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# ERDE Research Project

# Welfare Generosity and Well-being: Evidence from Canada

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## Abstract

This paper explores the association between provincial welfare generosity and well-being of poor Canadians. The well-being indicators include poverty incidence, depth of poverty, labor supply, time spent with kids, health status, happiness, and education. Using both macro and micro- level data over the years 1989 to 1996 and 1998 to 2009, I examine the link between welfare generosity and poverty. The micro-level information of General Social Survey (GSS) is used to correlate various indicators of well-being with measures of welfare generosity. The analysis of macro-level CANSIM data is used as a robustness check of the poverty estimation using GSS. In this study I considered total welfare generosity as well as the subcategories, social assistance and other social services spending, as the measure of welfare generosity. With regards to poverty, the result suggest no evidence of determinate relationship between total welfare generosity and poverty rate. However, generosity of social services is associated with a lower poverty rate, while generous income assistance is associated with a higher poverty rate. The total welfare generosity shows a significant association with reduction in employment rate and high school dropout rate among the poor. In the case of health, both total welfare generosity and social assistance appear as significant determinants of better health outcome of the poor. Receipt of other social services appear as a significant determinant of poor individuals time spent with kids and happiness.

## I. Introduction

During the past two decades, welfare spending in Canada has more than doubled (Statistics Canada, 2009). The aim of this welfare generosity is to provide Canadian more financial assistance whose resources are inadequate to maintain their basic needs. The presumption is welfare generosity increases well-being but there is a debate on the extent of welfare generosity. Several empirical studies show that welfare generosity is able to address several socio-economic issues all at once (Brady 2005, Kenworhy 1999, Blank and Hanratty 1993). According to these studies welfare generosity reduce income insecurity and inequality, provide equal opportunity to the poor to maintain a decent standard of living. However, some studies also indicate that welfare generosity interferes with the motivation to work (Borjas 2015, Murray 1984), suggesting that if individuals receive high government transfers they would likely choose not to work or reduce their work effort. Therefore, it may create high dependency on welfare. In that context, this paper aims to answer- "Are differences in welfare generosity across provinces associated with better socio-economic outcome for poor individuals?" In this analysis, I consider several outcome variables such as poverty incidence, depth of poverty, labor supply, time spent with kids, health status, happiness, and education status of poor individuals.

The impact of welfare generosity has been extensively studied over the last two decades. These studies have used information on government spending and transfer spending to capture the extensiveness of welfare generosity across countries. However, no empirical study closely matches the methodological objective of this paper. This paper contributes to the economic literature that quantitatively examines the different aspects of welfare generosity. Empirical studies on welfare and poverty fall into two categories. Firstly, welfare studies demonstrate cross-national empirical assessment of social welfare policies on poverty (Brady 2005, Defina and Thanawala 2001, Kenworhy 1999). Evidence from these studies indicate a higher level of welfare spending has a significant association with poverty reduction. Secondly, welfare studies examine the association between welfare and poverty at the national level. (Borjas 2015, Niehues 2010). The study by Borjas (2015) suggests that generous government transfer may foster dependency on welfare benefits thereby increasing poverty rate. However, Niehues (2010) suggests that high spending of welfare has a significant association with reducing income inequality. The study by Ross and Irvine (2008) investigate the impact of welfare generosity and unemployment rate. The findings reveal an improvement of economic conditions due to welfare generosity that resulted in a gradual decline in social assistance during the time 1993 to 2005 in Canada.

Apart from poverty, empirical studies also focus on labor supply response of welfare generosity based on different income experiment programs (Burtless 1986, Hum and Simpson 1993, Smith 2004). A common conclusion across these studies is that generous income assistance significantly reduces the work incentives of recipients. According to these studies, the reduction in labor supply to be more pronounced in families with preschool children, indicating that recipients were able to spend more time with their kids. Also, the evidence from income experiment programs associates generous income assistance with increased opportunity for poor individuals to participate in learning activities (Salkind and Haskins 1982, Maynard et al., 1977).

Recent studies on welfare generosity and population health reveal that high amount of welfare spending significantly improves individuals' health (Conley and Springer 2001, Bradley et al. 2011, Ng, Edwin Yee-Hong 2013). The study by Conley and Springer (2001) and Bradley et al. (2011) investigate the cross-national empirical assessment of welfare generosity on health. Conley and Springer (2001) establishes a significant association between per capita spending on health and reduction in infant mortality rate. Bradley et al. (2011) investigate the impact of social services expenditures relative to health expenditure positing that the high share of social services expenditures to total health expenditure has a significant association with a reduction in infant mortality and increase in life expectancy. The study by Ng, Edwin (2013) shows that provincial welfare generosity has a significant impact on the reduction of mortality rate. The study used provincial expenditures on health, education, and social services spending to measure the provincial welfare generosity in Canada.

Empirical studies on happiness indicate a significant positive association with high income (Esterline 1974, Winkelmann and Winkelmann 1997, Blanchflower 2000). Therefore, the increase in income due to welfare generosity may positively associate with increased happiness of the recipients. Cross-national empirical studies on happiness also indicate a significant positive association with generous welfare transfer (Pacek and Radcliff 2008, Flavin et.al. 2011).

The extant literature contributes substantially to the understanding of welfare impact on the different socio-economic outcomes. The cross-national studies on welfare generosity conceptualized country as the unit of analysis. In this study, I used data for Canadian provinces on welfare generosity and various indicators of well-being. Each province has distinct regimes and amount of welfare assistance. [1] This inter-provincial variation in welfare generosity may have a different impact on the well-being of poor individuals. A few number of studies consider the endogeneity issue of welfare generosity and poverty addressing the cases when high poverty rate in a country leads to higher spending on welfare. In this study, I use two-period lag values of welfare generosity so that welfare generosity of a province are independent of the current poverty rate. Also, the provincial difference in welfare generosity may provide a great deal of exogenous variations that could, in principle, help in understanding the welfare impact on the well-being of poor individuals. Besides the overall effect on welfare spending, this study focuses on which kind of welfare spending has a significant association with the different socio-economic outcomes for poor individuals.

Using data from General Social Survey (GSS) and Statistics Canada CANSIM from 1989 to 1996 and 1998 to 2009, I examine the association between welfare generosity and well-being. In this study, I define welfare generosity across provinces in Canada as the extent to which

[1] Provincial welfare assistance in Canada mainly formed by Canada Assistance Plan (CAP)-a cost share agreement between federal and provincial government-instituted in 1966. After CAP, there have been several changes in social policies which provided provinces more autonomy to design and administrate their welfare programs. In 1996, CAP was replaced by Canada Health and Social Transfer (CHST). CHST is a conditional transfer provided by federal government to provinces and territories to support provincial health care, post-secondary education, social assistance and social services. In 2004 the CHST was replaced by Canada Health Transfer (CHT) and the Canada Social Transfer (CST). The CHT and CST are federal transfers provided to the provinces to support specific policy areas such as health care, post-secondary education, social assistance and social services.

provinces are providing the social welfare services (social assistance and other social services). The study considers the total welfare generosity and its subcategories i.e. social assistance spending and other social services spending as the welfare generosity variables. The findings of the study reveal that total welfare generosity is not an important determinant of poverty. However, generosity of other social services spending is associated with a lower poverty rate, while generous social assistance spending is associated with a higher poverty rate. Then I examine the association of welfare generosity with labor supply, time spent with kids, health status, happiness, and education status of poor individuals. The regression results on total welfare generosity and employment rate show that an increase in the share of total welfare generosity relative to total provincial expenditure one year ago reduces employment rate by 0.96 percent. Moreover, generous other social services spending appears as a significant determinant of the time poor individuals spend with their kids and their happiness. With regards to health, total welfare generosity and generous social assistance both are associated with a better health outcome. The findings also reveal that higher share of total welfare generosity is linked with higher rates of secondary school graduation among poor individuals.

In the next section, I discuss the data and methodology of the study. The third section describes the different well-being indicators that I consider for my analysis and the regression results. The last section concludes the findings of the study.

## II. Data and Methodology

The study analyzes the link between welfare generosity and poverty using both macro-level and micro- level data over the years 1989 to 1996 and 1998 to 2009. The micro-level information is sourced from General Social Survey (GSS) to correlate various indicators of well-being with measures of welfare generosity. GSS is a nationally representative annual, cross-sectional data, which provides information on individuals living conditions and well-being in Canada. The GSS was not conducted in the year 1997.

In the analysis, I pool the GSS data over all years. The individual level GSS data provides information on well-being indicators of poor individuals' which are not available at the aggregate level. The macro level information on poverty data is sourced from Statistics Canada CANSIM database, which is available at the provincial level. The analysis of macro-level CANSIM data is used as a robustness check of the poverty estimation using GSS. The micro-level data of GSS is aggregated up to the provincial level.

### 2.1 Measure of Welfare Generosity

In Canada, provincial governments are responsible for welfare services and transfers. To examine the relation between welfare generosity and well-being of poor individuals I use provincial expenditures data on total social services spending from CANSIM. The total social services

spending is considered as a measure of total welfare generosity, which incorporates social assistance and services to poor people.[2]

Next, I focus on which specific components of social service spending might have a significant effect on the well-being of poor people. Two subcategories of social services spending that I consider are social assistance spending and other social services spending. About 82 percent of total social service spending are covered by these two sub-categories (Statistics Canada, 2009)

"The social assistance program covers income assistance to poor people to secure a reasonable standard of living. Along with income assistance the program includes refundable tax credits to middle and low income individuals or families, outlays related to old age security, Canada pension plan and Quebec pension plan, child tax benefits, employment insurance benefits, rent subsidy and assistance for blind and disabled persons" (Statistics Canada, 2009).

"The other social services spending includes the outlays related to the services to elderly (i.e. residential homes for elderly, care centers, community based nursing homes etc.), to persons who are physically or mentally challenged and not capable of working due to sickness, to survivors of a deceased person (spouse, children, etc.), to the household with dependent person and to other needy persons. The spending also includes the outlays related to hospitals, residential care facilities, other health and social services institutions" (Statistics Canada, 2009).

### 2.2 Trends in Welfare Generosity

Between 1989 and 2009, provincial allocations for total welfare spending as a share of total provincial expenditure have changed alongside the economic cycle. Following economic recession in the early 1990s total welfare spending across provinces in Canada accounted for 17 percent of total provincial expenditure. It then continued to increase and peaked at approximately 19 percent in 1993, then fell to 17 percent in 2009.

Table-1 shows the share of welfare generosity in total provincial expenditures in 1989 and 2009. In a comparison of provinces, between 1989 and 2009 Quebec has the highest proportional spending on total welfare generosity relative to total provincial expenditure. In 2009, for Quebec, the category accounted for 20.18 percent of total provincial expenditure (was 16.78 percent in 1989). Following this province, British Columbia, Manitoba, Ontario, Alberta, Nova Scotia, New Brunswick, Newfoundland and Labrador, while Saskatchewan and Prince Edward Island are in the bottom two positions.

The share of transfer on other social services relative to total provincial expenditures was higher in 2009 compared to 1989, for all provinces except Prince Edward Island. In 2009, for Prince Edward Island, the category accounted for 2.63 percent of total provincial expenditure (was

[2] The subcategories of social service spending includes social assistance, workers' compensation benefits, employee pension plan benefits, veterans' benefits, other social services and motor vehicle accident compensation. Due to data limitations in my analysis I consider social assistance and other social services as the subcomponent of social service spending.
All of the expenditures data are sourced from CANSIM II table 385-0002, where the data are available from 1989 to 2009

6.55 percent in 1989). The share of transfer on social assistance relative to total provincial expenditures declines for all provinces in 2009 compared to 1989.

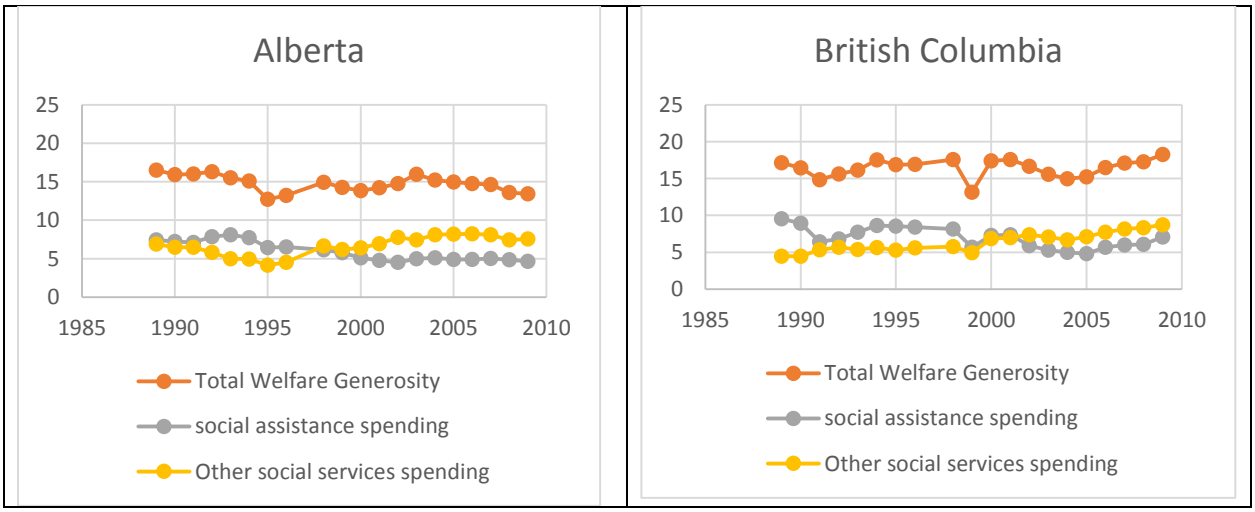
Table 1: Share of Welfare Expenditure Relative to Total Provincial Expenditures in 1989 and 2009

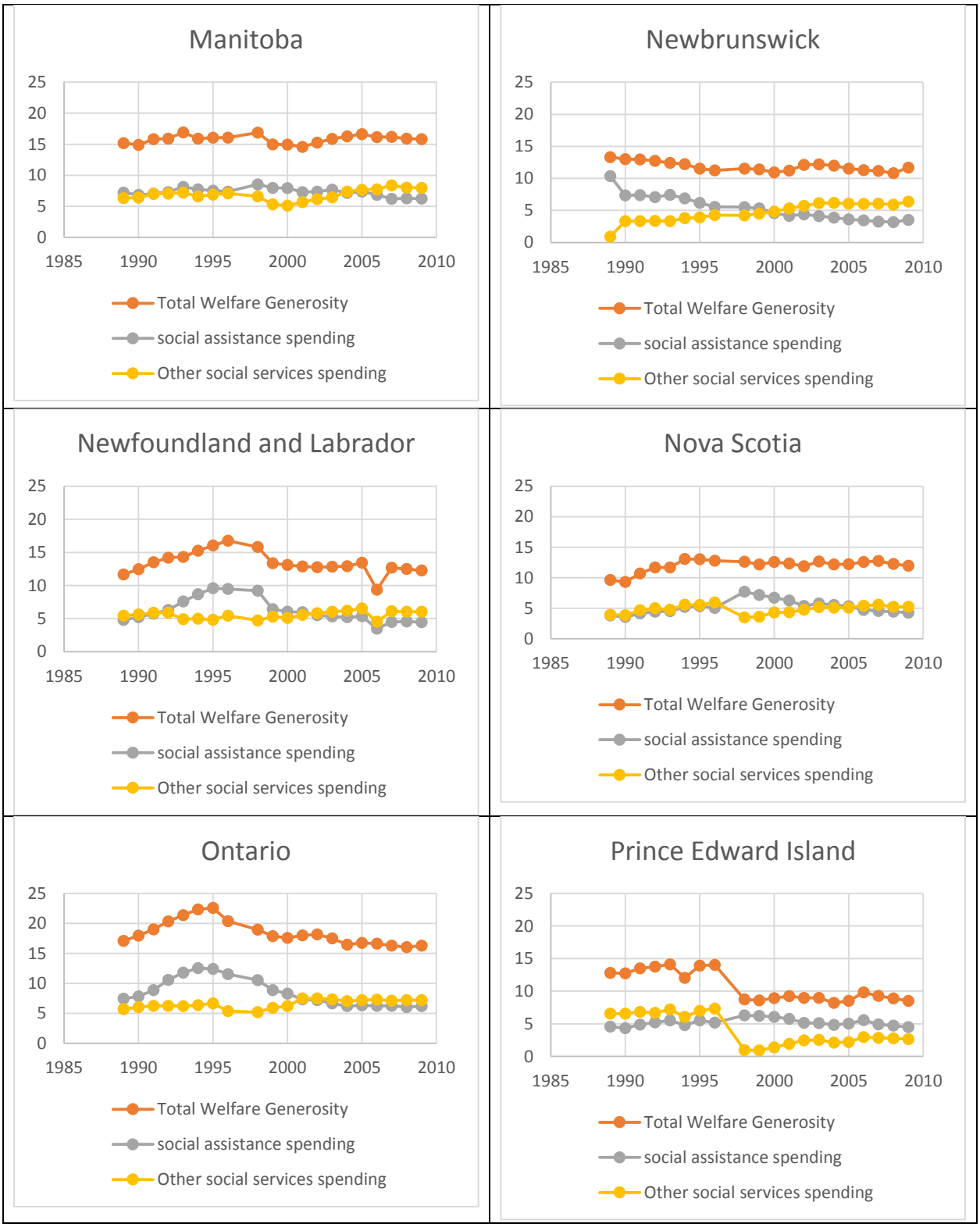
| | Total Welfare Generosity | | Social Assistance Spending | | Other Social Services | |
|---|---|---|---|---|---|---|
| | 1989 | 2009 | 1989 | 2009 | 1989 | 2009 |
| Provinces | | | | | | |
| Alberta | 16.49 | 13.41 | 7.44 | 4.66 | 6.90 | 7.55 |
| British Columbia | 17.14 | 18.26 | 9.55 | 7.07 | 4.46 | 8.69 |
| Manitoba | 15.18 | 15.83 | 7.22 | 6.22 | 6.33 | 7.99 |
| New Brunswick | 13.32 | 11.69 | 10.34 | 3.53 | 1.00 | 6.38 |
| Newfoundland and Labrador | 11.65 | 12.26 | 4.78 | 4.45 | 5.44 | 6.04 |
| Nova Scotia | 9.64 | 11.98 | 3.83 | 4.26 | 3.93 | 5.23 |
| Ontario | 17.10 | 16.28 | 7.45 | 6.21 | 5.71 | 7.21 |
| Prince Edward Island | 12.80 | 8.50 | 4.57 | 4.48 | 6.55 | 2.63 |
| Quebec | 16.78 | 20.18 | 7.54 | 5.11 | 6.85 | 12.62 |
| Saskatchewan | 11.97 | 9.90 | 4.58 | 2.57 | 6.13 | 5.85 |

Source: Computation using data from CANSIM (Statistics Canada 2009)

Figure-1 shows the pattern and trend in welfare generosity across provinces in Canada. In a comparison of provinces, between 1989 and 2009, British Columbia, Manitoba and Nova Scotia exhibited an increase in their share of spending on total social services. However, Prince Edward Island showed the largest decline (from 13 percent to 9 percent) among the provinces that had a decline in their relative spending in total social services. Similarly, the share of social assistance spending and other social services spending showed an increase in trend for all provinces except Prince Edward Island.

Figure 1: Ratio of Social Services Spending to Total Government Expenditures from 1989 to 1996 and 1998 to 2009 based on the Statistics Canada data

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Total Welfare Generosity
social assistance spending
Other social services spending
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social assistance spending
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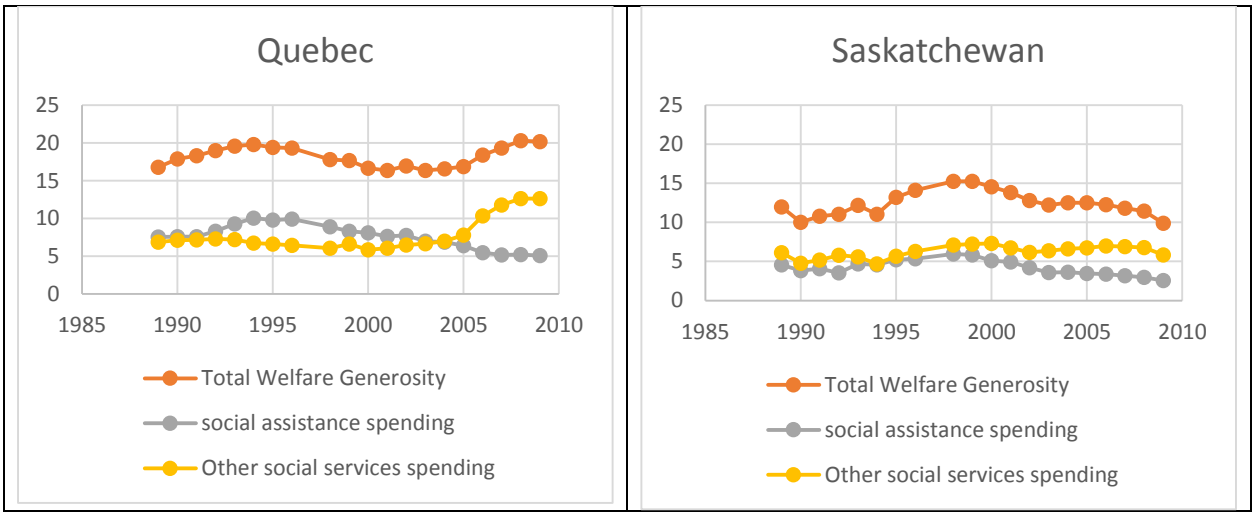


### 2.3 Measure of Poverty

To measure poverty in the micro-level GSS data, I use the low income cut-offs (LICO) as the poverty line. "The LICO is an income threshold below which a family will likely spend 20 percentage points more of its income than the average family on food, shelter, and clothing." (Statistics Canada, 2009). Statistics Canada reports 35 total LICO groups based on 7 family sizes and 5 community sizes. The most recent LICO is based on the 1992 Family Expenditure Survey, and for other years LICO is adjusted annually based on inflation. [3] The other measures for poverty are low income measures (LIM) and market basket measure (MBM). According to LIM, a family is considered as poor if the income is less than 50 percent of the median family income. However, the data of LIM is not available before 1992. MBM estimates the absolute minimum resources to fulfill the basic necessities of life. However, MBM measure varies among geographical area, therefore, it is difficult to update continuously and identically. Considering these factors, in this study, I used the LICO to measure poverty. [(4)(5)]

To calculate poverty at the micro-level, I followed several methods. Firstly, I had to determine a household's income in the GSS. In this dataset, family income comprises all types of income, including the government transfer, and total income of the households is reported in

[3] Besides the base year 1992, LICO have also been based on the 1986, 1978, 1969 and 1959 Family Expenditure Surveys.
[4] "The low income measure (LIM) is a fixed percentage of median adjusted income, where adjusted indicates that the family needs are adjusted with family sizes that mean the family needs increases as the number of the family member increases" (Statistics Canada, 2009).
[5] "The MBM is a measure of low income based on the cost of a specific basket of goods and services representing a modest, basic standard of living. It includes the costs of food, clothing, footwear, transportation, shelter and other expenses for a reference family of two adults aged 25-49 and two children (aged 9 and 13)" (Statistics Canada, 2009).

different categories. To estimate a household's income, I used the midpoint of each income categories. [6][7]

Secondly, to calculate the poverty rate, I took all households (and all persons in those households) with income below the LICO as poor. LICOs are available for both pre and after tax income. Since GSS does not have information on tax paid, the total household income reported in the data is considered as before-tax income. So, to calculate the poverty, I used the low income cut-offs before-tax (LICO_BT). For GSS's family size greater than seven, the LICO_BT for family size seven is considered as the low income cut-offs. [8]

Finally, to make the poverty calculation comparable with CANSIM, I consider LICO_BT thresholds that provide the close poverty measure with CANSIM. Since GSS does not have information for Census Metropolitan Area (CMA) level, therefore, I used different LICO_BT thresholds for different provinces based on the close estimates with CANSIM poverty rate. The rate of poverty is calculated as the percentage of persons in a province falls below the low income thresholds.[9]

In this study, I not only analyze the association between welfare generosity and poverty rate but also the depth of poverty. The poverty gap ratio is calculated as the difference between the low income threshold and the household income, expressed as a percentage of the low income threshold. To calculate poverty gap ratio in GSS, I follow the methodology of CANSIM. Thus, the poverty gap ratio measures the extent to which income of poor individuals' falls below the LICO_BT. This gives us an indicator of the depth of poverty within that province.[10]

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[6] For example, in 1989 the household income is reported in nine income groups such as; income under $5000, income group $5,000- $9,999, income group $10,000-$14,999, income group $15,000-$19,999, income group $20,000-$29,000, income group $ 30,000-$39,999, income group $40,000-$59,999, income group $60,000-$79,999 and income group $80,000.

[7] For example, for income $5,000-$9,999 the median of the range is $7,499.5 is considered as the total household income.

[8] Of the five LICOs, one is for rural area and the other four LICOs are for urban area based on the population size. Detailed information on LICO can be found in the following link:
http://www.statcan.gc.ca/pub/75f0002m/2009002/s2-eng.htm

[9] To measure poverty using GSS data I use different "LICO_BT" for different provinces based on the close measure of statistics Canada poverty. For Alberta, British Columbia, Manitoba and Ontario, I use the upper LICO_BT thresholds for cities with "population over 500,000 and over". For these provinces, the upper LICO thresholds gives close measure with statistics Canada poverty. Similarly, based on the close measure with Statcan poverty, I use LICO_BT with "population size 100,000 to 499,999" for Quebec. For Saskatchewan, I use LICO_BT with "population size 30,000 to 99,999". For New Brunswick, Newfoundland and Labrador, Nova Scotia and Prince Edward Island, I use LICO_BT for "population 100,000-499,999".

[10] To measure the average poverty gap ratio I have used the following method-
gap ratio= ((Lico -household income)/Lico) *100
Thus, a family with an income of $15,000 and a low income cut-off of $20,000 would have a low income gap of $5,000. In percentage terms this gap would be 25%. The household with negative gap are set as zero.

## 2.4 Trends in Poverty

In this section, I analyze the trends of poverty across provinces in Canada by examining the poverty measure of CANSIM and GSS. For comparison, I use CANSIM's information of percentage of people below Low Income Cut-offs before-tax (LICO_BT).

Table-2 shows the poverty rate in 1989 and 2009 based on CANSIM and GSS data. Observing the CANSIM poverty rate, during 1989 to 2009 Alberta experienced the largest decline in poverty from 16.60 percent to 10.80 percent. Following this province, New Brunswick, and Quebec experienced a large decline in poverty during this time.

The lowest poverty rate among the provinces in 2009 is in Prince Edward Island, with 8.30 percent. Following this province, New Brunswick, Alberta, Newfoundland and Labrador and Saskatchewan subsequently have the lower rate of poverty. In contrast, the rate of poverty was higher than the Canadian average (14 percent) in British Columbia (16 percent), Quebec (14.80 percent), Ontario (14.40 percent) and Manitoba (14 percent).

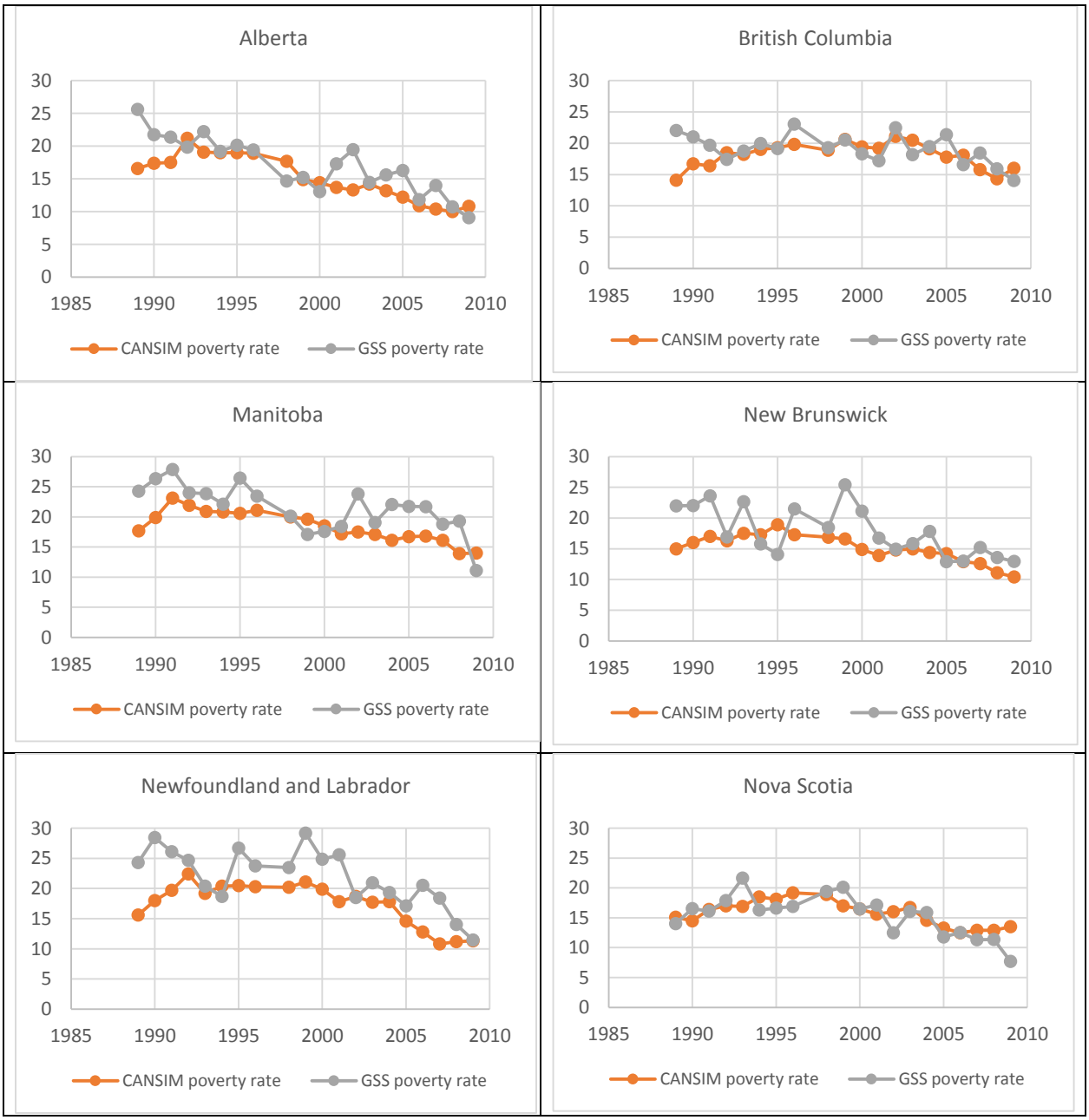
Table 2: Rate of poverty in 1989 and 2009

| Provinces | CANSIM Poverty Rate | | GSS Poverty Rate | |
|---|---|---|---|---|
| | 1989 | 2009 | 1989 | 2009 |
| Alberta | 16.60 | 10.80 | 25.60 | 9.07 |
| British Columbia | 14.10 | 16.00 | 22.04 | 14.03 |
| Manitoba | 17.70 | 14.00 | 24.25 | 11.09 |
| New Brunswick | 15.00 | 10.40 | 21.96 | 12.92 |
| Newfoundland and Labrador | 15.60 | 11.30 | 24.28 | 11.47 |
| Nova Scotia | 15.10 | 13.50 | 14.00 | 7.71 |
| Ontario | 10.80 | 14.40 | 18.62 | 12.19 |
| Prince Edward Island | 11.70 | 8.30 | 17.62 | 8.50 |
| Quebec | 16.40 | 14.80 | 22.59 | 11.70 |
| Saskatchewan | 17.40 | 11.70 | 21.66 | 9.85 |

Source: Computation using data from CANSIM and GSS data

Figure-2 shows the trends in poverty rates across provinces based on CANSIM and GSS data. Poverty measures using GSS and CANSIM show similar trends for all provinces. Starting from 1989, poverty rates follow an increasing trend and then decline in recent years. Overall, both the GSS and CANSIM poverty rate indicate that between 1989 and 2009 there has been significant progress in reducing the rate of poverty.

Figure 2: Rate of poverty from 1989 to 1996 and 1998 to 2009 based on the analysis using CANSIM and GSS data



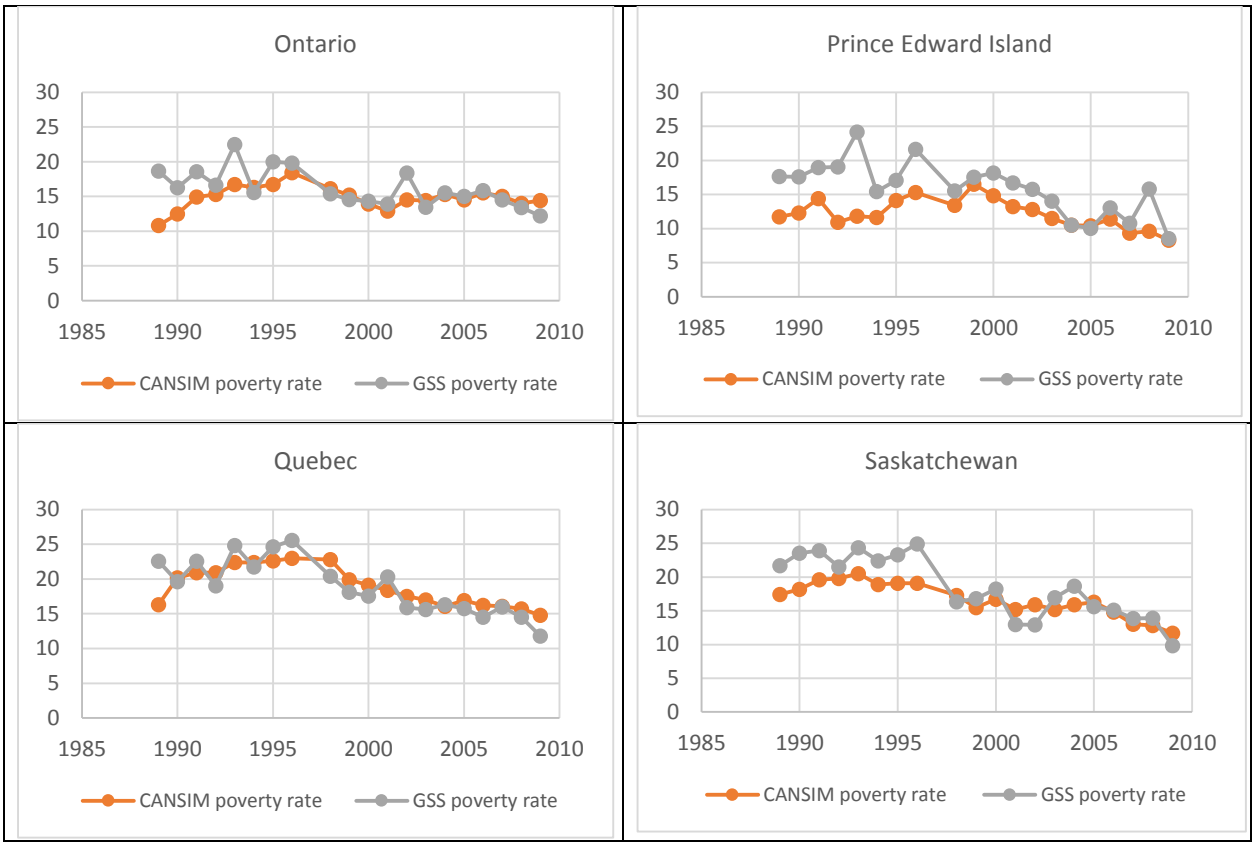



Table-3 shows poverty gap ratio in 1989 and 2009 based on CANSIM and GSS data. During 1989 and 2009, the poverty gap ratio has remained constant for all provinces.

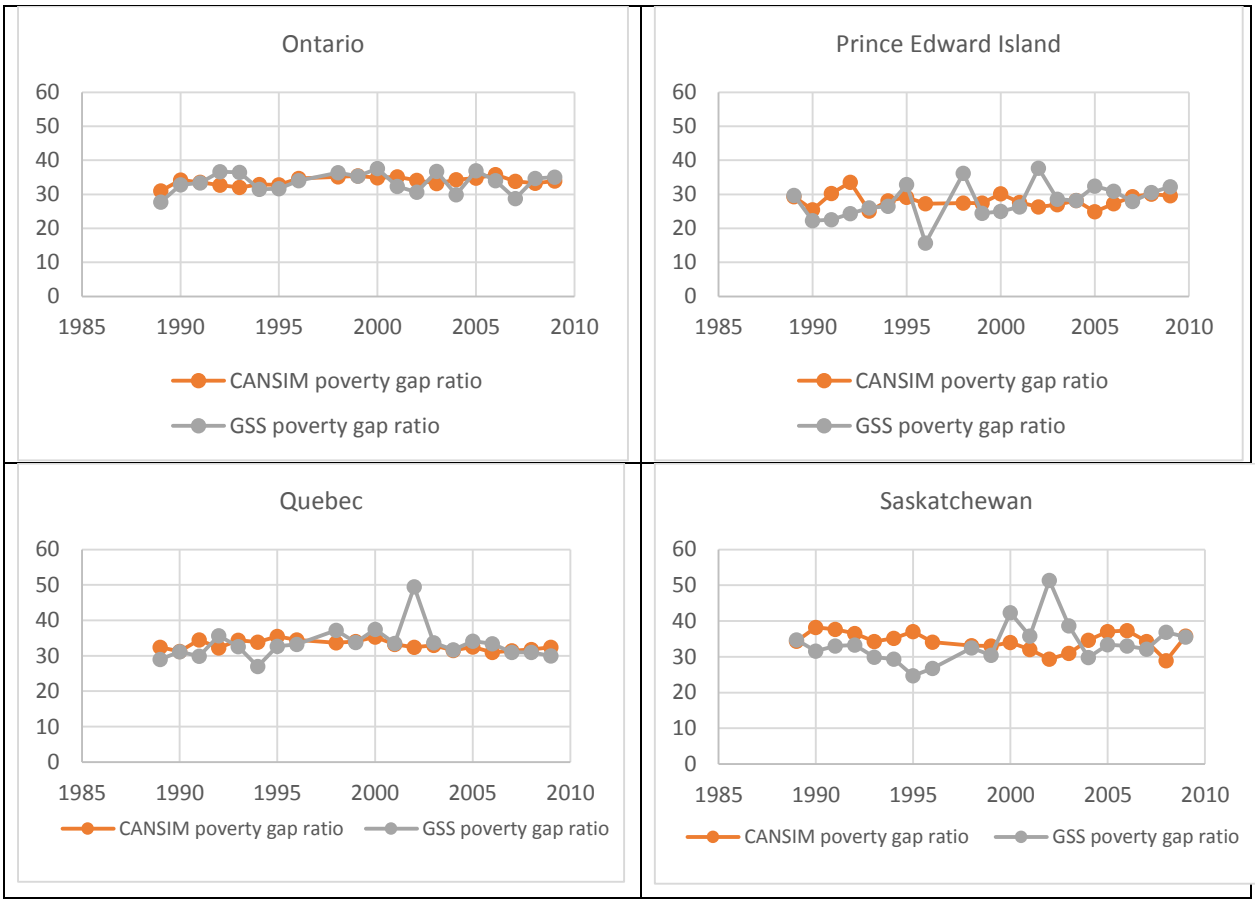
Table 3: Poverty Gap Ratio in 1989 and 2009

| | CANSIM Poverty Gap Ratio | | GSS Poverty Gap Ratio | |
|---|---|---|---|---|
| Provinces | 1989 | 2009 | 1989 | 2009 |
| Alberta | 36.30 | 37.40 | 31.43 | 33.67 |
| British Columbia | 32.20 | 39.30 | 31.94 | 36.75 |
| Manitoba | 3140 | 29.70 | 33.24 | 37.25 |
| New Brunswick | 30.90 | 36.80 | 34.33 | 37.25 |
| Newfoundland and Labrador | 31.10 | 31.30 | 34.80 | 37.59 |
| Nova Scotia | 28.90 | 31.60 | 30.67 | 32.22 |
| Ontario | 31.00 | 33.90 | 27.75 | 35.03 |
| Prince Edward Island | 29.30 | 29.60 | 29.68 | 32.19 |
| Quebec | 32.40 | 32.40 | 28.95 | 29.94 |
| Saskatchewan | 34.40 | 35.80 | 34.92 | 35.55 |

Source: Computation using data from CANSIM and GSS data

Figure-3 shows the trends in poverty gap ratio across provinces based on CANSIM and GSS data. The measured poverty gap ratios of GSS and CANSIM show similar trends, indicating a little improvement in reducing the poverty gap.

Figure 3: Average poverty gap ratio from 1989 to 1996 and 1998 to 2009 CANSIM and GSS data




## III. Welfare Generosity and Well-being

In this section, I examine the link between welfare generosity and well-being of poor individuals. The well-being of poor individuals includes the following indicators, such as poverty as an indicator of financial security, labor supply, time spent with kids, health status, happiness, and education. In the analysis below, in each section, I analyze regression results and findings of welfare generosity and different well-being indicators.

### 3.1 Poverty

The mechanism of reducing poverty, specifically how to reduce the number of people living below the poverty line, is an important issue for economists. The aim of the welfare benefits is to ensure low income individuals to achieve a basic standard of living. In that perspective, higher welfare generosity should be associated with more poverty reduction. However, the generous welfare spending might also have negative effect on poor individual's labor supply (Borjas 2015, Niehues, 2010). This is because, any amount of welfare transfer that allows poor individuals' to maintain a decent standard of living also mean they need to earn less money to maintain that standard. If the reduction in earnings due to reduction in labor supply is relatively large then welfare generosity might be associated with higher poverty.

Another issue is, the relation between welfare generosity and poverty may suffer from endogeneity bias. The problem arises when high poverty rate of a province causes more spending on welfare. The situation indicates the possibility of reverse causality that is the generosity of provincial government transfer might be determined by the poverty level. To overcome the endogeneity issue, in this study, I use two-period lag values of welfare generosity so that welfare generosity of a province are independent of the current poverty rate. Therefore, the analysis will show in what way welfare generosity two years ago affects the current poverty rate.

To determine the impact of the welfare generosity on poverty, I estimate the following regression-

$$Y_{it} = \beta G_{jt-2} + \gamma X_{it} + \eta t + v_i + \varepsilon_{it}$$

*i=1,……,N province units (10 provinces),*

*t=1,……,T time units (20 years)*

Where, $Y_{it}$ is the dependent variable, a measure of well-being i.e. poverty rate or poverty gap ratio. In the regression equation, $G_{jt-2}$ measures the share of welfare generosity in total provincial expenditure two years ago. $X_{it}$ is the vector of different macro-economic and socio-demographic factors are used as control variables. $t$ is the linear trend, the coefficient $\eta$ captures the overall direction of poverty moves across time, $v_i$ captures the provincial fixed effects that may affect poverty and $\varepsilon_{it}$ is the error term. The coefficient $\beta$ shows in what way welfare generosity two years ago affects the dependent variable. In the regression, the explanatory variables include three types of welfare transfer as the indicators of welfare generosity along with the control variables.

soc_serv_ratio $_{t-2}$ : The variable represents the total social services spending which is a measure of total welfare generosity. In the regression, I consider the ratio of total welfare generosity relative to total provincial expenditure two years ago.

soc_assist_ratio $_{t-2}$ : This variable is the social assistance spending, which measures the ratio of social assistance spending relative to total provincial expenditure two years ago.

soc_other_ratio $_{t-2}$ : This variable represents the other social services spending, which measures the ratio of other social services spending relative to total provincial expenditure two years ago.

Besides welfare spending, I use macro-economic and socio-economic factors that may affect different indicators of well-being as the control variables.[11]

unempd_rate: This variable represents the unemployment rate, defined as the total number of unemployed persons as percentage of the total provincial population. The unemployment status

[11] Provincial data on unemployment rates is collected from CANSIM II, Table 282-0002. Provincial data on dependency ratio and population is collected from CANSIM II Table 510-0001

The variable percent of people with post-secondary education and percent of lone parent are constructed using GSS data.

indicates the lack of earning opportunity of an individual. Hence, unemployment rate may be positively correlated with poverty rate.

depen_ratio: This variable is the dependency ratio, which measures the proportion of persons in a province aged below 15 and above 64 as percent of total provincial population. The high dependency ratio implies greater dependence on employed work force thus may have a positive relation with poverty. Also, high dependency ratio may demand more welfare spending.

ln_population: The variable indicates the population across provinces. The relation between total number of population and poverty rate depends on the demographic composition of the population. Provinces with a higher proportion of working population might have a lower level of poverty. Also higher population in a province may demand more welfare spending.

high_school_plus_prcnt: This variable indicates the number of individuals with post-secondary education as percent of total provincial population. Higher post-secondary education is positively related to human capital development and higher earnings. Thus higher post-secondary education may have a negative association with poverty.

lone_parent_prcnt: This variable is the lone parent ratio, measured as proportion of lone parents relative to total provincial population. The lone parent family is likely to earn less compared to couple family; therefore it may have a positive relation with poverty (Finnie and Sweetman 2003, Picot and Myles 1995).

Next, I examine the link between welfare generosity on poverty using CANSIM and GSS data. For all outcome variables, I estimate regressions using Ordinary Least Squares (OLS) model. Table-4 reports the relation between welfare generosity and poverty rate from two specifications of the model (i.e. *without control* and *with control variables*). Three government transfer regressions are estimated using GSS data and CANSIM data. From Table-4, it appears that share of total welfare generosity relative to total provincial expenditure shows no significant association with the poverty rate. However, the two subcomponents of total welfare generosity show a significant association with the poverty rate. The regression results show that an increase in the share of social assistance spending relative to total provincial expenditure two years ago, on average, increase the current poverty rate by 0.39 percent. On the other hand, an increase in the share of other social services spending two years ago, on average, reduce poverty by 0.26 percent. The results show that none of the control variables dependency ratio, unemployment ratio, population, lone parent percent and high school plus education appear significant. At the aggregate level, the regression estimates result are robust using GSS data.

The results in this section indicate that generosity of social assistance spending may exacerbate poverty rate. In contrast, other social services show a significant impact on reducing the poverty rate. Analysis indicates that providing social services to the families with physically challenged, elderly, and the child may have the significant impact on reducing the poverty rate.

Table 4: Pooled OLS Results: Welfare Generosity on Poverty rate

| Dependent Variable: Poverty rate | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total Welfare Generosity | | | | Social assistance spending | | | | Other Social Services spending | | | |
| | CANSIM | | GSS | | CANSIM | | GSS | | CANSIM | | GSS | |
| | Without control | With control | Without control | With control | Without control | With control | Without control | With control | Without control | With control | Without control | With control |
| soc_serv_ratio$_{t-2}$ | 0.15 | 0.136 | 0.153 | 0.178 | | | | | | | | |
| | (0.102) | (0.105) | (0.153) | (0.162) | | | | | | | | |
| soc_assist_ratio$_{t-2}$ | | | | | 0.295** | 0.394*** | 0.198 | 0.215 | | | | |
| | | | | | (0.108) | (0.107) | (0.16) | (0.17) | | | | |
| soc_other_ratio$_{t-2}$ | | | | | | | | | -0.111 | -0.262* | 0.014 | 0.029 |
| | | | | | | | | | (0.114) | (0.127) | (0.158) | (0.176) |
| unempd_rate | | 0.095 | | -0.358 | | 0.247 | | -0.252 | | 0.251 | | -0.333 |
| | | (0.155) | | (0.236) | | (0.151) | | (0.242) | | (0.147) | | (0.241) |
| depen_ratio | | 0.3 | | -0.247 | | 0.332 | | -0.197 | | 0.415 | | -0.2 |
| | | (0.289) | | (0.385) | | (0.26) | | (0.378) | | (0.258) | | (0.384) |
| ln_population | | 4.39 | | 7.649 | | 5.864 | | 8.037 | | 4.469 | | 6.861 |
| | | (4.288) | | (5.044) | | (4.183) | | (5.15) | | (3.993) | | (5.015) |
| High_schl_plus_prcnt | | 0.013 | | 0.045 | | 0.011 | | 0.047 | | 0.02 | | 0.049 |
| | | (0.024) | | (0.042) | | (0.022) | | (0.041) | | (0.023) | | (0.041) |
| lone_parent_prcnt | | -0.063 | | 0.329 | | -0.031 | | 0.36 | | -0.011 | | 0.349 |
| | | (0.175) | | (0.259) | | (0.162) | | (0.252) | | (0.164) | | (0.257) |
| British Columbia | 3.235*** | 1.935 | 2.359** | 0.629 | 3.154*** | 1.095 | 2.371** | 0.365 | 3.363*** | 1.658 | 2.558** | 1.024 |
| | (0.671) | (1.431) | (0.822) | (1.75) | (0.654) | (1.462) | (0.835) | (1.842) | (0.663) | (1.347) | (0.816) | (1.747) |
| Manitoba | 3.295*** | 6.655 | 4.577*** | 12.997* | 3.027*** | 7.531 | 4.440*** | 13.055* | 3.427*** | 6.487 | 4.700*** | 12.230* |
| | (0.465) | (4.771) | (0.837) | (5.51) | (0.466) | (4.571) | (0.85) | (5.562) | (0.438) | (4.39) | (0.84) | (5.471) |
| New Brunswick | 0.552 | 6.323 | 1.505 | 14.251 | 0.251 | 7.446 | 1.14 | 13.867 | -0.144 | 4.77 | 1.06 | 12.56 |
| | (0.57) | (6.381) | (1.015) | (7.595) | (0.472) | (6.076) | (0.916) | (7.598) | (0.512) | (5.879) | (0.92) | (7.437) |
| Newfoundland and Labrador | 2.771*** | 9.649 | 5.215*** | 22.475* | 2.481*** | 10.241 | 4.945*** | 21.713* | 2.432*** | 7.708 | 5.010*** | 20.663* |
| | (0.653) | (7.918) | (0.993) | (9.423) | (0.606) | (7.484) | (0.915) | (9.354) | (0.663) | (7.326) | (0.977) | (9.254) |
| Nova Scotia | 1.341* | 6.085 | -0.44 | 10.045 | 1.135* | 7.033 | -0.735 | 9.641 | 0.696 | 4.549 | -0.872 | 8.496 |
| | (0.563) | (5.494) | (0.865) | (6.337) | (0.472) | (5.186) | (0.732) | (6.296) | (0.549) | (5.06) | (0.802) | (6.194) |
| Ontario | -0.315 | -6.455 | -0.765 | -10.645 | -0.544 | -9.267 | -0.738 | -11.325 | 0.178 | -6.502 | -0.236 | -9.04 |
| | (0.742) | (5.774) | (0.871) | (6.945) | (0.702) | (5.669) | (0.818) | (7.154) | (0.582) | (5.304) | (0.71) | (6.84) |
| Prince Edward Island | -2.196** | 9.993 | 0.003 | 27.246 | -2.565*** | 13.119 | -0.46 | 26.986 | -3.089*** | 7.587 | -0.591 | 23.838 |
| | (0.835) | (14.163) | (1.044) | (16.502) | (0.564) | (13.517) | (0.8) | (16.577) | (0.758) | (13.003) | (0.913) | (16.2) |
| Quebec | 3.572*** | -0.3 | 1.845* | -3.844 | 3.488*** | -2.489 | 1.945** | -4.416 | 4.084*** | -0.294 | 2.291** | -2.679 |
| | (0.574) | (3.964) | (0.784) | (4.804) | (0.496) | (3.916) | (0.736) | (4.974) | (0.507) | (3.597) | (0.714) | (4.696) |
| Saskatchewan | 1.840*** | 5.087 | 1.886* | 12.272 | 1.990*** | 6.908 | 1.866* | 12.42 | 1.457** | 4.238 | 1.538 | 10.786 |
| | (0.527) | (5.79) | (0.908) | (6.77) | (0.48) | (5.506) | (0.874) | (6.865) | (0.445) | (5.233) | (0.794) | (6.644) |
| t | -0.350*** | -0.294** | -0.466*** | -0.690*** | -0.326*** | -0.215** | -0.453*** | -0.640*** | -0.353*** | -0.224** | -0.476*** | -0.685*** |
| | (0.025) | (0.09) | (0.036) | (0.129) | (0.025) | (0.081) | (0.039) | (0.13) | (0.026) | (0.081) | (0.037) | (0.132) |
| r2 | 0.767 | 0.777 | 0.626 | 0.642 | 0.776 | 0.794 | 0.627 | 0.642 | 0.765 | 0.782 | 0.624 | 0.639 |
| N | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 |

Note: Robust standard errors reported under coefficient estimates. *p=.1; **p=.05; ***p=01. The Province Alberta is considered as a base province.

Table-5 shows the relation between welfare generosity and poverty gap ratio. The result shows both aggregate and disaggregate measures of welfare generosity show no significant association with poverty gap ratio. It appears that although certain types of government transfer may have a significant association with poverty rate but it is not an important determinant of poverty gap ratio.

Table 5: Pooled OLS Results: Welfare Generosity on Poverty gap ratio

| Dependent Variable: Poverty gap ratio | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total Welfare Generosity | | | | Social assistance spending | | | | Other Social Services spending | | | |
| | CANSIM | | GSS | | CANSIM | | GSS | | CANSIM | | GSS | |
| | Without control | With control | Without control | With control | Without control | With control | Without control | With control | Without control | With control | Without control | With control |
| soc_serv_ratio$_{t-2}$ | -0.023 | -0.043 | 0.158 | 0.193 | | | | | | | | |
| | (0.093) | (0.09) | (0.234) | (0.245) | | | | | | | | |
| soc_assist_ratio$_{t-2}$ | | | | | -0.049 | 0.011 | 0.396 | 0.338 | | | | |
| | | | | | (0.104) | (0.103) | (0.225) | (0.24) | | | | |
| soc_other_ratio$_{t-2}$ | | | | | | | | | 0.028 | -0.09 | -0.236 | -0.098 |
| | | | | | | | | | (0.115) | (0.115) | (0.297) | (0.331) |
| unempd_rate | | 0.028 | | 0.077 | | 0.022 | | 0.224 | | 0.062 | | 0.166 |
| | | (0.153) | | (0.27) | | (0.155) | | (0.275) | | (0.154) | | (0.301) |
| depen_ratio | | 0.509 | | -0.741 | | 0.495 | | -0.69 | | 0.52 | | -0.654 |
| | | (0.299) | | (0.516) | | (0.303) | | (0.51) | | (0.296) | | (0.505) |
| ln_population | | 5.777 | | -12.035 | | 6.009 | | -11.075 | | 6.169 | | -12.579* |
| | | (3.478) | | (6.256) | | (3.54) | | (6.237) | | (3.442) | | (6.278) |
| High_schl_plus_prcnt | | 0.039 | | -0.103 | | 0.038 | | -0.102 | | 0.039 | | -0.096 |
| | | (0.024) | | (0.077) | | (0.024) | | (0.076) | | (0.024) | | (0.075) |
| lone_parent_prcnt | | -0.08 | | 0.014 | | -0.086 | | 0.051 | | -0.074 | | 0.052 |
| | | (0.169) | | (0.359) | | (0.168) | | (0.35) | | (0.17) | | (0.357) |
| British Columbia | 1.056 | -0.545 | 1.504 | 4.784* | 1.073 | -0.658 | 1.341 | 4.205* | 1.043 | -0.811 | 1.577 | 4.947* |
| | (0.585) | (1.234) | (1.11) | (1.853) | (0.572) | (1.248) | (1.072) | (1.85) | (0.571) | (1.185) | (1.089) | (1.96) |
| Manitoba | -2.565*** | 1.626 | 1.28 | -8.614 | -2.518*** | 1.843 | 0.885 | -8.17 | -2.586*** | 1.936 | 1.43 | -9.254 |
| | (0.543) | (3.936) | (1.175) | (7.158) | (0.546) | (4) | (1.216) | (7.087) | (0.544) | (3.921) | (1.167) | (7.148) |
| New Brunswick | -3.186*** | 5.029 | 0.848 | -17.1 | -3.144*** | 5.517 | 0.579 | -16.868 | -3.058*** | 5.366 | -0.131 | -19.054* |
| | (0.66) | (4.979) | (1.472) | (9.685) | (0.595) | (5.03) | (1.371) | (9.556) | (0.649) | (4.929) | (1.451) | (9.482) |
| Newfoundland and Labrador | -3.777*** | 6.584 | 0.417 | -22.584 | -3.732*** | 7.097 | 0.09 | -22.872 | -3.713*** | 6.864 | -0.07 | -24.803* |
| | (0.601) | (6.522) | (1.296) | (12.128) | (0.587) | (6.594) | (1.265) | (12.015) | (0.593) | (6.494) | (1.271) | (11.888) |
| Nova Scotia | -3.223*** | 3.441 | 0.206 | -14.278 | -3.196*** | 3.889 | 0.058 | -14.141 | -3.105*** | 3.717 | -0.684 | -16.120* |
| | (0.63) | (4.364) | (1.506) | (8.337) | (0.606) | (4.417) | (1.29) | (8.181) | (0.612) | (4.333) | (1.368) | (8.075) |
| Ontario | -1.745** | -9.703* | 0.665 | 17.007* | -1.698** | -10.174* | 0.207 | 15.218 | -1.817*** | -10.468* | 1.16 | 18.165* |
| | (0.598) | (4.798) | (1.366) | (8.221) | (0.555) | (4.882) | (1.236) | (8.22) | (0.511) | (4.678) | (1.072) | (8.236) |
| Prince Edward Island | -7.681*** | 8.869 | -3.909* | -40.333 | -7.630*** | 9.856 | -4.224** | -39.091 | -7.518*** | 9.759 | -5.144** | -43.939* |
| | (0.778) | (11.578) | (1.827) | (21.083) | (0.645) | (11.73) | (1.404) | (20.776) | (0.741) | (11.446) | (1.746) | (20.679) |
| Quebec | -2.594*** | -7.099* | 0.481 | 9.616 | -2.573*** | -7.446* | 0.239 | 8.192 | -2.678*** | -7.643* | 1.093 | 10.475 |
| | (0.586) | (3.398) | (1.647) | (5.6) | (0.535) | (3.461) | (1.4) | (5.57) | (0.532) | (3.279) | (1.409) | (5.568) |
| Saskatchewan | -1.702* | 2.108 | 1.397 | -8.574 | -1.733* | 2.546 | 1.7 | -7.631 | -1.641* | 2.555 | 0.955 | -10.055 |
| | (0.792) | (4.956) | (1.821) | (8.523) | (0.773) | (5.061) | (1.696) | (8.375) | (0.746) | (4.888) | (1.65) | (8.286) |
| t | -0.038 | 0.017 | 0.136** | 0.137 | -0.042 | 0.017 | 0.171** | 0.21 | -0.038 | 0.035 | 0.141** | 0.173 |
| | (0.027) | (0.098) | (0.047) | (0.156) | (0.031) | (0.099) | (0.054) | (0.163) | (0.027) | (0.098) | (0.05) | (0.17) |
| r2 | 0.627 | 0.657 | 0.174 | 0.218 | 0.627 | 0.657 | 0.183 | 0.223 | 0.627 | 0.658 | 0.176 | 0.216 |
| N | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 |

Note: Robust standard errors reported under coefficient estimates. *p=.1; **p=.05; ***p=01. The Province Alberta is considered as a base province.

### 3.2 Labor Supply

The standard neoclassical model of labor-leisure choice indicate when leisure is a normal good, high welfare generosity may result an increase in leisure consumption and reduction in work hours of poor individuals (Borjas 2015, Niehues 2010). The social assistance spending covers income assistance and employment insurance benefits. Therefore, it may ensure safety net to the poor workers, so they do not have to accept work conditions that are detrimental to their well-being. Likewise, the other social spending is targeted to improve the living condition of household with elderly, physically and mentally challenged. Therefore it may ensure more bargaining power of the workers of these families. Since most of the job of poor workers do not cover employment insurance and work benefits so welfare generosity provide an incentive to the worker to reduce their labor supply. Considering these factors I examine the relation between welfare generosity and work hours of poor people.

Table-6 shows the average weekly work hours and employment rate of poor in 1989 and 2009. The average weekly work hours of poor individuals remains same for all provinces except Newfoundland and Labrador. For this province, the average weekly work hours of poor decline to approximately 28.67 hours in 2009 from 42.44 hours in 1989. Similarly, the employment rate for Newfoundland and Labrador shows the largest decline among the provinces, which is about 16.98 percent in 2009 (was 36.56 percent in 1989).

Table 6: Labor Supply of poor individuals in 1989 and 2009

| Province | Average weekly work hours | | Employment Rate | |
|---|---|---|---|---|
| | 1989 | 2009 | 1989 | 2009 |
| Alberta | 36.23 | 32.03 | 45.01 | 44.15 |
| British Columbia | 36.67 | 35.43 | 47.64 | 48.33 |
| Manitoba | 40.11 | 36.98 | 58.31 | 51.53 |
| New Brunswick | 39.44 | 39.30 | 45.78 | 33.36 |
| Newfoundland and Labrador | 42.44 | 28.67 | 36.56 | 16.98 |
| Nova Scotia | 32.97 | 34.89 | 31.81 | 26.28 |
| Ontario | 37.35 | 32.58 | 50.22 | 39.45 |
| Prince Edward Island | 44.79 | 36.58 | 31.88 | 53.08 |
| Quebec | 37.27 | 33.23 | 28.38 | 38.86 |
| Saskatchewan | 38.38 | 37.73 | 46.81 | 45.11 |

Source: Computation using data from GSS

To analyze the link between welfare generosity and labor supply of poor individuals, I use two measures of labor supply i.e. work hours and employment rate. The GSS reports weekly total hours of work for all kinds of paid jobs.[12] Provincial average work hours of poor individuals is taken as the average weekly work hours of poor individuals within each province. Then, I focus on whether welfare generosity has any significant association with employment rate. The

[12] In GSS, the data for work hours was not available in 2003.

employment rate of poor is constructed for those who were employed in the last 12 months. As the decision of labor supply of poor is a response based their current economic situation. So, the relation between welfare generosity and labor supply would be contemporaneous. Therefore in the analysis below I examine in what way welfare generosity at present affects the current labor supply of poor.

The control variables in the regression include dependency ratio, total population, percentage of population with post-secondary education, and percentage of lone parents. As the analysis is based on the employed poor individuals, therefore the unemployment rate is not included as a control variable. Controlling for dependency ratio is important because higher percentage of dependents may affect the demand for welfare spending. With regards to population, the relation between total population and labor supply of poor individuals depend on the demographic composition. Also higher population in a province may cause greater demand for welfare spending. The higher rate of post-secondary education might have a positive association with labor supply. This is because individuals with post-secondary graduation are more likely to have higher human capital and earnings opportunities. The lone parent might have a negative association with labor supply if the income of the lone parent family largely depends on welfare assistance.

Table-7 shows the regression estimates of welfare generosity and average weekly work hours of poor individuals across provinces. Regression estimates show that total welfare spending and its subcategories show no significant association with average weekly work hours of poor.

Table 7: Pooled OLS Results: Welfare Generosity on average work hour

| Dependent Variable: Average Work Hour | | | | | | |
|---|---|---|---|---|---|---|
| | Total Welfare Generosity | | Social assistance spending | | Other social service | |
| | Without Control | With Control | Without Control | With Control | Without Control | With Control |
| soc_serv_ratio | -0.158 | -0.129 | | | | |
| | (0.31) | (0.317) | | | | |
| soc_assist_ratio | | | 0.108 | 0.248 | | |
| | | | (0.252) | (0.268) | | |
| soc_other_ratio | | | | | -0.378 | -0.499 |
| | | | | | (0.45) | (0.496) |
| depen_ratio | | 0.021 | | -0.039 | | 0.139 |
| | | (0.419) | | (0.449) | | (0.447) |
| ln_population | | 4.123 | | 5.15 | | 5.692 |
| | | (5.557) | | (5.865) | | (6.085) |
| High_schl_plus_prcnt | | -0.09 | | -0.096 | | -0.089 |
| | | (0.066) | | (0.063) | | (0.065) |
| lone_parent_prcnt | | 0.675 | | 0.718 | | 0.745 |
| | | (0.389) | | (0.396) | | (0.398) |
| British Columbia | -1.911 | -2.826 | -2.300* | -3.578 | -2.298 | -3.605 |
| | (1.245) | (1.868) | (1.161) | (2.032) | (1.208) | (2.099) |
| Manitoba | 0.854 | 3.85 | 0.546 | 4.523 | 0.776 | 4.914 |
| | (1.182) | (6.168) | (1.14) | (6.425) | (1.186) | (6.592) |
| New Brunswick | 3.43 | 7.864 | 3.949 | 9.735 | 3.124 | 9.318 |
| | (3.04) | (9.378) | (3.07) | (9.959) | (3.092) | (9.878) |
| Newfoundland and Labrador | 2.417* | 8.112 | 2.600* | 9.883 | 2.204 | 10.371 |
| | (1.148) | (9.131) | (1.096) | (9.696) | (1.223) | (9.943) |
| Nova Scotia | -2.361* | 1.485 | -1.834* | 3.208 | -2.610* | 2.633 |
| | (1.118) | (6.492) | (0.782) | (6.929) | (1.128) | (6.791) |
| Ontario | -0.727 | -6.624 | -1.586 | -9.121 | -1.342 | -9.318 |
| | (1.331) | (7.659) | (0.94) | (8.279) | (0.717) | (8.355) |
| Prince Edward Island | 4.541* | 16.223 | 5.254* | 20.213 | 4.201* | 19.912 |
| | (1.936) | (17.919) | (2.524) | (19.491) | (1.716) | (19.555) |
| Quebec | -1.279 | -6.016 | -2.014* | -7.918 | -1.383 | -7.212 |
| | (1.448) | (5.606) | (0.954) | (5.855) | (1.109) | (5.62) |
| Saskatchewan | -0.402 | 3.689 | 0.146 | 5.838 | -0.185 | 4.89 |
| | (1.532) | (7.679) | (1.334) | (8.278) | (1.237) | (8.059) |
| t | -0.111** | -0.052 | -0.088 | -0.025 | -0.072 | 0.009 |
| | (0.041) | (0.122) | (0.046) | (0.127) | (0.051) | (0.12) |
| r2 | 0.155 | 0.174 | 0.154 | 0.175 | 0.159 | 0.182 |
| N | 190 | 190 | 190 | 190 | 190 | 190 |

Note: Robust standard errors reported under coefficient estimates. *p=.1; **p=.05; ***p=01. The Province Alberta is considered as a base province.

Table-8 shows the regression estimates of welfare generosity and employment rate of poor people across provinces. The results suggest that an increase in the share of total welfare generosity relative to total provincial expenditure, on average, reduces employment rate of poor by 0.96 percent. However, social assistance spending and other social services show no significant association with employment rate. The results indicate that improved financial security due to welfare generosity may allow poor individuals to be less dependent on low-paying jobs, therefore shows a reduction in employment rate of poor.

Table 8: Pooled OLS Results: Welfare Generosity on Employment Rate

| Dependent Variable: Employment rate | | | | | | |
|---|---|---|---|---|---|---|
| | Total Welfare Generosity | | Social assistance spending | | Other social service | |
| | Without Control | With Control | Without Control | With Control | Without Control | With Control |
| soc_serv_ratio | -0.898* | -0.962* | | | | |
| | (0.4) | (0.405) | | | | |
| soc_assist_ratio | | | -0.752 | -0.779 | | |
| | | | (0.456) | (0.483) | | |
| soc_other_ratio | | | | | -0.322 | -0.368 |
| | | | | | (0.53) | (0.543) |
| depen_ratio | | 0.637 | | 0.256 | | 0.354 |
| | | (0.892) | | (0.894) | | (0.954) |
| ln_population | | -10.403 | | -10.314 | | -7.047 |
| | | (10.088) | | (10.264) | | (10.258) |
| High_schl_plus_prcnt | | 0.095 | | 0.09 | | 0.083 |
| | | (0.116) | | (0.118) | | (0.122) |
| lone_parent_prcnt | | 0.42 | | 0.333 | | 0.495 |
| | | (0.558) | | (0.615) | | (0.563) |
| British Columbia | -3.963 | -1.384 | -4.683 | -2.239 | -5.534* | -3.979 |
| | (2.426) | (3.666) | (2.455) | (3.591) | (2.498) | (3.633) |
| Manitoba | 1.338 | -10.232 | 1.431 | -8.799 | 0.481 | -7.097 |
| | (2.611) | (11.26) | (2.618) | (11.465) | (2.555) | (11.612) |
| New Brunswick | -13.271*** | -27.406 | -11.088*** | -24.796 | -11.279*** | -20.744 |
| | (2.781) | (14.641) | (2.597) | (14.792) | (2.631) | (14.622) |
| Newfoundland and Labrador | -20.731*** | -37.863* | -19.328*** | -36.272* | -19.845*** | -31.426 |
| | (2.623) | (17.402) | (2.539) | (17.705) | (2.725) | (17.843) |
| Nova Scotia | -16.706*** | -29.504* | -14.773*** | -27.055* | -14.792*** | -23.571 |
| | (2.838) | (12.423) | (2.611) | (12.521) | (2.704) | (12.341) |
| Ontario | -3.82 | 10.099 | -5.156* | 8.613 | -7.064** | 2.128 |
| | (2.627) | (14.288) | (2.534) | (14.355) | (2.243) | (14.13) |
| Prince Edward Island | -7.647* | -41.629 | -4.522 | -36.839 | -4.815 | -27.578 |
| | (3.464) | (32.546) | (3.596) | (32.949) | (3.372) | (32.805) |
| Quebec | -10.177*** | 0.306 | -11.981*** | -2.085 | -12.859*** | -5.954 |
| | (2.512) | (10.203) | (2.169) | (9.997) | (2.251) | (9.852) |
| Saskatchewan | -4.098 | -18.018 | -3.28 | -14.979 | -2.118 | -10.745 |
| | (2.88) | (13.815) | (2.804) | (13.923) | (2.549) | (13.785) |
| t | 0.059 | 0.178 | 0.021 | 0.07 | 0.139 | 0.204 |
| | (0.085) | (0.228) | (0.111) | (0.232) | (0.106) | (0.25) |
| r2 | 0.408 | 0.414 | 0.401 | 0.405 | 0.395 | 0.399 |
| N | 200 | 200 | 200 | 200 | 200 | 200 |

Note: Robust standard errors reported under coefficient estimates. *p=.1; **p=.05; ***p=01. The Province Alberta is considered as a base province.

### 3.3 Time spent with kids

Empirical studies analyzed the relation between welfare generosity and time spent with kids based on income experiments programs. These studies suggest that poor individuals with dependent member in the household are more likely to reduce work hours, specifically new mothers to reduce their labor supply and spend more time with their kids (Forget, E. L. 2011).

Table-9 shows average weekly hours spent with kids in 1992 and 2008. Although for all provinces the data shows a significant increase in hours spent with kids. The data for other years such as 1995, 1996 and 1998 shows a reduction in time spent with kids. [13]

Table 9: Average weekly hours spent with kids in 1992 and 2008

| Provinces | Poor | |
|---|---|---|
| | 1992 | 2008 |
| Alberta | 16.53 | 39.18 |
| British Columbia | 20.58 | 47.88 |
| Manitoba | 16.60 | 44.36 |
| New Brunswick | 19.48 | 49.50 |
| Newfoundland and Labrador | 20.78 | 59.49 |
| Nova Scotia | 19.63 | 39.72 |
| Ontario | 16.75 | 39.89 |
| Prince Edward Island | 27.12 | 38.52 |
| Quebec | 12.77 | 34.51 |
| Saskatchewan | 17.86 | 41.59 |

Source: Computation using data from GSS

The GSS's data on time spent with kids are available in 1992, 1995, 1996, 1998 and 2008. Provincial average hours spent with kids by poor parents is taken as the average weekly hours spent with kids across poor individuals within each province. As for most parents, the decision of how much time can be spent with their kids is a reaction to their current economic situation. Therefore, the relation between the proportion of government spending spent on social assistance and time spent with kids would be contemporaneous. Therefore the analysis will show in what way welfare generosity today affects poor individuals time spent with their kids.

In the regression, I include the following control variables: dependency ratio, population, percentage of population with post-secondary education, and percentage of lone parents. The variables dependency ratio and population are included to control for the demand for welfare spending. With regards to education, individuals with higher level of education may be more likely to be employed. Therefore, post-secondary graduates may have less time to spend with kids. The relation between the proportion of lone parents and amount of time with kids depends on the economic condition of the households. If the income of the lone parent family largely depends on

[13] In 1995 and 1996, the data on time spent with kids are reported different hours groups. The midpoint of each hour groups are considered as the total time spent with kids.

welfare assistance, then the percentage of lone parent may be positively associated with amount of time spent with kids.

Table-10 shows the link between welfare generosity and time spent with kids. The total welfare generosity shows no significant association with poor individuals' time spend with kids. The result suggests that an increase in the share of social assistance spending, on average, reduce the average time spend with kids by 3.02 hours. In contrast, increase in the share of other social services shows a positive significant association with time spent with kids, on average time spend with kids increase by 1.55 hours. The results in this section indicate that generous social assistance spending may reduce poor parent's time spent with their kids if income assistance could not improve the financial security of the family. However, the higher share of spending on other social services may encourage poor recipients to spend more time with their kids.

Table 10: Pooled OLS Results: Welfare Generosity on Time spent with kids

| | Dependent Variable: Average time spent with kids | | | | | |
|---|---|---|---|---|---|---|
| | Total Welfare Generosity | | Social assistance spending | | Other social service | |
| | Without Control | With Control | Without Control | With Control | Without Control | With Control |
| soc_serv_ratio | -0.736 | -0.541 | | | | |
| | (0.722) | (0.707) | | | | |
| soc_assist_ratio | | | -2.632*** | -3.027*** | | |
| | | | (0.734) | (0.79) | | |
| soc_other_ratio | | | | | 1.036 | 1.557* |
| | | | | | (0.617) | (0.699) |
| depen_ratio | | -0.812 | | -2.286 | | -1.955 |
| | | (1.969) | | (1.349) | | (1.761) |
| ln_populat~n | | -28.816 | | -31.805 | | -34.249 |
| | | (25.387) | | (17.713) | | (22.429) |
| High_schl_plus_prcnt | | 0.107 | | 0.147 | | 0.114 |
| | | (0.093) | | (0.098) | | (0.095) |
| lone_parent_prcnt | | -0.198 | | 0.568 | | -0.679 |
| | | (1.239) | | (1.067) | | (1.088) |
| British Columbia | 5.659 | 12.481 | 6.909 | 14.753* | 3.262 | 11.411 |
| | (4.652) | (8.296) | (3.908) | (5.526) | (3.964) | (6.681) |
| Manitoba | 4.504 | -19.49 | 5.752 | -15.446 | 1.578 | -24.015 |
| | (3.883) | (25.675) | (3.79) | (18.232) | (3.366) | (21.768) |
| New Brunswick | 1.854 | -35.653 | 1.502 | -41.029 | 5.179 | -38.835 |
| | (4.297) | (35.307) | (3.999) | (25.653) | (3.803) | (30.829) |
| Newfoundland and Labrador | 6.319 | -41.206 | 9.499* | -42.783 | 5.998 | -50.312 |
| | (5.083) | (41.966) | (4.322) | (29.47) | (5.097) | (37.386) |
| Nova Scotia | 0.192 | -31.656 | -1.119 | -37.461 | 2.135 | -34.97 |
| | (3.267) | (30.129) | (3.356) | (21.681) | (3.278) | (26.28) |
| Ontario | 3.74 | 41.689 | 9.851* | 54.274* | -0.727 | 45.545 |
| | (5.378) | (35.17) | (4.784) | (24.864) | (3.333) | (30.224) |
| Prince Edward Island | 1.518 | -83.528 | 0.591 | -90.513 | 4.01 | -94.153 |
| | (5.19) | (78.359) | (3.882) | (55.14) | (4.385) | (67.641) |
| Quebec | 0.783 | 26.199 | 2.522 | 30.856 | -5.079 | 24.315 |
| | (5.091) | (24.123) | (3.758) | (16.798) | (3.166) | (20.125) |
| Saskatchewan | -0.18 | -25.103 | -3.973 | -23.582 | 0.024 | -25.153 |
| | (3.151) | (30.315) | (3.153) | (21.693) | (3.367) | (24.751) |
| t | 1.729*** | 1.690*** | 1.389*** | 0.997** | 1.713*** | 1.418*** |
| | (0.169) | (0.397) | (0.151) | (0.323) | (0.192) | (0.364) |
| r2 | 0.761 | 0.779 | 0.816 | 0.847 | 0.767 | 0.802 |
| N | 50 | 50 | 50 | 50 | 50 | 50 |

Note: Robust standard errors reported under coefficient estimates. *p=.1; **p=.05; ***p=01. The Province Alberta is considered as a base province.

### 3.4 Self-rated health status

Empirical studies show that welfare transfer has a significant impact on improving population health (Conley and Springer 2001, Bradley et al. 2011, Ng, Edwin Yee-Hong 2013). The findings of these study indicate that welfare generosity allows individuals to spend income in health-improving activities (i.e. purchasing nutritious food). To examine the link between welfare generosity and health, I consider self-rated health status of poor individuals as a proxy of their overall health.

GSS reports self-rated health as "How would you describe your state of health?" The information was available for the year 1990-1999 and 2002-2009. The response was specified on a five-point scale i.e. 1="Excellent", 2="Very good", 3="Good", 4="Fair" and 5="poor". Among these five responses, I categorized "excellent to very good" as good health status and "Good to poor" as poor health status. The ratio of good health status is calculated as the percentage of poor people in a province consider them with good health status.

Table-11 shows the percentage of poor individuals reported good health status in 1990 and 2009. The percentage of poor individuals with good health status is increased in 2009 for all provinces compared to 1990.

Table 11: Percentage of Poor Individuals with Good Health Status in 1990 and 2009

| Provinces | Poor | |
|---|---|---|
| | 1990 | 2009 |
| Alberta | 29.53 | 49.64 |
| British Columbia | 23.83 | 58.17 |
| Manitoba | 31.19 | 39.63 |
| New Brunswick | 27.59 | 28.90 |
| Newfoundland and Labrador | 31.20 | 47.16 |
| Nova Scotia | 23.20 | 44.34 |
| Ontario | 30.80 | 46.80 |
| Prince Edward Island | 30.83 | 39.33 |
| Quebec | 23.29 | 44.38 |
| Saskatchewan | 32.91 | 43.19 |

Source: Computation using data from GSS

Welfare effect of better self-rated health outcome is a response based on the experience and stress coping mechanism in previous years. Therefore the relation should not be contemporaneous. In this analysis, I use one-period lag government transfer to account for its link with the percentage of poor individuals with good health status.

The control variables in the regression include unemployment rate, dependency ratio, population, percentage of population with post-secondary education, and percentage of lone parents. High unemployment rate indicates that individuals have less income to invest in health; therefore it may have a negative association with lower health outcome. However, being unemployed allow poor to not work in a risky environment, therefore, indicate a positive association with better health outcomes (Ng 2013). The variable dependency ratio and population are included to control for the demand for welfare spending. Also higher proportion of children

and elderly may be associated with greater demand for welfare spending on health. Higher level of education affects the demand for health care, the associated costs of dependence, and promote healthy lifestyle, therefore it is positively associated with health (Eide and Showalter 2011). Lone parent families are more likely to face more health related problems because of low income (Curtis and Pennock 2006). Thus higher percentage of lone parent families may have a significant positive association with poor health.

The regression results show that total welfare generosity and social assistance spending has significant positive effects on poor individuals' health. The estimate suggests that one percent increase in the share of total welfare generosity relative to total provincial expenditure one year ago increases the proportion of poor individuals' with good health by 1.26 percent. Similarly, an increase in the share of social assistance spending in total provincial expenditure, on average, increase the proportion of poor individuals' with good health by 1.70 percent. However, the other social services spending shows no significant association with good health status. Among the control variables, the unemployment rate shows significant positive association with good health status rate of poor. In contrast, lone parent percent shows a negative association with good health status. The analyses reveal that not all provincial welfare expenditures matter for good health rate. The high share of total welfare generosity and social assistance spending allow poor to invest their income in health-improving activities, therefore, indicate a positive association with better health outcome.

Table 12: Pooled OLS Results: Welfare Generosity on Health Status

| Dependent Variable: Self-rated Health Status | | | | | | |
|---|---|---|---|---|---|---|
| | Total Welfare Generosity | | Social assistance spending | | Other social service | |
| | Without Control | With Control | Without Control | With Control | Without Control | With Control |
| soc_serv_ratiot-1 | 1.266* | 0.775 | | | | |
| | (0.495) | (0.477) | | | | |
| soc_assist_ratiot-1 | | | 1.683** | 1.706*** | | |
| | | | (0.592) | (0.496) | | |
| soc_other_ratiot-1 | | | | | -0.237 | -0.946 |
| | | | | | (0.636) | (0.6) |
| unempd_rate | | 2.262** | | 2.440*** | | 2.727*** |
| | | (0.715) | | (0.679) | | (0.73) |
| depen_ratio | | 0.341 | | 0.639 | | 0.899 |
| | | (1.21) | | (1.125) | | (1.186) |
| ln_population | | 16.14 | | 20.392 | | 15.571 |
| | | (14.858) | | (14.73) | | (14.034) |
| High_schl_plus_prcnt | | 0.007 | | -0.001 | | 0.045 |
| | | (0.12) | | (0.114) | | (0.114) |
| lone_parent_prcnt | | -1.769* | | -1.657* | | -1.627* |
| | | (0.762) | | (0.788) | | (0.795) |
| British Columbia | -1.628 | -8.269 | -1.38 | -10.1 | 0.06 | -8.301 |
| | (3.108) | (5.006) | (3.035) | (5.142) | (3.001) | (4.942) |
| Manitoba | -2.375 | 13.275 | -3.223 | 14.9 | -1.151 | 11.918 |
| | (3.094) | (16.844) | (3.005) | (16.322) | (2.965) | (15.446) |
| New Brunswick | -4.48 | 7.521 | -7.363* | 11.017 | -8.843** | 0.352 |
| | (3.532) | (21.957) | (3.166) | (21.666) | (3.174) | (20.462) |
| Newfoundland and Labrador | 7.107* | 11.456 | 4.923 | 15.318 | 4.94 | 3.645 |
| | (3.115) | (27.299) | (3.026) | (26.891) | (3.191) | (25.933) |
| Nova Scotia | -0.532 | 9.479 | -2.566 | 12.886 | -4.738 | 2.548 |
| | 3.164 | 18.802 | 2.841 | 18.351 | 3.052 | 17.542 |
| | (3.164) | (18.802) | (2.841) | (18.351) | (3.052) | (17.542) |
| Ontario | -5.613 | -28.604 | -5.246 | -36.211 | -1.193 | -26.291 |
| | (3.282) | (19.931) | (3.04) | (19.888) | (2.673) | (18.876) |
| Prince Edward Island | 6.614 | 38.479 | 3.183 | 47.934 | 1.032 | 26.611 |
| | (4.087) | (48.615) | (3.484) | (47.705) | (3.811) | (45.177) |
| Quebec | -9.677** | -29.506* | -8.286** | -34.084* | -5.386* | -26.750* |
| | (3.04) | (13.949) | (2.575) | (13.812) | (2.502) | (13.073) |
| Saskatchewan | -1.863 | 12.18 | -2.078 | 16.355 | -5.398 | 6.352 |
| | (3.121) | (20.762) | (2.902) | (19.948) | (2.762) | (18.739) |
| t | -0.165 | 0.356 | -0.036 | 0.603 | -0.224 | 0.582 |
| | (0.132) | (0.32) | (0.153) | (0.306) | (0.14) | (0.338) |
| r2 | 0.225 | 0.345 | 0.24 | 0.382 | 0.192 | 0.346 |
| N | 170 | 170 | 170 | 170 | 170 | 170 |

Note: Robust standard errors reported under coefficient estimates. *p=.1; **p=.05; ***p=01. The Province Alberta is considered as a base province.

## 3.5 Happiness

This section analyzes the link between welfare generosity and happiness of poor people. The self-rated happiness reflects the feelings and satisfactions about income security, health, job and life events, and experiences. Considering financial security as an important source of satisfaction, income support from government transfer expected to have a positive relation to the happiness poor people.

In GSS, the information of happiness is available in 1989, 1990, 1996, 1998, 2003, 2005, and 2008. The self-rated happiness is reported as, “How would you describe yourself?” The response was stated on a four-point scale i.e. 1=”Happy”, 2=”Somewhat happy”, 3=”Somewhat unhappy” and 4= “Very unhappy”. In some years happiness is reported on a five-point scale where additional scale includes the category of “unhappy with little interest”. Among these responses I consider "Happy" as happiness status and "somewhat happy to very unhappy" as unhappy status. Happiness is measured as the percentage of poor people in a province that consider themselves happy. As this question asks individuals about how they would describe themselves presently, I consider the link between government transfers and happiness to be contemporaneous.

Table-13 proportion the percentage of poor reported happy status in 1990 and 2009, suggesting that the proportion of poor with happy status is increased in 2009 for all provinces compared to 1989.

Table 13: Percentage of Poor with Happy Status in 1989 and 2008

| Provinces | Poor | |
|---|---|---|
| | 1989 | 2008 |
| Alberta | 34.32 | 66.55 |
| British Columbia | 45.74 | 76.16 |
| Manitoba | 45.00 | 66.50 |
| New Brunswick | 50.21 | 64.39 |
| Newfoundland and Labrador | 43.38 | 68.80 |
| Nova Scotia | 42.38 | 57.00 |
| Ontario | 49.05 | 65.60 |
| Prince Edward Island | 58.08 | 66.32 |
| Quebec | 34.79 | 60.35 |
| Saskatchewan | 42.37 | 82.07 |

Source: Computation using data from GSS

In the regression I include unemployment rate, dependency ratio, population, percentage of population with post-secondary education, and percentage of lone parents as the control variables. The relation between unemployment rate and happiness is a subjective matter. The lack of earning opportunities due to unemployment is negatively associated with happiness (Winkelmann and Winkelmann 1998). However, if individuals prefer to be unemployed in search of better job options, everything else being equal, unemployed individuals should be happier than employed (Böckerman and Ilmakunnas 2006, Frey and Stutzer 2002). The variables dependency ratio and population are included to control the demand for welfare spending. The higher level of education is associated with better job, earnings and health, which contributes to happiness of people (Cuñado and de Gracia 2012). In that perspective, percentage of population with post-secondary education may have a positive association with happiness. Lone parents are more likely to have lower earnings and poor health; hence these factors may have negative effects on happiness.

Table-14 reports the association between welfare generosity and happiness. The results show that total welfare generosity and social assistance spending show no significant association with the poor individuals' happiness. However, the result suggests that an increase in the share of other social services spending, on average, increase the proportion of happy poor individuals by 2.87 percent. Therefore, generosity of other social services might be considered as a significant determinant of happiness of poor individuals. The argument point towards the improvement of financial security due to generous other social services that contributes the happiness of poor families with elderly, disabled and physically challenged individuals, and families with children.

Table 14: Pooled OLS Results: Welfare Generosity on Happiness

| | Dependent Variable: Happiness rate | | | | | |
|---|---|---|---|---|---|---|
| | Total Welfare Generosity | | Social assistance spending | | Other social service | |
| | Without Control | With Control | Without Control | With Control | Without Control | With Control |
| soc_serv_ratio | 2.437 | 2.719 | | | | |
| | (1.561) | (1.722) | | | | |
| soc_assist_ratio | | | 0.213 | 0.125 | | |
| | | | (1.4) | (1.75) | | |
| soc_other_ratio | | | | | 2.923* | 2.875* |
| | | | | | (1.468) | (1.54) |
| unempd_rate | | -0.426 | | 1.037 | | 1.615 |
| | | (2.471) | | (2.818) | | (2.309) |
| depen_ratio | | 1.351 | | 2.164 | | 1.402 |
| | | (2.737) | | (2.734) | | (2.663) |
| ln_population | | 24.608 | | 9.505 | | 3.09 |
| | | (43.984) | | (42.976) | | (40.974) |
| High_schl_plus_prcnt | | 1.516 | | 1.283 | | 1.032 |
| | | (0.764) | | (0.843) | | (0.79) |
| lone_parent_prcnt | | -2.488 | | -2.283 | | -2.474 |
| | | (2.282) | | (2.419) | | (2.228) |
| British Columbia | -2.089 | -14.582 | 1.458 | -8.323 | 3.796 | -4.548 |
| | (9.166) | (13.334) | (9.2) | (14.047) | (9.95) | (13.496) |
| Manitoba | 0.185 | 27.97 | 2.1 | 11.503 | 2.027 | 6.353 |
| | (8.574) | (50.286) | (8.211) | (46.784) | (8.62) | (45.939) |
| New Brunswick | 9.526 | 60.419 | 2.119 | 21.193 | 9.041 | 14.813 |
| | (11.418) | (72.688) | (8.936) | (68.093) | (11.7) | (62.137) |
| Newfoundland and Labrador | 10.969 | 68.179 | 7.546 | 21.434 | 10.856 | 6.092 |
| | (10.147) | (90.622) | (8.574) | (88.329) | (9.98) | (77.478) |
| Nova Scotia | 9.684 | 44.468 | 1.649 | 10.821 | 7.676 | 7.232 |
| | (12.198) | (61.641) | (8.956) | (56.108) | (10.864) | (51.628) |
| Ontario | -5.273 | -42.799 | 1.082 | -16.275 | 3.019 | -5.71 |
| | (9.236) | (60.727) | (8.704) | (59.952) | (9.747) | (55.707) |
| Prince Edward Island | 14.72 | 99.44 | 4.347 | 27.132 | 11.98 | 12.09 |
| | (12.516) | (153.048) | (9.304) | (144.899) | (10.718) | (134.437) |
| Quebec | -16.38 | -29.256 | -9.671 | -13.824 | -11.825 | -14.227 |
| | (8.528) | (42.822) | (9.052) | (42.379) | (8.42) | (40.452) |
| Saskatchewan | 5.914 | 36.023 | 0.17 | 6.613 | 1.222 | 2.865 |
| | (13.219) | (63.682) | (11.003) | (58.354) | (11.501) | (55.169) |
| t | 0.225 | -1.259 | 0.183 | -0.65 | -0.065 | -0.7 |
| | (0.23) | (1.07) | (0.235) | (1.058) | (0.242) | (0.977) |
| r2 | 0.121 | 0.213 | 0.075 | 0.167 | 0.131 | 0.218 |
| N | 70 | 70 | 70 | 70 | 70 | 70 |

Note: Robust standard errors reported under coefficient estimates. *p=.1; **p=.05; ***p=01. The Province Alberta is considered as a base province.

### 3.6 Education

The financial security due to welfare generosity may allow poor individuals' to afford to participate in learning activities. Therefore generous government transfer is expected to have a positive effect on poor individuals' education completion. In the analysis below, I examine the relation between generous government transfer and different types of education of poor individuals' such as university education rate, college and diploma rate and high school dropout rate. The information of different types of education are compiled from GSS education component, reported as highest level of education completed.

Table-15 shows education levels of poor individuals in 1990 and 2009. The completion of university education rate among poor is very low. However, college and diploma and high school dropout appear as the dominant education status for poor. The college and diploma completion rate among poor individuals is higher in 2009, compared to 1990. In contrast, the high school dropout rate of poor declines significantly for all provinces in 2009 compared to 1990.

Table-15: Education status of poor individuals in 1990 and 2009

| province | University Education Rate | | College and Diploma Education Rate | | High School Dropout Rate | |
|---|---|---|---|---|---|---|
| | 1990 | 2009 | 1990 | 2009 | 1990 | 2009 |
| Alberta | 5.07 | 17.25 | 32.90 | 45.45 | 50.14 | 25.11 |
| British Columbia | 5.46 | 19.25 | 45.31 | 45.25 | 36.23 | 21.50 |
| Manitoba | 4.52 | 7.76 | 27.39 | 41.33 | 53.63 | 33.79 |
| New Brunswick | 0.00 | 3.34 | 20.75 | 16.22 | 66.55 | 44.77 |
| Newfoundland and Labrador | 0.96 | 0.00 | 21.89 | 24.99 | 69.72 | 48.81 |
| Nova Scotia | 1.07 | 8.55 | 23.12 | 40.99 | 72.36 | 33.92 |
| Ontario | 4.56 | 13.44 | 35.17 | 39.80 | 46.79 | 27.86 |
| Prince Edward Island | 6.47 | 5.89 | 31.50 | 35.95 | 49.07 | 28.50 |
| Quebec | 4.63 | 8.34 | 23.33 | 36.18 | 63.64 | 41.92 |
| Saskatchewan | 2.56 | 7.68 | 29.53 | 38.10 | 52.25 | 28.36 |

Source: Computation using data from GSS

After receiving government transfer it takes time to plan, enroll and complete education. Hence the link between government transfer and education would not be contemporaneous. In the analysis below I use one-period lag values of welfare generosity. In the regression I include unemployment rate, dependency ratio, population, and percentage of lone parents as the control variables. The variable *high school plus prcnt* are not included in the regression, as the dependent variable includes different education status. High unemployment rate indicate that individual has less income to investment in education. Also, high unemployment rate create a low expected return from education, which discourage people to invest less in education; therefore, it may have a negative association with education. The variables dependency ratio and population are included to control the demand for welfare spending. Lone parents are more likely to have low income, which results in less investment in education. Empirical evidence also shows that children in lone parent families had completed few years of schooling, therefore indicates a negative association with education (Galarneau 2005).Table-16 shows the relation between welfare generosity and different levels of education attainment. In this table, I report the regression results of total welfare generosity as social assistance and other social services spending show no significant association

with education attainment. The regression results suggest that welfare generosity has no significant association with university education and college and diploma completion. However, total welfare generosity has significant association with higher high school graduation for poor individuals. An increase in the share of total welfare generosity in total provincial expenditure, on average, reduce the high school dropout rate by 0.77 percent. The results in this section indicate that poor individuals who fail to complete their high school study due to financial reason might be able to continue their education due to welfare generosity.

Table 16: Pooled OLS Results: Total Welfare Generosity on Education

| Variables | University Education rate | | College and Diploma Rate | | High school Dropout rate | |
|---|---|---|---|---|---|---|
| | Without control | With control | Without control | With control | Without control | With control |
| soc_serv_ratiot-1 | 0.17 | 0.192 | 0.663 | 0.577 | -0.771* | -0.55 |
| | (0.138) | (0.135) | (0.38) | (0.378) | (0.433) | (0.416) |
| unempd_rate | | 0.071 | | 0.104 | | -0.83 |
| | | (0.168) | | (0.405) | | (0.446) |
| depen_ratio | | -0.315 | | 0.897 | | -0.711 |
| | | (0.296) | | (0.687) | | (0.775) |
| ln_population | | 17.765*** | | -10.398 | | 7.02 |
| | | (4.186) | | (10.347) | | (10.933) |
| lone_paren~l | | -0.09 | | -0.907 | | 1.222 |
| | | (0.213) | | (0.51) | | (0.64) |
| British Columbia | 2.200* | -2.716 | 2.79 | 5.852 | -5.686** | -6.828 |
| | (0.918) | (1.551) | (1.651) | (3.466) | (1.74) | (3.528) |
| Manitoba | -1.953** | 16.240*** | -7.858*** | -20.392 | 10.090*** | 18.548 |
| | (0.684) | (4.416) | (1.445) | (11.188) | (1.841) | (11.533) |
| New Brunswick | -4.297*** | 20.325*** | -8.286*** | -23.193 | 11.915*** | 25.658 |
| | (0.968) | (6.017) | (2.222) | (15.128) | (2.995) | (16.47) |
| Newfoundland and Labrador | -6.309*** | 23.476** | -10.802*** | -28.981 | 19.082*** | 39.339 |
| | (0.679) | (7.336) | (1.648) | (18.632) | (2.472) | (20.161) |
| Nova Scotia | -2.841*** | 18.037*** | -3.697 | -15.87 | 10.686*** | 21.916 |
| | (0.809) | (5.034) | (2.009) | (12.961) | (2.495) | (13.764) |
| Ontario | 0.478 | -23.580*** | -4.487* | 9.887 | 3.962 | -5.328 |
| | (0.852) | (5.975) | (1.904) | (14.377) | (2.303) | (15.262) |
| Prince Edward Island | -2.004 | 53.628*** | -4.11 | -39.505 | 9.027** | 39.044 |
| | (1.29) | (13.592) | (3.201) | (34.397) | (3.353) | (35.674) |
| Quebec | -1.859* | -18.323*** | -13.213*** | -2.565 | 18.725*** | 13.36 |
| | (0.859) | (4.302) | (1.939) | (10.129) | (2.365) | (10.773) |
| Saskatchewan | -2.422** | 18.822*** | -3.488 | -20.48 | 6.477** | 19.114 |
| | (0.888) | (5.508) | (1.919) | (13.688) | (2.412) | (14.075) |
| t | 0.264*** | 0.13 | 0.318*** | 0.564* | -0.771*** | -1.140*** |
| | (0.03) | (0.085) | (0.076) | (0.217) | (0.088) | (0.211) |
| r2 | 0.611 | 0.652 | 0.444 | 0.461 | 0.613 | 0.63 |
| N | 190 | 190 | 190 | 190 | 190 | 190 |

Note: Robust standard errors reported under coefficient estimates. *p=.1; **p=.05; ***p=01. The Province Alberta is considered as a base province.

## IV. Conclusion

This study examines the association between welfare generosity and well-being of poor Canadians. With regards to poverty, no evidence of determinate relationship between total welfare generosity and poverty rate has been found. Instead, the subcomponents of total welfare generosity comes out crucial for understanding the impact of welfare on poverty. The results indicate that providing generous social assistance might exacerbate poverty. Conversely, generosity of other social services might have significant impact in reducing the poverty rate. The other social services usually provided to households with the elderly, disabled person and dependents. The results indicate that the other social services spending has a significant contribution in improving the financial condition of these households.

Next examined is the impact of welfare generosity on labor supply, time spent with kids, health, happiness and education of poor individuals. Findings reveal that total welfare generosity is associated with a lower employment rate of poor individuals. An increase in the share of total welfare generosity one year ago, on average, reduces employment rate by 0.96 percent. Receipt of other social services is positively associated with poor individuals' time spent with kids. Similarly, the category shows positive association with happiness of poor individuals. In the case of health, the total welfare generosity and social assistance to the poor appear as the significant determinants of health of the poor. The results show that, an increase in the share of total welfare generosity one year ago increases the proportion of poor individuals' with good health by 1.26 percent. Similarly, an increase in the share of social assistance spending in total provincial expenditure, on average, increases the ratio of poor individuals' with good health by 1.70 percent. With regards to education, a higher share of total welfare generosity is correlated with higher rates of high school graduation among poor individuals. The results posit that improved financial conditions due to welfare generosity might cause increased participation in educational activities by the poor.

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