

Labour Market Participation of Women in Alberta

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Introduction

Estimates of past and future earnings losses for litigation purposes are often based on lifetime earnings projections, in which labour market contingencies are built into the calculations. Negative contingencies include non-participation in the labour market, part time work and unemployment and are typically based on Census data cross-tabulated by age, sex and educational attainment. A short coming of the cross-tabulation approach is that no account is taken of the influence of certain variables or factors that are known to impact upon whether or not women choose to participate in the labour market.

An alternative approach is described in this article. Probabilities of labour market participation of females in Alberta are estimated using regression analysis. This method allows for inclusion of many more factors which influence the decision to take part in the work force than does the traditional cross-tabulation method.

Summary of Findings

Using a multiple regression equation, labour market participation rates have been estimated for females resident in Alberta. The regression analysis, like cross-tabulation, relies on data from the 1991 Census of Canada. The results show that participation rates are determined by a number of social and economic characteristics. Age, years of education, the presence of children under 15 years of age, non-labour income received by the individual, income received by other members of the household and previous employment history have been found to be important determinants of women's labour market participation rates.

A number of interesting results emerged from the analysis. Marital status was found to be insignificant as a determinant of labour market participation. However, the presence of children in the household was found to have a powerful influence on participation. The insignificance of marital status may be further explained by the importance of women's non-labour income and the income of other household members.

Data

The data used for the analysis were from the 1991 Census of Canada public use micro data file on individuals. Excluded from the sample were women under the age of 15 and over the age of 70. In addition, the analysis was limited to residents in Alberta at the time of the 1991 Census. In total, there were 24,003 females included in the analysis. In 1991, the public use Census sample tape was drawn by from a population 33.33 times larger than the sample. Therefore, there were about 800,000 females aged between 15 and 70 resident in Alberta at the time of the 1991 Census.

Discussion of Findings

The following variables were statistically significant in explaining the labour market participation decision of females: age and the square of age; years of schooling; presence of children six to fourteen; non-labour income received by the individual; income of other household members; a variable identifying those with no prior labour market experience.

The equation which we have developed indicates that the probability of being in the labour force initially increases rapidly with age, particularly in the years of school to work transition, that rates plateau in the age range 25 to 50 and that they then decline after age 50. Labour force participation rates are higher among women with higher levels of education, with no children and with no sources of income or financial support, other than from their own labour. In fact, in the absence of children and other sources of income, women's participation rates are very much like those of men.

Children under age 6 and to a lesser extent, children aged 6 to 14, substantially reduce probabilities of participation. Non-labour income received by women and income received by other household members also have quite strongly negative effects on women's participation rates. The absence of past involvement in the labour force also has a strongly negative effect on the likelihood of future participation.

Participation Rate Projections

Figures 1 and 2 show projected values using the regression equation we have developed. The scenarios depicted are:

- * Projection 1 in Figure 1, women without children, with no non-labour income and no income earned by other household members;
- * Projection 2 in Figure 1, women without children and with annual income of \$50,000 earned by a husband or partner;
- * Projection 3 in Figure 2, women bearing children at age 25 and 28, with the income of other household members set at \$50,000.

In all projections education is assumed to be 12.4 years, and all projections start at age 18.

FIGURE 1

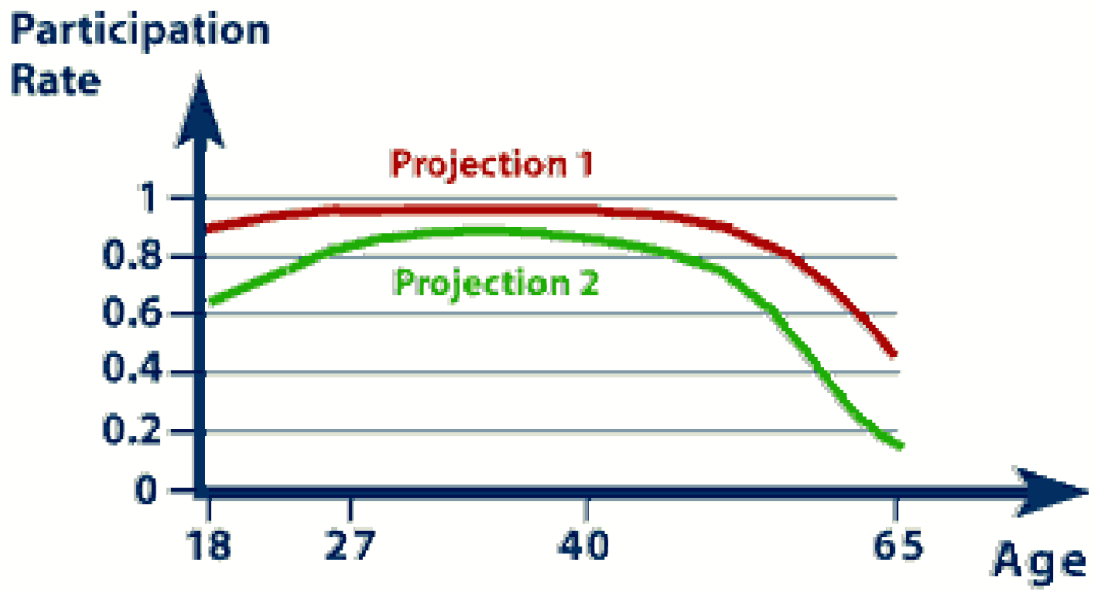
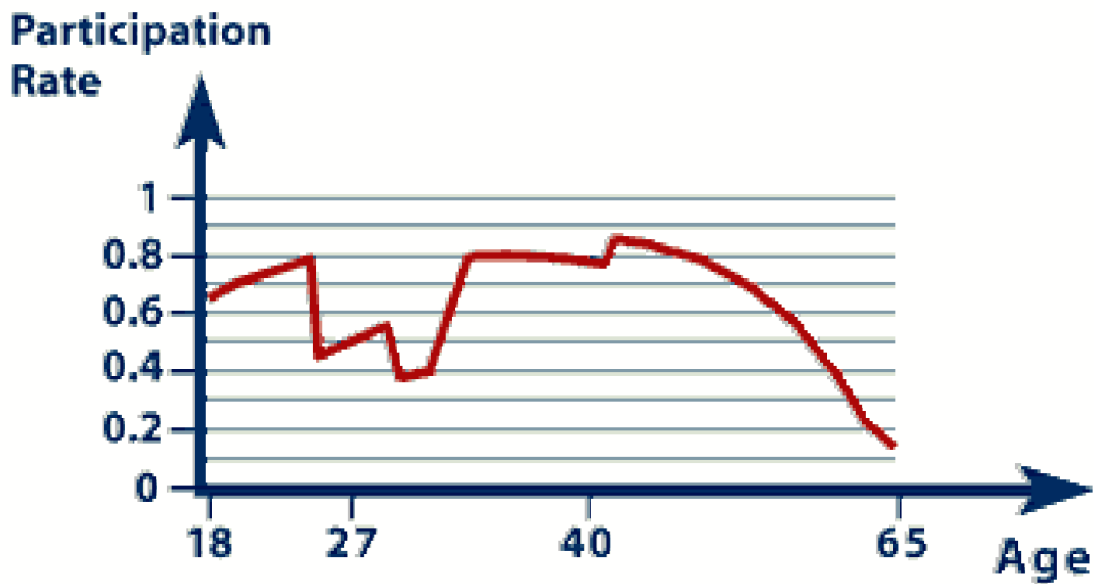


FIGURE 2



The results show the significant impact that earnings from a partner have on participation rates. As a comparison of the two curves in Figure 1 will show earnings of other household members (in the example, set at \$50,000 annually), can significantly reduce women's participation rates. For women with no other source of income the average participation rate in the age range 18 to 65 is 88.89%. If there is a partner with income of \$50,000 annually present in all years the participation rate falls to 71.88%.

Projection 3 in Figure 2 shows the impact of young children. Note that estimated participation rates are significantly lower in the years in which the children are young. In all other respects Projection 3 is directly comparable to Projection 2. Recall that the average participation rate Projection 2 was 71.88%. In Projection 3, it is 63.68%. In the 17 year period where children affect participation in Projection 3 the number of years of labour force participation is reduced from 14.7 years to 10.8 years.

In a regression model like the one described here a change in one factor or another will not always have the same effect. The result of a change depends in part on the other characteristics of the person in question. For example, an increase in another household member's income will not have the same effect on the labour force participation rates of college graduate women as it will have on the participation rates of women who have not completed high school.

As noted above, the analysis to date is based on 1991 Census data. A final form of the regression equation will be developed when data from the 1996 Census become available.

To avoid over sampling, the results were estimated for a random sample of the 24,033 observations included. The regression estimates were found to be robust with respect to alternative random samples being used for the estimation.

Other Articles

Basset, P. (1994) "Declining Female Labour Force Participation". Perspectives on Labour and Income. Statistics Canada (Summer).

Ciecka, J. and T. Donley. "A Logit Model of Labour Force Participation". Journal of Forensic Economics 9, no. 3 (Fall 1996): 261-282.

Boothby, Daniel (1984). "The Continuity of Married Women's Labour Force Participation". The Canadian Journal of Economics, XVII, no. 3.