



# Canadian Labour Market and Skills Researcher Network

## Working Paper No. 79

### Are the Labour Market Benefits to Schooling Different for Aboriginal and Non-Aboriginal People

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July 2011

CLSRN is supported by Human Resources and Skills Development Canada (HRSDC) and the Social Sciences and Humanities Research Council of Canada (SSHRC). All opinions are those of the authors and do not reflect the views of HRSDC or the SSHRC.

# Are the Labour Market Benefits to Schooling Different for Aboriginal and Non-Aboriginal People?

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## Abstract

It is well documented that 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 first of two by the same author investigating the issue in detail. This initial paper focuses on one potential reason for differences in educational attainment between Aboriginal and non-Aboriginal individuals: the possibility that Aboriginal individuals reap fewer labour market benefits from additional schooling than do their non-Aboriginal counterparts. The results of this analysis, which is based on the 2006 Census of Population, show that additional schooling is generally associated with a larger decline in the probability of being unemployed for Aboriginal people compared to non-Aboriginal people. In terms of wages and salaries, additional schooling generally yields about the same benefits for both groups. The results hold whether Aboriginal people live off-reserve, on-reserve, or in northern communities. There is also no evidence that Aboriginal people who eventually choose to pursue further education following high school are a more select group than their non-Aboriginal counterparts in terms of academic performance; this suggests that the results in this study are not likely to be explained by self-selection. Furthermore, there is little evidence that perceptions of the benefits to schooling are any different for Aboriginal youth than for non-Aboriginal youth. These findings suggest that the labour market benefits to schooling are not likely to be a factor behind the lower levels of educational attainment among Aboriginal people.

JEL code: I24, J15

KEYWORDS: Educational attainment, Labour market outcomes, Aboriginal

## Executive Summary

It is well documented that Aboriginal people generally have lower levels of educational attainment than other groups in Canada; however, little is known about the reasons behind this gap. This study is one of two by the same author investigating the issue in detail. This paper focuses on one potential reason for differences in educational attainment between Aboriginal and non-Aboriginal individuals: the possibility that Aboriginal individuals reap fewer labour market benefits from additional schooling than do their non-Aboriginal counterparts. The second paper will investigate differences in socio-economic characteristics.

This study primarily uses the 2006 Census of Population micro-data file. The focus is on three groups of Aboriginal people: off-reserve North American Indians, Métis, and Inuit. However, sample size limitations at higher levels of education often require combining all three groups in order to create aggregate estimates. It is important to note that this may miss important differences among the three groups. For a substantial portion of the study, Aboriginal people living on-reserve or in northern communities are not examined given that the labour market may be very different in those areas. However, they are included in a separate analysis discussed in section 7. The 2006 Census identity data have been used.<sup>1</sup> All results are generated separately by sex. Non-Aboriginal people are also included in the analysis as a benchmark. Since the focus is on the labour market benefits to additional schooling, individuals of prime working age (i.e., 25 to 54 years old) are selected.

Three outcomes are examined in particular, each requiring a different analytical sample: educational choices; the unemployment rate; and wages and salaries. The educational choices of Aboriginal people are examined for the full sample (i.e., all individuals 25 to 54 years old). Although this is not the main focus of the analysis, it is important to highlight these choices in order to set the backdrop for the labour market results to follow. In addition, the study includes two labour market outcomes, namely, the unemployment rate, and wages and salaries. The unemployment rate is calculated among individuals who are working during the Census reference week (i.e., 7 May to 13 May 2006), have a job lined up, or are actively seeking employment. Wages and salaries refer to the year prior to the Census (i.e., 2005). In order to minimize the impact of differences in weeks worked or hours worked per week, the study focuses on individuals who worked full-year (i.e., 49 weeks or more) and full-time (i.e., 30 hours or more per week, on average). For this part of the analysis, only paid employees are examined (i.e., individuals with positive wages and salaries and zero net self-employment from farm and non-farm sources).

The results of this analysis show that additional schooling is generally associated with a larger decline in the probability of being unemployed for Aboriginal people compared to non-Aboriginal people. In terms of wages and salaries, additional schooling generally yields about the same benefits for both groups. The results hold whether Aboriginal people live off-reserve, on-reserve, or in northern communities. There is also no evidence that Aboriginal people who eventually choose to pursue further education following high school are a more select group than their non-Aboriginal counterparts in terms of academic performance; this suggests that the results in this study are not likely to be explained by self-selection. Furthermore, there is little evidence that perceptions of the benefits to schooling are any different for Aboriginal youth than for non-Aboriginal youth. These findings suggest that the labour market benefits to schooling are not likely to be a factor behind the lower levels of educational attainment among Aboriginal people.

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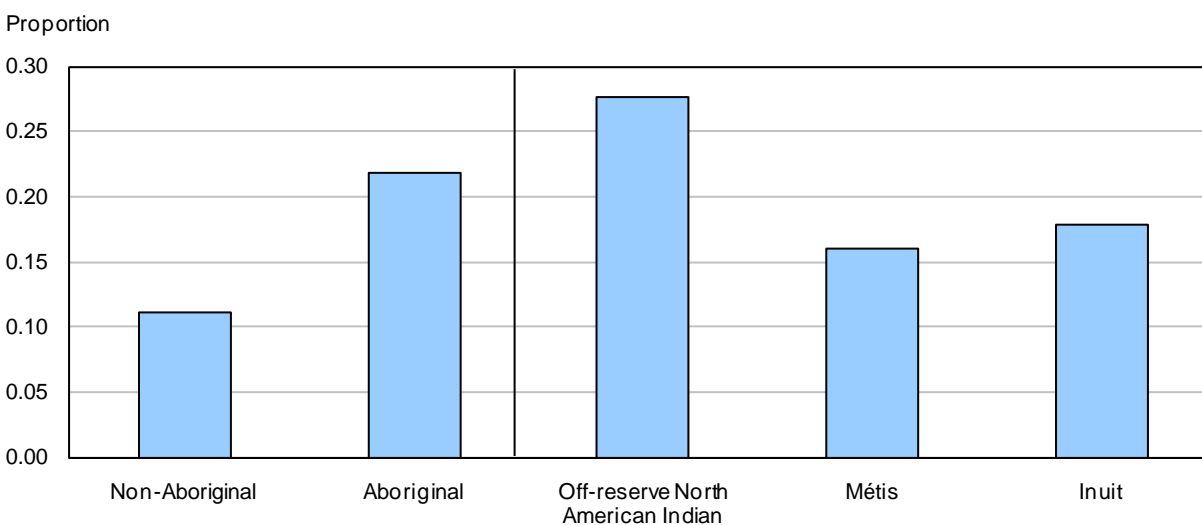
<sup>1</sup>. Information on the 2006 Census reference guides and technical reports is available at <http://www12.statcan.gc.ca/census-recensement/2006/ref/rp-guides/index-eng.cfm>. Information on Aboriginal content is available at [http://www12.statcan.gc.ca/census-recensement/2006/ref/rp-guides/rp/ap-pa\\_2/index-eng.cfm](http://www12.statcan.gc.ca/census-recensement/2006/ref/rp-guides/rp/ap-pa_2/index-eng.cfm).

Moreover, among bachelor's degree graduates working full-year and full-time, both groups earn about the same when they have studied in similar disciplines. However, unemployment rates are higher among Aboriginal than non-Aboriginal people for the same disciplines. As well, the two groups do not generally study in the same disciplines: Aboriginal people are more likely to choose disciplines such as education, arts, social sciences, and humanities, while non-Aboriginal people are more likely to choose disciplines such as engineering, mathematics, computer science, and physical sciences. These trends are true for men and women, but they are especially true for men. It is generally the case that studies in engineering, mathematics, computer science, and physical sciences, compared to other disciplines, lead to higher-paying jobs and are less likely to lead to jobs requiring less education than individuals in these fields of study have.

# 1 Introduction

According to the 2006 Census of Population, more than one in five (21.8 percent) Aboriginal individuals lived in economic families with after-tax income below the low-income cut-off (LICO), as depicted in Chart 1. That is about two times the figure for non-Aboriginal individuals (11.1 percent). Among Aboriginal people, off-reserve North American Indians have the highest low-income rate by far (27.6 percent), although a greater proportion of Métis and Inuit people than non-Aboriginal people are below the LICO.

**Chart 1**  
**Proportion in economic families below the low-income cut-off (LICO), non-Aboriginal and Aboriginal (with a breakdown as off-reserve North American Indian, Métis, and Inuit)**



Note: Excludes people living on reserve or in northern communities.  
Source: 2006 Census of Population.

Since education is a key component of labour market outcomes, a thorough understanding of the benefits to schooling experienced by Aboriginal people is required in order to more fully understand their economic situation. It is also important to understand educational attainment among Aboriginal people, since this group may represent a potentially large, untapped skilled labour force. Despite the importance of the topic, all we know is that Aboriginal individuals lag behind non-Aboriginal individuals in terms of educational attainment (O'Donnell and Ballardin 2006; Costa and Siggner 2005; Tait 1999). We know little about the reasons behind the gap, although Bougie (2008) examines literacy profiles of Aboriginal people.

One possible explanation for the “education divide” is that Aboriginal people do not reap the same labour market benefits from additional schooling as non-Aboriginal people. This is precisely the issue that is addressed in this study. Why might the labour market benefits to schooling matter? In standard human-capital theory, prospective students decide whether to further their studies or not depending on the present value of net lifetime earnings (i.e., the benefits less the costs of attending, all discounted to account for alternative investment opportunities and time preferences). Although we have limited evidence in the current context, we know that benefits to additional schooling tend to vary by other dimensions. For example, we know that boys face lower added benefits to higher education than do girls, and that this plays some role in understanding the gender gap in university enrolment (Frenette and Zeman 2008; Christofides, Hoy, and Yang 2006).

The results of this analysis, which is based on the 2006 Census of Population, show that additional schooling is generally associated with a larger decline in the probability of being unemployed for Aboriginal people compared to non-Aboriginal people. In terms of wages and salaries, additional schooling generally yields about the same benefits for both groups. The results hold whether Aboriginal people live off-reserve, on-reserve, or in northern communities. There is also no evidence that Aboriginal people who eventually choose to pursue further education following high school are a more select group than their non-Aboriginal counterparts in terms of academic performance; this suggests that the results in this study are not likely to be explained by self-selection. Furthermore, there is little evidence that perceptions of the benefits to schooling are any different for Aboriginal youth than for non-Aboriginal youth. These findings suggest that the labour market benefits to schooling are not likely to be a factor behind the lower levels of educational attainment among Aboriginal people.

Moreover, among bachelor's degree graduates working full-year and full-time, both groups earn about the same when they have studied in similar disciplines. However, unemployment rates are higher among Aboriginal than non-Aboriginal people for the same disciplines. Furthermore, the two groups do not generally study in the same disciplines. Aboriginal people are more likely to choose disciplines such as education, arts, social sciences, and humanities, while non-Aboriginal people are more likely to choose disciplines such as engineering, mathematics, computer science, and physical sciences. These trends are true for men and women, but they are especially true for men. It is generally the case that studies in engineering, mathematics, computer science, and physical sciences, compared to other disciplines, lead to higher-paying jobs and are less likely to lead to jobs requiring less education than individuals in these fields of study have.

In the next section, "Methodology," the data and methods used in the study are described. Section 3 sets out in more detail than has been done in previous studies the extent to which Aboriginal and non-Aboriginal people differ in their educational outcomes. The main results of the study, with respect to labour market benefits to schooling, are presented in section 4. The following two sections ask questions that add perspective on the estimates of benefits to schooling, namely "Can self-selection of Aboriginal and non-Aboriginal people with different levels of education explain the results?" (section 5) and "Are the perceptions of the benefits to schooling different for Aboriginal and non-Aboriginal youth?" (section 6). Section 7 compares unemployment rates and median wages and salaries for non-Aboriginal people and Aboriginal people living off-reserve, on-reserve, and in northern communities. The study is summarized in the conclusion.

## **2 Methodology**

This study uses primarily the 2006 Census of Population micro-data file. Three groups of Aboriginal people are the subject of the study: North American Indians, Métis, and Inuit. However, sample size limitations at higher levels of education often require combining all three groups in order to create aggregate estimates. It is important to note that this may miss important differences among the three groups. For a substantial portion of the study, North American Indians living on-reserve or Aboriginal people living in northern communities are not examined given that the labour market may be very different in those areas. However, they are included in a separate analysis discussed in section 7.

The term *Aboriginal* refers here to identity as opposed to ancestry. Specifically, respondents to the 2006 Census of Population were asked: “Is this person an Aboriginal person, that is, North American Indian, Métis or Inuit (Eskimo)?”<sup>2</sup>

Respondents could answer<sup>3</sup>:

- No
- Yes, North American Indian<sup>4</sup>
- Yes, Métis
- Yes, Inuit

All results of our analysis are generated separately by sex. Non-Aboriginal people are also included in the analysis as a benchmark; however, a 2-percent random sample of them is analyzed in order to save on computing time. All sample sizes used in the analysis are available upon request.

Since the focus is on labour market benefits to schooling, individuals of prime working age (i.e., 25 to 54 years old) are selected. Three outcomes are examined in particular, each requiring a different analytical sample: educational choices; the unemployment rate; and wages and salaries. The educational choices of Aboriginal people are examined for the full sample (i.e., all individuals 25 to 54 years old). Although this is not the main focus of the analysis, it is important to highlight these choices in order to set the backdrop for the labour market results to follow. In addition, the study includes two labour market outcomes, namely, the unemployment rate, and wages and salaries. The unemployment rate is calculated among individuals who are working during the Census reference week (i.e., 7 May to 13 May 2006), have a job lined up, or are actively seeking employment. Wages and salaries refer to the year prior to the Census (i.e., 2005).

The purpose of the study is to provide estimates of the benefits to schooling. This refers to the estimated benefit of pursuing additional qualifications, which is calculated from predicted values generated from ordinary least squares regression in the case of the unemployment rate models,<sup>5</sup> and from median regression in the case of the wages and salaries models. Note that, since longitudinal data are not available, and since we know nothing about differences in discount rates for Aboriginal and non-Aboriginal people, it is not possible to estimate the net present value over the life course.

Separate regressions are estimated for Aboriginal and non-Aboriginal people. For each group, predicted outcomes are generated for each level of completed schooling, while other variables in the model are held constant. The absolute or relative differences in predicted outcomes across levels of education are compared across groups (Aboriginal versus non-Aboriginal).

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<sup>2</sup>. An alternative would have been to use responses to the question on ethnic origin included in the 2006 Census of Population. However, responses to this question are not conveniently grouped into the three major Aboriginal peoples.

<sup>3</sup>. Respondents could give two answers. To simplify the analysis, these cases, which accounted for less than 1 percent of the sample are dropped throughout the study.

<sup>4</sup>. In the 2006 Census, the term *North American Indian* was used.

<sup>5</sup>. The unemployment equations are also estimated with logit and probit models but are not shown in the study since the results are very similar to ordinary least squares.

The categories of completed schooling include:

- Less than a high school diploma
- High school diploma (omitted in the regressions)
- Trade/vocational certificate or apprenticeship
- College certificate
- University certificate below a bachelor's degree
- Bachelor's degree
- Graduate (master's or doctorate) or professional (medicine, dentistry, veterinary medicine, or optometry) degree

The other variables included in the model are age, age squared, activity limitation (no limitations [the omitted category in the regressions], sometimes has a limitation, often has a limitation), and economic region, which is used to identify the local labour market (59 economic regions in total).<sup>6</sup>

At times the analysis also delves deeper into educational choices and their associated labour market outcomes by looking at the major field of study. To reduce the dimensionality of this analysis, these choices are examined only among bachelor's degree graduates. The fields of study are grouped into nine categories:

- Educational, recreational, and counselling services
- Fine and applied arts
- Humanities and related
- Social sciences and related (including law)
- Commerce, management, and business administration
- Agricultural, biological, nutritional, and food sciences
- Engineering and applied sciences
- Health
- Mathematics, computer, and physical sciences

Finally, data drawn from the Youth in Transition Survey (YITS), Cohort A, as part of the Programme for International Student Assessment (PISA)/YITS, are used to examine two other possible explanations for the results: selection into different levels of education and different perceptions of the benefits to schooling. These data are described in sections 5 and 6, respectively.

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<sup>6</sup>. Note that job characteristics such as industry, occupation, and job tenure are excluded from the wages and salaries models. As such, these outcomes should be interpreted as unconditional (i.e., not conditional on job characteristics).



### 3 The Educational Attainment of Aboriginal People

Although it is well documented that Aboriginal people generally have lower levels of completed education than non-Aboriginal people (O'Donnell and Ballardin 2006; Costa and Siggner 2005; Tait 1999), previous evidence dates back to 2001 and generally does not consider differences in field-of-study choices.<sup>7</sup> This section of the study is meant to update our knowledge of the educational attainment of the Aboriginal population while providing greater detail than has been done in earlier works.

Table 1 shows the distribution of Aboriginal and non-Aboriginal men and women aged 25 to 54 years old by their highest level of education. Aboriginal people are far more likely than non-Aboriginal people to have less than a high school diploma. This is especially the case among Inuit men and women. Specifically, 13.9 percent and 11.4 percent of non-Aboriginal men and women, respectively, have less than a high school diploma. In contrast, 49.9 percent and 48.7 percent (one-half) of Inuit men and women, respectively, have less than a high school diploma. Off-reserve North American Indians and Métis people are as likely to report a high school diploma as their highest level as are non-Aboriginal people; this is due to the fact that off-reserve North American Indians and Métis are less likely to pursue further studies beyond high school—particularly university qualifications. In terms of trade/vocational certificates or apprenticeships and college certificates, Aboriginal people are as likely as non-Aboriginal people to report these as their highest level.

**Table 1**  
**Distribution of highest level of education achieved**

	Men				Women			
	Non-Aboriginal	Aboriginal			Non-Aboriginal	Aboriginal		
		Off-reserve North American Indian	Métis	Inuit		Off-reserve North American Indian	Métis	Inuit
	percent							
Less than a high school diploma	0.139	0.318	0.269	0.499	0.114	0.264	0.209	0.487
High school diploma	0.239	0.243	0.246	0.130	0.248	0.244	0.263	0.144
Trade/vocational certificate or apprenticeship	0.153	0.181	0.202	0.183	0.092	0.100	0.120	0.092
College certificate	0.192	0.160	0.182	0.153	0.234	0.237	0.260	0.199
University certificate below a bachelor's degree	0.042	0.029	0.025	0.014	0.054	0.046	0.043	0.030
Bachelor's degree	0.148	0.048	0.053	0.017	0.170	0.083	0.079	0.039
Graduate or professional degree	0.089	0.022	0.023	0.005	0.088	0.027	0.027	0.011
Total	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Notes: Excludes people living on reserve or in northern communities. The sample includes 25-to-54-year-olds. A 2% random sample of non-Aboriginal people was taken.

Source: 2006 Census of Population.

<sup>7</sup> Wannell and Caron (1994) are an exception. They examine a sample of university and college graduates from the class of 1990 two years later (in 1992), and report “representation rates” of Aboriginal people in various fields of study, as well as unemployment rates and earnings of Aboriginal people in those fields. However, the labour market outcomes are not available for many fields as a result of the small sample sizes.

The disciplines chosen by Aboriginal people in university are very different from those selected by non-Aboriginal people. In Table 2, the distribution of major field of study among bachelor's degree graduates is shown. On the one hand, Aboriginal men are far more likely than non-Aboriginal men to choose disciplines such as educational, recreational, and counselling services, fine and applied arts, humanities and related fields, and social sciences and related fields. On the other hand, Aboriginal men are far less likely than non-Aboriginal men to choose disciplines such as engineering and applied sciences, mathematics, computing, and physical sciences. While the Aboriginal/non-Aboriginal differences are usually in the same direction for women as for men, the magnitudes of the gaps are generally smaller for women.

Taken together, the results in Tables 1 and 2 suggest that, compared to non-Aboriginal people, Aboriginal people are far less likely to obtain a high school diploma, just as likely to obtain a non-university post-secondary (PS) certificate, and far less likely to obtain university credentials. Moreover, once in university, Aboriginal men (and to a lesser extent Aboriginal women) are generally more likely to pick disciplines that are less well-paying than other disciplines (Finnie and Frenette 2003) and that are more likely to lead to under-employment, or jobs requiring less education than the level that they have obtained (Frenette 2004).

**Table 2**  
**Distribution of major field of study among bachelor's degree graduates**

	Men		Women	
	Non-Aboriginal	Aboriginal	Non-Aboriginal	Aboriginal
	percent			
Educational, recreational, and counselling services	0.085	0.165	0.186	0.272
Fine and applied arts	0.032	0.041	0.040	0.031
Humanities and related	0.089	0.124	0.141	0.111
Social sciences and related	0.181	0.283	0.184	0.245
Commerce, management, and business administration	0.229	0.185	0.185	0.180
Agricultural, biological, nutritional, and food sciences	0.049	0.036	0.060	0.035
Engineering and applied sciences	0.215	0.103	0.044	0.016
Health	0.022	0.016	0.118	0.096
Mathematics, computer science, and physical sciences	0.098	0.048	0.043	0.015
Total	1.000	1.000	1.000	1.000

Notes: Excludes people living on reserve or in northern communities. The sample includes 25-to-54-year olds with a bachelor's degree. A 2% random sample of non-Aboriginal people was taken.

Source: 2006 Census of Population.

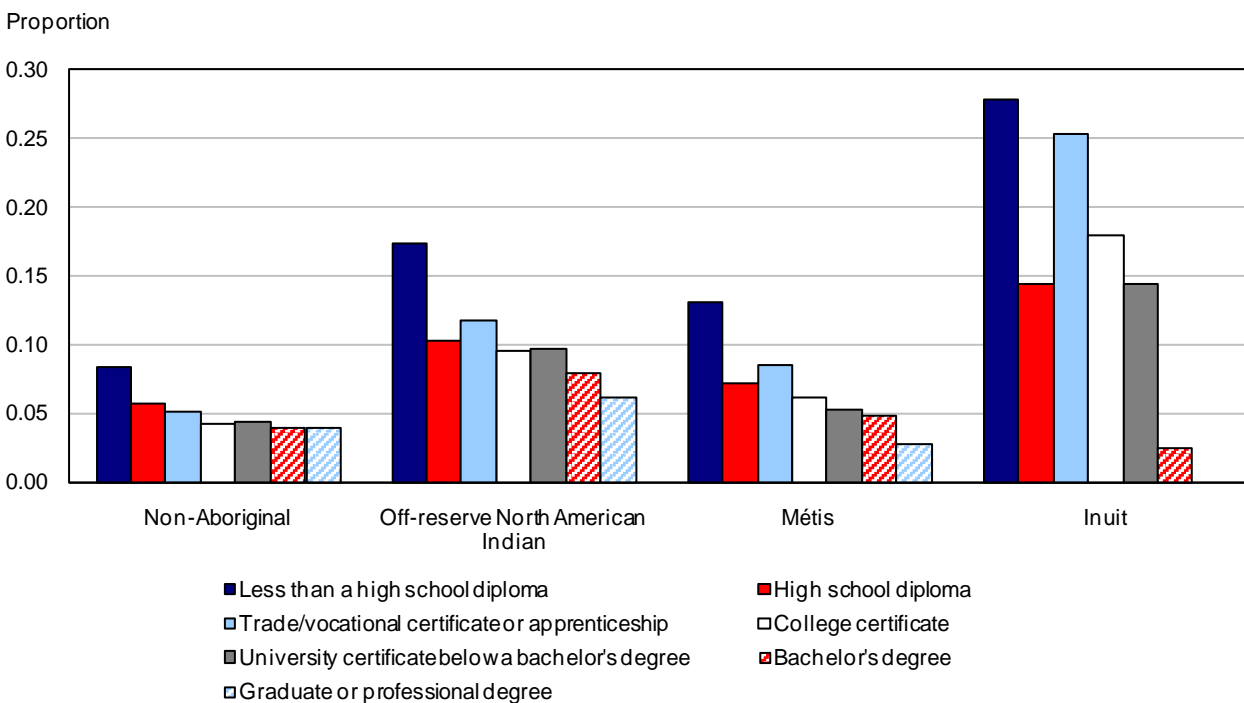
## 4 The Labour Market Benefits to Schooling of Aboriginal People

This section considers the labour market benefits to schooling for Aboriginal people in terms of unemployment rates as well as wages and salaries. Several studies have examined the earnings of the Aboriginal population through a different lens. Using the 1986 Census of Population, George and Kuhn (1994) document the size of the wage gap between Aboriginal and non-Aboriginal workers and attempt to explain it through observable characteristics. They note that the wage gap between Aboriginal and non-Aboriginal workers is small compared to the gap between non-Aboriginal workers and other groups, and that about half of it can be accounted for by differences in factors such as education (the main factor), language, and region. Hull (2005) uses 2001 Census data to examine earnings and employment rates by educational level; however, he does not consider the additional benefits to schooling. Also using census data (1991 and 2001, respectively), De Silva (1999) and Sharpe *et al.* (2009) find that differences in educational attainment explain a considerable portion of the earnings gap. Kuhn and Sweetman (2002) use the 1991 Census of Population to study Aboriginal earnings in a framework similar to the standard one

used in the immigrant earnings integration literature. These authors find support for the hypothesis that earnings of Aboriginal workers benefit from skill/trait acquisition similar to those of non-Aboriginal workers. Walters, White, and Maxim (2004) use the 1995 National Graduates Survey, which measured the short-term to medium-term labour market outcomes of graduates from Canadian public university, community college, and trade-vocational programs, to examine labour market outcomes of Aboriginal post-secondary graduates in comparison with their non-Aboriginal counterparts. These authors find that, once educational attainment and socio-economic characteristics are accounted for, Aboriginal post-secondary graduates earn more than do non-Aboriginal post-secondary graduates. However, Aboriginal post-secondary graduates generally experience poorer employment prospects, as measured by their part-time/full-time status or their probability of being unemployed. Unlike these studies, the current work focuses on the *additional* benefits associated with *additional* schooling for Aboriginal and non-Aboriginal people.

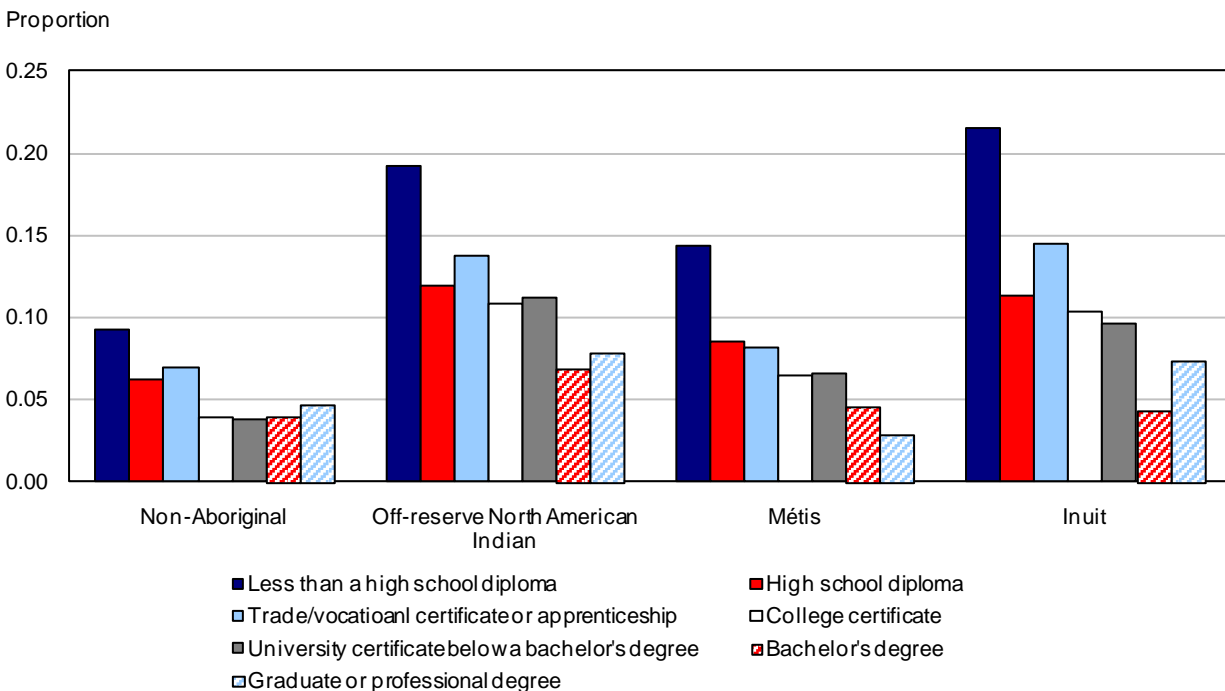
Charts 2 and 3 show predicted unemployment rates by level of education for men and women, respectively. Text table 1 in the Appendix shows the exact numbers as well as absolute and relative differences. Higher levels of schooling are associated with lower unemployment rates. This is true for non-Aboriginal and Aboriginal men and women. In general, the differences are higher for Aboriginal people than for non-Aboriginal people. Shown at the bottom of Text table 1 are absolute and relative differences with respect to three types of decisions: (1) completing a high school diploma (compared to having less than a high school diploma); (2) completing a first post-secondary qualification, such as a trade/vocational certificate or apprenticeship, a college certificate, a university certificate below a bachelor's degree, or a bachelor's degree (compared to a high school diploma); and (3) completing a graduate or professional degree (compared to a bachelor's degree).

**Chart 2**  
**Predicted unemployment rates by highest level of education achieved – Men**



Notes: Excludes people living on reserve or in northern communities. Unemployment rates are higher among Inuit people than among other groups. This analysis compares labour market outcomes across educational levels, but *within* groups. In other words, the objective is to compare the benefits of additional schooling for different groups, as opposed to comparing outcomes across groups. A different framework would be required to compare outcomes across groups (i.e. the models should be pooled across groups).  
 Source: 2006 Census of Population.

**Chart 3**  
**Predicted unemployment rates by highest level of education achieved – Women**



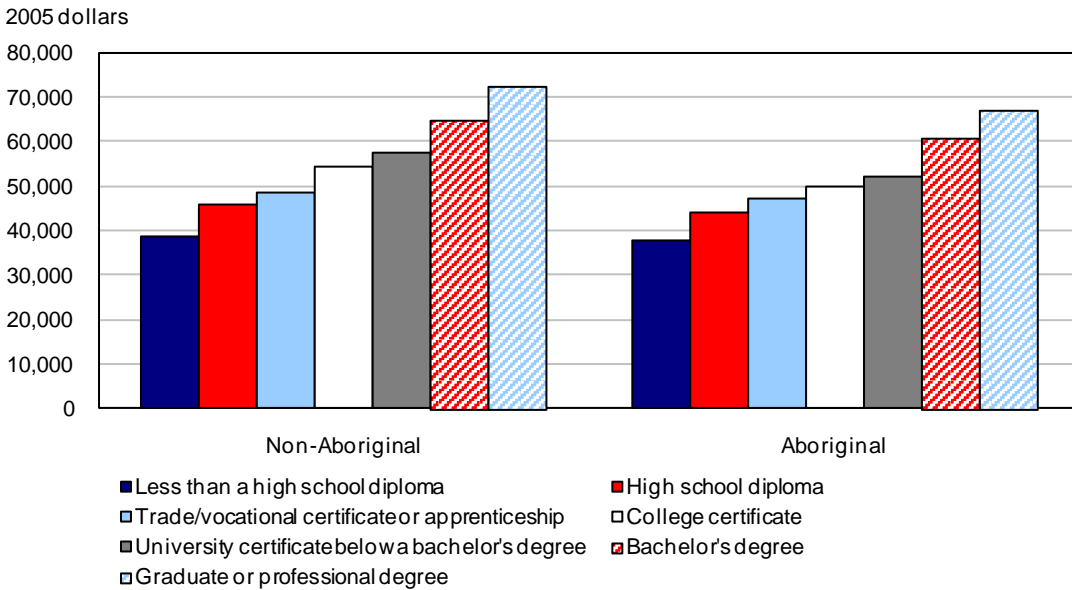
Notes: Excludes people living on reserve or in northern communities. Unemployment rates are higher among Inuit people than among other groups. This analysis compares labour market outcomes across educational levels, but *within* groups. In other words, the objective is to compare the benefits of additional schooling for different groups, as opposed to comparing outcomes across groups. A different framework would be required to compare outcomes across groups (i.e. the models should be pooled across groups).  
 Source: 2006 Census of Population.

The findings suggest that the added benefits to completing a high school diploma or a university degree are generally higher for Aboriginal people, in both absolute and relative terms. In contrast, the absolute and relative benefits of completing a trade/vocational certificate or apprenticeship, a college certificate, or a university certificate below a bachelor's degree are generally lower for Aboriginal people. Recall from Table 1 that Aboriginal people are far less likely to complete a high school diploma or to obtain a university degree, but are just as likely to obtain a trade/vocational certificate or apprenticeship or a college certificate as non-Aboriginal people.

Charts 4 and 5 set out predicted median wages and salaries for men and women, respectively. Text table 2 in the Appendix shows the exact numbers, as well as absolute and relative differences. The three Aboriginal groups had to be combined in this instance, given the low sample sizes at higher levels of education. The low sample sizes are the result of the focus on full-year, full-time workers. As Text table 2 illustrates, the benefits to further schooling are large and positive for all groups. Absolute and relative differences are shown at the bottom of Text table 2 for the median results. They indicate that the added benefits for Aboriginal people are generally as high or almost as high as for non-Aboriginal people with respect to most thresholds and groups.<sup>8</sup> Thus, there is no systematic evidence suggesting that Aboriginal people gain substantially less from higher schooling in terms of wages and salaries than do non-Aboriginal people.

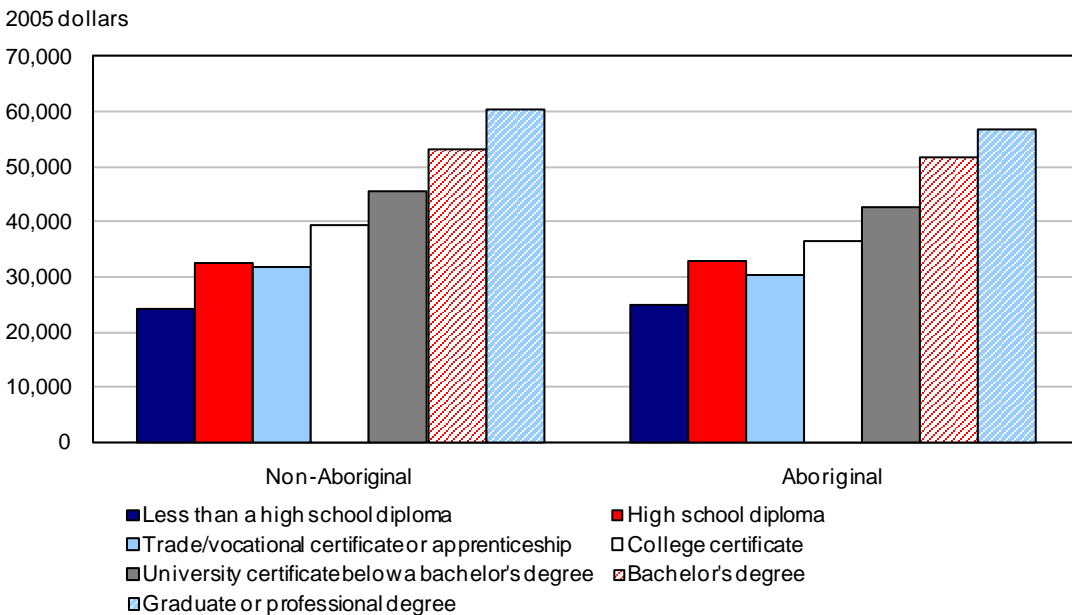
<sup>8</sup> Significance tests suggest that the benefits to a college certificate and a university certificate below a bachelor's degree (both versus a high school diploma) are significantly higher for non-Aboriginal people than for Aboriginal people.

**Chart 4**  
**Predicted median wages and salaries by highest level of education achieved – Men**



Note: Excludes people living on reserve or in northern communities.  
 Source: 2006 Census of Population.

**Chart 5**  
**Predicted median wages and salaries by highest level of education achieved – Women**



Note: Excludes people living on reserve or in northern communities.  
 Source: 2006 Census of Population.

Table 3 sets out unemployment rates by major field of study among bachelor's degree graduates. Note that these are actual, not predicted, numbers. In general the disciplines in which Aboriginal people are relatively more likely to study are precisely the ones where their unemployment rate is highest. For example, 8.6 percent of Aboriginal men who studied social sciences and related disciplines (a relatively common choice among this group) are unemployed, compared to only 3.9 percent of their non-Aboriginal counterparts. In contrast, only 1.2 percent of Aboriginal men who studied engineering and applied sciences (a much less common choice among Aboriginal people) are unemployed, compared to 4.5 percent of their non-Aboriginal counterparts.

**Table 3**  
**Unemployment rates by major field of study among bachelor's degree graduates**

	Men		Women	
	Non-Aboriginal	Aboriginal	Non-Aboriginal	Aboriginal
	proportion			
Educational, recreational, and counselling services	0.022	0.018	0.025	0.046
Fine and applied arts	0.064	0.123	0.025	0.056
Humanities and related	0.046	0.082	0.053	0.084
Social sciences and related	0.039	0.086	0.046	0.074
Commerce, management, and business administration	0.025	0.068	0.046	0.063
Agricultural, biological, nutritional, and food sciences	0.038	0.000	0.053	0.078
Engineering and applied sciences	0.045	0.012	0.073	0.101
Health	0.009	0.000	0.020	0.030
Mathematics, computer science, and physical sciences	0.061	0.043	0.092	0.025
All fields of study	0.030	0.059	0.048	0.060

Notes: Excludes people living on reserve or in northern communities. The sample includes 25-to-54-year-olds who were in the labour force during the Census reference week. A 2% random sample of non-Aboriginal people was taken.

Source: 2006 Census of Population.

Table 4 considers median wages and salaries by major field of study among bachelor's degree graduates. Once again, note that these are actual, not predicted, numbers. Here the evidence suggests that non-Aboriginal and Aboriginal people generally earn the same when they study in the same discipline, as long as they both work full-year, full-time. As shown in Table 3, unemployment is more frequent among Aboriginal people, even within similar disciplines.

**Table 4**  
**Median wages and salaries by major field of study among bachelor's degree graduates**

	Men		Women	
	Non-Aboriginal	Aboriginal	Non-Aboriginal	Aboriginal
	2005 dollars			
Educational, recreational, and counselling services	58,470	59,860	53,343	50,771
Fine and applied arts	43,864	50,741	39,012	31,970
Humanities and related	51,691	52,789	42,747	45,862
Social sciences and related	61,843	55,000	49,235	45,947
Commerce, management, and business administration	69,288	51,881	51,109	49,174
Agricultural, biological, nutritional, and food sciences	53,322	52,000	46,442	48,908
Engineering and applied sciences	70,016	68,039	47,319	54,898
Health	67,434	62,749	59,912	59,000
Mathematics, computer science, and physical sciences	64,819	68,103	59,653	63,700
All fields of study	62,609	58,300	50,958	49,630

Notes: Excludes people living on reserve or in northern communities. The sample includes 25-to-54-year-olds who were employed full-year and full-time, with positive wages and salaries and no net self-employment income from farm and non-farm sources, in 2005. A 2% random sample of non-Aboriginal people was taken.

Source: 2006 Census of Population.

## 5 Can Selection Bias Explain the Results?

Since Aboriginal people who choose higher levels of schooling are relatively fewer than their non-Aboriginal counterparts, it is possible that higher-educated Aboriginal people are a relatively more select group in terms of unobserved abilities. The omission of these unobserved abilities in the labour market outcomes regressions may bias results; thus, it is important to know whether these abilities are present in the first place. Unfortunately, the Census of Population contains no direct measure of ability.

For this purpose, this study drew on the Youth in Transition Survey (YITS) (specifically Cohort A), which contains overall reading scores from a standardized assessment administered to students at the age of 15. The YITS is a longitudinal survey carried out jointly by Statistics Canada and Human Resources and Skills Development Canada, under the Programme for International Student Assessment (PISA)/YITS, to examine the major transitions in the lives of youth, particularly between education, training, and work. The YITS collects data from 15-year-olds (born in 1984) (Cohort A) who, in 2000, also participated in PISA. It tracks these same students until age 21 (so far) and asks them about their educational participation since age 15. Although this birth cohort is too young to examine on the labour market, looking at the test scores for these individuals prior to their reaching their chosen level of schooling can provide some insight.<sup>9</sup>

Plotted in Charts 6 and 7 are median overall reading scores at age 15 by the highest level of educational attainment at age 21. Since many students have not yet had time to complete college or university, results are shown for students who have simply attended such institutions by age 21.

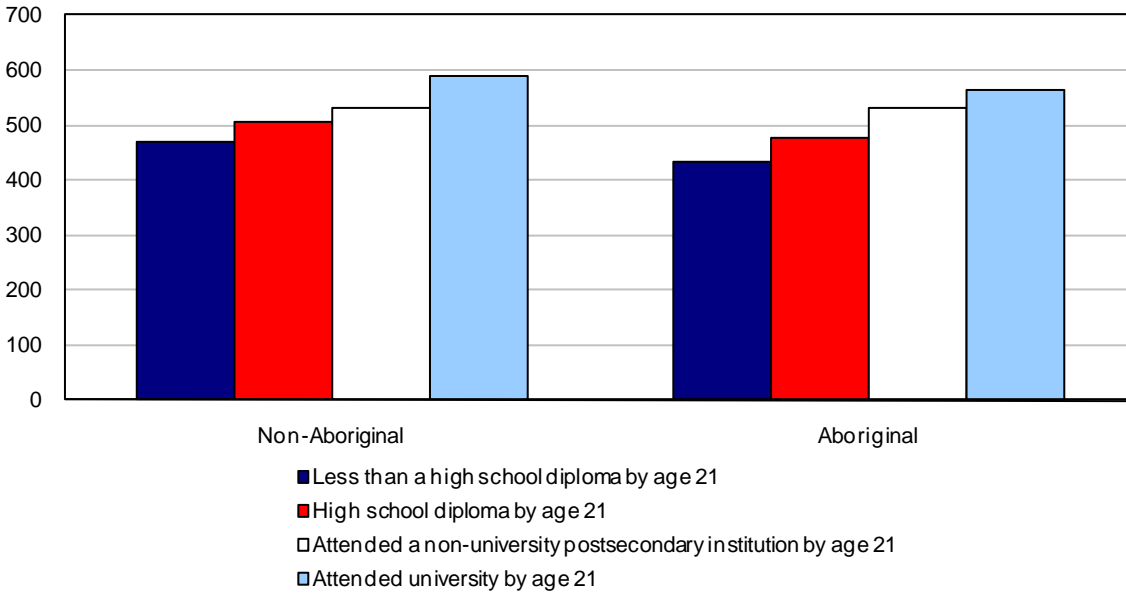
For both males and females, the median test scores of Aboriginal and non-Aboriginal people rise at the same rate in absolute and relative terms. This suggests that, for both males and females, Aboriginal people who are more highly educated are no more select as a group (in terms of test scores) than non-Aboriginal people with higher levels of schooling.

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<sup>9</sup>. Unfortunately, there is no way to impose the same labour force attachment criteria as provided under the Census of Population. One option would be to consider the International Adult Literacy Survey (IALS), which was coordinated by Statistics Canada and conducted for the purpose of comparing reading skills in participating countries (in two phases, 1994 and 2000), or the International Adult Literacy and Skills Survey (IALSS), a seven-country initiative conducted in 2003. For the most part, the assessment in this study is administered *after* respondents have completed their schooling. If schooling affects performance on standardized tests, it is preferable to examine scores prior to reaching the end of compulsory school age; this is largely the case in the YITS. (Most youth are 15 years old when they are assessed by PISA.)

**Chart 6**  
**Median overall YITS reading score at age 15 – Males**

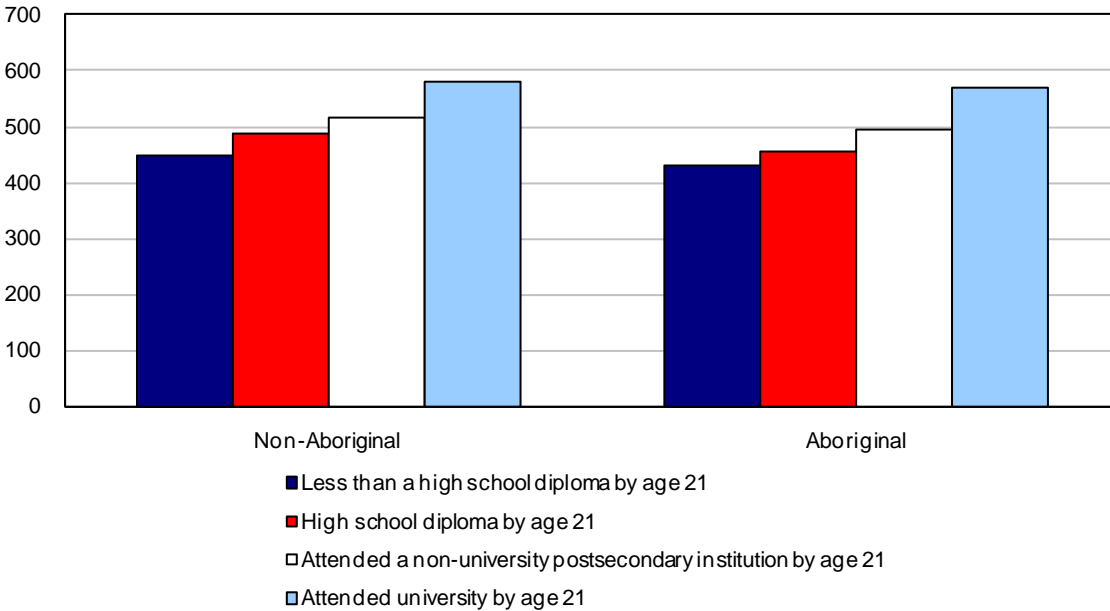
Median overall reading score



Note: Excludes people living on reserve or in northern communities.  
 Source: Youth in Transition Survey (YITS), Cohort A.

**Chart 7**  
**Median overall YITS reading score at age 15 – Females**

Median overall reading score



Note: Excludes people living on reserve or in northern communities.  
 Source: Youth in Transition Survey (YITS), Cohort A.

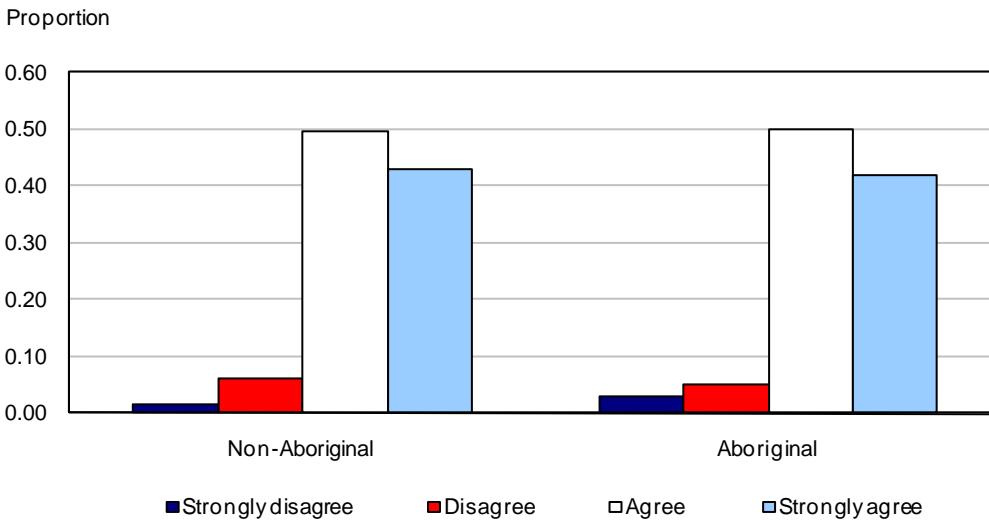


## 6 Perceptions of Benefits to Schooling among Aboriginal People

Although it is clear from the results presented so far that labour market benefits to schooling are generally not lower for Aboriginal people than for non-Aboriginal people, it is nevertheless possible that there are differences in the *perceptions* of benefits to schooling. Once again, the YITS data are useful here. Students are asked to what extent they agree with the following statement: "Getting a good job later in life depends on my success in school now." This is the closest question relating to perceptions of benefits to schooling in the survey. Although it does not make reference to specific dollar amounts, it does ask the student to relate success in the labour market with success in school.

The results are shown below for males (Chart 8) and females (Chart 9). For males, the distribution of responses is almost identical for Aboriginal and non-Aboriginal youth. Aboriginal females are slightly less in agreement with the statement than non-Aboriginal females. Thus, there is only limited evidence that the perceptions of benefits to schooling are lower among Aboriginal youth.

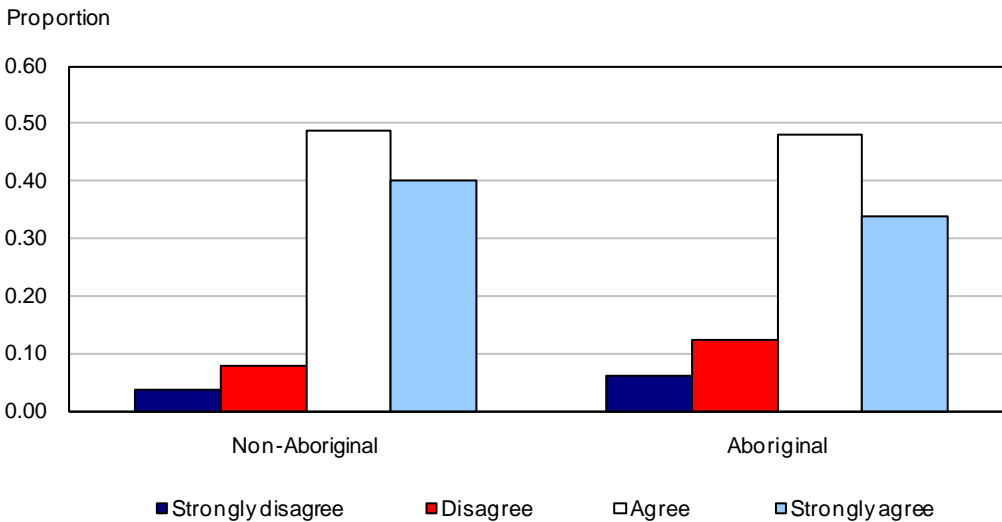
**Chart 8**  
**Agreement at age 15 with the statement "Getting a good job later depends on my success in school now" – Males**



Note: Excludes people living on reserve or in northern communities.  
Source: Youth in Transition Survey (YITS), Cohort A.

## Chart 9

### Agreement at age 15 with the statement "Getting a good job later depends on my success in school now" – Females



Note: Excludes people living on reserve or in northern communities.  
Source: Youth in Transition Survey (YITS), Cohort A.

## 7 Aboriginal People Living On-Reserve or in Northern Communities

To this point, this study has focused exclusively on Aboriginal people living off-reserve and outside northern communities. The reason for selecting this approach is that labour markets are very different in these areas. This section considers predicted unemployment rates and median wages and salaries, as well as their associated benefits, for non-Aboriginal and Aboriginal people (split into those living off-reserve, on-reserve, and in northern communities), by highest level of education. Readers should note that low sample sizes among Aboriginal people living on-reserve or in northern communities required that all individuals holding a university degree be combined.

Predicted unemployment rates are shown below in Table 5. Generally speaking, predicted unemployment rates are higher among Aboriginal people living on-reserve or in northern communities than among non-Aboriginal people and Aboriginal people living off-reserve. However, our previous findings still hold: the benefits (in terms of a reduction in the predicted unemployment rate) are generally as large on-reserve and in northern communities as in other areas.

**Table 5**  
**Predicted unemployment rates by highest level of education, including for Aboriginal people living on-reserve or in northern communities**

	Men				Women			
	Non-Aboriginal	Aboriginal			Non-Aboriginal	Aboriginal		
		Off-reserve	On-reserve	Northern communities		Off-reserve	On-reserve	Northern communities
	proportion							
Less than a high school diploma	0.075	0.160	0.326	0.352	0.089	0.174	0.265	0.244
High school diploma	0.049	0.089	0.228	0.265	0.061	0.101	0.174	0.142
Trade/vocational certificate or apprenticeship	0.048	0.106	0.268	0.283	0.065	0.109	0.192	0.241
Post-secondary certificate below a bachelor's degree	0.034	0.081	0.184	0.182	0.045	0.087	0.132	0.093
University degree	0.040	0.057	0.115	0.037	0.042	0.057	0.090	0.039
<b>Absolute differences</b>								
High school versus no high school	-0.026	-0.071	-0.098	-0.086	-0.028	-0.073	-0.091	-0.102
Trade/vocational/apprenticeship versus high school	-0.001	0.017	0.040	0.018	0.005	0.007	0.018	0.099
Post-secondary certificate below a bachelor's degree versus high school	-0.015	-0.009	-0.044	-0.083	-0.016	-0.014	-0.042	-0.049
University degree versus high school	-0.009	-0.032	-0.113	-0.229	-0.019	-0.045	-0.084	-0.103
<b>Relative differences</b>								
High school versus no high school	-0.348	-0.441	-0.301	-0.245	-0.313	-0.420	-0.343	-0.419
Trade/vocational/apprenticeship versus high school	-0.024	0.188	0.174	0.067	0.076	0.073	0.106	0.697
Post-secondary certificate below a bachelor's degree versus high school	-0.305	-0.098	-0.191	-0.314	-0.257	-0.142	-0.239	-0.343
University degree versus high school	-0.189	-0.357	-0.496	-0.862	-0.311	-0.440	-0.481	-0.723

Notes: Predicted values are derived from regression results that are available upon request. The sample includes 25-to-54-year-olds who were employed full-year and full-time, with positive wages and salaries and no net self-employment income from farm and non-farm sources, in 2005. A 2% random sample of non-Aboriginal people was taken.

Predicted unemployment rates are for non-Aboriginal men and women are for Canada. Unemployment rates for non-Aboriginal men and women living in northern communities are not shown separately.

Source: 2006 Census of Population.

Predicted median wages and salaries appear in Table 6. In terms of differences by level of education, the findings are interesting. For men, predicted wages and salaries are always lowest among on-reserve Aboriginal people and highest among Aboriginal people living in northern communities. Non-Aboriginal people and Aboriginal people living off-reserve stand in the middle. For women, the story is different. Predicted wages and salaries are more or less similar across groups.

Regarding relative differences, the patterns are generally the same across sex and group. In other words, the relative benefits are generally about as high for Aboriginal people living on-reserve or in northern communities compared to Aboriginal people living off-reserve or non-Aboriginal people. A notable exception concerns the relative benefits to completing a university degree versus a high school diploma, which are lower among on-reserve Aboriginal people.

**Table 6**  
**Predicted median wages and salaries by highest level of education, including for Aboriginal people living on-reserve or in northern communities**

	Men				Women			
	Non-Aboriginal	Aboriginal			Non-Aboriginal	Aboriginal		
		Off-reserve	On-reserve	Northern communities		Off-reserve	On-reserve	Northern communities
	2005 dollars							
Less than a high school diploma	40,846	37,696	26,645	43,177	24,994	25,113	24,004	25,070
High school diploma	45,390	44,062	30,567	56,177	33,087	32,641	32,397	32,695
Trade/vocational certificate or apprenticeship	49,742	47,125	30,842	57,024	31,119	30,061	31,921	30,151
Post-secondary certificate below a bachelor's degree	53,856	50,288	33,565	57,877	40,157	37,075	39,257	36,305
University degree	66,963	62,010	36,585	F	55,084	52,618	45,599	F
<b>Absolute differences</b>								
High school versus no high school	4,544	6,367	3,922	13,000	8,092	7,527	8,394	7,625
Trade/vocational/apprenticeship versus high school	4,352	3,063	275	847	-1,968	-2,580	-476	-2,544
Post-secondary certificate below a bachelor's degree versus high school	8,466	6,226	2,998	1,700	7,071	4,434	6,860	3,610
University degree versus high school	21,573	17,947	6,019	F	21,997	19,977	13,202	F
<b>Relative differences</b>								
High school versus no high school	0.111	0.169	0.147	0.301	0.324	0.300	0.350	0.304
Trade/vocational/apprenticeship versus high school	0.096	0.070	0.009	0.015	-0.059	-0.079	-0.015	-0.078
Post-secondary certificate below a bachelor's degree versus high school	0.187	0.141	0.098	0.030	0.214	0.136	0.212	0.110
University degree versus high school	0.475	0.407	0.197	F	0.665	0.612	0.407	F

Notes: Predicted values are derived from regression results that are available upon request. The sample includes 25-to-54-year-olds who were employed full-year and full-time, with positive wages and salaries and no net self-employment income from farm and non-farm sources, in 2005. A 2% random sample of non-Aboriginal people was taken.

Predicted values for non-Aboriginal men and women are for Canada. Predicted values for non-Aboriginal men and women living in northern communities are not shown separately.

Source: 2006 Census of Population.

## Conclusion

This study has examined the question: "Are the labour market benefits to schooling higher for Aboriginal or non-Aboriginal people?" The issue is important, since we know that Aboriginal people are far more likely to drop out of high school and less likely than non-Aboriginal people to pursue university credentials. However, little is known about the reasons behind the education gap. One possible reason is that Aboriginal people may face lower economic benefits to higher schooling than do non-Aboriginal people.

The results of this analysis, which is based on the 2006 Census of Population, show that additional schooling is generally associated with a larger decline in the probability of being unemployed for Aboriginal people than for non-Aboriginal people. In terms of wages and salaries, additional schooling generally yields about the same benefits for both groups. The results hold whether Aboriginal people live off-reserve, on-reserve, or in northern communities. There is also no evidence that Aboriginal people who eventually choose to pursue further education following high school are a more select group than their non-Aboriginal counterparts in terms of academic performance; this suggests that the results in this study are not likely to be explained by self-selection. Furthermore, there is little evidence that perceptions of the benefits to schooling are any different for Aboriginal youth than for non-Aboriginal youth. These findings suggest that the labour

market benefits to schooling are not likely to be a factor behind the lower levels of educational attainment among Aboriginal people.

Among bachelor's degree graduates working full-year and full-time, Aboriginal and non-Aboriginal people who have chosen similar disciplines earn about the same. However, unemployment rates are higher among Aboriginal than non-Aboriginal people, even when their degrees are in the same disciplines. Furthermore, the two groups do not generally choose the same disciplines. Aboriginal people are more likely to choose disciplines such as education, arts, social sciences, and humanities, while non-Aboriginal people are more likely to choose disciplines such as engineering, mathematics, computer science, and physical sciences. These trends are true for men and women, but they are especially true for men. It is generally the case that studies in engineering, mathematics, computer science, and physical sciences lead to higher-paying jobs and are less likely to lead to jobs requiring less education.

Since the findings suggest that the labour market benefits to schooling are no less for Aboriginal people than for non-Aboriginal people, it is likely that other factors contribute towards the gap in educational attainment that exists between the two groups. For example, other types of individual benefits may be associated with further schooling, such as health, happiness, or non-pecuniary job benefits. There could also be substantial differences in background characteristics underlying the gap in educational attainment. A companion study will investigate the role of these background characteristics in detail.

## Acknowledgements

The author gratefully acknowledges helpful comments by Jane Badets, John Baldwin, Torben Drewes, Ross Finnie, Rochelle Garner, René Morissette, Richard Mueller, Daniel Parent, Garnett Picot, John Richards, Arthur Sweetman, and Nancy Zukewich, as well as participants in one of the Measurement of the Effectiveness of Student Aid (MESA) sessions at the Canadian Economics Association meetings in Vancouver (June 2008), in a MESA workshop in Montreal (October 2008), and in the Social Analysis Division (formerly Business and Labour Market Analysis Division) Seminar Series. The majority of this work was completed while I was at Statistics Canada. The views expressed in this study are my own, and should not in particular be attributed to Statistics Canada. A condensed version of this study was published in *Economic and Social Dimensions of Participation in Post-Secondary Education: New Evidence for Canadian Policy*, R. Finnie, M. Frenette, R.E. Mueller, and A. Sweetman. (2010), Montreal and Kingston: McGill-Queen's University Press, Queen's Policy Studies Series.

# Appendix

Text table 1

## Predicted unemployment rates by highest level of education achieved

	Men				Women			
	Non-Aboriginal	Aboriginal			Non-Aboriginal	Aboriginal		
		North American Indian	Métis	Inuit		North American Indian	Métis	Inuit
	proportion							
Less than a high school diploma	0.083	0.173	0.131	0.278	0.093	0.192	0.144	0.215
High school diploma	0.057	0.103	0.072	0.144	0.062	0.119	0.085	0.113
Trade/vocational certificate or apprenticeship	0.051	0.118	0.085	0.254	0.070	0.137	0.081	0.145
College certificate	0.043	0.095	0.061	0.180	0.039	0.109	0.065	0.103
University certificate below a bachelor's degree	0.044	0.097	0.052	0.144	0.037	0.112	0.066	0.096
Bachelor's degree	0.040	0.079	0.048	0.024	0.039	0.069	0.045	0.043
Graduate or professional degree	0.040	0.062	0.028	F	0.046	0.078	0.028	0.073
<b>Absolute differences</b>								
High school versus no high school	-0.026	-0.070	-0.059	-0.134	-0.031	-0.073	-0.059	-0.101
Trade/vocational/apprenticeship versus high school	-0.007	0.015	0.013	0.110	0.008	0.018	-0.004	0.031
College versus high school	-0.014	-0.008	-0.011	0.036	-0.023	-0.011	-0.021	-0.010
University certificate below bachelor's versus high school	-0.014	-0.006	-0.020	0.001	-0.025	-0.007	-0.019	-0.017
Bachelor's degree versus high school	-0.017	-0.024	-0.024	-0.120	-0.023	-0.050	-0.040	-0.070
Graduate/professional degree versus bachelor's degree	0.000	-0.017	-0.019	F	0.007	0.009	-0.017	0.030
<b>Relative differences</b>								
High school versus no high school	-0.310	-0.404	-0.450	-0.482	-0.330	-0.378	-0.409	-0.472
Trade/vocational/apprenticeship versus high school	-0.114	0.144	0.183	0.767	0.122	0.151	-0.047	0.275
College versus high school	-0.247	-0.077	-0.154	0.249	-0.375	-0.090	-0.241	-0.090
University certificate below bachelor's versus high school	-0.240	-0.056	-0.280	0.004	-0.399	-0.062	-0.225	-0.149
Bachelor's degree versus high school	-0.305	-0.237	-0.335	-0.836	-0.368	-0.423	-0.475	-0.619
Graduate/professional degree versus bachelor's degree	0.004	-0.211	-0.405	F	0.170	0.131	-0.377	0.697

Notes: Excludes people living on reserve or in northern communities. Predicted values are derived from regression results that are available upon request. The sample includes 25-to-54-year-olds who were in the labour force during the Census reference week. A 2% random sample of non-Aboriginal people was taken.

Source: 2006 Census of Population.

**Text table 2**

**Predicted unemployment rates by highest level of education achieved**

	Men		Women	
	Non-Aboriginal	Aboriginal	Non-Aboriginal	Aboriginal
	2005 dollars			
Less than a high school diploma	38,374	37,700	24,004	25,070
High school diploma	45,543	44,094	32,397	32,695
Trade/vocational certificate or apprenticeship	48,320	47,069	31,921	30,151
College certificate	54,337	49,934	39,257	36,305
University certificate below a bachelor's degree	57,215	51,848	45,599	42,770
Bachelor's degree	64,458	60,630	53,359	51,716
Graduate or professional degree	72,165	66,867	60,542	56,714
<b>Absolute differences</b>				
High school versus no high school	7,169	6,394	8,394	7,625
Trade/vocational/apprenticeship versus high school	2,777	2,976	-476	-2,544
College versus high school	8,795	5,841	6,860	3,610
University certificate below bachelor's versus high school	11,672	7,754	13,202	10,075
Bachelor's degree versus high school	18,915	16,537	20,962	19,022
Graduate/professional degree versus bachelor's degree	7,707	6,237	7,182	4,997
<b>Relative differences</b>				
High school versus no high school	0.187	0.170	0.350	0.304
Trade/vocational/apprenticeship versus high school	0.061	0.067	-0.015	-0.078
College versus high school	0.193	0.132	0.212	0.110
University certificate below bachelor's versus high school	0.256	0.176	0.407	0.308
Bachelor's degree versus high school	0.415	0.375	0.647	0.582
Graduate/professional degree versus bachelor's degree	0.120	0.103	0.135	0.097

Notes: Excludes people living on reserve or in northern communities. Predicted values are derived from regression results that are available upon request. The sample includes 25-to-54-year-olds who were employed full-year and full-time, with positive wages and salaries and no net self-employment income from farm and non-farm sources, in 2005. A 2% random sample of non-Aboriginal people was taken.

Source: 2006 Census of Population.

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