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The Privilege of Choice: How Prospective College Students' Financial Concerns Influence Their Choice of Higher Education Institution and Subject of Study in England

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ABSTRACT

A hallmark of English higher education (HE) over the last twenty years has been policies seeking to increase provider competition and student choice. Central to this has been student funding policy changes, leading to rising college costs. This article asks if prospective HE students' concerns about college costs and the financial strategies they anticipate using because of them, widen or limit their choice of HE institution and subject of study. It calls on the findings from a nationally representative survey of 1,374 English college applicants and uses latent class analysis to develop a typology of students' planned financial coping mechanisms: *Minimizing costs; Managing costs and maximizing returns*; and *No financial concerns*; which prove to be socially stratified. *Minimizing costs* students are the most disadvantaged and adopt mechanisms which constrain their choices of where and what to study, unlike students in the other groups. Thus, government policies aimed at improving student choice potentially have the opposite effect for the most disadvantaged, perpetuating existing inequalities in access to, and the experience of, HE.

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Student loans; loan/debt aversion; higher education; England; college choice

Introduction

Recent higher education (HE) policies in England have sought to promote student choice and provider competition. Central to this are cost-sharing policies, especially higher tuition repaid via student loans, which transfer more of the costs of HE from government to students. These policies are intended to empower students to make better choices, and to motivate institutions to address student concerns because they are a revenue source (Callender & Dougherty, 2018). Meanwhile, these policies have led to rising college costs and student loan debt.

This article examines English prospective college students' concerns about the costs of HE and borrowing. It assesses how these can influence students' choice of HE institution and subject of study, by developing a typology of the

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financial mechanisms students anticipate adopting to cope with their study expenses. The typology discerns the distinct socio-economic characteristics of each group identified and their different implications for students' HE choices. The article asks if students' coping mechanisms enhance their options, reflecting government policy rhetoric, or actually undermine government policy objectives, and whether lower-class students' options are particularly limited. It also raises a broader issue — the extent to which "choice" is a meaningful construct.

To address these questions, the article examines findings from a bespoke 2015 nationally representative survey of students in England who had applied, or intended to apply, to study for an undergraduate degree at an HE institution.

The research is significant because student choice dominates England's HE policies, yet Government rhetoric ignores the realities of students' choice-making. It also provides a balance to United States (US)-based research in the field, which may have limited relevance to English and European students. Moreover, by developing a typology of financial coping mechanisms this study contributes to a more nuanced understanding of the role of financial issues in students' choice-making. Simultaneously, the typology could provide a useful conceptual tool for analyzing prospective students' choice-making. This matters for European policymakers with calls for more variable tuition based on where and what students study.

The English policy context[1]

The government's 2011 White Paper (BIS, 2011) encapsulates their policy rhetoric on student choice and provider competition.[2] Reforms introduced in 2012/13 sought

> to deliver a more responsive higher education sector in which funding follows the decisions of learners and successful institutions are freed to thrive … The overall goal is higher education that is more responsive to student choice, that provides a better student experience and that helps improve social mobility. (p. 8)

Consequently, the government withdrew most of universities' teaching funds, replacing them with higher tuition, repaid via government student loans. "The public money that supports higher education courses should come predominantly in the form of loans to first-time undergraduate students, to take to the institution of their choice, rather than as grants distributed by a central funding council" (p. 15). Grants allegedly stifled competition and student choice, while student loans would act like educational vouchers.

The White Paper argued "putting financial power into the hands of learners makes student choice meaningful" (BIS, 2011, p. 5). And "we want to ensure that the new student finance regime supports student choice, and that in turn student choice drives competition, including on price" (p. 19). To improve choice-making, HE institutions (HEIs) had to

provide students with more information about study costs and graduate outcomes. "Better informed students will take their custom to the places offering good value for money" (p. 26).

Student choice permeates all subsequent government HE policies (Callender & Dougherty, 2018). All acknowledge the huge variance in graduate earnings which depends on choice of subject and institution, alongside background. All encourage students to select institutions and subjects that produce high earnings so students meet labor market needs, repay their loans, and are not left with "the debt of an investment that didn't pay off" (Donelan, 2020).

Yet no government document investigates how students make institutional and subject choices nor how material constraints overshadow choice-making. The 2011 and 2016 White Papers (BIS, 2011, 2016) assume that the provision of loans eliminates students' financial anxieties, allowing equal access and widening participation. The rhetoric fails to see, as this article shows, how the choice agenda can help perpetuate existing HE inequalities.

Student financial support

Following the 2012 reforms, HE costs rose sharply. By 2015, when this study was undertaken, nearly all English universities had increased their full-time undergraduate annual tuition fees from £3,290 to £9,000, with no variation across programs and universities.

All prospective college students in this study qualified for government income-contingent loans covering their tuition, alongside partially means-tested maintenance loans toward living costs. Most anticipated borrowing — 92% intended to get a tuition loan and 84% a maintenance loan. These take-up rates mirror national data which also show that students enrolling in 2015/16 taking a three-year full-time Bachelor's degree could expect to graduate with average loan debt of £34,530 (Student Loans Company, 2019).

Students start repaying their loans once they graduate and their income reaches a threshold. They then pay 9% of their earnings above the threshold until their loans are paid off, with outstanding debt forgiven after 30 years.[3] This system protects low-earning graduates from high repayments and from defaulting on their loans. For some HE applicants this is acceptable.

Theoretical framework

Hossler and Gallagher (1987) US-based college-choice model simplifies the process into a three-stage sequential model which remains the dominant framework for understanding enrollment (Iloh, 2018). A high school student develops a predisposition to attend college; searches for information about colleges; and chooses their institution, when finances become important.

Perna (2006) extends Hossler and Gallagher's model by incorporating both the economic model of human capital investment and a sociological model of status attainment including ideas of habitus, cultural and social capital, to create a model which highlights the situated context in which attitudes toward HE and its costs are formulated and choices made. These are shaped by four nested contextual layers: the student and family; the school and community; HE; and the broader social, economic and policy context. Within each layer, Perna (2006) identifies factors influencing college choice. The individual's habitus reflects their demographic characteristics, and cultural and social capital. The social and community context accounts for social structures and resources that facilitate or impede student college choice, including finances. The HE context may involve the university's characteristics including its location and admissions decisions. The outermost layer — social, economic, and policy context — attributes college choice directly and indirectly to these forces (Perna, 2006).

Iloh (2018) argues for a new conceptual approach to student choice to reflect HE's changing landscape. She develops a three-component "ecological model" which considers "important contextual factors of opportunity, time, and information and their interdependent relationship in college decisions and trajectories" (p. 228). She questions the notion of choice, asserting that it "may be a limited and problematic way of understanding present-day college-going" (p. 227).

These US-centric models are limited for understanding student choice in countries where the sequence and dynamics of choice-making differ. First, they ignore subject choice because North American students usually select their major after enrollment. By contrast, English and European prospective HE students typically pick their subject before their institution. Secondly, admissions criteria in England vary by subject and program rather than applying to an entire institution. English students' prior academic attainment, therefore, affects their choice both of possible subjects and institutions.

Despite these limitations, we too assume that students' choice of institution and field of study, alongside their attitudes to HE and its costs, are shaped by Perna's (2006) four nested contextual layers. In choosing where and what to study, students' understanding of the costs and benefits of investing in HE, their views about their academic and financial resources, and their HE choices are constrained by their socio-economic backgrounds and resources derived from their cultural and social capital. And following Iloh (2018), for some, choice is a misnomer because their choices are so constrained.

Existing research

The large literature on student choice highlights a myriad social, economic, psychological, and cultural factors affecting educational choices (Hemsley-Brown & Oplatka, 2016; Perna, 2006). However, as Pollard et al.'s (2019)

literature review confirms, English research rarely examines the effects of HE costs and debt aversion on students' choices, or the role of student loan debt, the focus of this article.

US research mostly concentrates on how the large variations in tuition, financial aid and price-discounting influence students' choice of institution (Avery & Hoxby, 2003; Cabrera & Nasa, 2002; Kim, 2004), putting prestigious institutions out of reach for low-income students (Baum et al., 2008; St. John et al., 2005). Outside the US, tuition and student finance arrangements differ.

In England, tuition is high compared to the US average (Kirby, 2016), and all but the wealthiest students must borrow (de Gayardon et al., 2019). However, all English universities charge the same tuition for all their full-time undergraduate programs. Tuition is covered fully by universally accessible government income-contingent loans which postpone graduates' obligation to repay their tuition for years and sometimes forever, blunting the potency of price signals in shaping behavior (Chapman, 2006). Consequently, tuition and tuition rises have little impact on students' institutional and subject choice, except in relation to student mobility (Azmat & Simion, 2017). Nor does institutional aid in England have much influence (Corver, 2010; Pollard et al., 2019), as it is far less widespread and generous compared with the US. A study of English university applicants finds tuition has a "major" influence on choice of university for just 8% of respondents, institutional aid influences 12% while the course (program) offered influences 82% of respondents' institutional choice (Fagence & Hansom, 2018, pp. 66–67).

In England tuition and financial aid, therefore, have limited direct impact on institutional and subject preferences, unlike in the US. But in both countries, students are exposed to varying choice contexts which frame and constrain their options, differing by their socio-economic characteristics. Callender and Jackson (2008) argue concerns about HE costs and borrowing prompt students to adopt "financial coping mechanisms" (p. 407) — a generic term covering wide-ranging strategies to avoid debt and to reduce HE costs. Byford (2015) suggests students appear to adopt three broad strategies: minimizing and/or managing costs whilst studying, and maximizing the financial returns of study. Our latent class analysis below will verify the analytical usefulness of Byford's classification. Here we use her classification to report on, and to help order, the relevant literature.

Minimizing strategies in the US and England focus on reducing college living and housing costs and on containing loan debt accumulation. Prospective students, especially from disadvantaged backgrounds, select institutions: with lower room and board costs (Avery & Hoxby, 2003); in areas with lower living costs (Azmat & Simion, 2017; Fagence & Hansom, 2018); and near the student's parental home to save on accommodation and travel costs (Donnelly & Gamsu, 2018; Fagence & Hansom, 2018; Paulsen & St. John, 2002; Reay et al., 2005; Skinner, 2019). In England, debt aversion also prompts low-income students to live in areas with lower living costs (Callender &

Jackson, 2008). And living with parents while studying is a way of avoiding maintenance loans (de Gayardon et al., 2019), or reducing the amount borrowed especially among debt averse applicants (Artess et al., 2014; Bates et al., 2009). Usher et al.'s (2010) English qualitative study on the role of finance in applicants' decision-making confirms "proximity to home was frequently used by potential applicants as a proxy indicator of the financial cost of attending a particular institution" (p. 64). Reay et al. (2005) point to working-class localism. "Geography determines choice for a majority of working-class students" (p. 86) but not for their middle-class peers — a finding echoed by Donnelly and Gamsu (2018). Living and housing costs, therefore, affect institutional choice by encouraging primarily low-income students, underrepresented minorities, and first-generation college-goers to consider only, or mainly, local HEIs (Donnelly & Gamsu, 2018; Usher et al., 2010). The type and quality of these students' HE, therefore, is governed by the type and quality of their local institutions (Gibbons & Vignoles, 2012).

Living at home has other consequences, especially in England where around 80% of students move away from home to attend HE (Donnelly & Gamsu, 2018). For instance, those living at home have: less positive HE experiences; lower levels of engagement academically, in student social life, and in extracurricular activities; and lack opportunities to develop their social and cultural capital and learning through informal interaction (Christie et al., 2005; Thomas & Jones, 2017). On graduation, students living at home usually remain in their locality and are confined to local, often lower paying, jobs (Kidd et al., 2017). Consequently, student mobility — whether they can leave home and to what distance — is a major dimension of inequality within HE choice and experience, and on graduation.

Strategies to *manage* costs aim to offset them through seeking additional funds, usually institutional aid or term-time employment. As discussed, institutional aid in England has a limited effect on student choice. Only the most academically able and socially and geographically mobile students can compete for the largest scholarships offered by the top universities (Callender & Wilkinson, 2013). Term-time employment, however, can influence institutional choice (Burdman, 2005; Purcell & Elias, 2010; St. John et al., 2005). Some applicants choose an institution so they can continue working in a preexisting job. Others select institutions in areas with good part-time employment opportunities (Fagence & Hansom, 2018; Maringe, 2006), especially debt averse students from low-income families (Callender & Jackson, 2008).

Typically, more disadvantaged students work, and for longer hours than their advantaged peers. Evidence on the impact of term-time employment on students' college experiences, attainment, and graduate employment prospects is inconclusive. It can be positive (Perna, 2010; Scott-Clayton & Minaya, 2016) and negative (Callender, 2008).

Finally, *maximizing* strategies concentrate on exploiting the benefits of HE, choosing high-ranking institutions, or subjects that will help secure well-paid future employment. Anticipating that tuition fees must be repaid, and in line with human capital theory (and government policy rhetoric), applicants might seek to maximize the returns on their HE investment.

Institutional reputation and employment prospects are increasingly important in English prospective students' choice-making, especially since tuition increased (Esson & Ertl, 2016). But access to institutions and programs giving enhanced employment prospects is highly competitive and entry is determined by students' prior academic attainment, limiting options. The evidence is inconclusive. Some studies find no or just small effects of rising costs on students' institution and subject choice (Azmat & Simion, 2017). Callender and Jackson (2008) find debt aversion plays no part in subject choice. Others find applicants opting for courses with better employment prospects but with varying effects by social class, gender and ethnicity (Bates et al., 2009; Maringe, 2006; Purcell et al., 2008; Usher et al., 2010). Clark et al.'s (2015) qualitative study of low-income, mainly ethnic minority, high achieving applicants demonstrates how rising costs and student loan debt increased students' discrimination between universities and type of program, which was linked to job prospects on graduation. Their instrumental approach aimed to mitigate the financial risks of HE by looking for post-graduation security to offset the costs. Students began thinking about jobs before applying to university and their top subject choices were vocational with clear career paths. Students' need to undertake paid work while studying also led them to reject time-consuming courses. These students confined their choices to a narrow set of subjects and institutions.

These English studies provide useful insights into how financial issues influence students' HE choice-making, but they are limited. Few include nationally representative samples of prospective college students. Where they do, the analysis is descriptive and fails to identify and quantify the determinants of choice-making. Many larger studies were conducted over a decade ago, before the student funding reforms since 2012/13. The following analysis attempts to fill these gaps, and more.

No existing study, to our knowledge, has developed a typology of students' financial coping mechanisms or adequately differentiates between such strategies. For instance, Callender and Jackson (2008) analysis focuses on several individual coping mechanisms, showing how each one, in isolation, influences students' choice. They do not investigate how students combine various coping mechanisms, nor how clusters of coping mechanisms may shape choice differently. Similarly, Byford's (2015)classification provides no insights into how students might combine financial strategies nor into the socio-economic characteristics of students adopting each strategy. Consequently, these authors fail to capture the complexity and range of students' nuanced decision-

making. To rectify these omissions, we develop a typology of students' financial coping mechanisms based on their anticipated actions aimed at minimizing, managing, and maximizing their HE study costs and derived from students' answers to a survey question about what they planned to do because of the costs.

Informed by the theoretical framework and literature review, four hypotheses for the current study emerge. We posit that:

(1) Students concerned about the costs of HE adopt a range of financial coping mechanisms which affect their college choices.
(2) A typology of financial coping mechanisms based on the reported planned actions of prospective HE students to minimize, manage and maximize anticipated HE study costs is observable among a sample of would-be HE students in England.
(3) The typology can discriminate between students with different socio-economic characteristics, shaping choices differently.
(4) Students predominately minimizing their HE costs are over-represented amongst those from disadvantaged backgrounds, are more likely to be debt averse, and have more restricted choices compared to students adopting other financial coping mechanisms.

Data and methods

The survey

We draw on a 2015 nationally representative survey of pupils in England aged 17 to 21, in their final year of upper secondary studies, and studying toward HE entry-level qualifications. This was a one-off bespoke survey. Pupils attending public high schools were selected from the National Pupil Database (NPD); students attending public further education providers from the Individual Learner Record (ILR)[4]; and pupils from private fee-paying high schools directly through their institutions. The UK Department for Education supplied the NPD and ILR data from which the sample was drawn, and *Edubase* — a separate database of private high schools — was used to obtain a sample of private pupils.

Disadvantaged pupils[5] were oversampled to address the social class biases in university applicants and our interest in how the most disadvantaged students fare. A systematic random sample was selected from the eligible students in the NPD and ILR from within and outside the disadvantaged category. A systematic random sample of 100 private schools was selected from *Edubase* and the selected schools were contacted and invited to participate in the research project.

The survey was administered through a combination of paper and e-mail surveys, and yielded 1,617 respondents, giving an overall response rate of 22%. The response rate was considerably higher for the private school sample (40%)

than the NPD sample (28%) and the ILR sample (11%). The lower ILR response rate was driven primarily by the lower quality of the contact information received for the ILR sample.

A single weight was produced for analysis.[6] The influence of the sample design and weighting can be summarized by the measure of design effect, which was estimated at 1.73 (i.e., the effective sample size for the analysis is 1.73 times smaller than the actual number of respondents). This can be considered a reasonable result for a study with such a complex sampling design.

Here we focus on those who had applied or intended to apply to an HEI to study for an undergraduate qualification, creating an analytic sample of 1,374 students.

Our sample

The population-weighted proportions for the analytic sample were: female (59.2%); White British (74.4%); attended a state-funded high school (50.8%), a private high school (11.3%) or a vocational further education college (FE) (37.9%); had gained 5 or more A*-C grades in their General Certificate of Secondary Education (GCSE) exams[7] (57.3%), or GCSE Grades below 5 A*-C (35%), or GCSE Grades D-F only (7.6%); had at least one university-educated parent (53%). A third of respondents expected a large financial contribution from their parents toward their HE costs, 52.7% a small contribution, and 14% no financial support. The distribution by social class[8] was relatively balanced, with 35.8% low-class, 34.7% middle-class and 29.6% high-class. Across these characteristics, item non-response was observed: for social class, with 1149 complete cases; 1247 for the variable measuring expected financial support, and 1264 complete cases for parental university education.

Methods

Latent class analysis (LCA) was used to model a *typology of financial coping mechanisms*. LCA identifies unmeasured (unobserved) class membership among subjects using a multitude of both empirically and theoretically relevant observed variables. The model assumes that our data were collected for observed, in our case dichotomous, variables X_j where j is the number of variables = 1, 2 . . ., s and that there exists a latent, non-ordered categorical latent variable Y which accounts for the associations amongst the X_j. The LCA model links the probability π of belonging to a latent class k (where k = 1, 2, . . ., c) of the latent variable Y given the probability of a response l (which being dichotomous is either 0 = No or 1 = Yes) in any of the manifest variables X_j as follows:

$$\pi_{lk}^{X_j Y} = \pi_k^Y \pi_{lk}^{X_1|Y} \ldots \pi_{lk}^{X_s|Y} \quad (1)$$

In equation 1 the probability that a randomly selected individual will be in latent class k of the latent variable Y, given the answers l to a series of dichotomous items X_j is equal to the product amongst the probability of membership to any of the k latent classes of Y and the probabilities of a response l for all the observed X_j conditional to Y. This formulation assumes that the observed variables X_j are conditionally independent given a particular class in Y. LCA estimates two parameters: a) the probability of a particular observed response l conditional on latent class membership; b) the probability of being in a specific latent class k (Finch & Bronk, 2011) In Mplus v8.3, which we used, the estimation of these parameters is done through Maximum likelihood estimation (MLE) via the Estimation-Maximization algorithm, and model fit is assessed through the adjusted Bayesian Information Criterion, the Akaike Information Criterion, the Log-likelihood test, and the bootstrapped Lo-Mendel-Rubin adjusted Log-likelihood ratio test's (LRT) p-value for k-1 classes(Nylund et al., 2007)

Afterward, two separate stepwise multivariate regression models were run. In Part 1 of our analysis, a multinomial logistic regression was performed to assess the effect of socio-economic and attitudinal predictors on the typology of financial coping mechanisms. Then, Part 2 used our typology of financial coping mechanisms as one of the key predictors of subject choice in a logistic regression model where the choice is formalized as between Vocational and Non-vocational subjects.

Due to missing data, our multivariate regression models were run after multiple imputation (MI) (Little & Rubin, 1989) in Stata, using augmented simultaneous equations and estimations averaged across 10 MI datasets for robustness of the estimates (Manly & Wells, 2015). The imputation model includes all the variables that were used in the two regression models performed, including the typology of Financial coping mechanisms. For robustness checks, the regression analyses were performed also on the complete cases only, and the results are largely consistent.[9]

Measuring key variables

Choice of university: measuring a typology of financial coping mechanisms

Survey respondents were asked: "Have you done or are you considering doing any of the following because of the cost of studying for a higher education qualification?" and could tick any that applied. As Table 1 indicates, these mechanisms capture different ways in which HE applicants could potentially minimize or manage their HE costs or maximize the financial return on their HE investment.

To develop a typology of financial coping mechanisms the nine items in Table 1 were used for the LCA.

Table 1. Items measuring financial coping mechanisms (% of Yes).

Financial coping mechanism	Item	Yes (%)
Minimizing	Applying to universities near my home	35.2
	Living at home with parents	25.7
	Applying to universities in low-cost areas	24.8
Managing	Work during university holidays	61.2
	Work during university term-time	54.1
	Applying for bursary or sponsorship	45.6
	Applying to universities in areas with good term-time employment	23.4
	Doing a course with paid work placement	21.3
Maximizing	Taking a subject with a better employment prospects	41.2

Table 2. Subject choice.

Subject choice	n	% (on valid cases)
Vocational subjects	507	37.7
Medicine and dentistry	37	2.7
Subjects allied to medicine (nursing, midwifery)	86	6.3
Veterinary sciences, agriculture and related	22	1.6
Computer sciences	54	3.9
Engineering and technology	65	4.7
Architecture, building and planning	21	1.5
Law	44	3.2
Business and administrative studies	107	7.8
Education	71	5.2
Non-Vocational subjects	839	62.3
Biological sciences	87	6.3
Physical sciences	61	4.4
Mathematical sciences	37	2.7
Social studies	194	14.1
Media and mass communication	25	1.8
Languages and literature	51	3.7
Humanities	50	3.6
Creative arts and design	108	7.9
Combined subjects	226	16.5
Unknown	28	2
Total n	1,374	

Choice of subject

The survey respondents were asked what subject they hoped to take at university (Table 2). Given the small number of cases in each subject, applicants' subject choices were divided into two groups — vocational (37.7%), and non-vocational subjects (62.3%). This categorization is subjective as no official classification of vocational and non-vocational subjects exists.

Attitude measures

The attitude measures employ validated indicators (Callender & Jackson, 2008) which assess different dimensions about how students feel about HE and debt and what these mean to them (Figure 1). Specifically, they quantified their attitudes to: the perceived benefits of going to university; the long-term career and financial benefits of HE; the balance of its perceived costs and benefits; and debt aversion. All measures used were coded as 5-point Likert-

Perceived benefits of going to university	Attitudes toward the long-term career and financial benefits of HE	General levels of fear of debt	Attitudes towards the balance of the perceived costs and benefits of going to university
Going to university is a worthwhile experience	You need a university degree to get a decent job	Owing money is basically wrong	Borrowing money to pay for a university education is a good investment.
One of the best aspects of going to university is to develop yourself as a person	In the long term you benefit financially from going to university	There is no excuse for borrowing money	Student loans are a good thing because they allow students to enjoy university life.
Some of the best aspects of going to university are meeting new people and the social life	I would rather earn good money now than go to university (recoded)	You should always save up first before buying something	Students do not worry about their debts while at university because they will get well-paid jobs when they graduate.
			It is not worth getting into debt just so you can get a degree

Figure 1. Attitudes toward HE and Fear of debt. Items included in the factor analysis.

type scales, with categories strongly agree, agree, neither agree nor disagree, disagree, and strongly disagree. Students' positioning along the four attitude measures were computed through exploratory factor analysis rendering four factor scores for each student. Descriptives of the factor scores are given in (Tables 3–6) in relation to the latent classes of financial coping mechanisms, and subject choice.

The four scores were included in the statistical models as exogenous latent continuous variables to assess the relevance of attitudinal characteristics for respondents' financial coping mechanisms and subject choice. Together these four attitude measures solicit students' perception of the debts they might accrue against their attitudes toward the short — and longer-term benefits of HE.

Results

Part 1: The typology of financial coping mechanisms affecting choice of university

We tested LCA models with different number of classes *k*, then selected the number of classes that best represented the conditional distributions of the nine items of financial coping mechanisms. Table 3 shows that the 3-class solution is the best fit to our data, as the largest increase in the Log-likelihood (LL), accompanied by the largest drop in the Akaike Information Criterion (AIC) and in the Sample-adjusted Bayesian Information Criterion (BIC) values are observed between the 2-class and the 3-class solutions. The 3-class solution

Table 3. Model fit statistics for the LCA models of financial coping mechanisms.

Number of classes	Log-Likelihood	AIC	Sample-adjusted BIC	Entropy	Adjusted LRT *p*-value for K-1 classes
2	−7343.6210	14,725.2430	14,764.1720	.668	0.0000
3	−7173.0480	14,404.0950	14,463.5130	.779	0.0067
4	−7091.8100	14,261.6210	14,341.5270	.734	0.3459

produces the highest Entropy value (.779). The adjusted Likelihood Ratio Test *p*-value for *k*-1 classes of 0.0067 demonstrates the appropriateness of the last estimated model with *k* classes as compared to the previous one with *k*-1 classes. We characterized the first LCA group as *Minimizing costs*, the second as *Managing costs and maximizing returns* (abbreviated to *Managing and maximizing*), and the third as *No financial concerns*, as shown in Figure 2

The class *Minimizing costs* comprises 18.5% of respondents who are the most concerned about minimizing their HE costs. They are most likely to choose a HE institution near their parental home and are likely to get paid work during holidays and in term-time. The class *Managing and maximizing* (52.8% of respondents) focus their financial planning strategies on managing costs. They are the most likely to anticipate working during holidays and term-time, and consequently intend to select HEIs in areas with better employment opportunities. They also are the most likely to choose institutions in localities where living costs are low and institutions offering bursaries. The final group, *No financial concerns* (28.7% of respondents), are least likely to be concerned about economizing on their HE costs.

Table 4 describes the three latent classes by their socio-economic characteristics and their attitudes, highlighting any statistically significant differences between the groups.[10]

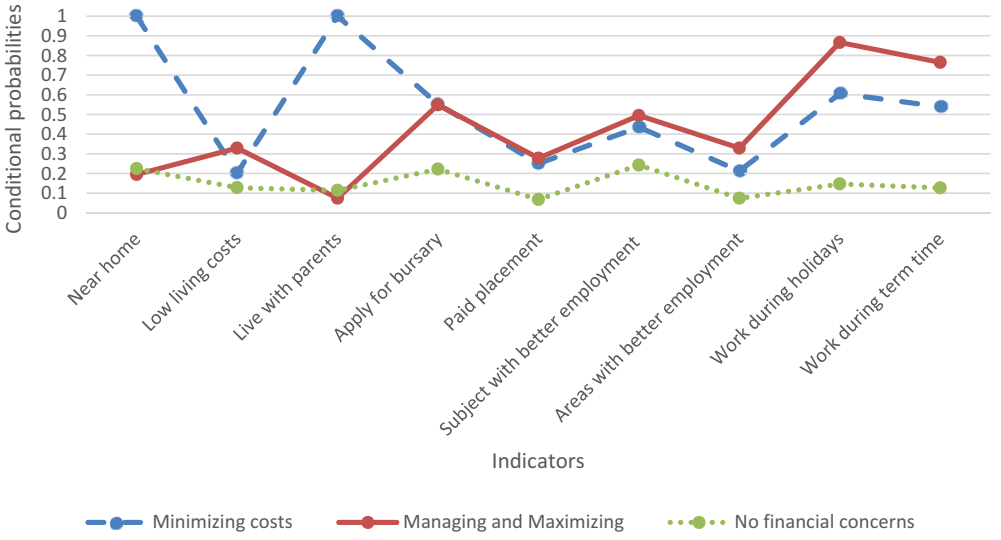

Figure 2. Latent class analysis of applicants' financial coping mechanisms. 3-class solution. Note: conditional probabilities significant at the 95% confidence level

Table 4. Latent classes by socio-demographic characteristics and attitudes (weighted; available cases).

	Latent classes of financial coping mechanisms		
Socio-demographic characteristics	Minimizing costs	Managing and maximizing	No financial concerns
*Gender (%)**			
Female (n = 869)	24.5	51.5	24.0
Male (n = 503)	17.4	44.9	37.8
*Social class (%)**			
Low (n = 441)	27.2	47.9	24.9
Middle (n = 373)	23.0	47.6	29.4
High (n = 335)	9.9	58.4	31.6
*Ethnic group (%)**			
White British (n = 947)	18.0	52.1	29.9
Other ethnic group (n = 369)	30.0	42.5	27.5
*Type of institution (%)**			
Public high school (n = 990)	20.3	54.9	24.8
Private high school (n = 130)	2.9	57.9	39.2
FE college (n = 254)	28.7	37.8	33.5
*Prior educational attainment (%)**			
5 or more GCSE Grades A-C (n = 856)*	15.9	57.9	26.3
GCSE Grades below 5 A-C (n = 419)*	27.9	38.5	33.6
GCSE Grades D-F only (n = 73)	35.8	27.9	36.3
*Parent went to university (%)**			
One parent went to university (n = 586)	12.8	54.4	32.8
No parent went to university (n = 678)	28.6	45.0	26.4
*Expected parental financial contribution to the costs of higher education (%)**			
Large contribution (n = 421)	16.1	44.2	39.6
Small contribution (n = 639)	23.1	51.5	25.4
No financial support (n = 187)	27.7	49.0	23.3
*Estimated amount of debt (mean £)***	31,723.61	38,894.01	34,931.67
*Debt averse [high = relaxed about debt] (mean)***	−0.159	0.159	−0.01
*Balance of costs and benefits of going to university [high = costs outweigh benefits] ** (mean)*	0.049	−0.21	−0.16
*Perceptions of social benefits [high = high benefits]** (mean)*	−0.08	0.293	0.08
*Perceptions of financial benefits [high = high benefits]** (mean)*	0.182	0.249	0.169
Latent classes n	287	725	362
Latent classes (%)	18.5	52.8	28.7

Due to missing data on socio-demographic characteristics not all variables add up to 1374.
*Statistically significant at least at the 95% confidence level according to the chi-square test. **Statistically significant at least at the 95% confidence level according to the ANOVA F-test

The three latent classes of applicants' intended financial coping mechanisms differ significantly in their socio-economic characteristics. For instance, more women than men fall into the *Minimizing costs* and *Managing and maximizing* classes, whilst men predominate in the *No financial concerns* group. Respondents from the lowest social class are three times more likely than those from the highest to fall into the *Minimizing costs* group. Ethnic minorities are overrepresented in the *Minimizing costs* group and underrepresented in *Managing and maximizing*. Particularly marked is the small proportion of applicants from private high schools in the *Minimizing costs* group and their overrepresentation among those with *No financial concerns*. Those with university-educated parents are mostly concentrated in the *Managing and maximizing*, and *No financial concerns* groups. Those anticipating getting large financial contributions from their parents, predictably,

are overrepresented among *No financial concerns* and underrepresented in the *Minimizing costs* group which was dominated by those not expecting parental financial support. Finally, there are differences in each group's attitudes to debt and to HE.

Assessing factors affecting latent classes of financial coping mechanisms: regression models

The predictors used in the regression model are informed by our conceptual framework. As Table 5 shows, we take into account socio-demographic characteristics, students' attitudes toward debt, the balance of the perceived costs and benefits of going to university, attitudes to long-term financial and career benefits of HE, and attitudes toward the social benefits of going to university. The effect of debt aversion on financial coping mechanisms therefore is assessed in combination with the social class of applicants' parents, as existing research (Boatman et al., 2017; Burdman, 2005; Callender & Jackson, 2008; Callender & Mason, 2017) demonstrates strong links between debt aversion and social class and prospective students' HE participation decisions. Hence, we include the interaction term between social class of origin and debt averse attitudes.

The latent class *Minimizing costs* comprises HE applicants who are more likely to come from a low social class, a minority ethnic group — by 10 percentage points, and to have gained GSCE grades below 5 A*-C. This group also is about 19 percentage points less likely to have attended a private high school and less likely to have a university-educated parent. They anticipate lower levels of debt on graduation than those in the other two latent classes. Indeed, debt aversion seemed to play no part in the characteristics of the *Minimizing costs* group. However, these students appear to have less positive attitudes toward HE, being more likely to believe that the costs outweigh its benefits. They are more interested in the perceived long-term career benefits of HE and its financial return but less concerned about the experiential benefits.

The latent class *Managing and maximizing* is characterized by a prevalence of women, typically from a white British background, who are less likely to attend an FE college and are more likely to have 5 or more GCSE grades A*-C. This group tends to have at least one university-educated parent but are almost 8 percentage points more likely to expect only a small financial contribution from their parents toward their HE costs, and more likely than the other classes to anticipate receiving no financial support. Associated with this, they anticipate leaving university with higher levels of debt than the other two latent classes. In addition, they are more likely than other groups to value the social benefits of going to university.

The third latent class *No financial concerns* is more likely to consist of males who attended either a private high school or a FE college. They are the group most likely to be privately educated — by 12 percentage points — and the least

Table 5. Multinomial regression. Predicted probabilities of membership to the latent classes of financial coping mechanisms.

	Financial coping mechanism		
	Minimizing costs	***Managing and maximizing***	***No financial concerns***
Predictor on latent classes	Pred(Pr)	Pred(Pr)	Pred(Pr)
Female [ref: Males]	0.0208	0.0899*	−0.1107*
	0.0218	0.0267	0.0232
Social class [ref: High]			
Low	0.0833*	−0.0646	−0.0187
	0.0353	0.0429	0.0394
Middle	0.0415	−0.04	−0.0042
	0.0306	0.0376	0.0329
Ethnic group [ref: White British]			
Other ethnic group	0.103*	−0.0931*	−0.0106
	0.0266	0.0309	0.0274
Type of institution [ref: State school]			
Private school	−0.191*	0.0743	0.1165*
	0.0235	0.0474	0.0457
FE College	−0.0084	−0.0768*	0.085*
	0.0275	0.0361	0.0338
Prior educational attainment [ref: 5 or more GSCE grades A*-C]			
GCSE Grades below 5 A-C*	0.0589*	−0.0799*	0.0198
	0.0239	0.03	0.0271
GCSE Grades D-F only	0.0786	−0.1692*	0.0945
	0.0499	0.0641	0.0597
One parent went to University [ref: No parent went to university]			
	−0.0802*	0.0803*	0.0005
	0.025	0.03	0.0271
Expected parental financial contribution to the costs of higher education [ref: Parents pay all higher education costs]			
Small contribution	0.0221	0.0782*	−0.1004*
	0.0265	0.0315	0.0289
No support	0.0043	0.1207*	−0.127*
	0.0337	0.0423	0.04
Estimated amount of debt (Log-scaled)	−0.0547*	0.0727*	−0.018
	0.0157	0.0238	0.0205
Debt averse [high = relaxed about debt]	−0.015	0.0248	−0.0105
	0.0113	0.0142	0.0126
Balance of costs and benefits [high = costs outweigh benefits]	0.0337*	−0.0172	−0.0165
	0.0126	0.0171	0.0151
Perceptions of the social benefits [high = high benefits]	−0.0513*	0.0755*	−0.0241
	0.0125	0.016	0.0142
Perceptions of financial benefits [high = high benefits]	0.0335*	−0.0173	−0.013
Near home	0.0142	0.017	0.0159
Interaction effect of Debt aversion with Social class			
Debt aversion with Low social class	−0.00337	0.0021	0.0003
	0.0181	0.022	0.0205
Debt aversion with Middle social class	−0.0218	0.0671*	−0.0439
	0.0198	0.0239	0.0225
Debt aversion with Higher social class	−0.0274	0.0088	0.0215
	0.0241	0.028	0.0246
Observations		**1374**	

Note: Standard errors in second row; * = significant at least at the 95% significance level.

likely to expect a small or no contribution from their parents toward the costs of HE, which further confirms our typology of financial coping mechanisms, as this group is the most likely to anticipate that their parents will pay all their costs.

The only significant effect found for the interaction between social class and debt aversion across the three latent groups of financial coping mechanisms was for *Managing and maximizing* students from middle-class backgrounds. These students are more likely to be debt averse than their peers, perhaps because they anticipate graduating with the highest levels of debt.

Part 2. Choice of subject

Choice of subject of study: descriptive statistics

The subject applicants anticipated taking at university were divided into vocational and non-vocational. The focus on vocational subjects reflects the existing literature discussed above which suggests some applicants concerned about HE costs and maximizing the returns of their HE investment may opt for such subjects. Table 6 shows the characteristics and attitudes of applicants planning to take vocational and non-vocational subjects.

Ethnicity, type of institution attended, and prior educational attainment significantly affect subject choice. Students choosing vocational subjects are significantly more debt averse than their peers choosing non-vocational subjects. Applicants who are less likely to believe that the costs of HE outweigh its benefits also select vocational subjects. Finally, there are differences among the three latent classes of financial coping mechanisms, with those in the *Minimizing costs* group being most likely to opt for a vocational subject.

Assessing factors affecting choice of subject of study: regression models

We use logistic regression to predict the choice of a vocational subject. Again, we consider gender, social class, ethnicity, type of institution attended, prior educational achievement, whether at least one parent was university-educated, the expected parental financial contribution and the estimated amount of debt, and the four attitude measures on the benefits of HE, including debt aversion. We introduce here the item "Taking a subject with better employment prospects," to indicate the importance given to the financial and employment benefits of choosing a specific subject, in order to assess its effect above the effect of the financial coping mechanisms. Finally, we include the three latent classes of financial coping mechanisms as predictors.

The same datasets generated via MI for the previous regression model were used for the analytical model in Table 7, to have sample-wise comparable results. Analyses run on available cases only showed consistent results (see Supplementary Table S2).

Table 6. Vocational and non-vocational subjects by socio-demographic characteristics and attitudes (weighted; available cases: 1346; 28 students did not choose a subject).

	Choice of subject		
Socio-demographic characteristics	Vocational	Non-vocational	n (100%)
Gender (%)			
Female	42.0		853
Male	44.1		491
Social class (%)			
Low	44.4		433
Middle	44.1		367
High	35.2		324
*Ethnic group (%)**			
White British	40.1		925
Other ethnic group	48.9		363
*Type of institution (%) **			
Public high school	33.5		973
Private high school	30.9		126
FE sector	59.2		247
*Prior educational attainment (%) **			
5 or more GCSE Grades A-C*	37.1		842
GCSE Grades below 5 A-C*	50.3		406
GCSE Grades D-F only	52.1		72
One parent went to university (%)			
Yes	40.9		662
No	43.9		574
Expected parental financial contribution (%)			
Large	43.6		412
Small	43.3		626
No financial support	43.4		185
Estimated amount of debt (£ mean)	34,596.64	35,953.91	1174
*Debt averse [the higher = the more relaxed about debt] (mean)***	−0.204	0.064	1293
Balance of costs and benefits [high = costs outweigh benefits] (mean)	−0.122	−0.139	1263
*Perceptions of social benefits [high = high benefits] (mean)***	0.015	0.222	1323
Perceptions of financial benefits [high = high benefits] (mean)	0.177	0.168	1258
Choice of subject with better employment prospects	43.8		1346
*Latent Class of financial coping mechanisms**			
Minimizing costs	56.2		283
Managing and maximizing	34.4		710
No financial concerns	47.1		353
All	37.7		1346

Note: *Statistically significant at the 95% confidence level according to the chi-square test of independence. **Statistically significant at the 95% confidence level according to the ANOVA F-test

Table 7 shows applicants from minority ethnic groups are around 6–7 percentage points more likely to choose vocational subjects, while those attending FE colleges are around 22 percentage points more likely to do so. Applicants preferring vocational subjects are more interested in the long-term financial benefits of HE rather than its social benefits. Those intending to take a subject with better employment prospects because of the cost of HE are around 8 percentage points more likely to choose a vocational subject. The students in the two latent classes of financial coping mechanisms *Minimizing costs* and *No financial concerns* are between 12 and 11 percentage points more likely to choose a vocational subject than those in the class *Managing and maximizing*. As a check, the

Table 7. Logistic regression. Predicted probabilities of choice of a vocational subject (statistically significant predictors only).

Predictor	Predicted probability
Ethnic group [ref: White British]	
Other ethnic group	0.063*
	0.03
Type of institution [ref: State school]	
Independent school	−0.056
	0.044
FE sector	0.223*
	0.036
Perceptions of financial benefits [high =high benefits]	0.038*
	0.017
Perceptions of the social benefits [high =high benefits]	−0.038*
	0.015
Intends to take a subject with better employment prospects	0.083*
	0.026
Latent class of financial coping strategy (ref: Managing and maximizing)	
Minimizing costs	0.127*
	0.036
No financial concerns	0.111*
	0.032
Observations	**1374**

Note: Standard errors in row below estimate; * = significant at least at the 95% confidence level.

interaction between social class background and debt aversion was considered in light of existing research demonstrating such links, but no effect was found.

Discussion

While our results provide robust evidence on prospective college students' varying financial coping mechanisms, we recognize several limitations. Our study only applies to traditional high school students. Since our survey was conducted in 2015, some elements of student financial aid have changed, which may impact future students' behavior. Additionally, our study focuses on prospective students' intentions rather than actual choices. Drawing a causal conclusion that specific financial coping mechanisms lead to institutional and subject choice requires longitudinal data tracking students from high school into college.

This study, however, provides valuable insights into the financial coping mechanisms English prospective college students anticipate using because of HE's costs, and highlights the mechanisms' effects on students' institutional and subject choices. The findings confirm our first hypothesis that students concerned about the costs adopt a range of financial coping mechanisms which affect their college choice.

The findings also support our second and third hypotheses that a typology of financial coping mechanisms aimed at minimizing, managing, and maximizing anticipated HE costs can be observed which discriminates between

students with distinctive socio-economic characteristics, shaping college choice differently. Applicants fall into one of three socially stratified financial coping mechanism groups: *Minimizing costs; Managing and maximizing*, and *No financial concerns*. Each group consists of students with marked socio-economic characteristics and each group's coping strategies have different implications for choice-making.

Minimizing costs students, around a fifth of all applicants, are the most anxious about college costs. They are the most disadvantaged — lower-class students, first-generation college-goers, ethnic minority and lower-attaining students. These students' potential cost-saving strategies, primarily by living at or near the parental home, constrain their HE options. Restriction to their local HEIs dictates the type and quality of their HE. By living at home, their HE experiences, and subsequent employment opportunities are likely to be impoverished relative to more affluent, geographically and socially mobile students. *Minimizing costs* students' attitudes toward HE center on its financial benefits. Consequently, they anticipate selecting vocational rather than non-vocational subjects of study. For many *Minimizing costs* students, choice is a fallacy. The costs of study and the loans required hamper rather than enhance their choices, undermining government policy objectives of greater student choice and social mobility and an improved student experience. Student funding policies, which since 2012 have aimed to promote student choice and widen participation, appear to have the opposite effect for *Minimizing costs* students, exacerbating existing HE inequalities.

Managing and maximizing students — just over half of all applicants — typically are high achieving, White women attending public high schools with at least one university-educated parent. They expect to receive limited parental financial support and to graduate with the highest debts — the price they pay for geographical mobility and valuing the social benefits of HE. This group plans to manage their HE costs mainly by augmenting their incomes through paid employment and institutional aid, and by maximizing the financial returns of their HE by selecting subjects with better employment prospects. However, they do not seek to maximize their HE returns by selecting vocational subjects and are significantly less likely to choose a vocational subject than the other student groups. Their choice of institution and subject is largely unencumbered by financial concerns, while the long-term consequences of their financial coping mechanisms are mainly benign, unlike those for *Minimizing costs* students.

No financial concerns students, nearly three in ten applicants, are the most privileged. They do not make financially motivated decisions and have the widest HE choices. They are typically men who attended private high schools and anticipate receiving generous parental financial help toward their study costs. They too are drawn to vocational subjects, but unlike the *Minimizing costs* students are unconcerned about the financial returns.

The characteristics of prospective students *Minimizing costs* supports our fourth hypothesis except in relation to debt aversion. While *minimizing* students are over-represented amongst the most disadvantaged and have more restricted choices than students in the other groups, they are not more debt averse. Indeed, applicants' attitudes toward debt played no role either in their financial coping mechanisms or their subject choice. Earlier, Callender and Jackson (2008) found debt aversion influenced applicants' institutional choices but not their subject choice. The change might be because, as Callender and Mason (2017) show, over time applicants have developed more relaxed attitudes toward income-contingent student loan debt and are more resigned to loan debt, which has become increasingly normalized for all but the wealthiest.

The only significant effect found for the interaction between social class and debt aversion across the three groups was for *Managing and maximizing* students from middle-class backgrounds. This middle-income group has been particularly squeezed by the greater means-testing of maintenance loans, limited access to institutional aid, and parents with no disposable income to compensate, making their children more dependent on loans and consequently anticipating graduating with the highest debt levels.

The typology of prospective students' financial coping mechanisms which analytically differentiates between strategies aimed at minimizing, managing, and maximizing HE costs, and the combination of strategies students anticipate employing, arguably, is conceptually useful. It goes beyond Byford's (2015) rather simplistic approach to provide a more nuanced insight into prospective students' behavior. The typology could be used in other contexts to provide a deeper understanding of prospective students' HE choice-making.

The study shows that the choices students make reflect their material constraints as well as their cultural and social capital, social perceptions and distinctions, and forms of self-exclusion — all of which are class bound. The findings illustrate how inequalities in patterns of participation, the student experience, and social mobility are perpetuated through material constraints which overshadow governments' choice agenda.

A fundamental deficiency of the student-choice model espoused in government policy rhetoric, is that greater choice equates with greater social equality. But as shown, this is not so. A neoliberal regime of offering students many choices, while seen as desirable and fair, augments and perpetuates existing societal disadvantage. The provision of many choices helps produce social inequality. Not all prospective college students have the wide-ranging choices that English policy makers or the US college choice literature assume. Choice is a "privileged term" distorting "our understanding of vast inequalities and varying life circumstances" (Iloh, 218, p. 239). Choice allows governments to offshore their

responsibilities, leaving individuals to face the consequences. As shown, some students restrict their choices or make sub-optimal choices because of the costs of study. But such occurrences are not randomly distributed throughout the student population, they are socially stratified. Those students who are already disadvantaged are the most affected.

Notes

1. Higher education funding policies are devolved in the UK. The policies discussed, and this article, only relate to undergraduates in England.
2. For a review of policy developments see (Callender & Dougherty, 2018).
3. The income threshold and period for debt forgiveness have varied over time (Belfield et al., 2017).
4. The NPD is a database of pupils in all public-funded schools in England and Wales. The ILR includes data about learners in further education colleges, sixth form colleges and others not included in the NPD.
5. Based on eligibility for free school meals, or being in care.
6. The weighting took into account first, the oversampling of disadvantaged pupils; secondly, non-response modeling by gender, birth year, ethnicity, achievement score, disadvantage flag for the NPD and ILR students, and gender and qualification type for private school pupils; and thirdly, a calibration of the whole dataset (all respondents) to available population totals: gender*school type, FSM status*school type, ethnicity*school type, school type.
7. These are national examinations that English students typically take at age 16, corresponding to ISCED 2011 level 3. Typically, university entry requires 5 or more GCSE grades A*-C.
8. Based on the UK Office for National Statistics Socio-economic classification (NS-SEC) https://www.ons.gov.uk/methodology/classificationsandstandards/otherclassifications/thenationalstatisticssocioeconomicclassificationnssecrebasedonsoc2010#classes-and-collapses
9. See Tables S1 and S2 in online supplementary material.
10. Students' age is excluded from our analysis because there was little variation in our sample.

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Availability of data and material

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