Nettle, 2017). Consequently, both parents and children are more likely to develop a less internal locus of control, that is, they perceive less personal agency over life outcomes and place greater emphasis on external factors, such as luck and external circumstances. Moreover, individuals with a more external locus of control are less likely to engage in long-term investments. If they perceive that their efforts may not reliably lead to desired results, they will be more inclined to focus on short-term outcomes. The review by Pepper and Nettle (2017) suggests that indeed low-SES families tend to exhibit a more external locus of control and a more short-term orientation in making investments across various life domains, including labour market and financial decisions, health behaviour, and family planning. Importantly, this argument should not be conflated with 'culture of poverty' explanations about a supposed working-class fatalism, for two reasons. First, these attitudes are understood as rational and even adaptive responses to the unstable and resource-scarce environments in which low-SES families often live. Second, this perspective does not suggest that low-SES families are indifferent to the potential benefits of their decisions, but rather that they assign lower weight to them because they perceive lower control over future outcomes (Pepper and Nettle, 2017).

We argue that, in the context of educational decisions, this mindset can significantly hinder ambitious, long-term investments, such as taking academically oriented curricula designed to prepare for higher education. Moreover, this tendency may be reinforced by a lack of familiarity with the higher education system. When parents have not attended, or have dropped out of, higher education, and when this is similarly true for their wider family and social networks, they may overestimate the actual difficulty of accessing and completing tertiary education (Gambetta, 1987; Erikson and Jonsson, 1996). As a result, low-SES families not only perceive less control over their future outcomes but also face greater uncertainty about the pathways leading to them. Hence, they may be more likely to adopt shorter-term strategies, such as opting for vocational curricula. In this study, we test this hypothesis using a behavioural

[1] If high-SES families enjoyed higher labour market returns to academic curricular choices, this could constitute an additional explanatory mechanism. However, our analyses indicated that, in the English case, objective returns do not vary by family background. Hence, we focus on subjective returns instead.

[2] Low-SES families, who face greater challenges in navigating the educational system, may more often overestimate the actual costs of choosing academic pathways. Unfortunately, our data do not contain measure of these information mechanisms.

model (McFadden, 1974) that links curricular choices to their objective returns, adjusted to account for SES-related differences in students' locus of control and perceived accessibility of higher education. Overall, based on these arguments, we hypothesize that *lower subjective occupational returns to academic curricular choices reduce the likelihood of selecting academically oriented curricula (H3a) and mediate SES-related disparities in curricular choices (H3b).*

2.2. The role of expressive motivations influencing of curricular choices

While rational choice theory emphasizes instrumental motives of action (Gambetta, 1987; Goldthorpe, 2006), human behaviour can also be shaped by intrinsic motivations tied to expressive gratifications (Barone, 2025). In the context of education, we argue that stronger interest in applied subjects and lower levels of school engagement reduce the likelihood of choosing academically oriented pathways. This is because these two factors reduce the intrinsic enjoyment of the school experience, leading students to prefer avoiding longer academic trajectories.

Moreover, such attitudes may be more prevalent among students from low-SES families. Since working-class parents are more often employed in manual and technical occupations, applied subjects tend to resonate more strongly with the workplace experiences, leisure activities, and socialisation practices prevalent in these families (Bourdieu, 1979). Hence, their children may be more likely to develop preferences for applied subjects, which are more prominently featured in vocational tracks.

School engagement is a multidimensional concept that refers to students' emotional, behavioural, and cognitive involvement in their school experience. Rather than being a fixed trait, student engagement is conceived as a malleable disposition shaped by school contexts and classroom climate (Fredricks et al., 2004). More engaged students tend to derive greater enjoyment from school activities, perceive them as more meaningful, and are consequently more motivated to invest sustained effort in their learning. Hence, student engagement may affect not only student performance, but also the propensity to choose academic pathways that require more time and effort to complete.

Several theoretical perspectives share the prediction that family background plays a significant role in shaping student engagement. According to cultural capital theory, school curricula and teacher practices are implicitly aligned with middle-class norms (Bourdieu, 1979; Brinkmann et al., 2024). Hence, low-SES students are less likely to possess the dispositions (language styles, attitudes, forms of knowledge) that are recognized and rewarded within the school system. As a result, they may feel out of place in the school environment, contributing to lower levels of student engagement.

Moreover, low-SES students are more likely to attend under-resourced schools, characterized by larger class sizes, higher teacher turnover, and limited support services (Klaauw et al., 2019). Their school environments may thus be less conducive to sustained engagement. Furthermore, in his ethnographic study of English schools, Willis (1977) argued that, owing to their lower perceived chances of social promotion, working-class students are more likely to develop oppositional identities toward school leading to lower student engagement. He advanced that these identities were reinforced by peer dynamics fostering anti-school attitudes and resistance to teacher authority. Finally, the cognitive bandwidth hypothesis suggests that chronic family hardship generates distress, which in turn impairs attention, motivation, and emotional regulation, which are key components of student engagement (Mani et al., 2013).

Overall, based on these arguments, we hypothesize that *lower student engagement and a stronger preference for applied subjects reduce the likelihood of selecting academically oriented curricula (H4a) and mediate SES-related disparities in curricular choices (H4b).*

2.3. Peer effects on curricular choices

While peer effects on student achievement and academic performance have been extensively studied, less is known about the influence of peers on educational decisions, and even less on curricular choices. Yet, peers are likely to shape these choices through three mechanisms (Zwier et al., 2023; Yuan and Olivos, 2023; Morgan, 2005; Manzo, 2013). First, peers can act as a reference threshold for student choices. Although status maintenance models assume that only parental social position defines the relevant aspiration threshold, it is plausible that school peers function as another important reference threshold. In other words, when students are surrounded by peers making ambitious choices, they may perceive less ambitious alternatives as less desirable. Second, peers can serve as a source of beliefs about the instrumental and expressive benefits associated with academic and vocational pathways. For instance, peers may convey more or less favourable representations of the value of different curricular pathways and their associated career implications. A third set of influences involves imitation and peer conformity pressures, including reputational or social costs, such as the risk of weakening peer connections when making choices that diverge from those of school peers.

Moreover, if student choices are influenced by those of their schoolmates, these peer effects may also foster SES-related gaps. Due to socio-economic segregation between schools, low-SES students are more likely to be surrounded by peers who choose academically oriented curricula less often. Hence, we hypothesize that the *curricular choices prevailing among school-level peers influence the likelihood of selecting academically oriented curricula (H5a), and mediate SES-related disparities in curricular choices (H5b).*

In this study, we examine the role of school peers, as we do not have access to data on out-of-school peers. The literature on peer effects in educational settings generally follows two main analytical approaches. One line of research, grounded in social network theory, focuses on a limited set of peers, typically close friends (Raabe et al., 2019). The other line of research examines broader peer effects at the school, grade or classroom level. Our analysis aligns with the latter approach: we conceptualize and measure peer effects as a grade-level, school-based characteristic that shapes curricular choices through the three mechanisms outlined above. Hence, we focus on structural peer effects rather than direct peer effects. The three above-mentioned mechanisms behind peer effects can operate for both direct and structural peer effects, albeit possibly with different intensity.

The limited evidence on school peer effects in curricular choices yields mixed findings. Jæger (2007) reported that in Denmark post-16 curricular decisions are shaped by the associated social costs, operationalized as the most commonly chosen type of secondary

education within a student cohort. Thomas and Webber (2001) used the actual educational intentions of peers to measure peer influences on students' decisions to remain in education after age 16 in England. Their results suggest that peers have a significant impact on boys' intentions to stay on in post-compulsory education, but not on those of girls. The empirical strategy used in our study aligns with more recent econometric studies that exploit exogenous changes in peer composition during the transition from primary to secondary school to examine peer effects (Lavy et al., 2012; Gibbons and Telhaj, 2015; Mendolia et al., 2018; Hedges and Speckesser, 2017). These studies focused primarily on student achievement. Only Battiston et al. (2020) examined post-16 curricular choices in England, finding that school peers' academic performance has a strong positive effect on the likelihood of choosing A-levels. This study investigated only a single educational decision and did not assess whether peer effects contribute to SES-related disparities in curricular pathways.

3. The education system in England and the relevant curricular choices

Primary and lower secondary education in England is largely comprehensive, with most students attending, free public schools (Green et al., 2006).[3] Primary education in England begins at the age of 5, lasts for six years, and is divided into two cycles: Key Stage 1 (KS1) and Key Stage 2 (KS2). Lower secondary education also consists of two cycles: Key Stage 3 (KS3) covering ages 11 to 14, and Key Stage 4 (KS4), covering ages 14 to 16. Table 1 provides an overview of the English school system.

Students take standardized assessments at the end of both primary (KS2) and lower secondary (KS4) education. The latter culminates in the General Certificate of Secondary Education (GCSE), a central exam that students usually sit for nine subjects. At the beginning of KS4, students must choose the subjects in which they will be examined -typically between 8 and 10. This is a first major curricular choice. The English Baccalaureate (EBacc) subjects of English language and literature, maths, a science subject, history or geography and a foreign language are of particular relevance. Previous research indicates that taking the EBacc has a significant impact on students' future opportunities, particularly in terms of chances of pursuing academic post-16 pathways, such as taking A-levels and entering university (Anders et al., 2017; Henderson et al., 2017; Sullivan et al., 2010).

Upper secondary education in England spans the ages of 16 to 18. At this stage, students face a second major curricular choice: they must decide between the academic track of A-levels, which is offered in a two-year education programme called sixth form, and a range of vocational pathways, with BTECs (Business and Technology Education Council) and Cambridge Technicals being the most common options. Access to A-levels is subject to GCSE results: students typically need to achieve at least five GCSEs at Grades 9–4 (formerly A–C), including English and mathematics. Students taking A-levels typically select three to four subjects for which they sit final exams at the age of 18. While vocational qualifications are heterogenous in terms of quality and labour market returns, A-levels are regarded as more prestigious and offer better labour market prospects (Kirby, 2015). Admission to university education is selective and although upper secondary vocational qualifications are increasingly accepted to enter university, the most prestigious universities still require A-levels. Tuition fees for higher education were higher than in most European countries in the mid-2000s, that is, at the time when the students in our sample were making their A-level choices (see the next section for further details). Consequently, cost considerations may have played a significant role in shaping their curricular choices.

Some lower secondary schools offer a sixth form, which means that students can pursue A-levels within the same institution. Hence, these schools are generally regarded as more academically oriented. A typical academic pathway thus comprises the selection of a school that offers a sixth form, the choice of the EBacc, continuation to A-levels and university admission. This study focuses on the choice of EBacc subjects at age 14 and of A-levels at age 16. We treat choice of a school offering a sixth form as an explanatory factor of later curricular choices.

Comparative studies report that England displays lower socio-economic school segregation than early tracking countries such as Germany, Belgium and Austria, but higher levels than most comprehensive school systems, including Scotland, Wales, Ireland and Nordic countries (Gutierrez et al., 2020; Jenkins, 2018). While residential segregation significantly influences school segregation in both England and Scotland, school choice and selective admission policies play a prominent role in England, where pupils can apply to any school and are not guaranteed a place at a default local school, resulting in substantial school segregation by family income (Drayton et al., 2023; Cullinane, 2024; Pensiero and Brede, 2024). Hence, England provides an interesting test case for assessing whether peer effects mediate socioeconomic disparities in curricular choices.

4. Data and variables

4.1. Data sources

The analyses draw on data from the Next Steps study, which follows a cohort of 15,800 children born in England in 1989/1990 throughout eight waves up to age 25. This survey covers information on GCSE subject choices and post-16 pathways, as well as rich data on their individual-level determinants. Lower secondary schools served as the primary sampling units, with an average of 30 pupils per school included in the sample during Wave 1 (2004), when students were aged 13–14. Because sampling occurred at the school level, we do not have data on entire classrooms, which prevents us from estimating classroom-level peer effects.

We link the Next Steps data with administrative education records from the National Pupil Database and the Individualised Learner

[3] There are still 164 grammar schools, which are highly selective but offer free admission. They account for less than 5% of students enrolled in secondary education in England. In addition, between 5% and 8% of students are enrolled in private schools.

Table 1
The school system in England.

Age	School year	Educational level	Key stage	Curricular choices
3-4	Pre-school	Pre-primary education		
4-5	Reception			
5-6	Year 1	Primary education	Key Stage 1	
6-7	Year 2			
7-8	Year 3		Key Stage 2	
8-9	Year 4			
9-10	Year 5			
10-11	Year 6			School with sixth form
11-12	Year 7	Lower Secondary education	Key Stage 3	
12-13	Year 8			
13-14	Year 9			EBacc subjects
14-15	Year 10		Key Stage 4	
15-16	Year 11			A-levels
16-17	Year 12	Upper secondary education (A-levels/vocational education and training)	Key Stage 5/Sixth form	
17-18	Year 13			

Records which provide information on the educational qualifications and exam results of the Next Steps students and their school peers.[4] Among these survey participants, 5208 individuals consented to the linkage of their survey responses with administrative records. After listwise deletion of missing cases, our analytical sample includes 4208 cases. Table 1 in Appendix 1 compares the distributions of the analytical sample and the full sample in terms of educational attainment, academic performance, and family background. The two samples are similar, with the analytical sample displaying a moderately higher percentage of high-SES students and of students taking A-levels (59% compared to 51% in the full sample). We use the survey weights provided with the dataset to account for the oversampling of more socioeconomically deprived schools and of pupils from minority groups as well as for survey non-response and longitudinal attrition (cf. appendix A for more details).

4.2. Measuring socio-economic inequalities in curricular choices

We examine two curricular choices: a) taking EBacc subjects versus non-EBacc subjects at GCSE in year 9; b) taking A-levels (or a combination of A-levels and vocational qualifications) versus exclusively vocational qualifications in year 11. Appendix 2 reports the detailed post-16 pathways of Nest Steps students. Since only 150 students in our analytical sample left education after Year11,[5] we dropped them from the analyses. Leaving education at 16 was possible in 2006 when the Next Steps sample students were 16, but it is no longer possible due to the extension of the age of compulsory education to 18 in 2015.

We measure family background using a composite measure obtained from a principal component analysis of parents' ISEI and educational attainment when students were 14 (Mean = 0.08, SD = 1.25).[6] ISEI (International Socio-Economic Index of Occupational Status) is an occupation-based measure that ranks occupations based on the average income and level of education of their incumbents (Ganzeboom et al., 1992). ISEI is derived from mapping the 9-category SOC (Standard Occupational Classification) scheme of parents' occupation onto the ISCO-88 occupational titles. If both parents are (or were) employed, the index averages their scores. Parents' education is measured as the average number of completed years of education of both parents derived from their educational qualifications (Thaning and Hällsten, 2020).[7]

4.3. Measuring the explanatory factors of inequalities in curricular choices

We included a range of independent variables in the analyses tapping the mechanisms of the effect of social background on curricular choices. We mark these variables in italics to enable easy cross-referencing in the text and the tables.

We use the KS2 total point score (henceforth *KS2 performance*) and the GCSE capped point score (henceforth *KS4 performance*) as measures of prior academic achievement for the analysis of, respectively, GCSE subject choices and post-16 choices. KS2 are national examinations administered in all state primary schools at age 11 in the three core subjects of English, Mathematics, and Science (Mean = 30, SD = 3). GCSEs are national examinations taken in all state schools at age 16 corresponding to the end of lower secondary school. They cover core subjects such as English, maths, science; foundation subjects including computing, physical education, citizenship; and optional subjects such as arts, design and technology, humanities and foreign languages (Mean = 375, SD = 45). Both variables are

[4] Many students take A-levels in schools offering a sixth form and are included in the NPD database, but a minority complete A-levels in colleges, which are included in the ILR dataset.

[5] We also dropped 68 individuals who attended schools where no student took EBacc GCSE subjects as this likely indicates that the option of EBacc subjects was not available in that school.

[6] The Principal Component Analysis extracts a unidimensional solution that explains 79,3% of the variance of the two constitutive variables.

[7] We established the following equivalences between educational qualifications and years of schooling: no qualification (9 years), Level 1 (11 years), GCSEs at grades A–C (11 years), A-levels (13 years), higher education below degree level (15 years), and a full university degree (16 years).

divided by 10 for ease of interpretation.

School peers' choices are defined as the proportion of school peers of the same year and of the previous year who selected, respectively, GCSE EBacc subjects and A-levels. While peers from the same year group are likely to exert greater influence, we also include peers from the previous school year, as they may serve as a reference group.

We are unable to include school fixed effects, as these would be collinear with the peer choice variables. However, leveraging the Next Steps data, we systematically control for whether the *school offers a sixth form*, that is, whether students have the option to pursue A-levels within the same institution. This serves as a key indicator of the school's academic orientation.

We incorporate measures of the actual costs and benefits of curricular choices. Unfortunately, the Next Steps data do not contain information on the perceived costs of higher education. Hence, we cannot account for subjective biases in cost estimates, which are relevant from a bounded rationality perspective (Abbiati, Barone, 2009). In line with previous research (Breen and Yaish, 2006; van de Werfhorst and Hofstede, 2007), we use data on actual costs.

We assume that the 16–18 stage of upper secondary education does not significantly impact direct costs, given the availability of student maintenance grants and educational maintenance allowances. However, we account for the fact that students typically regard A-levels as a stepping stone to higher education and consider the *choice of EBacc subjects* as instrumental for progressing to A-levels and, ultimately, for access to university. More precisely, we assume that, when making their secondary school choices, families anticipate that taking EBacc subjects first and A-levels later will bring them to attend (at least) 3-year bachelor's courses. As regards the direct costs of university education, fees cost £3000 per year at the time of the study and living expenses for university students not living at home (80% of the total) were estimated at approximately £7000.[8] Yet, the largest cost component of attending university education involves forgone earnings, that is, the earnings that the person would have earned between the age of 18 and21[9] had they chosen a vocational qualification instead, as this option is most often followed by labour market entry. We use data from the Labour Force Survey to calibrate empirically foregone earnings for youngsters with vocational qualifications aged 18-21 years old in 2005. While the cost estimates presented cannot fully capture the diversity of student profiles and individual circumstances, they offer a reasonable approximation of the overall magnitude of educational costs associated to the academic pathway. To measure relative costs (henceforth *cost of education*), we normalise absolute costs by equivalised family income before taxes (data on disposable income are not available). Hence, relative costs associated with taking A-levels are computed as follows: ((7000*0.8*3 + 3000*3)/(Equivalised family income))+((11,950*3)/(Equivalised family income)). This variable has a mean of 5.45 and a standard deviation of 11.06.

As discussed in section 2.1, we hypothesize that families respond to the subjective returns of curricular choices, measured by the actual returns adjusted to account for SES-related differences in students' locus of control and perceived accessibility of higher education (mean = 5.45, SD = 11.06). We proceed as follows to compute this predictor (henceforth *subjective occupational returns*). First, we compute the actual ISEI returns to educational qualifications based on the Labour Force Survey. By choosing ISEI as a metric, we assume that families consider not only prospective earnings but also the prestige of future occupations as reflected by the average educational level of their incumbents. The Next Step cohort made the decision whether to take A-levels or vocational courses in 2005. Therefore, we use the ISEI of adult individuals (25-65) in 2005. Considering that vocational qualifications are associated with an average ISEI score of 44 points, A-levels with 59 and GCSEs grades a-c with 43, ISEI returns can therefore vary between 43 and59[10]

The actual labour market returns to educational qualifications measured by ISEI do not significantly vary by family background. However, the two subjective discounting factors display significant variations by family background. Firstly, based on information available in the Next Steps data, we consider the perceived chances of applying to university weighted by the perceived chances of being admitted when applying. These variables are measured at age 14 for the analysis of GCSE subject choices and at age 16 for the analysis of A-levels choices. Both variables take four categories between 'very likely' and 'not at all likely'. We convert these categories into numeric probabilities (not at all likely: 0,001%,[11] not very likely: 25%, fairly likely: 75%, very likely: 90%). Our results are robust to different conversion rules (e.g., 0,001%, 33%, 67%, 100%; or 0%, 25%, 50%, 75%, as shown in Appendix D); the resulting indicators are strictly monotonic, and therefore highly correlated across different specifications (Pearson's $r \geq 0.96$). Hence, we combined them into one variable called *perceived chances of success*.

The expected utility of each curricular option is thus defined by its actual labour market returns discounted by the perceived accessibility of the academic pathway and adjusted by the locus of control. We argued in section 2 that SES differences in locus of control moderate the value that families assign to occupational returns, insofar as locus of control captures the perceived controllability, or conversely the randomness, of those returns. We model the relation between expected utility, locus of control and curricular choices using a Quantal Choice Model (QCM) (McKelvey and Palfrey, 1998; Goeree et al., 2016; McFadden, 1974). This is a behavioral model used in decision theory to describe how individuals make probabilistic choices between discrete alternatives. In this model, individuals are more likely to choose the options with the highest utility, but they sometimes deviate from them. In the formula below, the parameter β models the degree of randomness in the decision-making process which can reflect cognitive-processing boundaries and information constraints resulting in subjective uncertainty about expected outcomes. When the β parameter is 0, randomness is

[8] Our calculation from 2014 HESA data. Earlier data not available. https://www.hesa.ac.uk/data-and-analysis/students/chart-4.

[9] Since we assume that families opting for A-levels anticipate university attendance, foregone earnings are calculated for the period between ages 18 and 21.

[10] At the time of the Next Step cohort, GCSE grades a-c were considered 'good passes' and achieving at least a grade c in core subjects was often a minimum requirement for progressing to A-levels.

[11] A minimum probability of 0.001 (rather than 0) is used to prevent zero-valued probabilities from generating missing values in the expected-return function.

highest, and individual choices are indifferent between the different options because they do not take their utility into account. For higher values of this parameter (in our setting, $\beta > 0.5$), individuals select the most desirable pathway (A-levels) with near certainty. For intermediate values, individuals tend to choose the most desirable pathway but might not in some cases. We calibrate empirically this decision-making parameter using locus of control.

If we denote the expected utility of each curricular choice with U_{ij}, with i being the individual student making the choice, and k the set of two options relating to each outcome, students select A-levels (j) versus vocational courses with propensity γ_{ijk}.

$$\gamma_{ik} = \frac{e^{(\beta^* (U_{ik}))}}{\sum_{j=1}^{2} e^{(\beta^* U_{ik})}}$$

γ_{ik} is our measure of *subjective occupational returns* used as a predictor of choice of EBacc subjects and of A-levels.

Ideally, the β parameter in the quantal-choice formulation would be estimated using a direct measure of students' subjectively perceived uncertainty about returns to different curricular pathways. Such a measure is not available in our data. We use *locus of control* to calibrate β empirically reasoning that individuals with a more internal locus of control are more likely to engage in goal-directed decision-making and thus exhibit higher sensitivity to expected utility differences between choice options, as reported in previous research (cf. Caliendo et al., 2024 for a review). Conversely, those with a more external locus are expected to make more stochastic choices, corresponding to lower values of β. While locus of control does not directly measure subjective probability distributions, it provides an indirect proxy for how individuals perceive the controllability—and, by extension, the predictability—of choice outcomes. Hence, this behavioral trait serves as a theoretically grounded proxy for heterogeneity in bounded rationality across individuals (mean = 5.45, SD = 11.06).[12]

Locus of control measured at the age of 14 is based on a 6-item scale using a 4-point Likert format ranging from 'strongly agree' to 'strongly disagree'. Higher values indicate a stronger internal locus of control. We apply principal factor analysis to summarise the information contained in these items (cf. appendix 2 for detailed information). The Cronbach alpha of this variable is 0.60.

We measure occupational aspirations at age 13 along two dimensions: (1) preference for running one's own business, and (henceforth *own business aspirations*) (2) a preference for high-status jobs (henceforth *high status job aspirations*). The former is coded from two items assessing how important it is for respondents "to have a job where you can be your own boss or have your own business?" and "to have a job that pays well?". The second dimension is coded from the following three items asking students how important is it "to have a job where I can get promoted and get ahead?", "to have a job that's interesting and not routine?", "have a job that pays well?". Each item is answered on a three-point scale (matters a lot, matters a little, does not matter). We assign a value of 1 when a student reports at least some importance ("matters a lot" or "matters a little") for every item that makes up a dimension; otherwise, the value is 0.

We include a measure of *school engagement* at age 13, based on a 13-item scale using a 4-point Likert format ranging from 'strongly agree' to 'strongly disagree'. These 13 items capture the cognitive, emotional, and behavioural dimensions of student involvement in school life (Fredricks et al., 2004). We apply principal factor analysis to summarise the information contained in these items and report in appendix 2 the detailed items and summary statistics.

At age 13, students were asked about their *preferred GSCSE subject*. We grouped their responses into five broad domains: the humanities (English, foreign languages), social sciences (history, geography, social studies), arts (art, music, drama), maths and sciences, vocational and applied subjects (design and technology, ICT/computing, business studies, home economics).

Control variables include student gender, self-reported ethnicity (coded as white, Indian, Pakistani, Bangladeshi, black Caribbean, black African, and other), family composition (two-parent vs. single-parent household), and area of residence (urban, defined as 10,000 or more inhabitants, vs. non-urban). Appendix A reports the descriptives of the main variables.

5. Analytical strategy

We estimate two sets of models corresponding to the two curricular choices under examination. For each of these binary outcomes, we specify a sequence of nested probit models incorporating their determinants. We begin by estimating the total effect of family background net of the control variables. Next, we introduce the measures of student academic performance and thus decompose this total effect into direct and indirect effects; the latter are referred to in the literature as primary effects (Jackson, 2013). Then, we account for the residual association between social origins and curricular choices (secondary effects) with a set of variables expressing the proposed individual-level mechanisms and peer effects. We report the coefficients as average marginal effects, which express the average effect of a one-unit change in the independent variable on the probability that the outcome equals one (Pr (y = 1)). As average marginal effects are not affected by unobserved heterogeneity that is unrelated to the independent variables in the model, it is legitimate to compare them across models (Mood, 2010). The mediation analysis is conducted more formally using the KHB method (Karlson, Holm and Breen, 2012), which addresses the issue of comparing coefficients across nested non-linear models (Mood, 2010) and provides a complete set of decomposition statistics. The KHB method compares the full model with a reduced model that

[12] The expected return is a monotonic function of the perceived accessibility of university education. The relative spacing of students' expected returns remains virtually unchanged unless the underlying probabilities exhibit extreme non-linear shifts, which is not the case here. Consequently, the absolute levels of the expected-return variable vary only minimally across alternative conversion schemes of the perceived-likelihood measures.

substitutes the mediator variables with their residuals from a regression of the mediators on the key variables of interest. Because the KHB routine does not support instrumental-variable specifications, we rely on the IV-probit models when the mediator is instrumented.[13]

The estimation of peer effects raises two main challenges. First, selection and self-selection into peer networks are not random as students tend to gravitate toward peers who are similar to themselves. Hence, when students behave consistently with their school peers, this might reflect pre-existing similarities and it might be incorrect to infer that peers influence their behaviour. The second issue concerns the mutual influences among peers, introducing the risk of reverse causality. Both issues result in biased estimates of peer effects.

Random assignment addresses the sorting bias, but not reverse causality, and is anyway hardly feasible in real-world settings in the case of peer effects. The literature thus increasingly relies on quasi-experimental approaches, such as regression discontinuity designs based on ability thresholds or school catchment area policies, as well as natural experiments, such as earthquakes or hurricanes, that generate exogenous variation through the relocation of students across schools.

Our quasi-experimental identification strategy relies on instrumental-variable probit models based on the peers-of-peers methodology. Like Battiston et al. (2020), Mendolia et al. (2018), Hedges and Speckesser (2017) and Gibbons and Telhaj (2015), we exploit the fact that in England many children change school at age 11 when they transition to lower secondary education. Hence, a large proportion of a student cohort in secondary schools consists of new peers. For each Next Step student, we define peers-of-peers as those students who simultaneously meet three criteria: (a) they attended a different primary school; (b) they attended a different lower secondary school; and (c) they attended the same primary school as the secondary school peers of the Next Step student. We use academic performance at KS2 of the peer-of-peers as an instrument.

This approach thus exploits the exogenous variation in secondary school peers' choices that is related to peers-of-peers, thus overcoming both sorting and reverse causality biases. This instrument is constructed to meet the key assumptions of the instrumental variable approach, namely, relevance and the exclusion restriction. Because peers-of-peers spent six years of primary education with the secondary school peers of the Next Step students, they are likely to have influenced the academic performance of these secondary peers which subsequently affects their curricular choices. The instrument thus satisfies the relevance condition, as confirmed by the F-statistics reported in Tables 2 and 3 below.

Moreover, given the criteria a) and b) outlined above, peers-of-peers are unlikely to exert any significant influence on the curricular choices of Next Step students (as required by the exclusion restriction) since they attended different primary and secondary schools. Of course, we cannot entirely rule out occasional interactions outside the school context, for example if Next Step students and peers-of-peers come in contact via the peers, or if a Next Step student lives in the same neighbourhood as a peer-of-peer and they become friends despite attending different schools (and the latter influences the former's curricular choices). However, we expect such influences to be minimal for two main reasons. First, adolescent friendship networks are strongly shaped by school environments. A meta-analysis of 51 studies by Neal et al. (2025) indicates that children aged 10 to 14 report having, on average, six friends, with approximately 85% -or five out of six-being school-based peers. Moreover, friendship ties weaken significantly when students transition to different schools (Sahakian, 2023). Second, in England school choice policies as well as the absence of school catchment areas lead to the dispersion of students from the same neighbourhood across different primary and secondary schools, thereby reducing the risk of peer-of-peer contamination outside the school context.

We use an instrumental-variable probit model because the main predictor is a continuous variable and the outcome is binary (Wooldridge, 2013). In the first-stage equation, the probability that secondary school peers of the individual of interest choose EBacc subjects (or A-levels) is regressed on the KS2 performance of the peer-of-peers. The predicted probability that secondary school peers choose EBacc subjects (or A-levels) is then used in the second-stage equation as predictor of the educational choices of the Next Step students (instead of using the actual school peers' choices). We use the ivprobit command in Stata, which corrects the standard errors of the estimates to account for the use of predicted values in a covariate. We account for the nested structure of the data whereby students are nested into schools using school-level clustered standard errors that relax the assumption of independence of the errors within each school, thus providing more robust estimates.

If we relevance and exclusion restriction assumptions are met, peer effects can be interpreted as genuinely causal. Importantly, the resulting estimates return Local Average Treatment Effects (LATE) on the compliers, as discussed below. Moreover, as the peers of peers' choices are likely to be influenced by school-wide norms or policies, this instrument will reflect the characteristics of the school environment, and it may thus be interpreted as a school-level (or 'structural') peer effect (Battiston et al., 2020).

We use the provided weights that adjust for initial school-level non-cooperation, individual non-response, and subsequent attrition. These weights are derived from observable predictors of non-response available from administrative records (e.g., region, ethnicity, prior attainment at KS2/KS3/GCSE) and substantially reduce bias due to systematic non-response (Department for Education, 2011; Anders, 2012). Next Steps experienced 26% unit non-response at Wave 1 and a reduction from 13,914 full interviews to 12,437 by Wave 3. Importantly, non-response weights are modelled on predictors drawn from the National Pupil Database for all individuals, including those who never responded to the survey, which allows the weighting scheme to correct for baseline non-response using rich administrative data. The study documentation also shows that differential attrition is largely captured by region, ethnicity, and prior attainment, which are included in both the survey's weights and our own models. The primary source of missing data in our analytic

[13] We cannot carry out a full causal mediation analysis (Brand, Zhou and Xie, 2023), which would require strong assumptions, including the absence of unmeasured confounding between the mediator and the outcome. Given the observational nature of our data, these assumptions cannot be credibly met. Hence, we use the KHB method and refrain from making strong causal claims about the mediating role of the proposed mechanisms.

Table 2
Probit models of EBacc subjects choice (school clustered SEs, marginal effects). Next Steps, NPD linked data.

	1	2	3	4	4.1	5	6	6.1	7
Family SES (composite)	0.091*** (0.007)	0.050*** (0.007)	0.046*** (0.007)	0.046*** (0.007)	0.040*** (0.007)	0.043*** (0.007)	0.019* (0.011)	0.021*** (0.011)	0.011 (0.010)
KS2 performance		0.159*** (0.010)	0.159*** (0.010)	0.159*** (0.010)	0.138*** (0.011)	0.140*** (0.010)	0.121*** (0.013)	0.133*** (0.013)	0.108*** (0.014)
School has a sixth form			0.079** (0.025)	0.079** (0.025)	0.077** (0.025)	0.074** (0.025)	0.082** (0.025)		0.015 (0.033)
Cost of Education				0.002 (0.002)	0.002 (0.002)	0.002 (0.001)	0.002 (0.001)		0.002 (0.002)
Locus of control						0.025** (0.010)			
School engagement						0.041*** (0.010)			
Perceived chances of success						0.038** (0.018)			
High status jobs aspirations						−0.015 (0.021)			
Own business aspirations						−0.007 (0.016)			
Subjective occupational returns					0.002*** (0.001)				0.002*** (0.001)
School peers' choice of EBacc (Instrumental variable)							0.009** (0.003)	0.009** (0.003)	0.011** (0.003)
F statistics							40***	41***	38***
N	4208	4208	4208	4208	4208	4208	4208	4208	4208

Control variables: two-parent household, gender, ethnicity, lives in an urban area.
p: 0.001***, 0.05**, 0.1*.

sample is not survey non-response but non-consent to data linkage, particularly where participants declined linkage to the NPD. To assess whether this compromises representativeness, we compare the characteristics of the full sample with those of the subsample successfully linked to administrative records (Table A1). The contrasts show only modest differences. Students with administrative linkage are slightly more academically oriented (e.g., a higher share studying A-levels: 59% vs. 51%) and have marginally higher mean KS4 scores (375 vs. 364) and parental socioeconomic indicators (e.g., parents' ISEI: 45 vs. 43; parents' years of education: 13 vs. 12). These differences are substantively small and align with what the documentation reports about linkage consent, namely that families with higher prior attainment and slightly higher socioeconomic background are more likely to agree to administrative matching.

The Stata syntax required to replicate all analyses is publicly available at https://osf.io/mzd7k.

6. Results

6.1. Descriptive statistics

Fig. 1 displays selected individual and school-level characteristics of students in our analytical sample, disaggregated by quartiles of the family SES score (see also Appendix A). As shown, high-SES students are significantly more likely to take the EBacc (48%) compared to their low-SES peers (19%). Social disparities are even more pronounced when it comes to A-levels: 81% of high-SES students pursue this pathway compared to only 40% of those from low-SES backgrounds.

Moreover, we observe substantial differences in school performance at KS4 between students in the first (272) and fourth (322) SES quartiles, which are accompanied by marked disparities in student engagement. Fig. 1 highlights also that the balance between the costs and subjective occupational returns of educational investments is less favourable for low-SES students. While the financial burden of attending university (relative costs) is greater for their families, our measure of subjective occupational returns indicates that they perceive the profitability of university degrees as more uncertain. At age 16, 70% of high-SES students expect to get into university, compared to only 37% of their low-SES peers. Finally, social disparities in the academic plans of school peers may amplify existing individual-level mechanisms. A large majority of the school peers of high-SES students (75%) pursue A-levels, whereas this is the case for only 34% of the peers of low-SES students. Similarly, 35% of high-SES students' peers take the EBacc, compared to 22% among low-SES students.

The dispersion of individual- and school-level characteristics across family SES quartiles widens for the second curricular decision (Fig. 1; descriptive statistics in Appendix A). For personal and school-level curricular choices, the higher variance at the post-16 transition is consistent with the broader set of options available at this stage: whereas the EBacc decision at age 14 occurs within the comprehensive structure and is constrained by school-level GCSE offerings, the post-16 transition involves choosing whether to remain in school and selecting among more differentiated pathways (A-levels, vocational programmes, school sixth forms, FE

Table 3
Probit models of A-level choices (school clustered SEs, marginal effects). Next Steps, NPD linked data. Subsample of eligible students (5 GCSEs, A-C).

	1	2	3	4	4.1	5	6	6.1	7
Family SES (composite)	0.074*** (0.006)	0.040*** (0.006)	0.037*** (0.006)	0.036*** (0.006)	0.027*** (0.005)	0.029*** (0.005)	0.015 (0.009)	0.016* (0.009)	0.006 (0.008)
KS4 performance		0.030*** (0.002)	0.030*** (0.002)	0.030*** (0.002)	0.020*** (0.002)	0.022*** (0.002)	0.027*** (0.002)	0.028*** (0.002)	0.018*** (0.002)
School has a sixth form			0.086*** (0.014)	0.085*** (0.014)	0.076*** (0.014)	0.075*** (0.014)	0.084*** (0.014)		0.020 (0.022)
Cost of Education				−0.002* (0.001)	−0.002* (0.001)	−0.002** (0.001)	−0.002** (0.001)		−0.002** (0.001)
EBacc subject choice						0.024* (0.013)			
Locus of control						−0.011 (0.008)			
School engagement						0.013 (0.008)			
Perceived chances of success						0.160*** (0.023)			
High status job aspirations						0.046** (0.019)			
Own business aspirations						−0.015 (0.013)			
Preferred subject (Ref.: Humanities)									
Social Sciences						0.041* (0.024)			
Arts						0.060** (0.019)			
Science						0.035 (0.026)			
Vocational, applied						0.038** (0.016)			
Subjective occupational returns					0.004*** (0.001)				0.004*** (0.001)
School peers' choice of A-levels (Instrumental variable approach)							0.005** (0.002)	0.005** (0.002)	0.005** (0.002)
F statistics							79***	79***	81***
N	2716	2716	2716	2716	2716	2716	2716	2716	2716

Control variables: two-parent household, gender, ethnicity, lives in an urban area.
p: 0.001***, 0.05**, 0.1*.

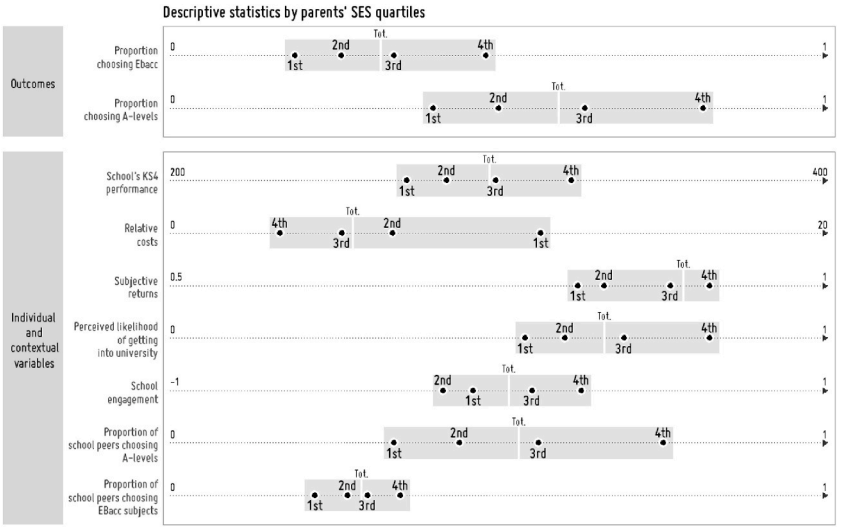

Fig. 1. Selected individual and school level variables by quartiles of family SES variable.

colleges), generating greater heterogeneity. For perceived accessibility of higher education, the increased dispersion at age 16 is plausibly linked to the proximity of the higher-education transition itself, as students form more realistic and therefore more diverse assessments of their chances.

6.2. Multivariate results

Table 2 reports the results for a sequence of nested probit models for the choice of EBacc subjects at GCSE. Model 1 presents the total effect of family SES net of control variables. A one standard deviation increase in the family SES score is associated with a 9.1% higher probability of selecting EBacc subjects. This result confirms the substantial impact of socioeconomic disparities on curricular choices in England. In model 2, which adds prior academic performance, the effect of family SES is reduced by 45% compared to model 1 (0.05 vs. 0.09), in line with previous research on primary effects in curricular choices in England (Jackson et al., 2007). Model 3 adds whether the school has a sixth form, revealing that this school-level variable is a significant predictor of EBacc choices (+7,9%) but only modestly attenuates the parameter for family SES. Model 4 incorporates the relative costs of education, which neither show an association with the outcome nor account for SES gaps, contrary to hypotheses 1a and 1 b. By contrast, subjective occupational returns show a significant association with EBacc choices and attenuate the effect of family SES, as indicated by Model 4.1, which provides support to hypotheses 3a and 3 b. In this parametric specification based on our quantal choice model, the subjective occupational returns measure incorporates both perceived accessibility of higher education and the locus-of-control–based β parameter, effectively including all three mechanisms through a single composite term. Model 5 relies instead on a non-parametric specification in which these variables are entered separately alongside school engagement and occupational aspirations. As can be seen, students with a stronger internal locus of control and with greater school engagement are significantly more likely to choose EBacc subjects. Both estimated effects are sizeable. Moreover, higher perceived chances of success in university education predict the outcome, whereas the two variables measuring occupational aspirations do not display any significant association with this curricular choice (contra H2a). Overall, this model specification does not improve the explanation of SES gaps in EBacc subject choices, suggesting that these characteristics are similarly distributed among high- and low-SES students with comparable academic performance (contra H2b and H4b). Notably, the more parsimonious Model 4.1 based on the quantal choice framework, performs as well as Model 5 in this respect.

Model 6 removes the predictors introduced in model 5 and incorporates school peers' choices using the instrumental variable specification. We observe a substantial attenuation of the family SES coefficient (0.019 vs. 0.43). The parameter for the peer effect (0.009) indicates that a 1% increase in the share of (predicted) school peers taking EBacc subjects increases the probability of making the same choice by almost 1% (0.009), thus corroborating hypothesis 5a.[14] Hence, the choices of school peers exert a sizeable influence on students' selection of EBacc subjects. Moreover, the F-statistic test indicates that the instrument is not weak. Model 6.1 indicates that the family SES coefficient is largely reduced by a parsimonious specification based only on student prior school performance and peer effects, thus supporting hypothesis 5 b. When we include subjective occupational returns in model 7, which remain significantly associated with EBacc subject choice, the coefficient for family SES is further attenuated (0.011), rendering it substantively negligible and not statistically significant. Hence, prior academic performance, subjective occupational returns, and school peers' choices together fully account for SES gaps in EBacc choice.

Table 3 presents the results for A-levels choices at age 16 among the subsample of students eligible to take A-levels. The total effect of family SES reported in model 1 (0.074) is substantial, albeit smaller than that observed for EBacc choice. Student school performance in KS4 and the presence of a sixth form have large positive effects, but while the former substantially accounts for family SES gaps, the latter mediates them only modestly, as is evident by comparing models 2 and 3. While the relative costs of higher education do not influence EBacc choices at age 14, they are associated with a lower likelihood of taking A-levels (model 4), thus partially supporting hypothesis 1a. This is understandable, as economic constraints are likely to have a stronger influence on later educational decisions, when the prospects of higher education enrolment become more salient. However, incorporating relative costs does not attenuate the estimated coefficient for family SES (contrary to hypothesis H1b). Subjective occupational returns are positively associated with A-levels subject choice. The estimated coefficient is twice as large as that observed for EBacc choices, and the inclusion of this variable reduces the coefficient for family SES by one quarter (model 4.1), thereby supporting hypotheses H3a and H3b.

Model 5 shows that EBacc subject choice at age 14 is associated with a higher likelihood of taking A-levels (+2.4%) even among students with comparable academic performance. Moreover, while student locus of control and school engagement predict EBacc choice, they are not associated with A-levels choice when controlling for performance and EBacc choice. Moreover, student preferences for different school subjects have limited discriminatory power in predicting curricular choices. Hence, the influence of intrinsic study motivations appears to be smaller at this second educational transition, contrary to hypotheses 4a and 4 b.

Conversely, model 5 indicates that more instrumental concerns relating to perceived chances of success in higher education (+16%) and aspirations for high-status occupations (+4.6%) play a substantial role at this branching point. This is understandable given the tight connection between A-level choices and future university trajectories. The coefficient for family SES in model 5 is reduced compared to model 3 but not compared to model 4.1. When each of the predictors included in model 5 is introduced separately, perceived chances of success stand out as the main mediator of family SES.

Models 6 indicates that students are more likely to take A-levels when they are surrounded by school peers making the same choice. While the magnitude of this effect is slightly smaller than for EBacc choice, the instrumental variable specification accounts again for a

[14] We also estimated a specification using the observed peer variable. In this model, peers' choice of EBacc is associated with a smaller increase in the probability of choosing EBacc subjects (0.6%) and the family SES coefficient is attenuated to a lesser extent (cf. Appendix C).

relevant portion of SES gaps, thereby corroborating H5a and H5b. The IV specification passes the F-test for weak instruments also for this model. The coefficient estimate indicates that a 1% increase in the share of peers choosing A-levels fosters a 0.5% increase in the likelihood of making the same choice.[15]

Finally, Models 6.1 and 7 mirror the results observed for EBacc choices: a parsimonious specification that includes prior academic performance and school peers choices substantially attenuates the family SES coefficient, which becomes negligible and statistically not significant upon the inclusion of subjective occupational returns. Table 4 summarises the predictions, measures, and empirical results corresponding to our ten hypotheses.

We employed the KHB decomposition method (Karlson, Holm and Breen, 2012) to formally assess the mediating role of the proposed explanatory mechanisms. In what follows, we focus on three selected models, chosen based on the results of the full set of specifications presented above. All mediating mechanisms considered in our analysis are statistically significant (additional results and extended model specifications are provided in Appendix E).

As illustrated in Fig. 2 and tables E.1 and E.2 in the Appendix, academic performance (Model 2) accounts for approximately half of the associations between family SES and both curricular choices. When peer effects are incorporated (Model 6), the explained share of these associations increases to about four fifths. Finally, the introduction in Model 7 of subjective occupational returns, defined as occupational returns adjusted for individuals' locus of control and perceived accessibility of university education, accounts for nearly the entire association between family background and curricular choices. This finding highlights the strong explanatory power of this parsimonious set of mechanisms.

7. Conclusions

Curricular differentiation in England functions as a socially stratified pipeline that channels high-SES students from the age of 11 into academically oriented lower secondary schools that offer sixth forms, setting them on a fast track to take the EBacc at age 14, which in turn increases the likelihood of taking A-levels at 16, thereby securing disproportionately greater opportunities to access and succeed in university education, particularly in elite institutions. Our results indicate that high-SES students are three times more likely than low-SES students to take the EBacc and twice as likely to pursue A-levels qualifications.

Because academic pathways are generally regarded as more demanding, access is strongly shaped by prior school performance. High-SES students achieve higher academic results and are thus overrepresented in these pathways. Our analyses confirm that school performance is a strong predictor of both curricular choices and accounts for roughly half of family SES gaps. This confirms that social origins have a large influence on curricular choices even among students with comparable school performance.

This study proposed and tested a theoretical framework that integrates mechanisms from sociology, economics, and psychology to explain these socio-economic disparities in curricular choices. Economic models emphasize the role of the actual costs and expected returns in shaping educational investments. Our findings indicate that relative costs do not influence EBacc selection but do affect A-levels choice. However, relative costs do not account for secondary effects in curricular choices, confirming earlier evidence (Stocké, 2007; Gabay-Egozi et al., 2010; van de Werfhorst and Hofstede, 2007).

Bounded rationality models in sociology highlight the role of subjective beliefs and status maintenance motives for educational choices. Based on prospect theory, status maintenance models predict that, because high-SES students have higher reference thresholds, they develop higher occupational aspirations (Breen, Yaish 2006), thereby opting for more academically oriented pathways that offer better training for university education, which minimises their risks of social demotion. Our findings show that, while occupational aspirations do not influence EBacc selection, they do affect A-levels choice. Although our measure is based on only five items, our results align with previous research in showing that occupational aspirations influence curricular choices but do not significantly mediate SES-related disparities among students with comparable academic performance. With regard to subjective beliefs, our findings show that the perceived accessibility of university education is associated with EBacc and, more strongly, A-levels choices. At similar levels of academic performance, low-SES students perceive lower chances of admission to and success in university education. These SES-related gaps in the perceived accessibility of university education contribute to disparities in access to A-levels.

Moreover, we assessed the role of subjective occupational returns for curricular choices. Drawing on insights from psychology and behavioral science, we hypothesised that locus of control and perceived chances of success in university education moderate the influence of the actual occupational returns to curricular choices. Low-SES families, being more often exposed to unstable and unpredictable social environments, tend to exhibit a weaker sense of agency, that is, a lower perceived control over the factors shaping educational and occupational outcomes, such as structural barriers linked to economic disadvantage and the academic selectivity of higher education. We formalised this hypothesis using McFadden's quantal choice model and found that this specification of subjective occupational returns predicts both EBacc and A-level choice, and that this factor significantly mediates SES disparities in curricular choices.

Alongside these instrumental motives, we also assessed the role of intrinsic study motivations, captured by students' engagement and subject preferences. Despite being largely overlooked in prior research on curricular choices, these factors display a strong association with EBacc choices, while they are less relevant for A-level choices. Intrinsic motives do not significantly mediate SES disparities at either stage of curricular selection.

By comparing the role of the same set of factors across these two educational transitions, our study shows that a coherent pattern emerges when comparing intrinsic and instrumental motives: the former play a greater role in lower secondary education, while the

[15] The observed variable specification displays a smaller coefficient for peer effects (0.2%) and a smaller reduction of the coefficient for family SES (cf. Appendix C).

Table 4
Overview of the hypotheses and related measures and empirical results.

Hypothesis	Mechanism	Main variables	Expected effect on academic curricular choices	Empirical Support	Comments
H1a	Relative costs	Absolute costs/family income	Higher costs → lower probability	Partially	Small effect only for A-levels choice
H1b	Relative costs	Same as H1a	Costs mediate SES gaps	Not supported	Negligible mediation
H2a	Occupational aspirations	Aspirations for high-status occupations	Higher aspirations → higher probability	Partially	Effect only for A-levels choice
H2b	Occupational aspirations	Same as H2a	Aspirations mediate SES gaps	Not supported	Negligible mediation
H3a	Subjective occupational returns	Subjective occupational returns (incorporates locus of control and chances of succes)	Higher returns → higher probability	Supported	Strong for both curricular choices
H3b	Subjective occupational returns	Same as H3a	Returns mediate SES gaps	Supported	They mediate SES gaps for both curricular choices
H4a	Expressive study motivations	School engagement, preferred school subjects	Higher study motivations → Higher probability	Partially	Large effects for EBacc, but weak for A-levels
H4b	Expressive study motivations	Same as H4a	Study motivations mediate SES gaps	Not supported	Negligible mediation
H5a	Peer effects	Share of school peers choosing EBacc/A-levels (IV specification)	Higher share of academic choices → higher probability	Supported	Large effects for both curricular choices
H5b	Peer effects	Same as H5a	Peer effects mediate SES gaps	Supported	They mediate SES gaps for both curricular choices

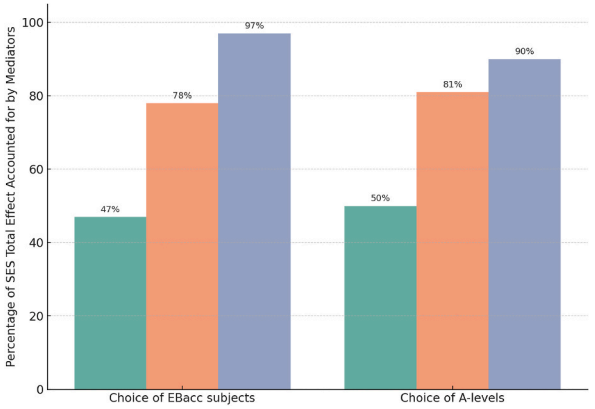

Fig. 2. KHB mediation analysis of the relationship between family SES and curricular choices
KHB: Karlson, Holm and Breen (2012).
Mediators: i) academic performance, ii) academic performance and school factors; iii) academic performance, school factors and subjective returns.
Full specifications are presented in Tables 2 and 3.
Full decomposition analysis is in Appendix E.

latter become more influential for upper secondary education. The 'logics' of educational choices evolve over the school career with cost-benefit considerations becoming more prominent in later stages. This pattern may reflect, at least to some extent, the late-tracking structure of the English educational system. Because school tracking occurs relatively late, students initially focus more on exploring their interests, which may enhance the salience of intrinsic motivations. As they approach high-stakes choices, however, instrumental considerations become more prominent. In early-tracking systems, instrumental considerations may be more salient at earlier stages (Stocké, 2007).

Altogether these findings suggest two main conclusions. First, the instrumental considerations emphasized by rational choice and bounded rationality models, such as relative costs, occupational aspirations, and perceived chances of success, play a more important role for curricular choices in upper secondary education than in lower secondary education. As students progress in the educational ladder, they become more responsive to instrumental considerations related to higher education participation, possibly also because they acquire better information about the implications of their choices. Second, despite their relevance, these factors account for a limited share of secondary effects in curricular choices. This conclusion may, of course, partly reflect some limitations in our measures or some specific features of the English context. Nonetheless, this conclusion largely resonates with findings from previous empirical tests of status maintenance models (Stocké, 2007; Gabay-Egozi et al., 2010; van de Werfhorst and Hofstede, 2007). Hence, it is possible that other, less explored mechanisms, account for these gaps.

It is important to note several limitations to our study. First, the evidence for all the individual-level mechanisms discussed above is correlational, and we thus cannot rule out issues of selection bias or reverse causality. This could have partially been addressed by using a school-level fixed effects model, but as most of our model specifications include school-level variables, we could not include school-level fixed effects. We considered these school-level variables to represent important explanatory mechanisms and omitting them would not have allowed us to assess these mechanisms in as comprehensive a manner as we did. Hence, we prioritised comprehensiveness over a marginally more robust analysis. Second, the measures of decision-making mechanisms available in our data are imperfect. Occupational aspirations capture only indirectly the underlying loss-aversion mechanism. Moreover, these measures focus on aspirations for high-status occupations, whereas SES gaps may be more pronounced with respect to the perceived acceptability of low-status occupations. Regarding relative costs, our measure is based on family income and does not account for between-family differences in the subjective perceptions of education costs, even though the latter are more relevant from a bounded-rationality perspective.

The above-mentioned explanations focus on the family environment and overlook the role of school context. This study investigated the influence of school peers on curricular choices. We argued that peers can exert a genuinely causal influence on curricular choices and that, since schools are socio-economically segregated, this influence reinforces educational inequalities. To the best of our knowledge, this is the first study to apply the peers-of-peers methodology to investigate whether the causal impact of peers' choices on curricular decisions mediates SES gaps. Our findings indicate that peer effects are substantial and do indeed contribute to social disparities in educational decisions. Moreover, their role in explaining secondary effects exceeds that of subjective occupational returns, the other main explanatory factor.

Peer effects have been largely overlooked in the literature on inequalities in curricular pathways. Our findings suggest that they may represent an important, yet underexplored, explanatory factor of secondary effects. This conclusion is all the more significant given that our estimates likely underestimate the influence of school peers. Due to data limitations, we were unable to examine the impact of close or classroom peers. Since students are more likely to adopt the beliefs and preferences of close peers (Loersch et al., 2008; Brinkmann et al., 2024), our analysis may dilute peer effects by averaging across both close and distant peers. Moreover, we could not explore the role of out-of-school peers.

Furthermore, as previously noted, our instrumental variable estimates of peer effects must be interpreted as local average treatment effects. Substantively, this means that peers may not influence the curricular choices of all students, but for those students whose choices are responsive to peers' choices, peer effects do mediate inequalities by family background. Importantly, our sequence of nested probit models reveals that prior academic performance, our composite measure of subjective occupational returns and peer influences, taken together, entirely account for socio-economic disparities in curricular choices. To the best of our knowledge, this is first study to achieve such a comprehensive explanation. This constitutes a promising avenue for future research, which will need to refine and further validate this explanatory framework.

CRediT authorship contribution statement

Nicola Pensiero: Writing – review & editing, Writing – original draft, Project administration, Methodology, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Carlo Barone:** Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Conceptualization. **Jan Germen Janmaat:** Writing – review & editing, Writing – original draft, Methodology, Funding acquisition, Formal analysis, Conceptualization.

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This work contains statistical data from the Office of National Statistics (ONS) which is Crown Copyright. The use of the ONS statistical data in this work does not imply the endorsement of the ONS in relation to the interpretation or analysis of the statistical data. The analysis was carried out in the Secure Research Service, part of the Office for National Statistics.

Appendix A. Descriptive statistics

Table A1
Descriptive statistics for the full Next Steps Sample and the Subsample linked to administrative records

	Full sample	Subsample of students linked to administrative data
	Percentages	Percentages
Qualifications:		
A-levels	51	59
NVQs, GNVQs	7	6

(*continued on next page*)

Table A1 (*continued*)

	Full sample	Subsample of students linked to administrative data
BTEC, OCR	10	9
Key, basic skills	12	12
Work full time	9	7
NEET	7	5
Other	2	2
Total	*100*	*100*
	Mean	Mean
KS4 score	364	375
Parents' ISEI	43	45
Parents years of education	12	13
Total	*10,430*	*4208*

NVQs (National Vocational Qualifications) are work-based awards in the UK that are achieved through assessment and training. They are typically taken by individuals who are already employed or in vocational training and focus on practical, job-related skills. NVQs are competence-based qualifications, meaning that students must demonstrate that they can perform tasks to national standards in a work environment. They are offered in a wide range of sectors (e.g., health and social care, construction, business administration).

GNVQs (General National Vocational Qualifications) were broader vocational qualifications designed to provide general skills applicable across industries, rather than job-specific training like NVQs. They were aimed at students aged 16–19 and were often studied in schools or colleges. GNVQs included classroom-based study and were graded rather than competency-assessed. Common during the period covered by the data collection, these qualifications have since been phased out. Typical learners are students not following the traditional academic A-level route, often with a preference for hands-on, vocational education.

BTEC (Business and Technology Education Council) qualifications are practical, vocational courses offered at different levels (from entry-level to Level 5). At age 17, students typically take Level 3 BTECs, which are equivalent to A-levels. BTECs combine theoretical knowledge with practical application and are commonly studied in further education colleges. Subjects include business, engineering, IT, health and social care, performing arts, and more. BTECs can lead to university entry, employment, or apprenticeships.

OCR (Oxford, Cambridge and RSA Examinations) is an exam board offering a range of vocational qualifications similar to BTECs, including OCR Nationals. These are also practical and skills-based, geared toward students looking for alternatives to academic A-levels. OCR qualifications emphasize both coursework and some exams, with a strong link to employability skills. Typical learners are students who prefer a structured, coursework-based approach to learning with a focus on applied subjects and career preparation.

Key, basic skills courses are designed to help learners improve their core competencies in reading, writing, and mathematics, often to meet minimum standards required for work or further education. Key Skills qualifications covered Communication, numeracy and Information and communication technology (ICT). Basic Skills refers more broadly to foundational capabilities in literacy and numeracy, and sometimes includes ESOL (English for Speakers of Other Languages). Typical learners include students who did not achieve strong GCSE results, or those needing to boost their essential skills before pursuing higher-level qualifications or employment.

Table A2
Selected school level and individual variables by parents' SES quartiles (means, proportions and standard errors in parentheses)

	KS2 score	GCSE score	Choice of EBacc	Choice of A-levels	Locus of control	School engagement	Expected returns	Costs	High status job aspiration	Own business aspiration	Proportion of peers choosing A-levels	Proportion of peers choosing EBacc subjects	Attending a sixth form school	Report high chances of access to university (age 14)	Report high chances of access to university (age 16)
Ref.: SES 1st quartile	28.33 (0.14)	356 (2.10)	0.19 (0.02)	0.40 (0.01)	0.36 (0.07)	−0.08 (0.05)	0.81 (0.01)	11.26 (0.51)	0.80 (0.01)	0.55 (0.01)	0.34 (0.01)	0.22 (0.01)	0.61 (0.01)	0.54 (0.01)	0.37 (0.01)
SES 2nd quartile	29.36*** (0.10)	363** (1.55)	0.26*** (0.02)	0.50*** (0.01)	0.59* (0.06)	−0.17 (0.04)	0.83 (0.01)	6.77*** (0.24)	0.86*** (0.01)	0.55 (0.01)	0.44*** (0.01)	0.27*** (0.01)	0.64*** (0.01)	0.60*** (0.01)	0.45*** (0.01)
SES 3rd quartile	29.66*** (0.08)	373*** (1.34)	0.34*** (0.02)	0.63*** (0.01)	0.45 (0.06)	0.10*** (0.04)	0.88*** (0.01)	5.22*** (0.57)	0.83* (0.01)	0.49*** (0.01)	0.56*** (0.01)	0.30*** (0.01)	0.68*** (0.01)	0.69*** (0.01)	0.54*** (0.01)
SES 4th quartile	30.59*** (0.06)	391*** (1.11)	0.48*** (0.01)	0.81*** (0.01)	0.46 (0.04)	0.25*** (0.04)	0.91*** (0.01)	3.34*** (0.13)	0.85*** (0.01)	0.48*** (0.01)	0.75*** (0.01)	0.35*** (0.01)	0.76*** (0.01)	0.82*** (0.01)	0.70*** (0.01)
Total (SE)	29.79 (0.04)	375 (0.73)	0.32 (0.01)	0.59 (0.01)	0.47 (0.02)	0.03 (0.02)	0.86 (0.01)	5.45 (0.11)	0.84 (0.01)	0.51 (0.01)	0.53 (0.01)	0.29 (0.01)	0.67*** (0.01)	0.66*** (0.01)	0.52*** (0.01)

P < 0.001***, 0.05**, 0.1*: differences with respect to the first quartile.

Appendix B. School engagement and locus of control scales

Table B.1
The items of the school engagement scale

a-I am happy when I am at school
b-School is a waste of time for me*
c-School work is worth doing
d-Most of the time I don't want to go to school
e-People think my school is a good school
f-On the whole I like being at school
g-I work as hard as I can in school
h-In a lesson I often count the minutes till it ends
i-I am bored in lessons
l-The work I do in lessons is a waste of time
m-The work I do in lessons is interesting to me
n-I get good marks for my work
o-My school is clean and tidy
Fit statistics
Cronbach's Alpha: 0.80
Eigenvalues above 1 of the Principal Component Analysis: 4.28, 1.23
Explained variance: 35,6% (component 1), 10,3% (component 2)

*The items b, d, h, i and l are reverse-coded.

Table B.2
The Student Locus of Control Scale

Items
a-Even if I do well at school, I'll have a hard time getting the right kind of job*
b-Working hard at school now will help me get on later in life
c-People like me don't have much of a chance in life
d-I can pretty much decide what will happen in my life
e-Doing well at school means a lot to me
f-How well you get on in this world is mostly a matter of luck
If you work hard at something, you'll usually succeed
Fit statistics
Cronbach's Alpha: 0.60
Eigenvalues above 1 of the Principal Component Analysis: 2.17, 1.31
Explained variance: 31,1% (component 1), 18,8% (component 2)

* The items a, c and f were reverse-coded.

Appendix C. Results with additional model specifications

Table C.1
Probit models of EBacc subject choices (school clustered SEs, marginal effects). Next Steps, NPD linked data

	1	2	3	4	5	6	7	7.1	7.2	7.3	8	9	10	11
Family SES (composite)	0.091*** (0.007)	0.050*** (0.007)	0.087*** (0.007)	0.046*** (0.007)	0.046*** (0.007)	0.043*** (0.007)	0.019* (0.011)	0.030** (0.007)	0.021*** (0.011)	0.019** (0.011)	0.011 (0.010)	0.008 (0.011)	0.009 (0.010)	0.007 (0.010)
KS2 performance		0.159*** (0.010)		0.159*** (0.010)	0.159*** (0.010)	0.140*** (0.010)	0.121*** (0.013)	0.141*** (0.010)	0.133*** (0.013)	0.131*** (0.015)	0.108*** (0.014)	0.102*** (0.014)	0.103*** (0.014)	0.103*** (0.014)
School has a sixth form			0.101** (0.026)	0.079** (0.025)	0.079** (0.025)	0.074** (0.025)	0.082** (0.025)	0.047* (0.022)		0.082** (0.025)	0.015 (0.033)		0.005 (0.032)	0.008 (0.030)
Cost of Education					0.002 (0.002)	0.002 (0.001)	0.002 (0.001)	0.002 (0.001)			0.002 (0.002)	0.002 (0.002)	0.002 (0.001)	0.002 (0.002)
Locus of control						0.025** (0.010)						0.033** (0.011)	0.032** (0.011)	
School engagement						0.041*** (0.010)						0.042*** (0.009)	0.041*** (0.009)	0.045*** (0.010)
Perceived chances of success						0.038** (0.018)						0.051** (0.019)	0.048** (0.019)	
High status jobs aspirations						−0.015 (0.021)						−0.016 (0.019)	−0.014 (0.021)	−0.022 (0.022)
Own business aspirations						−0.007 (0.016)						−0.006 (0.016)	−0.006 (0.017)	−0.009 (0.015)

(*continued on next page*)

Table C.1 (*continued*)

	1	2	3	4	5	6	7	7.1	7.2	7.3	8	9	10	11
Subjective occupational returns											0.002*** (0.001)			0.002*** (0.001)
School peers' choice of EBacc (Instrumental variable approach)							0.009** (0.003)		0.009** (0.003)	0.009** (0.003)	0.011** (0.003)	0.013*** (0.002)	0.012*** (0.003)	0.011*** (0.003)
School peers' choice of EBacc (observed variable)								0.006*** (0.001)						
F statistics							40***		41***	40***	38***	41***	40***	38***
N	4208	4208	4208	4208	4208	4208	4208	4208	4208	4208	4208	4208	4208	4208

Control variables: two-parent household, gender, ethnicity, lives in an urban area.
p: 0.001***, 0.05**, 0.1*.

Table C.2
Probit models of A-level choices (school clustered SEs, marginal effects). Next Steps, NPD linked data. Subsample of those eligible (5 GCSEs, A-C)

	1	2	3	4	5	6	7	7.1	7.2	7.3	8	9	10	11
SES (composite)	0.074*** (0.006)	0.040*** (0.006)	0.069*** (0.006)	0.037*** (0.006)	0.036*** (0.006)	0.029*** (0.005)	0.015 (0.009)	0.031*** (0.006)	0.016* (0.009)	0.015 (0.009)	0.006 (0.008)	−0.005 (0.008)	−0.001 (0.008)	0.003 (0.008)
KS4 performance		0.030*** (0.002)		0.030*** (0.002)	0.030*** (0.002)	0.022*** (0.002)	0.027*** (0.002)	0.028*** (0.002)	0.028*** (0.002)	0.027*** (0.002)	0.018*** (0.002)	0.018*** (0.002)	0.021*** (0.002)	0.017*** (0.002)
School has a sixth form			0.102*** (0.016)	0.086*** (0.014)	0.085*** (0.014)	0.075*** (0.014)	0.084*** (0.014)	0.070*** (0.015)		0.084*** (0.014)	0.020 (0.022)		−0.009 (0.023)	0.004 (0.021)
Cost of Education					−0.002* (0.001)	−0.002** (0.001)	−0.002** (0.001)	−0.002** (0.001)			−0.002** (0.001)	−0.002* (0.001)	−0.002* (0.001)	−0.002* (0.001)
EBacc subject choice						0.024* (0.013)						−0.001 (0.011)	−0.001 (0.010)	−0.001 (0.011)
Locus of control						−0.011 (0.008)						0.004 (0.008)	0.003 (0.008)	
School engagement						0.013 (0.008)						0.013 (0.008)	0.012 (0.008)	0.006 (0.008)
Perceived chances of success						0.160*** (0.023)						0.151*** (0.023)	0.156*** (0.022)	
High status job aspirations						0.046** (0.019)						0.032* (0.019)	0.021* (0.018)	0.034** (0.018)
Own business aspirations						−0.015 (0.013)						−0.019 (0.013)	−0.018 (0.013)	−0.017 (0.013)
Preferred subject (Ref.: Humanities)														
Social Sciences						0.041* (0.024)						0.021 (0.025)	0.019 (0.025)	0.011 (0.025)
Arts						0.060** (0.019)						0.074*** (0.018)	0.070*** (0.018)	0.065*** (0.018)
Science						0.035 (0.026)						0.026 (0.026)	0.027 (0.026)	0.025 (0.025)
Vocational, applied						0.038** (0.016)						0.023 (0.016)	0.021 (0.016)	0.017 (0.016)
Subjective occupational returns											0.004*** (0.001)			0.004*** (0.001)
School peers' choice of A-levels (Instrumental variable approach)							0.005** (0.002)		0.005** (0.002)	0.005** (0.002)	0.005** (0.002)	0.008*** (0.002)	0.008*** (0.002)	0.006*** (0.001)
School peers' choice of A-levels (observed variable)								0.002*** (0.001)						
F statistics							79***		79***	77***	81***	66***	68***	71***
N	2716	2716	2716	2716	2716	2716	2716	2716	2716	2716	2716	2716	2716	2716

Control variables: two-parent household, gender, ethnicity, lives in an urban area.
p: 0.001***, 0.05**, 0.1*.

Appendix D. Assessing alternative specifications of subjective occupational returns

We compare three specifications of the constitutive variable regarding the 'perceived chances of applying and getting into university education' based on different probability thresholds: a) not at all likely: 0,001%, not very likely: 25%, fairly likely: 75%, very likely: 90%; b) 0%, 33%, 67%, 100%; c) 0%, 25%, 50%, 75%.

Table D.1
Probit models of A-level choices (school clustered SEs, marginal effects). Alternative specifications of subjective occupational returns. Next Steps, NPD linked data. Subsample of those eligible (5 GCSEs, A-C)

	5.1 (a)	5.1 (b)	5.1(c)
Family SES (composite)	0.040*** (0.007)	0.042*** (0.007)	0.037*** (0.006)
KS2 performance	0.138*** (0.011)	0.128*** (0.011)	0.130*** (0.011)
School has a sixth form	0.077** (0.025)	0.074** (0.025)	0.062* (0.023)
Cost of Education	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)
Subjective occupational returns	0.002*** (0.001)	0.002*** (0.001)	0.003*** (0.001)
N	4208	4208	4208

Control variables: two-parent household, gender, ethnicity, lives in an urban area.
p: 0.001***, 0.05**, 0.1*.

Table D.2
Probit models of A-level choices (school clustered SEs, marginal effects). Alternative specifications of subjective occupational returns. Next Steps, NPD linked data. Subsample of those eligible (5 GCSEs, A-C)

	5.1 (a)	5.1 (b)	5.1 (c)
Family SES (composite)	0.027*** (0.005)	0.031*** (0.006)	0.023*** (0.004)
KS4 performance	0.020*** (0.002)	0.023*** (0.002)	0.018*** (0.002)
School has a sixth form	0.076*** (0.014)	0.071*** (0.015)	0.070*** (0.015)
Cost of Education	−0.002* (0.001)	−0.002* (0.001)	−0.002* (0.001)
Subjective occupational returns	0.004*** (0.001)	0.004*** (0.001)	0.005*** (0.001)
N	2716	2716	2716

Control variables: two-parent household, gender, ethnicity, lives in an urban area.
p: 0.001***, 0.05**, 0.1*.
Perceived chances of applying and getting into universities probabilities: a) not at all likely: 0%, not very likely: 25%, fairly likely: 75%, very likely: 90%; b) 0%, 33%, 67%, 100%; c) 0%, 25%, 50%, 75%.

Appendix E. KHB Decomposition analysis of SES differences in curricular choices

Table E.1
KHB mediation analysis of the total association between socio-economic status and EBacc subjects choices

		KS2 performance (model 2)		School factors + KS2 performance (model 6)		Peers + KS2 performance (model 6.2)		ISEI returns + School factors + KS2 performance (model 7)	
	Total (reduced model 1)	direct	Indirect	direct	Indirect	direct	Indirect	direct	indirect
SES	0.092***	0.049***	0.043***	0.020*	0.072***	0.022*	0.070***	0.012	0.080
% of the total effect explained by the mediators			47		78		76		97

Table E.2
KHB mediation analysis of the total association between socio-economic status and choice of A-levels

		KS4 performance (model 2)		School factors + KS4 performance (model 6)		Peers + KS4 performance (model 6.2)		ISEI returns + School factors + KS4 performance (model 7)	
	Total (reduced model 1)	direct	indirect	direct	Indirect	direct	Indirect	direct	Indirect
SES	0.078***	0.040***	0.039***	0.015	0.063***	0.016*	0.062***	0.007	0.071***
% of the total effect explained by the mediators			50		81		78		90

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