5

Aboriginal Occupational Gap: Causes and Consequences

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Introduction

While significant improvements in the labour market outcomes of Aboriginal people have been achieved over the last decade, they remain among the most marginalized and vulnerable groups in Canada. Previous studies have shown that, in general, "Aboriginal people have a lower labour force participation rate, a higher rate of unemployment, less representation in higher paying occupations, and not surprisingly, lower average wage rates than other workers" (DeSilva 1999). Low education has been identified as the key factor in explaining the relatively weak performance of Aboriginal Canadians in the labour market (Comfort, et al. 2005). Consequently, skills development has been identified as "the most fruitful approach to raising the standard of living of Aboriginal Canadians" (DeSilva 1999).

This study attempts to determine to what extent the weaker labour market performance of Aboriginal Canadians is due to the type of occupations they have, and why their occupations differ from the rest of Canadians. In particular, the study poses the following questions:

1. What kind of jobs do Aboriginal workers have, compared to those of non-Aboriginal workers?
2. What is the impact of occupational differences on wage differences between the two groups of workers?
3. What are the main factors behind their occupational and wage differences?

Methodology

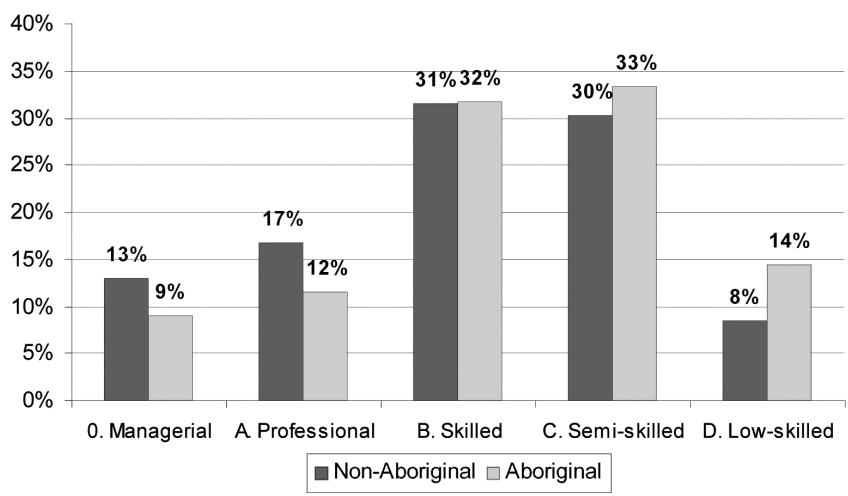
The analysis is based mainly on special tabulations from the 2001 Census. The Census 2001 Public Use Mircrodata Files (PUMF) was used primarily for initial explorations. The sample selected for our analysis was restricted as follows:

1. Age 18–64 in 2000, excluding full-time students; and
2. Had only paid work in 2000, and worked full-time (i.e. 30 or more hours weekly) for at least 26 weeks during the year.

Figure 5.1: Definition of NOC Skill Levels

High-skill occupations	**Skill level 0**	**Managerial occupations:** No education requirements or skill levels assigned, although they are often treated as high-skill occupations.
	Skill level A	**Professional occupations:** Usually require university education.
	Skill level B	**Skilled admin, technical, paraprofessional:** Usually require college education or apprenticeship training.
Low-skill occupations	**Skill level C**	**Clerical, health support, intermediate sales, machine operators:** Usually require secondary school and/or occupational specific training.
	Skill level D	**Elemental sale, trades helpers, labourers:** Usually require on-the-job training only

Figure 5.2: Distribution of Workers by Occupational Skill Level and Aboriginal Identity, 2000



The reason for the sample restrictions was to focus the analysis on those with a significant amount of work during the year.[1] The restriction to those with paid work only was imposed because self-employment income presents more measurement challenges (such as the presence of negative earnings). However, sensitivity analysis shows that a broader or narrower sample selection leads to similar results.

The occupational classification is based on the National Occupational Classification (NOC).[2] For some parts of the analysis, we used all 520 NOC categories. However, most of the time we used the five skill levels identified by NOC (**Figure 5.1**); and 19 clusters of major NOC groups. Following convention, we define high-skill occupations as managerial occupations (level 0), professional occupations (level A), and skilled occupations (level B). We define low-skill occupations as semi-skilled (level C) and low-skilled (level D). The term skill gap refers to the difference between the percentage of Aboriginal and non-Aboriginal workers with high-skill occupations—managerial, professional (level A) and skilled (level B) occupations. The industry classification is based on the North American Industry Classification System (NAICS). We distinguished occupations into two broad groups: public and private sector. The public sector is broadly defined as public administration, education, health, and social assistance while, the private sector is everything else.

Occupational Gap

Aboriginal Versus Non-Aboriginal

First, we compare the distribution of Aboriginal and non-Aboriginal workers by type of occupation. The main focus is on differences in the percentage of the two groups with high-skill jobs (referred to here as skill gap). Aboriginal individuals are less likely to have a significant amount of work than non-Aboriginal individuals. On average, the employment rate (full-time/26+ weeks) of Aboriginal individuals is about three-quarters that of non-Aboriginal individuals (43% vs. 56%). The difference is smaller in the case of Métis (50% vs. 56% non-Aboriginal). One possible reason is that Métis are more likely than other Aboriginal individuals to live in large urban areas.

Aboriginal workers are less likely than non-Aboriginal workers to have a high-skill occupation **(Figure 5.2)**. In particular:

1. Aboriginal workers are under-represented in managerial occupations and professional occupations (which usually require university education) (20% vs. 30%);
2. They are roughly equally represented in skilled jobs (which usually require college education) and semi-skilled occupations (32% vs. 31%); and
3. They are over-represented in semi-skilled and low-skilled occupations (47% vs. 38%).

Aboriginal workers are most under-represented in high-skill jobs in the private sector, including:

1. Private sector managerial positions
2. Professional occupations in business and finance, engineering and computers, and medicine
3. Skilled technicians and technologists in engineering, computers and health

They are overrepresented in the following occupations:

1. Public sector managers
2. Skilled workers in government and the cultural industry (e.g., paralegal, library technicians, etc.)
3. Semi-skilled workers in trades and low-skill workers in sales and labour

Aboriginal Identity

The percentage of workers with high-skill occupations is similar across all Aboriginal identities **(Figure 5.3)**. However, if it were not for public sector occupations, the Aboriginal skill gap would be larger. Over-representation of Aboriginal workers in the public sector high-skill occupations reduces the overall skill gap of Aboriginal workers. This is particularly true of the Inuit, half of whom are working in the public sector.

Gender

The skill rate among Aboriginal men is 51%, and 52% among Aboriginal women. This means that there is no male–female skill gap among Aboriginal workers. By contrast, the male–female skill gap among non-Aboriginal workers is 6 percentage points (64% male vs. 58% female). However, were it not for public sector employment, there would be a skill gap between Aboriginal men and Aboriginal women (37% vs. 20%). Women are over-represented in the public sector relative to men. The difference is particularly pronounced in the case of Aboriginal workers.

Wage Gap—Aboriginal Versus Non-Aboriginal

Next, we compare the average weekly wage rates of Aboriginal and non-Aboriginal workers. The reader should be reminded that our sample includes only full-time paid workers. Wage gap refers to the percentage wage difference between Aboriginal and non-Aboriginal workers.

Aboriginal workers earn 23% less on average than non-Aboriginal workers. Within each broad occupation group, Aboriginal workers earn less than non-Aboriginal workers. Moreover, the higher the skill level, the larger the wage gap (**Figure 5.4**). A more detailed comparison of average wages within each of the

Figure 5.3: Percentage of Workers with Private and Public Sector High-skill Occupations by Aboriginal Idenity, 2000

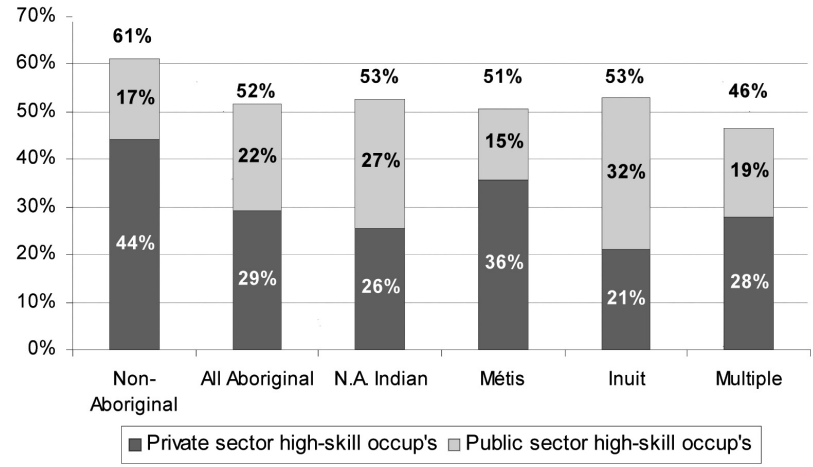
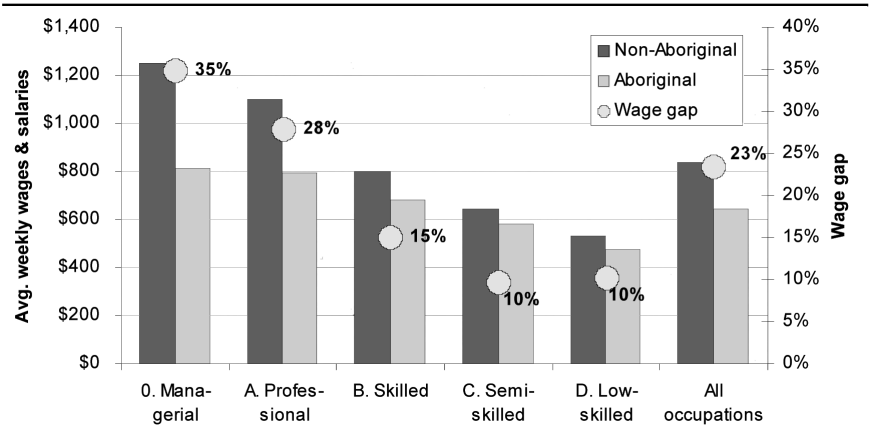


Figure 5.4: Average Weekly Wages by Skill Level and Aboriginal Identity, 2000



520 NOC codes shows that in 96% of the cases, Aboriginal workers earned less on average in their occupational category than non-Aboriginal workers.

We reweighted Aboriginal workers across all 520 NOCs (shift-share analysis) so that their occupational distribution would be the same as that of non-Aboriginal workers. Because there is an Aboriginal/non-Aboriginal wage gap within virtually all occupational categories, even when Aboriginal workers were redistributed among the 520 NOC's occupations, the wage gap was still 17%. The result was that only about one-third of the wage gap disappeared. A possible explanation of this finding is that wage differences hide further occupational differences within the 520 codes.

Figure 5.5: Average Weekly Wages by Aboriginal Identity, 2000

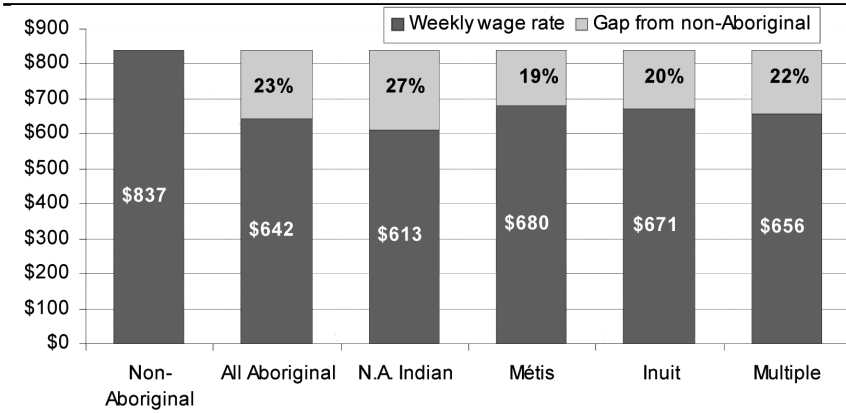


Figure 5.6: Distribution by Level of Education and Aboriginal Identity, 2000

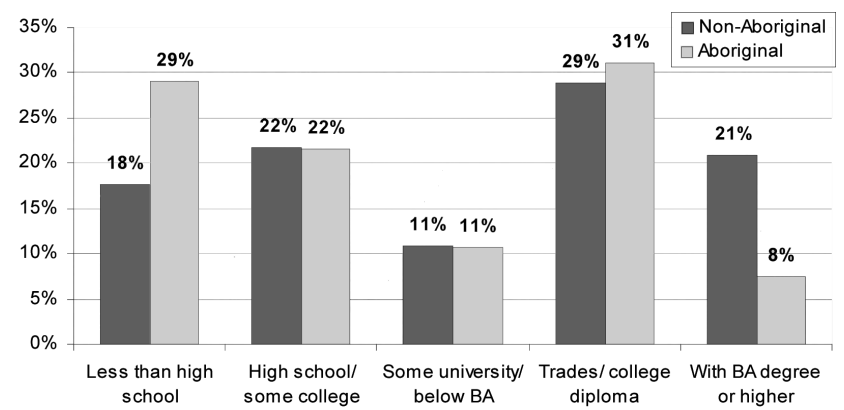
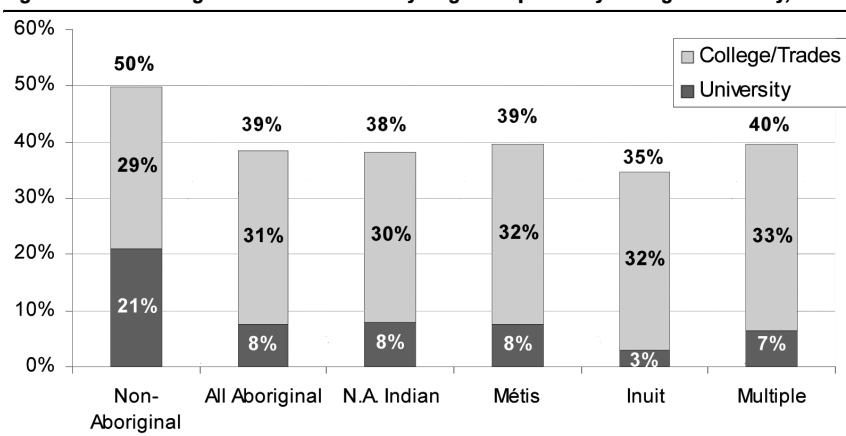


Figure 5.7: Percentage with Post-secondary Degree/Diploma by Aboriginal Identity, 2000



Aboriginal Identity

There are also small variations in the wage gap according to Aboriginal identity. The wage gap is largest in the case of North American Indians (27%) and smallest in the case of Métis (19%) **(Figure 5.5)**.

Gender

Aboriginal women earn less per week than non-Aboriginal women ($549 vs. $677). Similarly, non-Aboriginal men earn more than Aboriginal men ($957 vs. $719). Although Aboriginal women earn less than Aboriginal men, their wage gap compared to non-Aboriginal women is smaller (19%) than the corresponding gap among men (25%). A possible explanation is that in both groups more female workers are clustered near minimum and entrance level wages. As a result, their wage distribution tends to be "flatter," which leads to a smaller gap between both Aboriginal men and women, and non-Aboriginal men and women.

Worker Characteristics

Next, we explore the main differences in characteristics between Aboriginal and non-Aboriginal workers. We focus primarily on education, place of residence, and sector of work in order to examine the impact of these differences on the occupational and wage gap between Aboriginal and non-Aboriginal workers.

Education

The percentage of Aboriginal workers with a high school or college education is similar to that of non-Aboriginal workers. However, Aboriginal workers are less likely to have a university degree than non-Aboriginal works (8% vs. 21% respectively) and more likely to have less than high school education (29% vs. 18%) (**Figure 5.6**). Also, Aboriginal workers with a post-secondary diploma or degree tend to be somewhat under-represented in the highest paying fields of study, such as business and financial management, engineering, mathematics, and the applied, computer and physical sciences. As a result, differences in the level of education between Aboriginal and non-Aboriginal workers understate the full extent of differences in educational qualifications between the two groups.

Among Aboriginal identity groups, Inuit have the lowest rate of university degrees (3%) compared to the average Aboriginal rate (8%) and non-Aboriginal rate of (21%) (**Figure 5.7**). One possible factor that accounts for the low incidence of university degrees among the Inuit may be that most live in Nunavut, which is far from universities. Past research has shown that distance from post-secondary institutions is a significant barrier to higher education.

In general, women are more likely than men to have a university degree, particularly among Aboriginal workers. Aboriginal women are twice as likely to have a

university degree than Aboriginal men (10% vs. 5%). The higher education level of Aboriginal women relative to that of Aboriginal men is a likely reason why there is no skill gap between the two of them and why the wage gap is not as large as between male and female non-Aboriginal workers.

Place of Residence

Half of all Aboriginal workers live in rural and small urban areas (under 10,000 population), compared to one-quarter of non-Aboriginal workers **(Figure 5.8)**. Among Inuit workers, 98% live in rural communities. This difference works to the disadvantage of Aboriginal workers. The reason is that although the incidence of high-skill jobs is similar by size of area, wages are about 12% lower in smaller areas.

Sector of Work

About 35% of Aboriginal workers work in what can be broadly defined as the public sector (i.e., public administration, education, health, or social services) compared to 23% of non-Aboriginals (**Figure 5.9**). The percentage working in the public sector is particularly high among the Inuit (51%). The public sector has a higher incidence of high-skill jobs. This helps raise the occupational skill rate among Aboriginal workers and reduce their skill gap from non-Aboriginal workers.

Explaining the Occupational and Wage Gap

In this section, we examine the factors behind the occupational and wage gap between Aboriginal and non-Aboriginal workers. We will show that educational differences explain most of the occupational differences between Aboriginal and non-Aboriginal workers. However, we will also show that educational differences leave a big part of the wage gap unexplained.

Figure 5.10 (page 96) shows that within each level of education, Aboriginal and non-Aboriginal workers have a roughly equal chance of being in a high-skill occupation. The implication is that, if Aboriginal workers had the same level of education as non-Aboriginal workers, the percentage with high-skill jobs would be the same as that for non-Aboriginal workers.

Given the above results, it is not surprising that shift-share analysis shows that if there were no educational differences between Aboriginal and non-Aboriginal workers, the occupational mix of the two groups would have been more equalized (**Figure 5.11** – page 97). For example, the percentage of Aboriginal workers with managerial occupations would have been 11% rather than 9% (still somewhat lower than the non-Aboriginal rate of 13%). In the case of professional jobs, the percentage of Aboriginal workers would have actually surpassed that of non-Aboriginal workers.

Figure 5.8: Distribution of Aboriginal and Non-Aboriginal Workers by Size of Area, 2000

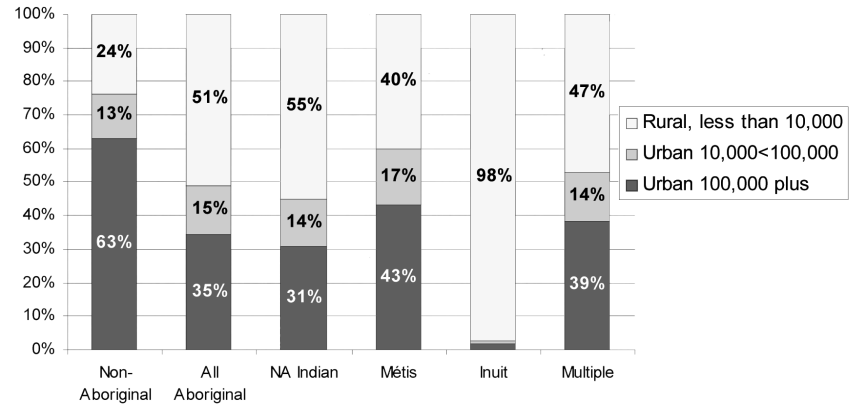
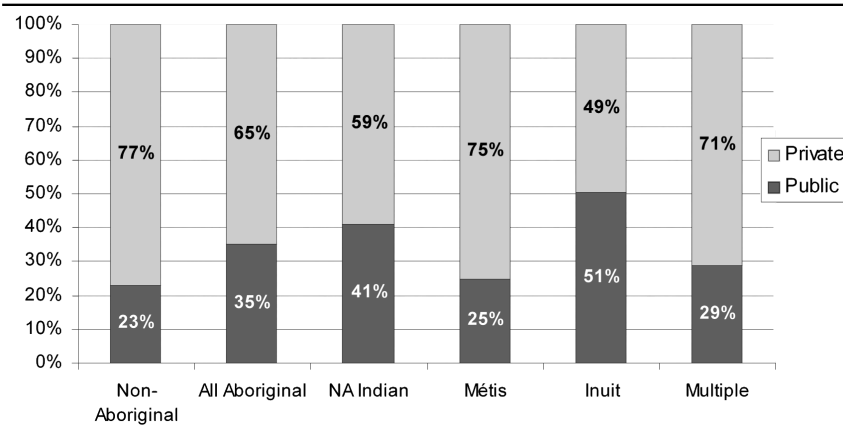


Figure 5.9: Distribution of Aboriginal and Non-Aboriginal Workers by Sector, 2000



Using logit regression, we probed further the two top types of high-skill occupations: managerial and professional (which usually require a university degree). As we discussed earlier, Aboriginal workers are under-represented in these two groups of occupations (20% vs. 30%). The regression results show that educational differences fully explain why Aboriginal workers have a lower incidence of occupations (**Table 5.1** – page 96). However, although closing the educational gap between Aboriginal and non-Aboriginal workers would have eliminated their skill-gap, a significant portion of the wage gap would have still persisted. Ordinary Least Squares (OLS) regression analysis attributed 36% of the wage gap to educational differences. The younger age of Aboriginal workers explained another 8% of the wage gap, while 3% was attributed to the fact that Aboriginal workers tend to live in smaller areas (**Table 5.2** – page 97). About half of the wage gap is due to factors not taken into account in our analysis, such as quality of education, discrimination, and social factors. The persistence of a wage gap, even after the effect of apparent education differences is removed requires further investigation.

Figure 5.10: Incidence of High-skill Occupations by Level of Education and Aboriginal Identity, 2000

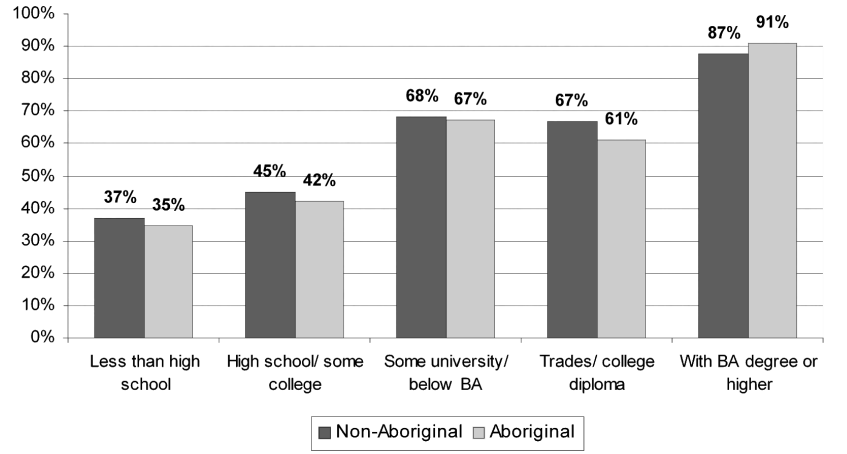


Table 5.1: Logit Regression Analysis of Determinants of Incidence of Managerial/Professional Occupations Among Aboriginal Workers, 2000

Independent variables	b-coeffic.	Stand.error	t-statistic	Odds ratio
Constant	-3.050	0.190	-16.086	0.047
Education				
- Less than high school (reference catego	na	na	na	na
- High school/some college: <13 yrs	0.258	0.236	1.094	1.295
- High school/some college: 13+ yrs	0.926	0.214	4.337	2.526
- Some university/below BA: <16 yrs	1.548	0.209	7.409	4.704
- Some university/below BA: 16+ yrs	2.393	0.278	8.597	10.942
- Trades/college diploma: <14 yrs	0.058	0.194	0.297	1.059
- Trades/college diploma: 14+ yrs	1.601	0.182	8.785	4.960
- With BA degree or higher: <19 yrs	3.917	0.284	13.802	50.229
- With BA degree or higher: 19+ yrs	4.183	0.391	10.711	65.546
Area				
- 100K plus	-0.429	0.132	-3.249	0.651
- 15K to less than 100K	-0.563	0.186	-3.021	0.570
- Less than 15K (reference category)	na	na	na	na
Sector				
- Private (reference category)	na	na	na	na
- Public	0.814	0.124	6.593	2.258
Gender				
- Male	-0.038	0.119	-0.321	0.963
- Female (reference category)	na	na	na	na
Age				
- Under 35 (reference category)	na	na	na	na
- 35-49	0.640	0.128	4.998	1.896
- 50+	0.948	0.177	5.364	2.580
Nagelkerke R Square:	35%	Unweighted count:		2,920
- Non-Aboriginal: Actual incidence				**30%**
- Aboriginal: Actual incidence				**19%**
- Aboriginal: Hypothetical incidence if education the same				**32%**

Figure 5.11: Occupational Profile Before/After Removing Educational Differences Between Aboriginal and Non-Aboriginal Workers, 2000

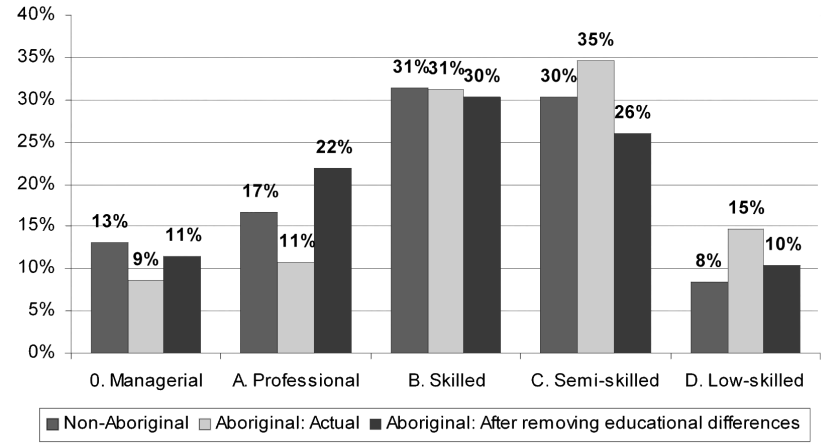


Table 5.2: OLS Reggression Analysis of Determinants of Weekly Wages among Aboriginal Workers, 2000

Independent variables	b-coeffic.	Stand.error	t-statistic
Constant	306.989	9.329	32.909
Education			
- Less than high school (reference categor	na	na	na
- High school/some college: <13 yrs	60.972	11.781	5.175
- High school/some college: 13+ yrs	68.956	11.088	6.219
- Some university/below BA: <16 yrs	146.742	13.561	10.821
- Some university/below BA: 16+ yrs	216.006	20.632	10.469
- Trades/college diploma: <14 yrs	106.166	9.571	11.093
- Trades/college diploma: 14+ yrs	180.576	10.521	17.164
- With BA degree or higher: <19 yrs	411.570	16.669	24.691
- With BA degree or higher: 19+ yrs	460.067	23.116	19.902
Area			
- 100K plus	23.900	7.373	3.241
- 15K to less than 100K	43.950	9.871	4.452
- Less than 15K (reference category)	na	na	na
Sector			
- Private (reference category)	na	na	na
- Public	-13.742	7.712	-1.782
Gender			
- Male	208.403	6.836	30.488
- Female (reference category)	na	na	na
Age			
- Under 35 (reference category)	na	na	na
- 35-49	162.542	7.033	23.113
- 50+	188.849	10.138	18.629
Adjusted R-squared	50% Count		2,613

Conclusions

There are significant occupational differences between Aboriginal and non-Aboriginal workers. Aboriginal workers are under-represented in managerial and professional occupations, which usually require a university degree. The under-representation is mostly concentrated in the private sector.

Educational differences explain most of the occupational differences between Aboriginal and non-Aboriginal workers. This means that closing the education gap between the two groups would eliminate most of the occupational differences. However, almost two-thirds of the wage gap between the two would still persist. Nevertheless, education remains the most promising policy lever. Two priorities are apparent:

1. Promote culturally sensitive programs that combine work and learning to reduce the Aboriginal high school drop-out rate, which will in turn increase the potential pool of post-secondary students; and
2. Offer more innovative ways of making university more accessible and enticing to Aboriginal youth (e.g. distance education).

Endnotes

1 A similar definition of significant work was used recently in a study of the working poor by Fleury and Fortin (2004).

2 For more details on the National Occupational Classification system please visit the HRSDC website at <**www23.hrdc-drhc.gc.ca/2001/e/groups/index.shtml>**.

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