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What Explains the Educational Attainment Gap between Aboriginal and Non-Aboriginal Youth?

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Abstract

Aboriginal people generally have lower levels of educational attainment than other groups in Canada, but little is known about the reasons behind this gap. This study is the second of two by the same author investigating the issue in detail. The first paper (Frenette 2011) concludes that the labour market benefits to pursuing further schooling are generally not lower for Aboriginal people than for non-Aboriginal people. This second paper takes a more direct approach to the subject by examining the gap in educational attainment between Aboriginal and non-Aboriginal youth using the Youth in Transition Survey (YITS), Cohort A. Aboriginal people who live on-reserve or in the North are excluded from the YITS and, thus, from this analysis. The results of the analysis show that most (90 percent) of the university attendance gap among high school graduates is associated with differences in relevant academic and socio-economic characteristics. The largest contributing factor among these is academic performance (especially differences in performance on scholastic, as opposed to standardized, tests). Differences in parental income account for very little of the university attendance gap, even when academic factors are excluded from the models (and thus do not absorb part of the indirect effect of income). Differences in academic and socio-economic characteristics explain a smaller proportion of the gap in high school completion than in university attendance.

JEL code: I21, J15

KEYWORDS: Educational attainment, Aboriginal

Executive Summary

It is well-known that education is a key component of labour market success and thus economic well-being (e.g., Card 1999). It is also well documented that Aboriginal individuals lag behind non-Aboriginal individuals in terms of educational attainment (e.g., O'Donnell and Ballardin 2006; Costa and Siggner 2005; Tait 1999). However, less is known about the reasons behind this gap, although Bougie (2008) looks at literacy profiles of Aboriginal people. A companion study (Frenette 2011) demonstrates that the economic benefits to schooling are generally as high for Aboriginal people as for non-Aboriginal people, or even higher. Thus, it is unlikely that economic incentives explain why the educational attainment of Aboriginal people lags behind that of others. This follow-up study examines more directly the gap in educational attainment between Aboriginal and non-Aboriginal youth by considering academic and background characteristics of both groups.

The purpose of this study is to identify how much of a gap in educational attainment remains after accounting for observed differences in academic and socio-economic characteristics between Aboriginal and non-Aboriginal youth and to determine the extent to which these characteristics are correlated with educational attainment. Specifically, the study employs a standard Oaxaca decomposition approach where the gap in the mean educational outcome in question can be expressed as the sum of an 'explained' component and an 'unexplained' component. The explained component is simply the sum of the differences in mean characteristics (i.e., the factors that are believed to be important correlates of educational attainment, according to previous studies), each weighted by its "importance" in terms of its correlation with the outcome in question. The remainder is the unexplained component. The weights used are regression coefficients in a model of educational attainment as a function of the various socio-economic characteristics. Of course, the results should not necessarily be interpreted in a causal manner; the term '*explained*' should be interpreted in an accounting sense only. Furthermore, some factors may influence the outcome directly, while others may do so indirectly through other factors. For example, parental income may influence educational attainment directly (by helping children pay for higher education) or indirectly (by influencing academic performance).

The data are drawn from the Youth in Transition Survey (YITS), Cohort A. This survey was developed in conjunction with the Programme for International Student Assessment (PISA), a project of the Organisation for Economic Co-operation and Development (OECD) consisting of standardized tests in reading, mathematics, and science. According to OECD (2002), PISA is not primarily an assessment of school curricula. Rather, it assesses mainly the application of knowledge acquired in school and elsewhere.

All students wrote the reading test, while one half also wrote the mathematics test and the other half also wrote the science test. The target population consisted of students enrolled in an educational institution on 31 December 1999 who were 15 years old on that day (i.e., born in 1984). The assessment took place in April or May 2000. Furthermore, background questionnaires were administered to students through PISA and the YITS. Parents and schools were also administered questionnaires through the YITS. Students were followed up every two years. At the time of this study, we had information up to, and including, Cycle 4 (youth who were 21 years old as of 31 December 2005). Students who were deemed mentally or physically unable to perform in the PISA assessment, as well as students who were non-speakers of the language of assessment (English or French) and who had received less than one year of instruction in that language, were excluded. Also excluded were students living in the territories (Northwest Territories, Nunavut, and Yukon) or on Indian reserves. Thus, the current study excludes Aboriginal youth who live on-reserve or in the North, and no inferences should be made to those populations on the basis of the results of this study.

The results show that most (90 percent) of the university attendance gap among high school graduates is associated with differences in relevant academic and socio-economic characteristics. The largest contributing factor among these is academic performance (especially differences in performance on scholastic, as opposed to standardized, tests). Differences in parental income explain very little of the university attendance gap, even when academic factors are excluded from the models (and thus do not absorb part of the indirect effect of income). Differences in academic and socio-economic characteristics account for a smaller proportion of the gap in high school completion than in university attendance.

1 Introduction

It is well-known that education is a key component of labour market success and thus economic well-being (e.g., Card 1999). It is also well documented that Aboriginal individuals lag behind non-Aboriginal individuals in terms of educational attainment (e.g., O'Donnell and Ballardini 2006; Costa and Siggner 2005; Tait 1999). However, less is known about the reasons behind this gap, although Bougie (2008) looks at literacy profiles of Aboriginal people. A companion study (Frenette 2011) demonstrates that the economic benefits to schooling are generally as high for Aboriginal people as for non-Aboriginal people, or even higher. Thus, it is unlikely that economic incentives explain why the educational attainment of Aboriginal people lags behind that of others. This follows earlier work in the Canadian literature focusing on Aboriginal labour market outcomes, including George and Kuhn (1994), Kuhn and Sweetman (2002), and Walters, White, and Maxim (2004).

This study explores further the possible reasons behind the education gap by examining the possible role of socio-economic and academic factors. This study uses the Youth in Transition Survey (YITS), Cohort A, matched with standardized test scores from the Programme for International Student Assessment (PISA). According to OECD (2002), PISA is not primarily an assessment of school curricula. Rather, it assesses mainly the application of knowledge acquired in school and elsewhere.

The YITS contains detailed background information on youth, information on the high schools that they attend, and, most importantly, academic performance measures not usually available in other data sources. Most general population surveys contain very small sample sizes of Aboriginal people, thus impeding meaningful analysis. Fortunately, the YITS is somewhat larger than most surveys and includes several-hundred Aboriginal youth. Aboriginal people who live on-reserve or in the North are excluded from the YITS and, thus, from the analysis. As a result, no inferences should be made to those populations on the basis of the results of this study.

The purpose of this study is to identify how much of a gap in educational attainment one might expect, given the observed differences in academic and socio-economic characteristics between Aboriginal and non-Aboriginal youth and to determine the extent to which these characteristics are correlated with educational attainment. Specifically, the study employs a standard Oaxaca decomposition approach where the gap in the mean educational outcome in question can be expressed as the sum of an 'explained' component and an 'unexplained' component. The explained component is simply the sum of the differences in mean characteristics (i.e., the factors that are believed to be important correlates of educational attainment, according to previous studies), each weighted by its 'importance' in terms of its correlation with the outcome in question. The remainder is the unexplained component. The weights used are regression coefficients in a model of educational attainment as a function of the various socio-economic characteristics. Of course, the results should not necessarily be interpreted in a causal manner. The term '*explained*' should be interpreted in an accounting sense only. Furthermore, some factors may influence the outcome directly, while others may do so indirectly through other factors. For example, parental income may influence educational attainment directly (by helping children pay for higher education) or indirectly (by influencing academic performance).

The results show that differences in academic and socio-economic characteristics 'account for' most (90 percent) of the university attendance gap among high school graduates. Of these characteristics, the lower academic performance of Aboriginal youth accounts for almost half of the gap, and performance on scholastic tests explains a much larger portion of the gap than does performance on standardized tests.

Differences in parental income account for very little of the university attendance gap in a direct way, although the home environment (which may be influenced by the level of parental income) does explain a non-negligible portion. Furthermore, parental income may also influence academic performance, so that some of its impact on educational attainment may be crystallized in academic performance (e.g., Finnie, Lascelles, and Sweetman 2005). However, when academic factors were excluded from the models, parental income still accounted for very little of the gap in university attendance.

Of course, lower high school completion rates among Aboriginal youth further limit options regarding university attendance. What is behind the lower high school completion rates of Aboriginal youth? The findings in this study suggest that differences in academic and socio-economic characteristics 'account' for just over one-half (53 percent) of the high school completion gap. Once again, academic performance is a major contributor. Clearly, however, more work is needed in order to better understand differences with respect to high school completion.

The study proceeds as follows. In the next section (section 2), the methodology is described, including the statistical techniques and data used in the study. The results are presented in the following section (section 3). Section 4 examines the school context. Finally, the study is summarized in the conclusion (section 5).

2 Methodology

The data are drawn from the Youth in Transition Survey (YITS), Cohort A. This survey was developed in conjunction with the Programme for International Student Assessment (PISA), a project of the Organisation for Economic Co-operation and Development (OECD) consisting of standardized tests in reading, mathematics, and science. According to OECD (2002), "PISA differs from some other assessment programs in that it is not primarily an assessment of the extent to which students have mastered bodies of knowledge and skills identified in school curricula. It is not an assessment of achievement in school reading, mathematics and science only. PISA recognizes the necessity of curriculum-based knowledge and understanding for reading literacy, mathematical literacy and scientific literacy [...], but tests for these mainly in terms of the acquisition of broad concepts and skills that allow that knowledge to be applied."

All students wrote the reading test, while one half also wrote the mathematics test and the other half also wrote the science test. The target population consisted of students enrolled in an educational institution on 31 December 1999 who were 15 years old on that day (i.e., born in 1984). The assessment took place in April or May 2000. Furthermore, background questionnaires were administered to students through PISA and the YITS. Parents and schools were also administered questionnaires through the YITS. Students were followed up every two years. At the time of this study, we had information up to, and including, Cycle 4 (youth who were 21 years old as of 31 December 2005). Students who were deemed mentally or physically unable to perform in the PISA assessment, as well as students who were non-speakers of the language of assessment (English or French) and who had received less than one year of instruction in that language, were excluded. Also excluded were students living in the territories (Northwest Territories, Nunavut, and Yukon) or on Indian reserves. Thus, the current study excludes Aboriginal youth who live

on-reserve or in the North, and no inferences should be made to those populations on the basis of the results of this study.¹

Two educational outcomes are examined in this study: high school completion and university attendance among high school graduates. Both outcomes are measured as of Cycle 4 (when the youths were 21 years old). In most general-population surveys, the sample of Aboriginal people is usually too small for meaningful analysis. Although the sample of Aboriginal youth in the YITS is not large by any means, it is large enough to produce reliable estimates at the national level for all Aboriginal groups combined (i.e., North American Indian living off-reserve, Métis, and Inuit groups cannot be separated in the analysis since such estimates would be unreliable from a statistical point of view), and for young men and women combined. In the analysis of high school completion, there are 428 Aboriginal youth. Among these, 378 had a high school diploma; these youth are used in the analysis of post-secondary and university attendance.² Aboriginal youth are identified by asking parents this question: “Is this person Aboriginal, that is, North American Indian, Métis or Inuit?”

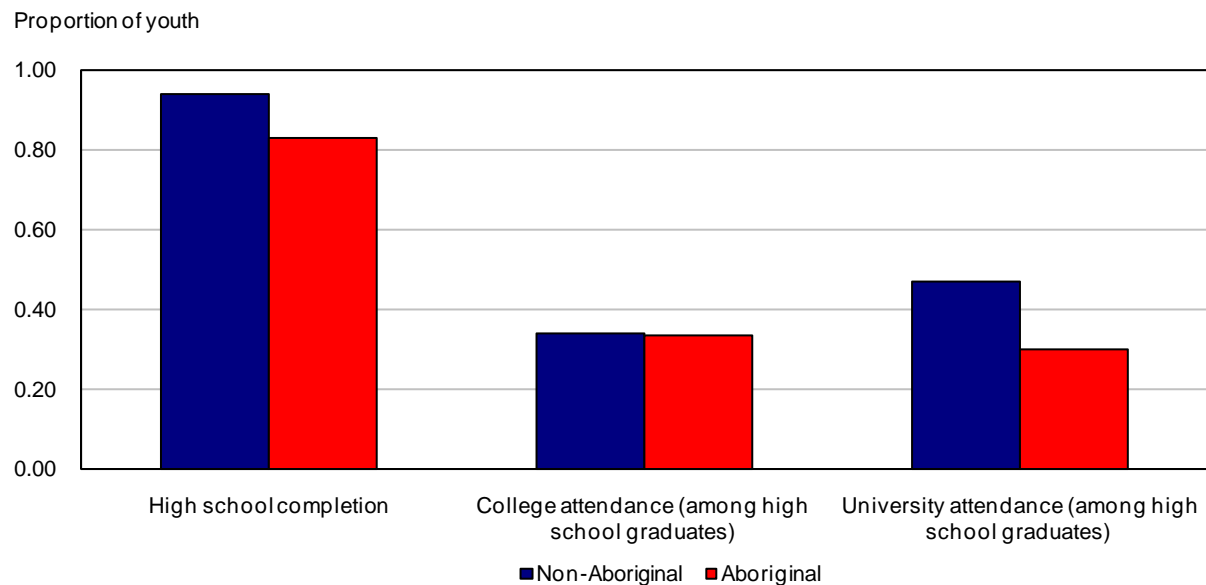
In Chart 1, the raw high school and post-secondary/university participation rates are shown. While 93.7 percent of non-Aboriginal youth have completed high school by age 21, only 82.7 percent of Aboriginal youth have done so. The gap is even larger in terms of university attendance (among high school graduates): 46.8 percent of non-Aboriginal youth have attended compared to only 29.8 percent of Aboriginal youth. In contrast, college attendance rates (again, among high school graduates) are almost identical for Aboriginal (33.7%) and non-Aboriginal (33.3%) youth. The term *college* here refers to any form of non-university post-secondary school. This point is also noted in Frenette (2011). Consequently, the remainder of this study focuses exclusively on high school completion and university attendance.³

¹. The YITS comprised two stages. In the first stage a stratified sample of schools was selected to ensure adequate coverage in all ten Canadian provinces (including adequate coverage of minority-language school systems in certain provinces). The stratification was based on the enrolment of 15-year-olds in the school in the previous academic year. In the second stage a simple random sample of 15-year-old students within each school was selected. Given this complex survey design (the clustered sampling within schools as well as the stratified sample of schools in the first stage), variance measures based on the assumption of a simple random sample are incorrect. To address this issue, variance measures are estimated by using a Taylor linear approximation. Although much less computationally intensive than the bootstrap approach, the Taylor linear approximation generally yields variances that are slightly higher than the true variances. In other words, significance may be slightly understated in this study. However, if results are found to be statistically significant, they are almost certainly statistically significant in actual fact.

². It is tempting to compute a high school completion rate for Aboriginal youth by dividing 378 by 428. However, these figures are not weighted to match population counts. As a result of sample stratification, the relative sizes of the weighted counts in the population are slightly different.

³. Aboriginal people often return to school later in life (Vaillancourt 2005). This means that follow-up data would be very useful. Readers are also reminded that only youth registered in school at age 15 are included in the YITS. Richards *et al.* (2008) use the Census of Population to show that high school completion rates are substantially higher among a more complete sample of 20-to-24-year-old Aboriginal people. Unfortunately, the Census of Population does not contain the rich academic and socio-economic characteristics available in the YITS.

Chart 1 Education outcomes at age 21



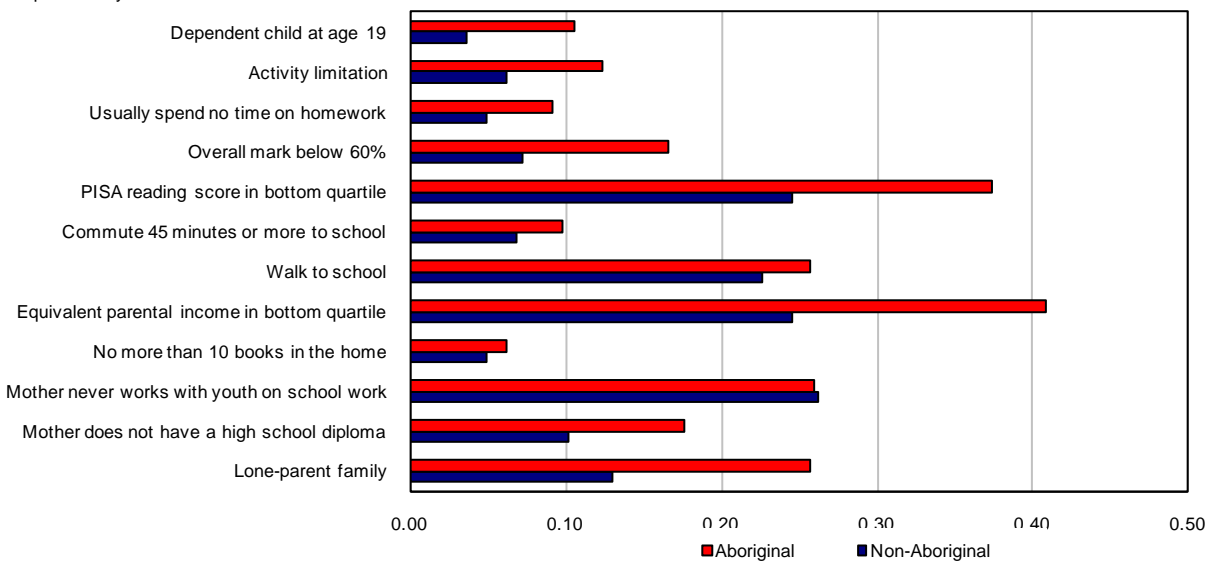
Source: Youth in Transition Survey (YITS), Cohort A.

Many factors may explain the large educational divide between Aboriginal people and non-Aboriginal people. Chart 2 shows the differences in the proportion of youth having select academic and socio-economic characteristics, for non-Aboriginal and Aboriginal youth. These characteristics were chosen on the basis of a large literature investigating the correlates of educational attainment (e.g., see Frenette 2008). The sample here includes all individuals: those with a high school diploma and those without a high school diploma. The actual numbers for the full list of characteristics used in this study is available in the appendix (Text table 1). Many of the differences shown in Chart 2 are substantial. For example, Aboriginal youth: are twice as likely to grow up in a lone-parent family; are almost twice as likely to have a mother who does not have a high school diploma; are far more likely to have parental income in the bottom quartile of the distribution; are about twice as likely to grow up in a home that is more than 80 kilometres from a university; are more than twice as likely to report some form of activity limitation; and are three times as likely to have a dependent child by age 19.

Many of the characteristics set out in Chart 2 (and those appearing in Text table 1) are strong correlates of educational attainment. To show this, both educational outcomes are regressed on the various characteristics; the results are presented in Text table 2 in the Appendix. It is worth noting in the results that the Aboriginal indicator variable is not statistically significant in the university attendance model. In other words, there is no significant difference in Aboriginal and non-Aboriginal rates of university attendance once differences in characteristics are taken into account. The Aboriginal coefficient is significant only at 10 percent in the high school completion model. Moreover, the point estimate, which is our best estimate given the data that we have, is still quite a bit lower than zero. In the university attendance model, the Aboriginal coefficient is not significant, and in any event it is very close to zero.

Chart 2 Aboriginal and non-Aboriginal youth with select characteristics

Proportion of youth



Note: PISA stands for Programme for International Student Assessment.
Source: Youth in Transition Survey (YITS), Cohort A.

The main purpose of this paper, however, is to account for the large differences in educational outcomes. In order to do so, a simple Oaxaca decomposition exercise is applied where the gap in the mean educational outcome in question can be expressed as the sum of an ‘explained’ component and an ‘unexplained’ component. The explained component is simply the sum of the differences in mean characteristics (shown in Text table 1), each weighted by its ‘importance’ in terms of its correlation with the outcome in question. The remainder is the unexplained component. The weights used are the regression coefficients appearing in Text table 1. Of course, the results should not necessarily be interpreted in a causal manner. The term ‘*explained*’ should be interpreted in an accounting sense only. See Frenette (2008) for a more detailed description of this approach.⁴ That being said, the approach has the advantage of indicating how much of a gap in educational attainment one might expect, given the observed differences in characteristics between Aboriginal and non-Aboriginal youth and the extent to which these characteristics are correlated with educational attainment.

3 Results

This section takes a significant step toward understanding the gap in educational outcomes between Aboriginal and non-Aboriginal youth. Two outcomes are examined: raw high school completion rates and university attendance rates among high school graduates. The magnitudes of the gaps in these outcomes were set out in Chart 1, in the previous section. In Table 1, the decomposition results are shown, including the contribution of specific groupings of factors. The results are more succinctly presented in Charts 3 and 4. In each chart, the characteristics are grouped into seven categories, which are somewhat more aggregated than those used in Table 1: home environment (age of mother at birth, parental presence, maternal education, maternal involvement, and books in the home); parental income; geography (province, distance to university,

⁴ Note that the regression coefficients used are from a pooled model of Aboriginal and non-Aboriginal youth. Regression coefficients from separate models were also used, but these yielded broadly similar conclusions.

commuting mode to high school, commuting time to high school, and residential mobility); academic performance (the PISA reading scores and school marks); academic effort (time spent on homework); personal characteristics (activity limitation, sibling order, number of siblings, sex, and the presence of a dependent child at age 19); and an unexplained component. The discussion below focuses on the figures but occasionally refers to some more detailed results from Table 1.

Table 1
Decomposition results for the contribution of factors to the educational attainment gap between Aboriginal and non-Aboriginal youth

	High school completion	University attendance among high school graduates
	percent	
Home environment		
Age of mother at birth	-0.9	6.2
Parental presence	6.1	3.8
Maternal education	5.1	9.2
Maternal involvement	0.1	0.7
Books	-0.6	0.4
Parental income		
Parental income	3.6	3.7
Geography		
Province	-4.9	-9.8
Distance to university	...	5.8
Commuting mode to high school	0.6	...
Commuting time to high school	-0.1	...
Residential mobility	4.6	...
Academic performance		
Reading score	7.5	12.0
Overall mark	17.9	32.7
Academic effort		
Homework time	5.3	13.2
Personal characteristics		
Activity limitation	0.5	5.5
Sibling order	0.3	-0.7
Number of siblings (including self)	0.0	0.3
Female	-0.2	-0.1
Dependent child at age 19	8.1	6.5
Total explained portion	53.0	89.5
Unexplained portion	47.0	10.5
Total gap	100.0	100.0

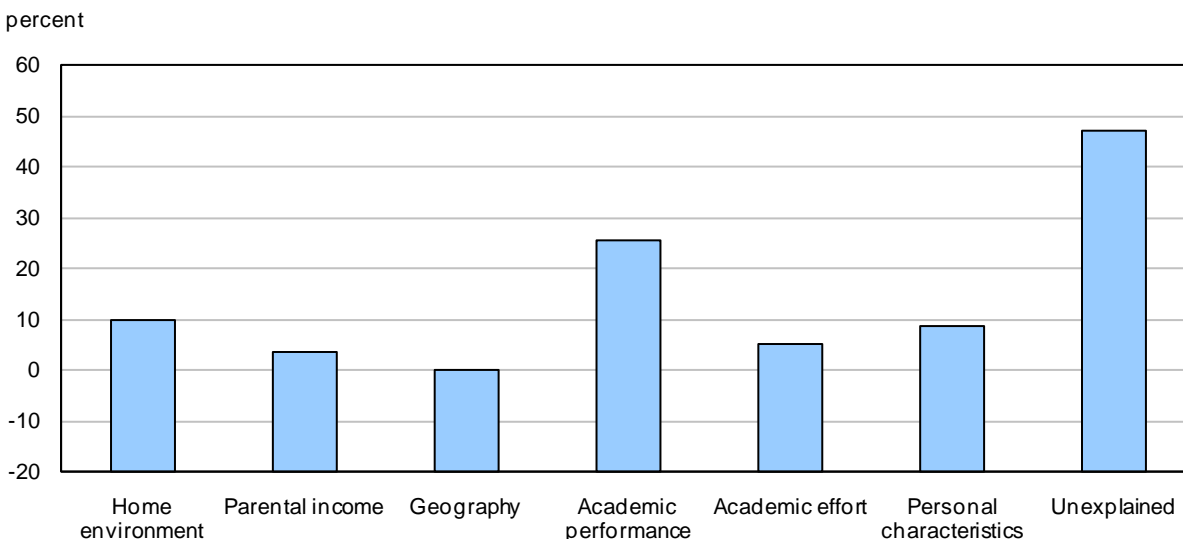
Notes: The samples consist of all respondents in cycles 1 and 4 (high school completion sample) and all respondents in cycles 1 and 4 who completed high school (university attendance sample). Unless otherwise stated, all variables refer to cycle 1. Variable groupings used in charts 3 and 4 of this document are also used in this table and appear in bold.

Source: Youth in Transition Survey (YITS), Cohort A.

We now turn to the gap in the high school completion rate (Chart 3). Overall, differences in characteristics 'account' for 53 percent of the high school completion gap. The key component here is academic performance, accounting for 25.4 percent of the gap (7.5 percent + 17.9 percent). The other characteristics individually explain smaller portions of the overall gap.

Chart 3

Decomposition results for the contribution of factors to the gap in high school completion rates between Aboriginal and non-Aboriginal youth

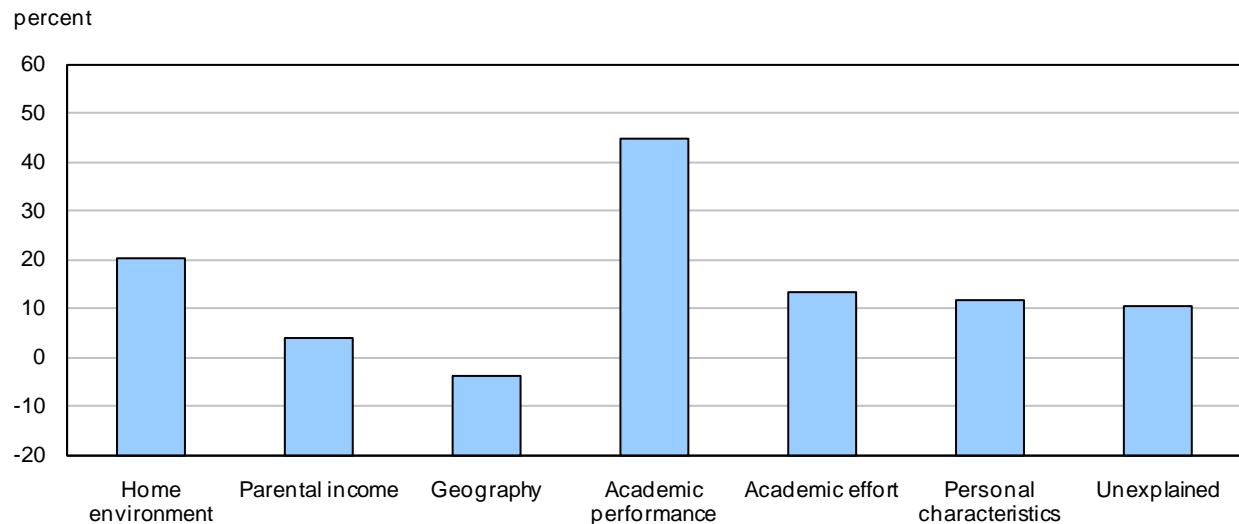


Source: Youth in Transition Survey (YITS), Cohort A.

The educational outcome that has attracted the most attention among both researchers and policy analysts is without a doubt university attendance. One possible reason for this attention is the high level of earnings achieved by university graduates. In Chart 4, the decomposition results are shown for the overall gap in university attendance among high school graduates. Overall, differences in characteristics 'account' for 90 percent of this gap. Almost half of the gap (44.7 percent) is related to differences in academic performance (12 percent + 32.7 percent). The fact that the overall mark in high school accounts for a much larger portion of the gap than the PISA reading scores is interesting, especially in light of the fact that the opposite was true when Frenette (2008) examined the university attendance gap among higher- and lower-income students. There appear to be important implications for the poorer performance of Aboriginal youth on scholastic, as opposed to standardized, tests. Recall that, according to OECD (2002), PISA is not primarily an assessment of school curricula. Rather, it assesses mainly the application of knowledge acquired in school or elsewhere.

Chart 4

Decomposition results for the contribution of factors to the gap in university attendance rates between Aboriginal and non-Aboriginal youth



Source: Youth in Transition Survey (YITS), Cohort A.

Note that differences in parental income account for very little of the gap in both high school completion and university attendance. The reason for this may be that parental income helps to foster academic development of youth. However, since academic performance and effort are already included in the models, this indirect channel may be removed from the parental-income effect. To test this theory, the models were re-estimated without the academic performance and effort variables. This exercise led to the same qualitative result: the proportion of the gap in high school completion that is explained by differences in parental income rose from 3.6% to 4.8%; for university attendance, the figure rose from 3.7% to 6.6%.

4 School context

So far, this study has demonstrated that the key to understanding the gap in educational attainment between Aboriginal and non-Aboriginal youth lies in examining academic factors, as opposed to parental income or economic incentives (the latter having been investigated in Frenette 2011). However, this finding requires additional context. What factors are responsible for the poorer academic performance registered by Aboriginal youth? To tackle this question, one would require detailed information on school strategies regarding Aboriginal youth. Unfortunately, this information is not available in the YITS data. One alternative is the 2006 Aboriginal Peoples Survey (APS). This is a post-Census survey of some 60,000 adults 15 years of age and over and children aged 6 to 14 who had indicated on the 2006 Census of Population questionnaire that they had Aboriginal origins, namely North American Indian, Métis or Inuit, had Treaty Indian or Registered Indian status, or had Indian Band membership. Aboriginal people living on-reserve in the ten Canadian provinces were not included in the 2006 APS, whereas all Aboriginal people in the territories were part of the APS target population.

To this end, Bougie (2009) uses the APS to study parental perceptions of academic achievement of Aboriginal children. Although very little information in the survey is specific to school strategies for Aboriginal students, the study does find that Aboriginal children with one parent who attended a residential school were less likely to be doing “*very well*” or “*well*” according to their parents. The survey also contains information on preschool attendance and explains whether the program in

which the children were taking part was Aboriginal in nature. However, participation in such programs was not found to be statistically related to perceived academic achievement.

Richards, Hove, and Afolabi (2008) provide further contextual background. These authors use a combination of administrative and survey data from British Columbia (BC).⁵ They began by noting that Aboriginal students in certain school districts in BC tended to outperform what is normally expected of students with similar socio-economic backgrounds. They then asked, "What are these school districts doing?" Following in-depth interviews with school and district officials in high- and low-performing districts, they discovered that high-performing districts were more likely to:

- Emphasize Aboriginal education success as a long-term priority
- Involve Aboriginal leaders and the broader community
- Use objective data on Aboriginal student performance in designing policy and follow through on policy implementation

More specifically, Richards *et al.* stress the importance of introducing Aboriginal content into school curricula, in the form of Aboriginal language and culture programs. The authors recommend community involvement (as noted above), as well as teacher cooperation, in order to successfully achieve this.

5 Conclusion

Despite the importance of educational attainment in determining labour market outcomes, we know very little about the reasons behind the gap in educational attainment between Aboriginal and non-Aboriginal youth. Until recently, no data set contained detailed information on a sufficient sample of Aboriginal youth in the process of making decisions regarding their education. The present study fills this gap with data from the Youth in Transition Survey (YITS), Cohort A.

The results show that differences in academic and socio-economic characteristics 'account' for most (90 percent) of the university attendance gap among high school graduates. Of these, the lower academic performance of Aboriginal youth explains almost one-half of the gap. Interestingly, performance on scholastic tests accounts for a much larger portion of the gap than does performance on standardized tests. Differences in parental income explain very little of the university attendance gap, even when academic factors are excluded from the models (and thus do not absorb part of the indirect effect of income). In addition, lower high school completion rates among Aboriginal youth further limit options regarding university attendance. What is behind the lower high school completion rates of Aboriginal youth? The findings indicate that differences in characteristics 'account' for just over one-half (53 percent) of the high school completion gap. Once again, academic performance is a major contributor.

A companion paper (Frenette 2011) concludes that the labour market benefits to pursuing further schooling are generally not lower for Aboriginal people compared to non-Aboriginal people. The two studies rule out a considerable number of candidate explanations and point to some possible explanations behind the gap in educational attainment. Of course, other factors not measured (or not measurable) may also come into play.

⁵. Richards, Hove, and Afolabi (2008) use as administrative data the Foundation Skills Assessment (FSA) data, which contain standardized test score results by school and student characteristic (including Aboriginal/non-Aboriginal) for grade 4 and 7 students. The survey data consist of in-depth interviews that the authors conducted with district and school officials.

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Appendix

Text table 1
Means of socio-economic characteristics

	Sample for high school completion		Sample for university attendance	
	Non-	Aboriginal	Non-	Aboriginal
	years			
Age of mother at birth	27.5	25.6	27.5	25.8
	proportion of youth			
Lone-parent family	0.130	0.257	0.125	0.229
Two parents, at least one not biological	0.110	0.181	0.102	0.148
Two biological parents	0.760	0.563	0.773	0.623
Mother does not have a high school diploma	0.101	0.177	0.088	0.159
Mother has a high school diploma	0.381	0.416	0.382	0.428
Mother has a non-university postsecondary certificate	0.319	0.287	0.324	0.273
Mother has a university degree	0.198	0.120	0.206	0.140
Mother never works with youth on school work	0.262	0.260	0.259	0.246
Mother works with youth on school work a few times per year	0.236	0.239	0.239	0.235
Mother works with youth on school work about once per month	0.206	0.223	0.209	0.207
Mother works with youth on school work several times per month	0.208	0.183	0.209	0.210
Mother works with youth on school work several times per week	0.087	0.095	0.084	0.103
No books in the home	0.006	0.005	0.004	0.007
1 to 10 books in the home	0.043	0.057	0.041	0.047
11 to 50 books in the home	0.161	0.196	0.156	0.195
51 to 100 books in the home	0.200	0.159	0.200	0.178
101 to 250 books in the home	0.251	0.283	0.253	0.281
251 to 500 books in the home	0.202	0.192	0.207	0.197
More than 500 books in the home	0.136	0.108	0.139	0.096
Equivalent parental income in bottom quartile	0.246	0.408	0.237	0.355
Equivalent parental income in 2 nd quartile	0.250	0.268	0.245	0.275
Equivalent parental income in 3 rd quartile	0.251	0.201	0.257	0.237
Equivalent parental income in top quartile	0.253	0.123	0.261	0.133
Newfoundland and Labrador	0.021	0.030	0.021	0.032
Prince Edward Island	0.006	0.003	0.006	0.004
Nova Scotia	0.034	0.020	0.034	0.022
New Brunswick	0.026	0.038	0.026	0.044
Québec	0.235	0.134	0.226	0.106
Ontario	0.377	0.287	0.383	0.300
Manitoba	0.033	0.095	0.033	0.084
Saskatchewan	0.037	0.091	0.038	0.097
Alberta	0.106	0.123	0.105	0.124
British Columbia	0.124	0.180	0.128	0.186
Parental home within 40 km of a university	...	...	0.690	0.534
Parental home between 40 and 80 km from a university	...	...	0.151	0.181
Parental home further than 80 km from a university	...	...	0.159	0.285
Walk to school	0.227	0.257	...	...
Bus to school	0.377	0.419	...	...
Public transit to school	0.122	0.102	...	...
Drive or ride to school	0.249	0.201	...	...
Bicycle, rollerblade, or skateboard to school	0.022	0.021	...	...
Live in school residence	0.004	0.000	...	...

See notes and source at the end of the table.

Text table 1 (concluded)
Means of socio-economic characteristics

	Sample for high school completion		Sample for university attendance	
	Non-	Aboriginal	Non-	Aboriginal
	proportion of youth			
Commute less than 15 minutes	0.517	0.501	...	...
Commute between 15 and 30 minutes	0.314	0.313	...	...
Commute between 30 and 45 minutes	0.102	0.089	...	...
Commute between 45 and 60 minutes	0.046	0.066	...	...
Commute between 60 and 90 minutes	0.017	0.027	...	...
Commute 90 minutes or more	0.004	0.005	...	...
Number of residential moves	2.009	2.941	...	...
PISA reading score in bottom quartile	0.245	0.373	0.220	0.300
PISA reading score in 2 nd quartile	0.252	0.239	0.254	0.259
PISA reading score in 3 rd quartile	0.247	0.214	0.257	0.248
PISA reading score in top quartile	0.256	0.174	0.269	0.193
Overall mark below 60%	0.073	0.166	0.058	0.101
Overall mark between 60% and 69%	0.180	0.224	0.165	0.241
Overall mark between 70% and 79%	0.336	0.375	0.343	0.397
Overall mark between 80% and 89%	0.329	0.208	0.347	0.229
Overall mark between 90% and 100%	0.082	0.028	0.088	0.032
Usually spend no time on homework	0.049	0.092	0.043	0.084
Usually spend less than 1 hour per week on homework	0.180	0.280	0.169	0.244
Usually spend 1 to 3 hours per week on homework	0.403	0.405	0.405	0.435
Usually spend 4 to 7 hours per week on homework	0.260	0.187	0.269	0.193
Usually spend 8 to 14 hours per week on homework	0.085	0.027	0.090	0.032
Usually spend 15 or more hours per week on homework	0.023	0.010	0.024	0.012
No activity limitation	0.938	0.876	0.942	0.868
Activity limitation - sometimes	0.050	0.089	0.046	0.089
Activity limitation - often	0.013	0.035	0.012	0.043
Sibling order	1.545	1.499	1.551	1.498
Number of siblings (including self)	2.279	2.253	2.290	2.259
Female	0.507	0.516	0.518	0.520
Dependent child at age 19	0.037	0.106	0.029	0.091
Sample size	13,906	428	13,251	378

Notes: The samples consist of all respondents in cycles 1 and 4 (high school completion sample) and all respondents in cycles 1 and 4 who completed high school (university attendance sample). Unless otherwise stated, all variables refer to cycle 1. PISA stands for Programme for International Student Assessment.

Source: Youth in Transition Survey (YITS), Cohort A.

Text table 2
Regression results

	High school completion		University attendance	
	coefficient	standard error	coefficient	standard error
Aboriginal	-0.052 *	0.028	-0.018	0.034
Age of mother at birth	-0.001	0.001	0.006 ***	0.001
Two parents, at least one not biological	-0.018	0.017	-0.035	0.022
Two biological parents	0.028 **	0.011	0.033 **	0.016
Mother has a high school diploma	0.075 ***	0.014	0.064 ***	0.017
Mother has a non-university postsecondary certificate	0.077 ***	0.015	0.094 ***	0.018
Mother has a university degree	0.075 ***	0.015	0.208 ***	0.020
Mother works with youth on school work a few times per year	0.006	0.008	0.008	0.014
Mother works with youth on school work about once per month	0.002	0.009	-0.016	0.014
Mother works with youth on school work several times per month	0.000	0.009	-0.025 *	0.014
Mother works with youth on school work several times per week	-0.015	0.013	-0.065 ***	0.021
1 to 10 books in the home	0.162 *	0.084	-0.073	0.058
11 to 50 books in the home	0.150 *	0.083	-0.050	0.056
51 to 100 books in the home	0.145 *	0.083	-0.054	0.055
101 to 250 books in the home	0.136	0.083	-0.049	0.056
251 to 500 books in the home	0.134	0.082	-0.030	0.056
More than 500 books in the home	0.135	0.083	-0.035	0.056
Equivalent parental income in 2 nd quartile	0.004	0.010	-0.018	0.015
Equivalent parental income in 3 rd quartile	0.024 ***	0.009	0.031 **	0.016
Equivalent parental income in top quartile	0.022 **	0.009	0.040 **	0.017
Prince Edward Island	0.000	0.009	0.045 *	0.025
Nova Scotia	-0.029 ***	0.010	0.045 **	0.021
New Brunswick	-0.004	0.009	0.038 *	0.020
Québec	-0.080 ***	0.010	-0.191 ***	0.019
Ontario	-0.036 ***	0.011	-0.077 ***	0.019
Manitoba	-0.047 ***	0.013	-0.022	0.023
Saskatchewan	-0.028 ***	0.010	-0.040 *	0.022
Alberta	-0.040 ***	0.010	-0.102 ***	0.019
British Columbia	-0.022 **	0.010	-0.121 ***	0.021
Parental home between 40 and 80 km from a university	...	...	-0.081 ***	0.015
Parental home further than 80 km from a university	...	...	-0.059 ***	0.013
Bus to school	-0.011	0.010	...	...
Public transit to school	0.000	0.011	...	...
Drive or ride to school	0.002	0.009	...	...
Bicycle, rollerblade, or skateboard to school	0.015	0.022	...	...
Live in school residence	0.027	0.038	...	...

See notes and source at the end of the table.

Text table 2 (concluded)
Regression results

	High school completion		University attendance	
	coefficient	standard error	coefficient	standard error
Commute between 15 and 30 minutes	0.008	0.008	...	...
Commute between 30 and 45 minutes	0.029 ***	0.011	...	...
Commute between 45 and 60 minutes	0.020	0.015	...	...
Commute between 60 and 90 minutes	0.015	0.019	...	...
Commute 90 minutes or more	-0.069	0.062	...	...
Number of residential moves	-0.005 ***	0.002	...	...
PISA reading score in 2 nd quartile	0.059 ***	0.011	0.112 ***	0.015
PISA reading score in 3 rd quartile	0.068 ***	0.010	0.174 ***	0.016
PISA reading score in 4 th quartile	0.063 ***	0.010	0.253 ***	0.017
Overall mark between 60% and 69%	0.108 ***	0.022	0.058 ***	0.017
Overall mark between 70% and 79%	0.177 ***	0.021	0.167 ***	0.018
Overall mark between 80% and 89%	0.180 ***	0.021	0.362 ***	0.019
Overall mark between 90% and 100%	0.175 ***	0.021	0.478 ***	0.022
Usually spend less than 1 hour per week on homework	0.017	0.022	0.018	0.023
Usually spend 1 to 3 hours per week on homework	0.043 **	0.021	0.069 ***	0.023
Usually spend 4 to 7 hours per week on homework	0.052 **	0.022	0.132 ***	0.024
Usually spend 8 to 14 hours per week on homework	0.058 ***	0.021	0.235 ***	0.029
Usually spend 15 or more hours per week on homework	0.024	0.027	0.197 ***	0.041
Activity limitation - sometimes	-0.027	0.019	-0.088 ***	0.020
Activity limitation - often	0.024	0.030	-0.184 ***	0.032
Sibling order	0.008 *	0.005	-0.021 **	0.009
Number of siblings (including self)	0.001	0.004	0.017 **	0.007
Female	0.022 ***	0.006	0.073 ***	0.010
Dependent child at age 19	-0.129 ***	0.030	-0.178 ***	0.022
Intercept	0.503 ***	0.091	-0.155 **	0.070
Diagnostic statistics				
Adjusted R-squared	0.164		0.356	
Sample size (number)	14,334		13,629	

* p<0.1

** p<0.05

***p<0.01

Notes: The symbol *** stands for *significant at 1%*; the symbol ** stands for *significant at 5%*; the symbol * stands for *significant at 10%*.

Ordinary least squares is used throughout. The samples consist of all respondents in cycles 1 and 4 (high school completion sample) and all respondents in cycles 1 and 4 who completed high school (post-secondary/university attendance sample).

Unless otherwise stated, all explanatory variables refer to cycle 1. PISA stands for Programme for International Student Assessment.

Source: Youth in Transition Survey (YITS), Cohort A.

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