CSSHE
SCÉES

Canadian Journal of Higher Education
Revue canadienne d'enseignement supérieur
Volume 45, No. 2, 2015, pages 229 - 262

Access and Barriers to Postsecondary Education: Evidence from the Youth in Transition Survey

Ross Finnie & Andrew Wismer
University of Ottawa

Richard E. Mueller
University of Lethbridge

Abstract

We exploit the Youth in Transition Survey, Cohort A, to investigate access and barriers to postsecondary education (PSE). We first look at how access to PSE by age 21 is related to family characteristics, including family income and parental education. We find that the effects of the latter significantly dominate those of the former. Among the 25% of all youths who do not access PSE, 23% of this group state that they had no PSE aspirations and 43% report no barriers. Only 22% of the 25% who do not access PSE (or 5.5% of all youths in our sample) claim that "finances" constitute a barrier. Further analysis suggests that affordability *per se* is an issue in only a minority of those cases where finances are cited, suggesting that the real problem for the majority of those reporting financial barriers may be that they do not perceive PSE to be of sufficient value to be worth pursuing: "it costs too much" may mean "it is not worth it" rather than "I cannot afford to go." Our general conclusion is that cultural factors are the principal determinants of PSE participation. Policy implications are discussed.

Résumé

Nous avons scruté les données de l'Enquête auprès de jeunes en transition (cohorte A) afin de comprendre les facteurs qui mènent aux études postsecondaires et ceux qui y font obstacle. Pour ce faire, nous avons d'abord analysécomment l'accès aux études à l'âge de 21 ans était lié aux caractéristiques familiales, comme le revenu familial et le niveau de scolarité des parents. Nous avons alors constaté que les effets de cette dernière caractéristique l'emportaient sur le revenu familial. En outre, parmi le quart de tous les jeunes qui n'ont pas eu accès à des études postsecondaires, 23 % ont indiqué

qu'ils n'avaient pas l'intention de poursuivre leurs études, tandis que 43 % ont indiqué qu'aucun obstacle ne les y opposait. À peine 22 % (ou 5,5 % des jeunes de notre échantillon) des jeunes qui ne poursuivent pas leurs études ont indiqué que l'aspect financier constituait un obstacle. Toutefois, une analyse plus poussée a révélé que l'accessibilité financière aux études ne constituait un problème que dans une minorité des cas, ce qui laisse sous-entendre que la majorité de ceux qui ont indiqué se heurter à des obstacles financiers aux études postsecondaires pourrait ne pas considérer celles-ci comme une valeur digne d'intérêt. Par exemple, « cela coûte trop cher » pourrait signifier « cela n'en vaut pas la peine » plutôt que « je ne peux pas me le permettre ». Notre conclusion générale identifie les facteurs culturels, comme les principales caractéristiques menant à la poursuite d'études postsecondaires. Enfin, l'étude aborde également les incidences sur les politiques générales.

Introduction

Public policy makers in Canada, like those all over the world, share a strong interest in postsecondary education (PSE) participation. This interest is motivated by the perception that all countries will need highly educated workforces to compete internationally in the new knowledge-based global economy. In this paper we focus first on who accesses PSE in terms of family characteristics, then on the specific barriers faced by those youths who do not access PSE, and finally on how different barriers are related to family background. For policy purposes, these findings can help us better understand patterns of access and develop policies that could improve access opportunities, including for those groups who are currently underrepresented in PSE.

Much of the research in the area of PSE access has focused on the effects of tuition fees, family income, and other indicators and measures of the affordability of PSE. This focus can be at least partially attributed to the availability of datasets containing the relevant variables; to the conventional wisdom that related policy levers (e.g., the regulation of tuition fees and the provision of student financial aid) can play a role in expanding PSE opportunities; and to the widespread attention financial barriers tend to be given in the mainstream media.

The advent of the Youth in Transition Survey (YITS), however, has allowed for an unprecedented investigation of the factors that determine access to PSE, owing to the rich student, parent, and family background information it includes; the longitudinal nature of the dataset; and its strong focus on education.

The first part of this paper investigates the various financial and non-financial factors related to PSE access, including family income, parental education, family type, visible minority and immigrant status, language, and place of residence (province and urban/rural status). In the second part, we focus on those youths who do not access PSE. Using both descriptive and modelling approaches, we investigate the various barriers students report for not attending PSE, including those relating to their financial situation, academic preparation and performance, and motivation, and we explore the relationships between these reported barriers and students' individual and family characteristics. Finally, in order to further probe the ambiguous "financial situation" barrier, we relate youths' reported barriers to the reasons they give for not having (or applying for) a student loan.

Background

It is not the purpose of this section to conduct a comprehensive review of the literature assessing the factors related to PSE participation. This has recently been done elsewhere within the Canadian context (De Broucker, 2005; Junor & Usher, 2004; Looker, 2001; Looker & Lowe, 2001; Mueller, 2008a, 2008b), as well as the American context (Ehrenberg, 2004; Long 2005). Instead, we focus on the evolution of the literature on access to PSE in Canada and thereby situate the contribution of this paper.

As mentioned, much of the Canadian and international literature has focused on the impact of financial variables such as family income or tuition on access to PSE among young people. The accumulated evidence (e.g., Junor and Usher, 2004) suggests that the demand for PSE is relatively price inelastic, and although access does vary with measures of socioeconomic status (SES), it depends more on family background characteristics such as parental education than it does on family income. Also, evidence (e.g., Finnie & Laporte, 2003; Foley, 2001) suggests that a lack of interest in or desire for PSE is cited by most youths who do not participate in PSE. Among youths who are interested in PSE but have not accessed it, financing is a commonly reported barrier.

Overall, youths from families of higher SES, measured by either family income or parental education, are more likely to participate in PSE, university in particular; are more likely to complete their degrees; and take less time to finish (e.g., Andres & Adamuti-Trache, 2008). Drolet (2005) and Frenette (2005) find that the PSE attendance gap between high- and low-income families is narrowed when colleges and universities are both considered (by now a standard finding), but that students from low-income families are less likely to attend either, especially university. That said, parental education is found to be an even stronger predictor of access to PSE compared to family income in many studies (e.g., Drolet, 2005; Finnie & Mueller, 2008a, 2008b; Knighton & Mirza, 2002; Rahman, Situ, & Jimmo, 2005; 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 provided (e.g., Childs, Finnie, & Mueller, 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 by these students (e.g., Andres, Adamuti-Trache, Yoon, Pidgeon, & Thomsen, 2007; Christofides, Hoy, Li, & Stengos, 2008). Krahn and Andres (1999) provide evidence that low SES high school students have relatively lower educational aspirations and therefore are more likely to be streamed into non-academic high school programs and hence less likely to access and complete PSE.

Tomkowicz and Bushnik (2003) look at the pathways taken by young people following graduation from high school and confirm that entering PSE right away, delaying entry into PSE, or not entering PSE at all are correlated with family background, but also with high school academic variables. Addressing the indirect channels through which parental influences work is also the purpose of a study by Finnie, Lascelles, and Sweetman (2005), which uses the 1991 School Leavers Survey 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 that 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 attenuated when the indirect effects are included, and are strongest for university attendance compared to other types of PSE participation.

Not all Canadian studies on access to PSE include tuition variables, but those that do find that tuition fees matter little in comparison to other variables. For example, Christofides, Cirello, and Hoy (2001) and Corak, Lipps, and Zhao (2003) both use time series data and conclude that tuition has little effect on PSE access overall. Coelli (2009), Johnson and Rahmad (2005), Junor and Usher (2004), Neill (2009), and Rivard and Raymond (2004) Neill (2009), also document the relative insignificance of tuition fees, yet Coelli (2009) provides evidence that tuition increases are likely to have a larger impact on individuals from low-income families compared to others.

Many empirical studies on access to PSE have suffered from data limitations of one sort or another. For instance, researchers who use cross-sectional data lack an ability to relate early student experiences and family characteristics to PSE outcomes in any detail or with much accuracy. Also, a lack of important control variables in many studies can result in biased coefficient estimates. For example, Finnie, Laporte, and Lascelles (2004) use the 1991 School Leavers Survey and a cross-section of the Youth in Transition Survey, Cohort B (YITS-B), a longitudinal survey that began in 2000 and that follows students who both do and do not access PSE; it includes fairly extensive information on youths' background characteristics. They find that participation rates in the 1990s increased most among students whose parents were highly educated, though the increase may be partially explained by the fact that education is strongly correlated with income, which was not controlled for. This correlation is particularly important when considering PSE access in the 1990s, a period of rapid tuition increases in most jurisdictions throughout Canada.

Attempting to overcome the omitted-variable bias problem, Rivard and Raymond (2004) address high school to PSE transitions using the YITS-B along with other data sources used to approximate measures of tuition and family earnings. They too 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.

The limitations of the YITS-B dataset (i.e., limited background variables and unreliable family income information) are improved upon with the Youth in Transition Survey, Cohort A (YITS-A), which follows youths from age 15 to 25. In all cycles of the YITS-A, students themselves are interviewed. In the first cycle, parents and high school administrators are also interviewed and provide valuable background information about the students.

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 9% 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-re-

ported 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).

Touching on the topic of barriers to PSE, Bowlby and McMullen (2002) use the YITS-B and report that among 18- to 20-year-olds who have graduated from high school and not accessed PSE, 49% reported that they had no barriers to receiving "as much education as they wanted," implying that either they had no desire to participate in PSE, or they saw no barriers to accessing in the future. Among those who did report barriers, 36% reported financial barriers, 7% reported academic barriers, and smaller percentages of youths reported motivational or other barriers. While the YITS-B asked students what might prevent them from getting "as much education as they want," the School Leavers Survey, conducted in 1991 and 1995, and the Post-Secondary Education Participation Survey, conducted in 2002, asked youths specifically for their reasons for not pursuing PSE. The results of these surveys show a relatively greater proportion of students reporting academic variables and a smaller proportion citing financial barriers, yet consistently, "interest/motivation" is the most common response (Finnie & Laporte, 2003; Foley, 2001). Foley (2001) finds that parental education does not appear to be strongly related to whether youths cite financial or academic barriers but finds that parental education does seem to be related to interest/motivation.

This represents 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 specific reasons individuals do not access PSE so that we may answer the question: What is standing in students' way of achieving their schooling aspirations? Importantly, we relate the relevant answers to a comprehensive set of background variables. With the use of regression techniques we analyse the relationship between youths' family backgrounds and their barriers to PSE in a manner that has not been attempted in previous studies.

Method

The Youth in Transition Survey and the Dependent Variables

This study uses data from Cohort A of the Youth in Transition Survey (YITS-A). The YITS-A is ideal for this application because it follows a representative sample of Canadian high school students born in 1984 through their 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 youths' anticipated barriers to PSE evolve as they get older.

In March and April of 2000 (Cycle 1), the YITS-A began with the completion of a written survey by those youths selected into the sample. Interviews were also conducted with the parents of these students and with officials of the high schools they attended. The parental survey is particularly important to this analysis because it provides accurate parental education and family income information. Obtaining this information directly from parents provides a level of accuracy not found in many other surveys that rely on students' responses for this information.[1]

The students themselves (although not their parents or school administrators) were surveyed again in 2002, 2004, 2006, 2008, and 2010 (Cycles 2 through 6). We use the

respondents' PSE status in the 2006 (Cycle 4) survey as the optimal compromise between an ability to identify participation in PSE (which increases with age) and sample size (which decreases with each subsequent cycle of the survey).[2] In this cycle 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.[3]

All results shown below have been 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 youths born in 1984 and thus age 15 and living in Canada in December 1999. Although the YITS is subject to attrition, an analysis carried out by the authors indicates that Statistics Canada's sample weights appear to do a good job of compensating for this attrition and related biases. The first and fifth columns of Table 1 describe the sample in terms of youth respondents' family background characteristics.

The Models

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

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

where Y is a categorical variable with three outcomes indicating participation in college, participation in university, or no PSE participation.[4] This dependent variable represents whether individuals enrolled in college or university at any point over the first 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 treated as a separate process.

In the "barriers" analysis that follows, the models take a similar form, but in this case Y represents a categorical variable which indicates whether individuals accessed PSE or, if they did not, the specific barriers they cite.

In both types of models, X_1 is a vector of covariates that influence Y, β_1 includes the coefficients associated with X_1, and μ is the classical stochastic error term. In all cases, we present the average marginal effects, which can be interpreted in a straightforward manner: the effect of the explanatory variable in question on the indicated outcome in terms of percentage point differences.

We use a multinomial logit setup 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.

It should be emphasized that the barriers we investigate relate to what youths *report*. These may reflect subjective judgments, or what the student regards as an "acceptable" answer. Some of the barriers cited by youths may not apply in reality. As an example, some youths may underestimate financial barriers to PSE if they are not aware of the full costs, while others may overestimate their financial barriers without full information about the amount of financial support available to them. Indeed, Frenette and Robson (2011) recently reviewed the literature on this topic and found that the cost of PSE is vastly overestimated by the public at large (and by lower income youths in particular), that the benefits are generally underestimated, and that knowledge of available aid is limited.

Table 1.
Sample Description and Access to Postsecondary Education (PSE) for Canadian Youths Age 21 (%)

	Males				Females			
	Dist. (100%)	Coll.	Univ.	Any	Dist. (100%)	Coll.	Univ.	Any
Number of observations	7,999				8,341			
All	100.0	34.6	33.8	68.4	100.0	31.4	49.7	81.1
Family income								
$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
Parental education								
Less than high school	8.2	27.4	10.0	37.4	9.0	38.0	20.6	58.7
High school 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 completed	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 - graduate school	8.7	18.0	73.8	91.8	9.5	11.9	84.3	96.2
Other/unknown	0.1	***	***	0.0	0.1	***	***	0.0
Visible minority/immigrant status								
Non-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-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

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
Province of high school								
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
Location of high school								
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

Note. *** indicates cells that are suppressed according to Statistics Canada's rules regarding residual disclosure.
Source. Authors' calculations from the Youth in Transition Survey (Cycle 4).

Results and Discussion

Descriptive Analysis of Access to PSE

Table 1 shows the college, university, and overall PSE access rates of males and females possessing various individual and family background characteristics. The table shows the increasingly well-known phenomenon that PSE participation is higher for females than for males—81.1% versus 68.4%. This differential is driven by the higher university participation rates of young women—49.7% compared to 33.8% for males; college rates go more moderately in the other direction—34.6% for males and 31.4% for females.

Family income appears to be strongly related to PSE participation, and the relationship is again driven by university participation, which increases sharply with family income. A positive relationship is also apparent between university access and parental education. In the following section we revisit these relationships using a multinomial logit regression approach, which allows us to separate the influence of these two factors.

Among males, and starting with college attendance, non-minorities are more likely to access college than visible minorities, regardless of immigrant status. Among females, non-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-minority immigrants are the least likely to access college. Focusing on university access, however, we see very different trends—among both males and females, non-immigrant non-minorities are much less likely to attend university than others, while visible minorities go in much greater numbers, whether they are immigrants or not.

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

The Atlantic 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 PSE participation rate is due to the proportion of young people attending college rather than university, whereas for the Maritimes, high university participation rates explain the high overall rates. In Quebec, university-bound students are first enrolled at CEGEP before completing the final two years of their programs at a university. This factor inflates the proportion of college attendees while reducing the proportion attending university among the 21-year olds in our sample.

French-language 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 more likely to access university than others. These patterns are more meaningful in a regression context, however, when province is controlled for at the same time (so that anglophones in Quebec are directly compared to other Quebecers , for example).

Among both males and females, young people from urban areas are much more likely to attend university than those from rural areas.

Multivariate Estimation of Access to PSE

In this section we estimate multinomial models where individuals are classified according to whether they (a) do not access any PSE, (b) attend a college (including trade schools), or (c) attend university. The average marginal effect on access to any form of PSE (i.e., college *or* university) can be computed by summing the average marginal effects associated with access to college and university. The average marginal effects are additive in this way.

The results from the estimation are presented in Table 2. Models 1 and 3 exclude parental education from the explanatory variables, while Models 2 and 4 include it. This allows us to assess family income effects with parental education first excluded, then 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.

University attendance is higher among youths from higher income families for both males and females in both of the model specifications shown in Table 2. However, in the model specifications where controls for parental education are included (Models 2 and 4), the income effects are greatly diminished from what they are when parental education is excluded (Models 1 and 3).

To put the relative importance of these factors into perspective, a fall in family income from the $50,000–$75,000 range (the reference group) to the $5,000–$25,000 range decreases university participation by 8.1 percentage points for females, on average (as represented by the average marginal effect of –.081 shown for the lower income category in the table). By comparison, having at least one parent with a bachelor's degree increases university participation by 31.1 percentage points compared to the reference group (high school graduates). Both income and parental education effects are significantly related to access, university attendance in particular, but it is parental education that dominates.

In the full model specifications (i.e., including both family income and parental education variables), being a visible minority has a strong positive effect on access to university, in particular (as compared to being a non-minority non-immigrant), whether the youth is an immigrant or not, while the effect of being a non-minority immigrant is generally non-significant. These relationships hold among both males and females.

It is interesting that, although the simple descriptive relationships noted in the previous section indicate that students from single-parent families are less likely to access PSE than those from two-parent families, 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.

Some of the general differences in participation rates between provinces continue to be observed in the models—i.e., after taking into account the other factors controlled for (including parental education and family income)—while others disappear. Again focusing on Models 2 and 4, we see that all provinces east of Alberta, except for Quebec, have significantly higher university participation rates than Ontario (the omitted/comparison province). The Atlantic Canada advantage in university participation is significant, both statistically and economically—males in Newfoundland and Labrador, for example, are about 12 percentage points ahead of Ontario, while males from PEI are 19 percentage points ahead in the full model specification (Model 2). Similar patterns are evident for females from Atlantic Canada.

Table 2.
Multinomial Logit Estimates of Access to College and University For Canadian Youths Age 21

	Males				Females			
	1		2		3		4	
	Coll.	**Univ.**	**Coll.**	Univ.	Coll.	Univ.	Coll.	Univ.
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]
Parental education (high school completed)								
Less than high school			-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 - graduate school			-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]

Visible minority/immigrant status (non-minority born in Canada)								
Visible minority born in Canada	-0.037 [0.032]	0.190*** [0.034]	-0.023 [0.033]	0.163*** [0.031]	-0.061** [0.028]	0.195*** [0.029]	-0.048* [0.029]	0.178*** [0.029]
Non-minority immigrant	0.027 [0.057]	0.041 [0.052]	0.061 [0.061]	-0.044 [0.044]	-0.112** [0.046]	0.157*** [0.052]	-0.083* [0.049]	0.090* [0.048]
Visible minority immigrant	-0.037 [0.039]	0.241*** [0.041]	0.001 [0.042]	0.173*** [0.042]	-0.084** [0.038]	0.234*** [0.038]	-0.032 [0.043]	0.161*** [0.043]
Family type (two parents)								
Mother only	-0.025 [0.027]	0.008 [0.026]	-0.017 [0.027]	-0.016 [0.025]	0.013 [0.025]	0.022 [0.026]	0.024 [0.025]	0.001 [0.025]
Father only	0.032 [0.052]	-0.072 [0.045]	0.071 [0.053]	-0.080* [0.041]	0.086 [0.057]	-0.063 [0.056]	0.092* [0.054]	-0.072 [0.052]
Other	-0.044 [0.066]	-0.067 [0.066]	-0.034 [0.066]	-0.016 [0.071]	0.108 [0.072]	-0.151** [0.064]	0.086 [0.070]	-0.128** [0.058]
Province of high school (Ontario)								
Newfoundland and Labrador	-0.092*** [0.027]	0.142*** [0.030]	-0.085*** [0.027]	0.123*** [0.029]	-0.137*** [0.022]	0.141*** [0.026]	-0.131*** [0.022]	0.130*** [0.025]
Prince Edward Island	-0.191*** [0.023]	0.231*** [0.029]	-0.178*** [0.023]	0.188*** [0.027]	-0.184*** [0.019]	0.197*** [0.024]	-0.171*** [0.020]	0.167*** [0.025]
Nova Scotia	-0.165*** [0.022]	0.191*** [0.027]	-0.150*** [0.023]	0.141*** [0.026]	-0.178*** [0.018]	0.190*** [0.023]	-0.165*** [0.019]	0.161*** [0.023]
New Brunswick	-0.174*** [0.022]	0.153*** [0.027]	-0.173*** [0.021]	0.141*** [0.026]	-0.168*** [0.019]	0.160*** [0.024]	-0.159*** [0.019]	0.134*** [0.023]
Quebec	0.009 [0.024]	-0.092*** [0.018]	0.015 [0.024]	-0.092*** [0.018]	0.026 [0.024]	-0.090*** [0.022]	0.030 [0.024]	-0.081*** [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]
Location of high school - 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]
Observations	7916		7916		8260		8260	

Notes. Average marginal effects are shown. Omitted categories are in parentheses. Standard errors are in brackets. *** $p<.01$, ** $p<.05$, * $p<.1$

Source. Authors' calculations from the Youth in Transition Survey (Cycle 4).

Meanwhile, males from Quebec are 9 percentage points less likely to access university than males from Ontario, while females from Quebec are 8 percentage points less likely to access university than their Ontario counterparts. The positive effects associated with Saskatchewan and Manitoba are more modest than those associated with Atlantic Canada. All provinces, excluding Quebec (where colleges include CEGEPs), have significantly lower college participation rates than Ontario, underlining the high college participation rates in Ontario and Quebec

Both males and females from urban areas are less likely to attend college than their rural counterparts, but more likely to attend university. This finding is consistent with the distance from PSE institutions hypothesis proposed by Frenette (2004), although it could also represent neighbourhood or peer effects (e.g., cities have higher proportions of more educated people (Beckstead, Brown, Guo, & Newbold, 2010) which could be what the urban residence effect captures).

The results of the above exercise are consistent with previous findings from the growing Canadian literature on access to colleges and universities regarding the factors related to PSE attendance. With this platform established, in the next section we investigate the barriers faced by those young people who *do not* attend either university or college.

Descriptive Analysis of Barriers to PSE

In each cycle of the YITS-A, all youths are asked about the highest level of education they hope to obtain, and they are also asked if there are any barriers that may prevent them from obtaining that level of education and what any such barriers may be. Students are permitted to choose more than one barrier.

Table 3, which reflects our descriptive analysis of the barriers cited by those who do not access PSE, shows that among all students in our sample at Cycle 4 (when they are 21 years of age), 75% have accessed PSE, and another 5.8% 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 express a goal of obtaining at least some PSE.

We observe that 10.7% of our entire sample consists of individuals who aspire to go to PSE, have not done so, but say they do not face any barriers to attaining their education goals. For some of these individuals, accessing PSE may be only a matter of time.[5] Others may have chosen to say they have PSE aspirations (perhaps a socially acceptable response, in their minds) even if they have no serious plans to further their education and have not thought of what might stand in their way of doing so. We cannot say to what extent this might be the case.

Survey respondents who indicate that they face barriers are questioned further about whether one of those barriers is their "financial situation (needs to work/costs too much)." In total, 5.5% of our sample consists of aspiring students who say that their financial situation is a barrier preventing them from reaching their education goals. Meanwhile, even smaller proportions are aspiring students who cite academic, motivational, or other barriers.[6]

The students who say that they aspire to PSE, but cite motivation as a barrier, are a curious group. They have signalled that they see value in PSE and wish to participate but do not seem to be able to get around to doing so. Again, perhaps this group contains individuals who say they have PSE aspirations but have no serious plans to further their education.

Table 3.
Barriers to Postsecondary Education, All Canadian Youths Age 21

	Has accessed PSE	Has not accessed PSE					
		Has no PSE aspirations	Has PSE aspirations				
			Has no barriers	Has barriers			
				Financial situation	High school grades	Motivation	Other
All	75.0	5.8	10.7	5.5	0.8	1.6	1.6
Gender							
Male	68.8	8.1	14.6	5.5	1.1	2.0	1.0
Female	81.3	3.5	6.6	5.6	0.5	1.3	2.2
Family income							
$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	8.0	1.0	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	80.0	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
Parental education							
Less than high school	48.7	16.3	17.7	11.3	1.6	3.4	2.8
High school 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 completed	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 - graduate school	94.4	***	***	***	***	0.2	***
Other/unknown	64.6						

Visible minority/immigrant status							
Non-minority born in Canada	72.9	6.6	11.5	6.0	0.8	1.7	1.7
Visible minority born in Canada	88.1	1.5	5.5	3.3	***	0.9	0.8
Non-minority immigrant	78.8	***	9.7	3.1	***	***	***
Visible minority immigrant	89.7	***	4.9	2.5	***	***	***
Family type							
Two parents	76.3	5.4	10.5	5.1	0.7	1.5	1.5
Mother only	69.5	8.0	11.2	7.5	0.8	2.5	1.8
Father only	69.0	9.3	12.6	6.7	***	1.6	1.6
Other	61.4	7.3	11.7	7.7	***	2.5	4.4
Province of high school							
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	***	1.0	2.2
Nova Scotia	77.6	5.5	10.4	4.0	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	1.0	1.9	1.4
Ontario	82.1	3.4	7.7	4.4	0.5	1.4	1.3
Manitoba	67.9	6.3	15.0	6.8	***	2.7	2.1
Saskatchewan	68.6	6.9	14.4	5.8	1.6	2.0	1.6
Alberta	67.4	6.3	15.6	7.2	1.0	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	5.0	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	***	***	***	2.0
Location of high school							
Rural	67.6	8.2	13.3	6.5	1.0	2.0	2.9
Urban	77.2	5.1	9.9	5.2	0.7	1.5	1.2

Notes. *** indicates cells that are suppressed according to Statistics Canada's rules regarding residual disclosure. Aspirations and barriers are those reported in cycle 4 (i.e., at age 21). Some totals are different than those reported earlier since only those who responded to the aspirations and barriers questions are included here.

Source. Authors' calculations from the Youth in Transition Survey (Cycle 4).

Males are more than twice as likely as females to not access PSE and have no PSE aspirations at Cycle 4 (8.1% versus 3.5%).[7] Also, having no PSE aspirations appears to be negatively correlated with parental education and family income. Individuals from two-parent families are somewhat less likely to have no PSE aspirations. Compared to all other provinces, Quebec has a large proportion of individuals in this category (10.6%).

Now focusing on the cited barriers, 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. Non-minorities born in Canada are also slightly more likely to be in this group, compared to immigrants and visible minorities. Individuals from two-parent families are slightly less likely than others to be aspiring students and say they have financial barriers. Among provinces, Alberta has the largest proportion of aspiring students who say they have financial barriers (7.2%) while the Atlantic provinces and Ontario have particularly small proportions (2.9% to 4.8%). Rural and urban individuals are about equally likely to be aspiring students and cite their financial situation as a barrier.

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 4 is similar to Table 3 but shows rates among only those students who do not pursue PSE (as opposed to among all students). Since these figures are linear transformations of the data in Table 3, the patterns discussed above are identical but presented in a way that some may find more useful.

Figure 1 presents the evolution of barriers, for males and females separately, from Cycle 2 when respondents are 17, to Cycle 3 when they are 19, and finally to Cycle 4 when they are 21. The information shown in the graphs concerns the 30.1% of the males and 18.2% of the females who do not access PSE by the age of 21 (the bars of each cycle sum to those percentages).[8] For example, 16.7% of all males do not access PSE by age 21 and say at age 17 that they want to attend PSE but face no barriers. For both males and females, the proportion of those claiming no barriers decreases slightly from one cycle to the next. 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 are at least one factor prohibiting them from accessing PSE. Stated differently, over the 4-year period there is a bit of movement from claiming no barriers, toward having no PSE aspirations as well as claiming that financial barriers are more important. Still, as of Cycle 4, only 5.5% of the total sample of both males and females claim finances as at least one barrier to achieving their education goals (Table 3).

Among both males and females, the proportion that cites “Grades” as a barrier decreases with age. The other categories are small in all cycles and change relatively little over time.

Multivariate Estimation of Barriers to PSE

The barriers to PSE just described are now analyzed using a series of multinomial logit models. Table 5 presents the results of four separate multinomial logit models, each of which takes into account the five mutually exclusive outcomes of interest.[9]

Table 4.
Barriers to Postsecondary Education, Canadian Youths Who Have Not Accessed Postsecondary Education by Age 21

	Has not accessed PSE	Has notaccessed PSE					
	% of total	Has no PSE aspirations	Has PSE aspirations				
			Has no barriers	Has barriers			
				Financial situation	High school grades	Motivation	Other
All	25.0	23.3	42.7	22.0	3.1	6.6	6.4
Gender							
Male	31.2	26.0	46.9	17.5	3.5	6.4	3.1
Female	18.7	18.9	35.5	29.8	2.5	7.0	11.9
Family income							
$5,000 to $25,000	37.5	29.0	36.6	19.9	4.0	7.0	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	20.0	17.4	49.6	21.1	***	8.4	6.4
$100,000 and up	12.4	25.0	51.6	14.8	***	4.2	2.7
Parental education							
Less than high school	51.3	31.7	34.4	21.9	3.2	6.6	5.4
High school completed	33.9	28.0	38.6	20.5	2.1	6.6	8.2
Some PSE	26.9	15.9	48.9	18.9	3.3	13.0	4.9
Trade/college completed	26.4	18.7	47.7	24.3	3.0	5.4	5.7
University - below BA degree	15.5	27.6	36.7	23.7	6.1		***
University - BA	10.9	13.9	49.0	22.4	4.3	8.1	7.2
University - graduate school	5.6	11.1	***	18.5	***	4.2	***
Other/unknown	35.4						

Visible minority/immigrant status							
Non-minority born in Canada	27.1	24.2	42.3	22.0	3.1	6.3	6.4
Visible minority born in Canada	11.9	12.5	46.7	27.9	***	7.6	6.5
Non-minority immigrant	21.2	***	45.6	14.7	***	***	***
Visible minority immigrant	10.3	***	47.5	24.1	***	***	***
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	6.0
Father only	31.0	30.1	40.5	21.6	***	5.3	5.2
Other	38.6	18.8	30.4	19.8	***	6.6	11.3
Province of high school							
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	5.0	6.5	5.1
Alberta	32.6	19.4	47.9	22.0	3.1	6.4	5.7
British Columbia	27.8	15.0	48.8	23.3	3.2	5.0	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
Location of high school							
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

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 (i.e., at age 21).

Source. Authors' calculations from the Youth in Transition Survey (Cycle 4).

Table 5.
Multinomial Logit Estimates of Barriers to Postsecondary Education, All Canadian Youths Age 21 (continued)

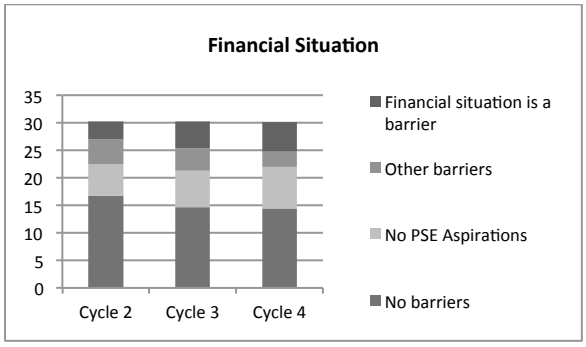
	Has accessed PSE	Has not accessed PSE					
		Has no PSE Aspirations	Has PSE aspirations				
				Has barriers			
			Has no barriers	Financial situation	High school grades	Motivation	Other
Province of high school (Ontario)							
Newfoundland and Labrador	0.005 [0.016]	-0.014** [0.006]	0.047*** [0.015]	-0.027*** [0.005]	-0.004*** [0.001]	-0.008*** [0.003]	-0.007** [0.003]
Prince Edward Island	-0.003 [0.016]	0.010 [0.010]	0.018 [0.013]	-0.024*** [0.006]	-0.002 [0.003]	-0.006 [0.004]	0.001 [0.005]
Nova Scotia	-0.012 [0.016]	0.013 [0.010]	0.017 [0.013]	-0.013* [0.007]	-0.001 [0.003]	-0.003 [0.004]	-0.005 [0.004]
New Brunswick	-0.034** [0.016]	0.011 [0.009]	0.031** [0.013]	-0.006 [0.008]	0.003 [0.004]	-0.009*** [0.003]	-0.003 [0.004]
Quebec	-0.063*** [0.016]	0.048*** [0.013]	0.007 [0.010]	0.010 [0.009]	0.003 [0.004]	0.003 [0.005]	-0.004 [0.003]
Manitoba	-0.099*** [0.018]	0.018* [0.011]	0.059*** [0.016]	0.015 [0.011]	-0.004*** [0.001]	0.009 [0.007]	0.002 [0.006]
Saskatchewan	-0.079*** [0.017]	0.019* [0.010]	0.049*** [0.014]	0.002 [0.009]	0.007 [0.005]	0.004 [0.006]	-0.004 [0.004]

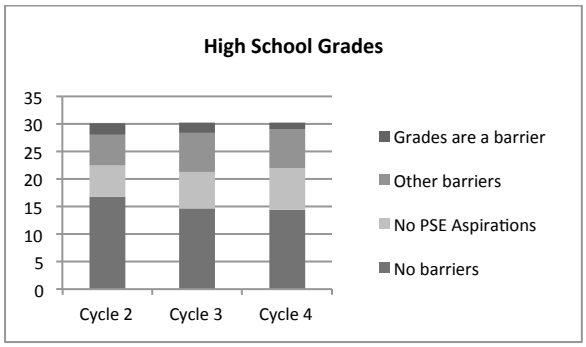
Alberta	-0.130***	0.026**	0.070***	0.026**	0.004	0.006	0.003
	[0.018]	[0.012]	[0.016]	[0.011]	[0.005]	[0.006]	[0.006]
British Columbia	-0.113***	0.014	0.065***	0.023**	0.002	-0.001	0.014
	[0.019]	[0.011]	[0.016]	[0.012]	[0.004]	[0.005]	[0.009]
Language minority (non-language minority)							
English 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]
Location of high school - 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]
Observations	16121						

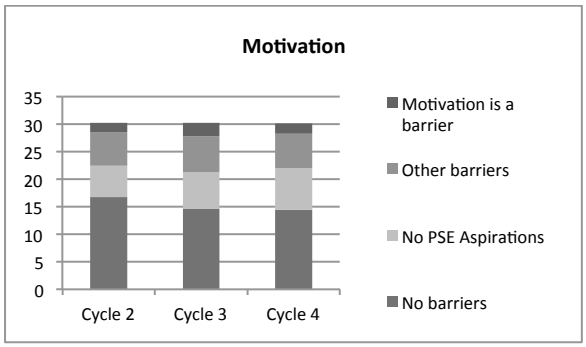
Notes. Average marginal effects are shown. Omitted categories are in parentheses. Standard errors are in brackets. *** $p<.01$, ** $p<.05$, * $p<.1$ This table shows the results of four separate models, each of which has a five-category dependent variable. Each five-category dependent variable includes 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.

Source. Authors' calculations from the Youth in Transition Survey (Cycle 4).

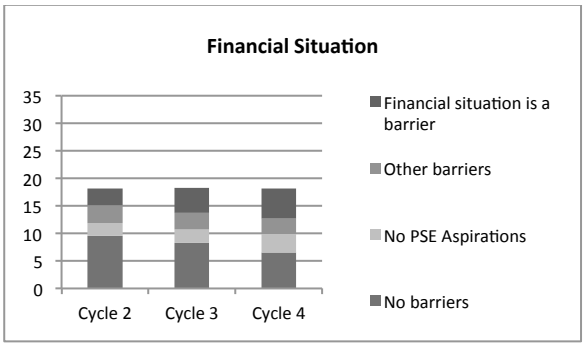
Males

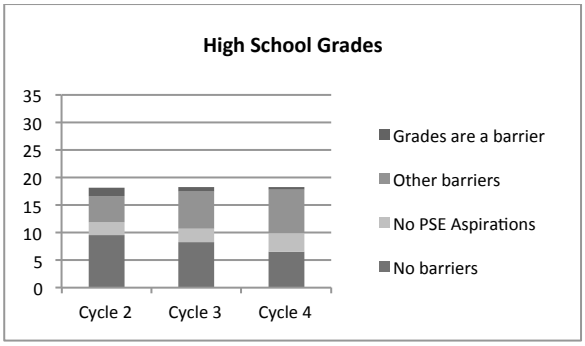


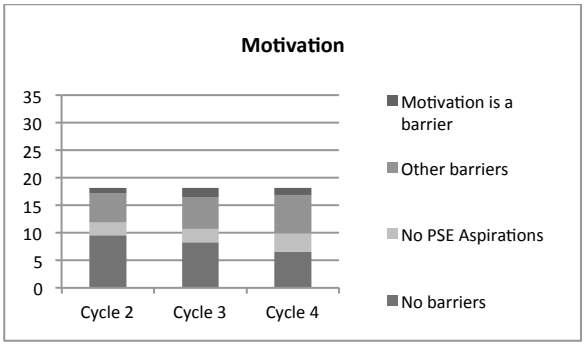




Females







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 – but very close to -- those reported in Table 1.

Source. Authors' calculations from the Youth in Transition Survey (Cycle 4).

Figure 1. Barriers to Postsecondary Education by Cycle of the Youth in Transition Survey, 2002–2006, for Youths Ages 17, 19, and 21

In each model, the first three categories of the dependent variable correspond to the first three columns of Table 5, meaning that the person (1) has accessed PSE, (2) has not accessed PSE but has no PSE aspirations, or (3) has not accessed PSE, has PSE aspirations, but faces no barriers.

The fourth category in each model then corresponds to one of the four specific barriers of interest: financial, grades, motivation, and other. The fifth, and small, residual category represents youths with barriers other than the one represented by the fourth category, and thus varies across models. For example, for the model where the fourth category represents youths with "other" barriers, the fifth category represents youths who did not cite "other" barriers, but cited finances, grades or motivation as barriers. Because the first three categories of the dependent variable are the same in each of the models (i.e., has accessed PSE, has no PSE aspirations, has no barriers), the marginal effects associated with these categories are the same in each model and are reported in columns 1 through 3 of Table 5.

The marginal effects shown in columns 4 through 7 are taken from each of the four separate models described above and represent how the explanatory variables are related to the incidence of each of those specific barriers, treated in turn. The marginal effects for the residual fifth category of each model have been omitted.[10]

The first column of Table 5 reflects the general patterns of PSE attendance, as described above. Higher access rates are observed for females, for those in families with higher levels of parental education and (to a lesser degree) higher family incomes, for visible minorities (including both those who are Canadian-born and those who are immigrants), and so on.

Column 2 represents individuals who do not access PSE but say they have no aspiration to do so, and it shows results in the opposite direction of those shown in the first column, although the magnitudes of the effects are not as strong as those in the first column. This pattern makes sense, as all the remaining columns capture those who did not access PSE *and* their reasons for not doing so. So, of those who did not access PSE, some had no aspirations (the second column), some had aspirations but faced no barriers (the third column), and so on.

Similar results are found in column 3, representing those who say they aspired to PSE but face no barriers—and make sense for the same reasons. That is to say, having higher levels of parental education or family income increases the probability of an individual accessing PSE and reduces the probability of not accessing PSE and either having no aspirations to do so (column 2) or not accessing PSE and simply not facing any barriers (column 3).

Column 4, in turn, represents those who did not go to PSE at least in part because of a financial barrier was faced (recall that multiple barriers could be listed). It is interesting that parental education plays a significant role here: that is, even while controlling for family income, having higher levels of parental education is associated with a significantly lower likelihood of not accessing PSE due to a financial barrier.

Consider two families, both with the same income but different levels of parental education. Children from the family with higher parental education are not only considerably more likely to access PSE, but are also considerably less likely to say they did *not* go due to a financial barrier. In other words, part of the reason a young person seeks further education is that potential financial barriers appear to be less of an issue.

In contrast, family income itself shows very little relationship with not accessing PSE due to a financial barrier. Also of note is that visible minorities and immigrants are less likely to not access PSE and say they face financial barriers.

We interpret this set of results as indicating the importance of cultural influences on access to PSE. Perhaps certain families (e.g., those with higher levels of parental education, visible minorities) actually provide their children with more in the way of financial resources for PSE or, alternatively, perhaps youths from such families do not *perceive* financial barriers where others do, or otherwise see the value in PSE where others do not. Tuition fees may, for example, seem like a "barrier" to some ("it costs too much") but signify a worthwhile investment to others if the person is brought up in a family that puts higher value on formal education. Probing these underlying factors, however, lies beyond the scope of this paper.

The relative unimportance of the family income variables may, at the same time, imply that the student financial aid system is doing its job pretty well: not accessing PSE due to financial barriers is only very weakly related to family income. Those from Newfoundland and Labrador, Prince Edward Island, and Nova Scotia are a bit less likely to say they faced financial barriers, as are anglophones in Quebec (relative to francophone Quebecers), although again we cannot say if this is a question of actual finances or how the costs—and benefits—of PSE are perceived.

The fifth column shows those who have not accessed PSE and cite their high school grades as being a barrier. The effects of the variables included in the model are all small, reflecting in large part the general unimportance of this barrier, which is cited by only 0.8 of 1% of the entire population (Table 3), or 3.1% of those who do not go to PSE (Table 4).

The sixth column shows those who do not go to PSE and say they lack motivation to do so. Again, this is a relatively uncommon barrier, representing just 1.6% of the overall population and 6.6% of those who do not go to PSE. The only clear influence here is, again, parental education: those from families with higher parental education are less likely to cite motivation as a barrier. That said, a lack of motivation is also captured by some of the other categories, including simply not having PSE aspirations (column 2) and not going to PSE but facing no barriers (column 3).

Financial Barriers and Loans

What room is there for public policy to increase PSE participation rates? Here we address the specific question of how many PSE non-participants might access PSE if a more extended and more generous student loan system were put in place. One way to at least begin to get at this issue is to focus on students who say they did not access PSE because of a financial barrier, as this is where loans would presumably have their principal effect.

We have seen (in Tables 3 and 4) that relatively few PSE non-participants cite financial barriers: just 22% of the 25% who do not access PSE, or 5.5% of the general population—thus representing a possible upper bound on the increase in access rates that could be hoped for with a more generous loan system. Still, that is a non-trivial number of individuals, and one potentially worthy of policy focus, especially given the life-changing potential of PSE.

In considering how the student loan system could effect change, though, it is perhaps first worth considering what exactly youths mean when they say they do not access PSE

because, in particular, "it costs too much." This response does not necessarily imply that they cannot *afford* PSE (as it is often interpreted), and may instead indicate that, at least in some cases, they do not see the value in the schooling.

Saying PSE "costs too much" could thus be an issue related to the perceived value of PSE (including its rate of return, as economists like to think about these issues), rather than a financing issue (or "liquidity constraint"). A loan system can potentially address the latter, but not the former. Indeed, grants rather than loans may be required to convince at least some students to change their PSE decisions, and in some cases, grants in excess of actual costs may in fact be required (see Finnie, 2005, for further discussion of the potential role of grants and loans).

Table 6 exploits the YITS by taking a closer look at the specific barriers to PSE youths mention and relating these to the reasons youths give for not having a student loan. In particular, we are interested in the individuals who cite financial barriers and the reasons they give for not having a student loan. We would expect reasons to the effect of "could not get a loan" to identify those youths for whom affordability may indeed be the key issue and for whom the loan system did not provide the money needed to access PSE. Conversely, those who give a financial reason for non-participation in PSE, but who say they could have had a student loan but did not need one, may be considered as not facing an affordability barrier and therefore represent individuals for whom an expanded loan system would not likely have changed their participation in PSE.

Table 6 indicates that a full 78.1% of those who cited financial barriers to PSE 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) is the direct underlying problem in only a clear minority of these cases. Indeed, only 8.1% of the group citing 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 a postsecondary institution.

These are small numbers—especially when we recall that this is within the relatively small group (i.e., 22% of non-participants) for whom finances seem to be a factor 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% ("could not get a loan") of the 22% who cite financial barriers—and this of the 25% that did not access PSE. This amounts to less than 1% of the relevant youth population.[11]

Some of those giving other (non-financial) reasons for not participating in PSE also say they could not get a student loan, but the percentages are generally even smaller than for the financial barrier group, and since they cite other barriers or say they face no barriers at all, an expanded loan system would likely have little effect on their behaviour. Overall, 4.1% of all PSE non-participants say they do not have a loan because they could not get one. If getting a loan would in fact change the access decisions of every one of these individuals, we are looking at 4.1% of the 25% that do not access PSE—or about 1% of the relevant youth population—this being perhaps the maximum (upper bound) effect we would expect of a more generous student loan system.

Table 6.
Barriers to Postsecondary Education and Why Students do not have Loans

	Total	Financial situation is at least one barrier	High school grades are at least one barrier	Motivation is at least one barrier	Has barriers, other	Has no PSE aspirations	Has no barriers
	100.0	22.0*	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
	100.0	100.0	100.0	100.0	100.0	100.0	100.0

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.

The "Why No Loan" categories are defined according to the responses youths gave when asked why they did not have a student loan.
1) Not needed: did not apply for a loan because they did not need one or because they were not going to PSE.
2) Not willing to borrow: did not apply for a loan because they were not willing to do so or because they preferred to borrow elsewhere.
3) Could not get a loan: applied for a loan but were not approved; or did not apply for a loan because their parents make too much money or because they did not think they would receive enough money.
4) Did not apply (other): did not apply for other reasons.

Source. Authors' calculations from the Youth in Transition Survey (Cycle 4).

Conclusions

This paper has addressed how the background characteristics of Canadian youths are related to participation in PSE in Canada. In the first part, we modelled access to college and university and related PSE access to a rich array of student background variables available in the YITS-A dataset, including—in particular—both family income and parental education.

Parental education is the most important determinant of access to PSE, with higher levels of parental education tending to increase the probability that an individual will attend university and thereby reduce (generally to a lesser degree) the probability that he or she will attend college. In other words, youths whose parents have higher levels of education are (a) more likely to access PSE and (b) more likely to choose university over college. Family income has a still significant but greatly reduced effect on access once parental education is included in the model.

Urban residents have a high probability of attending university and again a lower probability of attending college. Patterns of 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 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 much more likely to access university compared to non-minorities born in Canada, with overall PSE participation rates thus being considerably higher for the former groups.

While the first part of the paper addresses "who goes" to PSE, the second part asks the more pertinent policy questions: Who doesn't go on to PSE and why don't they? What are the specific 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 postsecondary institutions and equalize schooling opportunities, these are the questions to ask—at least to start, with the next set of questions pertaining to how we can lower these barriers and make opportunities more equal.

Although, by age 21, 75% of the individuals in our sample attend postsecondary institutions, 25% do not. Of this latter group, 23.3% have no (stated) aspirations for PSE—it would appear they just do not want to go. Another 42.7% are "PSE aspirants" but report that they face no barriers to accessing PSE (yet they have not gone), while 22% claim that finances are at least one barrier to their entering PSE. Stated differently, 5.5% of all the young people in our sample have not accessed PSE, say they aspire to go, and claim that "finances" represent at least one barrier to accessing PSE. Even fewer people in our sample have not accessed PSE, say they aspire to go, and claim that low high school grades or lack of motivation are barriers. For this reason, the following summarization does not focus on these other barriers.

Moving beyond the descriptive statistics, we have modelled a set of five outcomes that classify youths 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); and (5) have not accessed PSE, have aspirations to do so, and report some other type of barrier (a residual category). As each survey respondent was permitted to report multiple barriers (i.e., barriers were not mutually exclusive), separate models for each of the specific barriers were necessary. The results show that family income and parental education (especially the latter) are again—although now from this somewhat different perspective—important determinants of accessing PSE and are also negatively related to having no PSE aspirations. There are also slight negative relationships between, on the one hand, both parental education and family income and, on the other, citing finances as a barrier to attending PSE. The negative relationship associated with parental education, controlling for family income, suggests that citing financial barriers is more than simply a sign of low levels of family resources. Parental education may be related to parents' financial support for PSE, or perhaps youths' perception of this or the value in PSE—even after controlling for income.

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 in PSE. Recall that 5.5% of youths in the sample say that their financial situation is a barrier to PSE. Of these, about 78% say that they do 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, the literature suggests that some youths may have low estimates of the future benefits of PSE, overestimate the costs, be unaware of the financing options available, or otherwise simply do not see sufficient financial benefits of PSE relative to the up-front costs (Frenette and Robson, 2011). That is, "financial barriers" do not necessarily mean that the student cannot *afford* the schooling, but that they do not see the value in it. Hence, "it costs too much" may mean "I don't see the value in it" rather than "I don't have the money to go." This is a very important differentiation, with significant policy implications.

We conclude that changes in the student 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: perhaps a maximum of 8.1% (those who "couldn't get a loan") of the 22% who had financial barriers of the 25% that do not access PSE—or perhaps less than 1% of the entire youth population.

It is important that the proportion of students who do not access PSE by age 21 and cite financial barriers (5.5% of all youths) is smaller than the proportion of youths who hold no PSE aspirations (5.8%) and the proportion who claim to have no barriers (10.7%). It would seem to be that improving our understanding of why some individuals do not have PSE aspirations—or if they do have aspirations and no barriers, have simply not attended—would be useful for improving our policies for increasing participation in PSE overall, and equalizing PSE opportunities among youths from all backgrounds.

The findings of this paper imply that there is a yawning gulf between the empirics of access to PSE and political perceptions of access. Although we find evidence that finances represent a barrier to PSE for some youths, their numbers are relatively small. Meanwhile, certain groups in Canada continue to decry the effects of high tuition on the accessibility of PSE in Canada. While we can be critical of these groups' assertions, given

the evidence of this paper and others, we must note that we do not draw conclusions regarding the effects of tuition levels on outcomes other than access to PSE. Indeed, while tuition may prevent PSE access among only a small minority, student debt levels may affect other life outcomes.

For policy purposes, our findings suggest that educating people about the true costs and benefits of a postsecondary education and the details of the student loan system would likely yield better results in terms of increased and more equal access rates, compared to tinkering with tuition and/or the parameters of student aid programs. PSE must be made, and kept, affordable, but the most important policy initiatives for access may well be those that aim to change attitudes towards PSE, informing youths who do not see the value of PSE as it is perceived by others from different backgrounds. Trying to better understand those attitudes, and identifying what policies can help change them would seem to be a desirable set of goals for researchers and policy makers alike.

Notes

1 See Motte, Qui, and Bussière (2008) for a general description of the YITS.

2 The Cycle 4 sample size permits a level of efficiency in our estimations which is not permitted by those of the later cycles.

3 Using Cycles 5 and 6 of the YITS-A, we found that 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 if individuals were followed over a longer period of time.

4 College participation includes attending a college, CEGEP (Collège d'enseignement général et professionnel), trade, or vocational diploma program.

5 For reasons described above, our analysis focuses on outcomes at Cycle 4 when respondents are 21 years old. Using Cycle 6 information, when individuals are age 25, we find that 33% of this 10.7% accessed PSE by age 25.

6 The academic barriers group (i.e., high school grades in the tables) includes youths who choose "Not able to get into program/marks too low/not accepted" as a response to the survey question pertaining to their barriers. The motivational barriers group includes the youths who choose "Not enough interest or motivation." The other barriers group includes those who choose other responses such as "Wants to stay close to home," "Caring for own children," "Own health," or other responses.

7 Separate results for males and females are available from the authors.

8 All students with missing information in any cycle are dropped; therefore, the proportions who do not access PSE are close to, but not exactly the same as, those reported in Table 1.

9 The use of four separate models, rather than a single multinomial logit model where each possible barrier is considered as a separate outcome, is necessary because youths were permitted to choose more than one barrier, meaning that the categories are not mutually exclusive as is required by a multinomial logit approach.

10 Separate results for males and females are available from the authors.

11 Another 4.9% of those citing financial barriers to PSE identify debt aversion ("not willing to borrow") as the reason for not having a loan, and a final 8.9% give other reasons. Alternative financing measures (e.g., grants) could possibly increase these youths' participation rates—but this takes us beyond the issue of loans *per se*.

Acknowledgements

The authors are grateful to Statistics Canada for providing access to the YITS data through the EPRI Partnership, and for funding Fellowships at Statistics Canada for Finnie and Mueller. The authors also wish to acknowledge the ongoing support provided for EPRI by the University of Ottawa, and the Social Sciences and Humanities Research Council of Canada for their funding of the EPRI Partnership through their partnerships development grant program. The authors retain full responsibility for the paper and the opinions expressed therein.

References

Andres, L., & Adamuti-Trache, M. (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.

Andres, L., Adamuti-Trache, M., Yoon, E.-S., Pidgeon, M., & Thomsen, J. P. (2007). Educational expectations, parental social class, gender, and postsecondary attainment: A 10-year perspective. *Youth & Society*, *39*(2), 135–163.

Bowlby, J. W., & McMullen, K. (2002). *At a crossroads: First results for the 18 to 20-year-old cohort of the Youth in Transition Survey*. Ottawa, ON: Human Resources Development Canada and Statistics Canada.

Beckstead, D., W.M. Brown, W.M., Guo, Y., & Newbold, K.B. (2010). *Cities and growth: Earnings levels across urban and rural areas: The role of human capital* (The Canadian Economy in Transition Series Research Paper No. 20). Ottawa, ON: Statistics Canada.

Butlin, G. (1999). Determinants of postsecondary participation. *Education Quarterly Review*, *5*(3), 9–35.

Childs, S., Finnie, R., & Mueller, R. E. (2010). Family environment, family habits, and children's cultural experiences: Is there a link to participation in post-secondary education? In R. Finnie, M. Frenette, R. E. Mueller, & A. Sweetman (Eds.), *Pursuing higher education in Canada: Economic, social and policy dimensions* (pp. 243–265). Queen's Policy Studies Series. Montreal and Kingston: McGill-Queen's University Press.

Christofides, L. N., Cirello, J., & Hoy, M. (2001). Family income and post-secondary education in Canada. *Canadian Journal of Higher Education*, *31*(1), 177–208.

Christofides, L. N., Hoy, M., Li, Z., & Stengos, T. (2008). The evolution of aspirations for university attendance. 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* (pp. 109–134). Queen's Policy Studies Series. Montreal and Kingston: McGill-Queen's University Press.

Coelli, M. (2009). Tuition fees and equality of university enrolment. *Canadian Journal of Economics*, *42*(3), 1072–1099.

Corak, M., Lipps, G., & Zhao, J. (2003). *Family income and participation in post-secondary education* (Analytical Studies Branch Research Paper No. 210). Ottawa, ON: Statistics Canada.

De Broucker, P. (2005). *Getting there and staying there: Low-income students and post-secondary education: A synthesis of research findings* (Research Report W-27). Ottawa, ON: Canadian Policy Research Networks.

Drolet, M. (2005). *Participation in post-secondary education in Canada: Has the role of parental income and education changed over the 1990s?* (Analytical Studies Branch Research Paper No. 243). Ottawa, ON: Statistics Canada.

Ehrenberg, R. G. (2004). Econometric studies of higher education. *Journal of Econometrics*, *121*(1–2), 19–37.

Finnie, R. (2005). Student financial aid: The roles of loans and grants. In F. Iacobucci & C. Tuohy (Eds.), *Taking public universities seriously* (pp. 476–497). Toronto, ON: University of Toronto Press.

Finnie, R., & Laporte, C. (2003). *Student loans and access to post-secondary education: Preliminary evidence from the post-secondary education and participation survey, Pathways to Access*. Montreal, QC: Canada Millennium Scholarship Foundation.

Finnie, R., Laporte, C., & Lascelles, E. (2004). *Family background and access to post-secondary education: What happened over the 1990s?* (Analytical Studies Branch Research Paper No. 226). Ottawa, ON: Statistics Canada.

Finnie, R., Lascelles, E., & Sweetman, A. (2005). Who goes? The direct and indirect effects of family background on access to postsecondary education. In C. M. Beach, R. W. Boadway, & R. M. McInnis (Eds.), *Higher Education in Canada* (pp. 295–338). Montreal and Kingston: McGill-Queen's University Press.

Finnie, R., & Mueller, R. E. (2008a). 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* (pp. 79–107). Queen's Policy Studies Series. Montreal and Kingston: McGill-Queen's University Press.

Finnie, R., & Mueller, R. E. (2008b). *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, R., & Mueller, R. E. (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.

Foley, K. (2001). *Why stop after high school? A descriptive analysis of the most important reasons that high-school graduates do not continue to PSE*. Montreal, QC: Canada Millennium Scholarship Foundation.

Frenette, M. (2004). Access to college and university: Does distance to school matter? *Canadian Public Policy*, *30*(4), 427–443.

Frenette, M. (2005). *The impact of tuition fees on university access: Evidence from a large-scale price deregulation in professional programs* (Analytical Studies Branch Research Paper No. 263). Ottawa, ON: Statistics Canada.

Frenette, M. (2007). *Why are youth from lower-income families less likely to attend university? Evidence from academic abilities, parental influences, and financial constraints* (Analytical Studies Branch Research Paper No. 295). Ottawa, ON: Statistics Canada.

Frenette, M. (2008). Why are lower income students less likely to attend university? Evidence from academic abilities, parental influences, and financial constraints. 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* (pp. 279–297). Queen's Policy Studies Series. Montreal and Kingston: McGill-Queen's University Press.

Frenette, M., & Robson, J. (2011). *Financial literacy of low-income students: Literature review and environmental scan*. Toronto: Higher Education Quality Council of Ontario.

Johnson, D. R., & Rahmad, F. (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, S., & Usher, A. (2004). *The price of knowledge 2004: Access and student finance in Canada*. Montreal, QC: Canada Millennium Scholarship Foundation.

Knighton, T., & Mirza, S. (2002). Postsecondary participation: The effects of parents' education and household income. *Education Quarterly Review*, *8*(3), 25–32.

Krahn, H., & Andres, L. (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.

Long, B. T. (2007). *Contributions from the field of economics to the study of college access and success*. *Teachers College Record* 109 (10).

Looker, E. D. (2001). *Why don't they go on? Factors affecting the decisions of Canadian youth not to pursue post-secondary education*. Montreal, QC: Canada Millennium Scholarship Foundation.

Looker, E. D., & Lowe, G. S. (2001). *Post-secondary access and student financial aid in Canada: Current knowledge and research gaps*. Ottawa, ON: Canadian Policy Research Networks.

Motte, A., Qiu, H., & Bussière, P. (2008). The Youth in Transition Survey: Following Canadian youth through time. 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* (pp. 63–75). Queen's Policy Studies Series. Montreal and Kingston: McGill-Queen's University Press.

Mueller, R. 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, R. 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 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* (pp. 33–61). Queen's Policy Studies Series. Montreal and Kingston: McGill-Queen's University Press.

Neill, C. (2009). Tuition fees and the demand for university places. *Economics of Education Review*, *28*(5), 561–570.

Rahman, A., Situ, J., & Jimmo, V. (2005). *Participation in postsecondary education: Evidence from the Survey of Labour and Income Dynamics*. (Culture, Tourism and the Centre for Education Statistics Research Paper No. 36, Catalogue No. 81-595-MIE). Ottawa, ON: Statistics Canada and Human Resources and Skills Development Canada.

Rivard, M., & Raymond, M. (2004). *The effect of tuition fees on post-secondary education in Canada in the late 1990s* (Working Paper No. 2004-09). Ottawa, ON: Department of Finance.

Tomkowicz, J., & Bushnik, T. (2003). *Who goes to post-secondary education and when: Pathways chosen by 20 year-olds* (Education, Skills and Learning Research Paper No. 006, Catalogue No. 81-595-MIE). Ottawa, ON: Statistics Canada.

Turcotte, M. (2011). Intergenerational education mobility: University completion in relation to parents' education level. *Canadian Social Trends, 92*, 37–43.

Contact Information

Richard E. Mueller
Department of Economics
University of Lethbridge
richard.mueller@uleth.ca

Ross Finnie is a professor in the Graduate School of Public and International Affairs and director of the Education Policy Research Initiative (EPRI) at the University of Ottawa. His teaching and research interests include a range of topics relating to education. These include access and barriers to participation in postsecondary education; student retention, pathways to completion, and other aspects of student experiences and student success; the role of the postsecondary system in responding to labour market skill shortages; non-cognitive skills and their importance to the labour market and life outcomes; and the measurement of quality and accountability mechanisms.

Richard E. Mueller is a professor and chair in the Department of Economics at the University of Lethbridge and associate director of the Education Policy Research Initiative (EPRI) at the University of Ottawa. His main research interest over the past dozen years has been the various determinants of access to postsecondary education in Canada, and he dabbles in other postsecondary education and labour market issues. His research has been published in various economics and higher education journals, a number of edited volumes, and reports.

Andrew Wismer completed a master's degree in economics at the University of Ottawa. He also holds an honours degree in economics and political science from Dalhousie University, where he earned a Maxwell Scholarship for performance in economics. Andrew contributed to this paper while working with the Education Policy Research Initiative (EPRI) at the University of Ottawa. Andrew's key research interests pertain to labour economics, education policy, and low-income experiences.