COMPARISONS OF HIGH SCHOOL EQUIVALENCY AND HIGH SCHOOL DIPLOMAS IN NB

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PROJECT TITLE
Comparisons of high school equivalency and high school diplomas in NB

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Key Findings

This report uses Cycle 30 (2016) of the General Social Survey (GSS) to provide descriptive statistics of labour market outcomes for individuals in New Brunswick with a high school equivalency certificate. It compares these outcomes with those of other education levels. The following results emerged:

1. Approximately 27,000 New Brunswickers reported having a high school equivalency as their highest level of education, while 157,000 reported a traditional high school diploma. Of those with a higher level of education (e.g., college diploma or university degree), there is no way to use GSS data to distinguish between those having completed a high school equivalency and those with a high school diploma.

2. 51.38% of individuals with a high school equivalency certificate were employed in the last week, which is higher than the 30.51% of individuals with less than high school education who were employed, and almost as high as the 59.94% of individuals with a high school diploma who were employed.

3. Average income for individuals with a high school equivalency certificate was $31,742.18, which is higher than $19,893.42 for individuals with less than high school education, and almost as high as $32,381.35 for individuals with a high school diploma.

4. Individuals with a lower education level are more likely to be over 65 years old and reside in rural areas than those with higher levels of education.

Introduction

This report considers the research question, "Is lacking a GED a barrier to labour market outcomes?" A general equivalency diploma (GED) is the most common form of high school equivalency degree for those who drop out of high school but subsequently complete their high school education. The implicit assumption is that an equivalency degree has the same effect as a diploma; however, previous studies suggest that is not the case and even ask whether an equivalency degree holds any advantage over not getting one at all (Bowlby, 2005; Cameron & Heckman, 1993; Tyler, 2001; Uppal, 2017). This report uses the General Social Survey (GSS) Cycle 30 (2016) dataset from the Research Data Center (RDC) in Fredericton, New Brunswick to describe those with equivalency degrees compared to individuals from other education categories, such as those with a high school diploma.

Methods

The GSS Cycle 30: Canadians at Work and Home (2016), from the Research Data Center (RDC) in Fredericton, New Brunswick, is used to complete the analysis in this report. This is a Canadian survey with a sample size of approximately 20,000 individuals, with about 1,200 of those individuals from New Brunswick. One of the primary reasons for using this dataset is that it is one of the few Canadian datasets that distinguish between high school graduates with a diploma and those who completed high school requirements through an equivalency degree. Regarding individuals whose highest level of education is high school, GSS Cycle 30 distinguishes between high school graduates and equivalency degree recipients. For individuals who complete post-secondary education, the dataset makes no distinction between those who graduated high school with a diploma and those who completed high school requirements through an equivalency program.

Individuals are split into five education categories: 1) those who did not complete high school, 2) those who graduated high school with a diploma, 3) those who completed high school requirements through an equivalency program such as a GED, 4) those who completed a college or non-university degree, and 5) those who completed a university degree.

Other categories are considered in addition to education categories. These include an employment indicator, income level, age, sex, a rural/urban indicator, and province. Employment is captured through an indicator showing whether the individual was employed the week prior to the interview. Income level is split into four groups ranging from "less than $20,000 per year" to "more than $60,000 per year." Region is indicated by whether the individual lives in an urban CMA/CA area or a rural non-CMA/CA area. Age is split into "15-64 years old" for the working-age population and "aged 65 and over" for individuals outside the working age. Sex is another demographic category considered. The education category is also compared across the Atlantic Provinces – New Brunswick, Nova Scotia, PEI, and Newfoundland and Labrador.

Each of these additional categories is combined with the education category to produce descriptive statistics on the proportion of individuals in each sub-category, as well as their average income. Individuals in the GSS are weighted according to the number of individuals in the population they represent. Therefore, the number of individuals is scaled from sample totals to provincial totals using weights provided by Statistics Canada in the GSS. The released values used throughout this report to represent the number of individuals are an aggregated sum of weights by category, which are controlled-rounded to base 50.

Proportion of individuals by category

The population totals from the General Social Survey (GSS) are used in this section to describe the proportion of individuals in each education category from other categories.

Table 1: Population totals in New Brunswick (aged 15 and over) by education category

Education category	Population in Province
Less than high school diploma or its equivalent	111,750
High school equivalency certificate	27,100
High school graduation diploma	157,000
Non-university certificate or diploma	194,750
University certificate, diploma, degree	142,450
Grand Total	**633,050**

Table 1 shows the population totals in New Brunswick (aged 15 and over) by education category. The values range from 27,100 individuals with "High school equivalency" education to 194,750 with "Non-university degree" education. Those too young to have completed high school are not included in the sample, which is why the grand total does not add up to New Brunswick's population.

The other categories used in this report are province, employment status, age group, sex, area type, and income level. The subsequent figures divide the population into each combination of education and other categories. However, the population totals themselves are not used in the figures. This would highlight differences in the number of individuals in each education category. Instead, the proportion of individuals in each education category is shown by secondary category. This is meant to highlight differences in the distribution of individuals across categories.

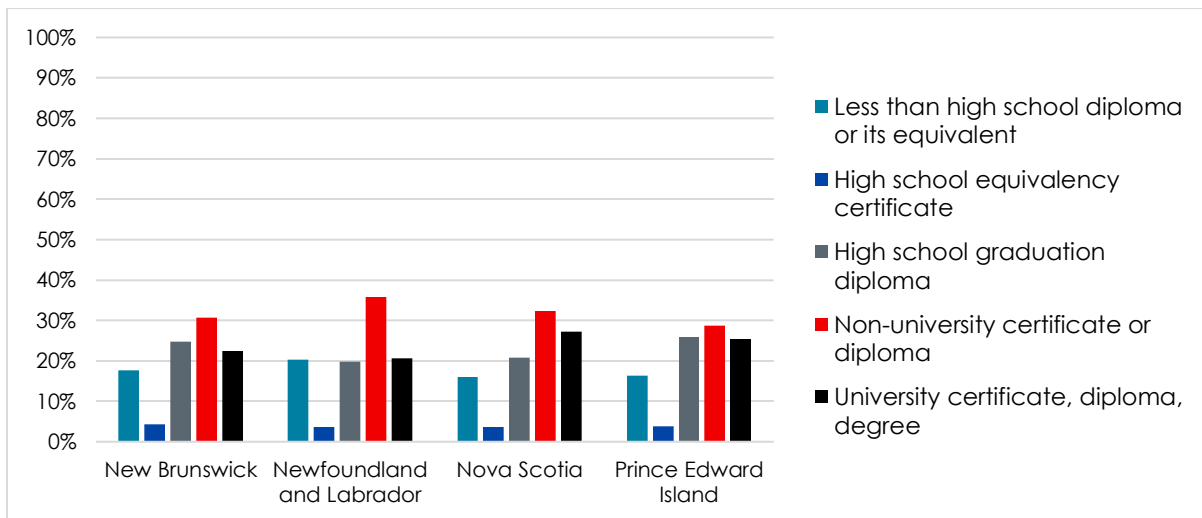**Figure 1: Proportion of individuals in each education category by province**

Figure 1 shows the proportion of individuals in the province for each education category. For example, 17.65% of individuals in New Brunswick have "Less than high school" education. There is a similar proportion of individuals with "Less than high school" education in the other Atlantic

Provinces. No clear trends emerge from these proportions. The figures following this one focus more specifically on individuals in New Brunswick.

Figure 2: Proportion of NB individuals in each education category by employment status
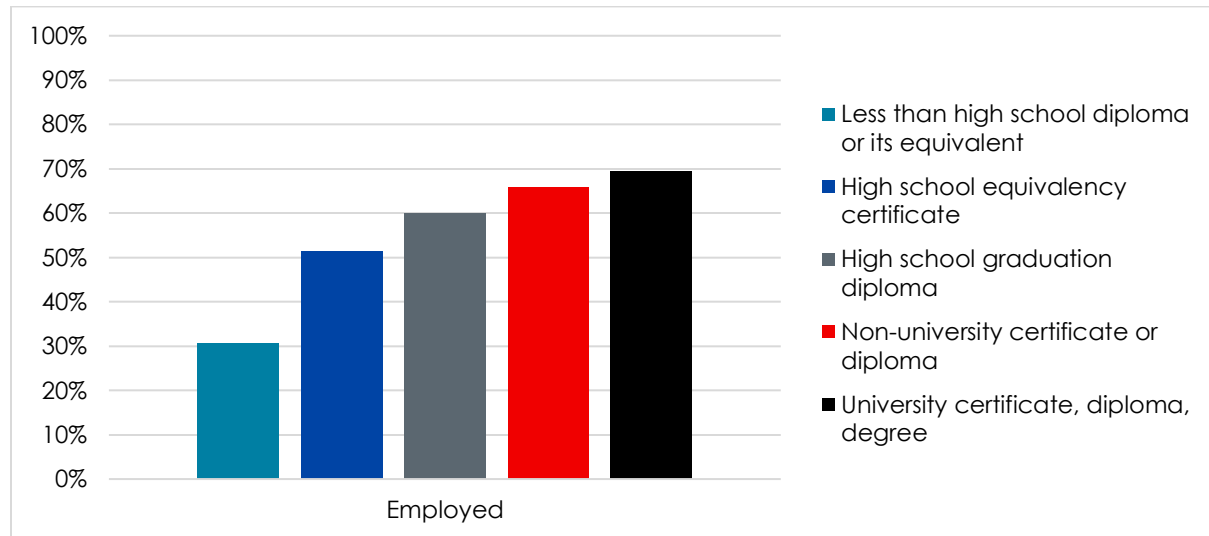

Figure 2 shows the proportion of employed New Brunswickers in each education category. Individuals labeled "Employed" were employed during the previous week. As education level increases, the proportion of employed individuals in the education category increases from 30.51% of individuals with "Less than high school" education to 69.53% of individuals with "University" education. The proportion of employed individuals is 51.38% for those with "High school equivalency certificate" and 59.94% for those with "High school graduation."

Figure 3: Proportion of NB individuals in each education category by age group
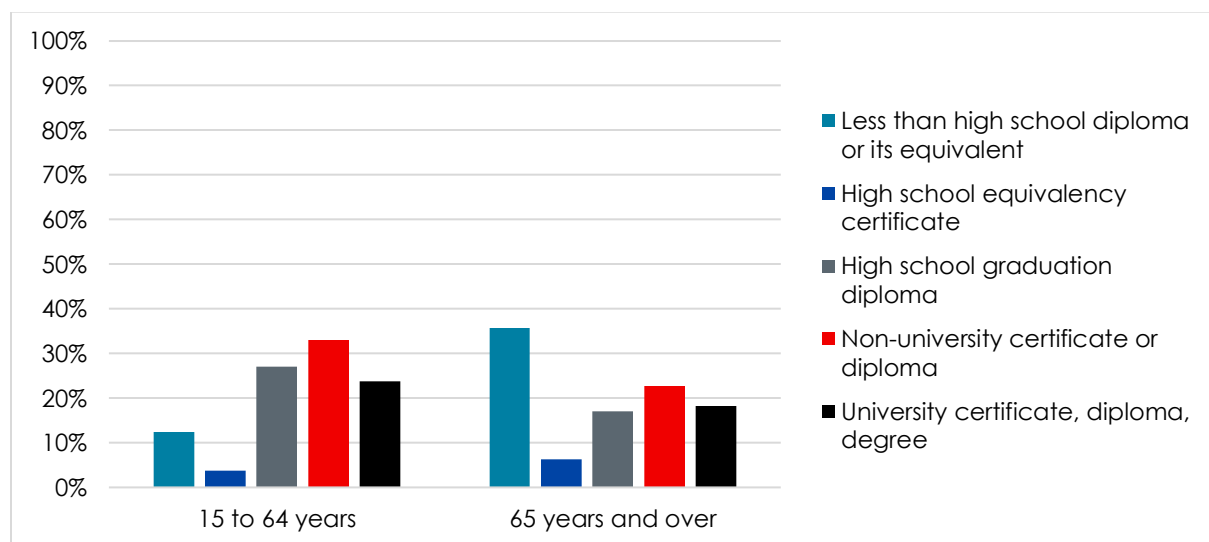

Figure 3 shows the proportion of New Brunswick individuals in each education category by age group. The age groups are "15 to 64 years" for working-age individuals and "65 years and over" for individuals beyond working age. The proportion of individuals with "Less than high school" or "High school equivalency" education is higher in the "65 years and over" category (35.77% and

6.22%, respectively) than in the "15 to 64 years" category (12.40% and 3.73%). This indicates that older individuals are more likely to have lower levels of education than younger individuals. This transition occurs when going from "High school equivalency" education to "High school graduation" education.

Figure 4: Proportion of NB individuals in each education category by sex
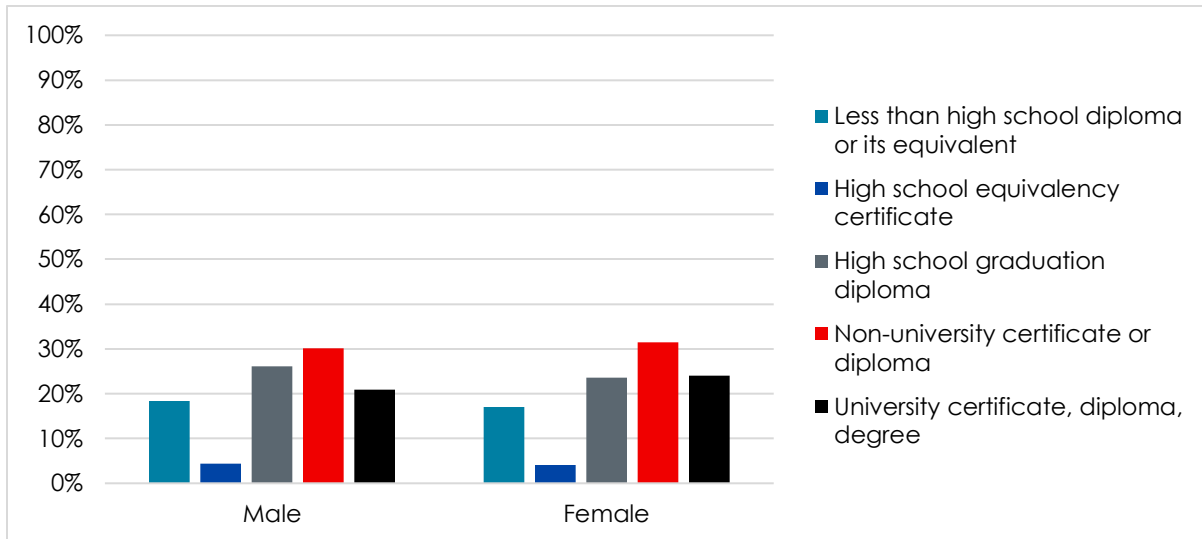

Figure 4 shows the proportion of New Brunswick individuals in each education category by sex. No clear trends emerge here since the proportions of each education category are roughly equal for males and females.

Figure 5: Proportion of NB individuals in each education category by area type
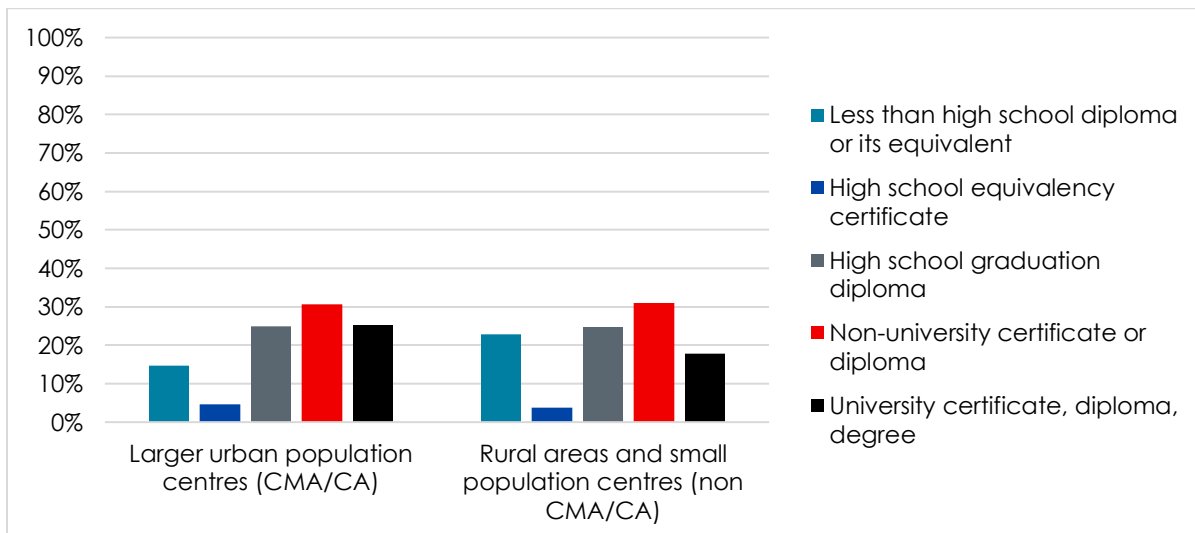

Figure 5 shows the proportion of New Brunswick individuals in each education category by area type. Individuals from Census Metropolitan Areas (CMAs) or Census Agglomerations (CAs) are part of "Larger urban population centres (CMA/CA)." Individuals outside these areas are part of "Rural areas and small population centres (non-CMA/CA)." Urban areas have a lower proportion of

individuals with "Less than high school" education (14.61%) than rural areas (22.79%) and a higher proportion of individuals with "University" education (25.30%) than rural areas (17.78%).

Figure 6: Proportion of NB individuals in each education category by income level
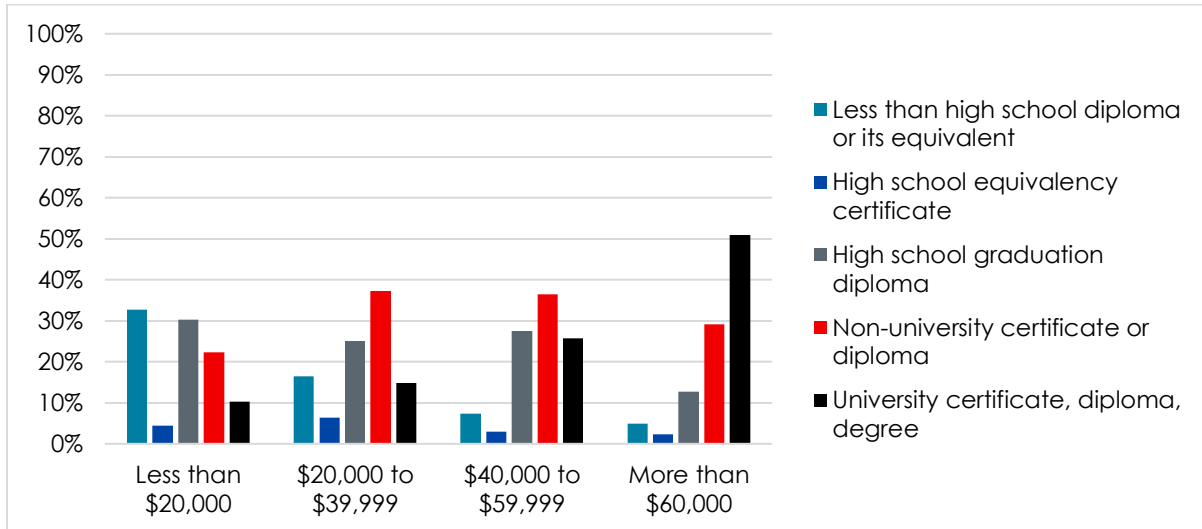

Figure **6** shows the proportion of New Brunswick individuals in each education category by income level. The income levels range from "Less than $20,000" to "More than $60,000." As income level increases, the proportion of individuals with "Less than high school" education decreases, and the proportion of individuals with "University" education increases.

Average Income of individuals by category

The weights used to calculate provincial totals from the GSS are also used to calculate weighted mean annual salaries by category. Confidence intervals were also calculated at the 95% level but were not included in the figures throughout this report due to the margins of error being negligible in size.

Table 2: Mean annual income in New Brunswick by education category with 95% confidence interval

Education category	Mean annual income	95% confidence interval (+/-)
Less than high school diploma or its equivalent	$19,893.42	$105.31
High school equivalency certificate	$31,742.18	$249.70
High school graduation diploma	$32,381.35	$131.02
Non-university certificate or diploma	$42,099.38	$164.02
University certificate, diploma, degree	$61,013.88	$244.19
Provincial Average	**$37,426.04**	**$178.85**

Table 2 shows the weighted mean annual income in New Brunswick by education category, along with the 95% margins of error. The average income shows a clear trend of increasing as education level increases. The same secondary categories as from the previous section are used here to sub-divide the population and find trends in average income by sub-category.

Figure 7: Average income of individuals in each education category by province
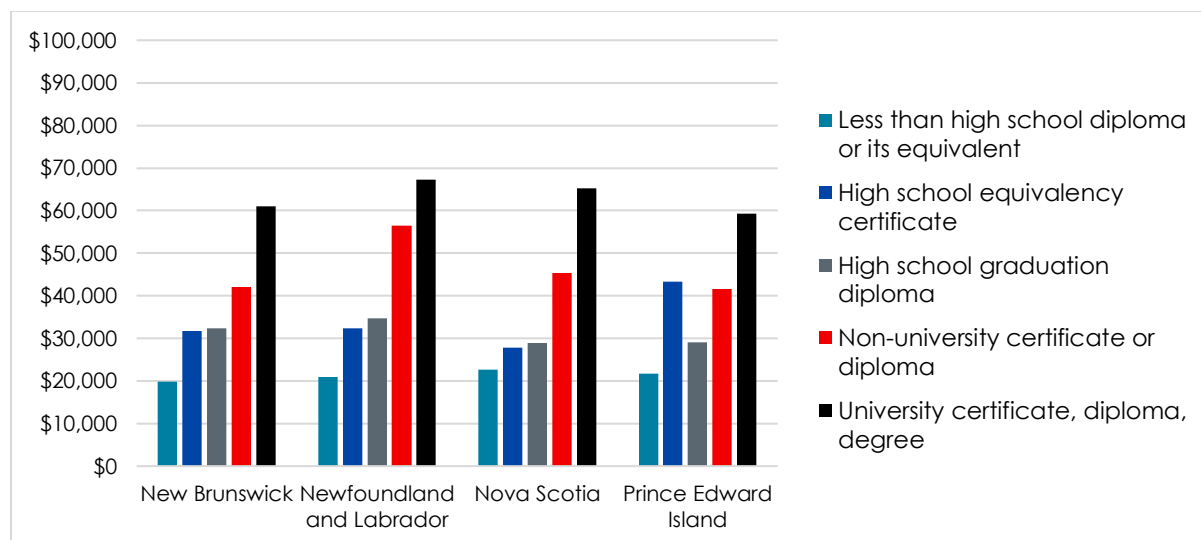

Figure 7 shows the mean annual income of individuals in each education category for each of the four Atlantic Provinces. The average income in New Brunswick increases as education level increases. Other provinces generally follow this trend as well, with the exception of individuals with "High school equivalency" in PEI. It is unclear why these particular individuals have a significantly higher average income, though it could potentially be due to a low sample size in the region.

Figure 8: Average income of NB individuals in each education category by age group
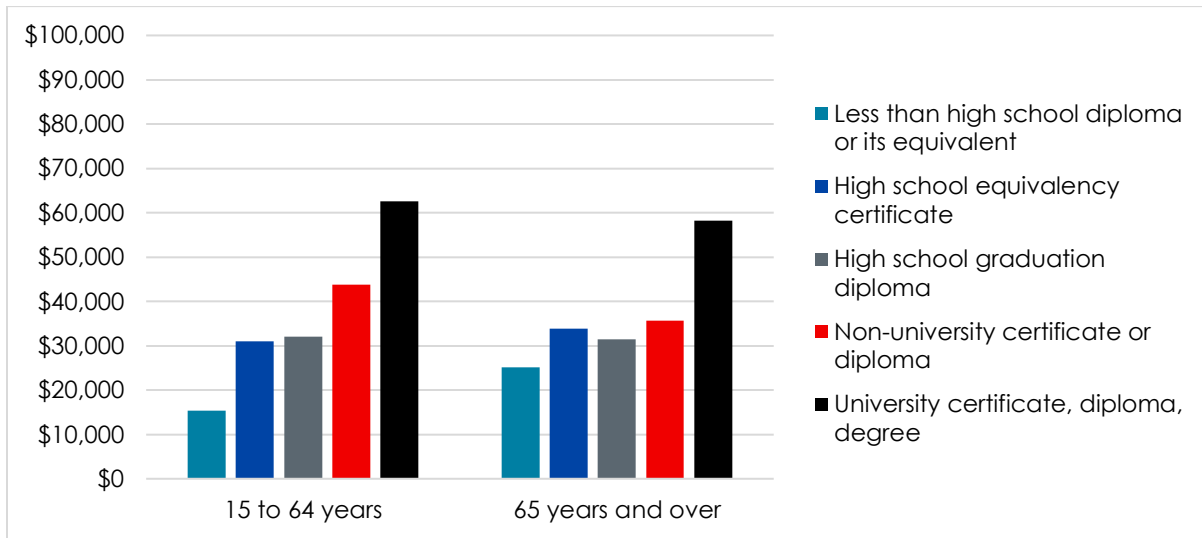

Figure 8 shows the mean annual income for New Brunswick individuals in each education category by age group. Individuals with "Less than high school" education show a lower average income for individuals "15 to 64 years" ($15,288.68) than for individuals "65 years and older" ($25,111.48). Other education categories generally have less difference in average income between age groups.

Figure 9: Average income of NB individuals in each education category by sex
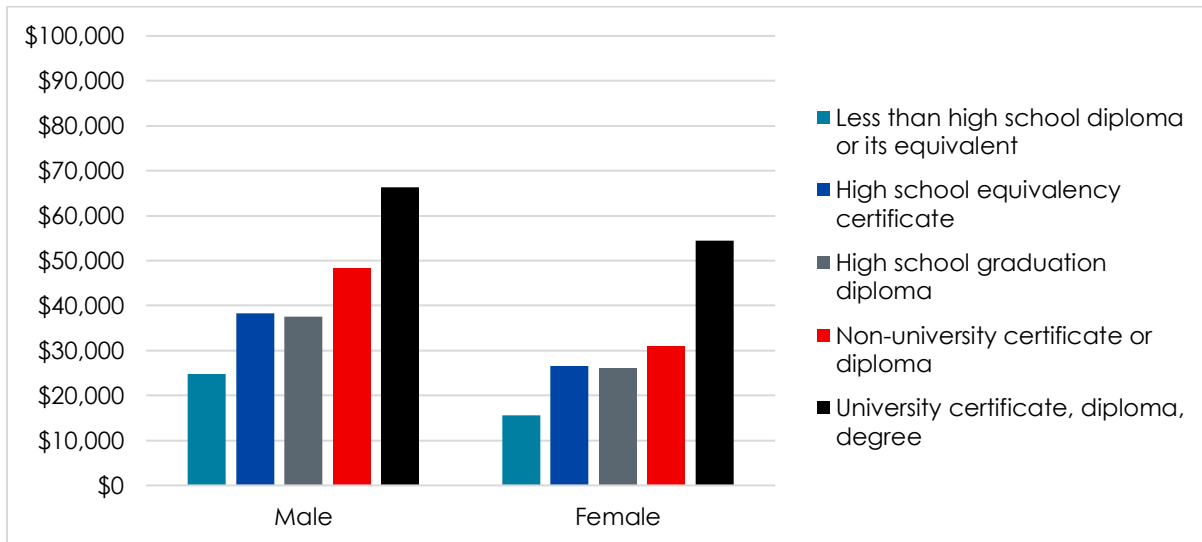

Figure 9 shows the mean annual income for New Brunswick individuals in each education category by sex. Males have a higher average income than females across all education categories. Otherwise, males and females follow a similar trend of increasing average income as education level increases.

Figure 10: Average income of NB individuals in each education category by area type
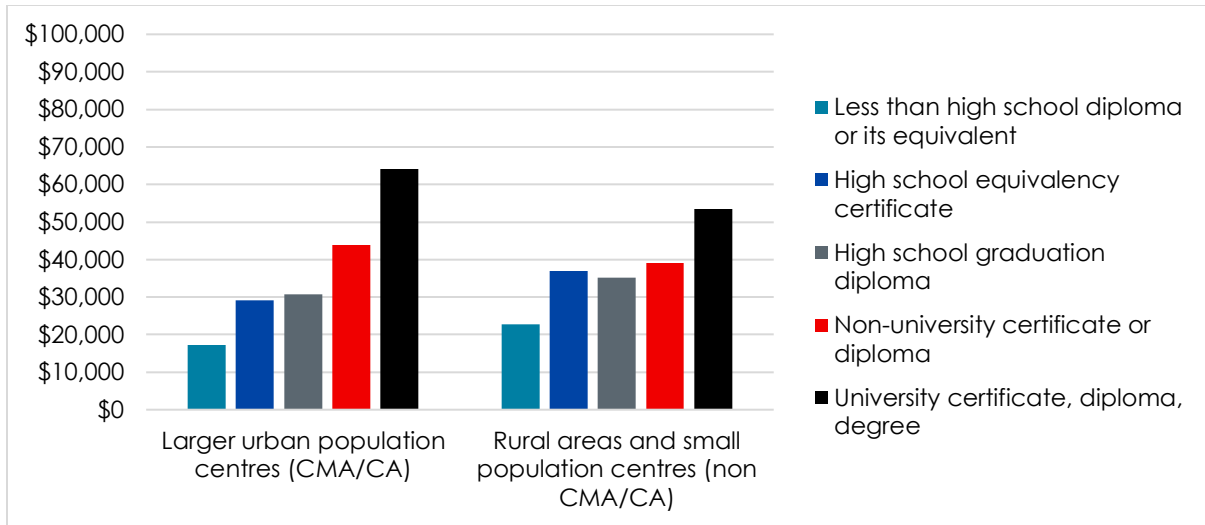
Figure 10 shows the mean annual income of New Brunswick individuals in each education category by area type. Individuals with "Less than high school," "High school equivalency," and "High school graduation" education levels have higher average incomes in rural areas than urban areas, while individuals with post-secondary education have a higher average income in urban areas. This may help explain why a larger proportion of individuals in rural areas have high school education than individuals in urban areas, as indicated in Figure 5.

Conclusion

The results from this report highlight a few main trends when comparing labour market outcomes of individuals with a high school equivalency certificate versus other education levels.

Individuals with "High school equivalency" have higher rates of employment status and average income than those with "Less than high school" education; and their rates are almost as high as those with "High school graduation" education. This suggests that a high school equivalency certificate gives a labour market advantage over not completing high school, and it is almost as good as graduating from high school with a diploma.

This analysis also gives rise to a demographic profile of individuals across different education levels. Individuals with a lower education level are more likely to be over 65 years old and reside in rural areas than those with higher levels of education.

This report serves as a preliminary analysis of individuals with a high school equivalency certificate versus those with other education levels. Further analysis will examine retention rates of individuals in these different education levels. The results here may also help with the examination of a profile of low-skilled workers in New Brunswick.

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