Educational Pathways of Youth in Ontario: Factors Impacting Educational Pathways

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Introduction

Obtaining a postsecondary education (PSE) is a crucial requirement both for Ontario and for the province's youth. With a cross-section of all demographic and socioeconomic groups in PSE, a dual benefit ensues: the province acquires the human capital needed for Ontario's economic success (HEQCO, 2010, p. 31), and graduates experience lower rates of unemployment, greater job stability and higher earnings (Berger, Motte, & Parkin, 2009, p. 7-21).

Objective of this Report

This report seeks to establish trends in factors that are impacting PSE decision making among Ontario's youth and to identify features that are strong predictors of PSE participation. The research is a collaborative effort of Human Resources and Skills Development Canada (HRSDC) and the Higher Education Quality Council of Ontario (HEQCO).

The decision to pursue a postsecondary education is influenced by a number of factors, including parental involvement, career counselling, parental income and education levels, and student location. In this report, student, household and external factors are examined to determine their impact on postsecondary pathways of Ontario youth of both linguistic sectors. Comparisons between Ontario and the rest of Canada are also explored.

Data, Methodology and Limitations

Data

The information contained in this report was obtained from the Youth in Transition Survey (YITS). YITS is a longitudinal survey which was first administered in 2000 through HRSDC and Statistics Canada. The initial YITS questionnaire of 15-year-olds was continued for longitudinal data collection. At two-year intervals, the same 15-year-old students who participated in the original YITS written survey in 2000 are contacted by Statistics Canada telephone interviewers to complete follow-up surveys about their educational and labour market pathways. Each year of the survey is a cycle, where year 2000 is Cycle 1, 2002 is Cycle 2 and so on. While there has been some attrition in both the Ontario and the national samples as each cycle in the YITS longitudinal survey has been completed, the sample size remains large enough for provincial analysis of the resulting data.

The Youth in Transition Survey asks students a range of questions relating to their current family backgrounds, interests and aspirations. Two YITS surveys exist: YITS-A, which follows a sample of students longitudinally from the age of 15, and YITS-B, which longitudinally surveys only PSE students from the ages of 18 to 20. This report deals exclusively with the YITS-A cohort, as this survey tool provides information about students before they enter PSE. The report that follows is based primarily on the results of the 2006 YITS longitudinal analysis (Cycle 4), which was done when the students were 21 years old.

The 2000 YITS was conducted in tandem with the OECD's Programme for International Student Assessment (PISA). PISA is administered in three-year cycles, measuring the skill and knowledge levels of 15-year-old students in the areas of reading, mathematics and science. Thirty-two nations, including Canada, were represented in the first PISA assessment in 2000. The academic information data provided by PISA complements the YITS background and characteristics survey.

Methodology

Descriptive analysis was performed to indicate how the PSE participation rate is related to several independent factors, such as family income and parental education. Following the summary statistics, logistic regression models were conducted to examine how the PSE participation rate is affected by each background characteristic. All YITS respondents were included in the analysis. Estimates are weighted using bootstrap weights and Cycle 4 weights. A table showing all regression results can be found in Appendix A.

The coefficients are interpreted as odds ratios. The odds ratios express the odds of an individual with a certain characteristic attending PSE while holding other factors constant. It should be noted that while interpreting odds ratios of a logistic regression, it is important to be aware of the reference groups. The reference groups for all variables are listed in Appendix B.

Limitations

One challenge in working with the 2000 cohort of 15-year-old students is that the Ontario Academic Credit Program (OAC) was phased out in 2002/03. OAC credits were commonly required for PSE, particularly university entrance, and students who participated in this program usually graduated in five years of high school instead of four in order to meet the OAC requirements. The restructuring of the Ontario high school curriculum and the sunset of the OAC program in 2002/03 created what is known as the "double cohort," when two years of students graduated at the same time, having had different curriculum structures. As this would have been a common year for the 2000 cohort of 15-year-olds to graduate, some of the findings may be skewed.

Postsecondary Pathways

The PISA/YITS Cycle 4 cohort of students, who were aged 15 when they were originally assessed and surveyed in 2000, had begun to graduate from high school by the time the first YITS follow-up survey was conducted in 2002. Across Ontario, a small percentage of students were able to complete high school by the age of 16 (in 2001, one year after the initial survey), and throughout the following years, more and more students graduated from high school. The largest number graduated in 2002 and 2003, when the majority were aged 17 and 18 years. Forty-four per cent of youth graduated at age 17 and another 44 per cent at age 18. Five years after the initial YITS survey was administered, when the 2000 cohort would have been about 20 years old, the great majority of Ontario students who had participated in the original PISA/YITS survey had successfully completed high school (94.5 per cent). This high percentage of graduates may be the result of the OAC program having been phased out, since the 2000

cohort would have been in Grade 12 in 2003, and those who would have graduated from OAC in 2004 under the old OAC program would also have graduated in 2003. This number closely follows the national trends, as 94 per cent of students in the rest of Canada had graduated by the age of 21. And in Ontario, as is the case in the rest of Canada, graduation rates by age 21 were higher among females (96 per cent) than among males (93 per cent).

Those young Ontarians who comprised the initial longitudinal PISA/YITS survey sample subsequently pursued four different pathways:

1. those who did not receive a high school credential before they were surveyed at 21 years of age;
2. those with a high school credential who had not participated in any sort of postsecondary education before they were surveyed at 21 years of age;
3. those who pursued or were pursuing a university degree between the time they graduated from high school and the time they were 21 years of age; and
4. those who pursued or were pursuing other types of postsecondary education besides university – primarily community college, but also private training, apprenticeship, etc. – by the time they were 21 years of age.

Gender

In a general Canadian context, women have outnumbered men in university enrolment for the last decade. In Ontario, the situation is much the same. As shown in Table 1, the proportion of females who chose to pursue postsecondary education was significantly larger than the proportion of males who entered PSE (92 per cent and 82 per cent, respectively). A higher proportion of females chose to go to university (58 per cent, as opposed to 41 per cent), and a lower proportion of females chose to pursue their postsecondary education at a non-university institution (34 per cent, as opposed to 41 per cent).

Table 1
Ontario participants in YITS (cycle 4, 21 years): Gender and PSE

Gender	Total		H.S. Only		Other PSE		University	
	No.	%	No.	%	No.	%	No.	%
Male	52,247	100	9,529	18	21,539	41	21,179	41
Female	56,271	100	4,740	8	18,942	34	32,590	58
Total	108,518	100	14,269	13	40,481	37	53,769	50

Note: numbers may not add up to total due to rounding.

Parental Influences

Parental Education

Parental education has been shown in numerous previous studies to be an important indicator of children's postsecondary educational attainment (see EPI, 2008, pp. 5-6). Children of highly educated parents are generally more likely to follow in their mother's and father's footsteps and complete their own postsecondary education. Table 2 presents the trends, in light of parental education, for Ontario YITS participants who completed high school.

In all, 21 per cent of students from families with the lowest levels of education chose not to pursue any postsecondary education by the age of 21. Stated more positively, however, 79 per cent did pursue further education, and they represent the type of "first generation" postsecondary students who are currently the focus of many provincial and federal incentives and initiatives. Almost all children of parents with university degrees pursued some form of postsecondary education. Among children of parents with bachelor's degrees, only 6 per cent did not attempt postsecondary education, and among those whose parents had graduate degrees, only 4 per cent did not attempt PSE.

Table 2
Ontario participants in YITS (cycle 4, 21 years): Parental education and PSE

Parental Education	Total		H.S. Only		Other PSE		University	
	No.	%	No.	%	No.	%	No.	%
High school or less	34,479	100	7,412	21	16,380	48	10,687	31
Other PSE	31,357	100	4,718	15	13,828	44	12,811	41
University	29,288	100	1,652	6	8,466	29	19,170	65
Graduate/Professional	13,394	100	487	4	1,806	13	11,102	83

Note: numbers may not add up to total due to rounding.

Parental Income

Parental education levels are often associated with parental income. As a rule, the higher the parents' education, the higher one can expect their individual and family incomes to be. Higher parental and family incomes, in turn, can translate into better supports for educational options, increased savings and funding for postsecondary education, and enhanced learning environments (Berger, Motte, & Parkin, 2009, pp.132-135; HEQCO, 2010, pp. 33-36).

Table 3
Ontario participants in YITS (cycle 4, 21 years): Parental income and PSE
Note: The quartile cut-offs are based on estimates for the province of Ontario.

Income Quartiles	Total		H.S. Only		Other PSE		University	
	No.	%	No.	%	No.	%	No.	%
First: Less than $48,700	26,283	100	4,501	17	11,055	42	10,726	41
Second: $48,700-$70,499	26,623	100	4,331	16	10,290	39	12,002	45
Third: $70,500-$89,022	27,552	100	3,556	13	9,948	36	14,048	51
Fourth: $89,023 and above	28,061	100	1,880	7	9,187	33	16,993	61

Note: numbers may not add up to total due to rounding.

As shown in Table 3 above, Ontario students from higher-income families tend to pursue higher levels of education. The differences in educational outcomes of students were most pronounced in the highest income quartiles. Sixty-one per cent of the students who had parental income in the highest income quartile pursued university-level education, while only 7 per cent had not attempted any postsecondary education by the age of 21. In each of the two lowest income quartiles, roughly two-fifths of students were in the university and other postsecondary education categories, respectively, while just under one-fifth did not continue their education beyond high school.

Parental Education and Income in Ontario Compared to the Rest of Canada

As shown in the two graphs below (Figure 1 and Figure 2), participation rates in PSE (university and non-university) differed not only by parental income and education, but also according to whether the student lived in Ontario or elsewhere in Canada. At all levels of parental education and family income, Ontario students had higher participation rates in non-university postsecondary education than did students in the rest of Canada. In addition, more Ontario students chose to pursue postsecondary education than did students in the rest of Canada at all parental education and income levels. However, Ontario university participation rates were similar to those of the rest of Canada for all categories of income and parental educational attainment.

Figure 1: PSE participation by parental education attainment for Ontario and the rest of Canada
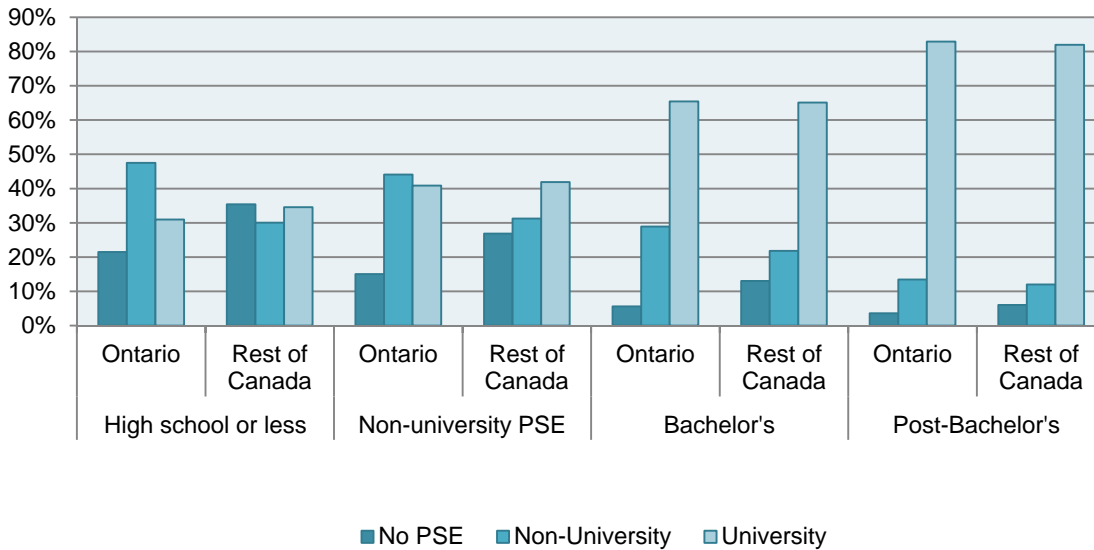
Figure 2: PSE participation by family income level for Ontario and the rest of Canada
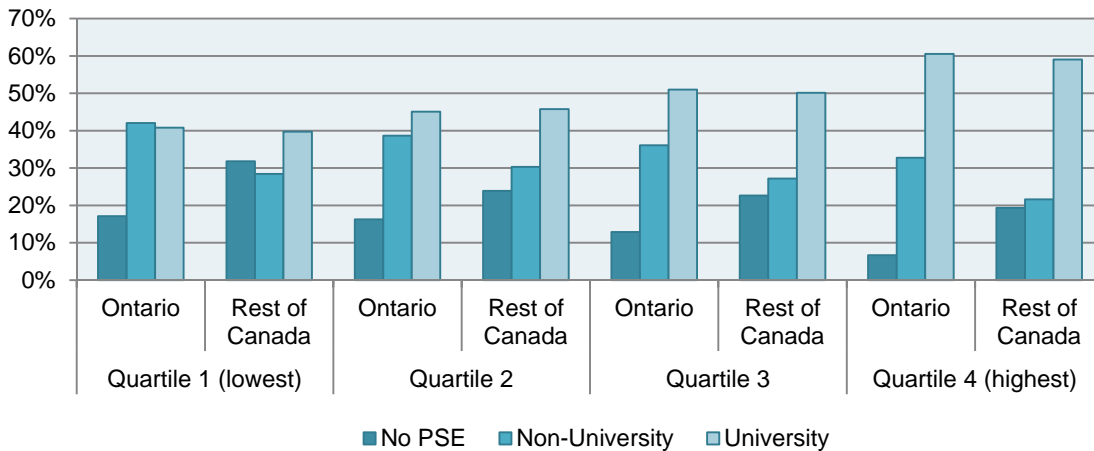
Parental Immigrant Status

Ontario attracts a large number of immigrants, and the Greater Toronto Area (GTA) is the most popular destination for immigrants within Ontario. Approximately 16 per cent of Ontario students had one foreign-born parent, and 22 per cent had two foreign-born parents. Table 4 presents results based on different types of parental immigrant status. Students who had at least one

foreign-born parent (even though they themselves may have been born in Canada) were more likely to have pursued a university education than a non-university education. Sixty-two per cent of students with two foreign-born parents and 58 per cent of those with one foreign-born parent attempted university, while only 43 per cent of those with both parents born in Canada went to university. In addition, youth with both parents born in Canada were more likely to choose not to pursue their education after high school (at 15 per cent) than those with at least one foreign-born parent (roughly 10 per cent).

Table 4
Ontario participants in YITS (cycle 4, 21 years): Immigration status and PSE

	Total		H.S. Only		Other PSE		University	
Immigration Status	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
Both parents born in Canada	66,596	100	10,138	15	27,852	42	28,606	43
One parent foreign-born	17,667	100	1,658	9	5,827	33	10,182	58
Both parents foreign-born	24,254	100	2,473	10	6,801	28	14,981	62

Note: numbers may not add up to total due to rounding.

Geographical Proximity to Postsecondary Institutions

Previous studies have shown that geographical proximity to postsecondary educational institutions is an important factor in encouraging increased participation rates, and that rural students tend to pursue college rather than university education (Frenette, 2006). This is often attributable to proximity issues, with colleges more likely to be present within commutable distance for rural students, as opposed to universities, which tend to be located in larger urban environments.

Table 5, below, shows the distribution of YITS participants from urban and rural environments in Ontario.

Table 5
Ontario participants in YITS (cycle 4, 21 years): Community of origin and PSE

	Total		H.S. Only		Other PSE		University	
Community	No.	%	No.	%	No.	%	No.	%
Urban	89,552	100	10,559	12	30,958	35	48,035	54
Rural	18,966	100	3,709	20	9,523	50	5,735	30

Note: numbers may not add up to total due to rounding.

In Ontario, 89,552 (or 82 per cent) of the students lived in an urban area, while18, 966 (or 18 per cent) lived in a rural area. Table 5 also reveals that a higher proportion of urban students (54 per cent) than rural students (30 per cent) chose to attend university. Similarly, a lower proportion of urban students (35 per cent) than rural students (50 per cent) enrolled in other

forms of postsecondary education (such as colleges). However, pursuing postsecondary education in general was much more popular among urban students: only 12 per cent of them did not pursue any postsecondary education, as opposed to 20 per cent of rural students. These results seem to indicate that proximity has an important influence on the decision to attend PSE and on the type of postsecondary education that is chosen.

Overall, Ontario's university participation rate for rural students (30 per cent) is lower than the rate for the rest of Canada (41 per cent), though urban youth present similar university participation rates both in Ontario and in the rest of the country. Yet for students living in both rural and urban areas, the proportion of students who chose not to pursue PSE is significantly lower in Ontario than in the rest of Canada.
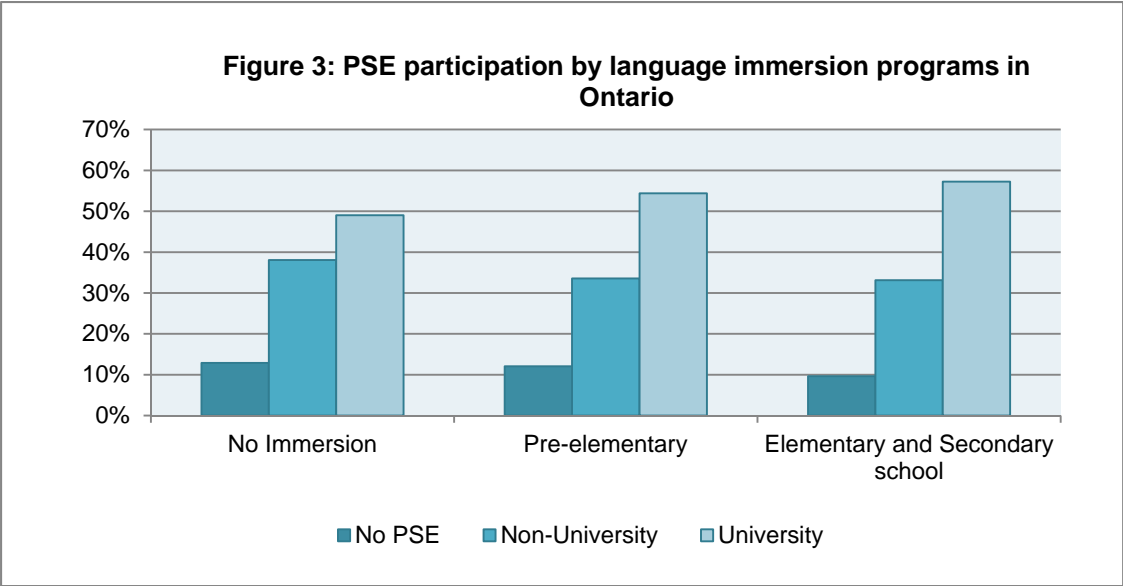
Linguistic Systems

Ontario's population is largely English-speaking. However, a number of francophone communities in the province provide French-language schooling for their youth. Students in the Ontario's French-language schooling system represent roughly 4 per cent of Ontario's youth. During each of the cycles of PISA assessment, Ontario has been oversampled, in order to achieve representative estimates for both the French-language and the English-language school systems. Given the large sample, nearly every high school in both linguistic sectors participated. As shown in Table 6, the proportion of students who chose not to purse postsecondary education is roughly the same for francophones and anglophones (14 per cent and 13 per cent, respectively). However, a significantly higher proportion of francophones pursued non-university postsecondary education (45 per cent, compared to 37 per cent). Anglophone students were more likely to attend university: 50 per cent of them, as opposed to 40 per cent of francophone students, chose this path.

Table 6
Ontario participants in YITS (cycle 4, 21 years): Linguistic system and PSE

School System	Total		H.S. Only		Other PSE		University	
	No.	%	No.	%	No.	%	No.	%
English-language	104,045	100	13,632	13	38,451	37	51,962	50
French-language	4,473	100	637	14	2,029	45	1,808	40

Language Programs

Language immersion programs are available to Ontario students in numerous educational phases. However, continuous participation in these programs is not required: students have this option during any phase of their learning. Language learning activities prior to entering postsecondary education are determinants in the decision to attend. As Figure 3 shows, those who were not exposed to immersion programs during their pre-postsecondary education were less likely to pursue a language immersion university credential and marginally less likely to persist with their studies beyond high school.

Figure 3: PSE participation by language immersion programs in Ontario

Chart legend: No PSE, Non-University, University

Y-axis: 0% to 70%

Categories: No Immersion, Pre-elementary, Elementary and Secondary school

Academic Preparation

Reading proficiency and academic grades in high school are potentially important determinants of PSE attendance. Academic grades are required by PSE institutions for admission, and reading proficiency indicates a certain basic level of knowledge.

Achievement on PISA

The academic skills of students graduating from high school are an important factor affecting the likelihood of their continuing with further education. Previous research (Bussière, Hébert, & Knighton, 2009) has shown that students with higher reading skills at age 15 (as measured by the OECD's PISA) have much higher probabilities of pursuing postsecondary education than those with lower reading skills. Figure 4, below, shows educational outcome distribution across different levels of reading skills. It reveals that the proportion of students who attempted university was highest for those with the highest reading level (Level 5) and lowest (at 5.4 per cent) for those at the lowest reading level (Level 1). The proportion of students who attempted non-university postsecondary education was the largest (60 per cent) for students with Level 2 reading skills and then decreased as students' reading skills increased to attain a mere 9 per cent for students with Level 5 reading skills. Finally, the proportion of students who did not attempt any postsecondary education was the highest (at 47 per cent) for students at the lowest reading level, where only 3 per cent of students who had strong reading abilities in PISA did not pursue PSE.

Figure 4: PSE participation by reading skill level in Ontario
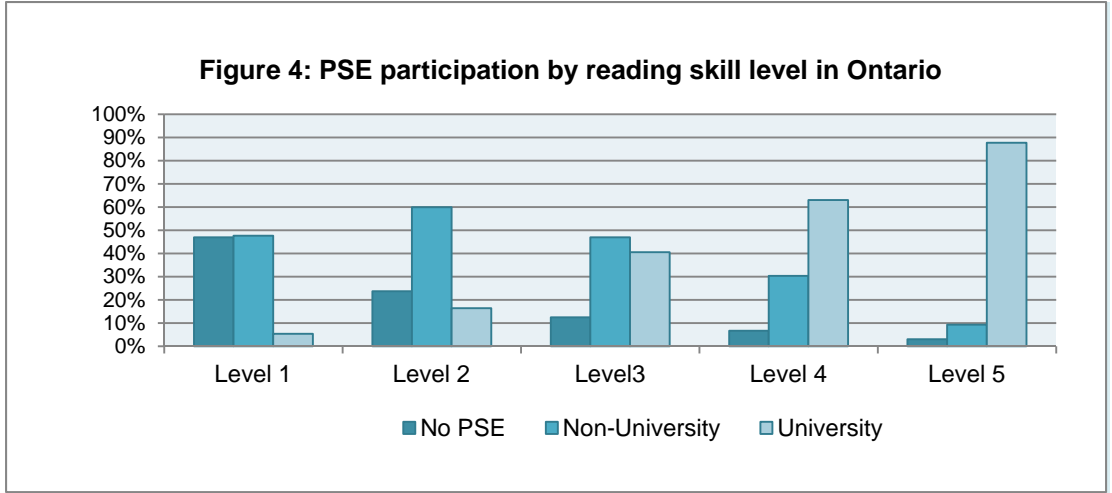
High School Grades

High school grades are generally considered to be a reflection of one's knowledge and skills, and they often represent the most important measure used in determining eligibility for admission to a postsecondary program. Figure 5 shows the distribution of grades by students who have chosen different educational paths. As in the case of reading skills, students who attended university were more likely to have higher high school grades than those who pursued non-university education or who pursued no further education at all.

Figure 5: PSE participation in Ontario by high school grade level
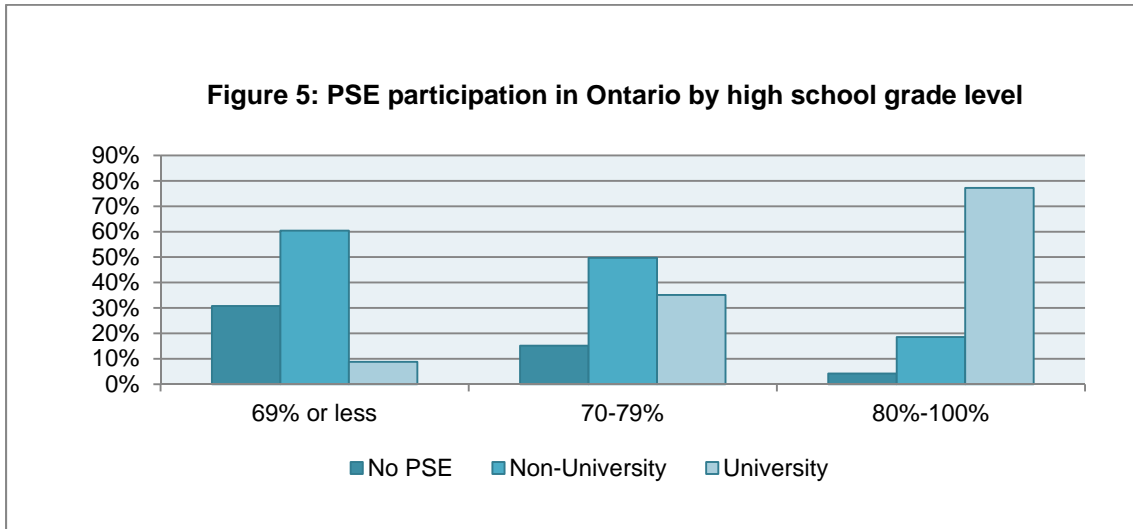
Active Youth/Community Participation

Participation in volunteering and extracurricular activities has been shown to be a positive indicator in terms of pursuing further education (Hansen, 2008). At age 15, more than two-thirds of Ontario students reported that they had participated in such activities. Among those who participated in volunteering activities, only 11 per cent did not pursue further education after high school, while 53 per cent attempted university (Table 7a). A similar pattern was shown for those who participated in extracurricular activities (Table 7b). University participation was higher for those who took part in extracurricular activities or volunteered than for those who were not involved in such activities.

Table 7a
Ontario participants in YITS (cycle 4, 21 years): Volunteer activities and PSE

Activity Type	Total		H.S. Only		Other PSE		University	
	No.	%	No.	%	No.	%	No.	%
Did not volunteer	34,308	100	6,044	18	14,167	41	14,097	41
Volunteering	74,210	100	8,224	11	26,314	35	39,672	53

Note: numbers may not add up to total due to rounding.

Table 7b
Ontario participants in YITS (cycle 4, 21 years): Extracurricular activities and PSE

Activity Type	Total		H.S. Only		Other PSE		University	
	No.	%	No.	%	No.	%	No.	%
No extracurricular	30,772	100	5,377	17	12,016	39	13,379	43
Extracurricular	77,746	100	8,891	11	28,464	37	40,391	52

Note: numbers may not add up to total due to rounding.

Multivariate Analysis

Thus far, the results presented in this report have not controlled for the effects of other variables. But to gain a more meaningful understanding of the effects of certain characteristics on participation in postsecondary education, it is important to analyze these effects in light of other characteristics. While the descriptive analysis above indicated a statistical relationship between postsecondary participation and a number of different characteristics, the nature of that relationship is still unclear.

Multiple regression analysis can be performed to measure the degree to which variation in the dependent variable (participation rate) is accounted for by each factor. For example, descriptive analysis identified that youths from low-income families and youths from families with low parental education level have lower participation rates. However, it is well known that family

income and parental education level are highly correlated. Descriptive analysis alone cannot measure how much the difference in participation rate is accounted for by family income and how much it is accounted for by parental education level. On the other hand, a regression model measures how participation rate differs across different family income groups by controlling for parental education level. Performing this type of analysis helps to isolate certain characteristics by controlling for other factors.

In this study, logistic regression was used to predict the probability that a youth would participate in postsecondary education by controlling for the youth's gender, family income group, parental education level, academic performance and other characteristics. Eleven logistic regression models were performed in a stepwise fashion to capture the changes in coefficients as a new set of variables being entered into the regression equation. The dependent variable of the models is the probability of an individual participating in PSE; the independent variables are dummy variables that indicate whether the individual belongs to one or another demographic or socioeconomic group. For example, the value of Income Quartile 1 is assigned as 1 (or 0 otherwise) if the youth come from a family whose income level is at or below the lowest 25th percentile of the sample population.

All regression results for the Ontario sample are shown in Appendix A. Odds ratios are used to present coefficients. The odds ratio is a relative measure of risk, which shows how much more likely it is that someone who has been exposed to the factor under study will develop the outcome as compared to someone (from the reference group[1]) who has not been exposed. For example, the odds ratio of the variable "females" (for which the reference group is "males") shows the degree to which a female youth is more likely to attend PSE than a male youth, given that all other factors included in the model are the same for the two individuals. An odds ratio equal to 1 means that females and males are equally likely to attend PSE, an odds ratio greater than 1 indicates that females are more likely to attend PSE and an odds ratio less than 1 means that males are more likely to attend PSE. The following section summarizes the findings for each coefficient separately. Note the discussions are based on Model 11 in Appendix A (unless stated otherwise).

Gender

Females not only outnumbered males in postsecondary education, but were also more likely to have attempted postsecondary education after statistically controlling for important factors such as parental education, income, grades and reading proficiency: the odds were that Ontario females had a 66 per cent greater likelihood than Ontario males of attempting PSE.

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[1] The reference groups for all variables are listed in Appendix B.

Parental Education and Income

Postsecondary education participation rates are statistically different across income quartiles in Model 2 (see Appendix A) when there are no controls for parental education, PISA reading scores or other characteristics. Model 2 indicates that youth from families in all three lower-income quartiles are less likely to attend postsecondary education than are youth from families in the highest-income quartile. However, when parental education level and PISA reading scores were controlled in Model 4 to Model 11, only the coefficient for the second income quartile was statistically significant. In this case, the role of parental income was not statistically significant – meaning that participation differences across income quartiles were explained more fully by differences in other variables, such as parental education, grades and reading proficiency.

While family income lost its statistical significance when other factors were entered into the equation, parental education level remained a strong predictor of postsecondary education participation. Ontario youth from families with higher parental education levels were substantially more likely to participate in postsecondary education. The odds of attending postsecondary education among youth from a family in which the highest educational attainment of at least one parent was a university degree were over twice as high as those of a youth with parents who had a high school diploma or less.

Academic Preparation

As indicated previously, reading proficiency and academic grades in high school are important determinants of postsecondary education attendance. However, in Ontario, only the lowest reading proficiency level had a statistically significant effect. The odds of pursuing postsecondary education among youth at that reading proficiency level were estimated to be 67 per cent lower than among youth at reading proficiency Level 3. Academic success seemed a more statistically significant factor in predicting postsecondary participation. The odds of attending postsecondary education among youth with overall grades in high school of 90 to 100 per cent were about 10 times as high as among youth with grades in the 70 to 79 per cent range. Similarly, the odds of participating in postsecondary education among youth with overall grades ranging from 80 to 90 per cent were estimated to be twice as high as among their peers with average grades. These results suggest that grades play a prominent role in initial enrolment in postsecondary education.

Other Important Factors

Although a number of factors included in the model were not significant, being an OAC graduate (during the time that OAC existed) was a very strong predictor of attempting postsecondary education. The odds of participating in postsecondary education among youth who were OAC graduates (a program that aimed at preparing youth for postsecondary education) were estimated to be three times as high as among youth who never took part in the OAC program.

Moreover, having previously dropped out of high school or having friends who had dropped out of high school were strong predictors of not attempting postsecondary education. Specifically,

the odds of attending postsecondary education among Ontario youth who had friends who had dropped out of high school were estimated to be 48 per cent lower than among youth who had no friends who had dropped out of high school. Similarly, the odds of attending postsecondary education among youth who had dropped out in the past and returned to school were estimated to be 58 per cent lower than among those who had never dropped out of high school.

Among Ontario youth who had graduated from the francophone system, the odds of attending postsecondary education by the age of 21 were about twice as high as among youth who had graduated from the Anglophone system.

Ontario youth who had graduated later than the majority of the cohort were much less likely to have participated in postsecondary education than youth who had graduated at the expected time. For example, the odds of participating in postsecondary education among youth who had graduated at age 19 (graduated in 2004), a year or two later than expected (depending on whether or not they had participated in the OAC program) were estimated to be 87 per cent lower than the odds among youth who had graduated at age 17.

Parents' aspirations regarding their child's postsecondary education also played a role in explaining PSE participation. The odds of pursuing postsecondary education among youth whose parents expected them to obtain non-university postsecondary education were almost twice as high as among youth whose parents expected them to obtain only a high school diploma.

One interesting observation for Ontario is that there were no statistically significant differences in postsecondary education participation among youth whose parents had both been born in Canada, among those with one foreign-born parent and among those with two foreign-born parents.

Conclusion

Multivariate analyses of postsecondary education participation revealed that Ontario youth who had highly educated parents, higher overall grades and a social network that did not include any high school dropouts, as well as youth who had graduated from a francophone secondary school, were more likely to have attempted education beyond high school.

Data from the Youth in Transition Survey (YITS) and results from the Programme for International Student Assessment (PISA) show a number of trends suggesting that specific factors are involved in the likelihood of Ontario youth pursuing postsecondary education. The following trends were found:

Parental education is one important indicator of the likelihood of students pursuing postsecondary education. Children of highly educated parents appear to be more likely to follow in their parents' footsteps, completing their own postsecondary education.

Participation in volunteering and extracurricular activities has been shown as a positive indicator in terms of pursuing further education.

Ontario youth who had graduated from the francophone system were more likely to have tried postsecondary education by the age of 21 than youth who had graduated from the Anglophone system.

Understanding the various factors that are involved as Ontario youth make the transition from high school to postsecondary education may help decision makers understand student characteristics and backgrounds and aid in planning for effective and efficient secondary-to-postsecondary transitions.

Appendix A

Odds ratios from logistic regression for Ontario (see appendix B for full description of variables). Dependent variable is participation in PSE. Only results from model 11 are discussed in the text.

Logistic regression results for Ontario

	Model 1 Exp(B)/sd	Model 2 Exp(B)/sd	Model 3 Exp(B)/sd	Model 4 Exp(B)/sd	Model 5 Exp(B)/sd	Model 6 Exp(B)/sd	Model 7 Exp(B)/sd	Model 8 Exp(B)/sd	Model 9 Exp(B)/sd	Model 10 Exp(B)/sd	Model 11 Exp(B)/sd
Females	2.123***	2.185***	2.215***	1.892***	1.664***	1.604**	1.623***	1.626**	1.759***	1.590**	1.656**
	(0.367)	(0.382)	(0.385)	(0.336)	(0.305)	(0.296)	(0.302)	(0.309)	(0.334)	(0.322)	(0.340)
OAC student	5.985***	5.655***	4.599***	3.398***	2.979***	2.949***	2.962***	2.945***	2.845***	3.833***	3.588***
	(1.215)	(1.153)	(0.979)	(0.737)	(0.665)	(0.660)	(0.664)	(0.660)	(0.635)	(0.906)	(0.880)
Income quartile 1		0.416***	0.573**	0.744	0.704	0.695	0.654	0.637	0.642	0.627	0.647
		(0.112)	(0.159)	(0.217)	(0.204)	(0.212)	(0.202)	(0.197)	(0.200)	(0.201)	(0.206)
Income quartile 2		0.414***	0.529**	0.530**	0.496**	0.489**	0.470**	0.460***	0.464**	0.446**	0.455**
		(0.111)	(0.149)	(0.152)	(0.142)	(0.143)	(0.140)	(0.138)	(0.140)	(0.140)	(0.143)
Income quartile 3		0.555**	0.649	0.705	0.702	0.716	0.697	0.678	0.686	0.712	0.721
		(0.154)	(0.184)	(0.207)	(0.207)	(0.214)	(0.210)	(0.204)	(0.207)	(0.217)	(0.219)
ParEd - non-university			1.424*	1.379	1.397*	1.395*	1.419*	1.429*	1.379	1.401	1.327
			(0.272)	(0.270)	(0.280)	(0.281)	(0.286)	(0.291)	(0.283)	(0.292)	(0.281)
ParEd - university			2.849***	2.581***	2.468***	2.359***	2.374***	2.375***	2.371***	2.360***	2.153**
			(0.762)	(0.714)	(0.688)	(0.665)	(0.680)	(0.677)	(0.673)	(0.703)	(0.650)
ParEd - post-university			3.470***	2.915**	2.775**	2.753**	2.829**	2.787**	2.680**	2.169*	1.948
			(1.456)	(1.297)	(1.264)	(1.290)	(1.318)	(1.314)	(1.247)	(0.952)	(0.857)
PISA reading 1				0.227***	0.267***	0.247***	0.242***	0.246***	0.270***	0.264***	0.327***
				(0.067)	(0.082)	(0.079)	(0.076)	(0.078)	(0.085)	(0.085)	(0.107)
PISA reading 2				0.556***	0.626**	0.606**	0.596**	0.601**	0.602**	0.608**	0.690
				(0.125)	(0.143)	(0.139)	(0.138)	(0.140)	(0.140)	(0.147)	(0.173)

Logistic regression results for Ontario

	Model 1 Exp(B)/sd	Model 2 Exp(B)/sd	Model 3 Exp(B)/sd	Model 4 Exp(B)/sd	Model 5 Exp(B)/sd	Model 6 Exp(B)/sd	Model 7 Exp(B)/sd	Model 8 Exp(B)/sd	Model 9 Exp(B)/sd	Model 10 Exp(B)/sd	Model 11 Exp(B)/sd
PISA reading 4				1.417	1.304	1.331	1.339	1.380	1.281	1.364	1.294
				(0.349)	(0.322)	(0.331)	(0.333)	(0.347)	(0.328)	(0.366)	(0.355)
PISA reading 5				2.468**	1.669	1.674	1.670	1.716	1.574	1.554	1.446
				(0.981)	(0.680)	(0.680)	(0.684)	(0.702)	(0.650)	(0.692)	(0.676)
Grades 90%-100%					10.624**	10.732**	11.197***	10.963**	11.406***	9.646**	9.878**
					(9.839)	(9.946)	(10.433)	(10.204)	(10.750)	(9.104)	(9.329)
Grades 80%-89%					1.844**	1.878***	1.876***	1.845***	1.851**	1.917***	2.022***
					(0.442)	(0.448)	(0.448)	(0.438)	(0.445)	(0.463)	(0.496)
Grades 69% or less					0.648**	0.648*	0.652*	0.659*	0.650*	0.815	0.884
					(0.143)	(0.144)	(0.145)	(0.148)	(0.145)	(0.191)	(0.211)
French school system						2.101***	2.053***	2.071***	2.131***	1.963***	1.907**
						(0.481)	(0.471)	(0.475)	(0.498)	(0.481)	(0.481)
One parent not Canadian						1.463	1.436	1.373	1.469	1.589	1.551
						(0.446)	(0.439)	(0.409)	(0.437)	(0.488)	(0.476)
Two parents not Canadian						1.255	1.202	1.173	1.132	1.013	0.852
						(0.318)	(0.306)	(0.307)	(0.297)	(0.267)	(0.228)
Rural community						1.057	1.046	1.041	1.052	0.926	1.064
						(0.238)	(0.236)	(0.235)	(0.238)	(0.216)	(0.253)
Parents $ for PSE						1.038	1.012	1.020	1.018	1.036	1.065
						(0.214)	(0.208)	(0.210)	(0.208)	(0.223)	(0.231)
Pre-elemnt immersion							0.695	0.724	0.739	0.772	0.755
							(0.224)	(0.235)	(0.240)	(0.263)	(0.249)
Element. Immersion							0.723	0.738	0.756	0.939	0.995

Logistic regression results for Ontario

	Model 1 Exp(B)/sd	Model 2 Exp(B)/sd	Model 3 Exp(B)/sd	Model 4 Exp(B)/sd	Model 5 Exp(B)/sd	Model 6 Exp(B)/sd	Model 7 Exp(B)/sd	Model 8 Exp(B)/sd	Model 9 Exp(B)/sd	Model 10 Exp(B)/sd	Model 11 Exp(B)/sd
(1-6)							(0.260)	(0.263)	(0.272)	(0.368)	(0.411)
Element. Immersion (7-10)							2.131	2.130	2.466	2.543	2.830*
							(1.472)	(1.491)	(1.726)	(1.653)	(1.717)
Parent talk - experience								0.607	0.581	0.556	0.582
								(0.219)	(0.207)	(0.200)	(0.219)
Parent talk - future								1.124	1.171	1.175	1.148
								(0.206)	(0.217)	(0.226)	(0.220)
Future info - teacher								1.230	1.181	1.315	1.249
								(0.245)	(0.236)	(0.280)	(0.273)
Future info - councillor								1.035	1.047	0.944	0.933
								(0.215)	(0.219)	(0.208)	(0.214)
Friend dropout									0.516***	0.521***	0.520***
									(0.110)	(0.116)	(0.121)
Family dropout									0.793	0.797	0.748
									(0.254)	(0.275)	(0.269)
Student dropout										0.413**	0.425**
										(0.142)	(0.143)
Graduation 2001										3.706	3.278
										(4.237)	(3.702)
Graduation 2003										0.389***	0.373***
										(0.081)	(0.079)
Graduation 2004										0.135***	0.129***
										(0.075)	(0.069)

Logistic regression results for Ontario

	Model 1 Exp(B)/sd	Model 2 Exp(B)/sd	Model 3 Exp(B)/sd	Model 4 Exp(B)/sd	Model 5 Exp(B)/sd	Model 6 Exp(B)/sd	Model 7 Exp(B)/sd	Model 8 Exp(B)/sd	Model 9 Exp(B)/sd	Model 10 Exp(B)/sd	Model 11 Exp(B)/sd
Graduation 2005										0.274**	0.246**
										(0.171)	(0.163)
Graduation missing										0.612	0.664
										(0.223)	(0.257)
Parental aspirations - NHS											0.306
											(0.237)
Parental aspirations - NU											1.899**
											(0.492)
Parental aspirations - U											1.697
											(0.613)
Parental aspirations - U+											1.273
											(0.416)
Number of observations	2,155	2,155	2,155	2,155	2,155	2,155	2,155	2,155	2,155	2,155	2,155
Adjusted R2	0.122	0.137	0.157	0.206	0.225	0.229	0.233	0.236	0.245	0.291	0.302

Note: .01 - ***; .05 - **; .1 - *

Appendix B

Variable description

Females – variable representing females (males are the reference group)

OAC student – variable representing students who attended Ontario Academic Courses level of courses (those who did not attend OAC courses is the reference group)

Income quartile 1 – variable representing those in the lowest parental income quartile (fourth quartile is the reference group)

Income quartile 2 – variable representing those in the second parental income quartile (fourth quartile is the reference group)

Income quartile 3 – variable representing those in the third parental income quartile (fourth quartile is the reference group)

ParEd – non-university – variable representing those whose parents attained non-university level education or less (those with less than PSE is the reference group)

ParEd – university – variable representing those whose parents attained bachelor level education (those with less than PSE is the reference group)

ParEd – post-university – variable representing those whose parents attained post-bachelor level of education (those with less than PSE is the reference group)

PISA reading 1 – variable representing those in the lowest level of reading proficiency as measured by PISA (those in the third level is the reference group)

PISA reading 2 – variable representing those in the second level of reading proficiency as measured by PISA (those in the third level is the reference group)

PISA reading 4 – variable representing those in the fourth level of reading proficiency as measured by PISA (those in the third level is the reference group)

PISA reading 5 – variable representing those in the highest level of reading proficiency as measured by PISA (those in the third level is the reference group)

Grades 90%-100% - variable representing those in the 90%-100% grade range in last year of high school (those in the 70%-79% is the reference group)

Grades 80%-89% - variable representing those in the 80%-89% grade range in last year of high school (those in the 70%-79% is the reference group)

Grades 60% or less - variable representing those in the 60% or less grade range in last year of high school (those in the 70%-79% is the reference group)

French school system – variable representing those in the French school system at age 15 (those in the English school system is the reference group)

One parent not Canadian – variable representing those whose one parent was born outside of Canada (those whose both parents were born in Canada is the reference group)

Two parents not Canadian – variable representing those whose both parents were born outside of Canada (those whose both parents were born in Canada is the reference group)

Rural community – variable representing those who were living in rural communities at are 15 (those living in urban communities is the reference group)

Parents $ for PSE – variable representing those whose parents had savings for their post-secondary education (those whose parents had no savings for their PSE is the reference group)

Pre-element. immersion – variable representing those who attended pre-elementary immersion (those not attending is the reference group)

Element. immersion (1-6) – variable representing those who attended elementary immersion in grades 1 to 6 (those not attending is the reference group)

Element. Immersion (7-10) – variable representing those who attended elementary immersion in grades 7 to 10 (those not attending is the reference group)

Parent talk-experience – variable representing those whose parents reported frequent (weekly or daily) conversations with their children about experiences at school (those with less frequent conversations or no conversations is the reference group)

Parent talk-future – variable representing those whose parents reported frequent (weekly or daily) conversations with their children about future educational and career moves (those with less frequent conversations or no conversations is the reference group)

Future info-teacher – variable representing those who discussed with their teacher(s) future education or career moves (those not discussing is the reference group)

Future info-councillor – variable representing those who discussed with their school councillor(s) future education or career moves (those not discussing is the reference group)

Friend dropout – variable representing those who reported to have friends who dropped out of high school (those not reporting is the reference group)

Family dropout – variable representing those who reported to family member(s) who dropped out of high school (those not reporting is the reference group)

Student dropout – variable representing those who reported to have experienced a high school dropout episode themselves (those with out a dropout episode is the reference group)

Activities out of school – variable representing those who reported participation in organized activities outside of school at age 15 (those not reporting such activities is the reference group)

Graduation 2001 – variable representing the students graduated from high school in 2001 (those graduated in 2002 is the reference group)

Graduation 2003 – variable representing the students graduated from high school in 2003 (those graduated in 2002 is the reference group)

Graduation 2004 – variable representing the students graduated from high school in 2004 (those graduated in 2002 is the reference group)

Graduation 2005 – variable representing the students graduated from high school in 2005 (those graduated in 2002 is the reference group)

Graduation missing – variable representing the students did not report the year of graduation (those graduated in 2002 is the reference group)

Volunteering activities – variable representing those who reported participation in volunteering activities at age 15 (those not reporting such activities is the reference group)

Parental aspirations-NHS – variable representing those whose parents reported educational aspirations for their children of less than high school (those with aspirations of high school is the reference group)

Parental aspirations-NU – variable representing those whose parents reported educational aspirations for their children of non-university post-secondary education (those with aspirations of high school is the reference group)

Parental aspirations-U – variable representing those whose parents reported educational aspirations for their children of university level (those with aspirations of high school is the reference group)

Parental aspirations-U+ – variable representing those whose parents reported educational aspirations for their children of more than one university degree (those with aspirations of high school is the reference group)

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