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Household Characteristics of Higher Education Participants*

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Abstract

The aim of this paper is to analyse the characteristics of Irish households that have a member participating in higher education, using surveys of Irish households collected in 1994-95 and 1999-2000. The results do not show a significant effect of income; this is notable, especially alongside the strong result that longer-term factors such as household wealth and cultural capital have a significant effect. This lends support to the argument proposed by Heckman (2000) that family income is only important over the entire educational investment cycle of a child. However, the importance of grant eligibility is a notable result, which suggests that short-term financial constraints cannot be dismissed. A combination of suitably beneficial short-term and long-term factors may be important for encouraging participation in higher education.

Introduction

The aim of this paper is to analyse the characteristics of Irish households that have a member participating in higher education, using surveys of Irish households collected in 1994-95 and 1999-2000 by the Central Statistics Office.[1] Before we outline the paper, a brief review is due on the current state of participation in Irish higher education. Participation has grown steadily for a number of decades; the most recent figures (for 2004) show that there were 36,051 new entrants to higher education in the Republic of Ireland and that the admission rate was 55 per cent (O'Connell et al, 2006).[2] This compares to 32,724 new entrants to higher education in 1998, when the admission rate was 44 per cent (O'Connell and Fitzpatrick Associates, 2005). Admission rates from earlier years are 36 per cent in 1992, 25 per cent in 1986 and 20 per cent in 1980 (Clancy, 2001). The admission rate in 2004 is 2.75 times what it was in 1980.

Entrants to higher education courses do not pay tuition fees; these fees were fully abolished in 1997. Means-tested financial support exists for new entrants to higher education; this was also available before the abolition of tuition fees. It should be noted that higher education is not completely free in the Republic of Ireland. There is an annual "registration" fee of approximately €800 (at the time of writing), though students who qualify for means-tested financial support do not pay this fee. Aside from the registration fee, there are other indirect costs to participating in higher education; these include accommodation, other living expenses and study materials. If a student on means-tested financial support incurs these costs, they must cover them on an annual maintenance grant. At present, the top income limit for 'grant' eligibility, where there are less than four children, is €46,700.[3] Maintenance grants range from €780 to €3,110, depending on declared income.[4] This is the maximum

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[1] The Central Statistics Office (CSO) is the principal compiler and publisher of official statistics in the Republic of Ireland.

[2] The admission rate is calculated by dividing the flow of new entrants to higher education by the single years of age from which more than seventy-five per cent of the new entrants come. The denominator used in this calculation is the average of the number of persons aged 17-19 years of age in the most recent census of population (O'Connell et al, 2005).

[3] A 'grant' is the payment of means-tested financial support in the Republic of Ireland.

[4] It should be noted that there are concerns about the equity of means-testing in the Irish grants system (Walshe, 2006). There are also concerns about the efficiency of "grant" payments in the Republic of Ireland (Murray, 2006).

amount of means-tested financial support that is available; various lesser amounts are provided dependent upon the eligibility criteria of the student.

Survey research estimates that 35 per cent of higher education students receive a 'grant' from the Irish state; this is in line with national figures from the Department of Education and Science. The same survey research estimates that over 40 per cent of students do not receive any direct (or indirect) financial support from their families (Darmody et al, 2005). This suggests that five per cent of higher education students receive no financial support from their families, and that the same students also fail to qualify for a financial support 'grant'.

In terms of outgoings, students' monthly expenditure averages €698 per month (Darmody et al, 2005). This approximates to €8,000 euro every year, or €32,000 over the course of a four-year degree. Expenditure is highest on accommodation, so considerable savings could be made if the higher education participant stays in the family household. However, the biggest indirect cost of participating in higher education is incurred by *every* student; this is the "opportunity cost" of earnings that must be sacrificed from engaging in full-time employment.

The opportunity cost of foregone earnings accelerated between the survey-periods that are examined in this paper. This is due to the buoyancy of the Irish economy between 1994 and 2001; the level of Irish economic growth between these years is unprecedented in the modern history of Ireland. The period between 1995 and 2000 is characterised by average annual growth in real GDP of 10 per cent per annum. House prices rose by 120 per cent between 1996 and 2000 (Honohan and Walsh, 2002), and household income rose by 53 per cent between 1994 and 2001 (CSO, 2001). Finally, the unemployment rate fell from 12 per cent in 1995 to 4 per cent in 2000, resulting in virtually full employment (Walsh, 2004).

This paper begins by presenting the main findings from the previous literature on the determinants of higher education participation. We also review the debate on the relative importance of short-term constraints in educational attainment. This is followed by an outline of the data and methods used in the paper. The subsequent section presents empirical results. This is followed with conclusions about the types of

measures that could potentially be used to encourage participation in higher education.

Previous Literature

To the authors' knowledge, there is no previous econometric study which uses household data to examine higher education participation in the Republic of Ireland. However, a number of econometric studies have been conducted in Ireland that are relevant to the analysis in this paper. These include O'Connell et al (2006), Sweetman (2002), Smyth (1999) and Whelan & Hannan (1999). The most common finding relates to the impact of social class upon participation. Sweetman (2000), using the 'School Leavers' survey, reports that those from professional and farming backgrounds are more likely to participate in higher education, while Smyth (1999) using the same data, reports that those from professional backgrounds are more likely to participate.[5] Whelan and Hannan (1999) use the 1994 cross-section from the 'Living in Ireland' survey, and report that individuals with origins in the professional and managerial classes are most likely to have earned a higher education qualification.[6] The results are based on a selected sub-sample of individuals from the cross-section, who passed through the education system between 1930 and 1969. This time-period is not comparable to that examined in this paper, but it provides some historical context.

There are a number of econometric studies in the international literature which model micro-level determinants of participation in higher education. The majority of the findings from this literature relate socio-economic factors to participation. Household income has a positive effect on participation in studies by Acemoglu and Pischke (2001) and Lopez-Valcarcel & Quintana (1998).[7] Higher levels of parental education have a positive effect on participation in studies by Lauer (2002a), Gayle et al (2002),

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[5] The 'School Leavers' Survey' is conducted annually by the Economic and Social Research Institute of Ireland. The survey began in 1980; a sample of 3 per cent of school-leavers is drawn from a sample of 25 per cent of all schools in Ireland, resulting in a total sample of approximately 2,000 respondents per year (Smyth, 1999). The survey provides information about school experience, college attended, course taken, employment record and parental occupation. There is no information on parental earnings.

[6] The 'Living in Ireland' survey is the Irish component of the European Community Household Panel, an EU-wide project conducted by Eurostat, which examines the social and economic situation of European households.

[7] This result is also found in a discussion paper by Corak et al (2004) and in a working paper by Hartog et al (2004).

Beneito et al (2001), Albert (2000) and Lopez-Valcarcel & Quintana (1998).[8] Parental social class has a positive effect upon participation in studies by Lauer (2002a), Lauer (2002b), Gayle et al (2002) and Burnhill (1990).[9] Rural location has a negative effect upon participation according to Le and Miller (2005). James (2001) suggests that higher education participation for people in rural areas is affected less by distance from university campuses than by socioeconomic circumstances.

De Graaf et al (2000) suggest that it takes more than financial resources to achieve successful educational outcomes. Their "cultural capital" hypothesis proposes that the effect of family background on educational attainment also depends upon the fact that parents with a greater quantity of cultural resources can help their children to master the school curriculum. These authors define cultural capital as "familiarity with the conceptual codes that underlie a specific culture with its major artistic and normative manifestations". Fryer (2003) formalises the introduction of cultural capital into economics. Reay (2004) discusses examples where cultural and economic capital work to reinforce each other, but also where cultural capital operates independently of economic capital. Lopez-Valcarcel and Quintana (1998) lend support to the importance of cultural capital for participation in higher education. Jaeger and Holm (2006) provide evidence to suggest that cultural capital is more important than economic capital.

De Graaf et al (2000) suggest that the most appropriate way to measure this alternative form of capital is through parental behaviour with respect to cultural tastes and preferences. Parental behaviour offers a stronger measure of cultural capital (compared to child behaviour) because it is unlikely that parental behaviour will be affected by a child's educational success. Di Maggio and Mohr (1985) find that cultural capital has a positive effect on 'post-secondary educational attainment'.

According to the results of a study by Lehrer (2005), religious affiliation is found to have a significant impact on years of schooling completed. Gruber (2005) suggests four possible reasons for why religious participation might lead to higher levels of

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[8] This result is also found in Kivinen et al (2001), Christensen et al (1975), in a discussion paper by Belzil and Leonardi (2005) and in working papers by Hanslin and Winkelman (2006), Hartog et al (2004) and Oliveira and Zanchi (2003).
[9] This result is also found in Post (1990) and in a working paper by Ono (2000).

education: that religious attendance increases the number of social interactions in a way peculiar to religious settings; that religious institutions provide financial and emotional "insurance" that help people mitigate their losses when setbacks occur; that attendance at religious schools may be an advantage; and, that religious faith may simply improve well-being directly by enabling the faithful to be "less stressed out" by the problems of every day life.

In summary, the literature on micro-level determinants of participation points to a number of factors that may influence the attainment of higher education; this literature also provides some indication of the expected direction of these relationships. We expect that household income, household education, religiosity, cultural capital and social class of the head of household are positively related to participation in higher education.

Heckman (2000) argues that income is an important determinant of educational achievement over the entire educational investment cycle of a child and that long-term factors are more important than short-term credit constraints (Carneiro and Heckman, 2002). As such, we might also expect household wealth to have a positive effect on participation in third level education on the basis that wealth is accumulated over long periods of time; households must have an adequately high level of "permanent income" to generate wealth *during* these time periods. We use home ownership, the number of rooms in the household and the presence of investments/savings to indicate whether households have accumulated wealth.

The discussion on the importance of short-run financial constraints for participation began with Becker and Tomes (1979, 1986) and since then the literature has been inconclusive in terms of its evidence. Laitner (1992), Benabou (2000) and Aiyagari (2002) also emphasise the importance of credit constraints. However, Heckman (2000) argues for the importance of parental environments over the long-run. Carneiro and Heckman (2002) offer evidence that long-term factors such as the fostering of cognitive and non-cognitive abilities are more important than short-term credit constraints in the determination of post-secondary schooling attainment. Heckman et al (2006) provide further evidence that cognitive and non-cognitive skills are critical in the determination of educational outcomes.

In the same vein, Chevalier and Lanot (2002) suggest that the family characteristics of children are more important than the financial constraints that they face. Aakvik, Salvanes and Vaage (2005) find that short-term credit constraints only have a small effect on educational attainment; they suggest that long-term factors such as permanent family income and parental education are relatively more important. Aakvik et al (2005) recommend that public policy should target the effects of family background in the early years of childhood development. Cameron and Taber (2004) suggest that public policies aimed at improving credit access will have little impact on schooling attainment.

More recent support for the importance of credit constraints in educational attainment is provided by Plug and Vijveberg (2005) who use adoptees as a natural experiment to show that high ability children in low income families face binding credit constraints. In this paper we hope to address some of these issues in the context of Irish higher education participation by including both accumulated wealth and transitory income.

Data and Methods

The datasets used are the Household Budget Surveys (HBS) 1994-95 and 1999-2000. The main purpose of the HBS is to determine in detail the current pattern of household expenditure in order to update the weighting basis of the Consumer Price Index.[10] The survey is assembled through data collected from diaries of household expenditure over a two-week period. Detailed information is also collected on all sources of household income, on a range of household facilities and on the socio-economic characteristics of households (CSO, 2001). Samples of 7,877 and 7,644 households were collected in 1994-5 and 1999-2000 respectively. Households in the survey are required to maintain a detailed diary of expenditure over a two week period and the figures in the dataset are weekly averages of the two weeks.

The dependent variable in the model is a dummy variable that indicates whether a household has one or more members participating in higher education. It takes a positive value for 527 observations in 1994-95 and 528 observations in 1999-2000. There are sixteen categories of higher education participation in the HBS,

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[10] The consumer price index is the main measure of inflation in the Republic of Ireland.

differentiated by age and type of institution attended, which are used to form the dependent variable.[11] (See Appendix for a complete list).

A wide range of variables found to be significant in the literature are included in the model. These are household income, household tenure, household location, parental education and parental social class. We use home ownership, the number of rooms in the household and the presence of investments/savings to indicate whether households have accumulated wealth. The full list of variables is outlined in Table 1. In addition to the variables proposed by the literature, the following variables are included as controls in the model: the age of the head of household, the presence of dependent children in the household and the gender of the head of household. A key variable that is constructed is "eligibility", which is an indicator of whether a household member is eligible for a higher education grant or not. This is achieved by combining information on income and the number of dependent children from the HBS, with grant eligibility information from the Department of Education and Science for 1995 and 2000.[12] (See Appendix for more on grant eligibility information).

Items of parental expenditure which foster cultural capital in the HBS include visits to the theatre, music lessons and language lessons. These items of expenditure are aggregated to form a "cultural capital" variable for inclusion in the econometric model. The assumption must be made that there is a consistent pattern of expenditure on items which foster cultural capital.

The HBS does not record religious affiliations, but there is a variable which can be used to approximate the importance of religion to a household: voluntary contributions to religious organisations. Two assumptions must be made. The first assumption is that households which donate to religious organisations are religious or that religion is important to them. The second assumption is that there is a consistent pattern of voluntary contributions to religious organisations.

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[11] The only difference between the dependent variable in the survey-years examined is the use of 'DIT/RTC' in 1994-95 compared to 'IT' in 1999-2000. However, both of these phrases refer to the same set of institutions.

[12] The Department of Education and Science is the body responsible for administering higher education grants (i.e. student financial support) in the Republic of Ireland.

The dependent variable in the model is observed in binary form: a household has 'one or more' members participating in higher education, or not, and as such a probit model is used. Marginal effects are calculated from this model to estimate the effects of various explanatory variables upon the probability that a household has a member participating in higher education.

Empirical Results

Likelihood ratio (LR) tests are conducted to test for the presence of heteroskedasticity. The null hypothesis of homoskedasticity cannot be rejected in 1999-00 but is rejected in 1994-95. The LR framework is also used to examine the issue of non-normality. The LR test is used to show whether there is skewness in the error-distribution of a logit model, and by assumed extension, whether there is skewness in the error-distribution of the probit model.[13] The null hypothesis of a non-skewed error distribution cannot be rejected in 1999-00 but is rejected in 1994-95. The results of both tests are outlined in Table 4. Due to the presence of both hetroskedasticity and non-normality, robust standard errors are used in the 1994-95 model. The robust standard errors are larger than the conventional standard errors in 1994-95.

Another specification issue that must be considered is multicollinearity. There are few remedies for this problem in the context of a probit model. Becker (2004) addresses the issue with specific reference to the econometrics of higher education participation. He suggests that the combined inclusion of parental income, parental education, and financial support variables may make it difficult to identify the individual effect for each of these variables. Nevertheless, he suggests that the potential problem of multicollinearity does not justify excluding variables from the regression, because omitting them implies that the correlation has been incorporated in the error term instead. As a result, the selection of variables is conducted with some caution within a general-to-specific modelling framework and based on theoretical guidelines and findings from the empirical literature.[14]

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[13] A scobit model is used to generate the alternative hypothesis. See Nagler (1994) for the original development of the scobit. Achen (2002) provides a good overview of the model.
[14] See Hoover and Perez (1999) for more background on the general-to-specific modelling framework.

Table 5 presents marginal effects for the probit models of higher education participation for 1994-95 and 1999-2000.[15] It was expected that the higher the household's level of disposable income, the more likely it would be to have a member participating in higher education. However, this variable is insignificant in both periods. The variables indicating the age of the head of household and the presence of dependent children are also insignificant in both periods.

The variable constructed to indicate the "grant eligibility" of households shows households qualifying for financial support (grants) are more likely to have a member participating in higher education, in both survey-periods. The "grant eligibility" variable picks up a positive effect that can be thought of as a highly particular interaction between the income variable and the variable indicating the number of dependent children. Qualification for financial support is determined by a household's position on a schedule, where the schedule is determined by positions between intervals, with intervals determined by different combinations of income and the number of dependent children.[16] The examination of whether a household is eligible for financial support exploits a comparison of the characteristics of households. This is an important distinction as we want to estimate the effects on participation from the characteristics of households, not the effects on participation from the characteristics of individuals.[17] Grant eligibility is a relatively novel measure as previous studies tend to focus on whether the student receives financial support or not (Dynarski, 2003; McPherson and Schapiro, 1991).[18]

In line with the previous literature, higher education levels of the head of household (HoH) indicate that the household is more likely to have a member participating, in both survey-periods. Also in line with the previous literature, if the HoH is from a

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[15] Pooled cross-sectional analysis is conducted by combining the data from both survey-periods. A "year" dummy variable is included in the pooled cross-section to indicate the survey-period. The analysis shows that the "year" dummy variable is insignificant.

[16] This is a formal description of how the financial support schedule is operated by the Department of Education and Science in the Republic of Ireland.

[17] With the exception of the individual who is the head of household because he/she defines the household more than any other member.

[18] Dynarski (2002) examines eligibility for tuition subsidies, which she suggests is beneficial for increasing college attendance. Tuition subsidies were an element of Irish financial support schedules, but only before the full abolition of higher education tuition fees in 1997.

higher social class, then the household is more likely to have a member participating in higher education, though the effect is more marked in 1994-95.

As hypothesised, households that spend on items of cultural importance are more likely to have a member participating in higher education. This effect is highly significant in both periods. Households that donate money to religious organisations are more likely to have a member participating in 1994-95, but not in 1999-00. It is also evident that the gender of the HoH is important; households with a male HoH are more likely to have a member participating in both 1994-1995 and 1999-2000.

In 1999-2000, households that reside in rural areas are more likely to have a member participating, but not in 1994-95. James (2001) suggests that higher education participation for people in rural areas is affected by socioeconomic circumstances. It could be the case than the socioeconomic circumstances of rural households were relatively better in 1999-2000. Disposable income of rural farm households grew by 40 percent between 1994-95 and 1999-2000 (CSO, 2001).

Home ownership, the number of rooms in the household and the presence of investments/savings are used to indicate whether households have accumulated wealth. Home ownership only has a significant effect in 1994-95, where it indicates a lesser likelihood that a household has a member participating in higher education.[19] The relative size of the household (the number of rooms in the household) has a positive effect on the probability of participation in both survey-periods. This result benefits from controls for home ownership and regional location. Households with investments/savings are more likely to have a member participating in both survey-periods. In terms of an overall view on accumulated wealth, households with investments/savings and a larger relative size are more likely to have a member participating in higher education.

Conclusion

The main characteristics of households that have a member participating in higher education are household wealth, higher levels of education of the HoH, higher levels

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[19] This could be due to a large amount of "student" households in the 1994-95 sample.

of social class of the HoH, household investment in cultural capital and whether the characteristics of the household produce grant eligibility for the participating household member. We know that the determination of grant eligibility exploits a comparison of the combined characteristics of households. A generous change to the financial support schedule should increase the likelihood of households (with certain combined characteristics) having a member that participates in higher education. Therefore, grant eligibility is an important factor in higher education participation.

The results do not show a significant effect from the income variable; this is notable, especially alongside the strong result that longer-term factors such as accumulated wealth and cultural capital have a significant effect. This lends support to the argument that family income is only important over the entire educational investment cycle of a child. However, the importance of grant eligibility is a notable result in this paper, and this suggests that the role of short-term financial constraints cannot be dismissed. The importance of grant eligibility consolidates recent support for the importance of credit constraints in educational attainment.

The results in this paper demonstrate the importance of longer-term factors such as cultural capital and wealth accumulation, but they also emphasise the importance of grant eligibility. This suggests that the financially constrained school-leavers of the present may need financial support, but also that children starting school may need investment in their education now. A combination of suitably beneficial short-term and long-term factors may be important for encouraging participation in higher education.

Table 1: Description of Variables Explored

Variable Name	Type	Description
HIGHERED	D[20]	Whether a household has a member in higher education
LogDISPOSABLE	C[21]	Log of Household Disposable Income[22]
LogROOMS	C	Log of the number of rooms[23]
LogAGE	C	Log of Age of HoH[24]
ELIGIBILITY	D	Indicates grant eligibility
DEPENDENT	D	Indicates the presence of dependent children
EDUCAT1	D	HoH has Leaving Cert
EDUCAT2	D	HoH has higher education
CLASS1	D	HoH Social Class: Professional
CLASS2	D	Managerial
CLASS3	D	Non-manual
CLASS4	D	Skilled manual
CLASS5	D	Semi-skilled manual
CLASS7	D	Other gainfully employed
OWNHOME	D	The house is in private ownership
URBAN	D	House is in an urban area
INVEST	D	The Household has Investments and/or Savings
CULTURE	D	Household spends money on cultural items
DONATE	D	Household donates to religious organisations
SexHoH	D	HoH is Male

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[20] 'D' meaning the variable is a Dummy variable

[21] 'C' meaning the variable is a continuous variable

[22] Household Income is adjusted for household size using the European Union's equivalent adults ratio (Head of Household = 1, each additional adult over 14 years = 0.7 and children under 14 = 0.5)

[23] The number of rooms is adjusted for household size using the European Union's equivalent adults ratio.

[24] 'HoH' refers to Head of Household

Table 2: Descriptive Statistics for 1990-2000

Variable	Obs	Mean	Std. Dev.	Min	Max
HIGHERED	7644	0.06907	0.253596	0	1
LogDISPOSA~E	7632	9.89456	0.597219	4.862999	12.2609
LogROOMS	7595	1.14589	0.638968	-1.740466	2.84158
LogAGE	7644	1.59029	0.3315	0.6931472	2.07944
ELIGIBILITY	7877	0.56113	0.496281	0	1
DEPENDENT	7877	0.49727	0.500024	0	1
EDUCAT1	7644	0.22606	0.418306	0	1
EDUCAT2	7644	0.21494	0.410808	0	1
CLASS1	7644	0.07326	0.26058	0	1
CLASS2	7644	0.23888	0.426427	0	1
CLASS3	7644	0.15018	0.357274	0	1
CLASS4	7644	0.24621	0.430828	0	1
CLASS5	7644	0.12991	0.336222	0	1
CLASS6	7644	0.04631	0.210171	0	1
CLASS7	7644	0.11525	0.319349	0	1
OWNHOME	7644	0.48574	0.499829	0	1
URBAN	7644	0.54631	0.497883	0	1
INVEST	7644	0.48169	0.499697	0	1
CULTURE	7644	0.10453	0.305962	0	1
DONATE	7644	0.61342	0.486997	0	1
SexHoH	7644	0.70801	0.454709	0	1

Table 3: Descriptive Statistics for 1994-95

Variable	Obs	Mean	Std. Dev.	Min	Max
HIGHERED	7877	0.0669	0.249871	0	1
LogDISPOSA~E	7853	11.0579	1.11426	1.735841	13.9906
LogROOMS	7877	1.10275	0.694719	-1.6864	3.12926
LogAGE	7877	1.56543	0.352071	0	2.07944
ELIGIBILITY	7878	0.69637	0.459854	0	1
DEPENDENT	7878	0.50508	0.500006	0	1
EDUCAT1	7877	0.1936	0.395145	0	1
EDUCAT2	7878	0.15105	0.358124	0	1
CLASS1	7877	0.10969	0.312518	0	1
CLASS2	7877	0.15996	0.366592	0	1
CLASS3	7877	0.14561	0.352741	0	1
CLASS4	7877	0.1936	0.395145	0	1
CLASS5	7877	0.11921	0.324054	0	1
CLASS6	7877	0.09877	0.29837	0	1
CLASS7	7877	0.17316	0.378412	0	1
OWNHOME	7877	0.43214	0.495406	0	1
URBAN	7877	0.64314	0.479104	0	1
INVEST	7877	0.44522	0.497022	0	1
CULTURE	7878	0.11094	0.31408	0	1
DONATE	7878	0.6249	0.484178	0	1
SexHoH	7877	0.73277	0.442544	0	1

Table 4: Likelihood ratio tests

Likelihood ratio test of homoskedasticity restriction

H_0 = Homoskedastic Probit

H_1 = Heteroskedastic Probit

	1994/1995	1999/2000
Log-likelihood Homoskedastic Probit	-1667.83	-1818.49
Log-likelihood Heteroskedastic Probit	-1632.84	-1815.19
Test statistic [-2*(LL H_0 - LL H_1)]	69.99	6.62
Critical value (1% level, with df = 2, the number of variables in the heteroskedasticity equation)	11.34	11.34
Result	**Reject H_0**	**Do not Reject H_0**

Likelihood Ratio test of non-skewed error distribution restriction

H_0 = Logit without skewness

H_1 = Scobit (Logit with skewness)

	1994/1995	1999/2000
Log-likelihood Logit without skewness	-1653.97	-1818.01
Log-likelihood Scobit	-1642.08	-1817.66
Test statistic [-2*(LL H_0 - LL H_1)]	23.77	0.70
Critical Value (chi-squared with df = 1)	6.63	6.63
Result	**Reject H_0**	**Do not Reject H_0**

Table 5: Empirical Results: Marginal effects for the probit models of higher education participation

SURVEY-PERIOD:	1994-95		1999-2000
Coefficient:			
LogDISPOSABLE	**-0.002**		**0.001**
	(0.005)		(0.005)
LogROOMS	**0.012***		**0.022*****
	(0.007)		(0.005)
LogAGE	**0.009**		**0.017***
	(0.009)		(0.010)
ELIGIBILITY	**0.026*****		**0.021*****
	(0.007)		(0.006)
DEPENDENT	**0.005**		**0.002**
	(0.008)		(0.007)
EDUCAT1	**0.026*****		**0.021*****
	(0.008)		(0.008)
EDUCAT2	**0.127*****		**0.060*****
	(0.013)		(0.010)
CLASS1	**0.087*****		**0.042**
	(0.023)		(0.026)
CLASS2	**0.044****		**0.037***
	(0.018)		(0.021)
CLASS3	**0.036****		**0.044***
	(0.017)		(0.023)
CLASS4	**0.012**		**0.027**
	(0.014)		(0.020)
CLASS5	**0.001**		**0.025**
	(0.014)		(0.022)
CLASS7	**0.089*****		**0.065****
	(0.019)		(0.027)
OWNHOME	**-0.024*****		**-0.005**
	(0.007)		(0.006)
URBAN	**-0.000**		**-0.014****
	(0.007)		(0.006)
INVEST	**0.012****		**0.027*****
	(0.005)		(0.006)
CULTURE	**0.050*****		**0.043*****
	(0.010)		(0.011)
DONATE	**0.009***		**0.002**
	(0.005)		(0.006)
SexHoH	**0.014****		**0.020*****
	(0.006)		(0.006)
Observations	7853		7578
R-squared	.		.

Standard errors in parentheses for 1999-2000
Robust standard errors in parentheses for 1994-95
*** p<0.01, ** p<0.05, * p<0.1

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Appendix

Categories of higher education participation in the Household Budget Survey:

The categories of higher education participation in the HBS are initially differentiated by age, that is:

• Households with a member participating in higher education who is aged 21 years and under

• Households with a member participating in higher education who is aged 21 years and over

Eight equivalent categories of higher education participation are included for each age-group; these are:

(i)   Attendance at University with a grant

(ii)   Attendance at University without a grant

(iii)   Attendance at an IT with a grant

(iv)   Attendance at an IT without a grant

(v)   Attendance at a third-level institution designated as 'other' with a grant

(vi)   Attendance at a third-level institution designated as 'other' without a grant

(vii)   Attendance at a private third-level institution

(viii) Other continuing education

[INSERT HERE: DEPARTMENT OF EDUCATION FINANCIAL SUPPORT SCHEDULES FOR 1995 AND 2000]