EDUCATION POLICY RESEARCH INITIATIVE
INITIATIVE DE RECHERCHE SUR LES POLITIQUES DE L'ÉDUCATION

WORKING PAPER / CAHIERS DE RECHERCH

NO. 2012 - 01

ACCESS AND BARRIERS TO POST-SECONDARY EDUCATION: EVIDENCE FROM THE YITS

by

Ross Finnie
University of Ottawa and Statistics Canada
(rfinnie@uottawa.ca)

Richard E. Mueller
University of Lethbridge
(richard.mueller@uleth.ca)

Andrew Wismer
Education Policy Research Initiative, University of Ottawa
(awismer@uottawa.ca)

FEBRUARY 15, 2012

EPRI Education Policy Research Initiative

Initiative de recherche sur les politiques de l'éducation

ACCESS AND BARRIERS TO POST-SECONDARY EDUCATION: EVIDENCE FROM THE YITS

ABSTRACT

This paper exploits the longitudinal Youth in Transition Survey, Cohort A (YITS-A) to address access, and "barriers", to post-secondary education (PSE). This paper first looks at how access is related to family background characteristics including both family income and parental education. Attention is then turned towards the 25 percent of youths who do not access PSE by age 21, and the barriers they face. Of this group, 23.3 percent have no (stated) aspirations for PSE. Among those who do aspire for PSE, over one-half report that they face no barriers to attending PSE, while 22 percent claim that finances are at least one barrier to their entering PSE. Stated differently, 5.5 percent of all youths of our sample wish to go to PSE, have not accessed PSE, and claim "finances" represent at least one barrier to accessing PSE. Regression analysis is used to relate students' background characteristics to their barriers.

ACCESS AND BARRIERS TO POST-SECONDARYEDUCATION:
EVIDENCE FROM THE YITS

I. Introduction

Public policy makers in Canada, and those all over the world, share an interest in post-secondary education (PSE) participation. This interest is motivated by the perception that all countries will need highly educated workforces to compete internationally in the burgeoning knowledge-based economy.

Much of the research in the area of PSE access has focused on the financial aspects of PSE participation (e.g., Coelli, 2009; Neill, 2005; Johnson and Rahmad, 2005). This focus can be at least partially attributed to the fact that datasets containing financial variables have been readily available and many of these variables (e.g., tuition, student loan amounts, etc.) can be changed through policy. The importance of financial variables to PSE access has been further perpetuated in the mainstream media, often encouraged by student interest groups whose mandate is to lobby federal and provincial governments for more favourable financial conditions for those attending PSE. Canadian studies on the impact of tuition hikes at PSE institutions have been common. In assessing PSE access, this literature generally finds that financial variables matter, but have limited explaining power when compared to background characteristics such as parental education.

The availability of the Youth in Transition Survey (YITS) allows for an unprecedented look at the importance of many variables that could potentially determine the success or failure of students in accessing PSE in Canada. The longitudinal nature of the dataset – and the fact that parents' survey responses have been linked to the youths' responses – provides for a rich set of variables for analysis.

The first part of this paper investigates the financial and non-financial factors that relate to PSE access including urban/rural status, province, language, family type, visible minority and immigrant status, parental education and family income. In the second part, we present an analysis of the barriers reported by those youths who do not access PSE, including financial barriers, grades, and motivation. For policy purposes, an understanding of who does not access PSE, and the barriers they face, is fundamental if the goal is to increase PSE participation or to level the playing field for groups who are under-represented in PSE.

Using both descriptive and modelling approaches, we identify the barriers students report, track how those responses change as students age, and analyse the relationship between these barriers and students' characteristics.

The results show that family income and parental education (especially the latter) are important determinants of attending PSE and are negatively related to having no PSE aspirations. These particular characteristics are also found to have weak negative relationships with whether youths state finances as a barrier to attending PSE.

The following section of this paper contains a review of the pertinent literature. Section III discusses the data and the methodology employed. The results of the descriptive and multivariate analysis are the topic of Section IV. The final section concludes the paper.

II. Literature

It will not be the purpose of this section to conduct a comprehensive review of literature assessing the factors related to PSE participation. This has recently been done elsewhere within a Canadian context (De Broucker, 2005; Junor and Usher, 2004; Looker, 2001; Looker and Lowe, 2001; Mueller, 2008a, 2008b), as well as the American context (Ehrenberg, 2004; Long 2005). In what follows, we briefly describe the evolution of our knowledge about access to PSE in Canada, and then outline how this paper contributes to the literature.

As mentioned, a good share of the Canadian and international literature has focused on the impact of financial variables on access to PSE amongst young people. The accumulated evidence, however, suggests that the demand for PSE is price inelastic (Junor and Usher, 2004), although tuition increases are likely to have a larger impact on individuals from low-income families (Coelli, 2009). Both Chrisophides, et al. (2001) and Corak, et al. (2003) include family income in their models of PSE participation and find that tuition generally has little effect on PSE access overall, but that family income is important for university attendance. Frenette (2005) and Drolet (2005) also find that the PSE attendance gap between high- and low-income families is narrowed when colleges and universities are both considered, but that students from low-income families are less likely to attend either, especially university. Frenette (2007) finds that the gap in university participation between students at the top and the bottom family income quartiles can almost entirely be explained by other observable characteristics; only 12 per cent of the gap is related to financial constraints. The negligible significance of tuition found in these

studies is important for our purposes; we able to control for family income but unable to examine tuition effects with our data.

The PSE access literature also includes many works regarding family characteristics and PSE participation. In this literature, youths from families of higher socio-economic status (SES) are found to be more likely to participate in PSE, university in particular, are more likely to complete their degrees, and take less time to complete their degrees (e.g., Andres and Adamuti-Trache, 2008). Parental education is often found to be a particularly strong predictor of success in higher education (e.g., Turcotte, 2011). Some studies have found that the positive education outcomes of students from high SES families are partially explained by the greater social and cultural capital they have been provided (e.g., Childs, et al., 2010). Such capital potentially increases the expectations of high SES students in terms of their educational and occupational attainment and these expectations are subsequently more likely to be fulfilled among these students (e.g., Andres, et al., 2007, Christofides, et al., 2008,). Krahn and Andres (1999) provide evidence that low SES high school students have relatively lower education aspirations and therefore are more likely to be streamed into non-academic high school programs and hence less likely to access and complete PSE.

Finnie, Laporte, and Lascelles (2004) use the 1991 School Leavers Survey (SLS) and a cross section of the YITS, Cohort B (YITS-B) – both of which contain a variety of family background variables – to analyze the influences of SES (as measured by parental income) and other factors on PSE access. They find that participation rates in the 1990s increased most amongst students whose parents were highly educated, though the increase may be partially explained by the fact that education is strongly correlated with income. This correlation is particularly important when considering PSE access in the 1990s, a period of rapid tuition increases in most jurisdictions throughout Canada.

Addressing the indirect channels through which parental influences work is the purpose of a paper by Finnie, Lascelles and Sweetman (2005) which also uses the 1991 SLS as well as its follow-up in 1995. The authors use a block recursive regression technique whereby the indirect effects of variables (e.g., family income, family type, etc.) are accounted for in a linear regression model which also includes their direct effects. They find that family background is related to PSE participation both directly and also indirectly through variables such as high school marks, attitudes towards education, etc. Furthermore, the direct effects are generally

3

attenuated when the indirect effects are included, and are strongest for university attendance compared to other types of PSE participation.

Many empirical studies on access to PSE have suffered from data limitations of one sort or another. For instance, researchers using cross-sectional data lack an ability to relate early outcomes to later outcomes or show how youths' characteristics evolve as they age. Also, some studies observe only students in PSE and require complex data manipulation techniques to account for those not observed (a "science" with its own problems). Some authors simple live with the problem inherent to such data but estimates of certain relationships are likely biased. For example, Rivard and Raymond (2004) explain how students who are already in the education system probably have less elastic price elasticity of PSE demand and how this will downward bias any estimates of tuition effects on access to PSE. Furthermore, a lack of important control variables in many studies can also result in biased coefficient estimates.

Overcoming many of these problems, Rivard and Raymond (2004) address high school to PSE transitions using the YITS, Cohort B (YITS-B) a longitudinal dataset which follows both students who do and do not access PSE and includes fairly extensive information on youths' background characteristics. They find that entrance into PSE is not particularly sensitive to either tuition or family income. More important factors are parental education and academic preparation, although they argue that increased returns to PSE, as well as increased student loan amounts, were likely important in reducing the significance of income and tuition variables. Tomkowicz and Bushnik (2003) look at the pathways taken by young people following graduation from high school and find that attending PSE right away, delaying entry into PSE, and not entering PSE at all are correlated with family background as well as high school academic variables.[1] The longitudinal data with fairly extensive family background variables that these authors use make their conclusions possible.

Studies using only the YITS-B sample have their own limitation though as this dataset does not contain as large a variety of early background variables, or as reliable family income

---

[1] Other recent studies that use the YITS, but do not model PSE participation include Bowlby and McMullen (2002) and Lambert, et al. (2004).

information as the YITS-A sample which follows youths from age 15 to 25.[2]   Using the YITS-A, Frenette (2007, 2008) investigates why those from lower income families are less likely to go to university than those from families with higher income. Students from the top and bottom income quartiles are compared. Using simple decomposition techniques, the author finds that 96 percent of the participation gap between students from high and low income families is explainable, with about 84 percentage points due to observable characteristics such as marks on standardized reading tests, high school grades, high school quality, etc., and only about 12 percentage points related to self-reported financial constraints. Of course, some of these differences are endogenous to the model being estimated and are positively related to SES (e.g., high school grades).

What we have learned from recent studies is that the decision to attend (and to ultimately complete) PSE is a complex one and depends on a variety of interrelated financial and nonfinancial factors. The existing work has also taught us that the inclusion of as many relevant variables as possible seems desirable since many control variables in earlier studies were highly correlated with excluded variables, thus biasing coefficient estimates and (perhaps) resulting in misguided policy recommendations. For example, recent Canadian studies show that the effect of tuition on the decision to attend PSE is very small once family income is taken into consideration, and family income itself is shown to be less important statistically and economically once parental education is included. Ironically, policy discussions still tend to focus on finance-related barriers to entry.

This is the point of departure for the current paper. We utilize the extensive background information contained in the YITS-A to address access to PSE in Canada but then go a step further to scrutinize the characteristics of students who have PSE aspirations but have not accessed by age 21. Specifically, we add to the existing literature by using the rich information in the YITS-A on students' aspirations and anticipated barriers to education to answer the question, "what is standing in students' way of achieving their goals?" Not only do we use the longitudinal nature of the YITS-A to see how youths' anticipated barriers evolve over time but we also relate youths' barriers to a comprehensive set of background variables.

---

[2] In all waves of the YITS-A, students themselves are interviewed. In the first wave, parents and high school administrators are also interviewed and provide valuable background information about the students. These latter two surveys are a real strength of the YITS-A sample.

III. Data and Methodology

III.1 The Youth in Transition Survey and the Measurement of Access to PSE

This paper uses data from Cohort A of the Youth in Transition Survey (or "YITS-A"). The YITS-A is ideal for this application since it follows a representative sample of Canadian high school students born in 1984 through their later high school years and beyond. The longitudinal aspect of the survey allows us to examine the impact of a number of background characteristics on subsequent PSE outcomes and to explore how students' anticipated barriers to PSE evolve as youths get older.

In March and April of 2000 (Cycle 1), the YITS-A began with the completion of a written survey by those youth selected into the dataset. Interviews were also conducted with the parents of these students, and with officials of the high schools they attended. The YITS-A also contains the youths' PISA reading scores (an international standardized test in which Canada participated).[3]

The students themselves (although not their parents or school administrators) were surveyed again in 2002, 2004, 2006 and 2008 (cycles 2, 3, 4 and 5). We use the respondents' PSE status in the 2006 (Cycle 4) survey as the optimal compromise between the ability to identify participation in PSE (which increases with age) and sample size (which decreases with each subsequent cycle of the survey). In this wave of the survey, the young people were 21 years of age (as of December 2005 – the reference point for cycle 4), a point at which they have made at least their initial choices about entering PSE.[4]

The dependant variables in our study represent whether individuals enrolled in college or university at any point over the four cycles of the survey, regardless of whether they continued in their studies after that. This is the standard definition of access to PSE used in the literature; continuing on to graduation and other aspects of persistence are normally thought of as being a separate process. We differentiate access to college and university, arbitrarily counting the latter if the individual attended both.

---

[3] See Motte, et al. (2009) for a general description of the YITS.

[4] Access rates change only moderately after age 21, and the *structure* of access with respect to the variables included in our models appears to change very little. In short, our results would hold were individuals followed over a longer period of time.

All results shown below were generated using the weights constructed by Statistics Canada for the YITS-A, which are designed so that the samples, and any analysis based on them, should reflect the underlying population of youth born in 1984 and thus age 15 and living in Canada in December, 1999.[5]

III.2 The Models

This research builds on a multinomial regression framework developed in earlier work (Finnie and Mueller, 2008a, 2008b, 2009) for estimating access to PSE and differences in access across various background characteristics. In this approach, access is taken to be a function of various background characteristics.

The model may be expressed as follows:

$$Y = X_1\beta_1 + \mu.$$

In the preliminary "access" models Y is a categorical variable with three outcomes indicating participation in college, participation in university, or no PSE participation. We also estimate models where Y has only two categories. First, we consider all students and Y classifies them as having accessed PSE or not. Second, we consider only students who have accessed PSE and Y classifies them according to whether they have accessed college or university.

In the later "barriers" models, Y is a categorical variable which indicates whether individuals accessed PSE, and if they did not, categorizes individuals according to their reported barriers.

In both types of models, X_1 is a vector of covariates that influence Y, the β_1 includes the coefficients associated with X_1, and μ is the classical stochastic error term.

We use a multinomial logit set-up to differentiate alternative access outcomes. This allows the regressors in our models to have different effects on the different outcomes, while allowing these processes to be related.

---

[5] Although the YITS is subject to attrition, an analysis carried out by the MESA Project indicates that this attrition does not appear to be a problem, at least for the analysis of access to PSE, since the sample weights appear to do a good job of compensating for the attrition.

IV. Results

IV.1 Descriptive Analysis of Access to PSE

Percent distributions over various background characteristics are presented in the first and third columns of Table 1 for males and females; a few patterns are worthy of note. PSE participation is higher for females than for males – 81.1 per cent versus 68.4 per cent. This total differential is almost completely explained by the higher university participation rates of young women – 49.7 per cent compared to 33.8 per cent for males. College participation rates are more equal – 34.6 per cent for males and 31.4 percent for females. The higher university participation rate for young women has been well documented in other research.

The remaining columns of Table 1 show the college, university and any PSE access rates of males and females of various individual and family backgrounds. Many of the general patterns are the same for both sexes. These results show that young people from urban areas much more likely to attend university than those from rural areas. The Maritime Provinces and Ontario have particularly high rates of PSE participation while university participation is particularly low among Quebec students. Much of Ontario's high overall participation rate is owing to the proportion of young people attending college rather than university, whereas for the Maritimes, high university participation rates explain the high overall rates.

French minorities outside Quebec are not greatly different from others in terms of their PSE access patterns. Meanwhile among males, English minorities in Quebec are much more likely to access college than others; among females, they are somewhat more likely to access university than others.

Young people from two parent families are much more likely to attend PSE than those from other types of families, almost entirely due to their higher university participation rates.

Among males, non-visible minorities are more likely to access college than visible minorities, regardless of immigrant status. Among females, non-visible minorities born in Canada are the most likely to access college, visible minority immigrants and visible minorities born in Canada access college at about the same rate and non-visible minority immigrants are the least likely to access college. Focussing on university access, we see very different trends – among males, non-visible minorities are much less likely to attend university than visible minorities, while immigrant status appears to have little effect. Among females, non-visible

minorities born in Canada are substantially less likely to access university than visible minorities and immigrants.

Parental education appears strongly related to PSE participation in general. University participation in particular, increases sharply with parental education. A similar relationship is found between university access and family income: attendance increases with family income.

Figure 1 displays the interaction between parental education and family income as they relate to access to university. The upper panels and the lower panels show the same data – displayed in two different ways. The upper panels tell us that within any given level of family income there is substantial variation in access rates across different levels of parental education. Meanwhile, the lower panels show that within any given level of parental education there is relatively little variation in access rates across different levels of family income. These raw access rates would lead us to believe that although family income and parental education are both positively associated with access to PSE, parental education may be the more important correlate. One can also observe from the lower two panels that family income, controlling for parental education, appears to have a stronger relationship with university access among females, compared to males. This matter is discussed further in the following sections.

Figure 2 shows the same information as Figure 1, but now as parental income and education relate to college access. From the upper two panels we can glean that within any income category there is considerable variation in access across parental education levels (students with a parent with a university education are particularly less likely to access college). Again, within any parental education category, there is very little variation in access rates across different levels of family income. Controlling for parental education, college access appears even less associated with family income than university access.

Of course, many of these preliminary results may change once we formally model and estimate the relationships summarized above. This is the topic of the next section.

IV.2 Multivariate Estimation of Access to PSE

IV.2a Multinomial Logit Regressions

In this section we estimate multinomial models where the dependant variable is a three category PSE access variable. All individuals are classified according to whether they 1) do not access any PSE, 2) access a college or a trade school, or 3) access university. In such models,

changes in the independent variables jointly affect the probabilities that individuals will access college/university. The results from the estimation are presented in Table 2 for both females and males. Models 1 and 3 are estimated with all the demographic variables as well as family income for males and females, respectively. In models 2 and 4, both parental education and income are included.

In general, the results in these tables are reflective of those already presented in the summary statistics, although there are some differences worthy of note. Both males and females from urban high schools are less likely to attend college than their rural counterparts, but more likely to attend university, bolstering support for the hypothesis that it is the location of universities and colleges that have an influence on who attends. This is consistent with the distance from PSE institutions hypothesis empirically supported by Frenette (2004).

Some of the general differences in participation rates between provinces continue to be observed while others have disappeared. All provinces east of Alberta, except for Quebec, have significantly higher university participation rates compared to Ontario. The Atlantic Canada advantage at university is significant, both statistically and economically – males in Newfoundland and Labrador, for example, are about 12 percentage points ahead of Ontario and males from PEI are 19 percentage points ahead in the full model specification (model 2). Males from Quebec are 9 percentage points less likely to access university than males from Ontario while Quebecois females are 8 percentage points less likely to access university than their Ontario counterparts. The positive values for Saskatchewan and Manitoba are more modest than those associated with Atlantic Canada. All provinces, excluding Quebec, have significantly lower college participation rates compared to Ontario, underlining the high college participation rates in the central provinces.

Summary statistics indicated that students from single parent families were less likely to attend PSE than those from two parent families. Interestingly, once other factors are controlled for, family type no longer appears to be an important correlate of PSE attendance. Butlin (1999) arrives at a similar result. In the full model specifications, visible minority status continues to have a significant positive effect on access to university while immigration status does not for either gender. This result is expected given the high university participation rates of the immigrant population and that many first and second generation immigrants are visible minorities.

10

University attendance is increasing in family income for both males and females regardless of the specification. However, once controls for parental education are also added to the model, the importance of income is diminished greatly, and becomes insignificantly different from zero in some cases. It seems that parental education as well as family income – which plays only a supporting role – are important in determining university, but not college participation rates. To put the relative importance of these factors into perspective, an increase in family income from the $5,000- $25,000 range to the $50,000-$75,000 range (the control group) would increase university participation by 8.1 percentage points for females. By comparison, having at least one parent with a BA degree would increase university participation by 31.1 percentage points compared to the control group (high school graduates). The general result that parental education is a stronger predictor of university participation than family income has also been found in other Canadian studies by Knighton and Mirza (2002), Drolet (2005), Rahman, et al. (2005), Finnie and Mueller (2008a, 2008b), etc.

IV.2b Analysis of Fitted Values

Figure 3 presents the results in a different way by showing the fitted values associated with the estimates reported above. The model used to generate these figures (Appendix Table 1) includes variables accounting for province, urban/rural high school location, language, minority status, family type, and visible minority/immigrant status as well as linear parental education and family income variables.[6] To generate the gender-specific fitted values, all variables except the specific variable of interest (either family income or parental education) were set to their gender-specific means, and the predicted probabilities generated at those values based on the relevant coefficient estimates generated by the model are taken into account. We then plot the predicted probability of attending university at the different levels of our variables of interest – family income and parental education – for each gender, based on the gender-specific estimates associated with those variables.

---

[6] The models in Appendix Table 1 are identical to those in Table 2 except that parental education and parental income are entered as continuous rather than categorical variables (using usual transformation in the case of the education variable into years of education, i.e., high school equals 12 years, etc.). These transformations do not markedly change the coefficient estimates.

Focusing on family income, we see that as income increases, probability of accessing university increases much more sharply for females as compared to males. At all income levels females are more likely than males to access university, but, we see that access levels are more dependent upon income for females then they are for males.

Again, at all levels of parental education females are more likely than males to access university. Interestingly, the male and female access curves show similar slopes as parental education rises from 12 to 16 years. Note that over 80 percent of our sample has parental education which falls in this range (see Table 1).

The noteworthy results in this figure – for reasons unknown – is that parental income is a stronger positive correlate of university attendance for females, while parental education at higher levels is more influential for males.

IV.2c Logit Regressions

One of the lessons of Table 2 is that most of the variables have a stronger relationship with university rather than with college participation. To better understand this, we now take a closer look at the correlates of PSE attendance (in general) and university participation (in particular). Table 3 shows for both males and females the results of two logit models. The first model (columns 1 and 3) uses a two category outcome variable whereby students are classified according to whether they 1) do not access PSE or 2) access PSE of any type. The second model (columns 2 and 4) includes only students who do access PSE and uses a two category outcome variable which classifies students according to whether they 1) access college or 2) access university. A body of literature exists whereby PSE access is modelled using this two stage process. What is easy to see from this table is how many of the variables which are strong correlates with access to PSE in general are also strong correlates with access to university, as opposed to college. For example, controlling for other factors, children of those with higher parental education are more likely than others to access PSE and among those that do access PSE, the same students are more likely to access university as opposed to college.

Meanwhile, there are variables that are not significant correlates with access to PSE, but are significantly correlated with access to university as opposed to college among students who do access PSE (for example, those from father-only families).

There are also variables which are significant correlates to access to PSE but insignificant correlated to access to university as opposed to college among students who do access PSE (for example, English Minority in Quebec).

IV.3 Descriptive Analysis of barriers to PSE

IV.3a Barriers at Cycle 4

In the fourth cycle of the YITS-A (and other cycles as well) all students are asked what is the highest level of education they hope to obtain. Furthermore, students are asked if there are any barriers that may prevent them from obtaining that level of education and what those barriers may be. Students are permitted to choose more than one barrier.

Table 4 shows that among all students in our sample at cycle 4 (when they are 21 years of age), 75 percent have accessed PSE, and 5.8 percent have not accessed PSE but do not have any aspirations to attend. For convenience we refer to all remaining individuals as aspiring students – they have not accessed PSE but they have a goal of obtaining at least some PSE. We observe 10.7 percent to be aspiring students and say that they do not have any barriers preventing them from obtaining their education goals. Furthermore, 5.5 percent are aspiring students and say that their financial situation is a barrier preventing them from obtaining their education goals; even smaller proportions are aspiring students and cite academic, motivational or other barriers.

Males are more than twice as likely as females to have not accessed PSE and have no PSE aspirations at cycle 4.[7] Compared to all other provinces, Quebec has a large proportion of individuals who have no PSE aspirations (10.6 percent). Individuals from two parent families are somewhat less likely to have no PSE aspirations. Also, having no PSE aspirations appears negatively correlated with parental education and family income.

Males are twice as likely as females to be aspiring students and say they have no barriers. Also, students of relatively lower levels of family income and education are more likely than others to be part of this group.

---

[7] Appendix Tables 2 and 3 repeat the exercise of Table 4 – only for males and females separately. This analysis was also conducted using cycles 2 and 3 (when the youth were 17 and 19 years of age, respectively) as well as cycle 4 (at age 21). The proportion all youth with no PSE aspirations rises from the ages of 17 to 21, but only modestly. The proportion of aspiring students who say that their financial situation is a barrier to PSE increases slightly, while the proportion of those who claim their grades are a barrier decreases slightly.

Now focusing on the cited barriers, rural and urban individuals are about equally likely to be aspiring students and site their financial situation as a barrier. Among provinces, Alberta has the largest proportion of aspiring students who say they have financial barriers (7.2 percent) while the Atlantic provinces and Ontario have particularly small proportions (2.9 to 4.8 percent). Individuals from two parent families are slightly less likely than others to be aspiring students and say they have financial barriers. Non-visible minorities born in Canada are also slightly more likely to be in this group, compared to immigrants and visible minorities. Both family income and parental education have an inverse relationship with the probability of being an aspiring student with financial barriers, as would be expected.

As already mentioned, very small proportions of our sample are aspiring students who cite academic, motivational or other barriers – leaving little room for variation among groups.

Table 5 is similar to Table 4 but shows rates among only students who do not access PSE by cycle 4 (as opposed to among all students). Since these figures are linear transformations of the data in Table 4, the patterns discussed above are identical.

Figure 4 presents the evolution of barriers by cycle. Cycle 2 represents the results of student surveys at the age of 17, cycle 3 at age 19, and finally cycle 4 at the age of 21. In each case, these stacked bar charts show that 30.1 percent of the males and 18.2 percent of the females in the sample have not accessed PSE by the age of 21. For both males and females, the proportion of those claiming no barriers decreases slightly as we move through the cycles. Over the same period, the proportion of those claiming no PSE aspirations increases marginally as does the proportion of both males and females claiming that financial barriers as at least one factor prohibiting them from accessing PSE. Stated differently, over the four-year period, there is movement from claiming no barriers into having no PSE aspirations as well as claiming that financial barriers are more important. Still, as of cycle 4, only about 5 percent of the total sample of both males and females claim financial barriers as at least one reason for not having accessed PSE by age 21.

IV.4 Multivariate Estimation of Barriers to PSE

The barriers to PSE just described are now analyzed using a multinomial logit model where the dependent variables contains five categories: one each corresponding to the first three columns of Table 6, one of the barriers listed in columns 4 through 7, and an omitted category

14

for students with barriers not listed here.[8] This results in the estimation of four distinct models. Since columns 1 through 3 are included in each model, these results to do change. The results, however, do differ between columns 4 through 7. Marginal effects are shown in all cases.

The first column of Table 6 reflects what is generally well known about PSE attendance: Higher access rates are observed amongst females, those residing in Ontario or the Atlantic provinces, visible minorities (including both the Canadian-born and immigrant populations), and those in families with higher parental education and (to a lesser degree) higher parental incomes.

Column 2 – where individuals have not accessed PSE and have no desire to do so – shows results opposite to those of the first column, at least in sign if not magnitude. Compared to those who have accessed PSE, both the parental education and income profiles are much less steep. This result does make sense: if young people don't desire to attend PSE, parental influences such as education and income will have little effect. Still, those young people with higher levels of parental education are less likely to have no PSE aspirations. Similar results are found in column 3 amongst the group who aspire to PSE and self-report no barriers.

For those who reported financial situation as at least one barrier for not accessing PSE, parental education has an even flatter profile, suggesting that financial woes can be a barrier at all levels of education. Income shows very little relationship with not accessing because of financial concerns – at least in this model specification – although the relationship is strong than in the case of those who report no barriers (column 3). Visible minorities and immigrants are less likely to report finances as a barrier.

The fifth column shows no meaningful relationship between any of the regressors and HS grades as a barrier to aspiring PSE students. Finally, there is very little relationship between parental education, and especially parental income, on aspiring to PSE but claiming a motivation barrier.

A graphical representation of these results is presented in Figure 5. The estimated model from which these results are obtained is found in Appendix Tables 7 and 8 and is identical the model estimated in Table 6, with the exceptions that the sample is divided into males and

---

[8] Appendix Tables 4 and 5 shows estimates from the same model but for males and females, respectively. Appendix Table 6 estimates the same model but with parental education and income entered as continuous variables. Appendix Tables 7 and 8 show the results from the model estimated in Table 6 but for males and females separately. The results in all cases are similar to those presented here (and will be investigated further at a future date).

females and the parental education and family income variables are entered as continuous variables. The purpose of this exercise to ascertain the relationship of parental education and family income on barriers to entry into PSE and if these differ between genders.

Higher levels of parental education and family income are both associated with higher probabilities of access to PSE. For example, for males, an extra year of parental education is related to a 0.046 point increase in the probability of having accessed PSE by the age of 21. For females, the relationship is weaker, but still positive at 0.033 points. The relationship between access and income is somewhat smaller: an increase in family income of $1,000 is related to an increased probability of PSE access of 0.007 for males 0.015 for females. What is interesting is that parental education appears to be more important for young males, and family income more important for young females. Also of interest is that family income has little effect on those claiming their financial situation as a reason for not attending PSE.

VI.5 Financial Barriers and Loans

But what of those who did not access PSE – what room is there for policy related to student loans to increase participation rates? In other words, how many of the non-participants might have gone had there been a more generous student loan system? One simple way to at least begin to get at this issue is to focus on the students who cite financial barriers. Given the complexity of the PSE decision for many individuals, including the interaction of different causes and barriers, we would probably not want to stop with such information – but it could be a useful starting point for any analysis seeking to get at potential loan effects, including those, such as the one reported on here, using a more analytical approach.

We have seen in Table 5 that relatively few PSE non-participants cite the sorts of financial barriers that might leave room for loan policy to increase participation rates: just 22 percent of the 25 percent who had not accessed PSE, or 5.5 percent of the general population – thus comprising a possible upper bound on the increase in access rates that could be hoped for with a better loans system. Still, that is a non-trivial share of the population, and one potentially worthy of policy focus, especially given the life changing potential of PSE.

Table 7 uses takes a closer look at the barriers to PSE and relates them to the reasons individuals give for not having a student loan. This aids in understanding the more fundamental factors underlying those who cite financial reasons (as well as other reasons) for their PSE non-

participation and to see where changes to the student loan system could perhaps make a difference to individuals' access to PSE. This is undertaken partly out of a recognition that saying PSE "costs too much" does not necessarily imply that the individual could not afford it, and may instead indicate that they simply did not see the value in the schooling: "it costs too much" could thus be an issue of (perceived) rate of return rather than a liquidity constraint, with a loan system being able to address the latter, but not the former.[9]

We have therefore used other information available in the YITS-A to identify the reasons individuals who cite monetary reasons for not going to PSE ("it costs too much" and others) give for not having a student loan on the grounds that we would expect reasons to the effect of "could not get a loan" to identify those youth for whom affordability was indeed the key issue and the loan system was not doing its job of providing them the money they needed to access PSE. Conversely, those who give a monetary reason for non-participation but who say they could have obtained a student loan but did not do so because they didn't need one are interpreted as not having faced an affordability barrier, meaning there would be little room for an expanded loan system to increase PSE opportunities.

Table 7 indicates that a full 78.1 percent of those who cited financial barriers to PSE (including that it costs too much) said they did not have a student loan because they did not need one, thus suggesting – by our interpretation – that liquidity or credit constraints (i.e., affordability) was the directly underlying problem in only a clear minority of cases. Indeed, only 8.1 percent of the group claiming financial barriers said they did not have a loan because they could not get one or could not get one of a sufficient amount to allow them to attend PSE.

These are small numbers – especially when we recall that this is within the relatively small group (i.e., 22 percent of non-participants) for whom monetary factors seemed to be determinant in their PSE non-participation. That said, these are cases where changes in the loan system could potentially lead to improved access, but the overall increases in PSE access rates that could be expected as a result are likely small: a maximum of, say, 8.1 percent ("couldn't get

---

[9] This point is actually rarely made in discussions of access to PSE and how it relates to costs, especially in a policy context, where such a situation (i.e., "costs too much") is typically assumed to imply a liquidity constraint rather than a perceived value issue. Note that one implication of this differentiation is that grants, rather than loans, may be required to cause at least some students to change their PSE decisions, and indeed that grants in excess of actual costs (or cost shortfalls) may in fact be required. These issues go to the heart of what student aid is intended to do: cover costs or change student incentives? Of course, in some cases and in many ways these amount to the same thing.

a loan") of the 22 percent ("monetary reason for non-participation") of the 25 percent that did not access PSE, or less than one percent of the relevant youth age population.[10]

Some of those giving other (non-financial) reasons for not participating in PSE also said they could not get a student loan, but the percentages are generally even smaller than for the financial reasons group, and since they first cite other reasons for their non-attendance (academic shortcomings, lack of interest or motivation, etc.), it would seem to follow that an expanded loan system would likely have little effect on their behaviour. Overall, 4.1 percent of all PSE non-participants said they did not have a loan because they could not get one. If getting a loan would in fact have changed the access decisions of every one of these individuals, we are looking at 4.1 percent of the 25 percent that did not access PSE – or about 1.02 percent of the relevant youth population – this being perhaps the maximum (upper bound) effect we would expect of a more generous student loan system.

V. Conclusions

This paper has addressed how the background characteristics of high school graduates are related to access to PSE in Canada. In the first part, we have modeled access to college and university, and related access to a rich array of student background variables available in the YITS-A dataset employed, including –in particular- both family income and parental education. Our main findings include the following.

Family income has a still significant, but greatly reduced affect on access once parental education is included in the model. Higher levels of parental education tend to increase the probability that an individual will attend university, reduce the probability that he or she will attend college, and boost overall PSE access rates due to the strong university effects. Urban residents have a high probability of attending university, but a lower probability of attending college. Patterns in access to university and college vary by region – the Atlantic Provinces have the highest university participation rates while Ontario has the highest college rates. Quebec, Alberta and British Columbia show lower rates of overall PSE access. Youths from mother- and

---

[10] Another 4.9 of those citing financial barriers to PSE identified debt aversion reasons ("not willing to borrow") as the reason for not having a loan, and a final 8.9 percent gave other reasons. If any of these individuals were in fact liquidity constrained, it could be that some kind of financing measure (e.g., increased grants) could increase their participation rates – but this takes us beyond the issue of loans per se.

father-only families do not have significantly different probabilities of attending either college or university compared to those from two-parent families, once other factors are controlled for. Immigrants and visible minorities generally are less likely to access college, and significantly more likely to access university compared to non-visible minorities born in Canada, with overall PSE participation rates higher for these groups.

While the first part of the paper addresses "who goes" to PSE, the second part asks the more pertinent policy question: Who doesn't go on to PSE and why? What are the barriers to PSE and how are these related to the observable characteristics in the YITS? If the goal of policy is to increase attendance at the country's PSE institutions, then who doesn't go and why they do not go are the questions that beg for answers.

Although by age 21, 75 percent of the individuals in our sample have attended PSE, another 25 percent have not. Of this latter group, 23.3 percent have no (stated) aspirations for PSE. Among the "PSE aspirants", over one-half report that they face no barriers to attending PSE, while 22 percent claim that finances are at least one barrier to their entering PSE. Stated differently, 5.5 percent of all the young people in our sample wish to go to PSE, have not accessed PSE, and claim "finances" represent at least one barrier to accessing PSE. Even fewer of such youths report low high school grades or lack of motivation as barriers.

Moving beyond descriptive statistics, we have modelled a five category outcome that classifies students as those who (1) have accessed PSE; (2) have not accessed PSE but have no PSE aspirations; (3) have not accessed PSE, have aspirations to do so, but report no barriers; (4) have not accessed PSE, have aspirations to do so, and report a given barrier (e.g., financing); (5) a residual category for those who have not accessed PSE, have aspirations to do so, and report some other type of barrier. The results show that family income and parental education (especially the latter) are important determinants of attending PSE and are negatively related to having no PSE aspirations. There are also weak (negative) relationships between both parental education, and family income and stating finances as a barrier to attending PSE, suggesting that citing financial barriers is more than simply a sign of low levels of family resources.

To further address the issue of financial barriers, we take a closer look at the reasons why those individuals in our sample who claimed financial barriers did not have a student loan. Student loans are intended to relax any liquidity constraints students may have and are a key policy tool to increase participation at PSE institutions. Recall that 5.5 percent of the sample

cited financial barriers as a reason for not attending PSE. Of these, about 78 percent said that they did not need a student loan. We interpret this result to mean that the student loan system is functioning relatively well, and that there are other "financial barriers" at play here apart from the actual affordability of schooling. For example, some youths may have low estimates of the future benefits of PSE or are otherwise simply not seeing the financial benefits of PSE relative to the up-front costs.

REFERENCES

Andres, Lesley, Maria Adamuti-Trache, Ee-Seul Yoon, Michelle Pidgeon, and Jens Peter Thomsen. 2007. "Educational Expectations, Parental Social Class, Gender, and Postsecondary Attainment: A 10-Year Perspective," *Youth & Society* 39(2), 135-63.

Andres, Lesley, Maria Adamuti-Trache. 2008. "Life-course transitions, social class, and gender: a 15-year perspective of the lived lives of Canadian young adults," *Journal of Youth Studies* 11(2), 115-145.

Bowlby, Jeffrey W., and Kathryn McMullen. 2002. At a Crossroads: *First Results for the 18 to 20-Year-old Cohort of the Youth in Transition Survey*. Ottawa: Human Resources Development Canada and Statistics Canada.

Butlin, George. 1999. "Determinants of Postsecondary Participation," *Education Quarterly Review* 5(3), 9-35.

Childs, Stephen, Ross Finnie and Richard E. Mueller. 2010. "Family Environment, Family Habits, and Children's Cultural Experiences: Is There a Link to Participation in Post-Secondary Education?" In *Pursuing Higher Education in Canada: Economic, Social and Policy Dimensions*. Ed. Ross Finnie, Marc Frenette, Richard E. Mueller and Arthur Sweetman. Montreal and Kingston: Queen's Policy Studies Series, McGill-Queen's University Press, 243-65.

Christofides, Louis N., Jim Cirello, and Michael Hoy. 2001. "Family Income and Post-Secondary Education in Canada," *Canadian Journal of Higher Education* 31(1), 177-208.

Christofides, Louis N., Michael Hoy, Zhi (Jane) Li, and Thanasis Stengos. 2008. "The Evolution of Aspirations for University Attendance." In *Who Goes? Who Stays? What Matters? Accessing and Persisting in Post-Secondary Education in Canada*. Ed. Ross Finnie, Richard E. Mueller, Arthur Sweetman, and Alex Usher. Queen's Policy Studies Series, Montreal and Kingston: McGill-Queen's University Press, 109-34.

Coelli, Michael. 2009. "Tuition Fees and Equality of University Enrolment," *Canadian Journal of Economics* 42 (3), 1072-99.

Corak, Miles, Garth Lipps, and John Zhao. 2003. "Family Income and Participation in Post-Secondary Education," Statistics Canada, Analytical Studies, Research Paper No. 210.

De Broucker, Patrice. 2005. "Getting There and Staying There: Low Income Students and Post-Secondary Education: A Synthesis of Research Findings," Canadian Policy Research Networks, Research Report W-27.

Drolet, Marie. 2005. "Participation in Post-secondary Education in Canada: Has the Role of Parental Income and Education Changed over the 1990s?" Statistics Canada, Analytical Studies Branch Research Paper Series No. 243.

Ehrenberg, Ronald G. 2004. "Econometric Studies of Higher Education," Journal *of Econometrics* 121(1-2), 19-37.

Finnie, Ross, Christine Laporte and Eric Lascelles. 2004. "Family Background and Access to Post-Secondary Education: What Happened over the 1990s?" Statistics Canada, Analytical Studies Research Paper Series No. 226.

Finnie, Ross, Eric Lascelles, and Arthur Sweetman. 2005. "Who Goes? The Direct and Indirect Effects of Family Background on Access to Postsecondary Education," in *Higher Education in Canada*. Ed. Charles M. Beach, Robin W. Boadway, and R. Marvin McInnis. Montreal and Kingston: McGill-Queen's University Press, 295-338

Finnie, Ross, and Richard E. Mueller. 2008a. The Effects of Family Income, Parental Education and Other Background Factors on Access to Post-Secondary Education in Canada: Evidence from the YITS. A Measuring the Effectiveness of Student Aid (MESA) Project Research Paper. Toronto, ON: Educational Policy Institute.

Finnie, Ross, and Richard E. Mueller. 2008b. "The Backgrounds of Canadian Youth and Access to Post-secondary Education: New Evidence from the Youth in Transition Survey," in R. Finnie, R.E. Mueller, A. Sweetman, & A. Usher (Eds.), *Who Goes? Who Stays? What Matters? Accessing and Persisting in Post-Secondary Education in Canada*. Montreal and Kingston: Queen's Policy Studies Series, McGill-Queen's University Press, 79-107.

Finnie, Ross, and Richard E. Mueller. 2009. Access to Post-Secondary Education in Canada Among the Children of Canadian Immigrants. A Measuring the Effectiveness of Student Aid (MESA) Project Research Paper. Toronto, ON: Educational Policy Institute.

Frenette, Marc. 2004. "Access to College and University: Does Distance to School Matter?" *Canadian Public Policy* 30(4), 427-43.

Frenette, Marc. 2005. "The Impact of Tuition Fees on University Access: Evidence from a Large-scale Price Deregulation in Professional Programs," Statistics Canada, Analytical Studies Branch Research Paper Series No. 263.

Frenette, Marc. 2007. "Why are Youth from Lower-income Families Less Likely to Attend University? Evidence from Academic Abilities, Parental Influences, and Financial Constraints," Statistics Canada, Analytical Studies Branch Research Paper Series No. 295.

Frenette, Marc. 2008. "Why are Lower Income Students Less Likely to Attend University: Evidence from Academic Abilities, Parental Influences, and Financial Constraints," in *Who Goes? Who Stays? What Matters? Accessing and Persisting in Post-Secondary*

Education in Canada. Ed. Ross Finnie, Richard E. Mueller, Arthur Sweetman, and Alex Usher. Montreal and Kingston: Queen's Policy Studies Series, McGill-Queen's University Press, 279-97.

Johnson, David R., and Fiona Rahmad. 2005. "The Role of Economic Factors, Including the Level of Tuition, in Individual University Participation Decisions in Canada," *Canadian Journal of Higher Education* 35(3), 83-99.

Junor, Sean, and Alex Usher. 2004. *The Price of Knowledge 2004: Access and Student Finance in Canada*. Montreal: The Canadian Millennium Scholarship Foundation.

Krahn, Harvey, and Lesley Andres. 1999. "Youth Pathways in Articulated Postsecondary Systems: Enrolment and Completion Patterns of Urban Young Men and Women," *Canadian Journal of Higher Education* 29(1), 47-82.

Knighton, Tamara, and Sheba Mirza. 2002. "Postsecondary Participation: The Effects of Parents' Education and Household Income," *Education Quarterly Review* 8(3), 25-32.

Lambert, Mylène, Klarka Zyman, Mary Allen, and Patrick Bussière. 2004. "Who Pursues Postsecondary Education, Who Leaves and Why: Results from the Youth in Transition Survey," Statistics Canada, Catalogue No. 81-595-MIE, No. 26.

Long, Bridget Terry. 2005. "Contributions from the Field of Economics to the Study of College Access and Success," Harvard Graduate School of Education Working Paper.

Looker, E. Dianne. 2001. "Why Don't They Go On? Factors Affecting the Decisions of Canadian Youth Not to Pursue Post-Secondary Education," Canadian Millennium Scholarship Foundation, Research Series.

Looker, E. Dianne, and Graham S. Lowe. 2001. "Post-Secondary Access and Student Financial Aid in Canada: Current Knowledge and Research Gaps," Canadian Policy Research Network.

Motte, Anne, Hanqing Qiu, and Patrick Bussière. 2008. "The Youth in Transition Survey: Following Canadian Youth through Time." In Who Goes? Who Stays? What Matters? Accessing and Persisting in Post-Secondary Education in Canada. Ed. Ross Finnie, Richard E. Mueller, Arthur Sweetman, and Alex Usher. Queen's Policy Studies Series, Montreal and Kingston: McGill-Queen's University Press, 63-75.

Mueller, Richard E. 2008a. Access and Persistence of Students from Low-Income Backgrounds in Canadian Post-Secondary Education: A Review of the Literature. A Measuring the Effectiveness of Student Aid (MESA) Project Research Paper. Toronto, ON: Educational Policy Institute.

Mueller, Richard E. 2008b. "Access and Persistence of Students in Canadian Post-Secondary Education: What We Know, What We Don't Know, and Why it Matters," in *Who Goes?*

Who Stays? What Matters? Accessing and Persisting in Post-Secondary Education in Canada. Ed. Ross Finnie, Richard E. Mueller, Arthur Sweetman, and Alex Usher. Montreal and Kingston: Queen's Policy Studies Series, McGill-Queen's University Press, 33-61.

Neill, Christine. 2009. "Tuition Fees and the Demand for University Places," *Economics of Education Review* 28(5), 561-70.

Rahman, Atiz, Jerry Situ, and Vicki Jimmo. 2005. "Participation in Post-secondary Education: Evidence for the Survey of Labour and Income Dynamics," Culture, Tourism and the Centre for Education Statistics Research Paper No. 36, Statistics Canada Catalogue No. 81-595-MIE.

Rivard, Marc, and Mélanie Raymond. 2004. "The Effect of Tuition Fees on Post-secondary Education in Canada in the late-1990s," Department of Finance Working Paper No. 2004-09.

Tomkowicz, Joanna, and Tracey Bushnik. 2003. "Who Goes to Post-secondary Education and When: Pathways Chosen by 20 Year-olds," Statistics Canada, Education, Skills and Learning Research Papers.

Turcotte, Martin. 2011. "Intergenerational Education Mobility: University Completion in Relation to Parents' Education Level," *Canadian Social Trends* 92. Statistics Canada, Catalogue no. 11-008-X, 37-43.

Table 1: Descriptive Statistics

	Males				Females			
	% Dist.	Coll.	Univ.	Any	% Dist.	Coll.	Univ.	Any
Number of Observations		7,999				8,341		
All	100	34.6	33.8	68.4	100	31.4	49.7	81.1
HS Region								
Rural	23.1	34.7	23.9	58.5	22.9	36.4	39.3	75.7
Urban	76.9	34.6	36.8	71.4	77.1	29.9	52.8	82.7
HS Province								
Newfoundland and Labrador	1.9	33.9	36.8	70.8	2.2	26.6	52.5	79.1
Prince Edward Island	0.5	22.7	49.0	71.7	0.6	20.2	62.7	82.8
Nova Scotia	3.2	24.8	47.0	71.8	3.3	20.1	63.2	83.3
New Brunswick	2.6	25.4	39.4	64.9	2.8	22.3	58.9	81.3
Quebec	23.3	41.1	22.6	63.6	22.5	38.9	38.4	77.3
Ontario	37.1	39.4	36.3	75.7	38.2	33.5	54.7	88.1
Manitoba	3.7	18.9	41.2	60.1	3.6	21.0	54.2	75.2
Saskatchewan	3.9	22.1	38.6	60.8	3.7	25.8	50.0	75.9
Alberta	10.6	28.2	32.5	60.7	10.1	29.0	43.8	72.9
British Columbia	13.3	27.9	38.9	66.8	13.1	25.1	51.3	76.4
French Minority Outside Quebec								
French Minority Outside Quebec	2.5	38.5	32.5	71.1	3.1	31.4	49.6	81.0
All Others	97.5	34.5	33.8	68.4	96.9	32.3	52.7	85.1
English Minority in Quebec								
English Minority in Quebec	2.1	45.4	30.6	76.0	1.7	31.4	49.6	81.0
All Others	97.9	34.4	33.9	68.3	98.3	34.7	54.8	89.4
Family Type								
Two Parents	83.7	34.8	35.3	70.1	81.9	30.2	51.9	82.1
Mother Only	12.1	33.2	27.4	60.7	14.4	36.0	40.6	76.7
Father Only	2.8	38.4	21.6	60.0	2.4	42.3	36.2	78.5
Other	1.5	29.7	22.1	51.8	1.3	38.0	33.4	71.3
Visible Minority/Immigrant Status				0.0				0.0
Non-Visible Minority Born in Canada	85.8	35.0	31.2	66.2	84.1	32.5	46.6	79.1
Visible Minority Born in Canada	6.4	30.0	52.5	82.5	7.6	26.5	66.2	92.7
Non-Visible Minority Immigrant	2.5	39.9	33.6	73.5	2.6	20.9	63.1	83.9
Visible Minority Immigrant	5.4	32.5	53.2	85.7	5.8	26.8	66.7	93.5
Parent/Guardian's Education								
Less Than HS	8.2	27.4	10.0	37.4	9.0	38.0	20.6	58.7
HS Completed	21.0	38.8	20.7	59.6	22.2	37.4	34.5	71.9
Some PSE	6.6	42.2	25.1	67.3	6.7	36.3	41.5	77.8
Trade/College	32.0	39.4	26.7	66.1	30.4	35.4	45.7	81.1
University- Below BA Degree	4.4	37.3	40.3	77.5	4.8	26.1	64.8	90.9
University- BA	18.9	29.7	53.8	83.4	17.4	23.4	71.5	94.9
University- Grad	8.7	18.0	73.8	91.8	9.5	11.9	84.3	96.2
Other/Unknown	0.1	***	***	***	0.1	***	***	***
Parental Income Level								
$5,000 to $25,000	6.9	32.8	22.9	55.7	8.1	31.4	36.3	67.8
$25,000 to $50,000	24.4	34.1	26.1	60.2	27.0	36.9	37.0	73.9
$50,000 to $75,000	29.0	36.7	28.5	65.2	28.3	32.7	50.4	83.1
$75,000 to $100,000	24.3	34.4	41.1	75.5	21.8	28.3	56.3	84.5
$100,000 and up	15.4	33.0	49.1	82.1	14.8	22.8	70.1	93.0

Table 2: Multinomial Logit Estimates of Access to College and University

	Males				Females			
	1		**2**		**3**		**4**	
	Coll.	Univ.	Coll.	Univ.	Coll.	Univ.	Coll.	Univ.
HS Location - Urban (Rural)	-0.027	0.097***	-0.017	0.068***	-0.069***	0.087***	-0.053***	0.050***
	[0.018]	[0.017]	[0.018]	[0.016]	[0.017]	[0.018]	[0.017]	[0.017]
HS Province (Ontario)								
Newfoundland and Labrador	-0.092***	0.142***	-0.085***	0.123***	-0.137***	0.141***	-0.131***	0.130***
	[0.027]	[0.030]	[0.027]	[0.029]	[0.022]	[0.026]	[0.022]	[0.025]
Prince Edward Island	-0.191***	0.231***	-0.178***	0.188***	-0.184***	0.197***	-0.171***	0.167***
	[0.023]	[0.029]	[0.023]	[0.027]	[0.019]	[0.024]	[0.020]	[0.025]
Nova Scotia	-0.165***	0.191***	-0.150***	0.141***	-0.178***	0.190***	-0.165***	0.161***
	[0.022]	[0.027]	[0.023]	[0.026]	[0.018]	[0.023]	[0.019]	[0.023]
New Brunswick	-0.174***	0.153***	-0.173***	0.141***	-0.168***	0.160***	-0.159***	0.134***
	[0.022]	[0.027]	[0.021]	[0.026]	[0.019]	[0.024]	[0.019]	[0.023]
Quebec	0.009	-0.092***	0.015	-0.092***	0.026	-0.090***	0.030	-0.081***
	[0.024]	[0.018]	[0.024]	[0.018]	[0.024]	[0.022]	[0.024]	[0.022]
Manitoba	-0.213***	0.105***	-0.208***	0.099***	-0.153***	0.067**	-0.152***	0.066**
	[0.021]	[0.027]	[0.021]	[0.026]	[0.021]	[0.028]	[0.021]	[0.026]
Saskatchewan	-0.193***	0.123***	-0.193***	0.101***	-0.118***	0.066**	-0.118***	0.056**
	[0.020]	[0.027]	[0.020]	[0.025]	[0.022]	[0.026]	[0.022]	[0.025]
Alberta	-0.118***	-0.017	-0.121***	-0.011	-0.061**	-0.083***	-0.065***	-0.074***
	[0.023]	[0.022]	[0.022]	[0.021]	[0.024]	[0.025]	[0.024]	[0.023]
British Columbia	-0.114***	0.017	-0.115***	-0.000	-0.096***	-0.021	-0.094***	-0.033
	[0.024]	[0.024]	[0.024]	[0.022]	[0.023]	[0.026]	[0.023]	[0.024]
Language Minority (Non-Language Minority)								
English Minority In Quebec	0.041	0.059	0.049	0.033	-0.023	0.120***	0.015	0.052
	[0.040]	[0.039]	[0.039]	[0.035]	[0.036]	[0.039]	[0.039]	[0.039]
French Minority Outside Quebec	0.051	-0.020	0.054	-0.020	0.024	0.014	0.024	0.022
	[0.038]	[0.034]	[0.035]	[0.031]	[0.036]	[0.035]	[0.036]	[0.034]
Family Type (Two parents)								
Mother only	-0.025	0.008	-0.017	-0.016	0.013	0.022	0.024	0.001
	[0.027]	[0.026]	[0.027]	[0.025]	[0.025]	[0.026]	[0.025]	[0.025]
Father only	0.032	-0.072	0.071	-0.080*	0.086	-0.063	0.092*	-0.072
	[0.052]	[0.045]	[0.053]	[0.041]	[0.057]	[0.056]	[0.054]	[0.052]
Other	-0.044	-0.067	-0.034	-0.016	0.108	-0.151**	0.086	-0.128**
	[0.066]	[0.066]	[0.066]	[0.071]	[0.072]	[0.064]	[0.070]	[0.058]
Visible Minority/Immigrant Status (Non-Visible Minority Born in Canada)								
Visible Minority Born in Canada	-0.037	0.190***	-0.023	0.163***	-0.061**	0.195***	-0.048*	0.178***
	[0.032]	[0.034]	[0.033]	[0.031]	[0.028]	[0.029]	[0.029]	[0.029]
Non-Visible Minority Immigrant	0.027	0.041	0.061	-0.044	-0.112**	0.157***	-0.083*	0.090*
	[0.057]	[0.052]	[0.061]	[0.044]	[0.046]	[0.052]	[0.049]	[0.048]
Visible Minority Immigrant	-0.037	0.241***	0.001	0.173***	-0.084**	0.234***	-0.032	0.161***
	[0.039]	[0.041]	[0.042]	[0.042]	[0.038]	[0.038]	[0.043]	[0.043]
Parental Education (HS Completed)								
Less Than HS			-0.101***	-0.093***			0.012	-0.125***
			[0.032]	[0.022]			[0.032]	[0.027]
Some PSE			0.045	0.026			0.010	0.038
			[0.037]	[0.029]			[0.036]	[0.035]
Trade/College			0.013	0.052***			-0.011	0.093***
			[0.023]	[0.020]			[0.022]	[0.022]
University-Below BA			-0.036	0.187***			-0.106***	0.264***
			[0.041]	[0.042]			[0.034]	[0.036]
University-BA			-0.088***	0.288***			-0.114***	0.311***
			[0.024]	[0.027]			[0.023]	[0.024]
University-Grad			-0.198***	0.482***			-0.215***	0.417***
			[0.025]	[0.031]			[0.024]	[0.028]
Other/unknown			-0.365***	0.140			0.391***	-0.224*
			[0.025]	[0.220]			[0.137]	[0.119]
Family Income ($50 000 to $75 000)								
$5 000 to $25 000	-0.012	-0.086***	-0.004	-0.006	-0.019	-0.189***	-0.037	-0.081***
	[0.034]	[0.030]	[0.035]	[0.033]	[0.032]	[0.029]	[0.031]	[0.030]
$25 000 to $50 000	-0.013	-0.033*	-0.014	0.013	0.047**	-0.156***	0.028	-0.098***
	[0.021]	[0.020]	[0.021]	[0.019]	[0.021]	[0.020]	[0.021]	[0.020]
$75 000 to $100 000	-0.029	0.119***	-0.003	0.052***	-0.039*	0.054**	-0.019	0.007
	[0.021]	[0.021]	[0.022]	[0.020]	[0.021]	[0.022]	[0.021]	[0.021]
$100 000 and up	-0.044*	0.203***	0.021	0.066***	-0.079***	0.189***	-0.021	0.085***
	[0.024]	[0.025]	[0.026]	[0.024]	[0.023]	[0.024]	[0.026]	[0.025]
Observations	7916		7916		8260		8260	

Notes: Average marginal effects are shown. Omitted categories are in parenthesis. Standard errors are in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table 3: Logit Estimates of Access to Any PSE and Logit Estimates of Access to University Conditional on Access to PSE

	Males		Females	
	PSE	Univ.	PSE	Univ.
HS Location - Urban (Rural)	0.050***	0.071***	-0.003	0.067***
	[0.016]	[0.021]	[0.013]	[0.019]
HS Province (Ontario)				
Newfoundland and Labrador	0.035	0.139***	-0.005	0.157***
	[0.023]	[0.033]	[0.019]	[0.025]
Prince Edward Island	0.008	0.247***	-0.006	0.203***
	[0.025]	[0.030]	[0.020]	[0.024]
Nova Scotia	-0.008	0.199***	-0.006	0.195***
	[0.024]	[0.029]	[0.019]	[0.022]
New Brunswick	-0.038	0.216***	-0.027	0.182***
	[0.024]	[0.028]	[0.020]	[0.023]
Quebec	-0.075***	-0.094***	-0.049**	-0.068***
	[0.023]	[0.023]	[0.020]	[0.025]
Manitoba	-0.111***	0.230***	-0.087***	0.154***
	[0.027]	[0.032]	[0.025]	[0.026]
Saskatchewan	-0.096***	0.219***	-0.063***	0.116***
	[0.026]	[0.030]	[0.022]	[0.026]
Alberta	-0.132***	0.069**	-0.139***	-0.002
	[0.026]	[0.028]	[0.026]	[0.027]
British Columbia	-0.114***	0.072**	-0.126***	0.047*
	[0.027]	[0.029]	[0.026]	[0.027]
Language Minority (Non-Language Minority)				
English Minority In Quebec	0.079**	-0.011	0.063*	0.024
	[0.036]	[0.041]	[0.033]	[0.040]
French Minority Outside Quebec	0.031	-0.038	0.045*	-0.002
	[0.033]	[0.037]	[0.023]	[0.039]
Family Type (Two parents)				
Mother only	-0.035	0.011	0.024	-0.016
	[0.027]	[0.033]	[0.016]	[0.028]
Father only	-0.003	-0.126**	0.023	-0.101*
	[0.041]	[0.057]	[0.035]	[0.061]
Other	-0.054	0.046	-0.043	-0.136*
	[0.067]	[0.092]	[0.055]	[0.072]
Visible Minority/Immigrant Status (Non-Visible Minority Born in Canada)				
Visible Minority Born in Canada	0.142***	0.121***	0.129***	0.119***
	[0.028]	[0.035]	[0.013]	[0.030]
Non-Visible Minority Immigrant	0.015	-0.103*	0.009	0.092*
	[0.055]	[0.055]	[0.041]	[0.054]
Visible Minority Immigrant	0.174***	0.126***	0.129***	0.105**
	[0.032]	[0.046]	[0.020]	[0.045]
Parental Education (HS Completed)				
Less Than HS	-0.190***	-0.062	-0.107***	-0.107***
	[0.033]	[0.047]	[0.031]	[0.040]
Some PSE	0.069**	0.004	0.048*	0.022
	[0.032]	[0.040]	[0.029]	[0.040]
Trade/College	0.063***	0.047*	0.081***	0.066***
	[0.021]	[0.026]	[0.015]	[0.025]
University-Below BA	0.149***	0.179***	0.158***	0.214***
	[0.037]	[0.048]	[0.021]	[0.036]
University-BA	0.201***	0.273***	0.198***	0.233***
	[0.019]	[0.028]	[0.009]	[0.024]
University-Grad	0.287***	0.432***	0.206***	0.343***
	[0.019]	[0.028]	[0.013]	[0.025]
Other/unknown	-0.247	0.595***	0.164**	-0.329**
	[0.208]	[0.062]	[0.074]	[0.131]
Family Income ($50 000 to $75 000)				
$5 000 to $25 000	-0.007	-0.006	-0.119***	-0.031
	[0.031]	[0.044]	[0.028]	[0.037]
$25 000 to $50 000	-0.000	0.018	-0.072***	-0.077***
	[0.019]	[0.025]	[0.018]	[0.023]
$75 000 to $100 000	0.048**	0.044*	-0.012	0.014
	[0.019]	[0.024]	[0.019]	[0.023]
$100 000 and up	0.085***	0.040	0.065***	0.058**
	[0.021]	[0.028]	[0.018]	[0.027]
Observations	7916	5619	8260	6857

Notes: Average marginal effects are shown. Omitted categories are in parenthesis. Standard errors are in brackets. *** p<0.01, ** p<0.05, * p<0.1

Table 4: Barriers to PSE, All Students

	Has Accessed PSE	Has not Accessed PSE					
		Has no PSE Aspirations	Has PSE Aspirations,				
			Has no Barriers	Financial Situation is at Least One Barrier	HS Grades are at Least One Barrier	Motivation is at Least One Barrier	Has Barriers, Other
All	75	5.8	10.7	5.5	0.8	1.6	1.6
Gender							
Male	68.8	8.1	14.6	5.5	1.1	2	1
Female	81.3	3.5	6.6	5.6	0.5	1.3	2.2
HS Region							
Rural	67.6	8.2	13.3	6.5	1	2	2.9
Urban	77.2	5.1	9.9	5.2	0.7	1.5	1.2
HS Province							
Newfoundland and Labrador	75.4	3.5	15.7	2.9	***	0.8	1.7
Prince Edward Island	77.6	5.5	10.9	2.9	***	1	2.2
Nova Scotia	77.6	5.5	10.4	4	0.6	1.2	1.4
New Brunswick	73.4	6.1	12.9	4.8	0.8	0.7	1.7
Quebec	70.4	10.6	9.7	6.4	1	1.9	1.4
Ontario	82.1	3.4	7.7	4.4	0.5	1.4	1.3
Manitoba	67.9	6.3	15	6.8	***	2.7	2.1
Saskatchewan	68.6	6.9	14.4	5.8	1.6	2	1.6
Alberta	67.4	6.3	15.6	7.2	1	2.1	1.9
British Columbia	72.2	4.2	13.6	6.5	0.9	1.4	2.4
French Minority Outside Quebec							
French Minority Outside Quebec	74.9	5.9	10.7	5.5	***	1.7	1.6
All Others	78.7	5	10.4	4.3	***	0.8	1.3
English Minority in Quebec							
English Minority in Quebec	74.9	5.8	10.8	***	***	***	1.6
All Others	82.1	7.3	5.8	***	***	***	2
Family Type							
Two Parents	76.3	5.4	10.5	5.1	0.7	1.5	1.5
Mother Only	69.5	8	11.2	7.5	0.8	2.5	1.8
Father Only	69	9.3	12.6	6.7	***	1.6	1.6
Other	61.4	7.3	11.7	7.7	***	2.5	4.4
Visible Minority/Immigrant Status							
Non-Visible Minority Born in Canada	72.9	6.6	11.5	6	0.8	1.7	1.7
Visible Minority Born in Canada	88.1	1.5	5.5	3.3	***	0.9	0.8
Non-Visible Minority Immigrant	78.8	***	9.7	3.1	***	***	***
Visible Minority Immigrant	89.7	***	4.9	2.5	***	***	***
Parent/Guardian's Education							
Less Than HS	48.7	16.3	17.7	11.3	1.6	3.4	2.8
HS Completed	66.1	9.5	13.1	6.9	0.7	2.2	2.8
Some PSE	73.1	4.3	13.2	5.1	0.9	3.5	1.3
Trade/College	73.6	4.9	12.6	6.4	0.8	1.4	1.5
University- Below BA Degree	84.5	4.3	5.7	3.7	***	***	***
University- BA	89.1	1.5	5.4	2.4	0.5	0.9	0.8
University- Grad	94.4	***	***	***	***	0.2	***
Other/Unknown	64.6						
Parental Income Level							
$5,000 to $25,000	62.5	10.9	13.7	7.5	1.5	2.6	2.7
$25,000 to $50,000	67.6	8.3	11.9	8	1	2.2	2.3
$50,000 to $75,000	74.3	5.6	11.6	5.6	0.9	1.5	1.6
$75,000 to $100,000	80	3.5	9.9	4.2	***	1.7	1.3
$100,000 and up	87.6	3.1	6.4	1.8	***	0.5	0.3

Notes: *** indicate cells that are suppressed according to Statistics Canada's rules regarding residual disclosure. Aspirations and barriers are those reported in cycle 4.

Table 5: Barriers to PSE, Individuals With No PSE

	Has not Accessed PSE (%)	Has no PSE Aspirations	Has no Barriers	Financial Situation is at Least One Barrier	HS Grades are at Least One Barrier	Motivation is at Least One Barrier	Has Barriers, Other
All	25	23.3	42.7	22	3.1	6.6	6.4
Gender							
Male	31.2	26	46.9	17.5	3.5	6.4	3.1
Female	18.7	18.9	35.5	29.8	2.5	7	11.9
HS Region							
Rural	32.4	25.3	41.1	20.1	3.2	6.2	8.9
Urban	22.8	22.5	43.3	22.9	3.1	6.8	5.3
HS Province							
Newfoundland and Labrador	24.6	14.3	63.7	11.6	***	3.4	6.7
Prince Edward Island	22.4	24.6	48.4	12.9	***	4.3	9.7
Nova Scotia	22.4	24.7	46.4	17.7	2.9	5.5	6.1
New Brunswick	26.6	22.8	48.4	18.2	2.9	2.5	6.4
Quebec	29.6	35.6	32.7	21.5	3.5	6.5	4.9
Ontario	17.9	18.9	42.8	24.5	2.9	8.1	7.1
Manitoba	32.1	19.5	46.9	21.3	0.9	8.4	6.4
Saskatchewan	31.4	21.9	45.9	18.6	5	6.5	5.1
Alberta	32.6	19.4	47.9	22	3.1	6.4	5.7
British Columbia	27.8	15	48.8	23.3	3.2	5	8.6
French Minority Outside Quebec							
French Minority Outside Quebec	25.1	23.3	42.5	22.1	***	6.6	6.4
All Others	21.3	23.4	48.8	20.2	***	3.6	6.2
English Minority in Quebec							
English Minority in Quebec	25.1	23.1	42.8	***	***	***	6.3
All Others	17.9	40.8	32.5	***	***	***	11.2
Family Type							
Two Parents	23.7	22.6	44.3	21.6	2.8	6.3	6.4
Mother Only	30.5	26.1	36.8	24.5	2.7	8.2	6
Father Only	31	30.1	40.5	21.6	***	5.3	5.2
Other	38.6	18.8	30.4	19.8	***	6.6	11.3
Visible Minority/Immigrant Status							
Non-Visible Minority Born in Canada	27.1	24.2	42.3	22	3.1	6.3	6.4
Visible Minority Born in Canada	11.9	12.5	46.7	27.9	***	7.6	6.5
Non-Visible Minority Immigrant	21.2	***	45.6	14.7	***	***	***
Visible Minority Immigrant	10.3	***	47.5	24.1	***	***	***
Parent/Guardian's Education							
Less Than HS	51.3	31.7	34.4	21.9	3.2	6.6	5.4
HS Completed	33.9	28	38.6	20.5	2.1	6.6	8.2
Some PSE	26.9	15.9	48.9	18.9	3.3	13	4.9
Trade/College	26.4	18.7	47.7	24.3	3	5.4	5.7
University- Below BA Degree	15.5	27.6	36.7	23.7	6.1		***
University- BA	10.9	13.9	49	22.4	4.3	8.1	7.2
University- Grad	5.6	11.1	***	18.5	***	4.2	***
Other/Unknown	35.4						
Parental Income Level							
$5,000 to $25,000	37.5	29	36.6	19.9	4	7	7.1
$25,000 to $50,000	32.4	25.6	36.9	24.8	3.2	6.8	7.1
$50,000 to $75,000	25.7	21.9	45.1	21.7	3.3	5.7	6.4
$75,000 to $100,000	20	17.4	49.6	21.1	***	8.4	6.4
$100,000 and up	12.4	25	51.6	14.8	***	4.2	2.7

Notes: * These columns do not sum to 100 exactly as students were permitted to choose more than one barrier. *** indicate cells that are suppressed according to Statistics Canada's rules regarding residual disclosure. Aspirations and barriers are those reported in cycle 4.

Table 6: Multinomial Logit Estimates of Barriers to PSE, All Students

	1	2	3	4	5	6	7
	Has Accessed PSE	Has not Accessed PSE					
		Has no PSE Aspirations	Has PSE Aspirations,				
			Has no Barriers	Financial Situation is at Least One Barrier	HS Grades are at Least One Barrier	Motivation is at Least One Barrier	Has Barriers, Other
Female (Male)	0.129***	-0.048***	-0.080***	0.000	-0.006***	-0.007***	0.012***
	[0.008]	[0.003]	[0.004]	[0.005]	[0.001]	[0.002]	[0.004]
HS Province (Ontario)							
Newfoundland and Labrador	0.005	-0.014**	0.047***	-0.027***	-0.004***	-0.008***	-0.007**
	[0.016]	[0.006]	[0.015]	[0.005]	[0.001]	[0.003]	[0.003]
Prince Edward Island	-0.003	0.010	0.018	-0.024***	-0.002	-0.006	0.001
	[0.016]	[0.010]	[0.013]	[0.006]	[0.003]	[0.004]	[0.005]
Nova Scotia	-0.012	0.013	0.017	-0.013*	-0.001	-0.003	-0.005
	[0.016]	[0.010]	[0.013]	[0.007]	[0.003]	[0.004]	[0.004]
New Brunswick	-0.034**	0.011	0.031**	-0.006	0.003	-0.009***	-0.003
	[0.016]	[0.009]	[0.013]	[0.008]	[0.004]	[0.003]	[0.004]
Quebec	-0.063***	0.048***	0.007	0.010	0.003	0.003	-0.004
	[0.016]	[0.013]	[0.010]	[0.009]	[0.004]	[0.005]	[0.003]
Manitoba	-0.099***	0.018*	0.059***	0.015	-0.004***	0.009	0.002
	[0.018]	[0.011]	[0.016]	[0.011]	[0.001]	[0.007]	[0.006]
Saskatchewan	-0.079***	0.019*	0.049***	0.002	0.007	0.004	-0.004
	[0.017]	[0.010]	[0.014]	[0.009]	[0.005]	[0.006]	[0.004]
Alberta	-0.130***	0.026**	0.070***	0.026**	0.004	0.006	0.003
	[0.018]	[0.012]	[0.016]	[0.011]	[0.005]	[0.006]	[0.006]
British Columbia	-0.113***	0.014	0.065***	0.023**	0.002	-0.001	0.014
	[0.019]	[0.011]	[0.016]	[0.012]	[0.004]	[0.005]	[0.009]
HS Location - Urban (Rural)	0.020*	-0.009	-0.002	0.001	-0.002	-0.001	-0.012***
	[0.010]	[0.006]	[0.008]	[0.006]	[0.002]	[0.003]	[0.003]
Language Minority (Non-Language Minority)							
English Minority In Quebec	0.065**	-0.009	-0.032*	-0.054***	0.001	-0.002	0.021
	[0.025]	[0.014]	[0.019]	[0.002]	[0.006]	[0.008]	[0.015]
French Minority Outside Quebec	0.036*	-0.006	-0.002	-0.012	-0.008***	-0.007**	-0.005
	[0.020]	[0.011]	[0.018]	[0.009]	[0.001]	[0.004]	[0.004]
Family Type (Two parents)							
Mother only	-0.003	0.002	-0.003	0.006	-0.002	0.006	-0.003
	[0.016]	[0.009]	[0.011]	[0.010]	[0.003]	[0.006]	[0.004]
Father only	0.009	-0.002	0.001	0.002	0.000	-0.003	-0.001
	[0.027]	[0.015]	[0.021]	[0.014]	[0.005]	[0.008]	[0.009]
Other	-0.043	-0.005	-0.022	0.006	0.038**	0.004	0.021
	[0.043]	[0.024]	[0.022]	[0.022]	[0.018]	[0.010]	[0.017]
Visible Minority/Immigrant Status (Non-Visible Minority Born in Canada)							
Visible Minority Born in Canada	0.137***	-0.043***	-0.053***	-0.025***	-0.005***	-0.007**	-0.009***
	[0.015]	[0.006]	[0.012]	[0.008]	[0.002]	[0.003]	[0.003]
Non-Visible Minority Immigrant	0.013	-0.018	0.006	-0.025*	0.005	0.008	0.003
	[0.034]	[0.019]	[0.029]	[0.013]	[0.009]	[0.021]	[0.010]
Visible Minority Immigrant	0.151***	-0.043***	-0.058***	-0.033***	-0.008***	-0.003	-0.012***
	[0.019]	[0.010]	[0.012]	[0.009]	[0.001]	[0.007]	[0.003]

Continued on Next Page

Table 6: Multinomial Logit Estimates of Barriers to PSE, All Students (Continued)

	1	2	3	4	5	6	7
	Has Accessed PSE	Has not Accessed PSE					
		Has no PSE Aspirations	Has PSE Aspirations,				
			Has no Barriers	Financial Situation is at Least One Barrier	HS Grades are at Least One Barrier	Motivation is at Least One Barrier	Has Barriers, Other
Parental Education (HS Completed)							
Less Than HS	-0.144***	0.048***	0.048**	0.037**	0.005	0.011	-0.003
	[0.023]	[0.018]	[0.019]	[0.015]	[0.004]	[0.009]	[0.006]
Some PSE	0.062***	-0.044***	-0.009	-0.011	0.003	0.013	-0.013***
	[0.022]	[0.010]	[0.016]	[0.010]	[0.004]	[0.012]	[0.004]
Trade/College	0.073***	-0.041***	-0.016	0.001	0.001	-0.007*	-0.011***
	[0.013]	[0.006]	[0.010]	[0.008]	[0.002]	[0.004]	[0.003]
University-Below BA	0.152***	-0.042***	-0.070***	-0.019*	0.006	-0.018***	-0.018***
	[0.021]	[0.013]	[0.012]	[0.012]	[0.008]	[0.002]	[0.005]
University-BA	0.199***	-0.071***	-0.076***	-0.030***	0.000	-0.011***	-0.015***
	[0.011]	[0.004]	[0.007]	[0.006]	[0.003]	[0.003]	[0.004]
University-Grad	0.250***	-0.081***	-0.097***	-0.045***	0.002	-0.018***	-0.021***
	[0.012]	[0.004]	[0.008]	[0.006]	[0.007]	[0.002]	[0.003]
Other/unknown	-0.050	0.176	-0.025	-0.060***	-0.006***	-0.021***	-0.025***
	[0.142]	[0.157]	[0.058]	[0.003]	[0.001]	[0.002]	[0.002]
Family Income ($50 000 to $75 000)							
$5 000 to $25 000	-0.060***	0.026*	0.010	0.009	0.005	0.004	0.009
	[0.021]	[0.014]	[0.015]	[0.013]	[0.006]	[0.008]	[0.007]
$25 000 to $50 000	-0.035***	0.012	-0.003	0.017**	0.002	0.005	0.005
	[0.013]	[0.008]	[0.009]	[0.009]	[0.003]	[0.005]	[0.005]
$75 000 to $100 000	0.021	-0.010	-0.002	-0.007	-0.006***	0.006	-0.001
	[0.013]	[0.008]	[0.010]	[0.007]	[0.001]	[0.006]	[0.004]
$100 000 and up	0.070***	-0.001	-0.024**	-0.029***	-0.002	-0.008**	-0.011***
	[0.014]	[0.010]	[0.010]	[0.006]	[0.003]	[0.004]	[0.003]
Observations				16121			

Notes: Average marginal effects are shown. Omitted categories are in parenthesis. Standard errors are in brackets. *** p<0.01, ** p<0.05, * p<0.1 This table shows the results of four separate models, each of which has a five category dependant variable. Each five category dependant variable includes the categories of columns 1 to 3, one of the barrier categories of columns 4-7, and a category not shown which includes students with a barrier other than the one specified. Because the same sample was used to run all models, the marginal effects of columns 1 to 3 were the same in all four models.

Table 7: Barriers to Post Secondary Education and Why Students Do Not have Loans

	Total	Financial	Academic	Interest/ Motivation	Other	Goal is HS	No Barriers
	100	22*	3.1*	5.4*	6.4*	23.3*	42.7*
Why no Loan*							
Not needed	86.4	78.1	80.9	81.7	81.9	93.1	88.2
Not willing to borrow	2.5	4.9	***	3.5	4.3	0.9	2.1
Could not get a loan	4.1	8.1	8.8	4.6	3.1	2.3	3.2
Did not apply (other)	6.9	8.9	***	10.2	10.8	3.7	6.5
	___	___	___	___	___	___	___
	100	100	100	100	100	100	100

Notes: Includes students who have not accessed PSE by cycle 4. * These cells do not sum to 100 exactly as students were permitted to choose more than one barrier. All information is taken from cycle 4 when respondents were 21. *** indicate cells that are suppressed according to Statistics Canada's rules regarding residual disclosure.

Appendix Table 1: Multinomial Logit Estimates of Access to College and University- Linear Parental Education and Family Income

	Males				Females			
	1		2		3		4	
	Coll.	Univ.	Coll.	Univ.	Coll.	Univ.	Coll.	Univ.
HS Location - Urban (Rural)	-0.015	0.070***	-0.020	0.076***	-0.054***	0.052***	-0.058***	0.058***
	[0.018]	[0.016]	[0.018]	[0.017]	[0.017]	[0.017]	[0.017]	[0.017]
HS Province (Ontario)								
Newfoundland and Labrador	-0.087***	0.119***	-0.081***	0.106***	-0.130***	0.121***	-0.128***	0.122***
	[0.027]	[0.029]	[0.027]	[0.028]	[0.022]	[0.026]	[0.022]	[0.026]
Prince Edward Island	-0.181***	0.182***	-0.180***	0.180***	-0.168***	0.159***	-0.170***	0.164***
	[0.023]	[0.027]	[0.023]	[0.027]	[0.021]	[0.025]	[0.020]	[0.025]
Nova Scotia	-0.152***	0.137***	-0.154***	0.136***	-0.164***	0.154***	-0.165***	0.158***
	[0.022]	[0.026]	[0.022]	[0.026]	[0.019]	[0.023]	[0.019]	[0.023]
New Brunswick	-0.175***	0.136***	-0.170***	0.128***	-0.158***	0.129***	-0.156***	0.127***
	[0.021]	[0.025]	[0.021]	[0.026]	[0.019]	[0.024]	[0.019]	[0.024]
Quebec	0.013	-0.095***	0.011	-0.095***	0.032	-0.086***	0.027	-0.078***
	[0.024]	[0.017]	[0.024]	[0.018]	[0.024]	[0.021]	[0.024]	[0.022]
Manitoba	-0.210***	0.097***	-0.211***	0.100***	-0.150***	0.063**	-0.149***	0.063**
	[0.021]	[0.026]	[0.021]	[0.027]	[0.021]	[0.026]	[0.021]	[0.026]
Saskatchewan	-0.195***	0.096***	-0.191***	0.089***	-0.118***	0.051**	-0.116***	0.052**
	[0.020]	[0.025]	[0.020]	[0.025]	[0.022]	[0.025]	[0.022]	[0.025]
Alberta	-0.119***	-0.011	-0.118***	-0.015	-0.066***	-0.074***	-0.065***	-0.077***
	[0.022]	[0.021]	[0.022]	[0.021]	[0.024]	[0.023]	[0.024]	[0.023]
British Columbia	-0.116***	-0.001	-0.115***	-0.001	-0.093***	-0.035	-0.094***	-0.031
	[0.024]	[0.022]	[0.024]	[0.022]	[0.023]	[0.024]	[0.023]	[0.024]
Language Minority (Non-Language Minority)								
English Minority In Quebec	0.049	0.036	0.053	0.033	0.015	0.050	0.007	0.064*
	[0.039]	[0.035]	[0.040]	[0.035]	[0.039]	[0.039]	[0.039]	[0.038]
French Minority Outside Quebec	0.053	-0.017	0.048	-0.013	0.024	0.021	0.016	0.033
	[0.035]	[0.031]	[0.036]	[0.032]	[0.036]	[0.034]	[0.035]	[0.034]
Family Type (Two parents)								
Mother only	-0.022	-0.022	-0.023	-0.022	0.020	-0.010	0.020	-0.002
	[0.025]	[0.024]	[0.026]	[0.025]	[0.024]	[0.025]	[0.025]	[0.026]
Father only	0.072	-0.088**	0.063	-0.088*	0.090*	-0.078	0.088	-0.071
	[0.053]	[0.041]	[0.054]	[0.045]	[0.054]	[0.052]	[0.056]	[0.055]
Other	-0.039	-0.016	-0.049	-0.005	0.084	-0.129**	0.091	-0.136**
	[0.065]	[0.071]	[0.066]	[0.082]	[0.070]	[0.058]	[0.073]	[0.061]
Visible Minority/Immigrant Status (Non-Visible Minority Born in Canada)								
Visible Minority Born in Canada	-0.025	0.162***	-0.028	0.168***	-0.045	0.173***	-0.053*	0.185***
	[0.032]	[0.031]	[0.032]	[0.032]	[0.029]	[0.029]	[0.028]	[0.029]
Non-Visible Minority Immigrant	0.060	-0.051	0.057	-0.045	-0.085*	0.094*	-0.093*	0.110**
	[0.061]	[0.044]	[0.061]	[0.048]	[0.048]	[0.048]	[0.048]	[0.047]
Visible Minority Immigrant	0.000	0.166***	-0.009	0.182***	-0.029	0.154***	-0.036	0.167***
	[0.042]	[0.041]	[0.040]	[0.040]	[0.043]	[0.043]	[0.042]	[0.043]
Parental Education (Years)			-0.011***	0.060***			-0.021***	0.056***
			[0.003]	[0.003]			[0.003]	[0.003]
Family Income ($1,000)	0.000	0.004**	-0.000	0.005***	-0.003	0.014***	-0.004	0.017***
	[0.002]	[0.002]	[0.002]	[0.002]	[0.003]	[0.004]	[0.003]	[0.004]
Observations	7916		7916		8260		8260	

Notes: Average marginal effects are shown. Omitted categories are in parenthesis. Standard errors are in brackets. *** p<0.01, ** p<0.05, * p<0.1

Appendix Table 2: Barriers to PSE, Males

	Has Accessed PSE	Has no PSE Aspirations	Has no Barriers	Financial Situation is at Least One Barrier	HS Grades are at Least One Barrier	Motivation is at Least One Barrier	Has Barriers, Other
				Has not Accessed PSE — Has PSE Aspirations,			
All	68.8	8.1	14.6	5.5	1.1	2	1
HS Region							
Rural	59.1	10.9	19.5	6.3	1.4	2.1	2
Urban	71.7	7.3	13.2	5.2	1	1.9	0.7
HS Province							
Newfoundland and Labrador	70.9	4.8	19.3	3.3			
Prince Edward Island	71.7	9.4	13.6	2.8		1.4	
Nova Scotia	71.8	7.8	13.3	4.6	1.2	1.5	
New Brunswick	64.9	10	18.8	4.8	0.9	0.5	
Quebec	63.8	14.9	12	6.5	1.3	2	0.8
Ontario	75.9	4.5	12.2	4.3	0.9	2	1
Manitoba	60.6	9.7	19.6	6.3		3	1.5
Saskatchewan	61.3	9	19	5.8	2.4	2.4	0.9
Alberta	61.4	7.9	20.3	7.7	1.2	2.2	1.2
British Columbia	67.6	5.9	18	5.4	0.9	2.1	1.3
French Minority Outside Quebec							
French Minority Outside Quebec	71.1	6.7	16.9	4.1		1.1	
All Others	68.7	8.1	14.6	5.5	1.1	2	1
English Minority in Quebec	76	11.1	9.1			1.5	
English Minority in Quebec	68.6	8	14.8	5.6	1.1	2	1
All Others							
Family Type							
Two Parents	70.5	7.4	14.6	4.8	0.9	1.8	0.8
Mother Only	60.9	11.4	14.8	9.1	1.1	3.3	1.5
Father Only	61	12.1	15.4	7.7		2.6	
Other	52.5	12.2	12.7	6.8	10.8		
Visible Minority/Immigrant Status							
Non-Visible Minority Born in Canada	66.5	9.1	15.5	5.8	1.2	2.1	1
Visible Minority Born in Canada	82.8	2.5	9.3	3.7		0.9	
Non-Visible Minority Immigrant	73.5	2.6	12.2	4.5			
Visible Minority Immigrant	85.7		8.2	2.8			
Parent/Guardian's Education							
Less Than HS	37.9	24.6	20.3	12.1	2.4	3.6	1.6
HS Completed	59.9	11.3	17.9	6.5	0.9	3	1.8
Some PSE	67.5	5	18.1	5.1	1.5	2.9	
Trade/College	66.4	7.5	17.8	5.9	1	1.6	0.7
University- Below BA Degree	77.8	8.3	7.6	3.4			
University- BA	83.7	2.4	8.3	3.5	0.5	1.6	0.8
University- Grad	92.3	1	4.8	0.6			
Other/Unknown	39.2						
Parental Income Level							
$5,000 to $25,000	55.9	12.5	17	7.6	3.1	3.6	1.7
$25,000 to $50,000	60.7	12.7	15.5	7.7	1.1	2.5	1.5
$50,000 to $75,000	65.6	8.5	17.1	6.1	1.3	1.3	1
$75,000 to $100,000	75.8	4.1	13.5	3.6	0.3	2.6	0.9
$100,000 and up	82.4	4.7	9.1	2.4	1.1	0.9	

Notes: *** indicate cells that are suppressed according to Statistics Canada's rules regarding residual disclosure. Aspirations and barriers are those reported in cycle 4.

Appendix Table 3: Barriers to PSE, Females

| | Has Accessed PSE | Has not Accessed PSE | | | | | |
| | | Has no PSE Aspirations | Has PSE Aspirations, | | | | |
			Has no Barriers	Financial Situation is at Least One Barrier	HS Grades are at Least One Barrier	Motivation is at Least One Barrier	Has Barriers, Other
All	81.3	3.5	6.6	5.6	0.5	1.3	2.2
HS Region							
Rural	76.3	5.4	7	6.8	0.7	1.9	3.8
Urban	82.8	3	6.5	5.2	0.4	1.1	1.7
HS Province							
Newfoundland and Labrador	79.4	2.4	12.5	2.5		1	2.4
Prince Edward Island	82.8	2	8.4	3			3.3
Nova Scotia	83.3	3.3	7.6	3.4		1	2.4
New Brunswick	81.3	2.4	7.4	4.9			3
Quebec	77.3	6	7.3	6.2	0.7	1.9	2.1
Ontario	88.1	2.3	3.3	4.5		0.9	1.6
Manitoba	75.6	2.6	10.3	7.4		2.4	2.6
Saskatchewan	76.3	4.7	9.6	5.9	0.6	1.7	2.3
Alberta	73.9	4.6	10.6	6.6	0.8	2	2.5
British Columbia	76.9	2.4	9	7.5			3.5
French Minority Outside Quebec							
French Minority Outside Quebec	85.1	3.5	5			0.5	2.1
All Others	81.2	3.5	6.7	5.6	0.5	1.3	2.2
English Minority in Quebec							
English Minority in Quebec	89.4						3.8
All Others	81.2	3.5	6.7	5.6	0.5	1.3	2.2
Family Type							
Two Parents	82.4	3.2	6.2	5.4	0.5	1.2	2.2
Mother Only	76.9	5	8.1	6.1		1.8	2.1
Father Only	78.5	6.1	9.2	5.6			0.8
Other	71.3	1.8		8.6			4.1
Visible Minority/Immigrant Status							
Non-Visible Minority Born in Canada	79.4	4	7.3	6.1	0.5	1.4	2.4
Visible Minority Born in Canada	92.7		2.4	3		0.9	
Non-Visible Minority Immigrant	83.9		7.2				
Visible Minority Immigrant	93.5		1.8				
Parent/Guardian's Education							
Less Than HS	58.7	8.6	15.2	10.5		3.3	3.9
HS Completed	72.1	7.8	8.5	7.3	0.5	1.5	3.7
Some PSE	78.7	3.5	8.1	5.1		4.1	2
Trade/College	81.3	2.2	7	6.9	0.6	1.2	2.3
University- Below BA Degree	90.9		3.8	3.9			
University- BA	95	0.5	2.1	1.3			0.7
University- Grad	96.3		1.5	1.5			
Other/Unknown	90.6						
Parental Income Level							
$5,000 to $25,000	68.2	9.5	10.8	7.3		1.8	3.5
$25,000 to $50,000	74	4.2	8.7	8.3	1	2	3.1
$50,000 to $75,000	83.4	2.7	5.8	5.1	0.4	1.7	2.3
$75,000 to $100,000	84.7	2.8	5.8	4.9		0.7	1.7
$100,000 and up	93	1.5	3.5	1.2			0.7

Notes: *** indicate cells that are suppressed according to Statistics Canada's rules regarding residual disclosure. Aspirations and barriers are those reported in cycle 4.

	1	2	3	4	5	6	7
	Has Accessed PSE		Has not Accessed PSE				
		Has no PSE Aspirations	Has PSE Aspirations,				
			Has no Barriers	Financial Situation is at Least One Barrier	HS Grades are at Least One Barrier	Motivation is at Least One Barrier	Has Barriers, Other
HS Province (Ontario)							
Newfoundland and Labrador	0.031	-0.016*	0.023	-0.018**	-0.006**	-0.013***	-0.007**
	[0.024]	[0.009]	[0.022]	[0.009]	[0.003]	[0.004]	[0.003]
Prince Edward Island	0.006	0.031*	-0.005	-0.020**	-0.004	-0.005	-0.004
	[0.025]	[0.018]	[0.020]	[0.008]	[0.004]	[0.007]	[0.005]
Nova Scotia	-0.011	0.023	-0.002	-0.001	0.000	-0.003	-0.009***
	[0.024]	[0.016]	[0.019]	[0.011]	[0.006]	[0.007]	[0.002]
New Brunswick	-0.038	0.032*	0.027	-0.003	0.002	-0.014***	-0.009***
	[0.025]	[0.017]	[0.021]	[0.011]	[0.007]	[0.003]	[0.002]
Quebec	-0.072***	0.076***	-0.014	0.017	0.001	-0.000	-0.004
	[0.024]	[0.022]	[0.016]	[0.013]	[0.006]	[0.007]	[0.004]
Manitoba	-0.109***	0.039**	0.055**	0.014	-0.007***	0.010	0.001
	[0.027]	[0.019]	[0.024]	[0.014]	[0.002]	[0.011]	[0.007]
Saskatchewan	-0.094***	0.027*	0.046**	0.009	0.012	0.006	-0.004
	[0.026]	[0.016]	[0.023]	[0.013]	[0.010]	[0.009]	[0.004]
Alberta	-0.126***	0.032*	0.067***	0.032*	0.002	0.004	0.001
	[0.026]	[0.017]	[0.023]	[0.017]	[0.007]	[0.008]	[0.007]
British Columbia	-0.108***	0.025	0.068***	0.015	-0.000	0.003	0.005
	[0.027]	[0.019]	[0.025]	[0.015]	[0.006]	[0.009]	[0.009]
HS Location - Urban (Rural)	0.049***	-0.010	-0.029**	0.003	-0.002	0.002	-0.012***
	[0.016]	[0.009]	[0.012]	[0.009]	[0.004]	[0.005]	[0.003]
Language Minority (Non-Language Minority)							
English Minority In Quebec	0.068*	-0.012	-0.020	-0.052***	0.008	-0.004	-0.002
	[0.038]	[0.021]	[0.035]	[0.004]	[0.014]	[0.010]	[0.008]
French Minority Outside Quebec	0.029	-0.012	0.009	-0.009	-0.011***	-0.005	-0.006**
	[0.033]	[0.013]	[0.031]	[0.013]	[0.001]	[0.007]	[0.003]
Family Type (Two parents)							
Mother only	-0.035	0.006	-0.003	0.030	-0.001	0.010	0.004
	[0.027]	[0.015]	[0.019]	[0.018]	[0.006]	[0.011]	[0.006]
Father only	0.003	-0.015	-0.006	0.011	0.007	0.005	0.014
	[0.041]	[0.021]	[0.032]	[0.023]	[0.011]	[0.015]	[0.018]
Other	-0.049	0.005	-0.046	-0.000	0.084**	-0.008	0.028
	[0.068]	[0.042]	[0.034]	[0.025]	[0.039]	[0.010]	[0.025]
Visible Minority/Immigrant Status (Non-Visible Minority Born in Canada)							
Visible Minority Born in Canada	0.141***	-0.054***	-0.056**	-0.018	-0.009***	-0.012***	-0.001
	[0.028]	[0.013]	[0.023]	[0.014]	[0.002]	[0.004]	[0.006]
Non-Visible Minority Immigrant	0.021	-0.052***	-0.002	-0.004	0.011	0.023	-0.005
	[0.053]	[0.013]	[0.050]	[0.023]	[0.017]	[0.036]	[0.005]
Visible Minority Immigrant	0.169***	-0.057***	-0.063***	-0.028**	-0.012***	-0.011	-0.006
	[0.032]	[0.020]	[0.022]	[0.014]	[0.001]	[0.008]	[0.004]

Continued on Next Page

	1	2	3	4	5	6	7
	Has Accessed PSE		Has not Accessed PSE				
		Has no PSE Aspirations	Has PSE Aspirations,				
			Has no Barriers	Financial Situation is at Least One Barrier	HS Grades are at Least One Barrier	Motivation is at Least One Barrier	Has Barriers, Other
Parental Education (HS Completed)							
Less Than HS	-0.185***	0.103***	0.036	0.051**	0.005	0.007	-0.006
	[0.034]	[0.031]	[0.029]	[0.024]	[0.006]	[0.014]	[0.006]
Some PSE	0.069**	-0.051***	-0.010	-0.006	0.007	-0.002	-0.010**
	[0.032]	[0.015]	[0.027]	[0.015]	[0.008]	[0.012]	[0.005]
Trade/College	0.062***	-0.032***	-0.013	0.000	0.003	-0.011**	-0.009***
	[0.021]	[0.010]	[0.017]	[0.010]	[0.005]	[0.006]	[0.003]
University-Below BA	0.148***	-0.019	-0.098***	-0.021	0.013	-0.024***	-0.009
	[0.037]	[0.026]	[0.020]	[0.017]	[0.016]	[0.005]	[0.008]
University-BA	0.200***	-0.076***	-0.091***	-0.016	-0.001	-0.012*	-0.004
	[0.020]	[0.007]	[0.013]	[0.012]	[0.005]	[0.007]	[0.007]
University-Grad	0.290***	-0.091***	-0.125***	-0.050***	0.007	-0.024***	-0.016***
	[0.019]	[0.008]	[0.014]	[0.004]	[0.012]	[0.003]	[0.002]
Other/unknown	-0.239	0.408*	-0.070	-0.057***	-0.008***	-0.028***	-0.016***
	[0.216]	[0.245]	[0.077]	[0.004]	[0.001]	[0.003]	[0.002]
Family Income ($50 000 to $75 000)							
$5 000 to $25 000	-0.011	0.003	-0.010	-0.008	0.009	0.020	0.001
	[0.031]	[0.018]	[0.023]	[0.015]	[0.010]	[0.019]	[0.006]
$25 000 to $50 000	0.001	0.015	-0.022*	0.004	-0.003	0.012	0.002
	[0.019]	[0.013]	[0.013]	[0.010]	[0.003]	[0.010]	[0.006]
$75 000 to $100 000	0.049***	-0.027***	-0.013	-0.015*	-0.008***	0.025*	-0.001
	[0.019]	[0.010]	[0.015]	[0.009]	[0.002]	[0.014]	[0.005]
$100 000 and up	0.082***	-0.006	-0.041***	-0.024***	-0.001	-0.002	-0.010***
	[0.021]	[0.015]	[0.015]	[0.009]	[0.006]	[0.008]	[0.001]
Observations				7883			

Notes: Average marginal effects are shown. Omitted categories are in parenthesis. Standard errors are in brackets. *** $p<0.01$, ** $p<0.05$, * $p<0.1$ This table shows the results of four separate models, each of which has a five category dependant variable. Each five category dependant variable includes the categories of columns 1 to 3, one of the barrier categories of columns 4-7, and a category not shown which includes students with a barrier other than the one specified. Because the same sample was used to run all models, the marginal effects of columns 1 to 3 were the same in all four models.

Appendix Table 5: Multinomial Logit Estimates of Barriers to PSE, Females

	1	2	3	4	5	6	7
	Has Accessed PSE			Has not Accessed PSE			
		Has no PSE aspirations		Has PSE Aspirations,			
			Has no Barriers	Financial Situation is at Least One Barrier	HS Grades are at Least One Barrier	Motivation is at Least One Barrier	Has Barriers, Other
HS Province (Ontario)							
Newfoundland and Labrador	-0.012	-0.013**	0.063***	-0.036***	-0.001	-0.004	-0.007
	[0.022]	[0.006]	[0.021]	[0.005]	[0.001]	[0.004]	[0.005]
Prince Edward Island	-0.008	-0.011	0.038**	-0.028***	0.001	-0.006	0.006
	[0.021]	[0.007]	[0.017]	[0.007]	[0.004]	[0.004]	[0.010]
Nova Scotia	-0.009	0.002	0.033**	-0.025***	-0.001	-0.002	-0.002
	[0.020]	[0.010]	[0.017]	[0.008]	[0.001]	[0.005]	[0.007]
New Brunswick	-0.031	-0.008	0.036**	-0.011	0.004	-0.002	0.003
	[0.021]	[0.007]	[0.017]	[0.010]	[0.007]	[0.005]	[0.008]
Quebec	-0.049**	0.020	0.025*	0.002	0.004	0.007	-0.003
	[0.020]	[0.014]	[0.014]	[0.012]	[0.006]	[0.008]	[0.006]
Manitoba	-0.085***	-0.003	0.060***	0.016	-0.000	0.009	0.002
	[0.026]	[0.009]	[0.021]	[0.016]	[0.002]	[0.010]	[0.009]
Saskatchewan	-0.062***	0.010	0.049***	-0.006	0.003	0.004	-0.003
	[0.023]	[0.013]	[0.018]	[0.012]	[0.005]	[0.007]	[0.006]
Alberta	-0.132***	0.019	0.071***	0.018	0.008	0.009	0.006
	[0.026]	[0.015]	[0.022]	[0.016]	[0.011]	[0.010]	[0.010]
British Columbia	-0.120***	0.005	0.060***	0.031*	0.005	-0.003	0.025
	[0.026]	[0.013]	[0.020]	[0.018]	[0.008]	[0.005]	[0.015]
HS Location - Urban (Rural)	-0.006	-0.009	0.024***	0.000	-0.002	-0.003	-0.012***
	[0.014]	[0.007]	[0.009]	[0.009]	[0.002]	[0.004]	[0.005]
Language Minority (Non-Language Minority)							
English Minority In Quebec	0.052	-0.005	-0.044***	-0.057***	-0.005***	-0.000	0.052
	[0.037]	[0.017]	[0.014]	[0.003]	[0.001]	[0.012]	[0.032]
French Minority Outside Quebec	0.043*	0.000	-0.015	-0.015	-0.005***	-0.008**	-0.006
	[0.025]	[0.017]	[0.019]	[0.012]	[0.001]	[0.003]	[0.007]
Family Type (Two parents)							
Mother only	0.024	-0.002	-0.005	-0.014	-0.003	0.003	-0.009**
	[0.016]	[0.009]	[0.011]	[0.010]	[0.002]	[0.007]	[0.005]
Father only	0.021	0.009	0.008	-0.012	-0.005***	-0.009**	-0.018***
	[0.035]	[0.019]	[0.027]	[0.017]	[0.001]	[0.004]	[0.004]
Other	-0.041	-0.017	0.011	0.014	-0.005***	0.019	0.011
	[0.054]	[0.015]	[0.031]	[0.038]	[0.001]	[0.017]	[0.020]
Visible Minority/Immigrant Status (Non-Visible Minority Born in Canada)							
Visible Minority Born in Canada	0.130***	-0.031***	-0.049***	-0.032***	-0.002	-0.003	-0.017***
	[0.013]	[0.004]	[0.007]	[0.009]	[0.002]	[0.006]	[0.004]
Non-Visible Minority Immigrant	0.000	0.018	0.020	-0.044***	-0.004***	-0.009**	0.012
	[0.042]	[0.035]	[0.032]	[0.009]	[0.001]	[0.004]	[0.020]
Visible Minority Immigrant	0.129***	-0.029***	-0.051***	-0.038***	-0.005***	0.005	-0.018***
	[0.020]	[0.007]	[0.009]	[0.011]	[0.001]	[0.014]	[0.004]

Continued on Next Page

	1	2	3	4	5	6	7
	Has Accessed PSE		Has not Accessed PSE				
		Has no PSE Aspirations	Has PSE Aspirations,				
			Has no Barriers	Financial Situation is at Least One Barrier	HS Grades are at Least One Barrier	Motivation is at Least One Barrier	Has Barriers, Other
Parental Education (HS Completed)							
Less Than HS	-0.110***	-0.003	0.062**	0.027	0.003	0.014	-0.001
	[0.031]	[0.016]	[0.025]	[0.018]	[0.005]	[0.011]	[0.011]
Some PSE	0.055*	-0.034***	-0.008	-0.015	-0.001	0.029	-0.017**
	[0.028]	[0.013]	[0.017]	[0.014]	[0.003]	[0.019]	[0.007]
Trade/College	0.082***	-0.049***	-0.018*	0.002	-0.000	-0.002	-0.013**
	[0.016]	[0.006]	[0.009]	[0.011]	[0.002]	[0.004]	[0.005]
University-Below BA	0.157***	-0.066***	-0.043***	-0.019	-0.002	-0.011***	-0.028***
	[0.022]	[0.007]	[0.014]	[0.016]	[0.002]	[0.002]	[0.006]
University-BA	0.199***	-0.064***	-0.061***	-0.047***	0.003	-0.011***	-0.026***
	[0.010]	[0.006]	[0.005]	[0.005]	[0.006]	[0.002]	[0.004]
University-Grad	0.205***	-0.069***	-0.066***	-0.039***	-0.004***	-0.012***	-0.028***
	[0.015]	[0.007]	[0.007]	[0.011]	[0.001]	[0.002]	[0.005]
Other/unknown	0.157**	-0.071***	0.018	-0.063***	-0.004***	-0.013***	-0.035***
	[0.078]	[0.008]	[0.078]	[0.004]	[0.001]	[0.002]	[0.004]
Family Income ($50 000 to $75 000)							
$5 000 to $25 000	-0.119***	0.054**	0.030	0.033	-0.002	-0.005	0.016
	[0.028]	[0.023]	[0.019]	[0.021]	[0.002]	[0.004]	[0.013]
$25 000 to $50 000	-0.076***	0.010	0.020*	0.035**	0.008	-0.001	0.007
	[0.019]	[0.011]	[0.012]	[0.014]	[0.007]	[0.004]	[0.008]
$75 000 to $100 000	-0.016	0.014	0.010	0.003	-0.003*	-0.006*	-0.003
	[0.020]	[0.015]	[0.013]	[0.012]	[0.001]	[0.003]	[0.007]
$100 000 and up	0.056***	0.005	-0.005	-0.036***	-0.004***	-0.011***	-0.012**
	[0.019]	[0.013]	[0.015]	[0.007]	[0.001]	[0.003]	[0.006]
Observations				8238			

Notes: Average marginal effects are shown. Omitted categories are in parenthesis. Standard errors are in brackets. *** p<0.01, ** p<0.05, * p<0.1 This table shows the results of four separate models, each of which has a five category dependant variable. Each five category dependant variable includes the categories of columns 1 to 3, one of the barrier categories of columns 4-7, and a category not shown which includes students with a barrier other than the one specified. Because the same sample was used to run all models, the marginal effects of columns 1 to 3 were the same in all four models.

	1	2	3	4	5	6	7
	Has Accessed PSE	Has not Accessed PSE					
		Has no PSE Aspirations	Has PSE Aspirations,				
			Has no Barriers	Financial Situation is at Least One Barrier	HS Grades are at Least One Barrier	Motivation is at Least One Barrier	Has Barriers, Other
Female (Male)	0.129***	-0.048***	-0.080***	0.000	-0.006***	-0.007***	0.013***
	[0.008]	[0.003]	[0.004]	[0.005]	[0.001]	[0.003]	[0.004]
HS Province (Ontario)							
Newfoundland and Labrador	-0.001	-0.012**	0.053***	-0.028***	-0.003**	-0.009***	-0.008***
	[0.017]	[0.006]	[0.016]	[0.005]	[0.002]	[0.003]	[0.003]
Prince Edward Island	-0.007	0.012	0.021	-0.024***	-0.001	-0.007*	-0.000
	[0.016]	[0.010]	[0.013]	[0.006]	[0.003]	[0.004]	[0.005]
Nova Scotia	-0.015	0.015	0.019	-0.014**	-0.000	-0.003	-0.006
	[0.016]	[0.010]	[0.013]	[0.007]	[0.003]	[0.004]	[0.004]
New Brunswick	-0.040**	0.013	0.035**	-0.007	0.003	-0.009***	-0.003
	[0.016]	[0.010]	[0.014]	[0.008]	[0.004]	[0.003]	[0.004]
Quebec	-0.064***	0.051***	0.007	0.009	0.003	0.002	-0.004
	[0.016]	[0.014]	[0.010]	[0.009]	[0.004]	[0.005]	[0.003]
Manitoba	-0.098***	0.017*	0.059***	0.015	-0.004**	0.010	0.001
	[0.019]	[0.011]	[0.016]	[0.011]	[0.001]	[0.007]	[0.006]
Saskatchewan	-0.085***	0.022**	0.052***	0.001	0.007	0.004	-0.004
	[0.018]	[0.011]	[0.015]	[0.009]	[0.005]	[0.006]	[0.004]
Alberta	-0.131***	0.025**	0.072***	0.026**	0.004	0.006	0.003
	[0.018]	[0.011]	[0.016]	[0.012]	[0.004]	[0.006]	[0.006]
British Columbia	-0.113***	0.013	0.067***	0.023*	0.002	-0.001	0.013
	[0.019]	[0.011]	[0.016]	[0.012]	[0.004]	[0.005]	[0.009]
HS Location - Urban (Rural)	0.025**	-0.011*	-0.005	0.002	-0.002	-0.000	-0.012***
	[0.011]	[0.006]	[0.008]	[0.006]	[0.002]	[0.003]	[0.003]
Language Minority (Non-Language Minority)							
English Minority In Quebec	0.066***	-0.011	-0.033*	-0.054***	0.001	-0.001	0.021
	[0.025]	[0.013]	[0.019]	[0.002]	[0.006]	[0.009]	[0.015]
French Minority Outside Quebec	0.038*	-0.005	-0.004	-0.013	-0.008***	-0.008**	-0.006
	[0.020]	[0.011]	[0.018]	[0.009]	[0.001]	[0.003]	[0.004]
Family Type (Two parents)							
Mother only	-0.010	0.012	0.001	-0.002	-0.001	0.004	-0.004
	[0.016]	[0.010]	[0.012]	[0.008]	[0.003]	[0.006]	[0.003]
Father only	0.011	0.000	0.002	-0.003	0.002	-0.003	-0.003
	[0.028]	[0.015]	[0.022]	[0.014]	[0.006]	[0.008]	[0.008]
Other	-0.045	0.000	-0.019	0.002	0.043**	0.002	0.018
	[0.045]	[0.025]	[0.023]	[0.021]	[0.022]	[0.010]	[0.017]
Visible Minority/Immigrant Status (Non-Visible Minority Born in Canada)							
Visible Minority Born in Canada	0.140***	-0.043***	-0.054***	-0.027***	-0.005***	-0.008**	-0.010***
	[0.015]	[0.007]	[0.012]	[0.008]	[0.002]	[0.003]	[0.003]
Non-Visible Minority Immigrant	0.020	-0.019	0.004	-0.028**	0.007	0.007	0.001
	[0.033]	[0.018]	[0.029]	[0.011]	[0.010]	[0.020]	[0.009]
Visible Minority Immigrant	0.154***	-0.042***	-0.059***	-0.036***	-0.008***	-0.005	-0.013***
	[0.019]	[0.011]	[0.012]	[0.008]	[0.001]	[0.007]	[0.003]
Parental Education (Years)	0.040***	-0.013***	-0.015***	-0.007***	-0.001	-0.003***	-0.002***
	[0.002]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
Family Income ($1,000)	0.010***	-0.001	-0.000	-0.006***	-0.001	-0.001*	-0.002***
	[0.002]	[0.001]	[0.002]	[0.001]	[0.001]	[0.000]	[0.001]
Observations				16121			

Notes: Average marginal effects are shown. Omitted categories are in parenthesis. Standard errors are in brackets. *** p<0.01, ** p<0.05, * p<0.1 This table shows the results of four separate models, each of which has a five category dependant variable. Each five category dependant variable includes the categories of columns 1 to 3, one of the barrier categories of columns 4-7, and a category not shown which includes students with a barrier other than the one specified. Because the same sample was used to run all models, the marginal effects of columns 1 to 3 were the same in all four models.

Appendix Table 7: Multinomial Logit Estimates of Barriers to PSE - Linear Parental Education Family Income, Males

	1	2	3	4	5	6	7
	Has Accessed PSE	Has not Accessed PSE					
		Has no PSE Aspirations	Has PSE Aspirations,				
			Has no Barriers	Financial Situation is at Least One Barrier	HS Grades are at Least One Barrier	Motivation is at Least One Barrier	Has Barriers, Other
HS Province (Ontario)							
Newfoundland and Labrador	0.023	-0.013	0.029	-0.018**	-0.005*	-0.014***	-0.008**
	[0.025]	[0.010]	[0.023]	[0.009]	[0.003]	[0.004]	[0.003]
Prince Edward Island	-0.001	0.037*	-0.003	-0.021**	-0.003	-0.007	-0.005
	[0.026]	[0.019]	[0.020]	[0.008]	[0.004]	[0.007]	[0.005]
Nova Scotia	-0.017	0.029*	-0.000	-0.002	0.001	-0.005	-0.009***
	[0.024]	[0.017]	[0.019]	[0.011]	[0.006]	[0.007]	[0.002]
New Brunswick	-0.045*	0.034**	0.033	-0.004	0.002	-0.015***	-0.009***
	[0.025]	[0.017]	[0.022]	[0.011]	[0.007]	[0.003]	[0.002]
Quebec	-0.077***	0.083***	-0.014	0.017	0.002	-0.003	-0.005
	[0.024]	[0.023]	[0.016]	[0.013]	[0.006]	[0.007]	[0.004]
Manitoba	-0.109***	0.039**	0.055**	0.014	-0.007***	0.009	0.001
	[0.027]	[0.019]	[0.024]	[0.014]	[0.002]	[0.011]	[0.007]
Saskatchewan	-0.101***	0.032*	0.049**	0.009	0.013	0.005	-0.005
	[0.026]	[0.017]	[0.023]	[0.013]	[0.011]	[0.009]	[0.004]
Alberta	-0.128***	0.030*	0.070***	0.034**	0.002	0.003	-0.000
	[0.026]	[0.017]	[0.024]	[0.017]	[0.006]	[0.008]	[0.007]
British Columbia	-0.107***	0.022	0.071***	0.014	-0.000	0.003	0.003
	[0.027]	[0.018]	[0.025]	[0.015]	[0.006]	[0.009]	[0.008]
HS Location - Urban (Rural)	0.056***	-0.013	-0.033***	0.003	-0.002	0.003	-0.012***
	[0.016]	[0.009]	[0.012]	[0.009]	[0.004]	[0.005]	[0.003]
Language Minority (Non-Language Minority)							
English Minority In Quebec	0.071*	-0.016	-0.020	-0.052***	0.006	-0.002	-0.001
	[0.038]	[0.020]	[0.035]	[0.004]	[0.012]	[0.010]	[0.009]
French Minority Outside Quebec	0.032	-0.010	0.006	-0.011	-0.011***	-0.006	-0.006**
	[0.032]	[0.014]	[0.030]	[0.013]	[0.001]	[0.007]	[0.003]
Family Type (Two parents)							
Mother only	-0.039	0.019	-0.004	0.018	0.002	0.009	0.002
	[0.026]	[0.017]	[0.019]	[0.015]	[0.006]	[0.010]	[0.005]
Father only	0.007	-0.010	-0.011	0.006	0.011	0.004	0.010
	[0.042]	[0.022]	[0.031]	[0.021]	[0.013]	[0.015]	[0.015]
Other	-0.045	0.010	-0.051	-0.007	0.097**	-0.009	0.022
	[0.071]	[0.045]	[0.033]	[0.023]	[0.044]	[0.010]	[0.023]
Visible Minority/Immigrant Status (Non-Visible Minority Born in Canada)							
Visible Minority Born in Canada	0.143***	-0.054***	-0.057**	-0.019	-0.009***	-0.012***	-0.000
	[0.028]	[0.013]	[0.023]	[0.014]	[0.002]	[0.004]	[0.007]
Non-Visible Minority Immigrant	0.022	-0.053***	-0.006	-0.009	0.017	0.023	-0.006
	[0.055]	[0.014]	[0.049]	[0.021]	[0.021]	[0.037]	[0.004]
Visible Minority Immigrant	0.173***	-0.055***	-0.066***	-0.031**	-0.012***	-0.011	-0.007
	[0.032]	[0.020]	[0.022]	[0.013]	[0.002]	[0.008]	[0.004]
Parental Education (Years)	0.046***	-0.018***	-0.017***	-0.008***	-0.000	-0.003***	-0.001
	[0.003]	[0.002]	[0.002]	[0.002]	[0.001]	[0.001]	[0.001]
Family Income ($1,000)	0.007***	-0.001	-0.000	-0.004***	-0.000	-0.001	-0.001
	[0.002]	[0.001]	[0.002]	[0.001]	[0.001]	[0.001]	[0.001]
Observations				7883			

Notes: Average marginal effects are shown. Omitted categories are in parenthesis. Standard errors are in brackets. *** p<0.01, ** p<0.05, * p<0.1 This table shows the results of four separate models, each of which has a five category dependant variable. Each five category dependant variable includes the categories of columns 1 to 3, one of the barrier categories of columns 4-7, and a category not shown which includes students with a barrier other than the one specified. Because the same sample was used to run all models, the marginal effects of columns 1 to 3 were the same in all four models.

Appendix Table 8: Multinomial Logit Estimates of Barriers to PSE - Linear Parental Education Family Income, Females

	1	2	3	4	5	6	7
	Has Accessed PSE	Has no PSE Aspirations	Has not Accessed PSE — Has PSE Aspirations,				
			Has no Barriers	Financial Situation is at Least One Barrier	HS Grades are at Least One Barrier	Motivation is at Least One Barrier	Has Barriers, Other
HS Province (Ontario)							
Newfoundland and Labrador	-0.017	-0.014**	0.071***	-0.037***	-0.001	-0.005	-0.008*
	[0.024]	[0.006]	[0.023]	[0.005]	[0.001]	[0.004]	[0.005]
Prince Edward Island	-0.009	-0.012*	0.041**	-0.029***	0.002	-0.006*	0.005
	[0.021]	[0.007]	[0.018]	[0.007]	[0.004]	[0.004]	[0.010]
Nova Scotia	-0.009	0.000	0.037**	-0.026***	-0.001	-0.002	-0.002
	[0.020]	[0.010]	[0.017]	[0.007]	[0.001]	[0.005]	[0.007]
New Brunswick	-0.034	-0.009	0.040**	-0.012	0.004	-0.003	0.002
	[0.022]	[0.008]	[0.018]	[0.010]	[0.007]	[0.005]	[0.008]
Quebec	-0.046**	0.018	0.026*	-0.000	0.004	0.005	-0.004
	[0.021]	[0.014]	[0.014]	[0.012]	[0.007]	[0.008]	[0.006]
Manitoba	-0.083***	-0.005	0.061***	0.014	-0.000	0.011	0.001
	[0.026]	[0.009]	[0.021]	[0.016]	[0.002]	[0.011]	[0.009]
Saskatchewan	-0.064***	0.010	0.053***	-0.007	0.003	0.004	-0.004
	[0.023]	[0.013]	[0.019]	[0.012]	[0.005]	[0.008]	[0.006]
Alberta	-0.133***	0.021	0.071***	0.017	0.007	0.010	0.006
	[0.026]	[0.016]	[0.021]	[0.016]	[0.010]	[0.011]	[0.010]
British Columbia	-0.118***	0.002	0.060***	0.032*	0.005	-0.003	0.023
	[0.026]	[0.013]	[0.020]	[0.018]	[0.009]	[0.005]	[0.015]
HS Location - Urban (Rural)	-0.005	-0.008	0.022**	-0.000	-0.001	-0.004	-0.012**
	[0.014]	[0.007]	[0.009]	[0.009]	[0.002]	[0.004]	[0.005]
Language Minority (Non-Language Minority)							
English Minority In Quebec	0.056	-0.007	-0.045***	-0.057***	-0.005***	0.001	0.049
	[0.035]	[0.016]	[0.014]	[0.003]	[0.001]	[0.012]	[0.031]
French Minority Outside Quebec	0.047*	-0.001	-0.016	-0.015	-0.005***	-0.009***	-0.006
	[0.025]	[0.016]	[0.019]	[0.013]	[0.001]	[0.003]	[0.007]
Family Type (Two parents)							
Mother only	0.022	0.002	0.003	-0.020**	-0.004**	0.000	-0.011**
	[0.019]	[0.010]	[0.014]	[0.009]	[0.002]	[0.006]	[0.004]
Father only	0.020	0.009	0.013	-0.016	-0.006***	-0.009**	-0.019***
	[0.038]	[0.020]	[0.029]	[0.016]	[0.001]	[0.004]	[0.003]
Other	-0.043	-0.016	0.018	0.012	-0.006***	0.020	0.010
	[0.056]	[0.015]	[0.033]	[0.038]	[0.001]	[0.019]	[0.020]
Visible Minority/Immigrant Status (Non-Visible Minority Born in Canada)							
Visible Minority Born in Canada	0.133***	-0.031***	-0.049***	-0.034***	-0.002	-0.003	-0.018***
	[0.012]	[0.004]	[0.007]	[0.008]	[0.003]	[0.005]	[0.004]
Non-Visible Minority Immigrant	0.014	0.011	0.017	-0.046***	-0.004***	-0.009**	0.008
	[0.037]	[0.029]	[0.031]	[0.008]	[0.001]	[0.004]	[0.018]
Visible Minority Immigrant	0.134***	-0.029***	-0.049***	-0.042***	-0.005***	0.002	-0.019***
	[0.019]	[0.007]	[0.010]	[0.010]	[0.001]	[0.012]	[0.003]
Parental Education (Years)	0.033***	-0.008***	-0.013***	-0.007***	-0.000	-0.003***	-0.003***
	[0.003]	[0.001]	[0.002]	[0.002]	[0.000]	[0.001]	[0.001]
Family Income ($1,000)	0.015***	-0.002	-0.001	-0.008***	-0.001***	-0.001*	-0.003***
	[0.004]	[0.002]	[0.003]	[0.002]	[0.000]	[0.001]	[0.001]
Observations			8237				

Notes: Average marginal effects are shown. Omitted categories are in parenthesis. Standard errors are in brackets. *** p<0.01, ** p<0.05, * p<0.1 This table shows the results of four separate models, each of which has a five category dependant variable. Each five category dependant variable includes the categories of columns 1 to 3, one of the barrier categories of columns 4-7, and a category not shown which includes students with a barrier other than the one specified. Because the same sample was used to run all models, the marginal effects of columns 1 to 3 were the same in all four models.

Figure 1: Parental Income, Parental Education and University Access

University Access by Family Income, over Parental Education
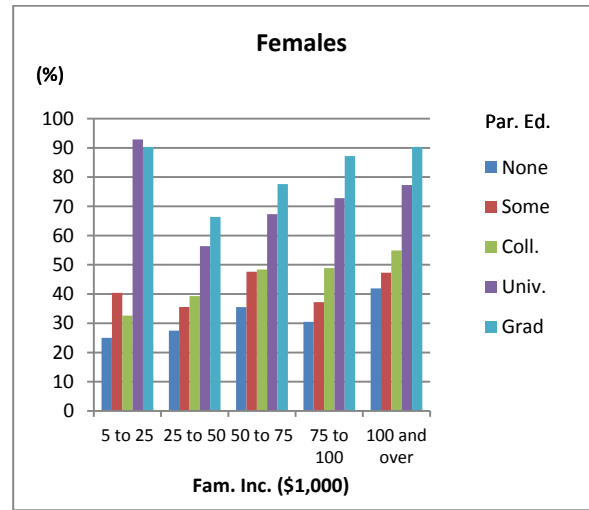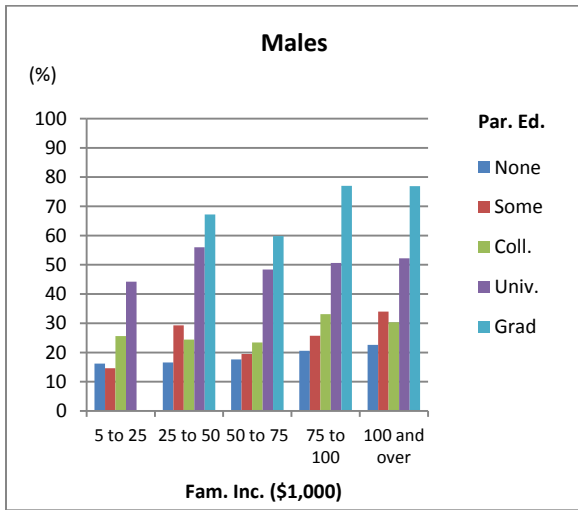
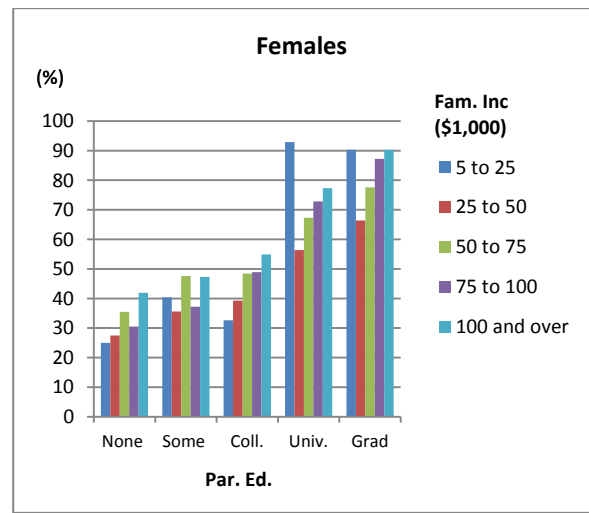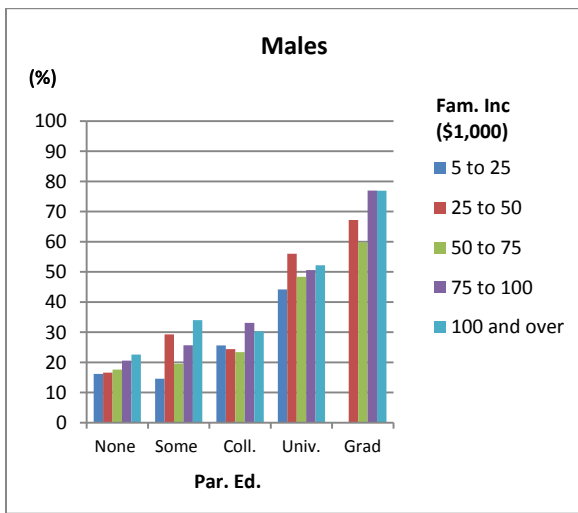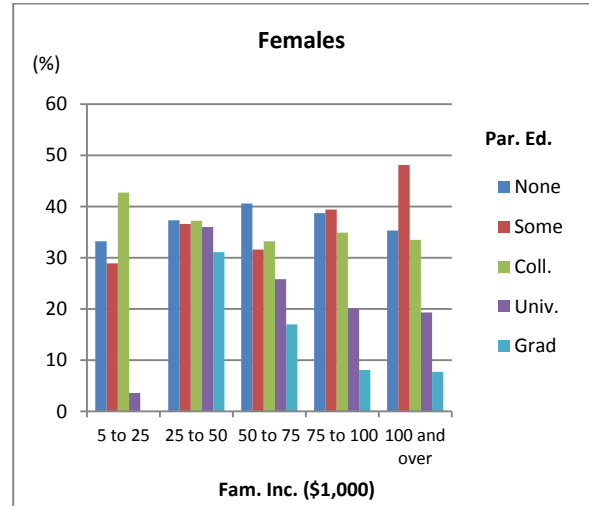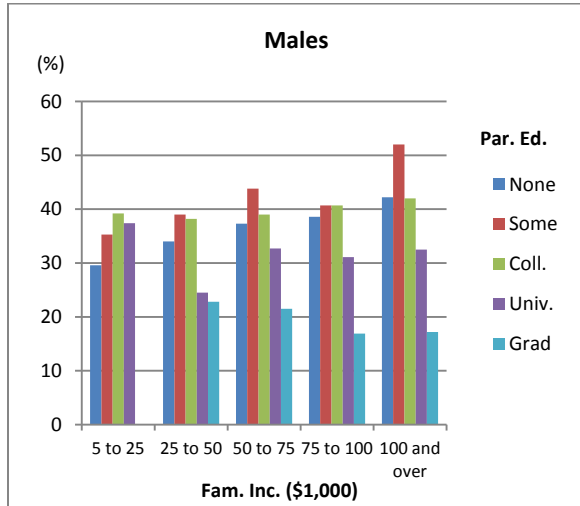University Access by Parental Education, over Family Income

Figure 2: Parental Income, Parental Education and College Access

College Access by Family Income, over Parental Education

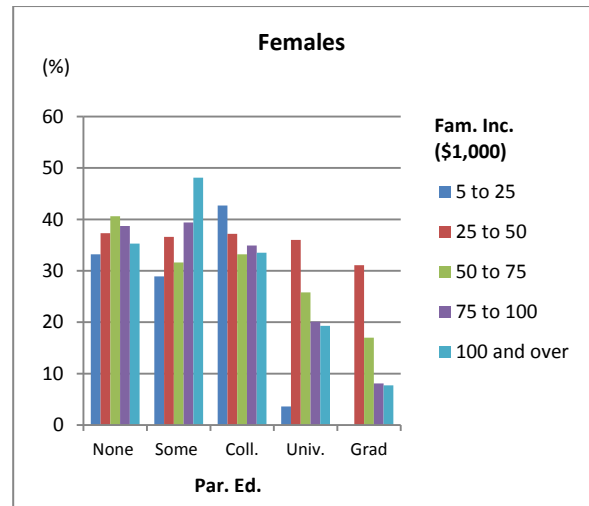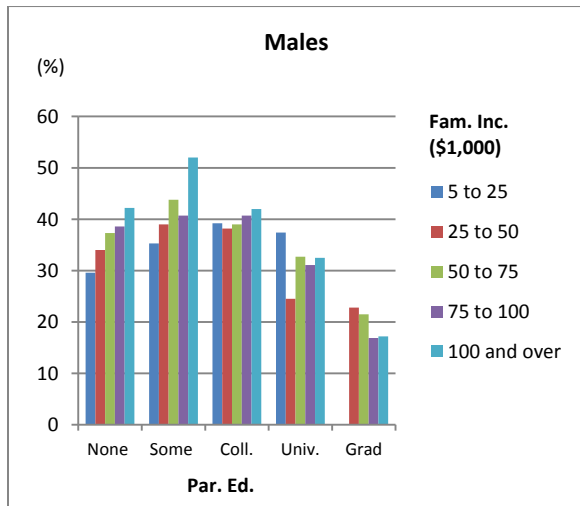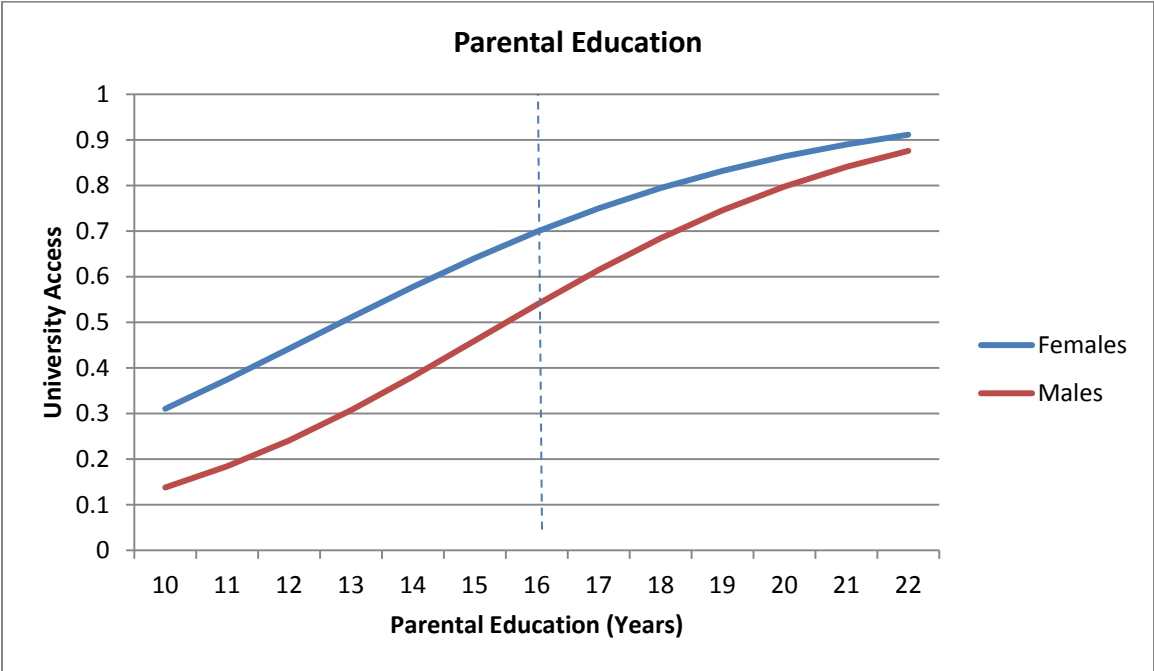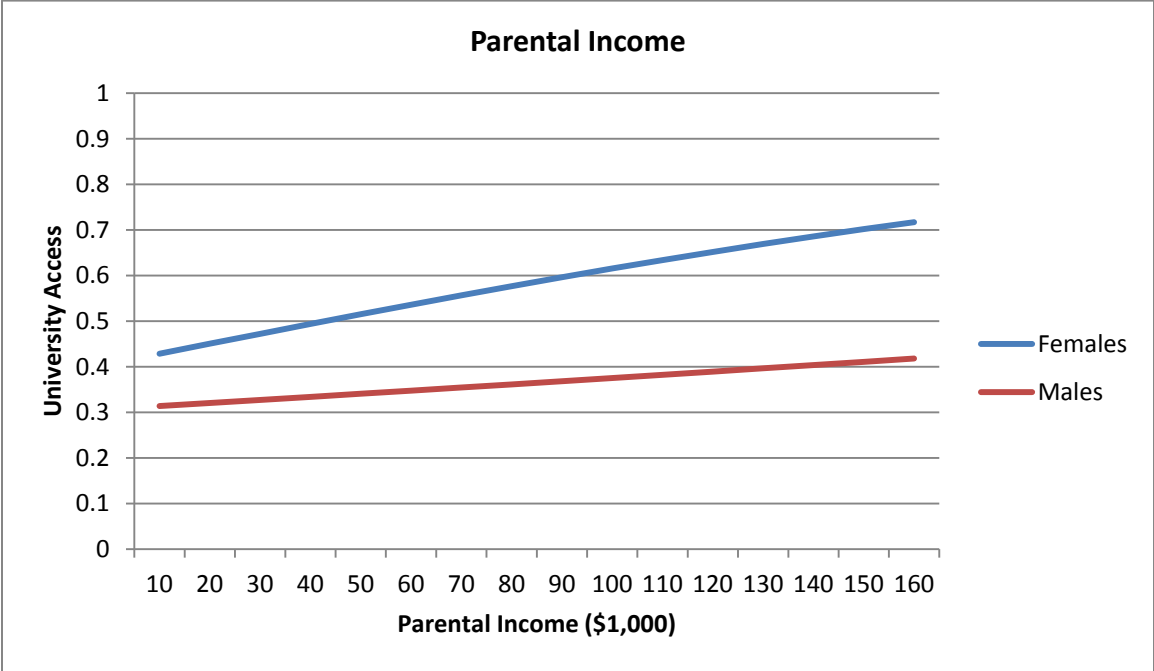University Access by Parental Education, over Family Income

Figure 3: Access to University Fitted Values – Parental Income and Parental Education
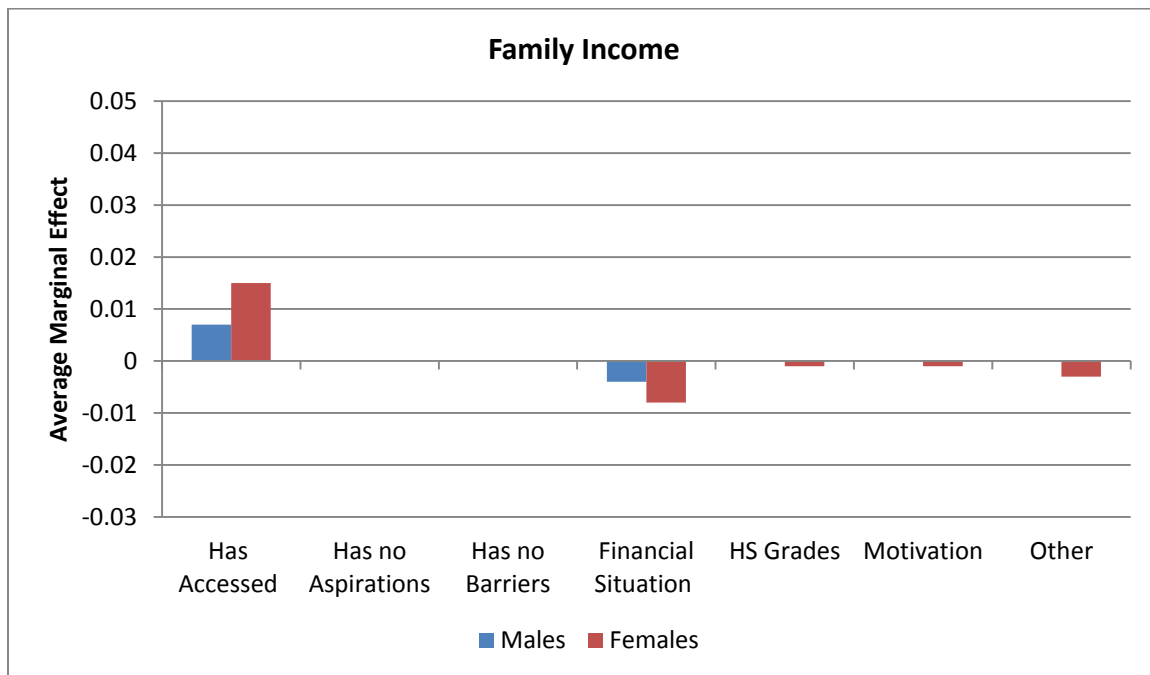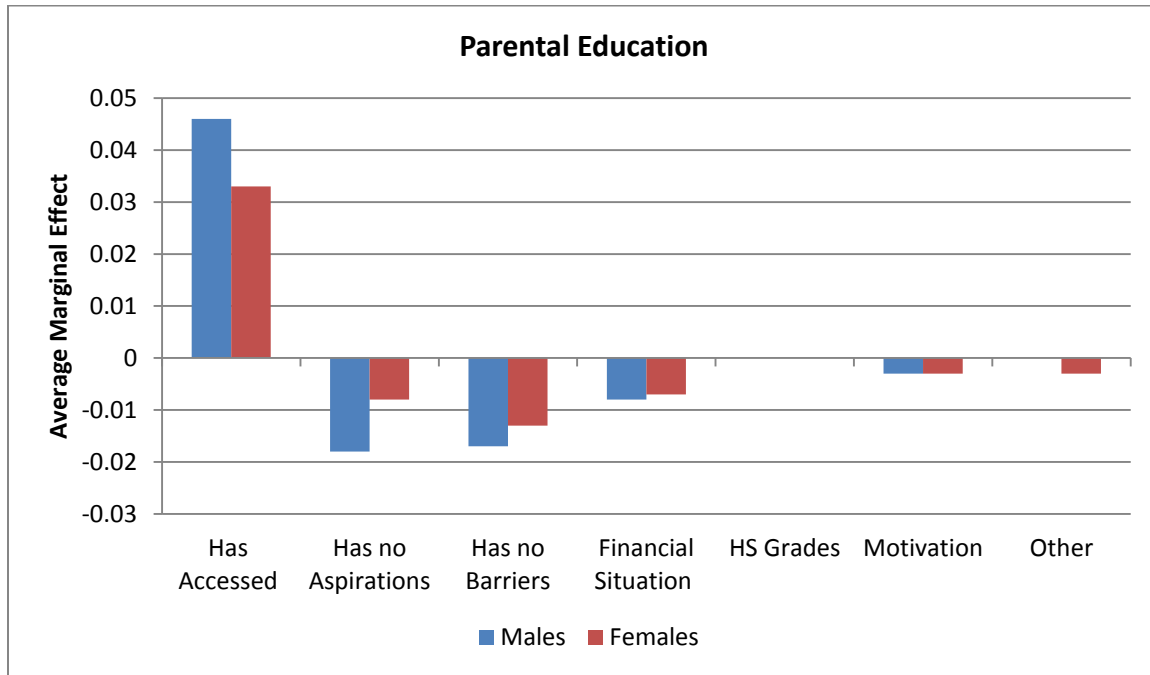

Note: Predicted probabilities are calculated at the gender-specific means for all variables except the variable treated in each graph. See the text for further details

Figure 4: Barriers by Cycle
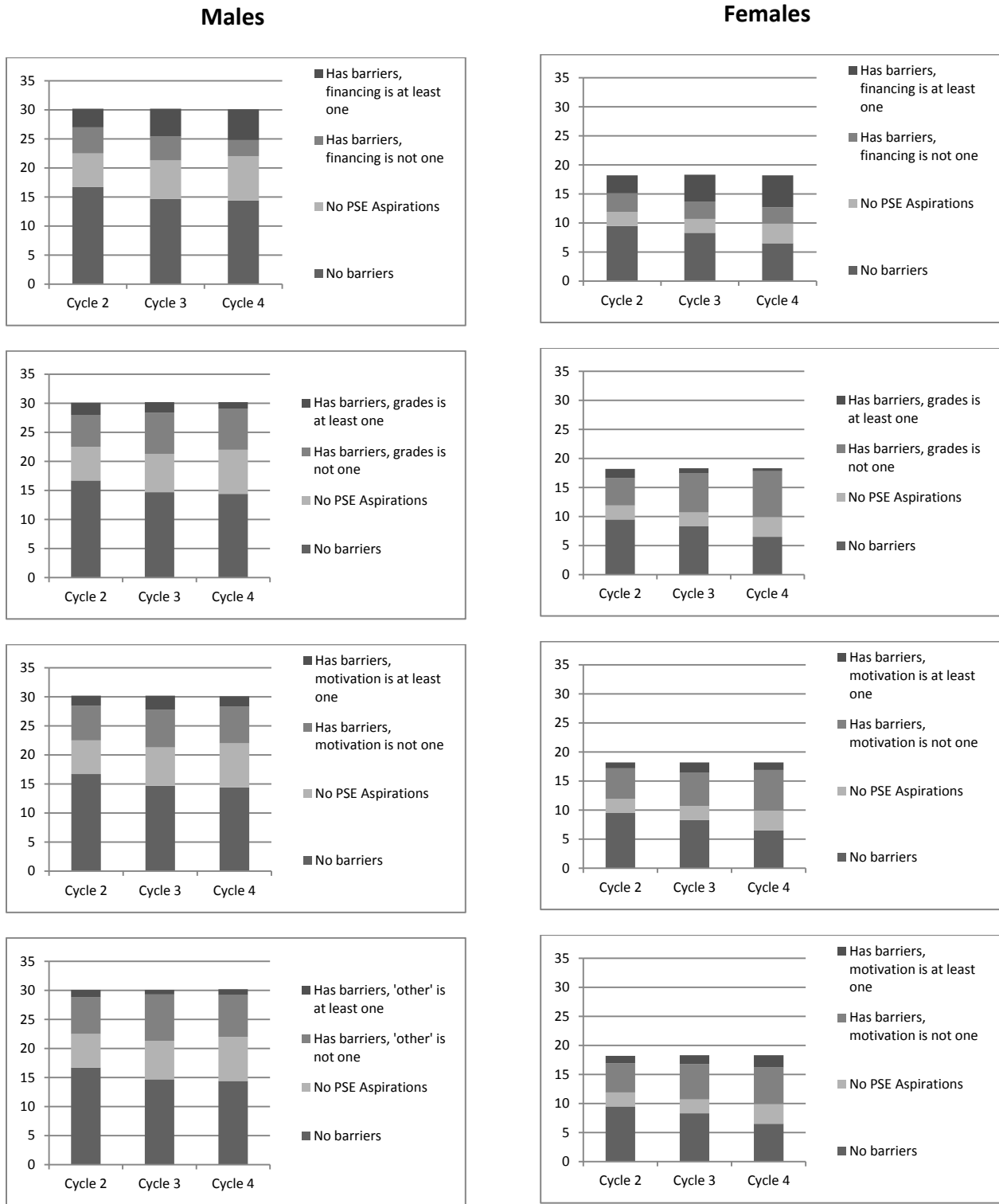
Males

Females

Note: Proportions are 'proportions of all students.' The proportions that do access PSE by cycle 4 (69.9 percent of males and 81.8 percent of females) are implicit in the above figures. All students with missing information in any year are dropped, therefore the proportions who access PSE are not exactly the same as those reported in Table 1 – but they are very close.

Figure 5: Average Marginal Effects of Parental Education and Family Income on Probability of Barriers – by Gender

Source: Appendix Tables 7 and 8.