# Employment and Wages for Alberta Workers with a Post-Secondary Education

Government of Alberta
Human Services

# Abstract

Between 2011 and 2015, Alberta's economy is expected to add approximately 230,000 new jobs.[1] In addition, approximately 62% of all new jobs are expected to require some form of learning beyond a high school education.[2] Post-secondary education is a degree, certificate (including a trade certificate), or diploma from an educational institution beyond the secondary (high school) level.[3] More education and training is expected to be a key to success in the new economy. Over the next five years, there will be a strong demand for occupations that need university degrees.

A major challenge with this growth in employment is matching the demands of the new workplace and evolving economy with the skills of its workforce. Since the new jobs created will favour the well qualified, post-secondary education is a requisite for having a competitive advantage in the labour force. This report investigates the relationship between education levels, employment, and earnings and tests the hypothesis that as people get more education, the chance of obtaining employment and higher earnings increases.

By using data from the 2010 Labour Force Survey, expected wages and salaries of non-graduates and graduates of post-secondary schooling have been analyzed. The main findings of this investigation are that for males and females, a higher level of educational attainment results in increased participation in the workforce, additional employment opportunities, reduced chance of unemployment, higher pay, and higher earnings throughout a working career.

[1] *Alberta Regional Occupation Outlook: 2011-2015,* Human Services
[2] *Alberta Regional Occupation Outlook: 2011-2015,* Human Services
[3] Statistics Canada's Labour Force Survey (2010 Historical)

## Labour Force Statistics and Education Levels for Alberta

The working age population is composed of persons 15 years of age and over, excluding persons living on native reserves, inmates of institutions, and full-time members of the Canadian Armed Forces.[4] In 2010, more than 1.8 million Albertans aged 15 years and over had some level of post-secondary education.[5]

The labour force is composed of that portion of the working age population who, during the reference week, were employed or unemployed. The reference week is defined as the week containing the 15th day of the month in which information is collected for the Labour Force Survey.[6]

Table 1 shows the labour force and working age population by education levels for Albertans in 2000 and 2010. Between 2000 and 2010, Alberta's labour force with a university bachelor's degree increased by 84.5%, followed by a 53.2% increase for those with a university graduate degree[7]. In addition, those in the labour force with a post-secondary certificate or diploma increased by 36.8% and the number of high school graduates in the labour force increased by 28.8%.

Table 1

| Alberta Labour Force and Working Age Population by Education Level | | | | | | |
|---|---|---|---|---|---|---|
| | Labour Force | | | Working Age Population | | |
| | 2000 | 2010 | Change | 2000 | 2010 | Change |
| High School Graduate | 377,300 | 485,900 | 28.8% | 488,100 | 659,300 | 35.1% |
| Post-Secondary Certificate or Diploma | 548,100 | 749,900 | 36.8% | 678,700 | 938,100 | 38.2% |
| University Bachelor's Degree | 190,900 | 352,300 | 84.5% | 227,800 | 429,100 | 88.4% |
| University Graduate Degree | 80,900 | 123,900 | 53.2% | 96,100 | 152,200 | 58.4% |

Data Source: Statistics Canada's Labour Force Survey (2010 Historical)

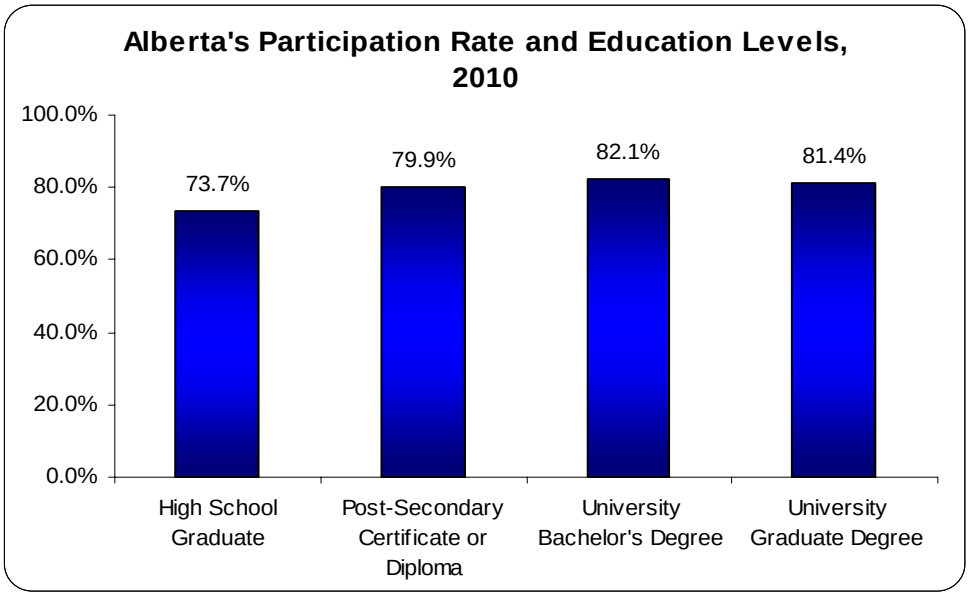
Between 2000 and 2010, the number of university bachelor's degree holders in the working age population had the greatest increase at 88.4%, followed by those with a university graduate degree at 58.4%, and then by post-secondary certificate or diploma at 38.2%. The number of Albertans in the working age population with a high school graduate had the smallest increase at 35.1%.

[4] *Guide to the Labour Force Survey:* Statistics Canada, 2011
[5] Statistics Canada's Labour Force Survey (2010 Historical)
[6] *Guide to the Labour Force Survey:* Statistics Canada, 2011
[7] Master's or Doctorate degree

## Labour Force Participation Rate and Education Levels

The participation rate represents the total labour force expressed as a percentage of the working age population (persons 15 years of age and older).[8] Figure 1 displays Alberta's participation rate by education levels for 2010. The participation rate for those with a post-secondary certificate or diploma was 6.2 percentage points higher than for high school graduates. Albertans with a university bachelor's degree experienced the highest participation rate at 82.1% (8.4 percentage points higher than for high school graduates). The participation rate for Albertans with a graduate degree was the second highest at 81.4%.

Figure 1




Data Source: Statistics Canada's Labour Force Survey (2010 Historical)

[8] *Guide to the Labour Force Survey:* Statistics Canada, 2011

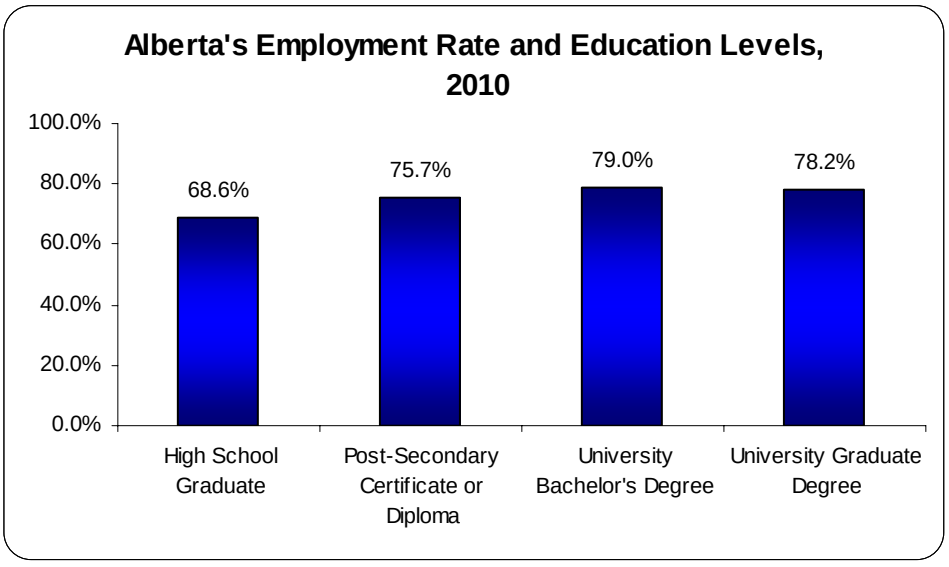
## Employment Rate and Education Levels

The employment rate represents the number of persons employed expressed as a percentage of the working age population (persons 15 years of age and older). The employment rate reflects, to a certain extent, the state of an economy. A high employment rate indicates the ability of an economy to create jobs and to employ a large percentage of its working age population.[9]

Job attainment in Alberta for those with a post-secondary education was higher than for those without. Between 2000 and 2010, employment increased by 73.0% for people with university degrees and by 33.8% for those with post-secondary diplomas or certificates, while employment for those with less than a high school education decreased by 24.0%.[10]

Figure 2 indicates that post-secondary graduates experienced higher employment rates than high school graduates. The employment rate for those with a post-secondary certificate or diploma was 7.1 percentage points higher than for high school graduates. Albertans with a university bachelor's degree experienced the highest employment rate of 79.0% followed by those with a graduate degree at 78.2%.

Figure 2



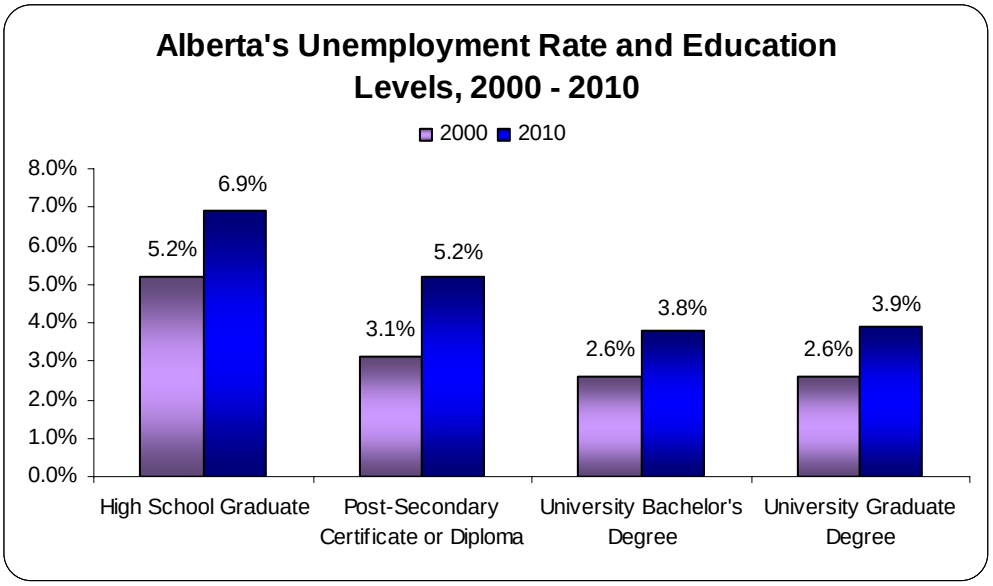

Data Source: Statistics Canada's Labour Force Survey (2010 Historical)

[9] *Guide to the Labour Force Survey:* Statistics Canada, 2011
[10] Statistics Canada's Labour Force Survey (2010 Historical)

## Unemployment Rate and Education Levels

The unemployment rate represents the number of unemployed persons expressed as a percentage of the labour force.[11] Figure 3 reflects the unemployment rate of Albertans with varying degrees of education for 2000 and 2010. Those who earned a bachelor's degree had a lower unemployment rate than those with other education levels in 2010. Higher education levels reduce the risk of unemployment[12]. Furthermore, with each level of education attained the incidence of involuntary part-time employment (meaning those who are employed part-time when they would prefer to be working full-time) decreases.[13]

Figure 3




Data Source: Statistics Canada's Labour Force Survey (2010 Historical)

[11] *Guide to the Labour Force Survey:* Statistics Canada, 2011
[12] HRSDC *Special Reports: January 2008 — "What Difference Does Learning Make to Financial Security?"*
[13] *Part-time by choice*: *Perspectives on Labour and Income,* Statistics Canada Catalogue 75-001-XIE, 2000

# Employment and Education Levels in Alberta

This section discusses employment and education levels in Alberta. Tables created by Alberta's Ministry of Human Services from Statistics Canada's 2010 Labour Force Survey show the employment probability for males and females.

Tables 2B (males) and 3B (females) have been analyzed by using contingency tables. These tables are important tools for understanding the nature of the data, and how the different variables (employment and education) are related to, or "contingent" on, one another. Contingency tables are useful in representing the results for data users in much the same way as an analysis of variance. In this case, the contingencies test to see if the probability of being employed depends on the education level attained.

## Male Working Age Population in Alberta

Tables 2A and 2B compress the age groups into labour force age categories (detailed analysis listed in Appendix A). Table 2A displays education levels and the probability of employment for males in Alberta in 2010. Table 2B investigates the relationship between levels of education and employment, and tests the hypothesis that as male Albertans receive more education, their chance of finding employment increases. By using the Chi-Square test, the significance of the employment probabilities for males with relation to level of education was examined.

Table 2A shows that males aged 25 to 44 with a high school diploma had a 43% probability of employment[14], those with a post-secondary certificate or diploma had a 53% probability, and those with a university bachelor's degree had a 60% probability. Males aged 45 to 64 with a high school diploma had a 31% probability of employment, those with a post-secondary certificate or diploma had a 38% probability, and those with a university graduate degree had a 51% probability.

Table 2A

**Alberta Employment Probability for Males by Education Levels, 2010**

| | 15 to 24 | 25 to 44 | 45 to 64 | 65 to 69 | Total |
|---|---|---|---|---|---|
| High School Graduate | 0.23 | 0.43 | 0.31 | 0.02 | 1.00 |
| Post-Secondary Certificate or Diploma | 0.07 | 0.53 | 0.38 | 0.02 | 1.00 |
| University Bachelor's Degree | 0.05 | 0.60 | 0.34 | 0.02 | 1.00 |
| University Graduate Degree | 0.01 | 0.45 | 0.51 | 0.04 | 1.00 |

Data Source: Calculated Using Statistics Canada, Labour Force Survey Microdata
Prepared by: Data Development and Evaluation, Human Services

[14] Probability of employment for high school graduate in the age group 25 to 44 = The employment number of high school graduates in the age group 25 to 44 ÷ The total employment number of high school graduates.

Table 2B shows 27.4% of employed males in the working age population, possessed a high school diploma, 45.6% had a post-secondary certificate or diploma, 19.2% had a university bachelor's degree and 7.7% had a university graduate degree.

Table 2B

| Education Levels of Employed Alberta Males, 2010 | | | | | |
|---|---|---|---|---|---|
| | 15 to 24 | 25 to 44 | 45 to 64 | 65 to 69 | Total |
| High School Graduate | 6.4% | 11.9% | 8.6% | 0.5% | 27.4% |
| Post-Secondary Certificate or Diploma | 3.2% | 24.2% | 17.5% | 0.8% | 45.6% |
| University Bachelor's Degree | 0.9% | 11.5% | 6.5% | 0.3% | 19.2% |
| University Graduate Degree | 0.1% | 3.5% | 3.9% | 0.3% | 7.7% |
| Total | 10.6% | 51.0% | 36.6% | 1.8% | 100.0% |

Data Source: Calculated Using Statistics Canada, Labour Force Survey Microdata
Prepared by: Data Development and Evaluation, Human Services

Approximately 10.6% of employed male Albertans were in the 15 to 24 age group, 51.0% were in the 25 to 44 age group, and 36.6% were in the 45 to 64 age category, and fewer than 2% of those employed were between 65 and 69 years of age.

The association between education and employment was statistically significant at the 0.01 level of probability (99% confidence level). The results indicate that there was a strong relationship between the level of educational attainment and employment. This finding is supported by past research.[15] Therefore, as males attain higher levels of education and skills, their chance of being employed increases.

[15] W. Craig Riddell and Xueda Song, *The Causal Effects of Education on Adaptability to Employment Shocks: Evidence from the Canadian Labour Market,* Canadian Labour Market and Skills Researcher Network, February 2009

## Female Working Age Population in Alberta

The values for the probability of employment with respect to level of education are presented in Tables 3A and 3B. Tables 3A and 3B compress the age segments into labour force age categories (detailed analysis listed in Appendix B). Table 3B investigates the relationship between levels of education and employment. By using Chi-Square analysis, Table 3B tests the hypothesis that as females obtained more education, their chance of finding employment would increase.

Table 3A

**Alberta Employment Probability for Females by Education Levels, 2010**

| | 15 to 24 | 25 to 44 | 45 to 64 | 65 to 69 | Total |
|---|---|---|---|---|---|
| High School Graduate | 0.22 | 0.37 | 0.39 | 0.02 | 1.00 |
| Post-Secondary Certificate or Diploma | 0.08 | 0.49 | 0.41 | 0.02 | 1.00 |
| University Bachelor's Degree | 0.07 | 0.61 | 0.31 | 0.01 | 1.00 |
| University Graduate Degree | 0.01 | 0.52 | 0.45 | 0.01 | 1.00 |

Data Source: Calculated Using Statistics Canada, Labour Force Survey Microdata
Prepared by: Data Development and Evaluation, Human Services

Table 3A shows that females aged 25 to 44 with a high school diploma had a 37% probability of employment, those with a post-secondary certificate or diploma had a 49% probability, and those with a university bachelor's degree had a 61% probability. Females aged 45 to 64 with a high school diploma had a 39% probability of employment, those with a post-secondary certificate or diploma had a 41% probability, and those with a university graduate degree had a 45% probability.

The data in Table 3B indicates that in the working age population, 28.5% of employed females had a high school diploma, 42.0% of employed female Albertans had a post-secondary certificate or diploma, 22.9% had a university bachelor's degree, and 6.7% possessed a university graduate degree.

Of the employed females who had completed high school or more, 11.4% were age 15 to 24, 48.6% were age 25 to 44, 38.4% were age 45 to 64, and 1.5% were age 65 to 69.

Table 3B

**Education Levels of Employed Alberta Females, 2010**

| | 15 to 24 | 25 to 44 | 45 to 64 | 65 to 69 | Total |
|---|---|---|---|---|---|
| High School Graduate | 6.3% | 10.6% | 11.1% | 0.5% | 28.5% |
| Post-Secondary Certificate or Diploma | 3.5% | 20.6% | 17.2% | 0.7% | 42.0% |
| University Bachelor's Degree | 1.5% | 13.9% | 7.1% | 0.3% | 22.9% |
| University Graduate Degree | 0.1% | 3.5% | 3.0% | 0.1% | 6.7% |
| Total | 11.4% | 48.6% | 38.4% | 1.5% | 100.0% |

Data Source: Calculated Using Statistics Canada, Labour Force Survey Microdata
Prepared by: Data Development and Evaluation, Human Services

The relationship between employment and education levels was statistically significant at the 0.01 level (99% confidence level), and was consistent with previous studies.[16] As females gain more knowledge, skills, and experience, their chance of being employed improves. The results, therefore, indicate that training and education are paramount in terms of gaining employment and employment rates are highest for female graduates of post-secondary education.

[16] W. Craig Riddell and Xueda Song, *The Causal Effects of Education on Adaptability to Employment Shocks: Evidence from the Canadian Labour Market,* Canadian Labour Market and Skills Researcher Network, February 2009

# Wage, Salary, and Education Levels in Alberta

For the year 2005 in Canada, the median earnings were 50% higher for university graduates with a bachelor's degree and 78% higher for university graduates with a post-bachelor degree in comparison to individuals with high school diplomas. Those who did not complete high school earned 14% less than those who did.[17]

Higher education is a gateway to higher earnings. In 2005, more than 57.0% of Canadians who earned over $100,000 and 65.3% who earned over $150,000 per year had a university degree.[18] In 2005, in the 25 to 34 age group, university graduates with a bachelor's degree received a median salary of $46,118, about 37.5% more than those with less than a high school education, who earned $28,832. In the 45 to 54 age group, university graduates with a bachelor's degree received a median salary of $64,111, almost double the earnings of workers with less than a high school education, at $34,024.[19]

The following section compares wage and salary information to levels of education in Alberta. This section tests whether wage rates are related to or dependent on levels of education that female and male Albertans have against the alternative hypothesis that wage earnings are independent or unrelated to levels of education. To determine whether the association between education levels and wage rates was statistically significant, the Chi-Square test was used. Tables created by Human Services from Statistics Canada's 2010 Labour Force Survey, show the expected wage rates for males and females.

[17] Statistics Canada, 2006 Census of Population, Catalogue no. 97-563-XWE2006002
[18] *Earnings and Incomes of Canadians Over the Past Quarter Century: High Earners,* Statistics Canada, 2006 Census
[19] Statistics Canada, 2006 Census of Population, Catalogue no. 97-563-XWE2006002

## Male Population in Alberta

Tables 4A and 4B show how wage rates relate to levels of education. Table 4B has been analyzed using contingency tables similar to those used in the previous section on employment and education. Each row represents an age group and each column represents a level of educational achievement. Each cell in the table displays a percent value that is a numerical combination of age groups and levels of educational achievement.

Average hourly wage rates are displayed for Alberta males in Table 4A. The table demonstrates that males experienced an increase in average hourly wage rates with the completion of post-secondary education. Alberta males consistently attained higher average hourly wage rates upon completion of a post-secondary certificate or diploma, a university bachelor's degree, or a university graduate degree.

Table 4A shows that males, ages 15 years and over, with a high school diploma could expect to earn an average of $21.66 per hour. Males in the same age group with a post-secondary certificate or diploma made $25.19 an hour, with a university bachelor's degree made $27.63 per hour, and those with a university graduate degree earned $31.65 per hour.

Table 4A

**Education and Wages for Alberta Males, 2010**

| | High School Graduate | Post-Secondary Certificate or Diploma | University Bachelor's Degree | University Graduate Degree |
|---|---|---|---|---|
| 15 to 19 | $10.37 | $10.87 | $11.53 | n/a* |
| 20 to 24 | $14.69 | $18.05 | $16.41 | $23.56 |
| 25 to 29 | $21.13 | $25.02 | $25.72 | $25.52 |
| 30 to 34 | $22.46 | $27.88 | $28.54 | $27.48 |
| 35 to 39 | $24.93 | $28.63 | $33.18 | $32.52 |
| 40 to 44 | $24.56 | $29.71 | $34.45 | $33.84 |
| 45 to 49 | $27.33 | $31.02 | $34.84 | $36.25 |
| 50 to 54 | $25.94 | $29.92 | $38.53 | $40.16 |
| 55 to 59 | $26.90 | $29.38 | $37.15 | $36.27 |
| 60 to 64 | $22.91 | $26.28 | $24.92 | $41.34 |
| 65 to 69 | $17.04 | $20.33 | $18.61 | $19.53 |
| Average | $21.66 | $25.19 | $27.63 | $31.65 |

Data Source: Calculated Using Statistics Canada, Labour Force Survey Microdata
Prepared by: Data Development and Evaluation, Human Services
* Data not available

# Wage, Salary, and Education Levels in Alberta

Table 4B shows that male Albertans ages 15 and over with a high school diploma made 21.0% of the total earnings for this gender and age in 2010. Male wage earners of this age with a post-secondary certificate or diploma made 24.4%. Those with a university bachelor's degree earned 25.7%, and those with a university graduate degree made just less than 28% of the total earnings for this age and gender in Alberta.

Table 4B

| Education and Earnings for Alberta Males, 2010 | | | | | |
|---|---|---|---|---|---|
| | High School Graduate | Post-Secondary Certificate or Diploma | University Bachelor's Degree | University Graduate Degree | Total |
| 15 to 19 | 0.9% | 1.0% | 1.0% | n/a* | 2.9% |
| 20 to 24 | 1.3% | 1.6% | 1.4% | 2.1% | 6.4% |
| 25 to 29 | 1.9% | 2.2% | 2.3% | 2.2% | 8.6% |
| 30 to 34 | 2.0% | 2.5% | 2.5% | 2.4% | 9.4% |
| 35 to 39 | 2.2% | 2.5% | 2.9% | 2.9% | 10.5% |
| 40 to 44 | 2.2% | 2.6% | 3.0% | 3.0% | 10.8% |
| 45 to 49 | 2.4% | 2.7% | 3.1% | 3.2% | 11.4% |
| 50 to 54 | 2.3% | 2.6% | 3.4% | 3.5% | 11.8% |
| 55 to 59 | 2.4% | 2.6% | 3.3% | 3.2% | 11.4% |
| 60 to 64 | 2.0% | 2.3% | 2.2% | 3.6% | 10.2% |
| 65 to 69 | 1.5% | 1.8% | 1.6% | 1.7% | 6.6% |
| Total | 21.0% | 24.4% | 25.7% | 27.9% | 100.0% |

Data Source: Calculated Using Statistics Canada, Labour Force Survey Microdata
Prepared by: Data Development and Evaluation, Human Services
* Data not available

The relationship between earning and education levels was statistically significant at the 0.01 level of probability (99% confidence level), and was consistent with past research.[20] The outcome of this test shows that as males gain more knowledge, skills and experience, their chance of higher earning increases. Therefore, wage rates depend on levels of education.

[20] W. Craig Riddell, *The Impact of Education on Economic and Social Outcomes: An Overview of Recent Advances in Economics*, Canadian Policy Research Networks Inc., 2006

## Female Population in Alberta

Alberta females experienced an increase in hourly wage rates with higher levels of education, even though female wage rates were lower than males. Females with a university bachelor's degree experienced a higher hourly wage at a younger age, and this was consistent throughout the working age population. Alberta females with a university graduate degree experienced the highest average hourly wage rate.

Tables 5A and 5B display the relationship between education levels and wage rates for females. In Table 5B, which has been analyzed using contingency tables in the same manner as Table 4B, each row represents an age group and each column represents an education level. Each cell in the table displays a percent value that is a numerical combination of age group and education levels.

Table 5A shows that Alberta females, ages 15 and over, with a high school diploma earned an average of $16.47 per hour. Female Albertans in the same age group with a post-secondary certificate or diploma made an average of $19.40 per hour, with a university bachelor's degree made an average of $25.63 per hour, and those with a university graduate degree earned an average of $27.48 per hour.

Table 5A

| Education and Wages for Alberta Females, 2010 | | | | |
|---|---|---|---|---|
| | High School Graduate | Post-Secondary Certificate or Diploma | University Bachelor's Degree | University Graduate Degree |
| 15 to 19 | $8.66 | $9.89 | n/a* | n/a* |
| 20 to 24 | $11.74 | $15.07 | $17.82 | $14.89 |
| 25 to 29 | $15.59 | $18.94 | $22.23 | $26.03 |
| 30 to 34 | $17.50 | $20.77 | $26.42 | $26.63 |
| 35 to 39 | $16.60 | $20.48 | $29.16 | $26.96 |
| 40 to 44 | $19.34 | $21.84 | $27.06 | $28.17 |
| 45 to 49 | $18.90 | $24.09 | $27.77 | $26.84 |
| 50 to 54 | $19.62 | $23.18 | $28.75 | $32.87 |
| 55 to 59 | $19.57 | $23.72 | $31.39 | $33.88 |
| 60 to 64 | $18.48 | $21.28 | $24.41 | $35.97 |
| 65 to 69 | $15.14 | $14.12 | $21.26 | $22.51 |
| Average | $16.47 | $19.40 | $25.63 | $27.48 |

Data Source: Calculated Using Statistics Canada, Labour Force Survey Microdata
Prepared by: Data Development and Evaluation, Human Services
* Data not available

# Wage, Salary, and Education Levels in Alberta

Table 5B shows the relationship between education levels and earnings for Alberta females aged 15 and over. In 2010, female Albertans with a high school diploma made 20.0% of total earnings, those with a post-secondary certificate or diploma made 23.6% of total earnings, those with a university bachelor's degree made 26.0% of total earnings, and those with a university graduate degree made 30.4% of total earnings.

Table 5B

| Education and Earnings for Alberta Females, 2010 | | | | | |
|---|---|---|---|---|---|
| | High School Graduate | Post-Secondary Certificate or Diploma | University Bachelor's Degree | University Graduate Degree | Total |
| 15 to 19 | 1.0% | 1.1% | n/a* | n/a* | 2.1% |
| 20 to 24 | 1.3% | 1.7% | 2.0% | 1.6% | 6.6% |
| 25 to 29 | 1.7% | 2.1% | 2.5% | 2.9% | 9.2% |
| 30 to 34 | 1.9% | 2.3% | 2.9% | 2.9% | 10.1% |
| 35 to 39 | 1.8% | 2.3% | 3.2% | 3.0% | 10.3% |
| 40 to 44 | 2.1% | 2.4% | 3.0% | 3.1% | 10.7% |
| 45 to 49 | 2.1% | 2.7% | 3.1% | 3.0% | 10.8% |
| 50 to 54 | 2.2% | 2.6% | 3.2% | 3.6% | 11.5% |
| 55 to 59 | 2.2% | 2.6% | 3.5% | 3.7% | 12.0% |
| 60 to 64 | 2.0% | 2.4% | 2.7% | 4.0% | 11.1% |
| 65 to 69 | 1.7% | 1.6% | n/a | 2.5% | 5.7% |
| Total | 20.0% | 23.6% | 26.0% | 30.4% | 100.0% |

Data Source: Calculated Using Statistics Canada, Labour Force Survey Microdata
Prepared by: Data Development and Evaluation, Human Services
* Data not available

The association between wage rates and education levels was statistically significant at the 0.01 level of probability (99% confidence level), and is supported by past findings.[21] Consequently, tables 5A and 5B show that wage rates were related to levels of education that female Albertans aged 15 and over, had against the alternative hypothesis that wage earnings were independent or unrelated to levels of education. This means that females with greater levels of education can expect to earn higher wages.

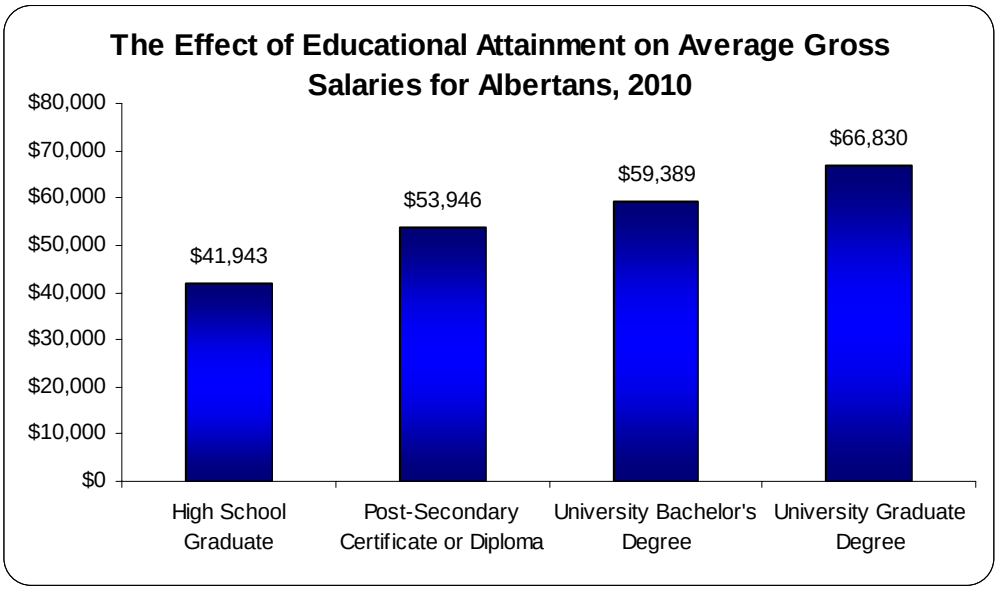
[21] W. Craig Riddell, *The Impact of Education on Economic and Social Outcomes: An Overview of Recent Advances in Economics*, Canadian Policy Research Networks Inc., 2006

## Education and Earnings

The information in Figure 4 displays the relationship between levels of post-secondary education and earnings. Average gross salaries were calculated by multiplying average weekly earnings, provided by Statistic Canada, by 52, the number of weeks in 2010.

In 2010, a post-secondary certificate or diploma graduate could expect to earn 25.0% more than a high school graduate. A university bachelor's degree graduate could anticipate earning 9.6% more than a post-secondary certificate or diploma graduate, and those with a graduate degree could forecast earning 11.8% more than a university bachelor's degree graduate. This is consistent with other findings that as one's credentials increase, income also increases.[22]

Figure 4




Data Source: Alberta Advanced Education and Technology, 2010

[22] *Alberta Post-Secondary Graduate Outcomes Survey: Class of 2007/2008,* Alberta Advanced Education and Technology, 2010

# Summary and Conclusions

While Alberta's working age population increased by 28.3% between 2000 and 2010, the proportion of the population who had completed some levels of post-secondary education increased by 51.5%, reflecting a growth rate 1.8 times that of the working age population. This growth rate suggests that Albertans believe the investment in post-secondary education yields desirable results.

Albertans holding a university bachelor's graduate degree experienced the highest participation rate at 82.1%, closely followed by those with a graduate degree at 81.4%. Thus, there was a positive relationship between educational attainment and the participation in the labour force.

The employment rate for those with a post-secondary certificate or diploma was 7.1 percentage points higher than for high school graduates. Albertans with a university graduate bachelor's degree experienced the highest employment rate, at 79.0% while those with a graduate degree had the second highest rate at 78.2%. Thus, there was a positive relationship between educational achievement and employment prospects.

As the education level of an individual increased, the probability of being unemployed decreased. This was evidenced by the fact that, among males, those possessing a university bachelor's degree or graduate degree in 2010 experienced the strongest probability of employment throughout the majority of a working career. In addition, Alberta females with a higher level of post-secondary education had a more consistent and a higher probability of employment.

For both genders, there was a positive relationship between higher levels of education and higher average hourly wage rates. This is in concordance with the conclusions derived in TD Economics Special Report titled, "*Post-Secondary Education is the Best Investment You Can Make"*. Thus, it can be concluded that higher pay can be expected from higher education.

In conclusion, for both males and females, a higher level of educational attainment results in increased participation in the workforce, additional employment opportunities, reduced chance of unemployment, and higher earnings throughout the working career.

# Appendix A

## Alberta Employment Probability for Males, 2010

Male Albertans aged 25 to 64* who graduated from high school had a 75% chance of employment. Males of the same age group who earned a post-secondary certificate or diploma could expect a 91% chance of employment. The probability of employment for a university bachelor's degree graduate was 94% and for those who received a university graduate degree it was 96%. Therefore, probability of employment increases as one obtains more education.

**Alberta Employment Probability for Males, 2010**

| | High School Graduate | Post-Secondary Certificate or Diploma | University Bachelor's Degree | University Graduate Degree |
|---|---|---|---|---|
| 15 to 19 | 0.06 | 0.00 | 0.00 | 0.00 |
| 20 to 24 | 0.18 | 0.07 | 0.05 | 0.01 |
| 25 to 29 | 0.14 | 0.13 | 0.16 | 0.08 |
| 30 to 34 | 0.10 | 0.15 | 0.12 | 0.13 |
| 35 to 39 | 0.10 | 0.12 | 0.16 | 0.11 |
| 40 to 44 | 0.09 | 0.13 | 0.15 | 0.14 |
| 45 to 49 | 0.11 | 0.13 | 0.09 | 0.14 |
| 50 to 54 | 0.10 | 0.12 | 0.11 | 0.12 |
| 55 to 59 | 0.06 | 0.09 | 0.09 | 0.15 |
| 60 to 64 | 0.04 | 0.05 | 0.06 | 0.09 |
| 65 to 69 | 0.02 | 0.02 | 0.02 | 0.04 |
| Total | 1.00 | 1.00 | 1.00 | 1.00 |

*Add the probabilities in the age groups 25 to 64 years for each level of education, probabilities subject to rounding.
Data Source: Calculated Using Statistics Canada, Labour Force Survey Microdata
Prepared by: Data Development and Evaluation, Human Services

# Appendix B

## Alberta Employment Probability for Females, 2010

Female Albertans aged 25 to 64* who graduated from high school had a 76% probability of employment. Females of the same age group who earned a post-secondary certificate or diploma could expect a 90% chance of employment. The probability for those with a university bachelor's degree was 92% while those who had achieved a university graduate degree had the brightest employment outlook at 97%. Thus, the employment rate is the highest for female graduates with post-secondary education.

**Alberta Employment Probability for Females, 2010**

| | High School Graduate | Post-Secondary Certificate or Diploma | University Bachelor's Degree | University Graduate Degree |
|---|---|---|---|---|
| 15 to 19 | 0.08 | 0.00 | 0.00 | 0.00 |
| 20 to 24 | 0.15 | 0.08 | 0.07 | 0.01 |
| 25 to 29 | 0.11 | 0.13 | 0.16 | 0.10 |
| 30 to 34 | 0.08 | 0.12 | 0.17 | 0.14 |
| 35 to 39 | 0.08 | 0.11 | 0.14 | 0.13 |
| 40 to 44 | 0.10 | 0.13 | 0.14 | 0.15 |
| 45 to 49 | 0.14 | 0.15 | 0.10 | 0.11 |
| 50 to 54 | 0.14 | 0.10 | 0.10 | 0.14 |
| 55 to 59 | 0.07 | 0.10 | 0.07 | 0.13 |
| 60 to 64 | 0.05 | 0.05 | 0.04 | 0.08 |
| 65 to 69 | 0.02 | 0.02 | 0.01 | 0.01 |
| Total | 1.00 | 1.00 | 1.00 | 1.00 |

*Add the probabilities in the age groups 25 to 64 years for each level of education, probabilities subject to rounding.
Data Source: Calculated Using Statistics Canada, Labour Force Survey Microdata
Prepared by: Data Development and Evaluation, Human Services