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# Marital Status and Motherhood: Their Impact on Women's

## Wage

by

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## Abstract

Many people believe that women's careers suffer after they marry or have children. My research uses the most recent Labour Force survey data available in Canada to determine if marital status and motherhood status have an impact on women's wages.

My research found that wages of women who have children are 4.5% higher than women who do not have children, and when married with children, their wages are 1.5% higher than the wages of their single counterparts. Furthermore, I also found that the following variables had an effect on women's wages: the level of education, the urban versus rural areas, the number of persons in a household, Part time versus Full time employment status, the size of the firm, and the tenure of the employment position.

My findings show that, contrary to popular belief, women actually make slightly more in Canada when they have children, and do not suffer any wage penalties for being married or having children. This result is quite different from what has been reported in the literature for other countries such as the United States, where women do experience wage penalties for having children. A possible interpretation is that the policies in Canada that support women and mothers in the workforce are effective in reducing wage penalties. These findings have important socio-economic policy implications.

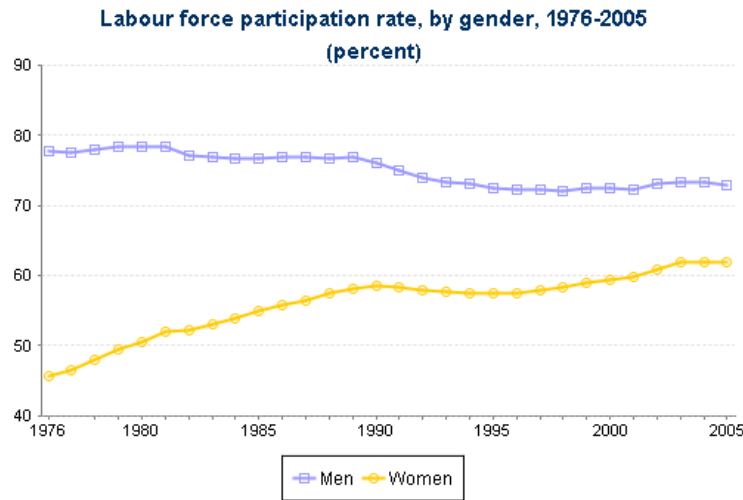
## Introduction

There are many misconceptions regarding the obstacles that women allegedly face in their career advancement when they marry or have children. Many people believe that a woman's career advancement is hindered either by having children or by being married. To further investigate this topic, it is important to first examine how women's human capital and competences have progressed over time. The general economic and social patterns have completely changed in Canada and in other developed countries, and this is also a relevant factor. Given the structure and the distribution of wages in the current labour market, many Canadian families are obliged to have two earners in the family (household) in order to attain a middle-class living standard, especially if the household contains children. This observation begs the question of whether being married and having children has any impact on women's wages. The response to this question will help improve our understanding of the decisions women face when planning to marry or have children while pursuing a professional career, and it could have policy implications for Canadian policies related to maternity leave and the family. This paper will examine what effect, if any, that marital status, having children, and the number of earners per household has on women's wages in Canada.

In order to study the relationship between marital status, having children, and women's wages in Canada, it is relevant to address some current trends in marriage behaviour in Canada. 2012 Data from the Labour Force Survey of Canada shows that financial issues are one of the main reasons cited for divorce, and divorce rates are high. According to Statistics Canada, in 2012, there were 71,000 divorces, and approximately 43% of marriages will not reach their 50<sup>th</sup> wedding anniversary. The 2006 census reveals that the percentage of married couples with or without children decreased considerably in the 25

years between 1981 and 2006, from 83.1% to 68.6%, and the remaining 31.4% shared by common-law and single-parent families that accounted for 15.5% and 15.9% of Canadian families, respectively. In 2001, 61.9% of women who were working and having children were in a relationship with dual-incomes.

**Figure 1**

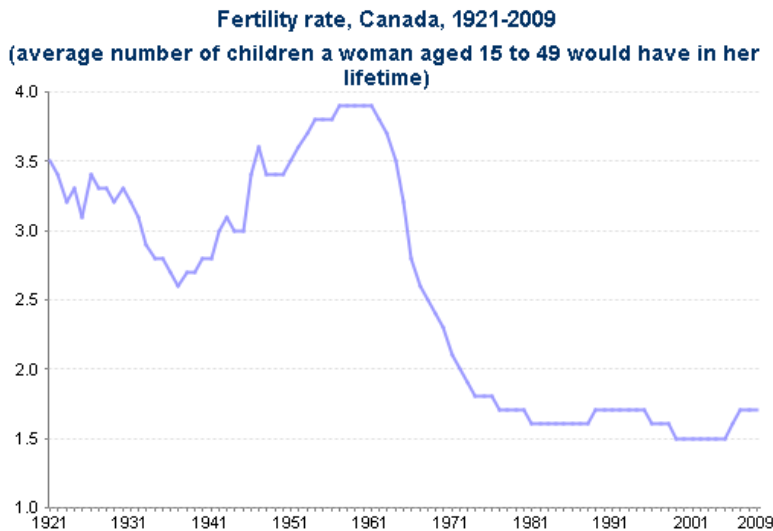


Source: Statistics Canada. *Labour Force Survey*. Ottawa, 2005.

Above, Figure 1 shows how the labour participation rate for women has significantly evolved in Canada from 1976 to 2005. The labor participation rate for women was around 35 % in 1976, and grew to 59% in 2005, a considerable increase of more than 24 percentage points. On the other hand, Figure 2 shows that the fertility rate in Canada has decreased by half between 1926 and 2009, from 3.5 children per family to almost 1.6 children. This suggests that in Canada, between 1976-2005, having children was not necessarily a barrier for women during their professional careers, despite the considerable decline in fertility rates in Canada. The employment rate for women with children aged from 0 to 6 years old was 66.8% in 2011, which was an increase of 31.4% from 1976. The labour force participation

rate for women with children aged 6 to 15 years rose from 46.4% in 1976 to 78.7% in 2005. Overall, the trends show that between 1976 and 2005, fertility rates in general decreased slightly, while employment rates for both women and women with children increased considerably.

**Figure 2**



Note: The 1921-1959 rates exclude Newfoundland and Labrador, Yukon, and the Northwest Territories; and the 1960-1990 rates exclude Newfoundland and Labrador.

Source: For 1921 to 1999 data, Statistics Canada, unpublished data. For 2000 to 2009, Statistics Canada. *Crude birth rate, age-specific and total fertility rates (live births), Canada, provinces and territories, annual* (CANSIM Table 102-4505). Ottawa: Statistics Canada, 2011.

These statistics demonstrate that women’s status in the labour force has evolved over time in Canada. It can be observed that women participate in the labor force almost as much as men, reflecting the well-known added worker effect. Based on these stylized facts, I address the issue of the impact of marital and fertility status on women’s wages. To this end, I estimate an empirical model of women's wages based on data from the Labour Force Survey (LFS) of Canada from the month of April 2012, and from January 2013, which is the most recent available data, to capture the most recent trends in women's wages as function of marital and motherhood status.

My research finds a slightly positive impact on wages for women who have children compared to women who do not have children. These results are consistent with the results of similar, previous studies.

In my empirical research, I found that women who have children have a slightly higher wage than those who do not have children, *ceteris paribus*. The difference narrows when control variables are introduced, such as employment status and tenure on the job. The average wage for a woman who lives in a household in which she is the only income-earner is slightly higher than if she is not the only person employed. In any given household, the more people that are employed, the more likely the woman's wages tend to be lower.

Women's job tenure, full-time employment, and the size of the firm are also important variables in explaining variations in women's wages. The results from this paper show that the average wages of women who have children are 4.5% higher than the wages of women who do not have children, all other factors held constant. Women who are the sole income-earners in the family have wages that are 1.0% higher than women who live in a household in which two people provide income for the family. On average, the wages of married women are 9.7% higher than those of their single counterparts. When married women have children, their wages are 1.5% higher than the wages of their single counterparts. For women with children and more than one income-earner in the household, the wage is generally higher than when women are the only income-earner in the household.

Women who live with two employed family members earn on average 6.8% less than if they live alone. However, if they have children, their wages are 6.1% higher than if they lived with another employed person, and 4.8% higher than if they lived with two employed members in the household. Overall, my results show that having children actually has a

positive effect on women's wages, and having more than one earner per household can also have a positive effect on women's wages, *ceteris paribus*. These results derived from April 2012 sample are consistent with those derived from January 2013, and show the same patterns. These results seem to show that the level of the responsibility for supporting dependents as well as the support received from other members of the households are important factors in understanding the impact of marital status and motherhood on the wages of women for reasons that are not clear at this time.

The rest of this paper is structured as follows; the next section will present a literature review, followed by a discussion of the data set. In section 4, the econometric model is presented, section 5 presents and discusses the results, and section 6 offers concluding remarks.

## **Literature Review**

The topic of how marital status and motherhood impact women's wages has attracted attention on the part of economic researchers for many years. The following summarizes some findings drawn from the existing literature on the relationship between gender, marital status, motherhood, and wages.

Gangl and Ziefle (2009) analysed women's careers and assessed the wage penalty associated with motherhood in Britain, Germany and the United States for women born in the 1960s. They analysed the career progression of mothers using five cohorts of women born during the 1960s in Britain, Germany and United States. They used panel surveys based on repeated survey interviews. They used the German Socio-Economic Panel, the harmonized longitudinal data from the British Household Panel Survey (BHPS), and the National

Longitudinal Survey of Youth (NLSY 1979). The penalties associated with maternity were around 9% and 18% per child for American and British mothers compared to the experience of their counterparts in Germany. As possible interpretations, employers might discriminate to against women who have children, believing that they are inherently less productive. Moreover, they believe these penalties are due to the work interruptions that women experience when having children, which undermine accumulation and skills. Gangl and Ziefle believe that when women receive the financial and social support during maternity and motherhood, such as subsidies, childcare benefits, or public childcare that help mothers throughout motherhood, women can experience further career progression and earn higher wages. The authors believe that the level and nature of public support for motherhood may mitigate the adverse labour market consequences for women and help them progress in their careers. This empirical study shows that the wage penalties associated with motherhood are different across countries, and this is thought to be due to differences in family and maternal policies regarding women in the workforce across different countries. Countries with generous family support policies tend to help women progress in their career during motherhood, and avoid the wage and career penalties of leaving the labour market for child bearing.

Drolet (2002) analysed the effects of being married or being a parent on women's' wages in Canada in 1998. The data used in this paper had a panel structure and came from the 1993-1998 wave of the survey of Labour and Income Dynamics of Canada. The sample was composed of women between the ages of 18-64 who had received pay for labour services rendered. The results of this study found that after controlling for differences in work history, labour force qualifications, and selected job characteristics, there was no

association between marital status and wages, while the relationship between wages and motherhood was more complicated. The study also concluded that the timing of child bearing was an important factor in generating high wages for women. Women that postponed having children earned at least 6.0% more than women who had children early in their working lives. Therefore, depending on when women had their first child, timing could have either a positive or a negative effect on their wages. The study also demonstrated that this pattern disappears after the birth of the first child.

Hewitt *et al.* (2002) analysed the impact of marriage on the earnings of both men and women in Australia from 1996-1997. The dataset used contained cross-sectional data from a nationally representative Australian source from 1996-1997 named “Negotiated the Life Course”. Hewitt *et al* found little or no impact of marriage on women’s wages, but they found that on average, married men earned 15 per cent more than non-married men. Furthermore, they found that for men in the top-earnings category, there was not a large difference in wages between married and single men. They asserted that married men are more productive than married women, and hence have higher earnings, because women are usually occupied with household duties, and men specialize in labour market activities.

Waldfogel (1998) analysed the wage differential between women with and without children in the United States from 1980 to 1991. The data consisted of a 1980 sample and a 1991 sample drawn from the National Longitudinal Survey of Youth of young women and men. Waldfogel found that wage gaps between women with children and those without children have continued to increase, but that the overall gender wage gap has fallen over time in the U.S. Waldfogel found that women who maintain their employment status despite having children earn higher wages on average. Waldfogel attributed these patterns to policy

reforms in the U.S., especially in the welfare system, which required single mothers with young children to work and earn money to support their children. Waldfogel's research, however, suggests that in reality, labour market earnings of single working mothers are much lower than what policy makers originally projected. Compared to women who do not have children, single working mothers earn far lower incomes. She asserts that the government should implement positive policies supporting women with children. Waldfogel concludes that policy in the U.S. should aim to help women with children participate in the labour market by implementing policies such as maternity leave benefits, flexible working hours, and the provision of child care support. According to Waldfogel, if these policies were implemented in the U.S., these would help close the experience and wage gaps between single working mothers and married working mothers.

Korean and Newark (1991) analysed the effects of marriage and motherhood on wages of women in the United States in 1982. The study showed that after controlling for the effects of tenure and experience variables, the event of having children had a minimal impact on wages. The data used to produce this study were drawn from the National Longitudinal Survey of Young Women, which consisted of a set of surveys containing information from multiple sources over several waves on labor market activities of men and women in the United States. The cross-sectional specifications are estimated based on 1982 survey in which the respondents were aged 28-38. The original sample had 5,159 observations in 1968. The final sample, after all restrictions were imposed, had a size of 1,207 working women from the 1982 survey.

First, Korean and Newark found a negative relationship between having children and wages, *ceteris paribus*. Results remained the same when the variables of experience and

tenure were introduced into the regression equation, and both variables were determined to be exogenous. Second, they found contradictory results: over a fourteen-year period from 1968 to 1982, the results showed no negative effects of motherhood on wages. Third, they found that the lower level of experience and job tenure associated with marriage and motherhood had an impact on lowering women's wages. Overall, they concluded that it was unclear whether tenure and experience were exogenous variables. In general, they found that marriage had little or no impact on women's wages, and childbearing seemed to reduce women's wages indirectly over the life cycle by reducing labour force participation and the accumulation of human capital, rather than by directly reducing their productivity levels.

Hill (1979) analysed the wage effects of marital status and the presence of children for workers of the same race (Black or White) and same sex (Females or Males) in the United States in 1975. The data used to produce this study were panel data from the Panel Study of Income Dynamics, consisting of representative sample of approximately 6,000 families; with 5,212 household heads comprised of women aged 18-64 who had worked at least 500 hours in 1975. The final dataset contained 1,326 white women and 741 black women. The data collected permitted the construction of wage predictors such as city size, age, education, hours of work, marital status, number of children, work experience, training, and labor force attachment such as absenteeism. Hill (1979) studied the changes in the wages associated with changes in marital status and in the number of children. In her results, she found that for white women, number of children was a good proxy variable for differentials in work history and labor market experience, and she found that marital status was not a proxy variable differentials in work history and labor market experience. The main finding of the paper was that workers with greater financial responsibilities for supporting their families

received higher wages than their counterparts with lesser financial responsibilities to their family, after controlling for measures of labor market qualifications. The study concluded that persons with greater responsibilities to support family members were more likely to work longer hours or accept unattractive jobs with the objective of earning more money to support their family. This economic phenomenon is called “the added worker effect”.

Waldfogel (1997) analysed the effect of the presence of children on women’s wages in the United States from 1968-1988. She analysed the presence of effects of having children on women’s wages by also considering the effects of marital status combined with parental status. The data used in this paper came from the National Longitudinal Survey of Young Women (United States Department of Labour) from 1968 to 1988. The sample contained 2,133 working women in 1988 aged between 34 and 44 years. Using panel data, the survey contained 0 to 15 different wage observations per worker. The Experience, age and family status were observed. The final dataset contained 30,000 observations. She found a direct impact of having children on women’s wage after controlling for the effect of work experience. Waldfogel found that the negative effect of children in Women’s’ wage can not be only explained by the difference in the working experience. Secondly, he found there was a positive effect on wages associated with divorced and married women, in comparison to single women, which may be due to individual attributes that are not observable. Thirdly, he discerned a small wage penalty for being a part-time employee compared to being a full-time employee. Even after controlling for part-time employment status, having children had a negative effect on women's wages. Finally, she found that the impact of family status may vary according to race and women’s education level. This study indicated that the presence of children had a negative impact on women’s wages in the United States. Waldfogel found

that this negative influence is mainly due to the time off that women take from employment due to having children, raising children, and other factors not observed. She also found that the wage gaps between single men and single women are small when compared with the wage gaps between married men and women. However, this negative impact on women's wages is can be offset by a woman's experience in the labour force. As a woman gains experience in the labour force, the negative impact of having children is offset.

Hersch (1991) analysed the effects of wages of human capital, working conditions, household responsibilities, and on-the-job training for women and men in the United States in 1986. The data used in this paper were from a 1986 survey collected in the Oregon area. The survey contained information on training activity, job characteristics, work history, and household responsibilities. The sample was constituted of eighteen firms: five wholesale warehouses, twelve manufacturing firms, and one large commercial laundry. Firms surveyed ranged in size from 40 to 400 employees. The sample was comprised of 414 men and 217 women who were employees and earned wages and salary. The human capital data contained information on work history and education. Hersch also defined individual characteristics, household responsibilities, and working conditions variables. She found that the presence of children in households seemed to have a negative effect on both men's and women's wages. She showed that the negative effect on women's wages was due to household responsibilities, which tended to reduce the amount of time and effort that women spent in the labour market. She tried to explain the differences between men's and women's wages by the difference in time spent on household responsibilities and working conditions. She found that household responsibilities have no direct effect on men's wages. Contrary to previous studies on this matter, Hersch was the first person to explain wage differences by gender by taking into

account four factors simultaneously: human capital, working conditions, household responsibilities and on the job training.

Budig and England (2001) analysed the effects of motherhood on women's wages in the United States of America from 1982-1993. They used data from the 1982-1993 waves of the Longitudinal Survey of Youth (NLSY), a national random sample of individuals aged 14 to 21 in 1979; Blacks and Latinos were over-represented in the sample. The sample was constituted of women working part-time or full-time from 1982 to 1993. Out of the total of 6,283 women in the 1979 NLSY, the sample contained at a least 5,287 women with at least two years of work experience. Budig and England analysed 41,842 person-year observations, or 5,287 women with an average of 7.9 years of work experience. Overall, they found a wage penalty of 7 percent per child on wages for women who had children. They assert that the main reasons why women tended to have lower wages when they had children was that many women spent more time at home when they had children to care for, creating an interruption from work and undermining their ability to work full-time. They also found that employers may discriminate against women who have children. Budig and England showed that the negative effect on women's wages was due to household responsibilities, which tended to reduce the amount of time that women spent in the labour market.

Overall, all these various research papers show that having children can have a negative effect on women's wages due to the time off that they are forced to take from the labor market during the child-raising stages. Countries with more supportive family and maternity policies can, in general, help to compensate for these negative wage effects, and in certain countries, such as Canada and Britain, actually eliminate them all together. Thus far, the literature on this subject has researched the effect that childbirth and motherhood have on

women`s wages throughout Canada, the United States, and other developed countries. My research will contribute to the existing literature by analyzing the current effects that childbirth and motherhood have on women`s wages in Canada, using the most recently available data. In my research, I also add to the literature by including other exogenous variables that can impact on women`s wages. I will analyze the wage effects for women of not only having children and being mothers, but also the wage effects of marital status, the number of earners in households, job tenure and experience, the number of children in households, and the effects of living in a big city versus living in smaller cities and rural areas.

## **Data**

In this paper, I employ cross sectional data drawn from the Labour Force Survey (LFS) of Canada for the months of April 2012 and January 2013. The LFS is a monthly survey of Canadian households on the employment status of household members at the regional, territorial and national levels. My objective is to measure certain patterns in women`s wages in the Canadian labour market. I chose to compare data from two different months in order to illustrate patterns and changes over time. I chose to use the data from January 2013 and from April 2012 because I want to analyse the most recent information about the Canadian Labour Force. The LFS also provides respondent data on marital status, sex, age of the youngest child from 0 to 24 years old, highest education level attained, hourly wage, union status, job tenure in months, labour force status of a spouse, and education obtained.

My population of interest is all legal working women in Canada who have an hourly wage. I omitted working women who are older than 65 years old from my dataset because

they are no considered to be part of the labour force. The self-employed were also not included in my estimating sample, because they usually do not work for an hourly wage. The April 2012 LFS contained approximately 53,000 representative households across Canada with at least one member who earned an hourly wage. After considering these restrictions, my final estimating sample for April 2012 contained 26,462 women, of which 10,907 had at least one child. The January 2013 LFS contained approximately 53,000 representative households across Canada who earned an hourly wage. After considering the restrictions, my final estimating sample contained 26,099 women, of which 10,862 had at least one child in my final dataset for January 2012.

As mentioned above, the objective of this study is to analyze the impact of marital status and motherhood on women's wages. I included other variables, in addition to women's marital status and motherhood, in my models, following studies on this topic from the existing literature. For example, I have included firm size as a variable, which could have a positive effect on women's wages because larger firms tend to earn higher revenues and profits. In line with the literature on human capital, I also included the level of formal education as a variable which would have an expected positive effect on productivity levels. I also included a tenure variable in order to capture the effect of on-the-job-training and experience. I also created the variable which I label "**MoreTenure**" to capture the impact of job tenure of more than 5 years on women's wages. The variable "Tenure" and wages variables could potentially cause an endogeneity problem because these two variables could be correlated.

An indicator for union status was also included, because unions can have a positive impact on wages compared with non-unionized employees. An indicator for full-time

employment status was also included, and is expected to have a positive impact on wages. The total number of employed persons in the household was also considered in my model, because women may behave differently when they are the sole income provider for their household compared to a case in which that responsibility is shared. In my model, I combined married and common-law women, although in the literature, these variables are typically entered separately in order to model the effects of different levels of labour-force engagement. Indicators for the cities of Montreal, Vancouver and Toronto are also included with their own coefficients, with the expectation of higher wage premiums and a higher degree of labour market competition in these cities compared to the rest of Canada.

I did not consider including in my regression a "region" variable instead of "city" variable, based on the precedent that was set in similar, previous studies, and also because maternity leave policies are the same across regions of Canada, but within bigger cities, there is an evident difference in the degree of labour market competition and wages, which is a relevant variable to consider when studying women's wages.

As we can observe in tables 1 and 4, in April 2012, 41.3% of women who worked had children, compared with on slightly higher value of 41.7% in January 2013. The percentage of working women who were unionized in Canada on average was 32.7% in April 2012, which increased to 33.8% in January 2013. The percentage of women who had a post-secondary degree represented 65.8% of the female labor force in April 2012 and 65.5 % in January 2013. Women's wages were on average around \$21.84 per hour in April 2012 and \$22.13 per hour in January 2013. 66.8% worked for large firm in April 2012, compared to 67.5% in January 2013. In my data set, a significant percentage of women were married; 46.7% in April 2012 and 46.4% in January 2013. In terms of location, 35.7% of women in

my dataset were living in Montreal or Toronto or Vancouver in April 2012 compared to 36.6% with January 2013.

In general, these variables of the labour market show a very slight evolution of the position of women in the labour force in Canada from April 2012 until January 2013. The values are relatively similar over this time period, which strengthens my confidence in their validity.

## **Econometric Model**

The econometric model that I estimated in this study takes the form of the following cross sectional equation:

$$\text{Ln}(\text{wage}_i) = \beta_0 + X_i \beta_1 + \varepsilon_i \quad (1)$$

where  $\text{Ln}(\text{wage}_i)$  is the natural logarithm of wages of individual  $i$  (in April 2012 or January 2013), and the vector  $X_i$  accounts for Marital status, motherhood, education, age, large firm<sup>1</sup>, central metropolitan area and full time status.  $\varepsilon_i$  is the error term of the regression model, representing all other influences that are either unspecified or unobservable.

## **Empirical Results**

Table 2 and Table 5 present the OLS results for all women in the dataset for three specifications of equation (1) for April 2012 and January 2013, respectively. These results differentiate between women who have children and childless women for the three specifications of equations (1). Table 3 presents the OLS results for women who have

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<sup>1</sup> Size of firm is considered as a regressor since large firms pay more than small firms.

children for three specifications of equation (1). For these specifications, indicators for the age range of the children are added.

### ***Does Marital Status Affect Women's Wages?***

The results show that women who are married, separated, widowed or divorced, earn more than single women in general, holding the variable of motherhood fixed. In general, my results found that women who are married earned higher wages on average than their counterparts who are single. My results among all women ( whether or not they had children) showed that in April 2012, married women earned 9.7% more than single women, and married women conditional as having children on average earned 1.6% more than single women. The pattern was the same for January 2013, where married women earned 10.4% more than single women, and married women with children on average earned 1.5% more than single women.

I also found that the number of employed persons in a household can impact women's wages. In the April 2012 dataset, women who were the only employed persons in a household earned, on average, 10% more than their counterparts who lived in households with two employed persons, and about 6.8% more than household with three earners. Similar results were also found in the January 2013 dataset, where women who were the only employed persons in a household typically earned 0.8% more than their counterparts living in households with two earners, and 7% more than in households with three earners.

However, this effect seems to change when women have children. My results indicate that women in households with another earner who have children earn more on average than women in households without a second earner. In the April 2012 dataset, women who had children and two employed persons in the household made on average 6.1% more than their

counterparts who did not have another earner in the household. Women who lived in a household with three employed persons, made, on average, 4.8% more than their counterparts who lived in a household without any other earners. The same pattern was found in the January 2013 dataset: women who had children and two employed persons in the household made, on average, 4.8% more than their counterparts who did not have another earner in the household. Women who lived in a household with three employed persons, earned, on average, 3.6% more than their counterparts who lived in households without any other earners.

### ***Does Motherhood or Fertility Affect Women's Wages?***

The results from this study dovetail with similar studies conducted on the relationship between marriage, motherhood, and women's wages in Canada. In Canada, the government has implemented positive policies which help women stay in the labour force and maintain professional experience in order to progress in their careers. These policies are different from policies in other countries, such as the United States. The results of this study (Table2) show that women with children earned wages that were approximately 4.5% higher than women who did not have children. In April 2012 and January 2013, women with children earned approximately wages 4.4% higher than women without children, consistent with findings from previous literature.

When I examined the impact of ages of children on their mother's wages, we found that women who have children under the age of 3 have, on average, a higher wage compared to women who have older children. These findings are similar to those reported in Drolet (2002), as well as other studies from the literature. In Tables 1 and 4 which contain summary

statistics, we observed that 74.2% of women occupied full-time positions, and 66.8% of women were working in large firms in April 2012, and in January 2013, 74.0% of women occupied full-time positions, and 67.5% of women were worked in large firms. On average, women who occupied full-time jobs and had children earned 13.8% (Table 3) higher wages than their counterparts who worked part-time in April 2012, and 14.1% (Table 6) higher in January 2013. Women with children who worked in large firms also earned more than their counterparts who worked in smaller firms, earning on average about 12.5% more in April 2012, and approximately 12.0% more in January 2013. This study found that in general, having children had a positive impact on women's wages in Canada. The fact that women with children have higher wages than those without children may be attributed to their higher level of productivity.

Another important pattern that was found in my study was that the proportion of all women who were employed in 2009 and had children under the age of 16 living at home was 72.9%, nearly twice the rate recorded in 1976. This trend shows that over time, women have been able to increase their participation in the workforce tremendously despite childbirth and motherhood, which also helps women gain experience to obtain better jobs and earn higher wages later on. Because women can maintain their employment status during motherhood, this allows them to maintain and increase their wages. It is important to mention that the timing of children can also affect women's wages. Drolet (2002) found that women who postpone having children earn, on average, 6 % more than women who have children early in their child-bearing years. This result could be because women who delay having children have time to gain more work experience and develop human capital skills.

I also found that women who have children and live in a household with two or three persons employed have higher wages on average than those who are the sole bread winner in their household. In April 2012 (Table 3), in households with two persons employed, the wages of women who have children were 6.1% higher than in households in which women were the sole breadwinner and 4.8% higher when there were three employed persons in a household. The results show the same pattern in January 2013. In households for which two persons were employed, women's wages were about 4.8% higher than in households with one breadwinner, and 3.6% higher in households with three employed persons. In this case, women who are the sole bread winners in their household actually make less than women who are in households with more than one bread winner, even though women who are the sole breadwinner in a household tend to face greater financial responsibilities. Women who live in households with multiple earners appear to be more productive than women who are the sole breadwinners. This reflects influences that are unobservable but are positively correlated with the number of wage earners in the household.

While the difference between average wages of women with and without children is not very large, nevertheless, these findings can eliminate the common misconception that having children negatively impacts a woman's career in Canada. At least in Canada, having children does not have a negative impact on women's wages, which might be related to the fact that Canada has progressive family and maternity policies that support women.

### ***Does Living in a Big City Affect Women's Wages?***

Women who have children and live in big cities such as Montreal, Toronto and Vancouver earn, on average, lower wages than women with children who live elsewhere in

Canada, keeping other variables constant. One reason for this phenomenon could be that big cities tend to have a more competitive job market and more qualified job candidates, compared to smaller cities. In big cities, it takes less time to fill a job opening, indicating a high level of competition and a highly skilled labor force. This competition can reduce the average-salary for women, especially when they have children because having children can limit the experience that women need to progress in their career by the time it takes for them to reintegrate the work market in such cities. Overall, the wages are higher in the big cities but for women who have children, the result is different.

My results indicated that, in the April 2012 dataset, on average, women with children who lived in Montreal and Toronto earned about 1% less than their counterparts living in other parts of Canada, and they made about 3.8% less in Vancouver. Results were similar using the January 2013 dataset. On average (Table 6), women with children who lived in Montreal and Toronto earned about 5.8% and 1.1% less, respectively, than their counterparts living in other parts of Canada, and they made about 1.6% less in Vancouver. According to Statistics Canada, Ottawa, Calgary and Edmonton are the cities in Canada with the highest average family income for 2010. In this section, we learned that women who live in big cities tend to have lower wages may be because they face a more competitive job market and compete against many more qualified job candidates, compared to smaller cities, and this situation can disadvantage women who have children.

The results also show that women with more than five years in a job position have 20.6% higher wages than those who have less tenure. *Ceteris paribus*, on average, women who work in large firms earn 10.5% more than those in small firms, and women who have children and are working in large firms earn, on average, wages that are 12.5% higher than

women who work in small firms. In addition, women who hold a full-time job position earn wages that are 17.4% higher than those who hold a part-time job position. This wage premium is 13.8% when they have children. In general, my results indicate that tenure and size of firm also have positive effects on women's wages.

### ***Endogeneity Problems***

In this study, I had to omit some variables from the regression model for which data were not available for the analysis, such as ability, industriousness, country, experience, culture, and ethnicity, all of which could contribute to any wage effects that are discerned. I can use some instrumental variables or proxy variables to proxy for their influence in the model.

The important issue with endogeneity is that the number of children that a woman has could well be correlated with unobservable variables that could affect the wage. It seems to me that the impact on the wage could be positive or negative, and I cannot think of obvious channel. Women with multiple children could be inherently more productive or less productive. As far as reverse causality is concerned, it seems possible to me that as the wage increases, one cannot say whether the number of children that she has rises or falls.

## Conclusion

In this paper, I researched the impact of marital status and motherhood on women's wages. This paper used cross-sectional data from the April 2012 and January 2013 drawn from the Labour Force Survey of Canada. My results indicated that, contrary to popular belief, being married or having children does not have a negative effect on women's wages in Canada. My results are consistent with results from similar, previous studies conducted by Korean and Newark (1991), and Drolet (2002). While Waldfogel (1998) did find a negative effect on having children and women's wages in the United States, this difference in results might be due to the difference in policies between the United States and Canada regarding women and maternity support. Policies in Canada that do not exist in the United States that support women during maternity and childcare, such as maternity leave policies, could account for the differences in women's wages in both contexts.

In my research, I found that, in general, married women with children have higher wages than single women with children. I also found that married women earn, on average, 8% more than single women, and women who work in large firms have higher wages than those who do not. This study also shows that women's wages are affected by the number of other employed persons in the household. When women with children are not the sole income provider in their household, they make, in general, more than women with children who are the sole income provider. However, my results also show that women who do not have children make slightly less than women who do have children.

My research also has implications for some interesting avenues for future research, such as continuing to analyze the relationship between childbirth, motherhood, and women's

wages using the most up-to-date labor data available. This research also might have important policy implications by suggesting that Canada's policies for supporting women in childbirth and motherhood are effective in eliminating any wage penalties for women who have children or get married. Thus, this research can contribute to policy understanding of policy and illustrate the positive implications of these policies. Other countries show that women do suffer wage penalties for having children, such as in the United States. Thus, there is some evidence clear that policies that support maternity leave and childcare services do impact women's wages and career progressions. The maternity leave policies might have facilitated the participation of relatively high productivity women in labour force in Canada.

My paper shows that women in Canada suffer no wage penalties for being married or having children, while other studies have indicated that women in other countries do suffer such wage penalties. Thus, important differences in policy between Canada and other countries could be what contravene these wage penalties for women.

In the future, research could also be conducted on the effects of motherhood in different social classes, countries and ethnicities, and how these variables impact women's wages. Further research could also explore the impacts that maternity leave policy and childcare policies have on society in general. It would be important to pursue rigorous research in which we are going to observe and compare the wage of mothers who took a maternity leave or subsidies for child care against those who do not take up those advantages.

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*Table 1: Summary Statistics– April 2012*

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	Weighted Mean
Women with child	.413 (.492)
Union	.327 (.469)
Full Time	.742 (.437)
Large Firm	.668 (.471)
One worker	.287 (.452)
Two Workers	.449 (.500)
Tenure >=60 months	.472 (.499)
Married	.467 (.499)
Common law	.144 (.352)
Separated	.333 (.180)
Divorced	0.057 (.232)
Widowed	.013 (.111)
Never Married	.285 (.452)
High School	.345 (.475)
College	.370 (.483)
University	.285 (.451)
Wage	21.837 (11.478)
Montreal	.114 (.318)
Toronto	.170 (.376)
Vancouver	.073 (.261)
Observations	26,462

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Note: Standard deviation in parentheses.

**Table 2: Coefficients Obtained With the Regression – OLS Results (1) – All Women - April 2012**

	1	2	3
Union	0.226*** (0.006)	.172** (.005)	.174*** (.006)
Full Time	.246*** (.006)	.175*** (.006)	.174*** (.006)
Large Firm	.120*** (.006)	.106*** (.005)	.105*** (.005)
College	.184*** (.006)	.158 (.006)	.158*** (.006)
University	.412*** (.006)	.391 (.006)	.391*** (.006)
More Tenure		.206*** (.005)	.206*** (.005)
Two Workers		-.010*** (.007)	-.010*** (.007)
Three workers		-.067*** (.007)	-.068*** (.007)
Women With child		.045*** (.005)	.045*** (.006)
Married		.098*** (.007)	.097*** (.007)
Common-law		.071*** (.009)	.074*** (.009)
Widowed		.082*** (.022)	.083*** (.022)
Separated		.068*** (0.014)	.067*** (.014)
Divorced		.086*** (.011)	.086*** (.011)
Montreal			-.014*** (.008)
Toronto			.010** (.007)
Vancouver			-.009*** (.009)
Constant	2.440*** (.006)	2.375*** (.008)	2.377*** (.008)
R <sup>2</sup>	.306	.373	.374
Observations	26,462	26,462	26,462

Note: Standard deviation errors are in parentheses. All regressions are using sample weights.

\* Significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

**Table 3: Coefficients Obtained With the Regression – OLS Results (2) – Women With Children- April 2012**

	1	2	3
Union	.193*** (.009)	.161*** (.009)	.160*** (.009)
Full Time	.166*** (.010)	.139*** (.010)	.138*** (.010)
Large Firm	.142*** (.009)	.125*** (.009)	.125*** (.009)
College	.138*** (.010)	.139*** (.010)	.139*** (.010)
University	.421*** (.011)	.406*** (.010)	.409*** (.011)
youngest3	.012*** (.015)	.040*** (.015)	.039*** (.015)
youngest35	-.014*** (.0156)	.010*** (.015)	.009*** (.015)
youngest612	-.010*** (.014)	.006*** (.013)	.006*** (.013)
youngest1617	.020*** (.018)	.005*** (.018)	.005*** (.018)
youngest1824	.013*** (.014)	-.012*** (.014)	-.011*** (.014)
More Tenure		.198*** (.008)	.198*** (.008)
Two Workers		.062*** (.013)	.061*** (.013)
Three Workers		.049*** (.016)	.048*** (.016)
Married		.014*** (.018)	.015*** (.019)
Common law		-.023*** (.020)	-.024*** (.020)
Widowed		.046*** (.046)	.047*** (.046)
Separated		.051*** (.024)	.052*** (.024)
Divorced		.032*** (.023)	.033*** (.023)
Montreal			-.011 (.013)
Toronto			-.010*** (.011)
Vancouver			-.038*** (.016)
Constant	2.573*** (.016)	2.444 (.021)	2.451*** (.021)
R <sup>2</sup>	0.258	0.300	0.300
Observations	10,907	10,907	10,907

Note: Standard deviation errors are in parentheses. All regressions are using sample weights.  
 \* Significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

*Table 4: Summary Statistics – January 2013*

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	Weighted Mean
Women with child	.417 (.493)
Union	.338 (.473)
Full Time	.740 (.439)
Large Firm	.675 (.469)
One worker	.285 (.451)
Two Workers	.502 (.500)
Tenure >=60 months	.485 (.500)
Married	.464 (.499)
Common law	.150 (.358)
Separated	0.033 (.179)
Divorced	0.058 (.235)
Widowed	.013 (.113)
Never Married	.281 (.450)
High School	.341 (.474)
College	.366 (.482)
University	.292 (.455)
Wage	22.134 (11.468)
Montreal	.117 (.321)
Toronto	.179 (.383)
Vancouver	.070 (.255)
Observations	26,099

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Note: Standard deviation in parentheses.

**Table 5: Coefficients Obtained With the Regression – OLS Results (1) – All Women – January 2013**

	1	2	3
Union	.212*** (.006)	.160** (.005)	.161*** (.005)
Full Time	.240*** (.006)	.172*** (.006)	.171*** (.006)
Large Firm	.120*** (.006)	.106*** (.005)	.106*** (.005)
College	.193*** (.006)	.163 (.006)	.164*** (.006)
University	.416*** (.006)	.390*** (.006)	.391*** (.006)
More Tenure		.193*** (.005)	.193*** (.005)
Two Workers		-.007*** (.006)	-.008*** (.006)
Three workers		-.069*** (.007)	-.070*** (.007)
Women With child		.044*** (.005)	.044*** (.005)
Married		.107*** (.007)	.104*** (.007)
Common law		.077*** (.008)	.081*** (.009)
Widowed		.028*** (.021)	.025*** (.021)
Separated		.055*** (.014)	.053*** (.014)
Divorced		.132*** (.011)	.132*** (.011)
Montreal			-.047*** (.008)
Toronto			.005** (.006)
Vancouver			-.016*** (.009)
Constant	2.455*** (.006)	2.386*** (.008)	2.391*** (.008)
R <sup>2</sup>	.307	.373	.374
Observations	26,099	26,099	26,099

Note: Standard deviation errors are in parentheses. All regressions are using sample weights. \* Significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

**Table 6: Coefficients Obtained With the Regression – OLS Results (2) – Women With Children – January 2013**

	1	2	3
Union	.176*** (.009)	.147*** (.008)	.146*** (.008)
Full Time	.165*** (.009)	.139*** (.009)	.141*** (.009)
Large Firm	.136*** (.009)	.120*** (.009)	.120*** (.009)
College	.167*** (.010)	.158*** (.009)	.160*** (.009)
University	.430*** (.010)	.409*** (.010)	.414*** (.010)
youngest3	-.042*** (.014)	-.017*** (.014)	-.017*** (.014)
youngest35	-.033*** (.0152)	-.011*** (.015)	-.011*** (.015)
youngest612	-.030*** (.013)	-.018*** (.013)	-.019*** (.013)
youngest1617	.014*** (.017)	.001*** (.017)	.001*** (.017)
youngest1824	.023*** (.014)	-.005*** (.014)	-.005*** (.013)
More Tenure		.181*** (.008)	.182*** (.008)
Two Workers		.048*** (.012)	.048*** (.012)
Three Workers		.038*** (.015)	.036*** (.015)
Married		.033*** (.018)	.028*** (.018)
Common law		-.011*** (.019)	-.013*** (.019)
Widowed		-.043*** (.043)	-.050*** (.043)
Separated		.007*** (.023)	.002*** (.023)
Divorced		.111*** (.022)	.108*** (.022)
Montreal			-.058 (.012)
Toronto			-.0110*** (.010)
Vancouver			-.016*** (.015)
Constant	2.596*** (.015)	2.471 (.021)	2.480*** (.021)
R <sup>2</sup>	0.266	0.304	0.306
Observations	10,862	10,862	10,862

Note: Standard deviation errors are in parentheses. All regressions are using sample weights.

\* Significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

