DISADVANTAGED GROUPS IN THE LABOUR MARKET: OLDER WORKERS, YOUNGER WORKERS, AND NONSTANDARD WORKERS

by

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A thesis submitted in conformity with the requirements for the degree of Philosophy
Centre for Industrial Relations and Human Resources
University of Toronto

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THREE ESSAYS ON DISADVANTAGED GROUPS IN THE LABOUR MARKET

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Doctor of Philosophy

2013

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ABSTRACT

This dissertation examines four disadvantaged groups in the labour market from a variety of perspectives. Specifically, I looked into older workers, younger workers, nonstandard workers and female workers. In the first chapter, I examine the effects of Ontario eliminating mandatory retirement in 2006 on the labour force participation of older workers and the unemployment of younger workers. My second chapter examines the relationship between nonstandard employment and the subsequent workplace profitability. In my final chapter, I examine the interaction effect of employment status and gender on the issue of work hour mismatches.

The first chapter examines the impact of recent labour policy change at a national/provincial level. I find positive and significant effects for the labour force participation rate of older workers in Ontario in the five years following the legislation change of banning mandatory retirement in Ontario. Similar results are found for both men and women; however, the magnitude of this effect is somewhat smaller for men. In addition, the empirical analysis also reveals a short-run rise in the unemployment rate of younger workers.
The second chapter examines the financial implication of nonstandard employment at an organizational level. The results suggest that nonstandard employment is positively associated with subsequent workplace profitability, after controlling for factors that might also affect profitability. Moreover, this significant positive relationship between nonstandard employment and subsequent profitability is primarily driven by capital intensive manufacturing, the real estate/rental/leasing, the retail/trade/consumer service, and the education and health services industries as well as smaller workplaces. Larger workplaces and the rest of the private sector do not display significant results.

The final chapter looks into how employment status and gender systematically impact work hour preferences at an individual level. The findings indicate that there is a significant interaction effect between nonstandard employment and gender. Female nonstandard workers prefer to work more hours. Male workers, both nonstandard and standard, are more likely to prefer to work fewer or the same hours. These results conform to labour market trend of increasing labour force participation rates of females and a declining trend among males.
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CHAPTER 1: ABOLISHING MANDATORY RETIREMENT IN ONTARIO:

ASSESSING THE IMPACT ON OLDER AND YOUNGER WORKERS

ABSTRACT

This paper examines the effects of Ontario eliminating mandatory retirement in 2006 on the labour force participation of older workers and the unemployment of younger workers. In general positive and significant effects are found for the labour force participation rate of older workers in Ontario in the five years following the ban. Similar results are found for both men and women; however, the magnitude of this effect is somewhat smaller for men. In addition, the empirical analysis also reveals a short-run rise in the unemployment rate of younger workers.
1. INTRODUCTION

In the past decade there have been changes in legislation eliminating mandatory retirement in several provinces and jurisdictions in Canada. For example, on December 16, 2012, amendments to the Canadian Human Rights Act and the Canada Labour Code come into force, prohibiting federally regulated employers from utilizing mandatory retirement, unless it can be demonstrated that it is a bona fide occupational requirement. Effective January 2008, older workers in British Columbia are no longer forced to retire because of their age. Ontario also effectively banned mandatory retirement starting on December 12, 2006.

These legislative changes banning mandatory retirement have changed the Canadian employment scene and have wide-ranging implications for society. They have also raised many questions and concerns for human resources planning and budgeting, such as the prospect of a labour shortage, the sustainability of public pension plans and healthcare funds. Of particular interest is to what extent the legislative ban influences older workers’ labour force participation decisions, and whether the potential increase in the older workforce participation rate would impact the youth unemployment rate. Few studies have examined the implications of these recent legislative changes. This study provides the most recent estimates of the impacts of eliminating mandatory retirement by looking at the empirical effects following Ontario 2006 ban. The results shed light on the impacts in the other jurisdictions as well.

Previous studies suggest that banning mandatory retirement tends to have little effect on the labour force participation rate of older workers in both the short run and the long run (Reid, 1988; Shannon & Gerison, 2003). Further, since the number of older workers is very
small relative to the whole workforce, any impact on new hires of younger workers should also be minimal. These conclusions, however, may no longer hold true when estimating the impact of the legislative change to effectively abolish mandatory retirement in Ontario in 2006. One of the reasons is that the trend towards early retirement has reversed itself since the late 1990s. For example, the male older workers’ participation rate increased from 10.8% to 16.5%, and female older workers’ participation rate increased from 3.6% to 8.1% from 1990 to 2011 in Canada (Statistics Canada, 2012a). As a result, older workers are more likely to be constrained by mandatory retirement nowadays than decades ago, which might result in reasonably large employment effects. Thus, it is both interesting and important to investigate the impact of the recent legislative change to abolish mandatory retirement in Ontario.

This study contributes to the mandatory retirement literature by providing new evidence for the Ontario labour market regarding changes in the participation rate of older workers in the five years following the ban. An attempt is also made to assess the impact of this policy change on the unemployment rate of younger workers during the transitional period, which is one of the major concerns of implementing mandatory retirement. The empirical approach relies upon difference-in-differences and OLS regression methods applied to aggregated annual data from the Labour Force Survey over the period of 1990-2011.

2. LITERATURE REVIEW

Discrimination on the basis of age is considered a violation of human rights and is prohibited in both the Canadian Charter of Rights and Freedoms and the Ontario Human
Rights Code. Thus, termination of employment by reason of age is considered to be age discrimination. Provisions dealing with mandatory retirement are regulated under provincial/territorial human rights legislations across Canada. In Quebec, provisions covering the practice of mandatory retirement are also contained in labour standards legislation. Meta analysis also shows that age is not a valid predictor of job performance (Schmidt & Hunter, 1998) and scholars have argued that forcing people to retire not only impacts the labour market, but it is an issue of morality and social justice (Munro, 2002; Kesselman, 2004).

Although provisions vary from one jurisdiction to another, by the end of 2009, all provinces and territories had abolished mandatory retirement in Canada, with exemptions where it is part of a bona fide retirement or pension plan in certain provinces. At the federal level, in 1986 the Canadian federal government eliminated mandatory retirement for its own employees.

Many previous studies have discussed the potential labour market implications of eliminating mandatory retirement in Canada (e.g., Gomez & Gunderson, 2009; Gunderson, 2004), while only a few investigated the empirical impact (e.g., Reid, 1988; Shannon and Grierson, 2004). The empirical literature that does exist focused on the provinces of Quebec and Manitoba, both of which banned mandatory retirement in the early 1980s. The general conclusion, from studies using both aggregate, provincial level data and studies using individual level data, is that banning mandatory retirement has not had a substantial impact on the labour market, in either the short run or the long run.

Reid (1988) provided the first Canadian study to estimate the effect of a change in the legal status of mandatory retirement. He estimated Manitoba and Quebec labour force
participation rates for people aged 65 and over, comparing with that of Ontario, for the sample period of 1975-1986. In both difference-in-differences method and OLS regression, he found that the effects of banning mandatory retirement are “small and statistically insignificant” in the short run.

Shannon and Gerison (2004) tested the long-term (1976-2001) effects on the employment probabilities of older workers in Quebec and Manitoba, using the census and Labour Force Survey microdata file. They compared the employment probability of individual older workers in Manitoba and Quebec with that of older workers in (1) all other provinces that had not banned mandatory retirement; (2) two of the neighboring provinces (for Quebec, Ontario and New Brunswick were used as controls; for Manitoba, Ontario and Saskatchewan were controls); and (3) workers aged 60-64 in Manitoba and Quebec. In all three comparison models, they found that making mandatory retirement illegal had little effect on the older workforce.

One explanation for why abolishing mandatory retirement had a limited impact on the labour market is that not many people were constrained by the policy. Keer & Beaujot (2005) suggested that evidence on the extent to which workers are forced to retire is limited and increasingly dated. Gomez, Gunderson, and Luchak (2002) found that only some specific groups of workers were likely to be constrained by mandatory retirement. They are males, in good health, covered by an employer pension plan and working in industries like public administration or manufacturing where collective bargaining coverage rates tend to be higher. Female workers are especially less influenced by the legislative change because they are less likely to be in jobs where retirement is mandatory (Gunderson, 2004). In terms of the actual size, Gomez and Gunderson (2010) suggested that only slightly more than 10%
of workers retire due to mandatory retirement in Canada, and the figure was trending downward from 12.4% in 1996 to 11.1% in 2002.

This estimate, could however, understate the current impact of abolishing mandatory retirement because older workers are more likely to be constrained by mandatory retirement policy now than years ago. There are several demographic, economic, and social change forces behind this trend.

Firstly, both the number and the proportion of older workers in the labour force has been increasing (Marshall & Ferrao, 2007), given that baby-boom generation are aging and youth are delaying their entrance to the labour market to acquire more education. As the first of baby boomers turned 65 in 2011, it is uncertain how their labour force participation decisions will be made, as they are better educated, more skilled, and tend to prefer a different lifestyle than the cohorts that preceded them. For example, researchers have found that that the baby boomers may not want to move into traditional retirement as a life of leisure without working. In fact, 72% of them prefer to work at all after retirement according to a national representative survey conducted for the American Association of Retired Persons (AARP, Montenegro, Fisher, & Remez, 2002).

Secondly, improved health and increased life expectancy provide a longer remaining lifespan for older workers. For example, Statistics Canada reported that in 2007, Canadians at the age of 65 had on average 20.2 more years to live (18.5 years for males and 21.6 years for females; Statistics Canada, 2012b). Further, when asked to rate their own health conditions, in 2005, 22% of Canadians over the age of 55 rated their health as good, 33% of them rated their health being very good, and 35% rated their health being excellent
(Statistics Canada, 2012c). That is, about 90% of senior Canadians are in good to excellent health, which will increase their desire to maintain an active work life.

Socioemotional selectivity theory (SST, Carstensen 2006; Carstensen et. Al., 1999, 2003) suggests that changes in future time perspective leads to shifts in motivational priorities. That is, a perception that time in life is running out tends to result in present-oriented emotion-regulatory goals, such as retiring to enjoy more leisure and family activity; whereas perceptions that one is in good health condition and has lots of time left in life leads to a future-oriented information acquisition goals, such as staying at work and participating in training programs to acquire more job-related skills and knowledge. For example, Giffin, Hesketh, and Loh (2012) found that subjective life expectancy, or the age to which one thinks one will live, is a strong predictor of intended retirement age and the actual decision to retire. Given the evidence of longer life expectancy and improved health conditions among older Canadians, it is likely that older workers are more likely to be in a future-oriented than present-oriented mindset nowadays than previously. As a result, people at the age of 65 or older are more likely to prefer staying at work than retiring, compared to their predecessors.

Thirdly, older workers may want to increase their retirement age to avoid any financial hardships, given the shift from defined-benefit to defined-contribution pension systems. A study found that when people’s retirement funds decline and they feel they are losing control over their financial wellbeing, their attitude toward retirement will change and the retirement age will increase (Warren & Kelloway, 2010). The shift from defined-benefit to defined-contribution pensions reduces the financial incentives of defined-benefit plans that encouraged early retirement and discouraged postponed retirement (Gunderson, 2004).
Lastly, the joint nature of retirement between couples suggests that one spouse would not want to retire from labour market until the other one also retires. One study found that husbands’ response to an increases in wives’ labour force participation explains 50% of the increase in older men’s labour force participation rate since the mid-1990s (Schirle, 2008). In terms of gender differences in retirement decisions, previous research provides mixed results. For example, male older workers are found to be more likely to be constrained by mandatory retirement given that men reported a 10% higher expectation that they would work for pay in retirement than did women, according to a survey from the Employment Benefits Research Institute in the US (2004). On the other hand, Gomez et al. (2002) explained that, although females are less likely to retire due to mandatory retirement, those who do retire for that reason may be more adversely affected by it. This is because women tend to experience more career interruptions than men, which may lead them to accumulate less than the optimum number of years of service regarding pension benefits.

Given all the demographic, economic, and social change forces discussed above, it is reasonable to hypothesize that eliminating mandatory retirement might have larger employment effects now than in the 1980s. For example, 2007 General Social Survey (GSS) data indicate that about only 4 percent of the total sampled “near retirees” (people aged 45-55) plan to leave the workforce after the age of 65 (Schellenberg & Ostrovsky, 2008).

Understanding how banning mandatory retirement impacts older workers’ labour force participation decision as well as the overall labour market has significant practical implications. A survey conducted in 2005 on over 400 senior HR managers in Ontario indicates that, in workplaces that practice mandatory retirement, about 50 percent of the HR managers reported that the ban on mandatory retirement in 2007 had an impact on participation decisions of older workers/managers/professionals, and 80 percent of them
suggest there is an impact on the organization in general as well. Even in organizations that
did not have a mandatory retirement policy in place, 26 percent of senior HR managers report
that there was an impact on the retention of older employees, and about one-third of them
suggest the ban will also impact the organization in general. In general, however, there are
few significant differences in organizations with and without a mandatory retirement policy
in place in terms of the HR preparations to respond to the ban, such as developing HR
policies and procedures to actively retain older workers (Templer & Armstrong-Stassen,
2008).

Although studies on the overall labour market found minimal impacts of a ban on
mandatory retirement, there is some evidence of substantial impacts on individual segments
of the labour market such as the university professors. One Canadian study found that
universities without mandatory retirement policies have a higher fraction of professors over
the age of 65. The exit rates for faculty members at 64 and 65 are 30 to 38 percentage points
lower at universities without mandatory retirement than at universities with mandatory
retirement. The magnitude of this effect is found to be smaller for women than for men
(Worswick, 2005; Warman & Worswick, 2010).

Similar results were found for university faculty members in the United States.
Ashenfelter and Card (2003) found that in the mandatory retirement era when the MR age
for faculty was 70 in the US, about 75 percent of faculty who reached the age of 70 retired
within a year and about 60 percent of faculty who reached the age of 71 retired within a year.
Immediately after the removal of exemption of U.S. ban on mandatory retirement in 1994,
both rates fell to under 30 percent. A more recent study also found a sharp decline in the
probability of faculty at University of North Carolina retiring at age seventy once the
university was unable to impose forced retirement (Clark & Ghent, 2008)
Another concern with eliminating mandatory retirement is that if older workers keep working beyond the normal retirement age, it could affect job and promotion opportunities for younger workers in certain workplaces. Two issues need to be clarified concerning this argument: First, the impact on new hiring opportunities would only occur during the transitional period, and it will gradually diminish once the new retirement patterns are established. Second, although the impacts on the flow of new hires will occur only in the short run, the total stock of labour will increase permanently. This would result in an increased unemployment rate for younger workers if there is a fixed number of jobs. Economists, however, argue that this is an example of the “lump-of-labour” fallacy because a larger labour force will lead to increased spending, which in turn will generate an increased demand for labour to match the increase in labour supply. Although during the transitional period, job displacement may arise in narrowly defined occupations or within certain workplaces, over time the economy can create as many jobs as there are workers able and willing to fill them (Kesselman, 2005).

3. METHODS

Difference-in-differences and OLS regression are used to measure the impact of eliminating mandatory retirement on the labour force participation rate of older workers and the unemployment rate of younger workers in Ontario. The difference-in-differences method measures the impact as the change in the participation rate of older workers before and after the legislation change in Ontario compared to the change in the same outcome for a control group (i.e., Province of Quebec). A similar method is used for the unemployment rate of younger workers. In an ideal scientific experiment, researchers would use random
assignment of subjects to a control group to hold constant all factors except the change being investigated. In the difference-in-differences method, an appropriate control group is used to capture all other conditions, such as the changing economic environment, which could also impact the outcome variables. For example, one big concern in the specific time period that this study looks into is the 2008 to 2010 economic recession. Difference-in-difference method helps to address this concern as the impact of recession influences both the treatment and control group.

Choosing an appropriate control group is a key step of this method. In this study we considered two major groups as control groups: (1) older workers and younger workers in Quebec, where there was no change in mandatory retirement legislation during our sample period (in fact the ban on mandatory retirement took effect in 1983), and (2) core age workers in Ontario. Quebec is selected as a control because Quebec and Ontario are in geographical proximity and they are similar in terms of size, population, industry composition, and labour force. Ideally, the control group should have the same pattern on the outcome measures as the treatment group before the treatment. Figures 1 to figure 3 show that the trends of participation rates of older workers in Ontario and in Quebec had moved quite similarly prior to the legislation change in 2006. Figures 4 to 6, however, show that younger workers in Quebec may not be an appropriate control group for younger workers in Ontario. The trend of unemployment rates of younger workers in Ontario and in Quebec moved together up to the year 2000, but between 2000 and 2006 the youth unemployment rate in Ontario increased substantially relative to that of Quebec. Since younger workers in Quebec may not serve as an ideal control group, core age workers in Ontario are selected as a control. Figures 7 to 9 reveal that the trend of unemployment rates for the 15-24-year-old group is quite similar to that of 25-44-year-old group prior to the ban
in 2006. The suitability of these groups as control groups is also supported by our multiple regression analysis below.

The OLS regression is complementary to the difference-in-differences method from two perspectives. First, it systematically tests whether the selected control group is appropriate. Although previous researchers conducted difference-in-differences analysis based on carefully selected treatment groups and control groups, most of them failed to verify the fidelity of the two statistically. Second, OLS regression also provides an estimate of the magnitude of the impact of the impact of the ban on mandatory retirement. When the same outcome variable is measured by two different statistical methods, and both methods result in similar conclusions, the validity of the findings is increased.

The OLS regression model used to estimate the impact of a ban is specified as follows:

\[ Y_t = \alpha + \beta_1 \cdot X_t + \beta_2 \cdot \text{Ban} + e \]

For older worker samples, \( Y_t \) is the labour force participation rate of people aged 65-69 in Ontario in the year \( t \). \( X_t \) is the labour force participation rate of older workers in Quebec in the year \( t \). For younger worker samples, \( Y_t \) is the unemployment rate of people aged 65-69 in Ontario in year \( t \). \( X_t \) is the unemployment rate of younger workers in Quebec or that of core age workers in Ontario in year \( t \).

\( \text{Ban} \) is a dummy variable coded as “0” before the ban on mandatory retirement (1990-2006) and “1” after the ban (2007-2011). This is the conventional way of coding the dummy variable, but we also use a transitional dummy, explained below. The implicit assumption behind the conventional dummy coding is that there is a sudden shift in the intercept in 2006.
Older workers are defined as workers aged 65 to 69 in this study. Therefore, in the year 2007, the first year after the ban, only people who were 65 that year were affected by the legislation change. Older workers who are aged at 66 to 69 were not impacted by the legislation change because they had already passed age 65 before the ban was implemented. For the same reason, in the year 2008, only workers who aged 66 and 65 were actually impacted by the legislation change. That is, although the ban was implemented in 2006, not all employees in the 65-69 age group were influenced by the ban immediately. Instead, the proportion gradually increases over a five year period so that by 2011 all of the employees in the 65-69 age group are affected. If we assume that the employees aged from 65 to 69 are equally distributed in the sample, then only one-fifth of employees were impacted by the legislation change in 2007; two-fifths were impacted in 2008, and so on, until 2011, when all older workers in the sample were not constrained by mandatory retirement when they turned 65. To better capture this gradual impact of the ban on mandatory retirement, a transitional dummy is also utilized in the OLS model, where ban is coded as coded as “0” before the ban (1990-2006) and “0.2” in the year 2007, “0.4” in 2008, “0.6” in 2009, “0.8” in 2010, and “1” in 2011.

The limited number of explanatory variables reflects the quasi-experimental method that assumes that the pattern of the outcome variable in the control group will capture all other factors influencing the employment outcome of the treatment group other than the legislation change.

The estimate of the coefficient $\beta_1$ indicates the suitability of the control group chosen because it indicates how closely the treatment group has behaved relative to the control group in the outcome variable. If Quebec is a good control group for Ontario, $\beta_1$ should be significantly different from zero but not significantly different from 1. The
extreme case would be when $\beta_1$ equals to 1, indicating that the two provinces reported exactly the same pattern in the outcome variable before the treatment; If $\beta_1$ equals to 0, it means that the treatment group has no relationship with the control group in Ontario at all.

The estimate of $\beta_2$ captures the differences on the outcome variable in the treatment group in the period after treatment. In other words, for older workers it indicates how much more or less older workers in Ontario participated in the labour force after the ban, after controlling for all other factors that could potentially impact the labour market outcome. The argument is analogous for the unemployment rate of younger workers in Ontario, in the conventional dummy model, $\beta_2$ indicates the average change in the outcome variable in the five years after the ban. In the transitional dummy model, $\beta_2$ estimates the ultimate changes in the outcome variable at the end of the five-year transitional period, in the year 2011.

The analysis is based on the Labour Force Survey (LFS) aggregated annual data for the sample period of 1990-2011. There are two reasons that the year 1990 was selected as the starting year for the analysis. First, we use Quebec as a control group where mandatory retirement was banned in 1983. It takes five full years after the policy change before everyone in the age group of 65-69 faces the no-mandatory retirement regime. To make sure that the control group is not contaminated by the treatment, which is the ban of mandatory retirement, the sample period of this study should be outside the five-year window.

The second reason is that in 1984, the Quebec Pension Plan (QPP) changed to permit people to retire at the ages 60-64 and receive a reduced QPP pension. Three years later, the Canada Pension Plan (CPP) introduced a similar policy change. Our sample starts in 1990 so it will not be affected by this temporary divergence in QPP and CPP policies. Nonetheless,
this point is a relatively minor concern, given that Baker and Benjamin (1999) found that the QPP change had little impact on the labour market.

Aggregated data is used in this study rather than microdata because not everybody was constrained by mandatory retirement before the legislation changed. Therefore it is more informative to estimate the impact on the labour market as a whole rather than the increased employment possibility for each individual.

People aged 65-69 (older workers), 15-24 (younger workers) and 25-44 (core age workers) are used in this study. Since we are only looking at a short run impact (five years after the ban) on the labour market, ideally we should look at 2011 to 2015 data to capture the overall effect when no employees in the age group of 65-69 is constrained by mandatory retirement. Given the date limitation, the estimated effects of the ban on older workers in the difference-in-differences method and in the OLS conventional dummy model should be interpreted as an underestimation, because certain people in our sample turned 65 before the legislation changed and could have retired because of the mandatory retirement policy. The estimation in the OLS transitional dummy model is more likely to be accurate estimation because it captures the gradual change that each year more of the 65-69 age group are affected by the change in legislation. One last qualification is that even the transitional dummy is potentially biased in that the model assumes that people aged 65 to 69 are equally distributed within the older worker sample, whereas in reality it is more likely that population gradually decreases with age.

4. RESULTS AND DISCUSSION

The main results for participation rates of older workers are reported in table 1 to table 5 and the results for youth unemployment rates are reported in Tables 6 to 10.
For the results on older workers, the control group is older workers in Quebec. Tables 1 to Table 3 present difference-in-differences estimates. Table 4 reports OLS regression results using a conventional dummy that estimates the average magnitude of the effects in the five years after the ban. Table 5 reports OLS regression results using a transitional dummy to estimate the magnitude of the effects at the end of the transitional period. Results for both sexes, males, and females are reported separately, given the considerable differences in the overall participation rates trends for the two sexes over the sample period (see figure 1 to figure 3).

Table 1 calculates the difference-in-differences for older worker participation rates for both sexes. For the control group, the older worker participation rate in Quebec increased from 9.26 percentage points to 16.16 percentage points between the pre-ban and post-ban periods, an increase of 6.90 percentage points. In Ontario, the participation rate of older workers increased from 14.17 percentage points to 23.52 percentage points, an increase of 9.35 percentage points. The impact of eliminating mandatory retirement in Ontario is the difference in these two changes, that is, 9.35 percent minus 6.90 percent equals 2.45 percentage points. In other words, on average the ban on mandatory retirement in Ontario significantly boosts the participation rate of older workers by 2.45 percentage points in the five years after the ban.

An alternative, but equivalent, interpretation is that, prior to the ban, the older worker participation rate in Ontario exceeded that of Quebec by 4.91 percentage points. After the ban the older worker participation rate exceeded that of Quebec by 7.36 percentage points. The impact is estimated as the difference in these differences, that is, 7.36 percent minus 4.91 percent equals 2.45 percentage points, significant at the 0.01 level.
Table 2 and Table 3 present difference-in-differences results separately for males and females. For male older workers, in Quebec, the labour force participation rate increased from 13.62 percentage points to 21.48 percentage points between the pre-ban and post-ban periods, an increase of 7.86 percentage points. In Ontario, the comparable figure increased from 19.11 percentage points to 29.38 percentage points, an increase of 10.27 percentage points. The net effect of the ban on Ontario male older workers is the difference in these two changes, which is 2.42 percentage points, significant at 0.01 level.

For female older workers, in Quebec, the difference before and after the ban is 5.73 percentage points, increased from 5.49 percentage points to 11.22 percentage points. In Ontario, the difference is 8.36 percentage points, increased from 9.74 percentage points to 18.12 percentage points. So the net impact of banning mandatory retirement in Ontario for female older workers is the difference between 5.73 percent and 8.38 percent, which is 2.65 percentage points, significant at 0.05 level. To sum up, eliminating mandatory retirement in Ontario increased the participation rate of both males and females by a very similar amount.

Table 4 presents the results for older worker participation rates using OLS regression and a conventional dummy. As discussed in the methods section above, if Quebec is a good proxy for Ontario, β1 should be statistically significant from zero and not statistically significant from 1. The results show that 1 is included in the 95% confidence interval of β1 for all three sample groups: both sexes, males and females. These results confirm that Quebec is a good control group for Ontario in terms of older worker participation rates. Again, OLS regression is complementary to the difference-in-differences method, in that it statistically tests the fidelity between the control and the treatment group and permits confident statements of the conclusion from the difference-in-difference method.
The estimate of $\beta_2$ indicates the average impact in the following five years after the legislation change. Here we find consistent evidence of both positive and significant employment effects for all sample groups. After banning mandatory retirement, on average there is a significant and positive increase of about 2.80 percentage points in the participation rate of older workers in Ontario. For male older workers, the estimated impact is 4.02 percentage points. For female workers, the estimated impact is 3.78 percentage points. All results reported are statistically significant.

Table 5 presents the OLS regression results with a transitional dummy. There is consistent evidence that for the both sexes sample and the male sample in Quebec are a good control for older workers in Ontario. For both sexes and male samples, $\beta_1$s are statistically significant from zero and not statistically significant from 1. For females, $\beta_1$ is out of the 95% confidence interval, but it is included in the 90% confidence interval. In this model, the estimate of $\beta_2$ indicates the impact of the legislative change at the end of the transitional period. That is, what the magnitude of the impacts would be when all older workers aged of 65 to 69 are not constrained by the mandatory retirement policy when they turned 65. As a result, the estimated $\beta_2$ from the transitional dummy model is expected to be much larger (we expect it to approximately double) than that from the conventional dummy model. As expected, the results suggest that there is about 4.86 percentage points increase in the participation rate of all older workers in Ontario after the transitional period. Consistent with the difference-in-differences method, the magnitude of the effects is larger for female older workers (7.11 percentage points) than for female older workers (4.50 percentage points).

Some may argue that the results for female older workers are not consistent between conventional dummy model and transitional dummy model, because the conventional dummy model finds that the magnitude of effects is smaller for female older workers
whereas the transitional dummy model finds the opposite. These two results are actually compatible, in that the conventional dummy model is to estimate the average impact in the following five years after the ban, while the transitional dummy model is to estimate the ultimate impact in the end of the transitional period, which is the impact on the fifth year after the ban. Therefore, it is possible that the impact on female older workers is higher than on male older workers at the end of the transitional period, but overall the average impact is larger on male older workers.

The results for the impact of the ban on mandatory retirement on unemployment rates of younger workers are reported in table 6 to table 10. The control group is core age workers in Ontario. The difference-in-differences results are reported in the first three tables (tables 6 to 8) followed by OLS regression estimates, with both a conventional dummy and a transitional dummy. Again, samples on both sexes, male, and female are reported separately, given the considerable differences in the overall unemployment trends for the two sexes over the sample period (see figure 7 to figure 9).

Table 6 presents the difference-in-differences result for both sexes. For the control group, the unemployment rate of Ontario core age workers decreased from 7.09 percent to 6.74 percent, between the pre-ban and post-ban periods, a decrease of 0.35 percentage points, which is not statistically significant. For Ontario younger workers, the unemployment rate increased from 14.36 percent to 15.44 percent, an increase of 1.08 percentage points that is also not statistically significant. The impact of the ban is the difference in these two changes, that is, 1.08 percent minus –0.35 percent equals 1.43 percentage points, which is statistically significant. This result indicates that the ban on mandatory retirement resulted in a positive and significant increase in the unemployment rate of Ontario youth.
An alternative, but equivalent, interpretation is that prior to the ban, the unemployment rate of younger workers in Ontario exceeded that of core age workers by 7.27 percentage points. After the ban the younger worker unemployment rate exceeded that of core age workers by 8.70 percentage points. The impact of the ban in Ontario is estimated as the difference of these two differences, that is, 8.70 percent minus 7.27 percent equals 1.43 percentage points, significant at 0.01 level.

Table 7 and Table 8 report results for separate male and female samples. For male core age workers, the unemployment rate decreased marginally from 7.05 percent to 7.02 percent between the pre-ban and post-ban periods. For male younger workers, the unemployment increased from 16.04 percent to 17.54 percent, an increase of 1.50 percentage points. The difference of these two changes is 1.53 percentage points, significant at 0.05 level. For female core age workers, the difference before and after the ban is small (-0.64 percentage points) and statistically insignificant. For female younger workers, the comparable figure is also small (0.68 percentage points) and statistically insignificant. The difference-in-differences for female younger workers is 1.32 percentage points, significant at 0.01 level. Again, the magnitudes of the effects are quite similar for both male and female younger workers, and male younger workers show a slightly larger magnitude.

Table 9 presents the OLS regression results with a conventional dummy. The results suggest that the coefficient $\beta_1$ is not significantly different from 1 for all samples, supporting the view that Ontario core age workers are a good proxy of Ontario younger workers. The estimate of $\beta_2$ indicates the average impact of the legislation change in the five years after the ban is a consistently small positive and significant increase in the unemployment rate, and the magnitude is larger for male younger workers than female younger workers. To be more specific, after banning mandatory retirement, there is an
increase of 1.52 percentage points in the unemployment rate of younger workers of both sexes in Ontario. For male younger workers, there is an average of 1.53 percentage points increase in unemployment rate while for female younger workers, there is an average of 1.19 percentage point increase.

The OLS regression results with transitional dummy are in Table. For all samples, \( \beta_1 \)s are statistically significant from zero and not statistically significant from 1. Again, these results indicate that Ontario core age workers are a good control for Ontario younger workers in terms of unemployment rate. \( \beta_2 \) estimates the impacts of the legislation change in the end of the transitional period, that is, in the end of the transitional period, when all older workers aged 65-69 were not constrained by the mandatory retirement policy and any potential impact on new hires reaches its peak. The results suggest that there is a significant increase of more than 2 percentage points in the overall and male youth unemployment rates in Ontario at the end of the transitional period. For female younger workers, the estimated impact is a 1.83 percentage points increase but it is not statistically significant.

5. CONCLUSION

Although this study is based on a relative short five-year period after the 2006 change in legislation banning mandatory retirement in Ontario, it provides the first assessment of the impacts of eliminating mandatory retirement in the Ontario labour market. One of the key findings is that a substantial number of older workers decided to take remain in the labour market after the ban on mandatory retirement. The empirical analysis reveals that the participation rate of older workers increased by an average of more than 2
percentage points in the first five years after the change in legislation. The magnitude gradually increased over a five-year transitional period reaching a full impact of 4.8 percentage points in the year 2011. This is because the impact of the ban is measured on the participation rate of people in the 65 to 69 age group and in the first year of the ban only those aged 65 are affected – those aged 66 to 69 may have been forced to retire before the ban was implemented. In the second year after the ban, those aged 65 and 66 were affected, and so on, until the entire five-year 65 to 69 age group was affected in 2011, five years after the ban. Banning mandatory retirement is, therefore, important from a human rights perspective, given that the empirical evidence suggests that a considerable number of older workers are choosing to work beyond the normal retirement age.

This result contrasts with earlier studies of provinces that banned mandatory retirement in the 1980s that showed minimal impacts. Recent demographic, economic, and social changes have resulted in different retirement patterns of older workers in Canada. Understanding the trends of older workers’ labour force participation at a time when a large number of experienced baby boomers start transitioning into retirement has significant implications for organizational workforce planning and government policies concerning in areas such as pensions and health policy. Impending labour and skill shortages, as well as institutional specific knowledge within workplace, will depend on when and how many older workers retire. HR managers would be advised to take this new labour force participation pattern into consideration, to better anticipate their recruitment demand and pension obligations, as well as plan their training and retention programs that target and accommodate the requirements of an aging workforce.

Increased older workforce participation can be a positive trend because it contributes to the accumulated experience and expertise in the labour market. Also, delayed retirement
helps reduce pressures on pension systems. On the other hand, it may increase the
difficulties in succession planning due to the increased uncertainty as to when older workers
are retiring. It can also increase employers’ burdens on other age-related expenditures such
as health expenditures. Moreover, employers will have to pay special attention to manage
multi-generational workplaces and retrain older workforce to use new technologies. A wide
range of human resources policies and practices will help workplaces adjust to the
requirements of a growing older worker cohort that tend to stay at work longer, including
phased retirement programs, flexible work arrangements, wellness programs and reverse
mentoring.

For younger workers, the empirical evidence in this paper suggests that in the five
years after banning mandatory retirement in Ontario, there was a short-run rise in the
unemployment rate of younger workers of about 1.5 percentage points. Theoretical models
and past experience suggests, however, that the impact of banning mandatory retirement on
youth employment is temporary and will diminish once the new retirement pattern is
established.

6. REFERENCES

Ashenfelter, O., & Card, D. (2002). Did the elimination of mandatory retirement affect

312, 1913.


Munro, J. (2002). The debate about mandatory retirement in Ontario universities: Positive and personal choices about retirement at 65: IDEAS.


### Table 1 Difference-in-differences: Ontario older worker (65-69) participation rates, Quebec older workers as control

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<tr>
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<tr>
<td>Quebec</td>
<td>9.26</td>
<td>16.16</td>
<td>6.90***</td>
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<tr>
<td>Ontario</td>
<td>14.17</td>
<td>23.52</td>
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<td>7.36***</td>
<td>2.45***</td>
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### Table 2 Difference-in-differences: Ontario male older worker (65-69) participation rates, Quebec male older workers as control

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<td>21.48</td>
<td>7.86***</td>
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<tr>
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### Table 3 Difference-in-differences: Ontario female older workers (65-69) participation rates, Quebec female older workers as control

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<td>6.90***</td>
<td>2.65**</td>
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### Table 4 OLS regression: Ontario older worker (65-69) participation rates, Quebec older workers as control, using conventional dummy

<table>
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<th></th>
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<td>$\beta_1$ (Quebec LFP)</td>
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<td>.80***</td>
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<td>Adjusted R²</td>
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<td>1.42</td>
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### Table 5 OLS regression: Ontario older worker (65-69) participation rates, Quebec older workers as control, using transitional dummy

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<td>$\beta_1$(Quebec LFP)</td>
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<td>.87***</td>
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<tr>
<td>[95% conf. interval]</td>
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<td>[.47,1.26]</td>
<td>[.60, .88]</td>
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<td>4.86**</td>
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<td>7.11***</td>
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<tr>
<td>Adjusted R²</td>
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<td>F</td>
<td>190.53***</td>
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Note: Significance is denoted by*** at the 0.01 level, ** at the 0.05 level and * at the 0.1 level.
Table 6 Difference-in-differences: Ontario younger worker (15-24) unemployment rates, Ontario core age workers (25-44) as control

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Table 7 Difference-in-differences: Ontario male younger worker (15-24) unemployment rates, Ontario male core age workers (25-44) as control

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<tr>
<td>Ontario 25-44</td>
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<td>7.02</td>
<td>-0.03</td>
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<td>Ontario 15-24</td>
<td>16.04</td>
<td>17.54</td>
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<tr>
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<td>8.99***</td>
<td>10.52***</td>
<td>1.53**</td>
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Table 8 Difference-in-differences: Ontario female younger worker (15-24) unemployment rates, Ontario female core age workers (25-44) as control

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<tr>
<td>Ontario 25-44</td>
<td>7.12</td>
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<td>5.46***</td>
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Table 9 OLS regression: Ontario younger worker (15-24) unemployment rates, Ontario core age workers (25-44) as control, using conventional dummy

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<td>1.07***</td>
<td>0.79***</td>
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<tr>
<td>[95% conf. interval]</td>
<td>[.65,1.28]</td>
<td>[.77, 1.37]</td>
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<td>1.52**</td>
<td>1.53**</td>
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<td>F</td>
<td>22.27***</td>
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Table 10 OLS regression: Ontario younger worker (15-24) unemployment rates, Ontario core age workers (25-44) as control, using transitional dummy

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<td>$\beta_1$ (Ontario Core Age )</td>
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<td>1.04***</td>
<td>0.73***</td>
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<td>[95% conf. interval]</td>
<td>[.62,1.22]</td>
<td>[.76, 1.32]</td>
<td>[.36, 1.11]</td>
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<tr>
<td>$\beta_2$ (Ban)</td>
<td>2.34***</td>
<td>2.70***</td>
<td>1.83</td>
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<tr>
<td>Adjusted R²</td>
<td>0.69</td>
<td>0.77</td>
<td>0.48</td>
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<td>F</td>
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<td>36.40***</td>
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<td>DW stats</td>
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<td>1.00</td>
<td>1.41</td>
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Note: Significance is denoted by*** at the 0.01 level, ** at the 0.05 level and * at the 0.1 level.
**Figure 1** Participation rates of older workers (65-69) in Ontario and in Quebec by time

![Graph showing participation rates of older workers in Ontario and Quebec](image1)

**Figure 2** Participation rates of male older workers (65-69) in Ontario and in Quebec by time

![Graph showing participation rates of male older workers in Ontario and Quebec](image2)
Figure 3 Participation rates of female older workers (65-69) in Ontario and in Quebec by time

Figure 4 Unemployment rates of younger workers (15-24) in Ontario and in Quebec by time
Figure 5 Unemployment rates of **male** younger workers (15-24) in Ontario and in Quebec by time

Figure 6 Unemployment rates of **female** younger workers (15-24) in Ontario and in Quebec by time
Figure 7  Unemployment rates of younger workers (15-24) and core age workers (25-44) in Ontario by time

![Unemployment rates of younger workers (15-24) and core age workers (25-44) in Ontario by time](image)

Figure 8  Unemployment rates of **male** younger workers (15-24) and **male** core age workers (25-44) in Ontario by time

![Unemployment rates of male younger workers (15-24) and male core age workers (25-44) in Ontario by time](image)
Figure 9 Unemployment rates of female younger workers (15-24) and female core age workers (25-44) in Ontario by time
CHAPTER 2: NONSTANDARD EMPLOYMENT AND WORKPLACE PROFITABILITY

ABSTRACT

This paper uses longitudinal data from the 2001-2006 Workplace and Employee Survey (WES) to examine how nonstandard employment, which accounts for about 30 percent of total Canadian employment, is related to subsequent workplace profitability in the Canadian private sector. To compare the marginal effects of three categories of nonstandard employment, namely, non-permanent part-time, permanent part-time, and non-permanent full-time, Nonstandard-employment Elasticity of Profitability (NEP, a measure of the percent change in nonstandard employment to the percent change in profitability of the next year) is introduced. Results reveal that all three categories of nonstandard employment are positively associated with subsequent workplace profitability, after controlling for factors that might affect profitability. The magnitudes of these relationships are proportional to the popularity of each category of nonstandard employment within workplaces. Also, I find that this significant positive relationship between nonstandard employment and subsequent profitability is primarily driven by capital intensive manufacturing, the real estate/rental/leasing, the retail/trade/consumer service, and the education and health services industries as well as smaller workplaces. Larger workplaces and the rest of the private sector do not display significant results.
1. INTRODUCTION

Nonstandard employment, such as part-time and non-permanent work, comprises an increasingly significant portion of total employment in Canada, as well as in many other countries. In 2011, about 19.1 percentage points of total Canadian employees worked part-time and about 13.7 percentage points worked in temporary jobs (Statistics Canada, 2012). These two proportions have increased by 6% and 7% separately from 2001 to 2011 in Canada.

Previous studies have identified savings on labour costs as an important factor in employers’ decisions to apply this human resources practice (e.g., Houseman, 2001). Although it is obvious that employers may save on costs of benefits through replacing regular standard employees by nonstandard employees, it is not as obvious whether workplaces may ultimately translate the savings on labour costs into increased profits, because the lower compensation may be reflecting proportionally lower productivity and there may be both the direct and indirect adverse effects of nonstandard employment on employees’ attitudes, well-being, and behavior (e.g., Thorsteinson, 2003; Davis-Blake, Broschak, & George, 2003). Thus, I aim to explore how this trend of increased dependence on nonstandard employment affects subsequent workplace profitability in the Canadian private sector.

My paper shows, that on average, all three categories of nonstandard employment are positively associated with subsequent workplace profitability. Specifically, permanent part-time employment reports the largest effect, followed by non-permanent part-time and non-permanent full-time employment. As expected, this rank is consistent with the extent of the usage of each category of nonstandard employment within workplaces. In addition, when the samples are segmented by industry and employment size, I find that this
relationship does not exist in all industries and all sizes of workplaces. In fact, only smaller workplaces (less than 20 employees) and only four industries (namely the capital intensive manufacturing, the real estate/rental/leasing, the retail/trade/consumer service, and the education and health services industry), report a significant positive relationship between nonstandard employment and subsequent profitability. Large workplaces and the rest of the private sector do not display significantly positive results. A conceptual model is discussed that explains this result in the following section.

2. BACKGROUND AND RESEARCH QUESTIONS

2.1 Nonstandard Employment

The traditional standard employment relationship generally refers to a situation where the worker works full-time, year-round, at an employer-owned location under the employer’s direction, indefinitely without an end date of employment and enjoys benefits and entitlements (Kalleberg, 2000). Accordingly, the broad definition of nonstandard employment consists of the following three situations: (1) Part-time employment; (2) Non-permanent employment, including non-permanent agency and contract company employment, short-term assignments, seasonal hiring, casual job, and independent contracting (Connelly & Gallagher, 2004) and (3) flexible scheduling such as flextime, jobsharing, compressed workweeks and homeworking such as telecommuting.

Current literature has also referred to nonstandard employment as alternative work arrangements, market-mediated arrangements, nontraditional employment relations, flexible staffing arrangements, atypical employment, vagrant or peripheral employment, vulnerable work, precarious employment, disposable work, new forms of work and contingent work (i.e., Kalleberg, 2000; Cranford, Vosko and Zukewich, 2003; Gomez & Gunderson, 2005).
These inconsistent definitions provide a shortcut to form impressions of nonstandard employment. However, most of them are inadequate measures as the attributes associated with those names do not apply to all types of nonstandard work arrangements.

The dominant Canadian literature uses a restricted definition of nonstandard employment, which is based on two dimensions of the nature of the job – permanent versus temporary, and full-time versus part-time (i.e., Gomez & Gunderson, 2005; Krahn, 1991; Cranford et al., 2003; Zeytinoglu, 2005). As such, the total labour force can be classified into four mutually exclusive categories: permanent full-time (regular standard workers); permanent part-time; non-permanent full time; and non-permanent part-time, with the latter three representing nonstandard employment.

There are two reasons behind this restricted definition typology: first, nonstandard employment literature focuses its research interests on the precarious financial or employment situations. However, some of the nonstandard work arrangements under the broad definition—for example, the telecommuters—are not associated with precariousness (Gomez & Gunderson, 2005). Second, the restricted measures are the most common ones and sometimes the only available ones in Canadian data sets, such as the labour force survey (LFS), the General Social Survey (GSS), the Survey of Labour and Income Dynamics (SLID), and the Workplace and Employee Survey (WES). The empirical analysis of this study is based on the WES data and hence, the restricted definition of nonstandard employment is applied.

2.2 Benefits and Costs Associated with Nonstandard Employment

2.2.1 Benefits and Costs to Employees

Although nonstandard employment fits the needs of certain employees whose labour supply is limited due to family responsibility, physical capability, or personal preference, and is
found to induce lower level of stress and work-family conflict (Guest, Oakley, Clinton, & Budjanovcanin, 2006) the growth of nonstandard employment prompts concerns about the increased precariousness in their financial and employment situations. Specifically, nonstandard employment tends to offer lower wages and limited access to social benefits and statutory entitlements, which lead to a higher level of financial difficulty and lower levels of financial satisfaction among nonstandard employees (Buchler et al., 2009). In terms of job quality, nonstandard employees are often concerned about physically uncomfortable tasks, unsatisfying content or schedules, lower control over the labour process, less access to high status roles and projects, lack of access to promotion opportunities, reduced responsibilities, increased work intensity and poor workplace support (Fuller & Vosko, 2008; Zaytinoglu & Cooke, 2005). Further, growing shares of nonstandard workers report a lack of legal protection, either because they are excluded by law or de facto because they are less likely to meet contribution requirements or satisfy other relevant eligibility criteria (OECD, 2009).

The precarious financial and employment situation may lead to further adverse social consequences. Studies have shown that the increasing levels of insecure employment relations may increase the conflict and strain for families of nonstandard employees. For example, non-permanent employees are found less likely to intend to have children, have less spare time for their family and to experience a higher level of conflict with their partner (Scherer, 2009). Moreover, the fact that the nonstandard employment is organized in highly gendered, racialized, and immigration-based ways may further worsen labour market inequalities (Cranford et al., 2003).
2.2.2 Benefits and Costs to Employers

Despite of all these concerns, the popularity of nonstandard employment is increasing and this trend is usually attributed to its benefits to employers. Previous research indentified four major benefits to using nonstandard workers: (1) Offer flexibility in the employment size to deal with fluctuations in demand and assist in peak-time hours of the day/week; (2) Reduce costs by avoiding employment protection and benefits; (3) Add expertise or knowledge to the organization and (4) Screen workers more effectively and hire the best performing nonstandard workers for permanent full-time jobs (Boyce et al., 2007; Houseman, 2001, 2003, 2004). The importance of these four benefits varies under different circumstances. For example, a recent study provides evidence that in the manufacturing industry, the key benefit is to provide numerical flexibility rather than to buffer core workers to externalize certain jobs (Vidal & Tigges, 2009).

On the other hand, employers also bear certain costs associated with nonstandard employment. Although the results have been inconclusive, findings seem to point to a lower or comparable level of nonstandard employees’ attitudes, well-beings and behaviors (for reviews, see Thorsteinson, 2003; De Cuyper & De Witte., 2006). Studies found lower or not significant differences in job satisfaction and organizational commitment between nonstandard employees and regular standard employees. Moreover, the relationship between various indicators of physical and mental health and nonstandard employment is likely to be negative, and the association varies from weak to strong with increased employment instability. In terms of performance, nonstandard employees are found to be less productive in task performance, and involved less in organizational citizenship behavior and more likely to conduct more counterproductive behaviors (e.g., late, absent, unsafe, and careless).
All these individual level factors—attitudes, well-beings and behaviors—have significant impacts on organizational performance (Ostroff, 1992; Brewer & Selden, 2000; Koys, 2001).

Aside from the direct implications for nonstandard employees themselves, there are also indirect implications for regular standard employees. On one hand, compared with the worse-off group of nonstandard employees, permanent full-time employees may feel superior to them which enhances their self-esteem and motivation and may increase work performance (Boyce et al., 2007). On the other hand, and more likely the case in practice, standard workers may feel threatened by the presence of the nonstandard workers, sensing that they can be easily replaced by nonstandard workers. For example, Rousseau (1995) found that use of non-permanent workers threatens the psychological contracts of standard employees with their employers and limits coordination, leaning, and shared values among coworkers. Kraimer, Wayne, Liden, and Sparrowe (2005) found that for full-time employees with low job security, the perception that temporary employees pose a threat to their jobs tended to have a negative relationship with their performance. Davis-Blake, Broschak, and George (2003) also found that a blended workforce with standard and nonstandard employees worsened relationships between managers and employees, decreased standard employees’ loyalty, and increased their interest both in leaving their organizations and in exercising voice through unionization. As such, although workplaces are able to save labour costs, it is not likely that these labour cost savings can be transferred into increased profit because of the direct and indirect implications on the employee attitudes, well-beings and behaviors.

2.3 Prior Empirical Evidence and Research Questions

Considering the potential benefits and costs associated with nonstandard employment, there are two questions that remain to be addressed: (1) What is the effect of
nonstandard employment on firm profitability? (2) How does this effect vary across different workplaces?

Empirical studies regarding these questions are sparse and with mixed results. Nayar and Willinger (2001) provided one of the first systematic examinations of the financial implications associated with increased reliance on nonstandard labour. Using the measures of performance from income statement, balance sheet data, and stock returns, they found that adoption of this labour practice is associated with superior subsequent performance, with no increase in systematic risk as measured by the standard deviation of stock returns. This result, however, is based on workplaces that increased their dependence of nonstandard employment from less than 10% to more than 10%. Although different workplaces use nonstandard workers to different extents, most workplaces use certain types of nonstandard workers below the 10% level (see descriptive statistics section). Therefore, the way this study treated its core variable of interest is too simplified and the result may not reflect the general picture of changes in nonstandard employment on the workplace performance. Further, this study defined nonstandard employment as “seasonal or part-time workers”. However, it is quite possible that seasonal workers and part-time workers have very different effects on workplace performance.

Using return on equity (ROE) as a measure of workplace performance, Lepak, Takeuchi, and Snell (2002) found that contract work is positively associated with firm ROE. The methodological concern in this study is that the independent variable measure is perceptual—Participants were asked to indicate the extent to which their firm relies on nonstandard employment (1: not at all; 5: to a great extent). Further, the empirical analysis is based on relatively larger workplaces (workplaces with more than 200 employees).
Rodriguez-Gutierrez (2007) found that although labour productivity is negatively related to the proportion of non-permanent worker, the total cost of production falls even faster so that the price-cost margin (profit-to-sales ratio) of Spanish firms is reduced with the rise in the proportion of non-permanent workers. This result, however, is limited to the manufacturing industry.

The above discussion shows that there is a gap in the literature in the following areas. First, there is no study that compares the effects of different categories of nonstandard workers. Prior research tends to focus on one type of nonstandard workers or estimate the effects of all types of nonstandard workers in one group. Second, prior research is limited to only one industry or certain types of workplaces. As a result, there is no way to compare the results across all industries and workplaces. Also, previous study pointed out the need for longitudinal analyses in the field of nonstandard employment (Cuyper et al., 2003).

Since I have access to unique Canadian longitudinal panel data, I can address some of the problems/limitations existing in current literature of nonstandard employment. Specifically, there are at least two significant contributions of this study: First, it provides Canadian evidence on how workplace profitability is impacted by three different categories of nonstandard employment, namely, non-permanent part-time, permanent part-time, and non-permanent full-time jobs. Second, the empirical analysis is comprehensive and provides comparisons of workplaces across all industries and employment sizes.

If we decompose profits into its two components – revenues and costs, nonstandard employment seems to have impacts on both the revenue side and the costs side. On the revenue side, there are both direct impacts and indirect impacts. Direct impacts are the potential changes in productivity due to the influences on nonstandard workers’ attitudes, well-being and behaviors. Indirect impact refers to the potential productivity changes due to
collaboration and cooperation between regular standard workers and nonstandard workers. It is uncertain whether the direct and indirect impact is positive or negative, although the literature tend to support that the overall effective of nonstandard employment on revenues is negative.

Thus, nonstandard employment is likely to be associated with subsequent positive workplace profitability only when, (1) The direct negative impact on revenues is minimized. For example, effective human resources practices are present in the workplace to help enhance nonstandard workers’ attitudes, well-beings and behaviors; (2) The indirect negative impact on revenues is minimized. For example, the work process is primarily individual based such that communication and collaboration between regular standard workers and nonstandard workers are not essential factors in work procedures; Or (3) The savings on labour costs are significant enough to cover any negative impacts on the revenues side. This is likely to be the case in certain industries or smaller businesses where human capital constitutes a considerably larger proportion of total costs.

Specifically, I hypothesize that the relationship between nonstandard workers and workplace performance would vary by the type of nonstandard employment. The higher the incidence of each type of nonstandard employment, the higher the positive impact on subsequent profitability. This is because only when the savings from labour costs are large enough to offset any negative impact on revenues, that the net profitability would be positive. Secondly, the relationship may also vary by industries and workplaces. In certain industries, such as real estate and retail, where the nature of work requires flexible labour supply due to long hours and minimum collaboration and/or communications between nonstandard and standard workers, it is likely that nonstandard employment will have little or no negative impact or even a positive impact in some cases, on the revenues,. Therefore, nonstandard
employment should have significant positive associations with subsequent workplace performance due to the minimized impact on revenues and savings on costs. However, in certain other industries, such as labour intensive manufacturing, where the precariousness of nonstandard employment is more salient and may lead to more negative impact on the attitudes, productivity and behaviors of nonstandard workers, it is likely that nonstandard employment will have a negative impact on subsequent workplace profitability. In terms of workplace size, smaller workplaces may be expected to experience a greater positive impact of non-standard employment on profitability given that labour costs in smaller workplaces are generally a greater proportion of total costs.

3. METHODS

3.1 Data

The empirical analysis of this paper is based on the longitudinal panel data from the Workplace and Employee Survey (WES) on workplaces. The WES is a unique dataset that contains linked employee and workplace data. Workplaces are sampled by physical location and employees are then sampled within each location. Starting in 1999, the WES contains a broad range of information from both the supply and demand sides of the labour market, such as training, earnings, job satisfaction and detailed demographic characteristics on the employee side, and workforce characteristics, workplace performance, business strategy, human resource practices, competitiveness and technology use on the workplace side.

The WES—both workplace and employee sides survey—is conducted annually and responding to the survey is mandatory. This study uses only the workplace side of data. The WES draws its workplace sample from the Business Register maintained by the Business Register Division of Statistics Canada, excludes business locations in the Yukon, Nunavut
and the Northwest Territories, as well as agriculture, fishing, road, bridge and highway maintenance, government services and religious organizations. The survey frame is stratified by industry (14), region (6), and size (4). The initial workplace sample selected in 1999 is followed over time and is supplemented every two years with a sample of new firms selected from units added to the Business Register since the last survey occasion. Stratification of units remains constant over the life of the initial panel. The average of the workplace sample size is about 6,300 from 1999 to 2006 with the minimum of 5,818 in 2002 and the maximum of 6,693 in 2005.

The final samples selected for this study are for-profit sector workplaces with at least five or more employees, for the period of 2001 to 2006. This period is selected because detailed nonstandard employment categories were only introduced to the survey in the year of 2001. There are 5,731 unique workplaces in the final sample, about 64% of which have six-year continuous observations. On average, there are about 4,400 observations each year and the total six-year pooled penal data add up to 26,901 observations (see Appendix Table 1). All sampled units are assigned a sampling weight to obtain estimates for the population from a sample.

3.2 Measures

**Dependent variable.** Profitability is calculated by the formula

\[
\text{Profitability}_{it} = 100 \times \frac{\text{revenue}_{it} - \text{expenditure}_{it}}{\text{revenue}_{it}}
\]

In the WES, revenue is measured as gross operating revenue from the sale or rental of all products and services for the location for the most recently completed fiscal year (between April of the previous year and March-end of survey year). Expenditure is measured gross operating expenditure for this location for the most recently completed fiscal year, that include payroll and non-wage expenses and the purchase of goods.
Profitability is selected over gross profit margin, which is measured as \( \frac{\text{sales-cost of goods sold}}{\text{sales}}\), because labour cost of nonstandard workers may not be captured by the “cost of goods sold” variable. Therefore, although the gross profit margin is commonly used in examining financial situations, profitability is chosen in this study because it better captures the effect of adopting nonstandard employment on total cost across all types of occupations and industries. Return on Investment (ROI) and Return on Assets (ROA) are not used as measurement of profitability in this study because data on average invested capital and average total assets of the year are not available in the WES. Investment in new technology and machinery is available and is controlled in the model.

**Independent variables.** Nonstandard employment is measured as percentage of non-permanent part-time workers, percentage of permanent part-time workers, and percentage of non-permanent full-time workers within surveyed workplaces. In the WES, a part-time employee is defined as an employee who works less than 30 hours per week in their main job. A Non-permanent employee is defined as any employee who has a set termination date or a specific period of employment.

Previous work treats nonstandard employment as a heterogeneous phenomenon, not only by the employment types, but also by whether workers voluntarily or involuntarily accepting nonstandard job. Further, voluntary and involuntary nonstandard employees are different in terms of job satisfaction and performance (Feldman et al., 1995; Krausz et al., 1995). However, using the more accurate measure that addressed an individual’s reasons for perusing non-permanent work, Ellingson, Gruvs, and Sackett (1998) found that whether an individual was more or less voluntary in pursuing non-permanent work appears to be unrelated to satisfaction levels and work performance. As such, this study will not further
differentiate voluntary and involuntary nonstandard employment within the three categories of nonstandard employment.

Since the dependent variable is potentially endogenous, the independent variables are lagged one year in the model. The argument is that although current level of nonstandard employment might be endogenous to profitability, it is unlikely that past levels of nonstandard employment are subject to the same problem. Although lagging addresses the concern of endogeneity, it does not address the issue of causality. No causal relationship can be inferred from this study.

**Control variables.** The models include several control variables because other workplace characteristics or practices may also influence the workplace profitability, and the object of this study is to isolate the impact of nonstandard employment.

The unionization rate, measured by number of employees covered by collected agreement within the workplace, is controlled for because union tends to associated with lower profitability (Freeman and Medoff, 1984; Hirsch, 2003). Industry is controlled for by dummies because previous studies suggest that, except a few leading and lagging workplaces within certain industries, the industry effect turns out to be more important for performance than firm-specific factors (Hawawini et al., 2003). The communication industry is selected as reference group in the regression as it reports the lowest profitability (see Table 2).

Consistent with Dostie and Jayaraman (2008), new technology and machinery investment is also controlled for in this study. This variable is measured by the Canadian dollar amounts spent per employee within a workplace in the past year on most recent implemented: (1) new software and/or hardware installation; (2) computer-controlled or computer-assisted technology; and (3) other major technologies or machinery.
Other control variables include percentage of management and professionals as a measure of occupational characteristics and time dummies to capture the overall economic trend.

In the preliminary analysis of this study, payroll, benefit, and training expenditure per employee are also controlled for because these labour cost variables could potentially influence profitability. These control variables were later dropped from the final model for two reasons: First, no significant results were reported for these control variables; second, the magnitude and significant level of the other independent variables are quite similar with and without these control variables.

To answer the three research questions, a base model with all pooled panel data is estimated first. The model is then re-examined with samples that are segmented by industry and by employment size. The availability of panel data allows controlling for heterogeneity of establishments in the sample (Baltagi, 2001). Hausman Tests were performed to decide whether a random or a fixed-effect model is appropriate. In all models, the Hausman test suggests a fixed-effect model. Fixed-effect models accounts for unobserved establishment specific effects. In addition, the analysis of the base model, as well as models with segmented employment size samples, is clustered by industry to provide robust standard errors.

4. RESULTS AND DISCUSSION

4.1 Descriptive Statistics

Table 1 provides the means and standard deviations of dependent and independent variables used in this study, by industry and by employment size. The change of dependent
and independent variables over the sample period from 2001 to 2006 is also available in Appendix table 2.

The average profitability of workplaces in the Canadian private sector from 2001 to 2006 is 11%. That is, for every 100 dollars of revenue, 11 dollars were profit. This value varied significantly among industries, from the most profitable capital intensive manufacturing industry (19.32%), to the least profitable communication industry (0.06%). However, it did not vary as much by employment size. The workplaces with 20 to 99 employees reported the highest profitability (12.14%), followed by the smallest (less than 20 employees, 10.74%) and the biggest (500 and above employees, 9.68%) workplaces.

For independent variables, the most popular nonstandard employment type is permanent part-time workers. On average, 23.67% of total employees worked as permanent part-time workers in Canadian private sector workplaces. Three industries that used most of permanent part-time workers were (1) education and health (40.4%); (2) Retail trade and consumer services (38.5%); and (3) Real estate, rental and leasing (30.5%). The percentage of permanent part-time workers decreased with the employment size of the workplace, from a quarter in the smallest workplaces (less than 20 employees) to 11.5% in the largest workplaces (500 and above employees). In other words, smaller workplaces tended to use a larger proportion of permanent part-time workers.

The second type of nonstandard employment, non-permanent part-time workers, consisted of 2.57% of total employees in the Canadian private sector from 2001 to 2006. By industry, the three most intensive user of this type of nonstandard employment were the education and health industry (7.21%), the information and cultural industry (4.05%), and the business services industry (3.62%). Generally speaking, workplaces with a larger
employment size tended to use a greater proportion of non-permanent part-time workers, but the variation by employment size is smaller than that of by industry.

The third type of nonstandard employment, non-permanent full-time workers had 1.58% of total employees in workplaces in the Canadian private sector. The forestry, mining, oil, and gas extraction industry (7.37%), the construction industry (5.09%), and the information and cultural industry (3.36%) reported the highest proportion of non-permanent full-time workers, while real estate, rental and leasing reported the lowest proportion (0.46%). Larger workplaces tended to use a larger proportion of non-permanent full-time workers, from 1.5% reported by workplaces with less than 20 employees to more than 4% reported by workplaces with more than 500 employees.

4.2 Regression Results—Base Model

Regression results are presented in Table 2. The first column shows the results from the base model with all samples, followed by results from subsamples of various industry and employment size that reported significant results. The results from the rest of subsamples are displayed in the Appendix.

For all samples in the base model, every 1 percentage point increase in non-permanent part-time employment is associated with 0.16 percentage point increase in profitability in the next year. That is about 1.5% increase in profitability (calculated by the formula of \( \frac{\text{points increase in profitability}}{\text{mean of profitability}} \), in this case it is 0.0016/0.11). Since average Canadian workplaces only hire about 2.6 percentage points of non-permanent part-time workers, 1 percentage point increase in the use of non-permanent part-time workers is about 38% increase in the level of non-permanent part-time employment (0.01/0.026). That is, if a workplace increases its non-permanent part-time
worker force by 38%, this human resources practice will tend to be associated with 1.5% increase in the workplace profitability in the next year. The ratio of the percentage change in profitability to the percentage change in non-permanent part-time employment is 0.04, calculated as 1.5/38. For definitional purposes, this ratio of percentage change in profits over the percentage change in nonstandard employment will be referred to as a nonstandard-employment elasticity of profitability (NEP).

The NEP is an indicator of how sensitive the workplaces profitability is in response to the changes in nonstandard employment. It is independent of units and easier to compare among different categories of nonstandard employments and among different models. Although the elasticity can be obtained as the estimated coefficient in a linear regression equation where both the dependent variable and the independent variables are in natural logs, this method is not applicable to this study because the dependent variable profitability has many of negative observations. Therefore, this NEP ratio is calculated manually and reported in Table 3.

It is worth noting that although NEP is a useful summary index, the regression coefficient displayed in Table 2 is also informative from a practical perspective. This is because the regression coefficient is a more direct parameter of the potential impact on subsequent workplace profitability by adding one extra nonstandard employee in any given workplace with a total employment size of a hundred. For example, in the base model of all samples, the non-permanent part-time employment reports a coefficient of 0.16. This coefficient essentially means that in a workplace of 100 employees, adding one nonpermanent part-time employee is associated with 0.16 percentage point increase in profitability in the next year. Similarly, adding one extra permanent part-time employee is associated with 0.09 percentage point increase in the subsequent profitability. Adding one
extra nonpermanent full-time employee is linked with 0.11 percentage point increase profitability in the following year. That is, if the workplace is considering hiring one extra nonstandard employee, financially it is most beneficial to hire a nonpermanent part-time workers, followed by a nonpermanent full-time worker and a permanent part-time one. Thus, the coefficient from regression model serves as a more direct index for HR practitioners who are interested in understanding the implications of hiring one extra nonstandard employee.

As indicated in the second row of the first column in Table 2, every 1 percentage point increase in permanent part-time workers is associated with 0.09 percentage point increase in profitability, or 0.8% increases (0.0009/0.11). The 1 percentage point increase in permanent part-time employees is about a 4% increase in the usage level (0.01/0.236). That is, increase permanent part-time workers by 4% tended to associated with 0.8% increase in profitability in the next year. So the NEP of permanent part-time employment is 0.2 (0.8/4). That is, for every 5% increase in hiring permanent part-time workers, the workplace tend to report 1% increase in the profitability in the following year. This elasticity is much larger than that of non-permanent part-time workers (0.04). That is, for the same percent increase in hiring permanent part-time workers and in hiring non-permanent part-time workers, the former one is likely to be associated with a larger increase in the workplace profitability.

As indicated in the third row, every 1 percentage point increase in non-permanent full-time employment are associated with 0.11 percentage point increase in profitability, or a 1% increases (0.0011/0.11). 1 percentage point increase of non-permanent full-time workers is a 63% increase in the level of usage because on average the Canadian private sector uses about 1.58 percentage points of non-permanent full-time workers. To put it differently, if one workplace increases its usage of non-permanent full-time workers by 63%, this labour
practice is likely to be associated with 1% increase in profitability in the next year. Therefore the NEP of non-permanent full-time worker is 0.02 (0.01/0.63).

To conclude, the regression coefficients are estimations of the percentage point changes in the profitability of the next year associated with every percentage point change in nonstandard employment. This effect, however, is not comparable among the three categories of nonstandard employment, because the usage of three nonstandard workers and the profitability among different workplaces are different. Therefore, the calculated NEP ratio is an appropriate summary indicator, when comparing among the three.

This base model suggests that all three categories of nonstandard employment were associated with positive subsequent workplace profitability, but to a different extent. Workplaces tended to increase profit most after hiring permanent part-time workers, followed by non-permanent part-time workers, and then non-permanent full-time workers. As expected, this variation is consistent with the popularity of these three nonstandard employments in workplaces. As such, the different magnitude of relationships between nonstandard workers and subsequent workplace performances might help to explain the popularity of the usage of different nonstandard workers.

4.3 Regression Results—By Industry and By Workplace Size

Not all industries can be expected to benefit equally from hiring nonstandard workers. In fact, only four industries reported significant positive coefficients in this study, the capital intensive manufacturing, the real estate (rental and leasing), the retail, trade and consumer services, and the education and health industry. The labour intensive manufacturing industry is the only one to report a negative coefficient. The remaining nine industries, reported non-significant results.
Capital intensive manufacturing benefits only from hiring permanent part-time workers and not from hiring other types of non-standard workers. For every 1 percentage point increase in permanent part-time workers there is a 0.49 percentage point increase in the profitability. Therefore, the calculated NEP of permanent part-time worker in the capital intensive manufacturing industry is about 0.1. In other words, in the capital intensive manufacturing industry, every 10% increase in permanent part-time worker usage tends to be associated with 1% increase in the subsequent workplace profit. This result is well above the overall sample NEP of 0.04. In fact, capital intensive industry reports the largest NEP of non-permanent part-time workers, compare to all other industries.

The real estate, rental and leasing industry reports increased profitability one year after hiring both non-permanent and permanent part-time workers. The NEP of non-permanent part-time worker in the real estate, rental and leasing industry is 0.05, and the NEP of permanent part-time worker in real estate, rental and leasing industry is 0.6, which is about 3 times of that of all samples (0.2). That is, the real estate, rental, and leasing industry reports a well above average profitability increase following increased dependence on permanent part-time workers. For every 10% increase in permanent part-time employment, there is a 6% increase in the workplace profitability in the next year. This is reassuring in the sense that the work nature of this industry requires more labour supply in irregular working hours, such as weekends and evening time, when people have time to go see real estate properties.

Similarly, the retail, trade and consumer services industry benefits from hiring both non-permanent and permanent part-time workers. The NEP of non-permanent part-time worker in capital intensive manufacturing industry is 0.08 and the NEP of permanent part-
time worker in the retail, trade and consumer services industry is 0.3. Both NEPs are larger than the overall sample.

The education and health industry is only beneficial from hiring permanent part-time workers, with the NEP of 0.43. That is, in the health and education industry, increasing the dependence on permanent part-time workers by 10% tends to be associated with more than 4% increase in subsequent profitability.

The only industry that reports a negative relationship between nonstandard employment and subsequent workplace performance is the labour intensive manufacturing industry. Every 1 percentage point increase in non-permanent part-time workers is associated with 0.2 percentage point decrease in the profitability. On average, the labour intensive manufacturing industry used 1.31 percentage points of non-permanent part-time workers, so 1 percentage point increase is about 7.7% increase (0.0001/0.013). The average profitability in this industry is 15.41%, so 0.2 percentage points decrease is about 1.3% decrease in profitability (0.20/0.154). As such, the NEP of permanent part-time worker in the labour intensive manufacturing industry is $-0.02 (-1.3/76.3)$. In other words, increasing dependence on non-permanent part-time workers tends to jeopardize the subsequent workplace profitability. This result is consistent with the Rodriguez-Gutierrez (2007) study which suggests a negative implication of nonstandard employment on the workplace performance in Spanish manufacturing firms.

To sum up, the capital intensive manufacturing, the retail, trade and consumer service and the real estate/rental/leasing industry reported increased profitability after hiring non-permanent part-time workers. The education and health, the real estate, rental and leasing, and the retail trade and consumer services industry report increased profitability after hiring permanent part-time workers. The labour intensive manufacturing industry is the
only industry that reports a significant negative link between hiring non-permanent part-time workers and subsequent profitability.

Cost saving is one of the two most important factors to hire nonstandard workers, according to previous nonstandard employment research (e.g., Housman, 1997). This result suggests that whether cost saving can be transferred into profitability depends on the nature of the business. It seems that only industries that work intensively outside of the “standard” 9 to 5 business hours, or industries where labour can be easily replaced by machine and/or capitals, are able to reap the benefits of nonstandard employment. Although other industries, such as transportation, wholesale, finance, and communication, still save labour costs from replacing a regular standard worker by a nonstandard worker, these savings do not necessarily transfer into increased profitability in the following year.

With respect to employment size, only workplaces with less than 20 employees report a significant association between nonstandard employment and subsequent increased profitability. That is, all the results discussed above are largely driven by smaller sized businesses. Further, smaller workplaces (with 5-19 employees) only report increased profitability from hiring non-permanent part-time workers. Every 1 percentage point increase in non-permanent part-time workers is associated with 0.19 percentage point increase in profitability. On average, 2.66 percentage points of the total employees in the smaller workplaces are non-permanent part-time workers, so 1 percentage point increase is about 38% increase (0.01/0.027). Given that the average profitability of this industry is 10.74 percentage points, 0.19 percentage point increase is about 1.78% increase in profitability (0.0019/0.1074). As such, the NEP of non-permanent part-time worker in smaller business is 0.05 (1.78/38).
One explanation that the positive link between nonstandard employment and following workplace profitability is mainly driven by small workplaces is that savings in human capital are more salient for smaller workplaces where labour costs tend to take a larger proportion of total costs. In larger workplaces, the savings in labour costs are not significant enough to offset the negative impacts from the revenue side.

5. CONCLUSION

Although the individual-level outcomes of nonstandard employment have been well documented, the evidence on workplace-level outcomes has been sparse and has failed to provide consistent findings. This study provides recent Canadian evidence on the effects of nonstandard employment on subsequent workplace profitability, across a wide range of industries and workplace sizes.

The result revealed that on average, greater dependence on all three categories of nonstandard employment is likely to be associated with positive changes in subsequent workplace profitability. However, the magnitude varied considerably among the three types of nonstandard work. Specifically, permanent part-time work reported the largest effect, followed by non-permanent part-time and non-permanent full-time. This rank is consistent with the popularity of the usage of three categories of nonstandard workers within workplaces. As such, the differences in the effects on subsequent profitability perhaps explain the differences in the popularity of the three types of nonstandard employment.

In addition, this study also found that not all workplaces experience a positive relationship between increased dependence on nonstandard employment and the subsequent workplace profitability. In fact, only the capital intensive manufacturing industry, the real estate, rental and leasing industry, the retail, trade and consumer service industry, and the
education and health services industry reported increased profitability following nonstandard employment. The labour intensive manufacturing industry, however, is the only industry that reported a negative association between nonstandard employment and subsequent profitability. Last but not least, all the results discussed above are largely driven by smaller workplaces that have less than 20 employees. One possible explanation could be that labour costs take a larger proportion of total costs in smaller business than that in larger workplaces. Thus, the profitability is more sensitive to changes in labour costs for smaller workplaces than larger ones.

This study departs from previous nonstandard employment studies in three ways. First, the analysis is based on workplace-level rather than individual level. Second, the analytical focus is comprehensive across 14 industries and 4 workplace sizes. Lastly, a summary indicator, NEP is introduced to evaluate how sensitive the workplaces profitability is in response to the changes in nonstandard employment. NEP is independent of units and easy to compare among different categories of nonstandard employments and across different models.

The practical implications of this study are twofold. First, knowing the potential financial consequences associated with nonstandard employment can serve as a guideline when workplaces make hiring decisions. My results show that firms of different industries and sizes tend to benefit differentially by hiring non-standard workers. In most cases, the savings on labour costs seem to be canceled out by the negative impacts on the revenue side. In other words, replacing regular full time workers by nonstandard workers does not always translate into higher subsequent profits. Thus, savings on labour costs should not be the only factor to consider when making hiring decisions. Secondly, for workplaces where nonstandard employment is a normal practice, they would be well advised to focus on
enhancing nonstandard workers' attitudes, well-being, and behaviors to maintain the productivity, and facilitating the communication and collaborations between nonstandard workers and standard workers, so as to minimize the negative impact of nonstandard employment on revenues. Certain training and compensation practices can be highly valuable in this situation, such as team building workshops and team performance-based pay.

Finally, there are a few limitations in the study. One is that certain important forms of nonstandard employment are not fully captured in the WES data set, such as temporary agency workers, outsourced workers, or self-employed workers. This is because these types of workers are not considered as employees to their client firms. They are legally the employees of the temporary agency, outsourcing company, or themselves. Temporary agency workers and outsourced workers would only be captured in this study when the temporary agencies or outsourcing companies were sampled by WES. As a result, the result reported is primarily applicable to nonstandard workers of company direct hire. In terms of the implications on profitability, temporary agency workers and outsourced workers might report more positive impacts, due to the extra saving on hiring, training, and sometimes work equipments. That is, the result reported might be an underestimation the true picture. Future research should test the relationship of non-company-direct-hire nonstandard employment and workplace profitability.

The second limitation is that the WES data lacks a good control for capital input. This concern is partially addressed by controlling for the recent investment in technology and machinery. However, this control variable should be considered at most as the recent changes of capital input, but not the real level of capital input.

The third limitation is that this study does not test the underlying mechanisms of how exactly nonstandard employment links with the subsequent workplace profitability. This
study does not measure some key variables that could explain the underlying mechanisms, such as productivity, or communications and collaborations among regular standard and nonstandard workers. It is worth considering the dynamics behind this relationship. Future research could focus on exploring the key drivers that account for the link.

The fourth one is that although longitudinal data is used in the empirical analysis, no causal relationship can be inferred. Because there could always be a third variable, \( t_{t-1} \) that simultaneously influence the use of nonstandard worker, \( t_{t-1} \) and workplace profitability, \( t \). For example, I found that workplaces tended to increase profit most one year after hiring permanent part-time workers, followed by non-permanent part-time workers, and then non-permanent full-time workers. This could also highlight the endogeneity issue; that is, profitable workplaces are likely to expand and hence may want to hire more permanent part-time workers. It might be interesting for future researchers to try to test if a series of profit increases across a number of years leads to more hiring of permanent full-time workers or even permanent part-time ones. It would also be insightful if future research could trace through the dynamics of these paths to see if higher continuous profitability fosters shifts among these groups.

6. REFERENCES


Table 1 Descriptive statistics

<table>
<thead>
<tr>
<th>DV</th>
<th>IVs</th>
<th>observations</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Variables</td>
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<td>% non-permanent part-time (t-1)</td>
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<td></td>
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Significant level: *p < .10, **p < .05, ***p < .01
Note: Base models also control for industry and employment size.
Table 3  Summary of Nonstandard-employment Elasticity of Profitability (NEP)

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<thead>
<tr>
<th>Nonstandard employment</th>
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## APPENDIX

### Table 1  Observations breakdown by year

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<td>16.69</td>
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<td>2005</td>
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### Table 2  Descriptive statistics by year

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### Table 3 Regression Results by Industry

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<th>Forestry, mining, oil, and gas extraction</th>
<th>Primary product manufacturing</th>
<th>Second product manufacturing</th>
<th>Construction</th>
<th>Transportation, warehousing, and wholesale</th>
<th>Communication and other utilities</th>
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<tr>
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<td>% non-permanent full-time (t -1)</td>
<td>0.26</td>
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<td>0.08</td>
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<td>-0.03</td>
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<tr>
<td>2003</td>
<td>0.19</td>
<td><strong>0.08</strong></td>
<td>0.03</td>
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<td>0.0188</td>
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<td><strong>0.03</strong></td>
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<td>-0.02</td>
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<td>*** 1.74E-06</td>
<td>7.42E-06***</td>
<td>1.24E-06***</td>
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<td>technology &amp; machinery expenditure per employee</td>
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<td>0.66</td>
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<tr>
<td>Adj R square</td>
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<td>Root MSE</td>
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<td></td>
<td>0.24</td>
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<td>0.92</td>
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Significant level: *p < .10, **p < .05, ***p < .01
CHAPTER 3 : MISMATCHED WORK HOURS: THE INTERACTION ROLE OF NONSTANDARD EMPLOYMENT AND GENDER

ABSTRACT

The increasing prevalence of nonstandard work has focused attention on work hours of nonstandard workers, both actual and desired. Any mismatch between the two provides key insights for policymakers in making the best use of policy instruments for nonstandard workers. Previous studies suggest that nonstandard employment status and gender play separate roles in determining work-hours preferences: nonstandard workers would want more hours due to lower job and income security and female workers would want fewer hours because of family obligations. In this study I investigate factors that affect mismatched hours among workers who participated in a nationally representative survey in Canada. My findings suggest that there is a significant interaction effect between nonstandard employment and gender on work-hours preferences: not all female workers want to work fewer hours. In fact, female nonstandard workers prefer to work more hours. Male workers, both nonstandard and standard, are more likely to prefer to work fewer or the same hours. These results conform to labour market trend of increasing labour force participation rates of females and a declining trend among males.
1. INTRODUCTION

Over the past three decades, nonstandard employment, such as part-time, contract, seasonal or casual, has become increasingly popular, both in Canada and around the world. This trend is driven by certain public policies that facilitate nonstandard employment as well as by its perceived benefits to both employers and employees. From a government’s perspective, nonstandard employment might help to mitigate unemployment in that certain nonstandard work increases employment opportunities without having to increase the overall demand for labour. For the employers, nonstandard employment provides flexibility in dealing with labour demand fluctuations as well as helping to reduce labour costs. For workers, it can help them reconcile employment with family commitments, health limitations, educational opportunities and leisure. On the other hand, nonstandard employment can also disadvantage these workers by providing precarious and relatively lower-paid employment that leads to financial insecurity and uncertainty about the future.

Many of the research studies have focused on job quality and the employment conditions of nonstandard work, such as the income inequality, job content, and employee volition (e.g. Cranford, Vosko and Zukewich, 2003). This study contributes to a related stream of research that examines the extent to which the number of hours that employees actually work matches the number of hours they actually prefer, and how these work-hours preferences differ by gender.

Female workers, regardless of race/ethnicity, are more concentrated in precarious nonstandard jobs than their male counterparts (Cranford et al., 2003). One important reason is that since women undertake more household responsibilities, they are more likely to “voluntarily” choose nonstandard employment in order to better balance work and family
obligations. This suggests that female nonstandard workers should be less likely to experience working hour mismatches because the work arrangement is consistent with their preferences. On the other hand, female nonstandard workers tend to suffer from low earnings and job quality, both due to the persistent gender wage gap and the precarious employment and financial insecurity associated with nonstandard jobs. In that case, female workers would want more hours to make up for poor earnings and financial insecurity. But gender-assigned norms prevent female nonstandard workers from getting the working hours they prefer. Thus, we may expect that female nonstandard workers would experience more work-hours mismatches than their male counterparts.

In this study, I assess the interaction effect of nonstandard employment status and gender on work-hours preferences. It is both theoretically and practically important to examine this interaction for at least three reasons: (1) nonstandard employment is growing fast and females remain more likely to be employed in nonstandard jobs (Cranford, et al., 2003); (2) work-hours mismatches, either overwork or underwork, have significant organizational and individual consequences (e.g., Jacobs & Gerson, 2004; Reynolds & Aletraris, 2006); and (3) existing research on work-hours mismatches generally treat workers as one homogenous group, making it difficult to examine the magnitude of this problem within each employment segment. My results suggest that work-hours mismatches are in fact systematically different by gender and employment status, such that female nonstandard workers are more likely to be underemployed, whereas male workers, regardless of their employment status, are more likely to be overemployed.
2. CONCEPTUAL FRAMEWORK AND HYPOTHESES

2.1 Nonstandard Employment

At the outset, it is necessary to clarify the definition of nonstandard employment. The current literature uses inconsistent terms for nonstandard employment and the definition differs from one study to another. Specifically, nonstandard work is variously referred to as alternative work arrangements, market-mediated arrangements, nontraditional employment relations, flexible staffing arrangements, atypical employment, vagrant or peripheral employment, vulnerable work, precarious employment, disposable work, new forms of work and contingent work (Kalleberg, 2000). These inconsistent definitions overlap but any single one is inadequate because they lack precision and are not comprehensive enough to capture the variety found in the labour market.

The traditional standard employment relationship generally refers to a situation where the worker works full-time, year-round, at an employer-owned location under the employer’s direction, indefinitely without an end date of employment and enjoys benefits and entitlements (Kalleberg, 2000). In accordance with this definition of standard employment, a broad definition of nonstandard employment encompasses the following three work arrangements: (1) Part-time employment; (2) Non-permanent employment, including non-permanent agency and contract company employment, short-term assignments, seasonal hiring, casual job, and independent contracting (Connelly & Gallagher, 2004) and (3) flexible scheduling such as flextime, jobsharing, compressed workweeks and homeworking such as telecommuting.

Canadian studies have use a restricted definition of nonstandard employment, which is based on two dimensions of the nature of the job – permanent versus temporary, and full-
time versus part-time (i.e., Gomez & Gunderson, 2005; Krahn, 1991; Cranford et al., 2003; Zeytinoglu, 2005). As such, the total labour force can be classified into four mutually exclusive categories: permanent full-time (regular standard workers); permanent part-time; non-permanent full time; and non-permanent part-time, with the latter three representing nonstandard employment.

There are two reasons behind this restricted definition typology: first, the focus of nonstandard employment literature focus is on precarious financial or employment situations. However, some of the nonstandard work arrangements under the broad definition—for example, the telecommuters—are not associated with precariousness (Gomez & Gunderson, 2005). Second, the restricted measures are the most common ones and sometimes the only available ones in Canadian data sets, such as the labour force survey (LFS), the General Social Survey (GSS), the Survey of Labour and Income Dynamics (SLID), and the Workplace and Employee Survey (WES). The empirical analysis of this study is based on the WES data and hence, the restricted definition of nonstandard employment is applied.

Cranford, Vosko and Zukewich (2003) ranked the precarious level of the four categories of work using three indicators of precarious employment—firm size, hourly wage, and union status. Smaller workplaces, lower hourly wage, and lack of union coverage tend to be associated with precarious employment situations. All three precarious indicators were found to increase along the continuum of the following order: regular standard permanent full-time as the least precarious, followed by nonpermanent full-time, permanent part-time and nonpermanent part-time as the most precarious.
2.2 Mismatched work hours

Work-hours mismatches occur when there is a discrepancy between the hours one prefer to work and the hours one actually works. As such, there are two types of mismatches, the desire to work more hours (underworked or underemployed) and the desire to work fewer hours (overworked and overemployed).

It is important to look into mismatched work-hours issue because it has significant individual and organizational implications. For example, Wooden, Warran and Drago (2009) found that working time mismatch is associated with lower satisfaction with work and life, and the magnitude of impact is quite large relative to other variables such as disability, based on a large national representative US data. Other studies have also found that work-hours mismatches hamper workers’ well-being. For example, overworked report more stress, more sleeping problems, and poorer health, whereas underworked is associated with lower self-esteem and alcohol abuse (e.g., Dooley, 2003; Prause & Dooley, 1997; Dooley & Prause, 1998; Galinsky, Kim, & Bond, 2001). Moreover, working hour mismatches are found to be associated with organizational efficiency and workplace safety. Overworked employees have poorer individual task performance (more likely to make mistakes at work) and are more likely to damage the organizational performance as a whole (resent their coworkers, turnover intention). Further, overworked employees are more prone to injury (e.g., Galinsky, Kim, & Bond, 2001; Dembe, Erickson, Delbos, & Banks, 2005; Stamper & Van Dyne, 2001). On the other hand, working fewer hours than one prefers is associated with lower levels of organizational citizenship behaviour.

Many studies have examined the prevalence of working hour mismatches by gender, but the evidence is mixed. For example, Jacobs and Gerson (1998) both men and women
increasingly experience overemployment, not because of changes in their individual work hours per week, but due to the increased incidence of dual-career couples and the lack of a stay-at-home family member to provide care. Reynolds and Aletaris (2006) found that hours mismatches are equally common among men and women. However, other researchers found that working hour mismatches are more common for male workers (e.g., Fagan & Warran, 2001; Golden & Gebreselassie, 2007).

There is not much research on work-hours mismatch by employment status. Most studies focus on the quality of nonstandard jobs. The general findings are that nonstandard jobs offer lower wages and limited benefits, physically uncomfortable tasks, unsatisfying content or schedules, and lack of career development or legal protection (e.g. Buchler et al., 2009; Fuller & Vosko, 2008; Zeytinoglu & Cooke, 2005; OECD, 2009). However, relatively few studies have considered the magnitude and effects of mismatched work-hours on nonstandard workers. Reynolds and Aletaris (2006) found that there is no significant difference between self-employed and paid employees regarding hour mismatches.

2.3 Theories and Hypotheses

Several well-established theories can be used to relate nonstandard employment and precariousness with work-hour mismatches.

Equity theory (Adams, 1965) suggests that employees seek to maintain equity between the inputs that they bring to a job and the outcomes that they receive from it compared to the perceived inputs and outcomes of others. When they perceive unfairness, people are motivated to keep the fairness maintained among co-workers by adjusting the input/output ratio. Given that nonstandard workers tend to receive lower wages and limited benefits, physically uncomfortable tasks, unsatisfying content or schedules, and lack of
career development opportunities and legal protection (e.g. Buchler et al., 2009; Fuller & Vosko, 2008; Zaytinoglu & Cooke, 2005; OECD, 2009), it is reasonable to assume that nonstandard workers would be more likely to perceive an unfair treatment than their regular standard counterparts. Thus, nonstandard workers would be more likely to want to adjust the input/output ratio by reducing their work effort. The more precarious the job is, the stronger the sense of unfairness and the more likely that these would prefer to work less than their actual hours.

Maslow’s hierarchy of needs (1943) is often portrayed in the shape of a pyramid, with the most fundamental levels of needs at the bottom, like food and shelter, then safety, then love and sense of belonging, then esteem, and the need for self-actualization at the top. Maslow’s theory suggests that the most basic level of needs must be met before the individual will strongly desire, or focus motivation upon the secondary or higher level needs. In the workplace, the needs for safety manifest themselves as things like job security and financial security, which nonstandard jobs are less likely to provide. This uncertain financial and employment prospect motivates nonstandard workers to work as much as possible when they have the job, so as to both satisfy current needs and save money for future periods of unemployment. As a result, nonstandard workers are more likely to prefer working more than their actual working hours.

Signaling theory (Spence, 1973, 1974) suggests two parties could get around the problem of asymmetric information by having one party send a signal that would reveal some piece of relevant information to the other party. That party would then interpret the signal and adjust his/her behaviour accordingly. One of the most important reasons that workplaces use nonstandard employment is to screen and select for potential regular standard employees (Houseman, 2001). As a result, many nonstandard employees take the
job offer in the hope of transferring to a permanent full-time job in the future. Therefore, it is reasonable to hypothesize that nonstandard workers tend to prefer work more hours than their actual working hours, because more working hours send out signals of effort and loyalty, which can help them transfer to regular standard jobs.

Although the theories discussed above indicate different implications for work-hours preferences, they are consistent in that they all suggest that nonstandard workers are more likely to experience working hour mismatches, and the extent of mismatch would increase with the degree of precariousness. Therefore, the first hypothesis of this study can be stated as below:

\textit{H1: Nonstandard workers are more likely to experience working hours mismatch compared to standard regular workers. The likelihood increases with the precariousness of nonstandard employment, such that the most precarious nonstandard workers (nonpermanent part-time) are the most likely to prefer different work hours than their actual amount, followed by the second most precarious (permanent part-time) and the third (nonpermanent full-time).}

Given that different theories support different directions of work hour preferences of nonstandard workers, H1 can be written into two competing hypotheses:

\textit{H1a: Nonstandard workers are more likely to prefer more work hours compared to standard regular workers. The likelihood increases with the precariousness of nonstandard employment, such that the most precarious nonstandard workers (nonpermanent part-time) are the most likely to prefer different work hours than their actual hours, followed by the second most precarious (permanent part-time) and the third (nonpermanent full-time).}
**H1b:** Nonstandard workers are more likely to prefer less work hours compared to standard regular workers. The likelihood increases with the precariousness of nonstandard employment, such that the most precarious nonstandard workers (nonpermanent part-time) are the most likely to prefer different work hours than their actual hours, followed by the second most precarious (permanent part-time) and the third (nonpermanent full-time).

This hypothesis, however, may not apply uniformly for male and female nonstandard workers. Social comparison theory (Festinger, 1954) suggests that individuals are motivated to gain accurate evaluations of themselves by examining their opinions and abilities in comparison to others in relevant domains, which provide a sense of validity and cognitive clarity. That is, workers tend to evaluate their employment outcomes in comparison with the outcomes received by the closest reference group (Feldman & Turnley, 2004). For male nonstandard workers, their closest reference groups are male standard workers or female nonstandard workers who are doing similar work under similar a work environment. Although male nonstandard workers could feel unfairly treated when comparing themselves with male standard workers, they would feel better off when comparing with female nonstandard workers, who are generally lower-paid. These two comparisons might offset each other to a certain extent.

Similarly, female nonstandard workers can compare themselves to either female standard workers, or male nonstandard workers. Unfortunately, female nonstandard workers seem to be doubly penalized by the interacting role of gender and nonstandard employment. When comparing themselves to female standard workers, female nonstandard workers are more likely to receive lower pay, fewer and lower benefits, less legal protection, and more unsatisfying work content and schedule. Furthermore, even though both male and female nonstandard workers are working under precarious situations, female nonstandard workers
tend to suffer more due to the persistent gender wage gap. As a result, female nonstandard workers tend to feel devalued compared to either of the two closest reference groups. Therefore, female nonstandard workers are likely to experience a greater sense of unfair treatment than male nonstandard workers, and the more precarious the employment status, the stronger the perception of unfairness.

This sense of unfairness could lead to a desire for either more or fewer work-hours. If the sense of unfairness is primarily triggered by inadequate monetary reward received, female nonstandard workers are more likely to prefer more hours to reach earnings equity with other reference groups. Literature has shown that the need for money is the most common reason for wanting more hours (Bond, Galinsky, & Swanberg, 1998). However, if the sense of unfairness is primarily triggered by the input/output ratio, rather than the absolute amount of financial outcome they receive, female workers are more likely to prefer to work fewer hours, which could provide a new level of equity. Thus, it is unclear from theoretical considerations alone whether female nonstandard workers would prefer to increase or decrease their hours.

Neoclassical economists argue that market forces tend to eliminate hours mismatches by allowing workers to change their actual hours and consequently it will reduce the gap between preferred and actual hours (Sousa-Poza & Henneberger, 2002). However, the joint nature of labour market participation decision in a household suggests that couples tend to make trade-offs by balancing one spouse’s stable employment and income against another’s lower attachment to labour force and more time for household responsibilities. Despite the increase in dual-earner families, the gender norm of male breadwinners and female homemakers has not disappeared completely (Williams 2000). For this reason, although theoretically both male and female nonstandard workers can easily solve the problem of
hours mismatch by changing their jobs, female nonstandard workers are more bounded in reality because they are more likely to take nonstandard jobs for family reasons.

To sum up, it is clear that the aforementioned theoretical arguments and empirical evidence suggest that female nonstandard workers are more likely to have an unmet work-hours preference, although the direction of whether they prefer more work or fewer hours is unclear due to competing explanations. Hence, my second hypothesis is

**H2: Female nonstandard workers are more likely to experience working hour mismatches than male nonstandard workers. The likelihood increases with the precarious level of their work status.**

Other than the two main variables of nonstandard employment and gender, previous studies have identified several other factors that determine mismatches between actual and preferred work hours. I classify them into three categories: job quality, personal characteristics, and workplace characteristics.

Total work hours are associated with work-hours preferences in that people who work many hours are more likely to desire fewer hours and people who work fewer hours are likely to desire more hours. Managers and professionals, or people with advanced degrees are likely to want fewer hours (Jacobs & Gerson, 2004), probably because those people tend to work too many hours already. Whether being paid by hourly wage or salary is also associated with how people want to spend their time (DeVoe & Pfeffer, 2007), because paying hourly wage makes the value of time more psychologically salient to workers. Thus it is expected that workers with hourly wages are less likely to want fewer hours and more likely to want more hours. Satisfaction with money makes people want to work fewer hours (Reynolds 2003). Employee involvement programs such as self-directed work groups are
expected to increase the desire for working more hours because workers have greater authority on work content and work pace under such programs, which in turn make them more comfortable at work.

For demographic characteristics, age is expected to have a curvilinear relationship with work-hours preferences such that people are more likely to want fewer hours at an early age and at a senior age (Reynolds, 2003). For women, being married or with common law partner, as well as having young children may increase the desire for fewer hours, because of increased family commitments. The opposite may be true for men who consider themselves the breadwinner of the family. Immigrants are more likely to want more hours and less likely to want fewer hours because they do not feel as secure as native workers. When unemployed, native workers may have more social networks to turn to, such as relatives or friends, than immigrants. Hence immigrants are likely to work more and save more for current and future needs. Tenure might also play a role such that the longer a person stays with an employer and/or a job, the less likely he or she wants to work more and the more likely he or she wants to work less. Two possible reasons are: first, as the worker gets more and more familiar with the workplace and the job, he or she is able to work more efficiently. Second, workers who stay with the same employer and/or job for a long time tend to be better established in that workplace. Therefore, they do not have to work more hours to prove themselves.

In terms of workplace characteristics, type of industry and workplace size is most likely to influence work-hours preferences. This is because some businesses tend to work longer hours than others. In industries where work-hours are general longer than others, workers would be more likely to want to work fewer hours. In other industries, such as forestry and construction, which require more physical input, workers would be less likely to
want more work hours because of physical exhaustion. In terms of workplace size, smaller workplaces tend to have poorer legal protection so employees may feel less secure and may want to work more (Cranford et al., 2003).

One limitation of previous research is that a mismatch in work-hours is assumed to have the same impact regardless of the absolute size of the gap between actual and preferred hours.

3. **METHODS**

3.1 **Data**

The empirical analysis of this paper is based on the 2005 Workplace and Employee Survey (WES) employee file. The WES provides unique data consisting of linked workplace and employee components. Workplaces are sampled by physical location and employees are then sampled within each location.

For the employee component, the WES draws its sample from lists of employees provided by the surveyed employers. In smaller workplaces with fewer than four employees, all employees are selected; in larger workplaces, a maximum of twenty four employees are sampled using a probability mechanism. Unlike workplace samples, employees will be followed for only two years, due to the difficulty of integrating new employers into the location sample as workers change companies. As such, every two years, the WES would draw fresh samples of employees within each surveyed workplace.

The WES—both workplace and employee sides survey—is conducted annually and responding to the survey is mandatory. For the initial wave of the survey in 1999, responses were received from 6,322 business locations and 23,540 employees with response rates of 95.2% for employers and 82.8% for employees. Statistics Canada regional offices are
responsible for all data collection, data capture, preliminary editing and follow-up of non-
respondents. By July 2011, eight years (1999-2006) of data from workplaces and seven 
years (1999-2005) of data from employees are available for analysis at Statistics Canada 
Research Data Centre.

The empirical analysis in this paper is based on employee responses to the 2005 
WES survey. The total sample size is 24,197. To this file, I have added selected workplace 
characteristics from the 2005 workplace file. Descriptive statistics on the selected sample are 
reported in the results and discussion section.

3.2 Measurement

In the WES, respondents were asked “Given your rate of pay, would you prefer to 
work (1) the same number of hours for the same pay; (2) fewer hours for less pay; or (3) 
more hours for more pay.” If respondents chose either fewer hours or more hours, they were 
further asked “by how many hours would you like to reduce your work week?” or “by how 
many hours would you like to increase your work week?”

In terms of nonstandard employment status, all employee samples in the WES are 
classified into one of four mutually exclusive work categories, divided into two dimensions: 
nonpermanent versus permanent, and part-time versus full-time. Part-time work is defined as 
those who work for less than 30 hours per week on their main job. A non-permanent 
employee is defined as any employee who has a set termination date or a specific period of 
employment. Among the four categories, nonpermanent part-time, permanent part-time and 
nonpermanent full time are considered as nonstandard workers, and permanent full-time 
workers are considered as standard workers.
Turning to control variables, the WES contains data on job attributes, workplace characteristics, and demographic variables. Job attributes used as controls in this study include: occupation; total working hours per week (including over time); the calculated hourly earnings rate; whether being paid by the hour; whether receiving other benefits and overtime pay; satisfaction with the job; satisfaction with money; and participation in employee involvement programs such as suggestion programs, quality circles or self-directed work groups. The hourly earnings rate is calculated as total salary plus other earnings such as bonus and commission divided by total average hours worked per week. Workplace characteristics include industry (14 categories) and employment size (four categories). Demographic controls include age, age squared, highest education level (eight categories), immigrant status, marriage status, family income, number of children under the age of 18, tenure with current employer and tenure on the current job.

3.3 Analytical Strategy

All the employees in the sample are categorized into discrete groups based on their employment status (permanent full-time, permanent part-time, nonpermanent full-time, and nonpermanent part-time) and work hour preferences (their actual working hours are below, equal to, or exceed their preferred hours). These two variables, employment status and work-hours preference, can then be correlated to identify patterns of association. However, given that working time mismatch can also be driven by a great many intervening factors, the main focus of my analysis is on the estimation of multivariate regression models that hold constant other influences.

To examine how the primary variables of interests (nonstandard employment and gender) are related to work-hours preferences, I first estimate a three-outcome multinomial
logistic regression where the dependent variable is whether the respondent prefers (1) the same work hours; (2) fewer hours; or (3) more hours. Workers preferring the same number of hours are used as the reference group. Regular standard workers are used as the omitted basis for comparison. To facilitate comparisons I present all the results expressed in terms of relative risk ratios (RRRs). That is, the RRRs estimate the relative probability of preferring fewer hours versus the same number of hours, or the relative probability of preferring more hours versus the same work hours. For example, an RRR greater than 1.0 implies a greater likelihood to prefer more or less hours as of prefer the same work-hours, and an RRR less than 1.0 indicates a greater likelihood to prefer the same hours rather than more or less hours. Actual coefficient estimates are available upon request.

To estimate the interactional role of gender and nonstandard employment, first I run a multinomial logit model on the full sample to model the decision to increase, decrease or keep the same number of work hours. This model is estimated with and without interaction terms of the two main variables. These results are shown in Table 5.

One gap in previous studies is that mismatch is assumed to have the same impact regardless of the absolute size of the gap between actual and preferred hours. My analysis addresses this issue by taking advantage of WES data that provide the actual number of hours that respondents would prefer to add or reduce. I run two tobit models, where the dependent variables are, respectively, the number of hours employees want to reduce or add. For employees who responded “prefer the same work hours with the same pay” in the previous question, I coded their change in preferred hours as “0” hours. As such, for the first tobit model, concerning reduction in hours, the sample consists of all respondents who prefer fewer or the same hours. Likewise, for the second tobit model, concerning increasing hours, the sample consists of all respondents who prefer more or the same hours. Tobit
model is appropriate for this situation, where the dependent variable consists of lots of zero and all non-negative observations. This analysis is informative to both researchers and practitioners in that it indicates (1) how severe the mismatch issue is and (2) the relative importance of explanatory factors, such as job quality, workplace characteristics, and demographics, in influencing working hour mismatch. These results are shown in Table 6.

4. RESULTS AND DISCUSSION

4.1 Descriptive statistics

Table 1 reports preferred work hours by employment status. On average, about 69% of all employees in the Canadian private sector prefer to work the same hours. In other words, about 30% of Canadian employees in the private sector experience a working hour mismatch. Within this 30%, underemployment is about three times higher than overemployment -- 23.5% prefer to work more hours compared to 7.5% that prefer to work fewer hours.

There is some divergence between this Canadian evidence and American findings. For example, Schor (1991:7, 39-41) suggests that about 20% of Americans want more hours, but the majority of them want fewer hours. Golden (2006) also found that approximately 60% of Americans have hour mismatches. It is noteworthy that the WES sample only represents the private sector and that Canadians on average work fewer hours than Americans (Lee, McCann, Messenger, & International Labour Organization, 2007). Further, Golden (2006) notes that such questions about preferences are very sensitive to the way the question is worded, and his analysis reveals that only 6 to 7 percent of Americans want fewer hours.
based on the 2001 Current Population Survey. This latter result is consistent with my findings.

A simple bivariate analysis in Table 1 shows a clear relationship between work hour preference and employment status. By employment status, a smaller proportion of nonstandard workers prefer fewer hours and a larger proportion of them prefer more hours, compared to regular standard workers, and this trend is consistent with precarious level (See Appendix Figure 1), such that the most precarious nonstandard employees (nonpermanent part-time) report the least proportion of preferring fewer hours (0.5%) and largest proportion of preferring more hours (42.7%). Similarly, the least precarious standard workers report the highest proportion of preferring fewer hours (8.8%) and least proportion of preferring more hours (21.1%).

Table 2 reports the average number of hours employees prefer to increase or decrease by employment status. For those who prefer to reduce their hours, on average they want to reduce 10.5 hours per week; and for those who prefer to increase their hours, on average they want to increase 9.5 hours per week. This result is consistent with literature that when people want to change the number of hours they work, they often want to increase or decrease the length of work hours by at least 5 hours per week (Fagan & Warren, 2001; Jacobs & Gerson, 2004: 64).

The average number of hours that employees prefer to change is also consistent with precarious level of nonstandard workers. For workers who prefer to reduce their work hours, the least precarious nonstandard workers, nonpermanent full-time employees, wish to reduce by the largest amount, which is 12.3 hours, followed by permanent part-time workers (wish to reduce 8.9 hours) and nonpermanent part-time (wish to reduce 5.4 hours). The opposite
pattern is found for samples that prefer to increase their hours, such that the most precarious nonpermanent part-time workers want to increase their work hours by the largest length (increase 14.3 hours), followed by nonpermanent full-time (increase 11.09 hours), and nonpermanent part-time (increase 9.05 hours). The least precarious regular standard workers want to increase 8.5 hours per week. These results show a clear relationship between the degree of precariousness and the desire to add/reduce work hours.

Table 3 and Table 4 report the gender distribution and average work hours by employment status. Consistent with Cranford et. al (2003), I also find that in the Canadian private sector, nonstandard jobs are highly female dominated. Among the three categories of nonstandard workers, almost 80% of permanent part-time workers and about 71.5% of nonpermanent part-time workers are women, whereas for regular standard workers, the comparable figure is 47.7%. In terms of working hours, overall employees in the Canadian private sector work for about 39.4 hours per week. The differences in number of working hours between part-time and full-time work is fairly large: It is more than 20 hours in my sample. On average, nonpermanent part-time employees work 17.1 hours per week, and nonpermanent full-time employees work 43.8 hours. Permanent part-time workers work 20.4 hours per week and permanent full-time employees work 43 hours.

4.2 Multinomial logit model

Table 5 reports multinomial logit regression results. For nonstandard employment, I find that workers in all the three categories of nonstandard employment relative to standard workers, are significantly less likely to prefer fewer work hours compared to preferring the same work hours. The most precarious nonpermanent part-time workers report the largest magnitude (82% less likely, calculated as 1 minus 0.18), followed by permanent part-time
(48% less likely), and nonpermanent full-time (38% less likely). All results are statistically significant. Thus, after controlling for all other factors that might influence work-hours mismatch, I still find a consistent pattern that nonstandard workers are less likely to prefer a reduction in work-hours, and that this likelihood increases with the degree of precariousness of employment.

On the other hand, all three categories of nonstandard workers relative to standard workers are more likely to prefer an increase in working hours as opposed to preferring the same work hours. Although only the result for the most precarious category, nonpermanent part-time workers, is significant, the magnitude of all three relative risk ratios decreases in line with the degree of precariousness. Nonpermanent part-time workers are 1.8 times more likely to prefer more hours rather than the same hours. The comparable figures for permanent part-time workers is 1.28 times more likely, and for nonpermanent full-time workers is 1.1 times more likely, compared to regular standard workers.

The results suggest that compared to regular standard workers, nonstandard workers are more likely to prefer more hours and less likely to prefer fewer hours. The situation is especially significant for the most precarious category of nonstandard workers, the nonpermanent part-timer. This empirical evidence first hypothesis, which posited that nonstandard workers are more likely to experience work-hours mismatch. I also find support for the hypothesis that the likelihood of such preferences increases along with the level of precariousness such that the work-hours mismatch is the most severe for the most precarious nonstandard workers (nonpermanent part-time), followed by the second precarious nonstandard employment (permanent part-time) and the third precarious one (nonpermanent full-time).
In terms of gender differences, I find that there is no significant difference between preferring less work hours versus the same work hours, among all samples. However, there is a significant gender difference in regard to preferring more hours versus the same hours. The magnitude of the relative risk ratio suggests that women relative to men in general are 36% less likely to prefer more hours as opposed to staying with the same hours. When the results of two models are taken together, it is clear that women in general are significantly more likely to prefer to stay with their current work hours, whereas men are more likely to prefer to increase their work hours.

This is an interesting finding in that it is different from conventional understanding of work-hours preference that female workers tend to prefer fewer work hours. What I find here is that female workers do not necessarily prefer less work hours compared to men. Rather, they are just much less likely to prefer to work more hours.

With regard to the second hypothesis concerning the interactional role of nonstandard employment and gender, I find supportive evidence for my hypothesis that the working hour mismatch varies systematically by gender and nonstandard employment status. In the model with preferring fewer hours versus the same hours as the dependent variable, there is no significant difference between male nonstandard workers and male standard workers. However, female nonpermanent part-time workers relative to male standard workers, are about 82% less likely to prefer less hours, and female permanent part-time workers are about 71% less likely to prefer less hours.

The model of preferring more hours versus the same hours reveals a similar consistent pattern. For male workers, there is no significant difference between nonstandard workers and standard workers. However, for female workers, nonstandard workers are
significantly more likely to desire more hours rather than the same hours, and standard workers are significantly less likely to prefer more hours. The magnitude of relative risk ratio for female nonstandard workers are quite large and do not vary much with precarious level: Female nonpermanent part-time workers are 1.83 times more likely to prefer more hours rather than the same hours, compared to male standard workers; Female permanent part-time and nonpermanent part-time workers are both 1.9 times more likely to prefer more hours. On the other hand, female regular standard workers are 44% less likely to prefer more hours compared to male standard workers.

That is, unlike their male counterparts, female nonstandard workers and standard workers are two very different cohorts in terms work hour preference. This result suggests that female nonstandard workers are underemployed. Again this is a very interesting findings in that it is different from the conventional impression that female nonstandard jobs are especially attractive to women because they are consistent with their preferences (e.g., Fortine, 2005).

To sum up, the main findings of the multinomial regression analysis are: (1) Not all women are less likely than men to prefer more work hours. Women with regular standard jobs are less likely to prefer more hours as opposed to keeping their current work hours. In contrast, women with nonstandard jobs are significantly more likely to prefer more work hours, and the magnitudes are quite large and constant across all categories of nonstandard employment types; (2) Male nonstandard workers and male standard workers are very similar in terms of whether they prefer more or less working hours as opposed to their current hours; (3) The overall pattern is that female nonstandard workers are significantly underemployed, male nonstandard workers are not. No specific group is significantly overemployed.
I also find reasonably strong support for most control variables. For example, immigrants are about 30% less likely to prefer less hours and about 1.4 times more likely to prefer more hours than native-born Canadians. As working hours increase, people are more likely to prefer less hours. Hourly wage is significantly associated with smaller probability to prefer more hours. Being married or living with a common law partner is significantly associated with more preference for less hours and less preference for more hours.

4.3 Tobit models

Table 6 reports results from the tobit models of the likelihood of preferring more or fewer work-hours by gender and type of nonstandard employment. The coefficient explains the extent to which each factor influences the actual gap between the preferred and current hours. The relative magnitude of the coefficient indicates the relative importance of these factors. For employees who prefer more or the same work hours, on average, male nonpermanent part-time workers prefer to increase their work hours by an additional 6.2 hours, while female nonpermanent part-time workers prefer to increase by an additional 2.7 hours compared to male standard regular workers. Male permanent part-time workers prefer to increase about 1.5 hours more than male standard workers, while female permanent part-time workers prefer to increase work hours by 4.7 hours. Female standard workers, however, want to increase their work hours by 4 hours fewer than what male standard workers prefer to increase.

It should be noted that a negative coefficient in the tobit model should not be interpreted as female standard workers preferring to decrease their work hours. Since the omitted group is male standard workers, a negative coefficient for the female variable means that compared to male standard workers, female standard workers want to increase fewer
hours than what male standard workers prefer to increase. An easy way to interpret the negative coefficient is to discuss the results concerning the omitted group. For example, in this case, the negative 3.98 on female can be interpreted as on average, male regular standard workers want to increase about 4 more hours than female standard do.

It is also important to point out that the result of male nonpermanent part-time workers prefer to increase their hours by 6.2 more hours than male standard workers is not incompatible with previous discussed multinomial logit model result that male nonstandard workers are not significantly prefer more hours compared to male standard workers. This is because multinomial logit model is about the relative likelihood one to prefer one choice against the other. It is possible that the relative likelihood of preferring more hours as oppose to the same hours are the same for male nonstandard and standard workers, but for those who do prefer more hours, the number of hours they want to increase are significantly different.

When we put the results of multinomial logit and tobit models together, it becomes clear that female permanent part-time and female nonpermanent full-time workers are the two groups that are most severely underemployed, because they report both high relative likelihood of preferring more hours, and a higher increase in the number of preferred work hours. Although female nonpermanent part-time workers also report a relatively high likelihood of preferring more hours, their preferred increase in work hours is relatively smaller (less than 3 hours). Although male nonpermanent part-time workers are not more likely to prefer more hours, but for those in the group who do prefer more hours, their preferred increase in work hours is greater than the preferred increase in hours of female nonstandard workers.
Other factors that are both significant and large in magnitude include immigrant status. Immigrants prefer to increase work hours by about 3.2 hours per week more than the hours preferred by native-born Canadians. Workers who receive hourly pay want to increase work hours by an additional 0.9 hours per week relative to hours preferred by workers who receive a monthly salary. Also, workers who receive overtime pay want to increase hours by an additional 1 hour per week compared to hours preferred by those who do not receive overtime pay. Workers who participated in self-directed group want to increase their 1.7 more hours. People who are unsatisfied with the money they received want to increase their 2.2 hours more than those who are satisfied. Single persons want to increase 1.9 hours than those who are married or with live with a common law partner. Although this marriage/with partner effect could be different by gender given the economics argument that women tend to decrease their labour market involvement while men tend to increase their labour market involvement after getting married. I did not add the interaction of gender and marital status in the model because the research focus of this study is the interaction of employment status and gender. All the results regarding control variables are consistent with previous research, as discussed in the theoretical background section.

There is no significant gender difference among workers who prefer to reduce their working hours. Male regular standard workers prefer reducing about 10 more hours than all other categories of nonstandard workers, except for two categories, male permanent part-time workers, and female nonpermanent full-time workers. These two groups prefer to reduce 6 to 7 more hours than male standard workers. Unionized workers want to reduce 3.3 hours more than hours preferred by nonunionized workers. Other interesting findings include that employees who receive salary want to reduce 3.6 hours more than those who receive hourly wage. And workers who are unsatisfied with their jobs want to reduce 4.5
hours more than those who are satisfied with their jobs. Employees who are married or live with a common law partner prefer to reduce 2.6 more hours than those who are living by themselves.

This result has implications for the human resource practices of firms with regard to work arrangement. Although the mismatch can be explained by sociology argument of social expectations do not adjust to reflect individual preferences, or the economic argument of female are still disadvantaged in household functions, from a practical perspective, it could be that institutions are missing to translate these hidden desire to shift in work hours. Therefore, human resources practitioners can help to reduce the mismatch by implementing practises that facilitate work hours shifting from people who desire to work less to those who desire to work more.

5. CONCLUSION

Data from the 2005 Workplace and Employee survey show that about a third of Canadian private sector employees prefer to work a different number of hours than the hours they actually work. Among those who prefer to change their work hours, the majority prefer to increase their hours. After controlling for traditional factors that impact work-hours preferences such as demographic characteristics, job attributes and workplace characteristics, this study finds that nonstandard employment status interacts with gender in explaining work-hours preferences. For men, whether they are working in nonstandard or standard jobs seems to have little impact on their work-hours preferences. However, for women, nonstandard workers are significantly more likely to prefer more hours, and less likely to prefer fewer hours. This result confirms that of employment status is fairly important in
understanding work-hours preferences and modifies the common understanding that female workers tend to prefer fewer hours.

Previous studies of work-hours mismatches have tended to treat all workers as a single group irrespective of employment status, and one common finding in these studies is that over-employment is more common than underemployment (Golden, 2006). However, it is important to look into work-hours mismatch by employment status and gender because these two factors are closely tied to different employment situations, worker motivation, and preferences. This study suggests work-hours mismatches differ systematically by gender and employment status, such that female nonstandard workers are most likely to be underemployed, whereas male workers, regardless of their employment status, are more likely to be over-employed.

The results of this study further indicate that female nonstandard workers seem to be doubly penalized in the labour market, due to the gender and employment status. It is also possible that female nonstandard workers who initially accepted a flexible work arrangement to balance work and family responsibilities later find that they have more time to contribute to work as children grow up. But they are unable to find suitable jobs that meet their work-hours needs as their personal circumstances change and evolve over time. They find themselves trapped in their current jobs which require either too many or too few hours.

One limitation of the WES employee data is that it only tracks employees over two years. It would be useful and interesting for future research to identify if underemployed female nonstandard workers are able to resolve their mismatches over a longer period of time.

Further, this study identifies certain factors that are associated with the desire to increase or decrease working hours and provide estimates of the relative importance of these
factors. For example, whether paid by hourly wage or salary, satisfaction with job and money, as well as marital status predicts relatively larger numbers of preferred increase in hours. This finding is especially informative to practitioners, given that workplaces are facing labour shortage due to the aging workforce. Understanding relevant personal, organizational, or job quality factors that are associated with working hour preference, HR practitioners can allocate workloads to workers of different characteristics more effectively. Ideally it would be a win-win situation for both employees and employers. That is, employers would find it easier to get certain employees to work overtime. Employees would also be able to work their desired amount of hours without taking another job or changing jobs. If more workers could work the hours they prefer we may expect a boost in employee engagement and the related improvement in outcomes such as quality and productivity among others

6. REFERENCES


Table 1 Preferred work hours by employment status

<table>
<thead>
<tr>
<th>Employment status</th>
<th>Same</th>
<th>Mismatch</th>
<th>Less</th>
<th>More</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>nonpermanent part-time (Weighted #)</td>
<td>577</td>
<td>440</td>
<td>6</td>
<td>435</td>
<td>1017</td>
</tr>
<tr>
<td>%</td>
<td>56.7</td>
<td>43.3</td>
<td>0.5</td>
<td>42.8</td>
<td>100</td>
</tr>
<tr>
<td>permanent part-time</td>
<td>1828</td>
<td>958</td>
<td>51</td>
<td>907</td>
<td>2786</td>
</tr>
<tr>
<td>%</td>
<td>65.6</td>
<td>34.4</td>
<td>1.8</td>
<td>32.6</td>
<td>100</td>
</tr>
<tr>
<td>nonpermanent full-time</td>
<td>820</td>
<td>359</td>
<td>58</td>
<td>301</td>
<td>1179</td>
</tr>
<tr>
<td>%</td>
<td>69.6</td>
<td>30.4</td>
<td>4.9</td>
<td>25.6</td>
<td>100</td>
</tr>
<tr>
<td>permanent full-time (standard)</td>
<td>13463</td>
<td>5752</td>
<td>1696</td>
<td>4056</td>
<td>19215</td>
</tr>
<tr>
<td>%</td>
<td>70.1</td>
<td>29.9</td>
<td>8.8</td>
<td>21.1</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>16688</td>
<td>7509</td>
<td>1810</td>
<td>5699</td>
<td>24197</td>
</tr>
<tr>
<td>%</td>
<td>69.0</td>
<td>31.0</td>
<td>7.5</td>
<td>23.6</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 2 Preferred change in work hours by employment status (in number of hours)

<table>
<thead>
<tr>
<th>Employment status</th>
<th>Reduce hours</th>
<th>Increase hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Std. Dev.</td>
</tr>
<tr>
<td>nonpermanent part-time</td>
<td>5.4</td>
<td>3.4</td>
</tr>
<tr>
<td>permanent part-time</td>
<td>9.0</td>
<td>6.2</td>
</tr>
<tr>
<td>nonpermanent full-time</td>
<td>12.3</td>
<td>8.7</td>
</tr>
<tr>
<td>permanent full-time (standard)</td>
<td>10.6</td>
<td>7.5</td>
</tr>
<tr>
<td>Total</td>
<td>10.6</td>
<td>7.5</td>
</tr>
</tbody>
</table>
### Table 3 Employment status by gender

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>nonpermanent part-time (weighted #)</td>
<td>291</td>
<td>726</td>
<td>1017</td>
</tr>
<tr>
<td>%</td>
<td>28.6</td>
<td>71.4</td>
<td>100</td>
</tr>
<tr>
<td>permanent part-time</td>
<td>570</td>
<td>2216</td>
<td>2786</td>
</tr>
<tr>
<td>%</td>
<td>20.5</td>
<td>79.5</td>
<td>100</td>
</tr>
<tr>
<td>nonpermanent full-time</td>
<td>645</td>
<td>535</td>
<td>1179</td>
</tr>
<tr>
<td>%</td>
<td>54.7</td>
<td>45.3</td>
<td>100</td>
</tr>
<tr>
<td>permanent full-time (standard)</td>
<td>10057</td>
<td>9158</td>
<td>19215</td>
</tr>
<tr>
<td>%</td>
<td>52.3</td>
<td>47.7</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>11563</td>
<td>12634</td>
<td>24197</td>
</tr>
<tr>
<td>%</td>
<td>47.8</td>
<td>52.2</td>
<td>100</td>
</tr>
</tbody>
</table>

### Table 4 Average working hours by employment status

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>nonpermanent part-time</td>
<td>17.1</td>
<td>9.0</td>
</tr>
<tr>
<td>permanent part-time</td>
<td>20.4</td>
<td>6.9</td>
</tr>
<tr>
<td>nonpermanent full-time</td>
<td>43.8</td>
<td>12.3</td>
</tr>
<tr>
<td>permanent full-time (standard)</td>
<td>43.1</td>
<td>8.2</td>
</tr>
<tr>
<td>Total</td>
<td>39.4</td>
<td>12.0</td>
</tr>
</tbody>
</table>
Table 5 multinomial logit model results—Likelihood of prefer fewer or more hours versus the same hours (odds ratio reported, prefer the same working hours used as reference group)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model1 (Without interaction)</th>
<th></th>
<th>Model2 (With interaction)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Less</td>
<td>Std.Err</td>
<td>More</td>
<td>Std.Err</td>
</tr>
<tr>
<td>nonpermanent part-time</td>
<td>0.182***</td>
<td>0.083</td>
<td>1.830***</td>
<td>0.373</td>
</tr>
<tr>
<td>nonpermanent part-time*Female</td>
<td>0.181*</td>
<td>0.160</td>
<td>1.827**</td>
<td>0.563</td>
</tr>
<tr>
<td>permanent part-time</td>
<td>0.519**</td>
<td>0.172</td>
<td>1.280</td>
<td>0.201</td>
</tr>
<tr>
<td>permanent part-time*Female</td>
<td>0.286**</td>
<td>0.181</td>
<td>1.906**</td>
<td>0.502</td>
</tr>
<tr>
<td>nonpermanent full-time</td>
<td>0.623*</td>
<td>0.167</td>
<td>1.084</td>
<td>0.178</td>
</tr>
<tr>
<td>nonpermanent full-time*Female</td>
<td>0.477**</td>
<td>0.144</td>
<td>0.812</td>
<td>0.181</td>
</tr>
<tr>
<td>female</td>
<td>1.145</td>
<td>0.151</td>
<td>0.644***</td>
<td>0.052</td>
</tr>
<tr>
<td>immigrant</td>
<td>0.729**</td>
<td>0.110</td>
<td>1.444***</td>
<td>0.143</td>
</tr>
<tr>
<td>unionized</td>
<td>0.948</td>
<td>0.166</td>
<td>1.015</td>
<td>0.093</td>
</tr>
<tr>
<td>total working hours</td>
<td>1.028***</td>
<td>0.005</td>
<td>0.993</td>
<td>0.005</td>
</tr>
<tr>
<td>paid by hour</td>
<td>0.678</td>
<td>0.110</td>
<td>1.114</td>
<td>0.100</td>
</tr>
<tr>
<td>converted hourly wage</td>
<td>1.002</td>
<td>0.005</td>
<td>0.985***</td>
<td>0.005</td>
</tr>
<tr>
<td>satisfaction with money</td>
<td>0.919</td>
<td>0.054</td>
<td>0.696***</td>
<td>0.025</td>
</tr>
<tr>
<td>satisfaction with job</td>
<td>0.678</td>
<td>0.041</td>
<td>0.954</td>
<td>0.042</td>
</tr>
<tr>
<td>receive benefits</td>
<td>0.923</td>
<td>0.156</td>
<td>0.927</td>
<td>0.093</td>
</tr>
<tr>
<td>receive overtime pay</td>
<td>1.111</td>
<td>0.173</td>
<td>1.097</td>
<td>0.096</td>
</tr>
<tr>
<td>employee suggestion program</td>
<td>0.815</td>
<td>0.151</td>
<td>1.038</td>
<td>0.101</td>
</tr>
<tr>
<td>quality circle</td>
<td>1.040</td>
<td>0.160</td>
<td>1.063</td>
<td>0.096</td>
</tr>
<tr>
<td>self direct group</td>
<td>1.046</td>
<td>0.125</td>
<td>1.296**</td>
<td>0.109</td>
</tr>
<tr>
<td>tenure with employer</td>
<td>1.019**</td>
<td>0.009</td>
<td>0.993</td>
<td>0.007</td>
</tr>
<tr>
<td>tenure of job</td>
<td>0.994</td>
<td>0.010</td>
<td>0.981**</td>
<td>0.008</td>
</tr>
<tr>
<td>age</td>
<td>1.046</td>
<td>0.046</td>
<td>0.995</td>
<td>0.021</td>
</tr>
<tr>
<td>age square</td>
<td>1.000</td>
<td>0.000</td>
<td>1.000</td>
<td>0.000</td>
</tr>
<tr>
<td>married/common law</td>
<td>1.348**</td>
<td>0.198</td>
<td>0.802***</td>
<td>0.067</td>
</tr>
<tr>
<td>family income</td>
<td>1.000*</td>
<td>0.000</td>
<td>1.000</td>
<td>0.000</td>
</tr>
<tr>
<td>No. of kids under 18</td>
<td>0.959</td>
<td>0.056</td>
<td>0.951</td>
<td>0.037</td>
</tr>
</tbody>
</table>

Number of obs                                | 24197 | 24197 |
Wald chi2(102)                                | 895.53 | 928.12 |
Prob > chi2                                    | 0     | 0     |
Pseudo R2                                      | 0.0993 | 0.1014 |
Log pseudolikelihood                          | 8700231.6 | 8679776.7 |

Significance level: *** P<.01; **P<.05; * P<.1; All models also controlled for education, occupation, industry and employment size.
Table 6: Tobit Estimates of the hour change preferences by gender and type of nonstandard employment

<table>
<thead>
<tr>
<th>Variables</th>
<th>Prefer more or the same hours</th>
<th>Prefer less or the same hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef. Std.</td>
<td>Coef. Std.</td>
</tr>
<tr>
<td>nonpermanent part-time</td>
<td>6.219** 1.095</td>
<td>-10.504* 5.936</td>
</tr>
<tr>
<td>nonpermanent part-time*Female</td>
<td>2.735*** 1.176</td>
<td>-12.449 8.386</td>
</tr>
<tr>
<td>permanent part-time</td>
<td>1.467* 0.887</td>
<td>7.218*** 2.587</td>
</tr>
<tr>
<td>permanent part-time*Female</td>
<td>4.733*** 0.891</td>
<td>-15.456*** 3.103</td>
</tr>
<tr>
<td>nonpermanent full-time</td>
<td>-1.252 0.827</td>
<td>-9.153*** 2.294</td>
</tr>
<tr>
<td>nonpermanent full-time*Female</td>
<td>4.419*** 1.194</td>
<td>6.544** 2.945</td>
</tr>
<tr>
<td>female</td>
<td>-3.988*** 0.350</td>
<td>2.874*** 0.636</td>
</tr>
<tr>
<td>immigrant</td>
<td>3.269*** 0.337</td>
<td>-1.565** 0.744</td>
</tr>
<tr>
<td>unionized</td>
<td>-0.310 0.364</td>
<td>-3.286*** 0.749</td>
</tr>
<tr>
<td>total working hours</td>
<td>-0.003 0.018</td>
<td>0.380*** 0.029</td>
</tr>
<tr>
<td>paid by hour</td>
<td>0.917*** 0.363</td>
<td>-3.588*** 0.652</td>
</tr>
<tr>
<td>converted hourly wage</td>
<td>-0.089*** 0.017</td>
<td>0.022 0.025</td>
</tr>
<tr>
<td>satisfaction with money</td>
<td>-2.208*** 0.130</td>
<td>-1.006*** 0.272</td>
</tr>
<tr>
<td>satisfaction with job</td>
<td>-0.713*** 0.163</td>
<td>-4.520*** 0.320</td>
</tr>
<tr>
<td>receive benefits</td>
<td>-0.205 0.342</td>
<td>-0.182 0.807</td>
</tr>
<tr>
<td>receive overtime pay</td>
<td>1.003*** 0.351</td>
<td>0.999 0.713</td>
</tr>
<tr>
<td>employee suggestion program</td>
<td>0.506 0.358</td>
<td>-1.493** 0.755</td>
</tr>
<tr>
<td>quality circle</td>
<td>0.814*** 0.341</td>
<td>1.908*** 0.710</td>
</tr>
<tr>
<td>self direct group</td>
<td>1.769*** 0.316</td>
<td>0.797 0.630</td>
</tr>
<tr>
<td>tenure with employer</td>
<td>-0.115*** 0.028</td>
<td>0.185*** 0.043</td>
</tr>
<tr>
<td>tenure of job</td>
<td>-0.157*** 0.036</td>
<td>-0.080 0.052</td>
</tr>
<tr>
<td>age</td>
<td>0.211*** 0.082</td>
<td>0.449** 0.188</td>
</tr>
<tr>
<td>age square</td>
<td>-0.004*** 0.001</td>
<td>-0.004* 0.002</td>
</tr>
<tr>
<td>married/common law</td>
<td>-1.874*** 0.314</td>
<td>2.565*** 0.700</td>
</tr>
<tr>
<td>family income</td>
<td>-0.000** 0.000</td>
<td>0.000 0.000</td>
</tr>
<tr>
<td>#of kids under 18</td>
<td>-0.625*** 0.160</td>
<td>-0.797*** 0.305</td>
</tr>
</tbody>
</table>

Number of obs                        22387                       18498
LR chi2(54)                           3392.32                      2006.98
Prob > chi2                           0                           0
Pseudo R2                             0.0501                        0.0623
Log likelihood                       -31224.759                    -15113.726

Significance level: *** P<.01; ** P<.05; * P<.1; All models also controlled for education, occupation, industry and employment size.
Appendix

Figure 1 Descriptive statistics: work hour preference by employment status