

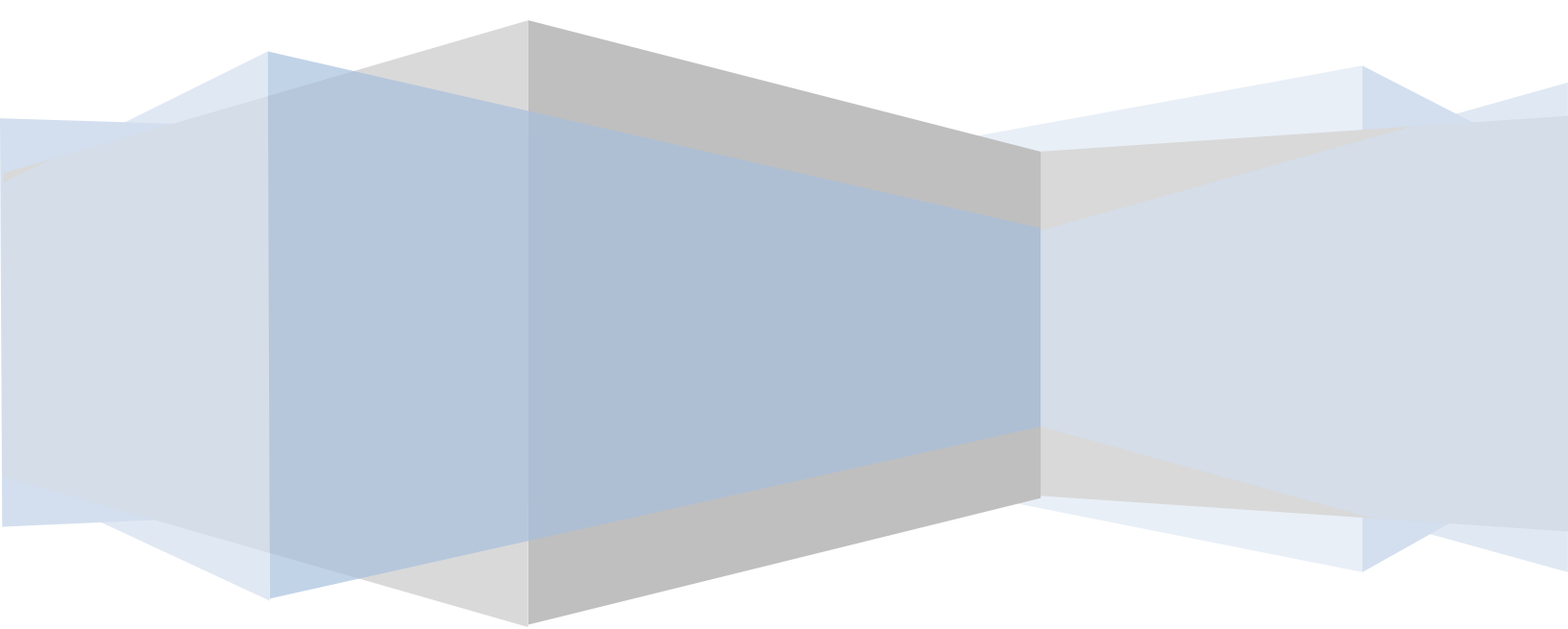
**University of Ottawa**

# **Gender-Wage Discrimination by Marital Status in Canada: 2006 to 2016**

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## Abstract

Using Canadian Labour Force Survey (LFS) data for the month of January from 2006 to 2016, by two-year intervals, this paper investigates gender-wage differentials by marital status in Canada. Utilizing a Blinder-Oaxaca decomposition technique, this paper finds that the "unexplained" component of the wage gap, interpreted by some as a measure of discrimination, is positive in all the years in the study for married and single females. Examining primary differences *between* marital groups, I explore how gender-wage discrimination affects married women relative to single women. The results indicate that married females face higher total wage gaps and greater discrimination than their single counterparts. However, upon closer inspection of the *proportion* of the total wage gap that is attributed to discrimination *within* each marital group, we find that proportion to be higher for single females. Therefore, taking the proportion of the total wage gap as a measure, we find that married females face less discrimination than single females. It is important to note that conclusions drawn from the analysis are contingent upon the definition of "discrimination", as it is apparent that referring to discrimination as the "unexplained" component of the wage gap as opposed to the proportion of the wage gap that is "unexplained" yields conflicting results.

## 1. Introduction

For many years, politicians and policymakers alike have highlighted the importance of achieving gender wage equality. It is a well-documented fact that females earn less than their male counterparts, a fact that the literature indicates is valid throughout the world. However, despite the fact that the gender pay gap has been subject to extensive research and study, there remains significant and persistent variation in wages between men and women.

Reducing this inequality is important for several reasons. First, if women's abilities are not fully reflected in their wage and position in the labour market, they are less likely to participate in the labour market because the benefit to doing so is lower. Furthermore, those who do choose to participate in the labour market are less likely to fulfil their economic potential, as there is less incentive to excel. Assigning a "just" and "accurate" value to women's skills therefore would increase their overall contribution to the economy. Second, eradicating the gender pay gap would promote social justice and assist with other political pursuits such as poverty reduction: increasing the lifetime earnings of females would undoubtedly lower their chances of falling into poverty (Eurostat, 2016). Put simply, the existence of the gender wage gap indicates lost economic opportunities.

Previous research into the gender wage gap has found that a large fraction of the inequality can be accounted for by explicit discrimination against women and structural inequalities (such as access to education and segregation within particular occupations). Moreover, some researchers theorize that the gender pay gap can also be attributed to differences in *decisions* regarding education, field of occupation, and commitment to the labour market.

Essentially, this difference in preferences leads women to work fewer hours or in lower paying professions, attaining a lower level of education and accruing less experience than their male counterparts – thereby decreasing their human capital endowment (Diaz and Sanchez, 2013, p. 58). Further theories suggest that males and females also differ in their preferences for market vs. non-market work, arguing that women are more dedicated to caring for children and the home, and as a result invest less in education and labour market activities.

However, in recent years, society has seen a decline in gender differences in educational achievement, and there has been a significant increase in women’s labour force participation rate. Effectively, these socioeconomic factors are losing relevance and as a result, the gender pay gap has decreased. However, wage differences between men and women are still significant, even when we account for differences in human capital and individual characteristics (Blau and Kahn, 2000). The fraction of the gender wage gap that cannot be attributed to differences in personal characteristics and human capital endowment is “unexplained”, and is broadly taken as a measure of discrimination.<sup>1</sup>

Despite extensive research examining the gender wage gap over time and its underlying causes, few empirical investigations have explored the degree to which the gender wage gap may differ within and across marital groups. Indeed, the compromise between family and career has become increasingly prominent in recent years as more women are choosing to delay starting families, and even more return to the workforce after giving birth. This paper will investigate the gender wage gap between married males and married females, and between single males and

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<sup>1</sup> However, it is important to note that this unexplained fraction may also be due to other productivity-related factors which are difficult to measure and which are not controlled for in existing models.

single females, in order to assess the extent of gender discrimination present for both marital groups. Using Canadian Labour Force Survey data from 2006 to 2016, I focus particularly on the degree of discrimination faced by single females as opposed to married females. The results find that while married women face higher wage discrimination than single women, the proportion of the wage gap attributed to discrimination *within* each marital group is higher for single females.

This paper is organized as follows. Section 2 will discuss the relevant literature related to the gender-wage gap in Canada and the role of discrimination in the labour market. In section 3, the paper will describe the Labour Force Survey dataset and variables, the summary statistics, as well as the model utilized in the analysis. Section 4 will present the empirical results and discuss their implications, and lastly we provide concluding remarks in Section 5.

## 2. Literature Review

Empirical investigations into gender wage inequality are numerous, employing a variety of statistical methods and datasets in order to discover underlying trends. Examining the gender pay gap across time and countries, results vary, as do the rationales proposed by researchers to justify their conclusions. However, one irrefutable fact remains common to all studies: women throughout the world earn less than their male counterparts.

In a recent study exploring gender wage gaps in Canada, Morissette, Picot, and Lu (2013) observe that the gender wage gap in Canada, based on median wages, appears to be narrowing. Using a variety of survey data - including the Survey of Work History (SWH), the Survey of Union Membership (SUM), the Labour Market Activity Survey (LMAS) and the Labour Force Survey (LFS) - Morissette *et al.* conclude that the gender wage gap decreased by half between

1981 and 2011, from 26% to 13%. In an earlier study, through the analysis of Canadian census data and the data from the Survey of Consumer Finances (SCF), Baker *et al.* (1995) also find that the gender wage gap has decreased in Canada over time. Specifically, they report that the female to male earnings ratio rose steadily from 0.60 in 1970 to 0.67 in 1990, indicating continuous, although modest, progress of females in the Canadian labour market over that time period. Baker and Drolet (2010) also studied SCF data as well as the Survey of Labour and Income Dynamics (SLID), and recorded similar results for the time period between 1988 and 2008. The fact that these studies all yield consistent results implies that the conclusions are seemingly robust to the types of data employed in the empirical analysis.

Examining the gender wage gap in the US labour market, Blau and Kahn (2000) conclude that the gender wage gap has also declined significantly over previous decades. Moreover, they remark that much of this decline can be attributed to “gender specific factors”, such as the increasing levels of education attained by women, and the increasing participation rate of women in the labour force. These results are consistent with Drolet’s (2011) conclusion that two thirds of the decrease in the gender wage gap in Canada can be ascribed to “changes in the relative characteristics of male and female workers,” (p.3) including changes in level of education and field of occupation. It is perhaps not surprising that the results for Canada and the US are so similar, given their similar levels of economic development, industrial composition, and political stances on gender equality.

Elsewhere in the world, some data appear to exhibit the opposite trend, with several studies observing an increase or no change in the gender wage gap in previous years. In particular, Atencio and Posedas (2015) note that the male-female wage gap in Russia “remains fairly constant despite huge changes in the economic structure” (p.2). In contrast, the gender

wage gap in South Africa has widened from 1995-2006 (OECD, 2012, p. 168). The gender wage gap in China has also displayed an increasing trend, broadening from 16% in 1995, to 26% in 2011 (Li and Song, 2011). However, it is important to note that the latter study only encompasses the mean wages of workers in several regions of China using the China Household Income Project, due to difficulties obtaining a comprehensive dataset.

Focussing specifically on gender pay inequality in Canada, it is readily apparent that the gap is decreasing steadily over time. Much of the previous literature observes that that a large proportion of the gap can be explained by the fact that women have increased their attributes related to productivity by a substantial amount. Preceding research has examined a wide variety of potential factors, including job tenure, occupational segregation, and level of education.

Referring to the length of time an employee remains in the same position, job tenure for women in Canada has shifted dramatically in recent decades. Morissette *et al.* (2013) report that, between 1981 and 1988, the average job tenure for females increased by 25.6 months – over 7 times the increase in average job tenure for males over the same period. This difference in relative improvements translates into a decrease in the gender wage gap. Essentially, the fact that women are employed in longer-term jobs increases the likelihood that they are receiving higher wages as they gain experience. Since the tenure (and therefore potential wages) for men is increasing at a lower rate, the gap between pay for males and females is reduced. Using more recent data, Drolet (2011) records similar results, observing that the gender difference in job tenures in Canada fell from 33.1 months to 6.7 months between 1978 and 2008. Upon careful analysis, she concludes that this result was attributed to a rise in average job tenure among females – approximately 2 years over the same thirty-year period.

Another factor which has been shown to influence gender wage inequality is occupational segregation. Traditionally, women have exhibited a strong tendency to be employed in what are viewed as primarily “female” occupations, such as childcare, secretarial jobs, the arts, etc., while men are frequently employed in the sciences and trades. Typically, the types of jobs chosen by females in the past have been in lower-paying occupations than jobs generally occupied by males, which require higher qualifications. The apparent occupational segregation of males and females is likely due to a number of factors, including gender stereotyping and inflexible working hours. Social attitudes which stereotype the roles men and women are perceived as having in society can influence and limit career aspirations, implicitly guiding females towards some particular occupations and males towards others. Furthermore, in many families, women often assume responsibility for caring for the children. Therefore, they are often unable to accept employment in full-time occupations or in occupations where hours are not flexible, as they are then unable to fulfill their responsibilities caring for their children. These constraints therefore present a lack of available options, and so many females turn to part-time, low-paid work due to the absence of feasible alternatives.

Examining these socioeconomic issues in the United States from an empirical perspective in the early 1990s, Groshen (1991) notes from her study of five Bureau of Labor Statistics Industry Occupational Wage Surveys (IWS) that “although men and women who work together in [the same occupation] earn about the same amount, such integration is rare” (p. 468 ). Despite the fact that women who do find themselves employed in predominantly male occupations earn approximately the same amount as their male counterparts, there is a clear selection bias in most occupations. Groshen (1991) explores the extent of this bias, and finds that gender segregation in

the workplace is responsible for approximately half of the observed wage gap between males and females. Examining gender segregation both by occupation and by establishment, Groshen (1991) concludes that segregation by gender varies primarily by establishment.

Consistent with results recorded by Bielby and Baron (1984) and Blau (1977), Groshen (1991) further finds that occupations in the manufacturing industries tend to be more separated by gender than those in the services industries. It is possible that deficiencies in females' physical strength may be responsible for the increased gender segregation in the manufacturing industries, as occupations in these industries tend to be more physically demanding. However, Johnson and Solon (1986) study the extent to which segregation in the workplace is attributed to differences in human capital, and conclude that even if there were no difference in human capital between the genders the wage gap would only be narrowed slightly.

Another factor which has been found to contribute to the gender wage gap is unionization. In particular, declining unionization rates exhibited in many countries throughout the world is credited with further narrowing the gender wage gap. The motivation for this theory is that, typically, unionized workers earn more than workers in occupations that are not unionized. Blau and Kahn (1997) examine the wage gains of females in the United States throughout the 1980s and find that union membership declined more for males than for females over the sample period. Upon close examination, they observe that the fall in unionization rate had a greater negative impact on male wages, thereby negatively influencing the gender wage gap.

Supporting the results reported by Blau and Kahn (1997, 2000), Drolet (2011) analyzes LFS data and remarks that the changing structural composition of the Canadian economy – in particular the shift from the manufacturing sector towards the services sector – is decreasing the unionization rates for both male and female workers. Predominantly occupied by male workers, more jobs in the manufacturing sector are unionized than jobs in the services industry. Therefore, Drolet (2011) notes that the structural changes exhibited in the Canadian economy over the past decades has had a “disproportionately larger impact on the unionization rates of men ... [to the extent that] the male-female unionization gap disappeared” (p.4). Thus, the steady elimination of this source of inequality has contributed to the decline in the gender pay gap in Canada evidenced in recent years.

Consistent with these findings, Even and MacPherson (1993) report that unionism in the United States has fallen more dramatically for male workers because the unionization rate fell more rapidly in primarily-male occupations. Employing a decomposition technique to incorporate union status as an endogenous variable, Even and Macpherson (1993) conclude that the decline in unionism accounts for approximately one-seventh of the decrease in the gender wage gap in the United States between 1973 and 1988. Doiron and Riddell (1994) utilize the same decomposition technique as Even and Macpherson (1993) to analyze the influence of unionization on the gender wage differential in Canada between 1981 and 1988. Despite finding the net impact of unionism on the gender wage gap to be relatively small, Doiron and Riddell (1994) estimate that the decline in unionism “prevented an increase of 7 percent that would otherwise have occurred in the overall earnings differential between men and women” (p.25).

Using a similar sample period as Doiron and Riddell (1994), Drolet (2011) demonstrates the significant role of education in affecting the gender wage gap. Studying women working in the Canadian labour market between the ages of 25 and 54, she finds that the number of women participating in the labour force and who have attained an undergraduate degree increased from 15.7% in 1990 to 29.3% in 2008. In contrast, the corresponding figures for males over the same period presented a far more modest increase – from 17.7% to 25.3%. Generally, higher levels of education are associated with higher earnings, and thus the fact that the level of education attained by females has risen by a disproportionate amount helps to explain part of the decline in the gender wage differential.

Boudarbat and Connolly (2013) generate similar results. Using 2006 census data, they find that 54% of the women above the age of 25 have attained a post-secondary certificate, compared to 58% of the men. However, examining a younger cohort between the ages of 25 and 34, the fraction that have completed post-secondary education increases to 71% for females and 62% for men (p.1038). Effectively, a growing number of women are attaining post-secondary certificates, which increases the overall participation rate of females entering the labour force as it becomes easier to find employment. Indeed, Christofides, Hoy and Yang (2010) and Boudarbart, Lemieux and Riddell (2010) cite increasing returns to education as a primary contributor to the rising number of women pursuing further education.

While many researchers have identified factors such as human capital, tenure, preferences, education, and personal characteristics as influencing gender wage inequality, a significant proportion of the gender wage differential cannot be explained by differences in

observable characteristics such as these. Miller (1987) estimates that variance in these wage-related characteristics accounts for between 45 to 58 percent of the gender pay gap, implying that approximately half of the gap remains unexplained. Furthermore, both Baker *et al.* (1995) and Gunderson (1998) estimate that only one quarter of the gender earnings gap between 1970 and 1985 can be reasonably explained by gender differences in observable characteristics.

Theorizing that the recent improvement in the gender wage gap is achieved by a significant decline in the “unexplained” proportion of the gap, Blau and Kahn (2007) claim that although women continue to face labour market discrimination, the degree of inequality appears to be decreasing. Moreover, they argue that the gender division of labour in the home is responsible for a large fraction of the gender pay gap observed in the labour market. Nicodemo (2009) studies wage differentials in families and finds that even when controlling for differences in observable characteristics, the wages of husbands remain significantly higher than the wages of wives. She thus concludes that though the characteristics effect is statistically significant, the largest contributor to the male-female wage differential remains unexplained. Nicodemo (2009) rationalizes that since a larger part of the gap cannot be explained by any visible attribute, this unexplained component can thus be described as a measure of discrimination; a determinant of wages based solely on gender.

Therefore, it is apparent from the literature that although women have seen significant improvements in gender wage inequality, the question as to whether that trend can continue remains unanswered. Implementing structural and policy changes to correct for differences in observable characteristics is no easy task, but harder still is attempting to correct for differences in a factor which cannot be explained. In fact, although gender wage differentials have exhibited a downward trend in recent decades, the rate of convergence has slowed (O’Neil, 2003; Fortin,

2005; Blau and Kahn, 2007; Coulombe and Frenette, 2007). This paper will extend the previous literature assessing the gender pay gap by focussing particularly on gender wage differentials by marital status. In doing so, we aim to establish a more detailed representation of gender wage discrimination in Canada.

### **3. Data and Descriptive Statistics**

This paper will utilize Canadian Labour Force Survey (LFS) data for the month of January from 2006 to 2016, by two-year intervals, to examine gender-wage differentials by marital status in Canada. Labour Force Surveys are mandatory surveys carried out every month (usually the week that includes the 15<sup>th</sup> day of the month) to collect detailed data from the working-age population (15 years of age and older) who are employed, unemployed, or not in the labour force. These cross-sectional data provide estimates for the employment rate, unemployment rate, and participation rate, which are among the most important indicators of labour market performance in Canada. These datasets also provide descriptive data on individuals in the labour market. A key aspect of LFS datasets is that they include information on the usual hourly wages of workers. While many studies examine annual earnings of full-time full-year workers, the benefit of analyzing wages instead is that they “more closely correspond to the price of labour that is the focus of economic models of discrimination” (Baker and Drolet, 2010) and are much less prone to measurement error. It is important to note that LFS data excludes individuals who are institutionalized, living on reserves, or full-time members of the armed forces.

Examining LFS data between 2006 and 2016 (by two-year interval) will show how gender-wage discrimination has evolved over the past decade. Moreover, the time frame permits

the analysis of the variation in gender-wage discrimination before, during, and after the 2008 recession. Two-year intervals are used in this paper in order to increase the time frame of the analysis while ensuring that year-over-year variations are accounted for. Monthly data are used for this paper due to data availability, and the month observed (January) was chosen at random. It is important to note that the month of the year is not expected to influence gender-wage discrimination over time in any significant way.

Two samples are drawn from the LFS data: one for currently married males and females, and another for single males and females.<sup>2</sup> Separating these two groups ensures that gender-wage discrimination can be modelled for each group over time. Restrictions are applied to these two samples in order to develop a more accurate and complete analysis. Specifically, individuals who are employed but not working during the reference week, unemployed, or not in the labour force are excluded from the samples. To ensure that males and females work a similar number of hours, only individuals working full-time are included. Furthermore, full-time incorporated, unincorporated, self-employed, and unpaid family workers are excluded from the sample due to missing data for hourly wages (i.e. they did not have an hourly wage). An age restriction of 25 to 54 years old is also imposed in order to exclude adolescents and students (who are typically not established in the labour market) and older individuals (who may be close to retirement). Put differently, those aged 25 to 54 are considered the prime-aged working group. Lastly, individuals

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<sup>2</sup> Individuals living in common-law relationships are included in the married sample, along with individuals who are legally married, given that there are very few differences between these two groups. However, only single men and women who have never been legally married comprise the single sample. In some circumstances, divorce, separating from a spouse, or being a widow may impact household arrangements and personal finances, which in turn can impact labour supply decisions and the hourly wage of an individual. Ideally, we would like to perform separate regression analyses for each of these groups in order to explore gender-wage discrimination across many marital statuses. However, due to small sample sizes for widows, divorced, and separated individuals, we focus only on single men and women who have never been married, and exclude the other three types of marital statuses. Future research should perform a similar analysis for each of these marital groups separately using annual LFS data in order to complement the findings of this paper.

whose job is covered by a union membership agreement but without a union are excluded in order to ensure that the impact of union membership status on hourly earnings for males and females is more accurately estimated.

The sample size of males and females within each marital group vary only slightly over time. Between 2006 and 2016, the average sample sizes of the groups examined are: 3,159 for single males, 2,503 for single females, 11,109 for married males, and 9,086 for married females. The sample size for each group and year is included in Tables 1 to 4.

### **3.1: Variables**

#### **Dependant Variable**

The LFS datasets include a continuous variable for usual hourly wages, in dollars. A log transformation of the usual hourly wage variable is employed to correct for the skewed distribution of this continuous variable, and is then used as the dependant variable for each sample (single and married). Using the log hourly wages of workers entails that a one unit change in an independent variable results in a percentage change in the log hourly wages.

#### **Independent Variables**

Key independent (explanatory) variables which are available in the LFS datasets are used to control for socio-demographic characteristics and productivity-related factors that may impact the log hourly earnings of male and female workers. Influencing both labour demand and supply in the labour market, education dummy variables are included in the models. Specifically, education levels are grouped into three different categories: high school or less (the reference group), post-secondary education (less than university), and university. Research has shown that education is a main determinant of an individual's human capital, with higher education resulting

in higher hourly wages, *ceteris paribus*. These independent variables will show the distribution of education between genders, both across and within marital groups, and serve to indicate whether education levels can account for some of the gender-wage discrimination in Canada over the past decade.

Age groups are also included as independent variables in the models utilized in this paper. Employed as dummy variables, age groups are defined as follows: 25-29, 30-34, 35-39 (reference group), 40-44, 45-49 and 50-54 (all in years). The age of workers plays an important role in their labour market decisions and is correlated with experience in the labour market. As workers get older, they develop more skills specific to the Canadian labour market, which often results in higher wages relative to more inexperienced (younger) workers. Furthermore, including age group dummy variables may capture evolving household structures over time and how they influence gender-wage discrimination in the labour market. Particularly, married men and women may have more children than single men and women, and married women may be more likely to pursue non-labour market activities relative to single female due to family commitments. It is also important to consider that labour market attachment, or the "need" to retain higher-paying employment, may be more important for married individuals relative to single individuals given their family responsibilities. It may therefore be the case that family roles and responsibilities increase married individuals' commitment to obtaining higher pay, or even influence an employer's decision to hire a married individual relative to a single individual. The dynamic situations that contribute to the log hourly wage gaps as well as discrimination in the labour market emphasize the need for further research in this area of interest.

The regression models also include a dummy variable for a worker's union status. This dummy variable is equal to 1 if the worker belongs to a union and to 0 otherwise. The reference

group is non-union status. Research has shown that unions tend to lower the degree of wage inequality *within* unions by increasing the wages of lower-paid workers relative to the wages of higher-paid workers, but that it increases wage inequality *between* unions and non-unions. Consequently, it is likely that the union status of a worker will have a significant impact on the gender-wage gap across marital groups, as well as the portion of that gap that remains "unexplained".

In order to take into consideration Canada's many provinces and regions, provincial dummy variables are also included as independent variables in the models. Specifically, the provinces examined are: Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick, Quebec, Ontario (reference group), Manitoba, Saskatchewan, Alberta, and British Columbia. Due to the small number of observations, the Territories are excluded from the samples.

### 3.2: Descriptive Statistics

This section will present and discuss the descriptive statistics of the four samples analyzed in this paper: single males, single females, married males, and married females. Highlighting key trends over time, these statistics will provide further context for the subsequent regressions.

Table 1 shows the descriptive statistics for single males. Data indicate that the majority of single males reside Ontario and Quebec. However, the percentage of single males residing in Ontario declined between 2006 and 2016, from 40.8% to 36.7%. On average, 13.7% of single males resided in Alberta, and 13.0% resided in British Columbia, between 2006 and 2016. The data indicate that the percentages of single males residing in the Atlantic Provinces,

Saskatchewan, and Manitoba have been relatively small over the past decade. The share of single males whose highest educational attainment was high school or less was largest among all educational groups, although this share declined from 40.2% in 2006 to 34.5% in 2016. In contrast, the percentage of single males with university education increased from 25.5% to 29.7% over the past decade. Indicating that many single males are relatively new labour market entrants, the largest share of single males is between the ages of 25 to 29, followed by the ages 30 to 34. It is also interesting to note that the percentage of single male union workers has declined over time, most notably between 2012 (28.2%) and 2016 (25.7%). Table 1 also shows that the hourly wage of single males has increased over time, from \$20.62 in 2006 to \$26.70 in 2016.<sup>3</sup>

Analyzing the descriptive statistics of single women in Table 2, we find that the majority reside in Ontario and Quebec, and that the largest share (approximately 35% over the 2006 to 2016 period) are between the ages of 25 and 29. Furthermore, more single females are union workers relative to single males, although this share has been declining over time. Consistent with previous literature highlighting the gains of women in productivity-related characteristics over the past decade, Table 2 also indicates that the majority of single females have a university degree, and that this share has increased over time. More specifically, in January 2016 41% of single females had university level education, compared to 37.8% who had postsecondary education and 21.2% with high school education or less. Furthermore, the percentage of single females with a university education increased from 36.1% in 2006 to 41% in 2016. Despite these gains in educational attainment, the average hourly wage of single females in 2016 was \$2.22 lower than that of single males. Table 2 also shows that the nominal hourly wage of single

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<sup>3</sup> Hourly wages are in current dollars.

females has increased over the past decade, from \$18.95 in 2006 to \$21.94 in 2010 and further to \$24.48 in 2016.

Interesting findings emerge when inspecting the descriptive statistics of the married samples. Examining Table 3, which depicts the descriptive statistics of married males, we find that most married males have attained postsecondary education relative to the other level of education. The percentage of married males with high school education or less declined between 2006 and 2016, while the percentage with a university education increased over the same period. Unsurprisingly, the ages of the married men are more evenly distributed than those of the single men. In January 2016, 16.7% of married men were 30 to 34 years of age, 17.2% were between 35 and 39 years of age, and 19% were between the ages of 40 and 44. Comparing Tables 1 and 3, we find that the average hourly wages of married men have been higher than those of single men between 2006 and 2016. The higher relative hourly wage for married men may reflect their experience in the labour market or the firm specific skills acquired over the years, both of which can contribute to higher hourly wages. Further analysis indicates that the hourly wages of married males have also increased over the past decade, from \$24.47 in 2006 to \$31.65 in 2016.

Table 4 shows the descriptive statistics of married females. The main results indicate that, relative to all other groups, married women have experienced the largest increase in the percentage of workers with university level education between 2006 and 2016. Specifically, the percentage of married women with university education increased from 28.6% in 2006 to 41.9% in 2016. Furthermore, the most notable gains in the percentage of married women with university education occurred between 2014 and 2016, where we observe a 4.6 percentage point increase. It is also interesting to note that, while the distribution of married females by age is quite even, many are over 40 years of age - a finding we also observe for married men. Comparable age

distributions point towards the shifting household structure in Canada, in which women continue to participate in the labour market (or re-enter the labour market) later in life as opposed to focusing on non-labour market activities. However, it is important to note that the data show that there were more married men participating in the labour market between 2006 and 2016 (about 11,000 on average) than married women (approximately 9,000 on average). Consistent with previous literature, Table 4 shows that a persistent wage gap exists between married male and female workers, but that this gap has declined over time. Specifically, the data indicate that the female-to-male wage ratio (based on nominal values) increased from 82.2% in January 2006 to 85.9% in January 2016. While the narrowing of the gap over time points towards achieving gender equality in Canada, the rate at which this gap is declining does not; at the current rate, it would take approximately 40 more years for the gender-wage gap (of those in the sample) to be eliminated. An intriguing observation from the data is that women (both married and single) have lower hourly wages relative to their male counterparts despite higher levels of education and union status.

#### **4. Methodology**

This section presents the methodology utilized in this paper. The methods, formulas, and interpretations follow from many articles and studies that analyzed or employed a similar methodology, including research by Jann (2008), Nicodemo (2009), Fairlie (2005), Blinder (1973), and Oaxaca (1973).

To explore how gender-wage discrimination by marital status has changed over the past decade, this paper will employ a two-fold Blinder-Oaxaca decomposition model. Developed by Oaxaca (1973) and Blinder (1973), the technique will first calculate the log hourly wage

differential between men and women and then divide it into two components. The first component will represent the portion of the log hourly wage gap that is "explained" by productivity differences stemming from observable characteristics between male and female workers. The second component will capture the "unexplained" portion of the log hourly wage gap between working men and women, and, consistent with the literature, will be taken as a measure of discrimination in the labour market. However, it is important to note that the "unexplained" component may also include productivity-related variables that are not included in the model and, consequently, discrimination may be overestimated using this two-way Blinder-Oaxaca model. Similarly, the "explained" component of the hourly wage gap may include characteristics that are the result of discrimination, which would understate discrimination in the Canadian labour market. Ultimately, the *exact* measure of discrimination that accounts for a portion of the wage gap is unknown.

A two-fold Blinder-Oaxaca decomposition will be employed for single males and females (Specification 1) and married males and females (Specification 2) separately. For simplicity, a description of the Blinder-Oaxaca decomposition method and formulas presented below will apply only to Specification 1. However, the same methodology applies to married males and females, albeit using different subscripts in the models.

For this analysis we consider two groups, single males ( $SM$ ) and single females ( $SF$ ), and use the log hourly wage as the dependant variable, denoted by  $Y_{SM}$  and  $Y_{SF}$  for single men and single women, respectively. The log hourly raw wage gap ( $WG$ ) between single males and single females is represented by:

$$WG = E(Y_{SM}) - E(Y_{SF}) \quad (1)$$

$E(Y_i)$  is the mean of the log hourly wage for each group  $i$  ( $i = SM, SF$ ). Furthermore, I specify a linear regression model for each group, expressed as:

$$Y_{SM} = X'_{SM}\beta_{SM} + \varepsilon_{SM} \quad (2)$$

and

$$Y_{SF} = X'_{SF}\beta_{SF} + \varepsilon_{SF} \quad (3)$$

where  $X_{SM}$  and  $X_{SF}$  are vectors containing all independent variables (union status, province of residence, age groups, and education groups) and a constant for group  $i$ ,  $\beta_i$  is a vector containing all the slope parameters and intercept for group  $i$ , and  $\varepsilon_i$  is the error term for group  $i$ . In order to express the hourly wage gap as the difference in the linear predictions of single males and females, (1) can be written as the difference between (2) and (3):

$$\begin{aligned} WG &= E(Y_{SM}) - E(Y_{SF}) \\ &= E(X'_{SM}\beta_{SM} + \varepsilon_{SM}) - E(X'_{SF}\beta_{SF} + \varepsilon_{SF}) \\ &= E(X_{SM})'\beta_{SM} - E(X_{SF})'\beta_{SF} \quad (4) \end{aligned}$$

We can derive equation (4) because:

$$E(Y_i) = E(X'_i\beta_i + \varepsilon_i) = E(X'_i\beta_i) + E(\varepsilon_i) = E(X_i)'\beta_i$$

since  $\beta_i$  is not a random variable, and  $E(\varepsilon_i) = 0$ , by assumption.

Equation (4) can be rearranged to obtain the traditional two-fold Blinder-Oaxaca decomposition, which identifies the contribution of the “explained” and “unexplained” component to the hourly

wage gap.<sup>4</sup> However, in order to accurately identify these two components, we assume that a non-discriminatory coefficient vector  $\beta^*$  determines the contribution of the difference in the independent variables to the hourly wage gap. Equation (4) is thus represented by the following equation:

$$WG = \{E(X_{SM}) - E(X_{SF})\}'\beta^* + \{E(X_{SM})'(\beta_{SM} - \beta^*)\} + \{E(X_{SF})'(\beta^* - \beta_{SF})\} \quad (5)$$

If we let  $E = \{E(X_{SM}) - E(X_{SF})\}'\beta^*$  and  $U = \{E(X_{SM})'(\beta_{SM} - \beta^*)\} + \{E(X_{SF})'(\beta^* - \beta_{SF})\}$ , the hourly wage gap can be expressed as:

$$WG = E + U \quad (5a)$$

Equation (5a) shows the decomposition of the wage gap into the two components previous discussed: the “explained” component ( $E$ ), which highlights productivity differences between men and women, and the “unexplained” component ( $U$ ), which is taken as a measure of wage discrimination.

Research has consistently shown that men have higher earnings relative to women, suggesting that most gender-wage discrimination in the labour market is imposed on women. Accordingly, we assume that hourly wage discrimination only affects women – i.e. there is no wage discrimination against men. This assumption implies that  $\hat{\beta}_{SM} = \beta^*$ , which entails that  $\hat{\beta}_{SM}$  can be used as an estimate for the non-discriminatory coefficient vector. As a result, (5) can be simplified as:

$$\widehat{WG} = (\bar{X}_{SM} - \bar{X}_{SF})'\hat{\beta}_{SM} + \bar{X}'_{SF}(\hat{\beta}_{SM} - \hat{\beta}_{SF}) \quad (6)$$

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<sup>4</sup> Three-fold Blinder-Oaxaca decompositions can be utilized for the analysis of the wage gap between two groups. This method would decompose the wage gap into the portion due to endowments (productivity-related factors), unexplained components (such as discrimination), and an interaction between the first two components. See Jann’s (2008) STATA article for more detail.

Equation (6) is the Blinder-Oaxaca decomposition equation used in this paper. Employing this model means that the coefficients of single males are used to evaluate the differences in characteristics (independent variables). This method seems reasonable given that, if discrimination were to be eliminated, it would be preferable to have females earning as much as males (who typically earn more) rather than males earning as little as females (who typically earn less).

As previously mentioned, the same model applies to the sample for married females and married males, but the subscripts examined in this section would differ. The regressions in Section 5 will estimate (2) and (3) separately by Ordinary Least Squares (OLS) for men and women in each marital group, before employing (6) in order to calculate and decompose the wage gap.

## 5. Regression Results

This section presents and discusses the main findings from the regression results. First, I will analyze the results of the OLS regressions for males and females from each marital group in order to provide insight into the impact of the independent variables on the log hourly wage. Second, I will present and discuss the Blinder-Oaxaca decomposition results for the two marital groups, which will highlight recent trends in the gender-wage gap, the “explained” portion of the gender-wage gap, and the “unexplained” portion of the gap. Subject to the reservations mentioned above, the “unexplained” portion is taken as an indicator of gender-wage discrimination in the Canadian labour market.

## 5.1: Ordinary Least Squares (OLS) Regression Results

Before employing the Blinder-Oaxaca model to decompose the hourly wage gap between men and women for each marital group, I use a linear OLS model to examine the impact of the independent variables on the log hourly wage of each sample. These results will provide insight into the returns to education for single male and female workers, and how the hourly wage differs by union status, province of residence, and age. I first present the OLS regression results for single males, followed by single females. A comparative analysis is then conducted in order to highlight key differences between these two groups, which is particularly relevant for our investigation of the wage decomposition in Section 5.2.

### 5.1.1: Single Males and Single Females

Listed in Table 5 are the OLS regression results for single males. The main findings indicate that the log hourly wages of single males vary by province, with single males in Ontario, British Columbia, Alberta, and Saskatchewan recording higher hourly wages relative to single males in other provinces. For example, results for January 2016 show that the hourly wages of single males residing in Prince Edward Island were 20.3% lower than those of their counterparts in Ontario. In comparison, single males residing in Saskatchewan and Alberta recorded hourly wages that were 11% and 21% higher than their counterparts in Ontario respectively.

The hourly wages of single males in Newfoundland-and-Labrador have made significant gains over the past decade relative to single males in Ontario, increasing from -26.5% in 2006 to -3.7% in 2014 relative to the baseline province (Ontario). The positive values observed for most Western provinces over the past decade indicate the relatively higher hourly earnings of single males in these provinces, which may be driven by the industrial composition in these provinces.

It is also important to highlight that results for Alberta have been the most significant over the past decade. The main findings from Table 5 also show that there are positive returns to higher education, with the hourly wages of single males with university education exceeding their counterparts with post-secondary education, who in turn have higher hourly wages relative to single males who have obtained high school education or less. Regression results for January 2016, for instance, indicate that single males with postsecondary education earned 14.3% more than those with high school education or less, while single males with university education earned 27% more than their counterparts with high school education or less. It is interesting to note that the returns to university education for single males have slightly declined in recent years, from a high of 33 percentage points in 2008 to 27 percentage points in 2016. Moreover, I find that younger single males in the labour market earn less than their counterparts who are between 35 and 39 years of age, while workers over 40 years of age earn slightly more. Lastly, Table 5 shows that the hourly wages of union workers have been approximately 20 percent higher than those of non-union workers between 2006 and 2016.

The regression results for single females presented in Table 6 are largely consistent with those obtained for their single male counterparts. In particular, we find that single females in Alberta and British Columbia have higher hourly wages relative to single female workers in other provinces. This finding is particularly true for single females in Alberta after 2012, whose hourly wages relative to single females in Ontario increased from 5.1 percentage points in 2012 to 14.2 percentage points in 2016. Furthermore, the estimated coefficients for the education levels indicate that higher education leads to greater hourly wages. Statistically significant at the 1% level, results for January 2016 show that the hourly wages of single female workers with university level education were 41.2% higher than the wages of their counterparts who had

obtained high school education or less. Regression results in Table 6 also highlight the finding that single females between the ages of 25 and 29 have hourly wages which are generally 9 to 11 percent lower than single female workers between the ages of 35 and 39. Note that the regression results for the 25 to 29 age group are significant at the 0.1% level for all years examined, but that hourly wages for all other age groups are typically not statistically different from those of the 35-39 reference group.

Comparing the regression results of single male and single female workers, I find that the returns to university education have been higher for single women than for single males over the 2006 to 2016 period. Higher education plays a key role in developing an individual's human capital and, as a result, we would expect the hourly wages of single females to be larger than their male counterparts, all other factors held constant. However, as we have seen in the descriptive statistics analyzed in Section 3, this is not the case. Evidenced by the magnitude and significance of the results, a comparative analysis of Tables 5 and 6 also indicate that single males in Alberta typically have higher wages than single females. This result could be driven by various factors, including: barriers to obtaining high-paying jobs for females (i.e. a glass ceiling), a mismatch of females' skills and/or job preferences with local labour market opportunities, or occupational discrimination leading to fewer women working in well-paying jobs.

Further examination of Tables 5 and 6 indicate that the returns to unionization are larger for single women than for single men. Between 2006 and 2016, the hourly wages of unionized single females are about 25 to 27 percent higher than those of non-unionized single females. In comparison, the hourly wages of single males working in a union job are between 18 to 22 percent higher than those of non-unionized single male workers.

### 5.1.2: Married Males and Married Females

Over recent decades, there has been a substantial shift in household dynamics in Canada. In particular, more women are participating in the labour market and are choosing to continue working even after having children, or are re-entering the labour market after having had children. As a result, married females are (from a labour market perspective) contributing more towards household income than ever before. Given these significant changes over the past few decades, examining how the explanatory variables in our regressions impact the wages of married males and females is important to consider. Moreover, investigating the relationship between the explanatory variables and the hourly wages of married males and females may provide an understanding of how marriage and family responsibilities affect outcomes relative to single men and women.

Important findings emerge when examining the regression results for married men presented in Table 7. First, the negative coefficients for all Atlantic Provinces, Quebec, and Manitoba over the 2006 to 2016 period indicate that hourly wages of married males are lower in those provinces relative to the hourly wages of married males in Ontario. Almost all results for the provinces examined are statistically significant in each year examined. Highlighting the role of education, the results show that there are positive returns to education for married males. However, it is interesting to note that the return to education slightly declined for married males with university level education between 2014 and 2016, from 34 percent to 31.3 percent compared to the reference group. Interestingly, single men with university level education recorded a similar result over the same period, with their return to education slightly declining from 29.3 percent to 27 percent. The results by age group in Table 7 are similar to those examined for single males - younger married males have lower hourly wages relative to married

men between the ages of 35 and 39. For example, in January 2016, married males between the ages of 25 and 29 had hourly wages which were 10.4 percent lower than their counterparts aged 35 to 39. Table 7 further shows that married men who are unionized have higher hourly wages than non-unionized married men. Additionally, the returns to unionization have varied over the past decade, from 10.3 percent in 2006 to a low of 9.7 percent in 2010, before increasing to 12.7 percent in 2016. Notably, the results in Table 7 show no apparent (direct) impacts of the 2008 recession on the returns to education, unionization, or to the outcomes by age group or province for married males. Similar findings are also observed for single males in Table 5. Moreover, note that the data is for the month of January in each year examined, which means that the impacts of the 2008 recession are mainly captured in the year 2010 in this paper. More specifically, the years before the recession are 2006 and 2008, the recessionary period is in 2010, and the recovery years are 2012 to 2016.

Regression results for married females, shown in Table 8, indicate once again that hourly wages in Ontario are relatively higher than those in almost all other provinces. Specifically, I find that only married females in Alberta have higher hourly wages than their counterparts in Ontario, beginning after 2012. In 2016, the hourly wages of married females in Alberta were 9.3 percent higher than those of married females in Ontario. Further examination of Table 8 indicates that, similar to results for all other groups examined, the hourly wages of unionized married females are higher than married females who are non-unionized – by approximately 23 percent over the 2006 to 2016 period. Lastly, I also find that there are positive returns to higher education for married females. Interestingly, although married females with postsecondary education or university-level education both earn more than married females with high school education or less, there is a substantial gap in the returns to education between married females

with a postsecondary education and married females with university level education. For instance, in January 2016 the hourly wages of married females with postsecondary education were 17.9 percent higher than those of their counterparts with high school education or less. In comparison, the hourly wages of married females with university level education were 45.2 percent higher than those of married females with high school education or less.

Comparing regression results between married males and married females, the relatively higher returns to education (especially university level education) for married females may have important implications for our subsequent analysis of gender-wage discrimination in the Canadian labour market, especially since the summary statistics presented in Section 3 show that the hourly wages of married females have consistently been lower than their male counterparts between 2006 and 2016. The Blinder-Oaxaca decomposition results in the next section will provide insight into whether higher relative returns to education for females (both single and married) have an impact on the "unexplained" portion of the gender-wage gap.

## **5.2: Blinder-Oaxaca Decomposition Results**

The categories of explanatory variables I used to estimate the wage equations with OLS are (in order): union status, highest education attained, province of residence, and age group. The Blinder-Oaxaca decomposition based on OLS estimation generates the wage-gap between men and women, and then identifies the "explained" and "unexplained" components of the gender-wage gap. Decompositions are performed separately for the single and married samples. As previously discussed in Section 3, decompositions are performed using the male's coefficients to evaluate the differences in characteristics (independent variables) between males and females.

This section will first present the Blinder-Oaxaca decomposition results for single males and females, before examining the results for married males and females. For each group, the "explained" and "unexplained" components of the gender-wage gap will be examined, before analyzing the contributions of the independent variables to these two components. Next, the measure of gender-wage discrimination - the "unexplained" portion of the wage gap - will be examined *between* marital groups in order to explore whether gender-wage discrimination against females varies by marital status. Given the shifting structure of households in Canada, these results may have important policy implications for alleviating discrimination in the Canadian labour market.

### 5.2.1: Single Males and Females

Table 9 shows the Blinder-Oaxaca decomposition results for single males and females. Listed in the first two lines of the table are the log hourly wages of single males and females, with the log hourly wage gap identified as the "difference". The positive results displayed for the "difference" show how much less the average hourly wages of females are relative to single males. Negative values for the "difference", on the other hand, would show how much more single females would earn relative to single males. For January 2006, we observe that the average hourly wages of single females are 7.8% lower than that of single male workers. The results in Table 9 indicate that the hourly wage gap between single males and females sharply declined during the 2008 recession, before slowly increasing to levels slightly below those observed for 2006 in January 2016. In 2008 (before the recession), single females earned 10% less than single males, but in 2010 (during the recession) the difference between the two groups declined to 6.1%. Subsequently, the hourly wage gap between single females and single males

slowly increased until January 2016, when single females earned 7.6% less than their single male counterparts.

Next, I examine the decomposition of the wage-gap between single males and single females, which is divided into two components: "explained" and "unexplained". I first consider the "explained" portion of the gender-wage gap between 2006 and 2016, and find that the results are negative in every year examined. The negative "explained" components indicate that single women have *better* characteristics than single men, and if evaluated with male coefficients, single women would earn *more* than single men. Consistent with the regression results examined in Section 5.1.1 and 5.1.2, findings from Table 9 suggest that single women have consistently had better characteristics than their male counterparts during the entire period of 2006 to 2016. In particular, we find that if single female workers in January 2006 were paid the same hourly wages as single males in 2006, single women would have earned 4.5% more than males. In 2008 and 2010, before and during the recession, the better characteristics of single females would have yielded 3.8% and 3.6% higher hourly wages relative to single males respectively. Since 2010, the negative "explained" portion of the wage gap slightly increased, with results indicating that if single females were evaluated based on single male coefficients, they would earn 4.6% more than single men in January 2016.

The "explained" effects, when negative, mean that in a labour market with no discrimination, single females should expect to earn higher wages than single males. To identify the contributions of the individual explanatory variables to the "explained" portion of the wage gap, I inspect Section B of Table 9. Note that independent variables listed in Section B of Table 9 are grouped together for ease of interpretation: the union dummy variable is labelled as "union", all education dummies are labelled "education", all provincial dummies are included in

“provinces”, and all age categories are labelled as “age”. Results in Section B of Table 9 show that most of the negative "explained" portion of the wage-gap between single females and single males is due to females having more education. Additionally, union status and province of residence have accounted for less of the "explained" portion over time, while age has contributes very little to the "explained" portion of the wage gap. It is also important to note that the negative values for union status indicate that single women are more unionized than single men, while the positive values for provinces indicates that men tend to live in provinces that have higher wages.

I now analyze the "unexplained" portion of the wage gap in Section A of Table 9 in order to explore the level of gender-discrimination, or differences in male and female coefficients, in the labour market. The positive values for the "unexplained" portion indicate that, at the average characteristics of single women, women receive lower hourly wages because the magnitude of their regression coefficients are not as advantageous as those of their male counterparts. With this in mind, I find that differences in female’s and male’s coefficients play the major role in elucidating the wage gap between males and females. The main findings indicate that gender-discrimination increased before the 2008 recession, but subsequently declined to its lowest level in 2010. This finding is likely driven by the fact that the recession affected more men than women. During the recovery years after the recession, gender-wage discrimination for single females increased. In January 2006, single women received 12.3% less than males because their regression coefficients were not as advantageous. This percentage increased to 13.8% in 2008, before declining to 9.6% in 2010. Since then, we find that difference between male and female coefficients in the Canadian labour market have increased, with single women earning 12.2% less than single men, given their average characteristics, in January 2016.

Table 9 also shows the *proportion* of the wage gap that is "unexplained" (i.e. the "unexplained" portion divided by the "differences" between single men and women) for single women working in the Canadian labour market between 2006 and 2016. These results help to identify how discrimination in the labour market has evolved relative to the wage gap. Table 9 shows that, while the hourly wage "difference" between men and women slightly declined between 2006 and 2016, the proportion of the gap due to discrimination increased. In 2006, 157.7% of the wage gap is "unexplained"; in 2008, this proportion declines to 138%. The largest proportion of the wage gap due to differences in coefficients is recorded for January 2012 (176.7%), followed by the proportion recorded in January 2011 (162.3%) and January 2016 (160.5%). The proportion of the gap that is "unexplained" is over 100% in every year examined because single females have better characteristics, but lower hourly wages, compared to single males; indeed, Baker and Drolet (2010) find similar results with Labour Force Survey data from 1997 to 2008.

More interesting findings emerge when referring to Section C of Table 9, which shows the contributions of the explanatory variables to the "unexplained" portion of the wage gap. In particular, results show that union status, education, province, and age have very little impact on the "unexplained" portion of the wage gap. It is important to highlight, however, that women have better coefficients for union status and education, but that there are some slight variations in the coefficients for age and province between 2006 and 2016. The main result indicates that most of the "unexplained" portion is due to the constant term in each year observed - results which are all significant at the 0.1% level. This finding is intriguing given that the constant term represents the wage gap for workers whose characteristics are zeros (i.e. for the reference categories of all the dummy variables). The exact interpretation of this result is unclear, but it seems as though

the contributions of the explanatory variables to the "unexplained" portion of the wage are (in a sense) unknown.

Overall, the Blinder-Oaxaca decomposition results for single workers yield important findings. First, the gender-wage gap has declined over time, but recorded a slight increase between 2010 and 2016. Second, the "explained" portion of the wage gap has consistently been negative, indicating that women have better characteristics than men. In other words, if females' characteristics were evaluated with males' coefficients, female workers would have higher hourly wages. Furthermore, Blinder-Oaxaca decomposition results show that most of the "explained" component is accounted for by gender differences in education. We also conclude that single female workers do face discrimination in the labour market - the hourly wages of single female workers between 2006 and 2016 were 11.6% lower than single males, on average. The "unexplained" portion of the wage gap in January 2016 is similar to the level observed in 2006; however, discrimination has increased by 2.6 percentage points since 2010. Moreover, the proportion of the wage gap that is "unexplained" has increased over time, despite a slight decline in the wage gap. These results present an interesting question for further research: is it more important to reduce the wage gap or the proportion of the gap due to discrimination between men and women when trying to achieve gender equality?

### **5.2.2: Married Males and Females**

Presented in Table 10 are the Blinder-Oaxaca decomposition results for married males and females. First, we find that the wage gap between married males and married females declined by 4.8 percentage points between 2006 and 2016, from 20.7% to 15.9%. Furthermore, it is interesting to note that most of the decline in the wage gap between married men and women occurred between 2010 and 2012, when the gender-wage gap decreased by 2.3 percentage points.

Blinder-Oaxaca decomposition results reported in Section A of Table 10 show that the "explained" component of the wage gap is negative for all years examined, which indicates that married women have better characteristics than married men. Note, however, that these negative values for married women are smaller than those of single women. Similar to their single female counterparts, if married women's characteristics were evaluated with men's coefficients, the hourly wages of married women would exceed the hourly wages of married men. Interestingly, the "explained" component of the wage gap remained stable between 2010 and 2016 inclusively. Over this period, if married women's characteristics were evaluated with men's coefficients, married women would have earned 2.5% more than married men.

Section B of Table 10 highlights the contributions of the independent variables (union status, education, province of residence and age group) to the "explained" portion of the wage gap between married men and women. Consistent with our Blinder-Oaxaca decomposition results for single men and women, most of the "explained" component of the wage gap between married men and women can be attributed to gender differences in education. The negative signs support our earlier findings that married women are more educated than married men. Moreover, differences in union status and age also (very slightly) favour married women. In contrast, the positive values recorded for the contribution of provinces to the "explained" portion of the wage gap suggest that gender differences by province favour men.

Examining the "unexplained" component in Section A of Table 10 provides insight into the role gender discrimination plays in determining hourly wages among married individuals in the Canadian labour market. The main findings convey that, given their average characteristics,

the hourly wages of married women in January 2016 are 18.4% lower than men because their regression coefficients are not as beneficial as those of married men. Moreover, taking the "unexplained" portion of the wage gap as a measurement for discrimination, the results in Table 10 reveal that discrimination against married women declined between 2006 and 2016, from 21.4% to 18.4%. Further analysis also indicates that the proportion of the wage gap that is unexplained has increased since the 2008 recession, but that the proportion observed in January 2016 (115.7%) closely resembles the proportion recorded for January 2006 (113.4%). Highlighting the better characteristics of married females relative to married males, the proportion of the wage gap that remains "unexplained" is over 100% - a finding that is similar to those observed for single males and females.

Examining Section C in Table 10, we find that the independent variables contribute very little to the "unexplained" portion of the wage gap. Instead, we find that most of the "unexplained" component is attributed to the constant term in each year examined, which is the wage gap for workers in the references category whose characteristics are all zeros. As previously mentioned, the interpretation of this result is unclear and warrants further analysis.

The main findings show that the wage gap between married men and women declined between 2006 and 2016, and that married women have better characteristics than married men. Moreover, gender differences in education account for the largest contribution to the "explained" portion of the wage gap. Investigation into the "unexplained" portion of the wage gap suggests that married women are discriminated against in the labour market, but that discrimination has declined over time. However, the proportion of the wage gap that remains unexplained has slightly increased over the past decade. It is also important to highlight that many of these findings are consistent with those of single women, with the main difference being that the wage

gap, as well as the "unexplained" portion of the wage gap, for married females is much larger than that of single females.

### 5.2.3: A Comparative Analysis of Single Women and Married Women

Facilitating the examination of gender-wage discrimination by marital group, this section will discuss the main differences between the Blinder-Oaxaca decomposition results obtained for single females and married females. The central findings discussed will help to develop an understanding of how discrimination affects different households in Canada.

Relative to their male counterparts, both single and married women are discriminated against in the labour market. Although some key similarities have already been discussed regarding the trends observed for the wage gap, the "unexplained" component of the wage gap, as well as the proportion of the "unexplained" gap over time, there are some central differences between single and married women that warrant further examination. Comparing Tables 9 and 10, we find that the "unexplained" component of the wage gap is much higher for married women than for single women. Put differently, the results show that married females face higher wage discrimination than single females. In January 2016, for instance, the measure of discrimination in the labour market for married women is 6.2 percentage points higher than that of single women. However, an important insight to consider is that the total wage gap among married women has been consistently larger than the total wage gap among single women. Consequently, when I examine the *proportion* of the wage gap attributed to discrimination *within* each marital group, I find that that proportion is higher for single females than for married females. Therefore, when comparing individuals with the same marital status we could say that married females face *less* discrimination than single females.

### 5.3: Robustness Test by Including Part-Time Workers in the Samples

Although I control for variables such as union status, province of residence, age group, and education, gender discrimination in the Canadian labour market may be affected by the type of jobs that males and females occupy. In my previous analysis, I only considered workers who had full-time jobs in order to ensure that the hourly wages of men and women were based on a similar number of hours worked between genders. However, it may be the case that gender-wage discrimination varies by type of job, or by hours worked. To test whether the Blinder-Oaxaca decomposition results are robust to the number of hours worked, I add part-time workers to the samples. Results for single men and women are shown in Table 11, and those for married men and women are presented in Table 12.

Including part-time workers in the sample for single men and women increases the sample size in each year, from a low of 712 additional workers in January 2012 to a high of 915 additional workers in 2012. Overall, part-time workers account for between 11% and 13.5% of the samples. Comparing our results in Table 11 to those in Table 9, we find that the magnitudes of the Blinder-Oaxaca results are the same. Specifically, results show that single men still earn more than single women, that single women still have better characteristics than men (as evidenced by the negative "explained" portion of the gap), and that the "unexplained" portion of the wage gaps persist over time. Furthermore, the proportion of the wage gap that is "unexplained" is still well above 100%. However, some interesting findings emerge when analyzing the results that account for part-time workers. First, the results show that the wage gap marginally increased over the past decade, rather than declined. Table 11 shows that single women, on average, earned 8.5% less than men in 2006 and 9% less in 2016. It is also important to note that the wage gap, or "difference" between males and females, is larger in every year

when we include part-time workers. This finding indicates that there is a larger wage gap among part-time workers than among full-time workers. Moreover, although the variation is relatively small, including single part-time workers in our sample increases the "unexplained" portion of the wage gap. For example, including single part-time workers in the sample entails that, in January 2016, single women received 13.3% lower hourly wages than single men because their regression coefficients were not as advantageous, i.e. a 1.1 percentage point increase relative to our earlier results. The contributions of the independent variables to the "explained" and "unexplained" components of the wage gap remain similar to our previous results: gender differences in education (in favour of women) contribute the most to the "explained" portion, while most of the "unexplained" portion is captured in the constant term.

Analyzing the married sample in Table 12, we see again that including part-time workers increases the number of observations in each year, from a low of an additional 2,300 in January 2016 to a high of an additional 2,808 in January 2006. These additional part-time workers account for approximately 10% to 12% of each of the new sample sizes between 2006 and 2016. Examining the "differences", or hourly wage gap, between married men and women, we find that including part-time workers in the married samples increases the overall wage gap relative to our previous results. For example, in January 2016 married women (including part-time workers) earned 18.5% less than married men, on average - a result that is 2.5 percentage points higher than our result obtained for January 2016 in Section 5.2.2. However, consistent with our previous findings, the hourly wage gap for the new samples declined over the past decade. Further analysis indicates that including part-time workers in the samples increases the "unexplained" portion of the wage gap, which suggests that married women working part-time are more discriminated against than married women working full-time. Additionally, the proportion of the

wage gap that is "unexplained" is lower in our new sample, although most results are still over 100%. The "explained" component of the wage gap is also negative in each year, supporting earlier findings that women have better characteristics than men. Moreover, the contributions of the independent variables to the "explained" and "unexplained" components of the wage gap are consistent with the previous findings. In order to provide insight into the significant contributions of the constant terms to discrimination in the labour market, further research may consider including other explanatory variables or using different reference groups in the linear OLS models and Blinder-Oaxaca decompositions. Including additional (relevant) explanatory variables in the models may capture the central factors contributing to the "unexplained" effect. Although there are some differences when including part-time workers in my samples, the results of Tables 11 and 12 show that the main findings of this paper are validated.

## **6. Concluding Remarks**

This paper has explored gender-wage gaps by marital status in Canada between 2006 and 2016 using January Labour Force Survey data. Linear regressions estimated by the OLS technique are employed by gender for single workers and married workers separately, before utilizing a Blinder-Oaxaca decomposition model to identify the hourly wage gap, the "explained" portion of the hourly wage gap, and the "unexplained" portion of the hourly wage gap. Consistent with previous literature examining gender discrimination, the "unexplained" component of the hourly wage gap is taken as a measure of discrimination.

The summary statistics presented in the paper show that more single and married women attain higher education relative to their male counterparts. Furthermore, the OLS regression results indicate that the returns to education are also higher for women than for men, regardless of marital status. Since education plays a vital role in developing an individual's human capital,

we would expect that women would have higher average hourly wages than males. However, this is not the case.

Blinder-Oaxaca decomposition results show that men earned more than women in every examined year between January 2006 and January 2016, regardless of marital status. However, consistent with previous research, I find that the hourly gender-wage gap declined over time, although more so for married females than for single females. For single and married groups, the negative "explained" portion of the wage gap is mostly due to women having more education than men. On the whole, union status and age also favour single and married women in contributing to the "explained" portion of the wage gap; however, province of residence tends to favour men.

Highlighting the significant role discrimination plays in determining hourly wages in the Canadian labour market, I find that the "unexplained" component of the wage gap is positive in all the examined years. Furthermore, the main results show that the constant term in each year contributes the most to our measure of discrimination over the years - a puzzling result given that the constant represents the wage gap for workers whose characteristics are all zeros. It may be the case that the factors underlying the wage discrimination are unobservable. Ultimately, further research is required in order to determine the other (logical) factors contributing to gender-wage discrimination in the Canadian labour market.

This paper also examines the main differences *between* marital groups in order to explore how gender-wage discrimination affects married women relative to single women - an important analysis given the dynamic and evolving household structures in Canada. A comparative analysis of single and married females shows that married females face higher total wage gaps and higher

discrimination than do single females. However, when we examine the proportion of the total wage gap that is attributed to discrimination *within* each marital group, we find that that proportion is higher for single females. Therefore, taking the proportion of the total wage gap as a measure, we find that married females face a lower degree of discrimination than single females. It is important to note that conclusions drawn from the analysis are contingent upon the definition of “discrimination”, as it is apparent that referring to discrimination as the “unexplained” component of the wage gap as opposed to the proportion of the wage gap that is “unexplained” yields conflicting results.

Ultimately, this paper highlights the important implications of differences in coefficients in wage regressions, or gender discrimination, between men and women in the Canadian labour market. Furthermore, the fact that gender-discrimination exists within and across marital groups only serves to highlight the severity and complexity of gender-wage discrimination in Canada. Moving forward, further research is required in order to eradicate a phenomenon that continues to hinder social and economic equality in Canada.

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## Tables

Table 1: Summary Statistics for Single Males, Means

Variable	2006	2008	2010	2012	2014	2016
<b>A. Region</b>						
NFLD	0.009	0.008	0.009	0.009	0.009	0.010
PEI	0.003	0.003	0.003	0.003	0.003	0.003
NS	0.025	0.022	0.022	0.023	0.020	0.025
NB	0.018	0.014	0.014	0.019	0.017	0.017
QUE	0.232	0.243	0.244	0.235	0.222	0.248
ON	0.408	0.384	0.369	0.381	0.386	0.367
MAN	0.037	0.034	0.033	0.038	0.035	0.033
SASK	0.022	0.024	0.024	0.028	0.028	0.035
ALB	0.117	0.142	0.146	0.147	0.138	0.132
BC	0.129	0.126	0.137	0.116	0.141	0.128
<b>B. Highest Education</b>						
High school or less	0.402	0.391	0.365	0.392	0.360	0.345
Postsecondary (< University)	0.343	0.346	0.352	0.350	0.363	0.358
University	0.255	0.262	0.283	0.258	0.277	0.297
<b>C. Age Group (in years)</b>						
25-29	0.369	0.370	0.380	0.377	0.369	0.364
30-34	0.208	0.215	0.199	0.212	0.252	0.225
35-39	0.153	0.133	0.140	0.124	0.122	0.134
40-44	0.123	0.128	0.107	0.109	0.096	0.104
45-49	0.092	0.096	0.099	0.096	0.084	0.088
50-54	0.054	0.058	0.074	0.081	0.076	0.085
<b>D. Union Status</b>						
Union Worker	0.288	0.280	0.282	0.282	0.278	0.257
<b>E. Hourly Wage</b>						
Hourly wage	20.62 (9.376)	22.05 (10.008)	23.37 (10.184)	24.64 (11.037)	25.21 (11.871)	26.70 (12.695)
<b>Number of Observations</b>	3,012	3,191	3,000	3,217	3,393	3,143

Note: Standard deviations of hourly wages are in brackets. Hourly wages are nominal values.

Table 2: Summary Statistics for Single Females, Means

Variable	2006	2008	2010	2012	2014	2016
<b>A. Region</b>						
NFLD	0.011	0.009	0.010	0.010	0.010	0.010
PEI	0.003	0.003	0.003	0.002	0.003	0.004
NS	0.029	0.030	0.026	0.028	0.028	0.031
NB	0.018	0.016	0.015	0.019	0.016	0.020
QUE	0.229	0.255	0.242	0.224	0.223	0.236
ON	0.442	0.401	0.422	0.385	0.407	0.383
MAN	0.030	0.027	0.033	0.032	0.028	0.035
SASK	0.022	0.022	0.023	0.024	0.026	0.027
ALB	0.101	0.110	0.109	0.122	0.119	0.115
BC	0.134	0.125	0.118	0.152	0.138	0.138
<b>B. Highest Education</b>						
High school or less	0.290	0.249	0.246	0.232	0.218	0.212
Postsecondary (< University)	0.350	0.396	0.398	0.376	0.374	0.378
University	0.361	0.355	0.356	0.392	0.408	0.410
<b>C. Age Group (in years)</b>						
25-29	0.358	0.370	0.387	0.350	0.363	0.364
30-34	0.185	0.212	0.198	0.223	0.216	0.234
35-39	0.138	0.117	0.127	0.135	0.121	0.129
40-44	0.126	0.127	0.104	0.108	0.100	0.104
45-49	0.115	0.108	0.112	0.103	0.104	0.079
50-54	0.079	0.066	0.074	0.080	0.096	0.091
<b>D. Union Status</b>						
Union Worker	0.301	0.302	0.316	0.315	0.293	0.279
<b>E. Hourly Wage</b>						
Hourly wage	18.95 (8.717)	20.05 (9.006)	21.94 (9.914)	23.17 (10.506)	23.74 (10.771)	24.48 (11.579)
<b>Number of Observations</b>	2,437	2,465	2,425	2,577	2,578	2,533

Note: Standard deviations of hourly wages are in brackets. Hourly wages are nominal values.

Table 3: Summary Statistics for Married Males, Means

Variable	2006	2008	2010	2012	2014	2016
<b>A. Region</b>						
NFLD	0.013	0.014	0.014	0.014	0.015	0.014
PEI	0.003	0.004	0.003	0.004	0.004	0.004
NS	0.026	0.027	0.026	0.026	0.023	0.023
NB	0.023	0.024	0.024	0.022	0.021	0.021
QUE	0.226	0.219	0.222	0.220	0.216	0.216
ON	0.407	0.406	0.401	0.397	0.393	0.398
MAN	0.034	0.037	0.036	0.037	0.036	0.036
SASK	0.027	0.029	0.029	0.029	0.029	0.030
ALB	0.120	0.114	0.125	0.126	0.138	0.136
BC	0.119	0.126	0.120	0.125	0.126	0.122
<b>B. Highest Education</b>						
High school or less	0.354	0.329	0.315	0.314	0.293	0.256
Postsecondary (< University)	0.384	0.395	0.400	0.396	0.402	0.395
University	0.262	0.276	0.285	0.290	0.305	0.349
<b>C. Age Group (in years)</b>						
25-29	0.105	0.102	0.106	0.102	0.104	0.106
30-34	0.159	0.150	0.153	0.158	0.163	0.167
35-39	0.175	0.173	0.181	0.182	0.185	0.172
40-44	0.197	0.197	0.177	0.175	0.174	0.191
45-49	0.201	0.198	0.198	0.189	0.180	0.177
50-54	0.163	0.180	0.187	0.193	0.194	0.187
<b>D. Union Status</b>						
Union Worker	0.340	0.319	0.307	0.305	0.307	0.295
<b>E. Hourly Wage</b>						
Hourly wage	24.47 (11.050)	26.49 (12.434)	27.98 (12.829)	28.84 (13.286)	30.33 (13.904)	31.65 (14.117)
<b>Number of Observations</b>	11,525	11,568	11,142	11,071	10,929	10,417

Note: Standard deviations of hourly wages are in brackets. Hourly wages are nominal values.

Table 4: Summary Statistics for Married Females, Means

Variable	2006	2008	2010	2012	2014	2016
<b>A. Region</b>						
NFLD	0.016	0.017	0.017	0.017	0.016	0.016
PEI	0.005	0.004	0.004	0.004	0.005	0.004
NS	0.030	0.028	0.031	0.029	0.026	0.026
NB	0.025	0.027	0.028	0.023	0.024	0.024
QUE	0.224	0.216	0.228	0.231	0.231	0.228
ON	0.417	0.415	0.405	0.411	0.411	0.403
MAN	0.035	0.036	0.036	0.033	0.034	0.034
SASK	0.030	0.029	0.029	0.028	0.028	0.030
ALB	0.101	0.107	0.104	0.109	0.118	0.123
BC	0.115	0.121	0.117	0.114	0.105	0.112
<b>B. Highest Education</b>						
High school or less	0.337	0.315	0.292	0.256	0.233	0.211
Postsecondary (< University)	0.376	0.387	0.381	0.401	0.394	0.370
University	0.286	0.298	0.327	0.343	0.373	0.419
<b>C. Age Group (in years)</b>						
25-29	0.114	0.115	0.118	0.114	0.110	0.111
30-34	0.143	0.137	0.148	0.145	0.156	0.157
35-39	0.171	0.159	0.156	0.162	0.168	0.170
40-44	0.202	0.208	0.184	0.182	0.185	0.174
45-49	0.203	0.200	0.214	0.201	0.182	0.192
50-54	0.168	0.182	0.179	0.196	0.198	0.195
<b>D. Union Status</b>						
Union Worker	0.339	0.343	0.349	0.353	0.352	0.356
<b>E. Hourly Wage</b>						
Hourly wage	20.13 (9.453)	21.90 (10.319)	23.20 (10.812)	24.67 (11.766)	25.98 (12.181)	27.20 (12.523)
<b>Number of Observations</b>	9,172	9,420	9,410	9,044	8,854	8,618

Note: Standard deviations of hourly wages are in brackets. Hourly wages are nominal values.

Table 5: Regression Results for Single Males

Log Hourly Wage	2006	2008	2010	2012	2014	2016
<b>A. Region</b>						
NFLD	-0.263 (0.051)***	-0.264 (0.053)***	-0.113 (0.048)*	-0.096 (0.049)	0.036 (0.045)	-0.037 (0.048)
PEI	-0.299 (0.059)***	-0.256 (0.057)***	-0.215 (0.052)***	-0.239 (0.054)***	-0.186 (0.056)***	-0.203 (0.046)***
NS	-0.197 (0.035)***	-0.217 (0.036)***	-0.216 (0.036)***	-0.202 (0.035)***	-0.141 (0.036)***	-0.161 (0.035)***
NB	-0.251 (0.037)***	-0.187 (0.040)***	-0.138 (0.042)***	-0.183 (0.036)***	-0.093 (0.038)*	-0.195 (0.038)*
QUE	-0.087 (0.022)***	-0.120 (0.022)***	-0.062 (0.022)**	-0.109 (0.022)***	-0.053 (0.022)*	-0.119 (0.022)*
ON	---	---	---	---	---	---
MAN	-0.140 (0.030)***	-0.114 (0.028)***	-0.091 (0.027)***	0.146 (0.026)***	-0.066 (0.026)*	-0.077 (0.027)**
SASK	-0.029 (0.035)	-0.021 (0.031)	0.020 (0.031)	0.064 (0.029)*	0.067 (0.029)*	0.110 (0.028)*
ALB	0.136 (0.024)***	0.168 (0.022)***	0.141 (0.023)***	0.190 (0.023)***	0.286 (0.023)***	0.210 (0.025)***
BC	0.032 (0.024)	0.030 (0.024)	0.090 (0.025)***	0.004 (0.025)	0.079 (0.023)***	0.010 (0.025)
<b>B. Highest Education</b>						
High school or less	---	---	---	---	---	---
Postsecondary (< University)	0.121 (0.016)***	0.156 (0.016)***	0.124 (0.016)***	0.161 (0.016)***	0.152 (0.016)***	0.143 (0.016)***
University	0.296 (0.020)***	0.330 (0.019)***	0.264 (0.019)***	0.269 (0.019)***	0.293 (0.018)***	0.270 (0.018)***
<b>C. Age Group (in years)</b>						
25-29	-0.100 (0.023)***	-0.113 (0.022)***	-0.079 (0.023)***	-0.102 (0.024)***	-0.098 (0.023)***	-0.100 (0.022)***
30-34	-0.002 (0.025)	-0.051 (0.025)*	0.032 (0.025)	-0.025 (0.025)	-0.006 (0.025)	-0.022 (0.024)
35-39	---	---	---	---	---	---
40-44	0.028 (0.028)	-0.017 (0.027)	0.044 (0.029)	0.022 (0.029)	0.001 (0.029)	0.018 (0.029)
45-49	0.033 (0.030)	-0.019 (0.029)	0.051 (0.029)	0.016 (0.030)	0.035 (0.030)	0.007 (0.029)
50-54	0.029 (0.034)	0.008 (0.033)	0.061 (0.032)	-0.005 (0.032)	0.028 (0.030)	0.056 (0.030)
<b>D. Union Status</b>						
Union Worker	0.219 (0.163)***	0.184 (0.016)***	0.189 (0.16)***	0.217 (0.016)***	0.176 (0.016)***	0.196 (0.016)***
<b>Constant</b>	2.780 (0.024)***	2.871 (0.024)***	2.881 (0.025)***	2.955 (0.025)***	2.938 (0.025)***	3.033 (0.024)***
<b>R-Squared</b>	0.1876	0.1909	0.1645	0.1889	0.1685	0.1796
<b>Number of Observations</b>	3,012	3,191	3,000	3,217	3,393	3,143

Note: \* p<.05; \*\* p<.01; \*\*\* p<.001. Standard errors of the coefficients are in brackets.

Table 6: Regression Results for Single Females

Log Hourly Wage	2006	2008	2010	2012	2014	2016
<b>A. Region</b>						
NFLD	-0.240 (0.046)***	-0.188 (0.049)***	-0.175 (0.048)***	-0.074 (0.048)	-0.094 (0.043)*	0.032 (0.049)
PEI	-0.224 (0.054)***	-0.217 (0.050)***	-0.203 (0.056)***	-0.208 (0.060)***	-0.109 (0.051)*	-0.228 (0.048)***
NS	-0.230 (0.035)***	-0.156 (0.034)***	-0.156 (0.035)***	-0.179 (0.035)***	-0.129 (0.034)***	-0.135 (0.034)***
NB	-0.229 (0.040)***	-0.153 (0.038)***	-0.234 (0.043)***	-0.158 (0.039)***	-0.184 (0.039)***	-0.110 (0.038)**
QUE	-0.093 (0.024)***	-0.068 (0.023)**	-0.125 (0.024)***	-0.100 (0.024)***	-0.051 (0.023)*	-0.014 (0.023)
ON	---	---	---	---	---	---
MAN	-0.131 (0.034)***	-0.085 (0.034)*	-0.128 (0.029)***	-0.087 (0.028)**	-0.081 (0.029)**	-0.088 (0.027)**
SASK	-0.101 (0.034)**	-0.082 (0.033)*	-0.043 (0.034)	-0.020 (0.034)	-0.007 (0.031)	0.067 (0.030)*
ALB	0.018 (0.034)	0.059 (0.026)*	0.041 (0.027)	0.051 (0.051)	0.079 (0.025)**	0.142 (0.027)***
BC	-0.012 (0.026)	-0.009 (0.026)	-0.040 (0.028)	0.003 (0.002)	-0.037 (0.025)	0.044 (0.026)
<b>B. Highest Education</b>						
High school or less	---	---	---	---	---	---
Postsecondary (< University)	0.153 (0.019)***	0.137 (0.019)***	0.129 (0.019)***	0.152 (0.019)***	0.092 (0.019)***	0.125 (0.019)***
University	0.377 (0.020)***	0.408 (0.020)***	0.384 (0.021)***	0.412 (0.020)***	0.359 (0.020)***	0.412 (0.020)***
<b>C. Age Group (in years)</b>						
25-29	-0.116 (0.025)***	-0.083 (0.025)***	-0.124 (0.025)***	-0.129 (0.025)***	-0.136 (0.024)***	-0.111 (0.023)***
30-34	-0.043 (0.028)	-0.031 (0.027)	-0.050 (0.028)	-0.069 (0.027)*	-0.034 (0.026)	-0.018 (0.025)
35-39	---	---	---	---	---	---
40-44	0.017 (0.029)	0.053 (0.030)	0.012 (0.031)	-0.003 (0.031)	0.013 (0.030)	0.063 (0.029)*
45-49	0.103 (0.031)***	0.081 (0.030)**	0.050 (0.030)	0.072 (0.031)*	0.036 (0.030)	0.031 (0.031)
50-54	0.050 (0.033)	0.056 (0.035)	0.023(0.034)	0.025 (0.032)	0.056 (0.030)	0.093 (0.030)**
<b>D. Union Status</b>						
Union Worker	0.276 (0.017)***	0.254 (0.017)***	0.257 (0.017)***	0.245 (0.017)***	0.249 (0.016)***	0.273 (0.016)***
<b>Constant</b>	2.628 (0.027)***	2.658 (0.027)***	2.805 (0.028)***	2.817 (0.028)***	2.871 (0.028)***	2.817 (0.027)***
<b>R-Squared</b>	0.2798	0.2773	0.2717	0.2612	0.2521	0.3027
<b>Number of Observations</b>	2,437	2,465	2,425	2,577	2,578	2,533

Note: \* p<.05; \*\* p<.01; \*\*\* p<.001. Standard errors of the coefficients are in brackets.

Table 7: Regression Results for Married Males

Log Hourly Wage	2006	2008	2010	2012	2014	2016
<b>A. Region</b>						
NFLD	-0.257 (0.022)***	-0.228 (0.022)***	-0.135 (0.022)***	-0.039 (0.021)	0.033 (0.021)	-0.051 (0.024)*
PEI	-0.303 (0.025)***	-0.254 (0.026)***	-0.270 (0.026)***	-0.201 (0.025)***	-0.212 (0.026)***	-0.203 (0.027)***
NS	-0.185 (0.018)***	-0.198 (0.018)***	-0.158 (0.019)***	-0.123 (0.019)***	-0.131 (0.020)***	-0.170 (0.021)***
NB	-0.220 (0.017)***	-0.208 (0.017)***	-0.192 (0.018)***	-0.161 (0.018)***	-0.176 (0.019)***	-0.158 (0.020)***
QUE	-0.112 (0.011)***	-0.114 (0.012)***	-0.100 (0.012)***	-0.107 (0.012)***	-0.062 (0.012)***	-0.074 (0.012)***
ON	---	---	---	---	---	---
MAN	-0.122 (0.015)***	-0.133 (0.015)***	-0.144 (0.014)***	-0.144 (0.014)***	-0.144 (0.014)***	-0.101 (0.015)***
SASK	-0.065 (0.016)***	0.002 (0.016)	0.026 (0.016)	0.057 (0.016)***	0.074 (0.016)***	0.085 (0.016)***
ALB	0.093 (0.013)***	0.133 (0.013)***	0.148 (0.013)***	0.169 (0.013)***	0.209 (0.013)***	0.192 (0.014)***
BC	-0.027 (0.013)*	-0.007 (0.013)	0.036 (0.014)**	0.024 (0.013)	0.040 (0.014)**	0.041 (0.014)**
<b>B. Highest Education</b>						
High school or less	---	---	---	---	---	---
Postsecondary (< University)	0.148 (0.008)***	0.159 (0.009)***	0.147 (0.009)***	0.151 (0.009)***	0.159 (0.009)***	0.143 (0.010)***
University	0.347 (0.010)***	0.366 (0.010)***	0.354 (0.010)***	0.364 (0.010)***	0.340 (0.010)***	0.313 (0.011)***
<b>C. Age Group (in years)</b>						
25-29	-0.143 (0.015)***	-0.147 (0.015)***	-0.132 (0.015)***	-0.164 (0.015)***	-0.193 (0.015)***	-0.104 (0.016)***
30-34	-0.050 (0.013)***	-0.038 (0.014)**	-0.045 (0.013)***	-0.080 (0.013)***	-0.036 (0.014)**	-0.035 (0.014)*
35-39	---	---	---	---	---	---
40-44	0.017 (0.012)	0.020 (0.012)	0.034 (0.012)**	0.012 (0.013)	0.047 (0.013)***	0.037 (0.013)**
45-49	0.073 (0.012)***	0.060 (0.012)***	0.090 (0.012)***	0.032 (0.012)**	0.076 (0.013)***	0.036 (0.013)**
50-54	0.077 (0.013)***	0.067 (0.013)***	0.085 (0.013)***	0.037 (0.012)**	0.084 (0.013)***	0.063 (0.013)***
<b>D. Union Status</b>						
Union Worker	0.103 (0.008)***	0.106 (0.008)***	0.097 (0.008)***	0.112 (0.008)***	0.119 (0.008)***	0.127 (0.009)***
<b>Constant</b>	2.953 (0.002)***	3.004 (0.12)***	3.004 (0.12)***	3.094 (0.012)***	3.070 (0.013)***	3.146 (0.013)***
<b>R-Squared</b>	0.1763	0.1793	0.1759	0.1796	0.1673	0.1525
<b>Number of Observations</b>	11,525	11,568	11,142	11,071	10,929	10,417

Note: \* p<.05; \*\* p<.01; \*\*\* p<.001. Standard errors of the coefficients are in brackets.

Table 8: Regression Results for Married Females

Log Hourly Wage	2006	2008	2010	2012	2014	2016
<b>A. Region</b>						
NFLD	-0.255 (0.022)***	-0.205 (0.022)***	-0.170 (0.022)***	-0.056 (0.021)**	-0.128 (0.022)***	-0.139 (0.023)***
PEI	-0.209 (0.024)***	-0.199 (0.026)***	-0.185 (0.025)***	-0.134 (0.026)***	-0.166 (0.025)***	-0.140 (0.026)***
NS	-0.192 (0.018)***	-0.186 (0.019)***	-0.141 (0.018)***	-0.157 (0.019)***	-0.111 (0.020)***	-0.148 (0.020)***
NB	-0.205 (0.018)***	-0.211 (0.018)***	-0.200 (0.017)***	-0.175 (0.019)***	-0.167 (0.019)***	-0.156 (0.019)***
QUE	-0.096 (0.012)***	-0.113 (0.012)***	-0.123 (0.012)***	-0.098 (0.012)***	-0.074 (0.013)***	-0.102 (0.013)***
ON	---	---	---	---	---	---
MAN	-0.112 (0.017)***	-0.139 (0.017)***	-0.135 (0.015)***	-0.119 (0.016)***	-0.150 (0.016)***	-0.135 (0.016)***
SASK	-0.134 (0.017)***	-0.101 (0.017)***	-0.076 (0.017)***	-0.023 (0.017)	-0.002 (0.017)	-0.010 (0.017)
ALB	-0.039 (0.015)**	0.047 (0.015)**	0.039 (0.014)**	0.052 (0.015)**	0.080 (0.015)**	0.093 (0.015)**
BC	-0.021 (0.015)	-0.048 (0.014)***	-0.057 (0.014)***	-0.054 (0.105)***	-0.053 (0.105)***	-0.034 (0.105)*
<b>B. Highest Education</b>						
High school or less	---	---	---	---	---	---
Postsecondary (< University)	0.195 (0.009)***	0.167 (0.010)***	0.180 (0.010)***	0.150 (0.101)***	0.168 (0.010)***	0.179 (0.011)***
University	0.470 (0.011)***	0.436 (0.011)***	0.443 (0.011)***	0.417 (0.011)***	0.428 (0.011)***	0.452 (0.011)***
<b>C. Age Group (in years)</b>						
25-29	-0.116 (0.016)***	-0.128 (0.016)***	-0.127 (0.016)***	-0.110 (0.016)***	-0.126 (0.016)***	-0.100 (0.016)***
30-34	-0.028 (0.015)	-0.055 (0.015)***	-0.046 (0.015)**	-0.027 (0.015)	-0.080 (0.015)***	-0.008 (0.014)
35-39	---	---	---	---	---	---
40-44	0.014 (0.013)	0.014 (0.014)	0.030 (0.014)*	0.023 (0.014)	0.009 (0.014)	0.052 (0.014)***
45-49	0.060 (0.013)***	0.043 (0.013)**	0.036 (0.013)**	0.043 (0.014)**	0.043 (0.014)**	0.054 (0.014)***
50-54	0.056 (0.014)***	0.062 (0.014)***	0.040 (0.013)**	0.057 (0.014)***	0.027 (0.014)*	0.062 (0.014)***
<b>D. Union Status</b>						
Union Worker	0.238 (0.008)***	0.238 (0.014)***	0.230 (0.008)***	0.233 (0.009)***	0.235 (0.009)***	0.226 (0.009)***
<b>Constant</b>	2.650 (0.013)***	2.741 (0.013)***	2.798 (0.014)***	2.840 (0.014)***	2.884 (0.014)***	2.881 (0.015)
<b>R-Squared</b>	0.2859	0.2647	0.2675	0.2427	0.2623	0.2734
<b>Number of Observations</b>	9,172	9,420	9,410	9,044	8,854	8,618

Note: \* p<.05; \*\* p<.01; \*\*\* p<.001. Standard errors of the coefficients are in brackets.

Table 9: Blinder-Oaxaca Decomposition Results, Single Males and Single Females

Log Hourly Wage	2006	2008	2010	2012	2014	2016
<b>A. Overall</b>						
Single Male	2.883 (0.008)***	2.968 (0.007)***	3.025 (0.008)***	3.070 (0.008)***	3.110 (0.008)***	3.157 (0.008)***
Single Female	2.805 (0.009)***	2.868 (0.009)***	2.964 (0.009)***	3.009 (0.009)***	3.041 (0.009)***	3.081 (0.009)***
<i>Difference</i>	0.078 (0.012)***	0.100 (0.012)***	0.061 (0.012)***	0.060 (0.012)***	0.069 (0.011)***	0.076 (0.012)***
<i>Explained</i>	-0.045 (0.006)***	-0.038 (0.006)***	-0.036 (0.005)***	-0.046 (0.006)***	-0.043 (0.006)***	-0.046 (0.006)***
<i>Unexplained</i>	0.123 (0.011)***	0.138 (0.011)***	0.096 (0.011)***	0.106 (0.011)***	0.112 (0.011)***	0.122 (0.011)***
Proportion of difference unexplained	1.577	1.380	1.574	1.767	1.623	1.605
<b>B. Explained</b>						
Union	-0.007 (0.003)**	-0.005 (0.002)*	-0.012 (0.002)***	-0.012 (0.002)***	-0.007 (0.002)**	-0.011 (0.003)***
Education	-0.039 (0.004)***	-0.042 (0.004)***	-0.031 (0.004)***	-0.039 (0.004)***	-0.039 (0.004)***	-0.039 (0.004)***
Province	0.005 (0.003)	0.012 (0.003)***	0.009 (0.003)***	0.010 (0.003)**	0.006 (0.003)	0.007 (0.003)*
Age	-0.003 (0.001)*	-0.003 (0.001)*	-0.003 (0.002)	-0.004 (0.001)**	-0.004 (0.002)*	-0.004 (0.002)*
<b>C. Unexplained</b>						
Union	-0.019 (0.008)*	-0.023 (0.007)**	-0.024 (0.008)**	-0.010 (0.008)	-0.023 (0.007)**	-0.025 (0.008)***
Education	-0.038 (0.016)*	-0.016 (0.016)	-0.041 (0.016)*	-0.044 (0.017)**	0.002 (0.017)	-0.043 (0.018)*
Province	0.024 (0.016)	0.004 (0.016)	0.047 (0.017)**	0.010 (0.017)	0.053 (0.017)**	-0.017 (0.018)
Age	0.004 (0.004)	-0.039 (0.026)	0.038 (0.027)	0.011 (0.027)	0.014 (0.026)	-0.009(0.024)
Constant	0.152 (0.036)***	0.213 (0.034)***	0.076 (0.038)*	0.139 (0.038)***	0.067 (0.038)	0.216 (0.037)***
<b>D. Observations</b>						
Males	3,012	3,191	3,000	3,217	3,393	3,143
Females	2,437	2,465	2,425	2,577	2,578	2,533
Total	5,449	5,656	5,425	5,794	5,971	5,676

Note: \* p<.05; \*\* p<.01; \*\*\* p<.001. Independent variables in Section B: Explained and Section C: Unexplained are grouped by category. Standard errors of the coefficients are in brackets.

Table 10: Blinder-Oaxaca Decomposition Results, Married Males and Married Females

Log Hourly Wage	2006	2008	2010	2012	2014	2016
<b>A. Overall</b>						
Married Male	3.075 (0.004)***	3.149 (0.004)***	3.208 (0.004)***	3.244 (0.004)***	3.285 (0.004)***	3.337 (0.004)***
Married Female	2.867 (0.005)***	2.947 (0.005)***	3.017 (0.005)***	3.076 (0.005)***	3.131 (0.005)***	3.179 (0.005)***
<i>Difference</i>	0.207 (0.006)***	0.202 (0.006)***	0.191 (0.006)***	0.168 (0.006)***	0.155 (0.006)***	0.159 (0.007)***
<i>Explained</i>	-0.007 (0.002)*	-0.014 (0.003)***	-0.016 (0.003)***	-0.025 (0.003)***	-0.025 (0.003)***	-0.025 (0.003)***
<i>Unexplained</i>	0.214 (0.006)***	0.216 (0.006)***	0.206 (0.006)***	0.193 (0.006)***	0.180 (0.006)***	0.184 (0.006)***
Proportion of difference unexplained	1.134	1.069	1.079	1.149	1.161	1.157
<b>B. Explained</b>						
Union	-0.001 (0.001)*	-0.003 (0.001)***	-0.005 (0.001)***	-0.007 (0.001)***	-0.007 (0.001)***	-0.009 (0.001)***
Education	-0.011 (0.002)***	-0.014 (0.002)***	-0.015 (0.002)***	-0.021 (0.002)***	-0.024 (0.002)***	-0.022 (0.002)***
Province	0.007 (0.001)***	0.005 (0.001)**	0.007 (0.001)***	0.004 (0.001)**	0.008 (0.002)***	0.006 (0.002)***
Age	-0.001 (0.001)	-0.001 (0.001)	-0.002 (0.001)*	-0.001 (0.001)	-0.003 (0.001)**	-0.001 (0.001)
<b>C. Unexplained</b>						
Union	-0.050 (0.004)***	-0.050 (0.004)***	-0.052 (0.005)***	-0.047 (0.005)***	-0.046 (0.005)***	-0.039 (0.005)***
Education	-0.050 (0.008)***	-0.022 (0.008)**	-0.039 (0.008)***	-0.016 (0.008)	-0.032 (0.009)***	-0.065 (0.010)***
Province	0.011 (0.008)	0.019 (0.008)*	0.029 (0.009)***	0.023 (0.009)**	0.036 (0.009)***	0.033 (0.009)***
Age	0.001 (0.012)	0.006 (0.012)	0.022 (0.013)	-0.021 (0.013)	0.035 (0.013)**	-0.010 (0.013)
Constant	0.302 (0.018)***	0.263 (0.018)***	0.246 (0.018)***	0.254 (0.018)***	0.186 (0.019)***	0.264 (0.020)***
<b>D. Observations</b>						
Males	11,525	11,568	11,142	11,071	10,929	10,417
Females	9,172	9,420	9,410	9,044	8,854	8,618
Total	20,697	20,988	20,552	20,115	19,783	19,035

Note: \* p<.05; \*\* p<.01; \*\*\* p<.001. Independent variables in Section B: Explained and Section C: Unexplained are grouped by category. Standard errors of the coefficients are in brackets.

Table 11: Robustness Test - Blinder-Oaxaca Decomposition Results for Single Men and Women, Including Part-Time Workers

Log Hourly Wage	2006	2008	2010	2012	2014	2016
<b>A. Overall</b>						
Single Male	2.857 (0.008)***	2.943 (0.008)***	2.991 (0.008)***	3.035 (0.008)***	3.081 (0.007)***	3.121 (0.008)***
Single Female	2.772 (0.009)***	2.833 (0.008)***	2.922 (0.009)***	2.961 (0.009)***	2.996 (0.008)***	3.031 (0.008)***
<i>Difference</i>	0.085 (0.012)***	0.111 (0.011)***	0.062 (0.012)***	0.074 (0.012)***	0.085 (0.011)***	0.090 (0.011)***
<i>Explained</i>	-0.040 (0.006)***	-0.034 (0.006)***	-0.035 (0.005)***	-0.043 (0.006)***	-0.037 (0.005)***	-0.042 (0.005)***
<i>Unexplained</i>	0.125 (0.011)***	0.144 (0.010)***	0.103 (0.011)***	0.117 (0.011)***	0.122 (0.010)***	0.133 (0.010)***
Proportion of difference unexplained	1.471	1.297	1.661	1.581	1.435	1.477
<b>B. Explained</b>						
Union	-0.009 (0.003)**	-0.007 (0.002)**	-0.014 (0.003)***	-0.011 (0.003)***	-0.007 (0.002)**	-0.011 (0.002)***
Education	-0.034 (0.004)***	-0.037 (0.004)***	-0.028 (0.003)***	-0.038 (0.004)***	-0.035 (0.003)***	-0.034 (0.003)***
Province	0.005 (0.003)	0.013 (0.003)***	0.010 (0.003)***	0.008 (0.003)**	0.008 (0.003)**	0.007 (0.001)*
Age	-0.003 (0.002)	-0.002 (0.001)	-0.003 (0.002)	-0.004 (0.001)*	-0.003 (0.001)	-0.005 (0.002)**
<b>C. Unexplained</b>						
Union	-0.013 (0.007)	-0.021 (0.007)**	-0.021 (0.007)**	-0.017 (0.007)*	-0.024 (0.007)***	-0.027 (0.007)***
Education	-0.034 (0.015)*	-0.018 (0.015)	-0.043 (0.015)**	-0.046 (0.015)**	0.003 (0.015)	-0.066 (0.016)***
Province	0.006 (0.015)	-0.003 (0.015)	0.047 (0.016)*	0.011 (0.016)	0.034 (0.016)*	-0.008 (0.017)
Age	-0.002 (0.025)	-0.036 (0.025)	0.022 (0.026)	0.016 (0.026)	0.023 (0.025)	-0.025 (0.024)
Constant	0.169 (0.034)***	0.222 (0.034)***	0.105 (0.036)**	0.153 (0.036)***	0.085 (0.036)*	0.258 (0.035)***
<b>D. Observations</b>						
Males	3,296	3,461	3,320	3,582	3,730	3,479
Females	2,870	2,907	2,935	3,127	3,122	3,063
Total	6,166	6,368	6,225	6,709	6,852	6,542

Note: \* p<.05; \*\* p<.01; \*\*\* p<.001. Independent variables in Section B: Explained and Section C: Unexplained are grouped by category. Standard errors of the coefficients are in brackets.

Table 12: Robustness Test - Blinder-Oaxaca Decomposition Results for Married Men and Women, Including Part-Time Workers

Log Hourly Wage	2006	2008	2010	2012	2014	2016
<b>A. Overall</b>						
Single Male	3.066 (0.004)***	3.141 (0.004)***	3.196 (0.004)***	3.230 (0.004)***	3.275 (0.004)***	3.326 (0.004)***
Single Female	2.830 (0.004)***	2.909 (0.004)***	2.979 (0.004)***	3.034 (0.004)***	3.089 (0.004)***	3.141 (0.004)***
<i>Difference</i>	0.236 (0.006)***	0.232 (0.006)***	0.217 (0.006)***	0.197 (0.006)***	0.186 (0.006)***	0.185 (0.006)***
<i>Explained</i>	-0.005 (0.002)	-0.012 (0.002)***	-0.013 (0.002)***	-0.021 (0.003)***	-0.023 (0.003)***	-0.024 (0.003)***
<i>Unexplained</i>	0.241 (0.005)***	0.244 (0.005)***	0.231 (0.005)***	0.218 (0.005)***	0.209 (0.005)***	0.209 (0.006)***
Proportion of difference unexplained	1.021	0.966	1.065	1.107	1.124	1.130
<b>B. Explained</b>						
Union	-0.002 (0.001)**	-0.003 (0.001)***	-0.005 (0.001)***	-0.006 (0.001)***	-0.007 (0.001)***	-0.009 (0.001)***
Education	-0.007 (0.002)***	-0.010 (0.002)***	-0.011 (0.002)***	-0.017 (0.002)***	-0.019 (0.002)***	-0.019 (0.002)***
Province	0.006 (0.001)***	0.003 (0.001)*	0.006 (0.001)***	0.003 (0.001)*	0.006 (0.001)***	0.005 (0.001)**
Age	-0.001 (0.001)	-0.002 (0.001)	-0.002 (0.001)*	-0.001 (0.001)	-0.002 (0.001)**	-0.001 (0.001)
<b>C. Unexplained</b>						
Union	-0.056 (0.004)***	-0.055 (0.004)***	-0.057 (0.004)***	-0.055 (0.004)***	-0.051 (0.005)***	-0.046 (0.004)***
Education	-0.055 (0.007)***	-0.025 (0.007)***	-0.041 (0.008)***	-0.025 (0.008)**	-0.037 (0.009)***	-0.064 (0.010)***
Province	0.007 (0.008)	0.015 (0.008)	0.014 (0.008)	0.015 (0.008)	0.027 (0.008)**	0.024 (0.009)**
Age	-0.001 (0.012)	-0.003 (0.012)	0.021 (0.012)	-0.023 (0.012)	0.033 (0.012)**	-0.012 (0.012)
Constant	0.346 (0.017)***	0.312 (0.017)***	0.295 (0.017)***	0.306 (0.018)***	0.236 (0.018)***	0.306 (0.019)***
<b>D. Observations</b>						
Males	11,868	11,917	11,532	11,492	11,303	10,784
Females	11,637	11,866	11,850	11,294	11,005	10,604
Total	23,505	23,783	23,382	22,786	22,308	21,388

Note: \* p<.05; \*\* p<.01; \*\*\* p<.001. Independent variables in Section B: Explained and Section C: Unexplained are grouped by category. Standard errors of the coefficients are in brackets.