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ACCESS TO POST-SECONDARY EDUCATION: HOW DOES QUÉBEC COMPARE TO THE REST OF CANADA?

Ross Finnie and Richard E. Mueller

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Article abstract

This research uses the Youth in Transition Survey, Reading Cohort ("YITS-A") to analyse access to post-secondary education (PSE) in Québec in comparison to other Canadian provinces and regions. We begin by presenting access rates by region and show that university participation rates in Québec are relatively low, while college rates are high in comparison to other provinces, although these differences are presumably due in part to the cégep system in Québec. We then undertake an econometric analysis which reveals that the effects of parental education on access to PSE are much stronger than the effects of family income, and are relatively uniform across the country. The substantially weaker family income effects (stronger for females than males) figure most importantly for the Atlantic Provinces, but much less elsewhere, including in Québec. We also find that the relationships between test scores from the Programme for International Student Assessment (PISA), which measures academic "performance" and "ability" and even more so high school grades, differ by province, and are generally strongest in Ontario and weakest in Québec, again perhaps in part due to the cégep system which represents a mediating influence between high school performance and university attendance, in particular. Males are much less likely to attend university across the country, but this gap is widest in Quebec. Our analysis of traditionally under-represented and minority groups points to students from rural Québec actually being at no disadvantage in terms of PSE participation, second-generation immigrants doing especially well in comparison to other provinces, but more recent first-generation immigrants not faring nearly so well in Québec. Finally, young Québecers who do not go on to PSE (especially the Francophone majority) are much more likely than other Canadian youths to say that they simply have no aspirations to attend PSE, and to otherwise say they face no barriers to attending PSE. Policy implications are discussed using a fiscal lens.

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ACCESS TO POST-SECONDARY EDUCATION: HOW DOES QUÉBEC COMPARE TO THE REST OF CANADA?*

Ross FINNIE
Graduate School of Public and International Affairs
Education Policy Research Initiative
University of Ottawa

Richard E. MUELLER
Department of Economics
University of Lethbridge
Education Policy Research Initiative
University of Ottawa

Résumé – Cette recherche utilise l'Enquête auprès des jeunes en transition pour la cohorte lecture (« EJET-A ») afin de comparer le taux de participation aux études postsecondaires (EPS) au Québec à d'autres régions du Canada. En premier lieu, nous présentons les taux d'accès par région et nous découvrons rapidement qu'il y a plusieurs différences importantes, notamment le fait que les taux de participation aux études universitaires au Québec sont faibles, tandis que les taux de participation aux études collégiales sont relativement élevés par rapport aux autres provinces. Par la suite, nous complétons une analyse économétrique qui révèle que le revenu parental à un effet important sur la participation aux EPS dans les provinces de l'Atlantique, mais semble avoir un effet beaucoup plus faible ailleurs, y compris au Québec. En revanche, nous déterminons que le niveau d'éducation des parents à un effet puissant et uniforme sur la participation aux EPS dans l'ensemble du pays. Nous constatons également que la relation entre les notes du secondaire et les résultats aux tests du programme international pour le suivi des acquis des élèves (PISA), qui mesure les connaissances académiques et les compétences des élèves, diffère selon la région et est généralement la

* This paper draws heavily on the previous work of the authors and their coauthors; in particular Finnie, Childs and Wismer (2011a, 2011b), Finnie, Mueller and Sweetman (2014, 2016), and Finnie, Mueller and Wismer (2015). We would like to thank Stephen Childs, Michael Dubois, and John Sergeant for their efforts on this paper, as well as an anonymous referee for comments which have strengthened the final product. Finally, we are grateful to the editors for including us in this project.

plus forte en Ontario et la plus faible au Québec. Ainsi, le Québec semble avoir un système qui est relativement moins « méritocratique », par exemple, que l'Ontario puisque les connaissances et compétences (tel que mesurées par PISA) sont des déterminants moins importants de la participation aux études universitaires. Nous constatons également que certains groupes sous-représentés ne performent pas aussi bien au Québec. Toutefois, certains, tels que ceux provenant de zones rurales et les immigrants de deuxième génération, performent mieux au Québec en ce qui a trait à la participation aux études universitaires. Les jeunes Québécois sont beaucoup plus susceptibles que les autres jeunes Canadiens à dire qu'ils n'ont pas d'aspirations à des études postsecondaires, et ce particulièrement pour la majorité francophone dans de la province. En somme, ces résultats pourraient être attribués à la présence de cégeps dans la province, propre au système d'éducation québécois, ou à d'autres facteurs culturels qui n'ont pas encore été découverts. Ces deux hypothèses devront être explorées dans le cadre de recherches futures.

ABSTRACT – This research uses the Youth in Transition Survey, Reading Cohort ("YITS-A") to analyse access to post-secondary education (PSE) in Québec in comparison to other Canadian provinces and regions. We begin by presenting access rates by region and show that university participation rates in Québec are relatively low, while college rates are high in comparison to other provinces, although these differences are presumably due in part to the cégep system in Québec. We then undertake an econometric analysis which reveals that the effects of parental education on access to PSE are much stronger than the effects of family income, and are relatively uniform across the country. The substantially weaker family income effects (stronger for females than males) figure most importantly for the Atlantic Provinces, but much less elsewhere, including in Québec. We also find that the relationships between test scores from the Programme for International Student Assessment (PISA), which measures academic ''performance'' and ''ability'' and even more so high school grades, differ by province, and are generally strongest in Ontario and weakest in Québec, again perhaps in part due to the cégep system which represents a mediating influence between high school performance and university attendance, in particular. Males are much less likely to attend university across the country, but this gap is widest in Quebec. Our analysis of traditionally under-represented and minority groups points to students from rural Québec actually being at no disadvantage in terms of PSE participation, second-generation immigrants doing especially well in comparison to other provinces, but more recent first-generation immigrants not faring nearly so well in Québec. Finally, young Québecers who do not go on to PSE (especially the Francophone majority) are much more likely than other Canadian youths to say that they simply have no aspirations to attend PSE, and to otherwise say they face no barriers to attending PSE. Policy implications are discussed using a fiscal lens.

Introduction

Research on access to post-secondary education (PSE) in Canada has made many important discoveries in recent years, not the least of which is that access appears to be more strongly related to parental education and other sociocultural factors than to family income and other financial factors. Our own work, along with that of others, has also discovered that academic preparation for PSE, as represented by high school grades and Programme for International Student Assessment (PISA) test scores (which measure math, science, and reading/writing when students are 15 years of age), is another important predictor of who will go to college or university. These various influences are interconnected, rooted in the family and start early in a young person's life – certainly well before the final years of high school when young people make their PSE choices. All this helps inform our understanding of PSE in important ways, including from a policy perspective[1].

In this paper we dig into these relationships at the provincial and regional level. This should further enhance our understanding of these relationships, and help inform policy formation in this area, with education largely falling under provincial jurisdiction.

We do this by using the wealth of information contained in the Youth in Transition Survey, Cohort A (YITS-A) to present empirical evidence on access to PSE for Québec in comparison to other provinces in Canada. We begin by looking at PSE access rates by province, and then carry out an econometric analysis of the determinants of access. We extend our analysis to focus on a set of traditionally under-represented and minority groups such as those from low-income households, first-generation students, and those from single parent households. We conclude the empirical analysis by presenting evidence on the self-identified barriers to PSE for those who do not attend.

We find that by age 21, 70.3 percent of the Quebecers in our sample have attended some kind of PSE – either college or university. This is the second lowest rate in the country, with only Western Canada lagging behind at 68.9 percent. Ontario leads the pack at 81.9 percent, with Atlantic Canada in second position at 75.7 percent.

Québec also lags the country in university participation rates specifically, at 30.3 percent, much lower than the 42.8 percent in Western Canada, the region with the second lowest participation rate. The Atlantic Provinces and Ontario have rates of 51.1 percent and 45.5 percent, respectively. While Québec's university participation rate seems low, this may be due at least in part to the cégep system that students enter after high school and before starting university, which may delay some students' ultimate university attendance.

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1. See Finnie, Sweetman and Usher (2008) for a recent review, as well as various other papers in Finnie, Mueller, Sweetman and Usher (2008) and Finnie, Frenette, Mueller and Sweetman (2010). See also Mueller (2008a, 2008b) for a general literature review of the access literature.

Conversely, Québec leads the country in college participation at 40 percent, again undoubtedly due in part to the cégep system. Ontario follows with a more conventionally defined college participation rate of 36.4 percent.

In our regression analysis, we find that the effect of parental income on access to university (once the other factors included in the models are taken into account) is very small in almost all provinces, including Québec, with it mattering only in Atlantic Canada. That said, when the models are estimated separately for females and males, it emerges that family income matters more for females than males, including smallish effects for Québec.

Parental education is, in contrast, a much stronger determinant of university attendance, and – interestingly – its effect is fairly uniform across the country, slightly higher for males than females.

We also discover that the effects of high school grades and PISA test scores (roughly interpretable as measures of academic performance and ability) on access to PSE are considerably smaller in Québec than in other provinces, especially in the case of grades, once again probably at least in part due to the cégep system, which presumably mediates some of the high school influences with its own effects (such as performance while in cégep – unfortunately not measured in our data). Within that general pattern, we find that high school grades for Québec males are not only a much less important determinant of university access compared to other provinces, but are also less important than for females in Québec.

Females attend university at much higher rates than males in all provinces, but nowhere is this gap greater than in Quebec.

Our results for the under-represented and minority groups (URMGs) considered in the analysis point to students from rural Québec actually being at no disadvantage in terms of PSE participation (unlike other provinces), second-generation immigrants doing especially well in comparison to those in other provinces, but more recent first-generation immigrants not faring nearly so well in Québec. Other results are more or less in line with their effects in other provinces.

Finally, young Quebecers who do not go on to PSE (especially the Francophone majority) are much more likely than other Canadian youths to say that they simply have no aspirations to attend PSE, and otherwise say they face no barriers to attending PSE.

Taken together, these results identify substantial differences by province in the determinants of who goes to university (in particular), and the barriers to PSE for those who do not attend. Policy implications are discussed through a fiscal lens.

The paper is laid out as follows. The following section discusses the methodology and data used in the analysis. Section 2 shows the proportion of students that attend university and college, while Section 3 reports the results of our multivariate analysis of the determinants of access to PSE by province and access among historically under-represented groups, and reports the barriers students say prevented them from attending. The final section discusses the results and their related policy implications.

1. Methodology and Data

1.1 *The Econometric Model*

We use a multinomial logit model to estimate access to PSE, differentiating access to college – including trade schools and cégep – access to university, or no PSE. For our main estimates, the model may be expressed as follows:

$$Y = f(X1, X2)$$

Where Y represents the access outcomes of interest (i.e., no PSE, college, university), $X1$ represents a set of control variables including family type, an indicator of rural residence and so on, and $X2$ are the key covariates that influence Y, including family income, parental education, overall high school grades and PISA reading scores. The model is estimated separately for four regions in Canada: Québec, Ontario, Atlantic Canada, and Western Canada.

This multinomial logit approach has been used previously in Finnie and Mueller (2008a, 2008b, 2009, and 2010) and in other studies, and treats the particular level of PSE as a jointly determined process, along with the decision to go to PSE. We believe this model represents both the conceptually and econometrically correct treatment (which various tests have further verified)[2]. Furthermore, after the appropriate transformations, this model yields easily interpretable estimates, which provide a full perspective of the effects of the explanatory variables on access to college, access to university, and the net effects on the two PSE outcomes relative to non-attendance.

1.2 *The YITS Data, Sample Selection, and Definitions*

The data used in the analysis are taken from the Youth in Transition Survey, Cohort A (generally known as YITS-A). The YITS-A is highly suitable for our purposes since it follows all young people born in 1984 (and thus age 15 as of December 31, 1999) through their high school years and through to the decision to enter PSE. The YITS-A is rich in background data and other important determinants of access to PSE. The provincial sampling structure of the YITS-A further provides for representative samples at this level and adequate sample sizes for carrying out analysis by province (or region).

The YITS-A data used here consist of four cycles, corresponding to the surveys and interviews undertaken in 2000, 2002, 2004, and 2006. The first cycle (in 2000) includes not only questionnaires that were completed by the 15-year-old student respondents, but also interviews that were completed with their parents and high school officials. The YITS-A also contains the youths' Programme for International Student Assessment (PISA) test scores in the areas of reading, mathematics, and science.

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2. We have, for example, tested our model against other models such as an ordered probit model and found that the multinomial logit is indeed appropriate.

Follow-up telephone surveys were carried out with respondents (but not parents or school officials) in 2002, 2004, 2006, 2008, and 2010.

We chose to 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 (decreasing over time)[3]. In this wave of the survey, the young people were 21 years of age, a point at which most had made their initial choices about entering PSE, which is the basis of our analysis[4].

The dependent variable in our study represents whether the individual ever enrolled in college, enrolled in university, or did not enroll in either, at any point over the first four cycles of YITS-A, regardless of whether or not they continued in their studies. This represents 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 and are therefore outside the scope of this paper.

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, would reflect the underlying population of youth born in 1984 and thus age 15 and living in Canada in December 1999.

2. University and College Participation Rates

This first part of our analysis is based on Figure 1, which displays rates of participation in PSE in Québec and other regions for comparison. Rates are shown first for males and females pooled together and then separately.

The top panel of the figure shows the overall rate of college participation in Québec for males and females combined is 40.0 percent and the highest of the four regions listed. In terms of university participation, Québec has the lowest participation rate at 30.3 percent, some 12 percentage points lower than the next lowest region of Western Canada. In Atlantic Canada, by contrast, 51.1 percent of the young people in our sample have attended university by age 21. Both these sets of numbers, however, presumably reflect the effects of the Québec cégep system, which probably both boosts the college rates and reduces the university rates[5].

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3. An analysis carried out by the MESA Project indicates that the attrition from the YITS-A 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.

4. Tests indicate that although PSE access rates do increase over time, the structure of access with respect to background variables does not change in any important ways.

5. Appendix Table A1 shows access rates from the YITS-B, Cycle 4 – a survey taken at the same time as the YITS-A in 2006, but when the respondents were 24 to 26 years of age (compared to 21 years of age in the YITS-A). The data show a university attendance rate of 38 percent for Québec, comparable to the rate for British Columbia and higher than that for Alberta. The 15 percentage point university participation gap between Ontario and Québec in the figure here narrows to 5 percentage points in the YITS-B data.

Comparing the bottom two panels in the figure, we see that in all regions, females access university at substantially higher rates than males. For Québec, university participation figures are 38.4 percent for females and 22.6 percent for males. In Ontario, females access university at a rate of 54.7 percent versus only 36.3 percent for males, a gap of 18.4 percentage points. Males in all province access college – but not (yet) university, reflecting the definitions used here – at greater rates than females. In Québec, the female rate is 38.9 percent compared to the male rate of 41.1 percent.

FIGURE 1

RATES OF ACCESS TO COLLEGE AND UNIVERSITY BY REGION

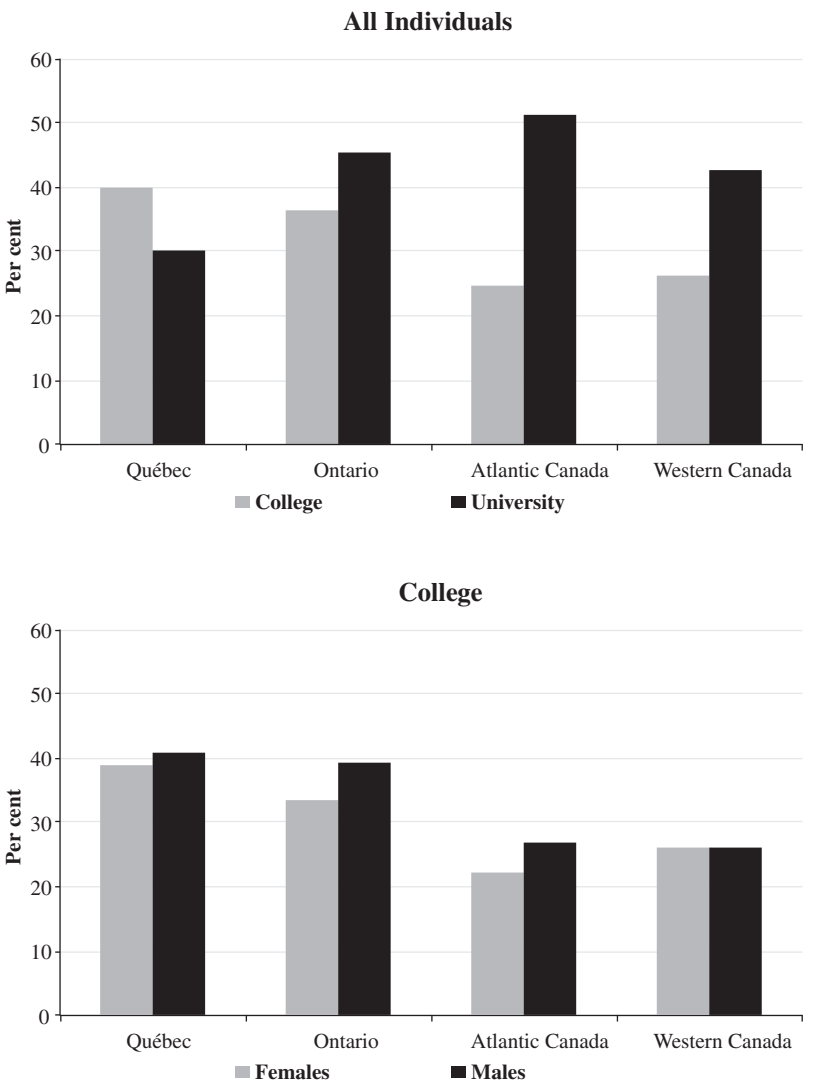
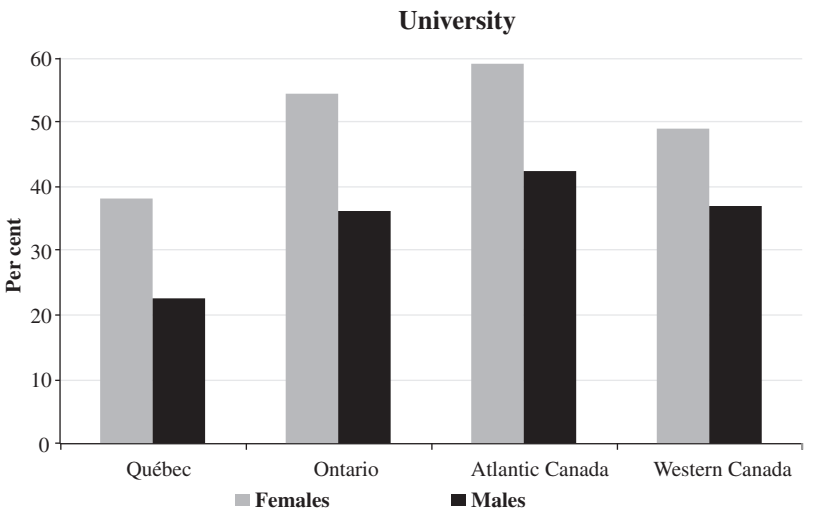


FIGURE 1 (continued)



3. An Econometric Analysis of Differences in Access

3.1 *Concepts, Definitions and Interpretation of the Findings*

In this section we investigate the major determinants of access – family income, parental education, overall high school grades, and PISA reading scores – and how these effects differ by region using a modelling approach.

It should be noted that we use the terms "determinants" of access, "effects" and so on advisedly, especially with respect to the PISA score and high school grade variables. These variables, grades in particular, are likely to be at least partly endogenous to PSE access decisions. For example, those intending to go to PSE are likely to attempt to gain the higher grades that will ensure their acceptance in the post-secondary programs and to the institution of their choice. Similarly, PISA scores might also be higher for those wanting to go to PSE as working hard in school to obtain the necessary grades would presumably also lead to better test results.

In addition, family income (actually restricted to the parents' income excluding all children's income) captures the effects of not only the family's financial resources, but also other factors correlated with income and not otherwise controlled for in the model that also affect access to PSE. Meanwhile, our models also include parental education (measured as the highest credential earned by either parent and converted into years of education), which would be expected to capture another range of family characteristics and influences. The results reported below should be interpreted in this context.

The high school grade variable represents the individual's overall grade average, out of 100, measured during their last year in high school. This is given in grade

ranges in the YITS survey (> 90, 80-90, 70-80, etc.), but we have converted these to a linear variable, using the relevant adjusted mid-points within each grade range (85, 75, etc.), so as to reduce the number of parameters to be estimated and thus gain efficiency in the estimation of our model[6].

The PISA score is given in points, the score given in the YITS being normalized to have a mean of 500 and a standard deviation of 100 across all individuals in all countries participating in the test.

To make the grade and PISA scores more directly comparable in terms of the magnitudes of their effects, the average grade variable is divided by 10, thus yielding the effect of a 10-point difference in grades, while the PISA scores are divided by 100, meaning the effect we report captures a difference of that much (i.e., one standard deviation). Finally, family income is scaled to represent a $10,000 difference in income. These scale adjustments do not affect the actual estimation, but make interpretation of the results easier.

All regressions in our analysis also include a set of controls that have been found to be significant in earlier work: gender, urban-rural location (high school), language, family type (two parents, single parent, etc.), parental education, and visible minority and immigrant status. These controls are not interacted with region[7],

Our discussions mostly focus on the effects on university attendance because the effects of the variables of interest tend to be more evident on university attendance. This is essentially because the main variables we are looking at in this analysis – family income, parental education, high school grades, and PISA scores – tend to have strongly positive effects on university access, but smaller or in many cases actually negative (net) effects on college attendance. Intuitively, this makes sense: coming from a family with a higher income, having at least one better educated parent, having higher grades in high school, or having a higher PISA score tend not only to increase the probability that an individual will go on to PSE at some level (i.e., to either college or university), but also that, among those that attend PSE, a person will go to university rather than college. Hence, the overall effects on university attendance will be strongly positive because the two effects run in the same direction, whereas the net effects on college is the outcome of these two offsetting influences, so sometimes it is (usually weakly) positive, sometimes negative, and often not statistically distinguishable from zero.

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6. We have tested using the categorical grade variables, and the results are consistent with those reported here. We use the individual's overall grade average instead of other specific grades (math, English/French, sciences) because past work (Finnie and Mueller, 2008a, 2008b) has revealed the overall grade to be the strongest determinant of university access in the YITS data.

7. See Finnie, Childs and Wismer (2011a) for models with interaction terms.

3.2 *The General Models*

Table 1a shows the estimation results for each region. The effects of parental education, family income, overall high school grades and PISA reading scores are shown, along with the effects of the other control variables.

It is interesting to first note the very strong and quite uniform effect of parental education in all regions, varying only between 0.030 and 0.033. This means that a young person whose highest-educated parent has a university degree (16 years of education) will have a 12-13 percentage point higher probability of attending university compared to a student whose best-educated parent has only a high school diploma (12 years of education), all else being equal. Given that the raw probability of young Quebecers attending university by the age of 21 is 30 percent (Figure 1), this is a large effect.

By contrast, the estimates on the income coefficients indicate much weaker effects, and vary by region. In Québec, the average marginal effect of income is small and only marginally significant (at the 10 percent level). The 0.006 point estimate means that a $50,000 difference in family income translates into a difference of just 3.0 percentage points in university attendance – the same effect as one year of parental education. The effects of family income is also small and not statistically significant in Ontario, while it is stronger in Atlantic Canada.

Grade and PISA reading score effects are significant in all regions, but the effects are generally smaller for Québec, especially in the case of grades. This could again be because Québec students attend cégep before university, with those cégep experiences presumably cutting into the high school effects.

The regional models were also run for females and males separately, with the results of these regressions found in Tables 1b and 1c. The parental education effects are again strong and relatively similar across provinces, but stronger and especially uniform for males relative to females: a uniform 0.037 for males regardless of region, in the 0.020 to 0.029 range for females.

TABLE 1A

MULTINOMIAL ESTIMATES OF ACCESS TO COLLEGE AND UNIVERSITY

	Québec		Ontario		Atlantic Canada		Western Canada	
	College	**University**	**College**	**University**	**College**	**University**	**College**	**University**
Parental Education (# of years)	-0.004 [0.005]	0.030*** [0.004]	-0.012** [0.005]	0.031*** [0.004]	-0.011*** [0.003]	0.030*** [0.003]	-0.008** [0.003]	0.033*** [0.003]
Parental Income ($10,000)	-0.002 [0.004]	0.006* [0.004]	0.001 [0.004]	0.004 [0.003]	-0.005* [0.003]	0.019*** [0.003]	-0.000 [0.002]	0.003* [0.002]
HS Overall Grade (percentage points)	-0.044*** [0.012]	0.121*** [0.010]	-0.079*** [0.012]	0.160*** [0.010]	-0.052*** [0.007]	0.155*** [0.007]	-0.044*** [0.008]	0.162*** [0.007]
PISA Reading Score (÷ 100)	0.054*** [0.014]	0.119*** [0.012]	-0.085*** [0.015]	0.170*** [0.012]	-0.057*** [0.008]	0.133*** [0.008]	-0.030*** [0.009]	0.118*** [0.008]
Female (Male)	-0.027 [0.020]	0.104*** [0.018]	-0.012 [0.022]	0.064*** [0.018]	-0.014 [0.012]	0.053*** [0.012]	0.013 [0.014]	0.045*** [0.013]
HS Location - Urban (Rural)	0.004 [0.026]	0.020 [0.021]	-0.023 [0.029]	0.056** [0.026]	-0.080*** [0.012]	0.076*** [0.013]	-0.032** [0.015]	0.051*** [0.014]
French Minority (Non-French Minority)			-0.023 [0.033]	0.088*** [0.029]	-0.028* [0.016]	0.085*** [0.017]	-0.087** [0.038]	0.105*** [0.040]
English Minority (Non-English Minority)	0.045 [0.030]	0.062*** [0.021]						

TABLE 1A (continued)

	Québec		Ontario		Atlantic Canada		Western Canada	
	College	**University**	**College**	**University**	**College**	**University**	**College**	**University**
Family Type (Two Parents)								
Mother only	-0.001 [0.033]	-0.010 [0.028]	0.002 [0.037]	-0.031 [0.028]	-0.017 [0.020]	0.010 [0.022]	-0.027 [0.023]	-0.016 [0.024]
Father only	-0.008 [0.054]	-0.041 [0.043]	0.103 [0.082]	-0.069 [0.069]	-0.066* [0.037]	0.033 [0.050]	0.039 [0.056]	-0.062 [0.052]
Other	0.149 [0.109]	-0.069 [0.097]	-0.078 [0.109]	0.025 [0.110]	0.050 [0.077]	-0.101 [0.098]	-0.080* [0.045]	-0.029 [0.052]
Visible Minority/Immigrant Status (Non-Visible Minority Born in Canada)								
Visible Minority Born in Canada	0.007 [0.050]	0.191*** [0.042]	-0.073* [0.038]	0.130*** [0.031]	-0.090** [0.040]	0.145*** [0.050]	0.024 [0.026]	0.171*** [0.026]
Non-Visible Minority Immigrant	0.097 [0.093]	-0.080 [0.073]	-0.031 [0.064]	-0.016 [0.046]	0.008 [0.115]	0.049 [0.106]	0.039 [0.050]	0.097** [0.043]
Visible Minority Immigrant	0.070 [0.075]	0.013 [0.062]	-0.084* [0.045]	0.197*** [0.042]	0.127 [0.104]	0.086 [0.103]	-0.009 [0.033]	0.243*** [0.035]
Observations	2463		2354		5440		5656	

NOTE: 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 1B

MULTINOMIAL ESTIMATES OF ACCESS TO COLLEGE AND UNIVERSITY - FEMALES

	Québec		Ontario		Atlantic Canada		Western Canada	
	College	**University**	**College**	**University**	**College**	**University**	**College**	**University**
Parental Education (# of Years)	-0.002 [0.007]	0.020*** [0.006]	-0.011 [0.007]	0.027*** [0.006]	-0.010** [0.004]	0.025*** [0.005]	-0.009** [0.005]	0.029*** [0.005]
Parental Income ($10,000)	-0.009 [0.006]	0.022*** [0.005]	-0.000 [0.007]	0.006* [0.003]	-0.006 [0.004]	0.024*** [0.004]	0.001 [0.003]	0.009*** [0.003]
HS Overall Grade (percentage points)	-0.076*** [0.019]	0.143*** [0.017]	-0.067*** [0.019]	0.144*** [0.015]	-0.061*** [0.010]	0.139*** [0.010]	-0.039*** [0.013]	0.146*** [0.010]
PISA Reading Score (÷ 100)	0.063*** [0.020]	0.106*** [0.018]	-0.090*** [0.022]	0.191*** [0.017]	-0.069*** [0.011]	0.149*** [0.011]	-0.050*** [0.014]	0.135*** [0.012]
HS Location - Urban (Rural)	-0.020 [0.036]	0.047 [0.031]	-0.084** [0.041]	0.075** [0.036]	-0.085*** [0.016]	0.051*** [0.017]	-0.031 [0.022]	0.022 [0.020]
French Minority (Non-French Minority)			0.001 [0.045]	0.070* [0.037]	-0.050** [0.021]	0.123*** [0.021]	-0.105** [0.050]	0.138** [0.055]
English Minority (Non-English Minority)	0.003 [0.046]	0.080** [0.034]						

TABLE 1B (continued)

	Québec		Ontario		Atlantic Canada		Western Canada	
	College	**University**	**College**	**University**	**College**	**University**	**College**	**University**
Family type (Two parents)								
Mother only	-0.008 [0.044]	0.015 [0.039]	0.056 [0.052]	-0.044 [0.038]	-0.008 [0.027]	0.032 [0.028]	-0.032 [0.034]	-0.006 [0.034]
Father only	-0.050 [0.075]	0.015 [0.071]	0.088 [0.105]	-0.008 [0.085]	-0.069 [0.054]	-0.013 [0.072]	0.174** [0.088]	-0.130* [0.075]
Other	0.218 [0.150]	-0.090 [0.148]	0.014 [0.165]	-0.151 [0.107]	0.015 [0.093]	-0.016 [0.118]	-0.049 [0.069]	-0.035 [0.070]
Visible Minority/Immigrant Status (Non-Visible Minority Born in Canada)								
Visible Minority Born in Canada	-0.072 [0.069]	0.199*** [0.060]	-0.044 [0.050]	0.160*** [0.045]	-0.088* [0.053]	0.195*** [0.063]	0.005 [0.038]	0.172*** [0.037]
Non-Visible Minority Immigrant	0.111 [0.162]	0.027 [0.144]	-0.154* [0.082]	0.070 [0.062]	-0.006 [0.147]	0.199 [0.146]	0.038 [0.071]	0.036 [0.057]
Visible Minority Immigrant	0.048 [0.118]	0.010 [0.113]	-0.077 [0.059]	0.218*** [0.057]	0.104 [0.114]	0.089 [0.112]	-0.053 [0.048]	0.296*** [0.053]
Observations	1216		1208		2897		2833	

NOTE: 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 1C

MULTINOMIAL ESTIMATES OF ACCESS TO COLLEGE AND UNIVERSITY - MALES

	Québec		Ontario		Atlantic Canada		Western Canada	
	College	**University**	**College**	**University**	**College**	**University**	**College**	**University**
Parental Education (# of Years)	-0.005 [0.006]	0.037*** [0.006]	-0.015** [0.007]	0.037*** [0.006]	-0.014*** [0.004]	0.037*** [0.005]	-0.007 [0.004]	0.037*** [0.004]
Parental Income ($10,000)	0.001 [0.003]	0.001 [0.002]	0.001 [0.004]	0.004 [0.003]	-0.004 [0.003]	0.015*** [0.003]	-0.000 [0.001]	0.001 [0.001]
HS Overall Grade (percentage points)	-0.018 [0.017]	0.102*** [0.014]	-0.086*** [0.016]	0.177*** [0.014]	-0.046*** [0.010]	0.171*** [0.011]	-0.047*** [0.010]	0.181*** [0.010]
PISA Reading Score (÷ 100)	0.051*** [0.019]	0.131*** [0.014]	-0.069*** [0.019]	0.153*** [0.017]	-0.046*** [0.010]	0.119*** [0.011]	-0.014 [0.012]	0.101*** [0.012]
HS Location - Urban (Rural)	0.028 [0.036]	-0.008 [0.029]	0.033 [0.040]	0.030 [0.034]	-0.081*** [0.017]	0.101*** [0.019]	-0.042** [0.020]	0.085*** [0.021]
French Minority (Non-French Minority)			-0.047 [0.048]	0.122*** [0.046]	0.008 [0.025]	0.028 [0.027]	-0.052 [0.060]	0.038 [0.049]
English Minority (Non-English Minority)	0.085** [0.040]	0.043 [0.027]						

TABLE 1C (continued)

	Québec		Ontario		Atlantic Canada		Western Canada	
	College	**University**	**College**	**University**	**College**	**University**	**College**	**University**
Family Type (Two Parents)								
Mother only	-0.008 [0.046]	-0.004 [0.038]	-0.065 [0.049]	-0.009 [0.038]	-0.022 [0.030]	-0.019 [0.034]	-0.022 [0.032]	0.001 [0.033]
Father only	0.024 [0.074]	-0.076* [0.045]	0.110 [0.112]	-0.123 [0.091]	-0.073 [0.049]	0.091 [0.060]	-0.095 [0.060]	0.042 [0.061]
Other	0.100 [0.141]	-0.056 [0.098]	-0.195** [0.087]	0.203* [0.106]	0.182 [0.125]	-0.338*** [0.114]	-0.105* [0.061]	0.005 [0.079]
Visible Minority/Immigrant Status (Non-Visible Minority Born in Canada)								
Visible Minority Born in Canada	0.064 [0.070]	0.198*** [0.060]	-0.092 [0.057]	0.083* [0.045]	-0.093* [0.055]	0.094 [0.072]	0.041 [0.037]	0.173*** [0.035]
Non-Visible Minority Immigrant	0.098 [0.116]	-0.116 [0.087]	0.070 [0.095]	-0.126* [0.070]	0.000 [0.166]	-0.096 [0.097]	0.048 [0.072]	0.169*** [0.063]
Visible Minority Immigrant	0.082 [0.095]	0.025 [0.066]	-0.095 [0.068]	0.181*** [0.058]	0.166 [0.156]	0.063 [0.154]	0.030 [0.044]	0.204*** [0.046]
Observations	1247		1146		2543		2823	

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

In Québec, parental income does not exert any influence on male university attendance, but the coefficient estimate of 0.022 for females suggests that an extra $10,000 of parental income is about equivalent to an extra year of parental education in its effect on accessing university. The income coefficients tend to be higher for Atlantic Canada, perhaps due to the generally higher tuition fees and lower incomes in the region relative to the rest of the country.

High school grades and PISA scores are strong determinants of university attendance for both males and females across the country, but the effects are generally smaller in Québec, especially in the case of grades for males and (less so) PISA scores for females.

3.3 *Under-Represented and Minority Groups*

Across the country there have been calls to increase the numbers of students enrolled in PSE. This has lead policy makers and researchers alike to focus on those groups that have lower-than-average participation rates and to determine what factors may be related to this under-representation.

In this section, we focus on the following under-represented and minority groups (URMGs):

- Those from low-income families;
- Those from families with no history of attending PSE (i.e., "first-generation" students);
- Those living in rural areas and others who live far from college or university campuses;
- Those whose mother tongue is French;
- First- and second-generation immigrants;
- Those from single-parent (or other "non-traditional") families;
- Those of Aboriginal or First Nations ancestry; and
- Those with disabilities.

The incidence of these groups is presented in Table 2. Québec is second only to Atlantic Canada in terms of the percentage of all families with incomes below $50,000 (40.2 percent and 47.0 percent, respectively). Parental education appears to be lowest in Québec, at least in terms of those with no PSE, with 37.8 percent of the Québec youth in our sample coming from a family where the most educated parent does not have any PSE. This is 9 to 11 percentage points higher than the same figure in the other regions. Québec is second lowest in the proportion of students from rural areas at 21 percent, compared to only 16.2 percent of those from Ontario coming from rural area (as determined by the location of the high school in the YITS).

Québec has the highest proportion of youth from single-parent families in the sample at 20.1 percent, but has proportionately fewer immigrants of either generation compared to Western Canada and Ontario. Québec has the lowest proportion of Aboriginals in the country, and the proportion of those with disabilities is also lower than elsewhere in Canada.

The PSE participation rates for these groups are presented in Table 3. Looking at these raw numbers (i.e., without adjusting for related factors – see below), we see that the overall participation rates for the regions repeat what was presented above in Figure 1, namely that Québec has the second lowest overall participation rates (next to Western Canada), mainly due to the low university participation rate for which the relatively high college participation rate does not compensate.

The Québec youth in our sample who come from low-income households (those that have a combined parental annual income of less than $50,000) have an overall rate of PSE attendance that is 15.5 percentage points lower than those from families with higher incomes in the Québec sample, while their university participation rate is 17.6 percentage points lower (19.7 percent for low-income students versus 37.3 percent for the higher income group). A similar pattern holds for the other regions, with some variation. In particular, in Atlantic Canada, where university participation rates are generally high, there is an even greater difference between lower-income students' and higher-income students' university access rates (36.1 percent versus 64.4 percent). Ontario, meanwhile, has a much higher overall university participation rate, and a somewhat smaller gap in relative participation between low-income students and higher-income students (14.3 percentage points).

In Québec, students with no family background of PSE attendance have an overall PSE participation rate that is an even greater 24.2 percentage points lower than that of students with at least one parent who attended PSE. This gap is the widest in the country. More dramatically, the university participation rate of first-generation PSE students is less than half that of non-first generation PSE students, at 16.7 percent and 38.5 percent, respectively. Unlike the other regions, this is not offset by higher college participation rates.

Rural Quebecers are also under-represented in PSE, with an overall PSE participation rate that is nine percentage points lower than that of students from urban areas, all because of lower university participation rates. This rural-urban university access rate gap is, however, the smallest in the country. Furthermore, there is no gap in Québec for college participation between the two groups, unlike in Ontario and the Atlantic provinces where the gap is about 10 percentage points. These results are presumably in part due to the cégep system in Québec as well as the University of Québec system, both of which have campuses across the province, including many remote areas, thus easing access for many rural students

Those respondents living out of Québec whose first language is French have a mixed record relative to non-Francophones, in some cases having higher PSE access rates, in some cases lower.

TABLE 2

GROUP DISTRIBUTIONS (%) BY REGION

	Québec	Ontario	Atlantic Canada	Western Canada
Family Income				
Income below $50,000	40.2	26.4	47	32.5
Income Greater than $50,000	59.8	73.6	53	67.5
Total	100	100	100	100
Parental Education				
No PSE	37.8	28.9	28.4	26.7
At Least some PSE	62.2	71.1	71.6	73.3
Total	100	100	100	100
Rural/Urban				
Rural	21	16.2	46.5	26.4
Urban	79	83.8	53.5	73.6
Total	100	100	100	100
Linguistic Minority				
French Minority outside of Québec/English Minority in Québec	8.4	4.2	10.2	1.1
Non-Linguistic Minority	91.6	95.8	89.8	98.9
Total	100	100	100	100

TABLE 2 (continued)

	Québec	Ontario	Atlantic Canada	Western Canada
Family Type				
Single Parent	20.1	17.2	15.9	15.4
Two Parent Family	79.9	82.8	84.1	84.6
Total	100	100	100	100
Immigrant Status				
First Generation Immigrant	4.1	12	0.9	8.9
Second Generation Immigrant	9.7	26.1	5.8	20.2
Non-Immigrant	86.2	61.9	93.3	70.9
Total	100	100	100	100
Aboriginal Status				
Aboriginal	1.6	2.3	3.1	4.3
Non-Aboriginal	98.4	97.7	96.9	95.7
Total	100	100	100	100
Disability Status				
Disability	9.5	11.4	15	16.5
No Disability	90.5	88.6	85	83.5
Total	100	100	100	100

Within Québec, students from single-parent families access PSE at an overall rate that is 4.3 percentage points lower than that of students from two-parent families. Although college rates are higher for those from single parent families, those from two-parent families are 6.7 percentage points more likely to attend university. The same pattern, with larger differences, is observed in Ontario. In Atlantic Canada, students from single-parent families have a similar college attendance rate to that of students from two-parent families, but the difference in the university attendance rate is over 13 percentage points. In the West, the difference between the university access rates is about 10 percentage points, while the college participation rate for students from single-parent households is approximately 2 percentage points lower than the rate for students from two-parent families.

First - and especially second-generation immigrants in Québec (i.e., those who came to Canada as immigrants themselves and those born in Canada to immigrant parents, respectively) - have higher overall PSE participation rates than non-immigrants, so they are not actually an under-represented group. This is driven mainly by their university participation rates, which are 18 percentage points higher for second-generation immigrants, while being approximately equal for first-generation immigrants as compared to non-immigrant youth. College participation rates for first-generation immigrants are somewhat higher in Québec, but somewhat lower for the second-generation. Higher university and lower college access rates are generally observed for first- and second-generation immigrants in all other regions. The exception is Ontario where non-immigrants still attend college in greater proportions.

Youth of Aboriginal ancestry are only somewhat under-represented at both colleges and universities in Québec, with participation rates about 5 percentage points lower than that of non-Aboriginal respondents in each case. This contrasts with the rest of Canada where the gaps in university participation rates are at least 10 percentage points, and close to 30 percentage points in the case of Ontario. College participation rates in Ontario are similar for Aboriginal and non-Aboriginal youth, so the difference in the overall rate of PSE access is due to the very large difference in their university participation rates.

Young Québecers who were identified by their parents as having a cognitive or physical disability have an overall PSE participation rate 13.4 percentage points lower than the participation rate of those without a disability. The university gap is about 15 percentage points in Québec, with college attendance marginally higher among those with disabilities. In Atlantic Canada and Western Canada, this result for colleges is similar, while for Ontario those with a disability are 11 percentage points more likely to attend college. By contrast, university participation rates in Ontario for the disabled are less than half of those with no disability.

TABLE 3

RATES OF ACCESS TO COLLEGE AND UNIVERSITY FOR UNDER-REPRESENTED AND MINORITY GROUPS

	Québec		Ontario		Atlantic Canada		Western Canada	
	College	**University**	**College**	**University**	**College**	**University**	**College**	**University**
All	40	30.3	36.4	45.5	24.6	51.1	26.1	42.8
Family Income								
Income below $50,000	41.3	19.7	39.3	35.2	29.2	36.1	26.5	36.4
Income Greater than $50,000	39.2	37.3	35.2	49.5	20.5	64.4	26	45.8
Parental Education								
No PSE	38.5	16.7	43.5	25.7	30.1	30.1	27.5	28.6
At Least some PSE	40.9	38.5	33.5	53.7	22.4	59.5	25.7	47.9
Rural/Urban								
Rural	40	23.2	44.6	28.6	30.4	42.5	28.7	33.1
Urban	40	32.1	34.9	48.8	19.6	58.5	25.2	46.3
French Minority								
French Minority	n/a	n/a	43	39.5	26.3	48.4	21	50
Others	n/a	n/a	36.1	45.8	24.4	51.4	26.2	42.8
Family Type								
Single Parent	41.9	24.9	41.1	36.4	24.4	39.7	24.8	34.3
Two Parent Family	39.5	31.6	35.5	47.4	24.6	53.2	26.4	44.4

TABLE 3 (continued)

	Québec		Ontario		Atlantic Canada		Western Canada	
	College	**University**	**College**	**University**	**College**	**University**	**College**	**University**
Immigrant Status								
First Generation Immigrant	44.5	29.1	30.1	58.4	12.6	82.6	24.1	63.4
Second Generation Immigrant	38.1	46.5	31.2	54.7	12.7	70.5	26.7	51.2
Non-Immigrant	40	28.5	39.9	39.2	25.5	49.6	26.2	37.9
Aboriginal Status								
Aboriginal	35.3	25.6	38.7	17.8	19.5	40.7	20.9	22.4
Non-Aboriginal	40.1	30.3	36.4	46.2	24.8	51.4	26.4	43.7
Disability Status								
Disability	41.6	16.5	46.2	22.1	26.4	37.9	28.5	27.4
No Disability	39.8	31.7	35.2	48.5	24.2	53.4	25.7	45.9

Table 4 includes the results of a regression analysis of these patterns where the indicators of the URMGs under consideration are all included together, thus yielding the net effect of each factor[8]. To start, while not normally considered a disadvantaged group, we again see a large gender divide, with males in Québec being 11.7 percentage point less likely to attend university than females. This is the largest gender gap in the country and could be considered even more troublesome given the lower overall attendance rates in that province.

The low-income university access gap in Québec is some 6.7 percentage points. For the Atlantic Provinces this gap is estimated to be 11.3 percentage points, with some of the gap compensated for by higher college attendance. Both of these regions stand in stark contrast to Ontario and the Western Provinces which have no statistically discernible gap for either college or university.

In all regions, the effect of being a first-generation PSE student is strong, with those whose parents have no PSE between 6 and 11 percentage points less likely to attend university compared to those who have at least one parent with PSE. Québec youth stand at a 10 percentage point disadvantage. The effect on college attendance is statistically zero in all regions, reflecting the fact that higher parental education pushes some young people from no PSE into college, and an equivalent number from college into university.

These results also demonstrate the importance of the two different effects: family income and parental education appear to be capturing two distinctly different sets of influences, with different effects in different provinces. It is also interesting how the specific low income variable included here seems to matter more than the general income variable considered earlier.

In all regions except Québec, the effect of being a rural student on university attendance is fairly strong and statistically significant. In Québec the effect is nil. Those from rural areas in Atlantic Canada and Western Canada have higher probabilities of attending college, whereas the effects for Ontario and Québec are essentially zero.

In both Ontario and Western Canada, there is a positive effect of being French speaking. In the former case, the effect is just for university attendance, with Francophones about 9 percentage points more likely to attend than non-Francophones, with no effect on college attendance. In Western Canada, the 8.4 percentage point advantage of Francophones at university is entirely offset by lower college participation rates. In Québec, the English minority has higher university access rates compared to non-English language groups.

8. Also included are variables for high school grades, a variable for PISA reading scores, and a series of "scale" variables which reflect the young person's experiences at home and at school at age 15. Scale variables are included as controls in the current context and so are not discussed. Details of these can be found in Finnie, Childs and Wismer (2011b). Separate results for males and females are available upon request.

The single-parent effect on university access is small in size and statistically insignificant. This result holds throughout the country.

In Ontario, Atlantic Canada and Western Canada, strong first- and second-generation immigrant effects on university participation exist. In Québec, however, the effect of being a first-generation immigrant is statistically insignificant, which may have important implications regarding the integration of their immigrants and the future growth of their economy (Finnie and Mueller, 2009 and 2010). The second-generation immigrant effect is similar across all provinces and regions, including Québec, which has the largest coefficient estimate.

In Ontario and Western Canada, the Aboriginal effects on university access are insignificant. Still, the point estimates are substantial, especially in Ontario, and the loss of statistical significance is probably, at least partly, related to the limited sample sizes. In Atlantic Canada and Québec, the Aboriginal effect is insignificant[9].

The effect on university participation of having a disability is large and statistically negative in three of the four regions, including Québec. In Atlantic Canada the effect is smaller and not statistically significant. The effect in Québec for college attendance, however, is significantly positive and similar to the coefficient estimate for Ontario.

9. In similar models without high school grades, PISA scores, and the scale variables, the negative effect of Aboriginal status on university attendance in Ontario and the Western provinces is large and statistically significant. Thus, it appears that it could be low grades, PISA scores, and/or other factors that result in lower Aboriginal attendance rates, rather than Aboriginal status *per se*. This is certainly worthy of further investigation.

TABLE 4

MULTINOMIAL ESTIMATES OF ACCESS TO UNIVERSITY AND COLLEGE FOR UNDER-REPRESENTED AND MINORITY GROUPS

	Québec		Ontario		Atlantic Provinces		Western Provinces	
	College	**University**	**College**	**University**	**College**	**University**	**College**	**University**
Gender - Female (Male)	-0.030 [0.023]	0.117*** [0.020]	-0.015 [0.024]	0.068*** [0.020]	-0.017 [0.012]	0.061*** [0.014]	0.004 [0.015]	0.059*** [0.015]
Income Below $50,000 (Others)	0.013 [0.025]	-0.067*** [0.019]	-0.014 [0.029]	-0.005 [0.023]	0.038*** [0.014]	-0.113*** [0.015]	-0.001 [0.016]	-0.020 [0.016]
Parents with no PSE (Others)	-0.004 [0.023]	-0.100*** [0.018]	0.024 [0.027]	-0.114*** [0.021]	0.018 [0.014]	-0.109*** [0.015]	0.000 [0.016]	-0.059*** [0.016]
HS Location - Rural (Urban)	0.000 [0.026]	-0.031 [0.021]	0.023 [0.031]	-0.074*** [0.025]	0.089*** [0.014]	-0.097*** [0.014]	0.039** [0.017]	-0.068*** [0.015]
French Minority (Others)			-0.029 [0.033]	0.088*** [0.030]	-0.013 [0.017]	-0.018 [0.021]	-0.083** [0.041]	0.084** [0.041]
English Minority (Others)	0.012 [0.031]	0.068*** [0.023]						
Single Parent (Two Parents)	-0.004 [0.030]	0.012 [0.025]	0.017 [0.034]	-0.025 [0.027]	-0.013 [0.017]	-0.023 [0.022]	-0.010 [0.022]	-0.032 [0.022]

TABLE 4 (continued)

	Québec		Ontario		Atlantic Provinces		Western Provinces	
	College	**University**	**College**	**University**	**College**	**University**	**College**	**University**
Immigration Status (Non-Immigrant)								
First Generation Immigrant	0.043 [0.057]	0.035 [0.047]	-0.093** [0.040]	0.145*** [0.033]	-0.051 [0.070]	0.141* [0.079]	0.001 [0.027]	0.196*** [0.028]
Second Generation Immigrant	0.007 [0.034]	0.133*** [0.028]	-0.073*** [0.026]	0.089*** [0.021]	-0.091*** [0.023]	0.093*** [0.029]	0.021 [0.019]	0.065*** [0.018]
Aboriginal (Non-Aboriginal)	-0.028 [0.091]	0.039 [0.080]	0.017 [0.083]	-0.120 [0.073]	-0.079*** [0.028]	0.018 [0.043]	-0.047 [0.033]	-0.023 [0.039]
Disabled (Non-Disabled)	0.073** [0.036]	-0.122*** [0.025]	0.074** [0.037]	-0.120*** [0.029]	-0.002 [0.016]	-0.025 [0.019]	0.025 [0.021]	-0.072*** [0.019]
Observations	2347		2257		5172		5461	

NOTE: Average marginal effects are shown. Omitted categories are in parenthesis. Standard errors are in brackets. *** $p<0.01$ ** $p<0.05$ * $p<0.1$. The grade variable is the students' overall high school grades divided by 10. The reading ability variable used is the students' PISA reading scores divided by 100.

Barriers to Accessing PSE

While the results presented thus far show the determinants of access to PSE, there are no explicit indications of the reasons for these results. The YITS-A asks young people who have not acessed PSE why this is the case. The group is first divided into those who have no PSE aspirations and those who do. This latter group is then asked why they have not attended PSE despite having aspirations to do so. In other words, what barriers have prevented them from accessing PSE by age 21? Table 5 shows these results. Note that multiple answers to the barriers question are allowed and thus totals do not add up to 100%.

The first column in Table 5 represents the mirror image of the earlier findings by showing how many have not accessed PSE. The lowest rates are in Ontario and Atlantic Canada, with higher rates in British Columbia and Québec, and still higher rates in the Prairie Provinces. The 29.6 percent of young Quebecers who have not accessed PSE is about the same as in Figure 1, the difference owing to the fact that not all respondents answered the questions about aspirations and barriers[10].

In Québec 35.6 percent of those who did not attend PSE had no aspirations to do so, a figure that is about 50 percent higher than the 23.3 percent for all provinces taken together. Conversely, only 32.7 percent claim no barriers, compared to a national average of 42.7 percent. Curiously, when asked specifically about the barriers they faced, young Quebecers gave responses similar to the national averages. For example, of the 29.6 percent of young Quebecers who have not attended PSE, 21.5 percent selected financial barriers as one reason for not attending. A simple calculation (21.5 percent x 29.6 percent) reveals that only 6.5 percent of the young people surveyed were not attending PSE because of a financial barrier. This is only modestly higher than the Canadian average of 5.5 percent (i.e., 25.0 percent who have not attended x 22.0 percent who claim a financial barrier).

Also of note for Québec is that only 25.1 percent of the English minority have not attended PSE by the age of 21. Of these, 23.1 percent had no aspirations to attend PSE. Another 42.8 percent of Anglophones in Québec who had not attended, stated they did have PSE aspirations and no barriers to attending. All of these figures are very close to the national averages. Similarly, Francophones residing outside of Québec also placed close to the national average in each of these three metrics.

10. The figures presented here are the unadjusted numbers. Estimating a multivariate model does not substantially change these results. See Table 5 in Finnie, Mueller, and Wismer (2015).

TABLE 5

BARRIERS TO POST-SECONDARY EDUCATION, CANADIAN YOUTHS WHO HAVE NOT ACCESSED POST-SECONDARY EDUCATION BY AGE 21

	Has not Accessed PSE	Has not Accessed PSE					
	% of total	Has no PSE Aspirations	Has PSE Aspirations				
			Has no Barriers	Has Barriers			
				Financial Situation	High School Grades	Motivation	Other
All Students	25.0	23.3	42.7	22.0	3.1	6.6	6.4
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
Québec	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

TABLE 5 (continued)

	Has not Accessed PSE	Has not Accessed PSE					
	% of total	Has no PSE Aspirations	Has PSE Aspirations				
			Has no Barriers	Has Barriers			
				Financial Situation	High School Grades	Motivation	Other
French Minority outside Québec							
French Minority outside Québec	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 Québec							
English Minority in Québec	25.1	23.1	42.8	***	***	***	6.3
All Others	17.9	40.8	32.5	***	***	***	11.2

NOTE: *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: Finnie, Mueller and Wismer (2015).

Conclusion

This analysis has used the uniquely rich Canadian YITS-A dataset to provide a new and original perspective on PSE participation patterns in Québec compared to other regions in Canada. Consistent with other recent work by the authors and others, the results generally point to the importance of cultural, rather than financial, factors in determining whether a young person attends PSE, perhaps best illustrated by the much stronger effect of parental education on access to PSE as compared to family income, and how immigrant children go to PSE at much higher rates than non-immigrant children (although the breakdown in this pattern for more recent immigrants to Québec is noted).

These cultural factors can be difficult to define, hard to measure, and are often questioned by economists who favour the standard human capital model. While the human capital model has much to offer in terms of our understanding of access to PSE, it is not all-encompassing and should not be viewed as such. This is not to say that money is not important, and drastically raising tuition fees, for example, especially for those at lower income levels, or cutting student financial aid, would almost certainly have a profound effect on attendance.

But as a recent Senate of Canada (2011: 1) concludes:

> Our knowledge of the key factors that influence participation and achievement in PSE has also grown considerably. It is now acknowledged that non-financial obstacles such as preparation for school, student motivation, and parental influence are as significant as cost. In fact, the cost of PSE becomes an issue only if these non-financial barriers are overcome in the first place; The policy implications of these findings are important.

Our findings thus have important policy implications, including from a fiscal perspective. They point to new opportunities and challenges alike for policy makers wanting to increase, and make more equal, opportunities for going on to PSE, especially for disadvantaged youth.

The policy challenge becomes identifying how PSE access opportunities can be improved when cultural influences appear to be so important, and implementing policies that accomplish this.

The opportunity is that the fiscal room needed to put such programs into place could be found by shifting from the total focus on keeping tuition effectively frozen at the (then) already low 1990 levels for all students. For example, moderate fee increases could be gradually implemented for students from higher income families even while retaining low fees (or even cutting further) for youth from low income families who need the assistance, and ploughing the additional revenue into new, more effective access programs.

The other side of this opportunity is that some of the most effective ways of increasing PSE participation rates, especially at the university level, might not be all that costly. Perhaps, for example, programs could be put into place whereby youth – especially disadvantaged youth – are taken for visits to college and (particularly)

university campuses starting early, possibly in primary school, so that these institutions and the PSE opportunities they represent become something they know and are brought into their effective choice sets in a way that does not currently happen.

At the same time, those currently attending PSE could go back to their old schools to talk about their experiences and further breathe life into the possibilities of PSE.

Academic support programs – again at an early age – may also play a key role. Better career counselling services could be put in place. Peer group/mentoring programs could possibly be initiated. Helping students prepare application forms for PSE when the time approaches may be part of a solution.

Gándara (2001) has provided a typology for classifying and ordering policies of this type, while Orders and Duquette (2010) have provided a review of policies that have been attempted to these ends in a number of OECD countries. While we have much to learn, what we do know is that equalising PSE opportunities is central to equalising life chances for children in care, that "culture" is probably critical to this, and policy has to follow in this vein. The result could be policies that are both more equitable and more effective.

APPENDIX

TABLE A1

RATES OF ACCESS TO UNIVERSITY, COLLEGE/CÉGEP AND OTHER PSE INSTITUTIONS FOR YOUNG ADULTS AGED 24 TO 26

Province	Attended University	Attended College/Cégep	Attended other post-secondary institution
Newfoundland and Labrador	48	26	30
Prince Edward Island	43	25	24
Nova Scotia	47	31	23
New Brunswick	41	34	23
Québec	38	64	23
Ontario	43	43	17
Manitoba	44	28	21
Saskatchewan	44	18	36
Alberta	34	27	35
British Columbia	38	27	45

NOTE: Other post-secondary institutions include publicly-funded technical institutes, trade/vocational schools, private business schools, private training institutes, university colleges, or any other school above high school e.g. police academy, firefighters training, etc. The numbers do not add to 100 since individuals may attend more than one type of institution.

SOURCE: Shaienks, Gluszynski, and Bayard (2008) Table 1.

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