What price university education? Evidence from a conjoint analysis

The changes in funding for undergraduate courses in England mean that universities are re-assessing their product offerings to prospective students. In order to make effective strategic decisions, universities can make use of consumer behaviour research to understand better the impact of higher fees on how students weigh up their options for university. This study uses conjoint analysis to simulate students' choices in applying for university. A range of criteria that affect university/course choice is selected, based on extant literature on students' choice of university. The results suggest that course and university reputation are much more important than fees but there are differences in patterns of utility across various segments of the student population. Findings suggest that whilst fees are not as important as course or university reputation, students from backgrounds where neither parent attended university experience more disutility from higher prices. The implications for the marketing of higher education institutions and the pricing of degree courses in the era full fees are discussed.

Introduction

From 2012 English universities will be allowed greater freedom to set the level of their fees and as a result tuition fees for undergraduate courses are set to rise to between £6,000 and £9,000 per annum, to a level more than double that of fees in 2011-12. The policy shift to higher fees for English undergraduate degree courses mirrors changes well-established in other countries such as Australia and the United States (for example see Clarke (2007)). Higher education institutions need evidence on how to proceed in developing their strategies to take account of the more market-oriented context in which university and course choices are made. But as well as the impact on individuals' choice decisions, universities also have to consider the impact on inclusiveness to ensure that students from under-represented groups have access to higher education. This study presents evidence on how the new fee regime might impact on students' choices using a conjoint analysis simulation. The implications for higher education institutions are discussed.

Research aim

Using conjoint analysis the research aims to examine the relative importance of various factors that affect choice of university and course, and the impact of higher fees on various segments of the student market. In particular responses from students who have been under-represented in higher education in the past, namely i) students whose parents did not attend university, ii) students from lower socio-economic groups, and iii) students who attended state schools (who are under-represented, proportionately, in comparison to students from private fee paying schools) and iv) female students are compared with other student groups.

Whilst higher fees may have some impact on students' choice of university course, it is likely that other criteria will influence students' choices. The extant literature suggests the following choice criteria are the most important: course reputation; university reputation; whether the institution is industry focused, research focused or teaching focused; whether the university is local to the student; entry qualifications; and price levels (tuition fees), see Soutar and Turner (2002); Raposo and Alves (2007); Cubillo, Sánchez, and Cerviño (2006) and Yamamoto (2006).

Research Questions:

What factors are most important in affecting students' choice of university and course?

Are patterns of utility significantly different for students from non-traditional backgrounds (i.e. families where neither parent attended university) compared to students from families where at least one parent attended university?

Are patterns of utility significantly different for students from lower socio-economic groups compared to higher socio-economic groups?

Are patterns of utility significantly different for students educated in the state sector compared to those educated in fee paying schools?

Are patterns of utility significantly different for female students compared to male students?

Method: Conjoint Analysis

Conjoint analysis is a statistical technique used in market research to determine the importance that consumers attach to various features (or attributes) of a good or service. It does this by offering respondents a controlled set of potential products or services. By analysing the choices consumers make, the implicit valuation of the individual elements making up the good or service can be calculated. These implicit valuations are known as utilities or part-worths. The study is based on the responses of 400 people who completed an on-line questionnaire. The questionnaire was hosted by a market research organisation that had access to a specialist 'panel provider' *www.Opinionpanel.co.uk*. This research agency is nationally recognised and used by the UK government and by HEFCE for their own higher education research purposes. The characteristics of the sample were: 200 female, 200 male; geographically representative based on ITV region; social class: 200 ABC1, 200 C2DE; educational background of parents (based on the question: Did your parents go to university?) neither parent went to university (55%); mother went to university (12%); father went to university (13%); both parents went to university (20%); fee-paying or state school - about 10% of the sample came from fee-paying schools, the remainder from the state sector.

Analysis

Importance of factors affecting students' choice of university and course

From the study it appears course reputation and university reputation are the most important factors, and that fees are less important, as denoted by the higher utility values associated with these criteria compared to the other criteria involved in the conjoint analysis (see Appendix 1). And whilst a great deal of utility is attached to both course and institutional reputation, having a poor reputation has an even more powerful but negative impact on utility. There is also evidence of strong patterns in importance for different segments of the sample. Multiple regression analysis (see Appendix 2) suggests that whether parents attended university is a significant variable affecting the importance of fees in the choice decision. Students whose parents (at least one) attended university are not as deterred by high entry qualifications as those from families where neither parent attended university. One explanation could be that the *'parents attended university'* students were using high entry

qualifications as an indicator of quality, in much the same way that someone might view a social club that is difficult to join as one worth joining. In addition, higher socio-economic groups attach more importance to university reputation, as do males compared to females.

Students whose parents did not attend university

Appendix 3 shows the utilities (zero-centred differences) for two sets of respondents. We used independent samples t-tests to compare the two groups. One interesting result is the difference in attitude towards fees. There was a significant difference between the two groups in the utility associated with low fees and that associated with high fees. It seems that respondents whose parents had not gone to university suffer more disutility from high entry qualifications than those whose parents had gone to university.

These results are consistent with other studies, for example, the role of parental influence was highlighted by Bergerson (2010), and 'family traditions' were found to influence students' choice decisions (Dixon & Martin, 1991).

Students from lower socio-economic groups

Perhaps surprisingly we found no significant difference in the levels of utility related to price levels between ABC1s and C2DEs. However there does seem to be a significant difference between the two groups in their attitude towards university reputation.

For both groups going to university is important, but for the ABC1s what is really important is going to a *good* university. The results split by socio-economic group are shown in Appendix 4. Although there is no significant difference between the two groups in their attitude to fees the C2DEs display a marked preference for a local university over a non-local one. This may imply some cost consciousness since living at home is likely to be cheaper. The inconclusive results may also reflect a flaw in the way we compared the two groups, perhaps a clearer pattern might have emerged had we divided the sample into AB and C1C2DE.

Students who attended state schools

The study also looked at differences in attitudes between respondents from state schools and those from private schools. Although the differences were in the expected direction very few of them were significant. This may well be because in our sample the number of respondents from private schools was small (only about 10 percent of the sample attended private schools).

Gender differences

As expected girls express a clear preference for a local university (this may be a reflection of the girls' parents' wishes). Girls also dislike 'industry' but they value a teaching orientated university more than their male counterparts do. Lastly course reputation (average), university reputation (high) and fees (average) all show significant differences between the genders. Girls are more prepared than boys to accept something that is good value for money, even though it may not be the best. It could be speculated that this reflects gender stereotypes with regard to a reluctance to overspend on female education coupled with a nose for a

'bargain', in comparison to a male preference for 'the best' and a belief (reasonable or not) that boys' education is worth it. See Appendix 5 for these results.

Conclusion

Overall this study provides evidence to higher education institutions that course and university reputation are by far the most important factors influencing students' choice of university whatever their background and despite the forthcoming rise in fees. Fees remain a relatively unimportant determinant of the overall utility associated with a university course. It may even be that, for students whose parents attended university, high fees are perceived as an indicator of quality. However, a key finding of the study was that students whose parents had not attended university experience a higher loss of utility as a result of higher fees.

The results of the conjoint analysis demonstrate the importance of reputation for higher education. This is consistent with services marketing theory: marketers would expect reputation to be important for a highly intangible service high in credence qualities. What is more, the impact of poor reputation is more damaging compared to the positive impact of a good or average reputation for both course and institution.

How should universities respond in adapting their undergraduate offerings in the era of high fees? It would appear that lowering fees is not likely to increase utility to any great extent and higher fees may provide higher revenue streams that could be invested in improvements in course and institutional reputation. Above all, institutions should be wary of the corrosive effect of a poor reputation. If higher fees mean resources to protect and enhance reputation then universities would be well advised to push fees up to the maximum allowed. Investing in course quality could be an appropriate strategy to enhance reputation via word of mouth, more than ever important given the speed that reviews and recommendations circulate in the digital age. But universities will have to confront the dilemma of attempting to secure revenue streams from higher fees whilst at the same time discharging their societal obligations for inclusiveness. One approach could be differential fees but such a strategy could be just as controversial as the high fees themselves. The danger is that inclusiveness will be side-lined as universities attempt to acquire the resources from higher fees to enhance their reputation. Studies from America suggest that one outcome is a stratified higher education system with low income and minority (African American and Hispanic) students in the American context concentrated in lower-price and less selective institutions Clarke (2007); Astin and Oseguera (2004).

In the end it brings us back to the question of the role of universities in society. If they are viewed as institutions that enable individuals to benefit personally from higher education then charging fees to reflect individual benefits is appropriate. But if universities have a role in shaping society beyond the (student) buyer-(institution) seller dyad then the impact on inclusiveness of high fees may need to be addressed.

Finally, it is worth noting that conjoint analysis is a simulation and may inadequately model the real responses of students to high fees. Future research on this study will focus on actual choices made to address this shortcoming and to assess the effectiveness of the conjoint analysis technique in the context of highly intangible product offerings high in credence qualities.

Appendix 1

Relative importance of university attributes	importance (%)		utility (zero centred differences)
course reputation	31.2	low	-106
		average	25
		high	81
university reputation	27.8	low	-99
		average	32
		high	68
orientation	16.7	industry focussed	-23
		research focussed	5
		teaching focussed	18
distance	10.1	not local	-7
		local	7
fees	9.5	low	24
		average	9
		high	-33
entry qualifications	4.8	low	10
		average	9
		high	-19

Appendix 2

We used multiple regression to predict the influence of the various demographics on 'percentage importance of fees'. A multiple regression shows the *independent* effect of each of the predictors (regressors) on the dependent variable (the percentage 'importance' of fees). The only variable that is significant is 'parents went to uni'.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	11.967	3.874		3.089	.002
	Parents went to uni? (Q1)	-1.201	.551	-.131	-2.178	.030
	social class (SG)	.465	1.338	.021	.348	.728
	state school or private (Q2)	-.372	1.922	-.010	-.194	.847
	male/female (S3)	-.284	1.119	-.013	-.254	.800

a. Dependent Variable: Importance of Fees

"Parents went to uni" is coded 1=neither went to 4 = both went
Thus the higher the value of "Parents went to uni" the less the importance of fees (such students are less price sensitive).

Importance attached to university reputation

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	36.554	4.873		7.501	.000
	Parents went to uni? (Q1)	.337	.694	.029	.486	.627
	social class (SG)	-3.857	1.683	-.136	-2.292	.022
	state school or private (Q2)	.738	2.418	.015	.305	.760
	male/female (S3)	-2.971	1.407	-.105	-2.111	.035

a. Dependent Variable: Importance of University Reputation

Parents went to university is not significant now, but social class is. Because of the way this is coded (ABC1=1, C2DE=2) it means that as you move into the *lower* social classes university reputation

becomes *less* important (in other words for the ABC1s it's important to go to a 'good' university, not just any university). Gender is also important – university reputation is less important for girls.

The importance attached to course reputation

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	33.501	5.745		5.831	.000
	Parents went to uni? (Q1)	.806	.818	.059	.986	.325
	social class (SG)	-2.452	1.984	-.074	-1.236	.217
	state school or private (Q2)	-1.415	2.850	-.025	-.497	.620
	male/female (S3)	.866	1.659	.026	.522	.602

a. Dependent Variable: Importance attached to course reputation

No variables are 'significant' here.

Importance attached to entry qualifications

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.150	3.460		1.777	.076
	Parents went to uni? (Q1)	-1.094	.492	-.134	-2.222	.027
	social class (SG)	-.258	1.195	-.013	-.216	.829
	state school or private (Q2)	1.144	1.717	.034	.667	.505
	male/female (S3)	-.037	.999	-.002	-.037	.971

a. Dependent Variable: importance attached to entry qualifications

'Parents went to uni' has a significant influence on the importance attached to entry qualifications. Remember that 'parents went to uni' is coded 1=neither went to 4 = both went. So the negative sign on the parameter indicates that the more the parental influence the less importance is attached to entry qualifications.

Appendix 3

Utilities associated with university attributes by parental background		parents went to uni = **yes** n=178	parents went to uni = **no** n=222	significance
course reputation	low	-111	-102	***
	average	22	27	*
	high	87	75	-

university reputation	low	-102	-95	*
	average	32	31	-
	high	72	64	-

orientation	industry focused	-23	-23	-
	research focused	7	3	-
	teaching focused	16	20	-

distance	not local	-5	-9	-
	local	5	9	-

fees	low	20	27	**
	average	7	10	-
	high	-27	-37	**

entry qualifications	low	7	12	**
	average	6	11	**
	high	-13	-24	**

$p<0.05 = *$ $p<0.01 = **$ $p<0.005 = ***$

Appendix 4

Utilities associated with university attributes by social class		social class ABC1 n=200	social class C2DE n=200	sig.
course reputation	low	-110	-101	**
	average	23	26	-
	high	87	75	-

university reputation	low	-106	-92	***
	average	33	31	-
	high	74	61	***

orientation	industry focused	-22	-24	-
	research focused	7	2	-
	teaching focused	15	21	-

distance	not local	-2	-13	*
	local	2	13	*

fees	low	21	27	-
	average	8	9	-
	high	-29	-36	-

entry qualifications	low	9	11	-
	average	8	10	-
	high	-17	-21	-

$p<0.05 = *$ $p<0.01 = **$ $p<0.005 = ***$

Appendix 5

Utilities associated with university attributes by gender

		male n=200	female n=200	sig.
course reputation	low	-103	-108	-
	average	22	27	*
	high	81	-81	-
university reputation	low	-103	-95	*
	average	32	32	-
	high	72	63	-
Orientation	industry focused	-11	-34	***
	research focused	0	9	-
	teaching focused	11	25	*
Distance	not local	-3	-12	*
	local	3	12	*
Fees	low	25	23	-
	average	7	11	*
	high	-32	-32	-
entry qualifications	low	10	10	-
	average	9	9	-
	high	-19	-19	-

p<0.05 = *   p<0.01 = **   p<0.005 = ***

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