

Determinants of Job Satisfaction: Canadian Labour Market

By Mahshid Ghassemi

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Supervisor: Professor Kathleen M. Day

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Abstract

This study aims to examine the impact of individual and job characteristics as well as health status on job satisfaction in the Canadian labour market, using an ordered probit model, with data drawn from the *General Social Survey (GSS), cycle 30, 2016, Canada: Canadians at work and home*. The results highlight the importance of health status, individual and job characteristics. Marginal effects are provided, shedding light on the impact of each independent variable on job satisfaction, making policy targeting more feasible. Among all variables, two job-related factors, having opportunities to provide input into decisions and having a good prospect for career advancement, appear to have the greatest impact on job satisfaction. These findings have implications for policymakers and employers, for job satisfaction is of great importance both for employees' psycho-social well-being, and the efficiency of human capital.

Table of Contents

| | |
|--|----|
| 1. Introduction | 5 |
| 2. Literature Review..... | 6 |
| 3. Methodology..... | 12 |
| 3.1. Introduction to Discrete Choice..... | 12 |
| 3.2. Linear Probability Model | 13 |
| 3.3. Random utility model..... | 14 |
| 3.4. Latent variable model, functional form and regression | 15 |
| 3.5. Probit Model..... | 16 |
| 3.6. Ordinal Outcomes | 16 |
| 4. Data Description | 18 |
| 5. Results | 25 |
| 6. Conclusion..... | 36 |
| References | 38 |
| Appendix | 40 |

1. Introduction

Job satisfaction has been a topic of wide interest for many researchers. It is also important for businesses as it reflects the psycho-social well-being of human capital (Pagan et al., 2016). Today, a person's job plays a vital role in many aspects of their life. One's job is no longer considered to be just a source of income, but probably a factor affecting people's social behaviour and life happiness (Saner and Eyüpoğlu, 2012). Having an impact on many aspects of life, job satisfaction has been studied in different fields, specifically sociology and economics. As far as businesses are concerned, being dissatisfied with one's job can be a reason for absenteeism or quits, and not having enough courage to be innovative. In contrast, those who are more satisfied are probably more efficient workers (Sharma and Jyoti, 2009). Thus, it can be concluded that job satisfaction is vital for the economic performance of businesses.

In today's world, and with the intense competition that exists in the market, having more satisfied, and therefore more efficient employees is considered to be a competitive edge. In many studies, individual characteristics have been examined as determinants of job satisfaction. Among them, gender and age are probably the most frequently used variables. Along with age and gender, marital status, education level and immigration status appear in many studies.

Although the impact of individual characteristics has drawn the attention of many economists, some claim that they are not the only important factors affecting one's job satisfaction and suggest that job characteristics should be given more attention. Therefore, in recent studies, many researchers examined the impact of both individual and job characteristics on job satisfaction. In addition, some researchers such as Clark (1997), Clark and Oswald (1996) and Viñas-Bardolet et al. (2015), took an extra step and considered health status to be a determinant of job satisfaction.

According to the *General Social Survey, Cycle 30, 2016 (GSS)*, 15.2% of Canadians are not in general satisfied with their job (1.4% very dissatisfied, 4.4% dissatisfied, and 9.4% neither satisfied nor dissatisfied). Among those who have reported dissatisfaction, 11.7% claimed that there were no opportunities for advancement, 3.6% reported that they did not have enough benefits, and 30.8% did not like their work environment. Furthermore, 25.1% did not agree that they have the motivation to perform at their best. These numbers highlight the importance of job

characteristics. Also, among the respondents, 16.1% claimed that they are going to leave their current job in the next 12 months, for which job dissatisfaction might be the reason.¹

In a nutshell, both studies and statistics show the importance of job satisfaction. In this study, both individual and job characteristics were examined as the determinants of job satisfaction. The Canadian data used in this study are drawn from the *General Social Survey, Cycle 30, 2016 (GSS)*. Based on the related literature, individual characteristics that are considered in this study are age, gender, marital status, education level, immigration status, and having a religious affiliation. Also, some job characteristics including workplace size, unionized job, number of hours worked, opportunities in the workplace, having a good prospect for career advancement, workplace pension plan and number of friends at work were considered as explanatory variables. Finally, due to the ordinal nature of the dependent variable, an ordered probit model is estimated in this paper.

In the next section, the related literature is reviewed. Section three is dedicated to the methodology, and section four describes the data used in this study. In section five the results of the estimation are presented, and finally, section 6 concludes the paper.

2. Literature Review

Job satisfaction has been a topic of interest not only in the field of economics but also in other areas such as sociology, management, and psychology. According to Bakotic and Babic (2013, 206), “job satisfaction is a sense of comfort and positive experience that an employee has related to his job.” As employees’ feelings toward their job affect their productivity, many businesses are willing to meet employees’ expectations in the workplace, specifically in this era in which we witness a higher level of stress due to fierce competition in the labour market. Based on previous studies, researchers conclude that job satisfaction is a complex concept, affected by various variables including age, marital status, education level, gender, health status and job characteristics. As important determinants of job satisfaction, individual and job characteristics have repeatedly drawn the attention of many researchers.

Information about the level of job satisfaction is usually drawn from surveys. Due to the nature of questions regarding satisfaction, people report the degree of their satisfaction with their

¹ These statistics are drawn from the *General Social Survey, Cycle 30, 2016 (GSS)*. The variable names are respectively, JSR_02, JSR_03, JSR_08, and JSR_04.

job in ordinal values. Hence, the use of an ordered probit model, which represents the strength of options, is commonly used in the economic literature; however, the ordinary least squares method is used in some studies despite its potential problems for ordinal outcomes.

In the category of demographic variables, there have been many investigations into the impact of gender on job satisfaction. It is a well-known fact that historically women have been discriminated against in many job positions. However, the results of many papers, such as Ahn and Garcia (2004), indicate that female job satisfaction is higher than that of men. One possible explanation is the lower level of expectations among women in comparison to men, which results in their higher relative happiness (Clark, 1997).

Ahn and Garcia (2004) examine the overall job satisfaction in Western European countries using data from the *European Community Household Panel Survey (1994-2001)* (ECHP). The method of Ordinary Least Squares (OLS) was employed, and four different regressions were estimated. Demographic variables, health status, wage, education level, and some job characteristics factors were considered to be the determinants of overall job satisfaction. The findings reveal that both individual and job characteristics contribute to job satisfaction. As far as gender is concerned, women appeared to be more satisfied, and health and education factors are found to have a significant impact on job satisfaction while wage plays a minor role in explaining job satisfaction.

Emphasizing the impact of gender on job satisfaction, Clark (1997) examined the gender differences in job satisfaction by defining the utility of work as a function of individual and job characteristics along with health, job tenure, occupation, and hours of work. Data are collected from the *British Household Panel Survey, Sep-Dec 1991* (BHPS). Due to the ordinal nature of the dependent variable (job satisfaction), an ordered probit regression model was estimated. The findings confirm the gender differential, with women having a higher level of satisfaction in their occupation; however, this difference disappears in both younger and more educated people. Clark (1997) also, explains the gender differential by the lower expectations of women.

Another study with an emphasis on gender differences is Mumford and Smith (2015). Using data from the *British Workplace Employment Relations Study WERS (2014)*, they studied the effect of gender and peer salaries on job satisfaction. The ordered probit model is used, and the determinants of job satisfaction are assumed to be demographic variables, education level and any recent training, individual and job characteristics. The results reveal important insights: while

relative earnings (relative to their colleagues) are an important factor affecting job satisfaction among men, women turn out to be indifferent to peers' salaries.

The contribution of age has also been a topic of interest in the literature. Although this factor has been repeatedly analyzed in many studies, there is still an inconsistency in the literature, arising from the relationship between age and job satisfaction. While in some studies, a linear relation has been found to exist, a number of studies such as Clark et al. (1996) have indicated a non-linear U-shaped relation between age and job satisfaction - declining in the early years and then increasing after the age of thirties. According to Clark et al. (1996) several reasons can be presented to explain this discrepancy, including the study dates, sampling at young ages and national differences.

Viñas-Bardolet et al. (2015) confirm the U-shaped relation between age and job satisfaction when explaining the determinants of job satisfaction with emphasis on the impact of knowledge-based work in Spain. Data were gathered from the quality of working life survey (ECVT), and the level of job satisfaction is estimated using an ordered probit technique. In this study, both individual and job characteristics, along with household types, region, macroeconomic condition, economic activity and financial job characteristics were considered to be independent variables that explain the level of job satisfaction. Job-related factors are found to be significantly important, with work organization factors and work intensity factors having the most significant impact on explaining job satisfaction. Furthermore, the results indicate that interpersonal relationships and monthly income are important determinants of job satisfaction.

The impact of age on job satisfaction is the center of attention in the study of Clark et al. (1996) that uses the first (1991) wave of survey data drawn from the British household panel study. In addition to job satisfaction, general mental health is also considered to be a dependent variable in this study, and the related data are drawn from the *General Health Questionnaire* (GHQ). The job satisfaction factor is a 7-scaled variable ranging from 1-7, which indicates the level of satisfaction ranging from *not satisfied at all* to *completely satisfied*. As the dependent variable has an ordinal nature, as in other similar studies an ordered probit model is used. It is worth noting that six types of arguments in this paper are presented as possible explanations for why older employees report higher satisfaction, including lower expectations, cohort differences, differences in work values, etc. The results confirm a significant U-shaped relation between age and job satisfaction in both models, with and without control variables and also for both men and women separately.

The results of Chaudhuri et al. (2015) contrast with those studies which found a U-shaped relationship between job satisfaction and age. In their study, they investigate the effects of age and tenure on job satisfaction using survey data from BHPS for 1996-2000 and 2002-2007. They employed a *Generalized Dynamic Random Effects Ordered Probit* (GDREOP) technique, and among the independent variables, lagged job satisfaction is also included. While a non-linear relationship between job satisfaction and tenure is observed, they fail to find any significant relationships and any U-shaped relation between age and job satisfaction. They suggest analyzing the determinants of job satisfaction for men and women separately. The coefficient of age is still found to be insignificant for women while for men, some age categories are significantly related to job satisfaction.

Job satisfaction has been a topic of interest not only in the field of economics but also in the other areas. The paper by Saner and Eyüpoğlu (2012) in the area of social and behavioural science investigates the relationship between job satisfaction and age using data gathered by the *Minnesota satisfaction questionnaire* (MSQ), and their sample is limited to higher-educated people. They categorize job satisfaction into three different measures, including *intrinsic*, *extrinsic* and *overall job satisfaction*, each of which is a 5-scale variable ranging from 1-5 with one being *very dissatisfied* and five being *very satisfied*. Their findings reveal a statistically non-significant linear relationship between intrinsic satisfaction and age, while the other two measurements are found to have a significant non-linear relationship with age.

Job characteristics are believed to have an impact on the level of job satisfaction not only in the economics literature but also in other fields such as psychology and sociology. Different factors were considered as job characteristics, such as having a good relationship with colleagues, hours of work, employment benefits, having a good prospect for career advancement and workplace size.

Raziq and Maulabakhsh (2015) analyze the impact of the working environment on job satisfaction for the city of Quetta in Pakistan, by employing data from a self-administered survey questionnaire. Their model considers job satisfaction, which includes “employee loyalty, sense of ownership, level of commitment, efficiency, effectiveness and productivity” to be the dependent variable (Raziq and Maulabakhsh, 2015, 720). The independent variables include “working hours, job safety and security, relationship with co-workers, esteem needs and top management” (Raziq

and Maulabakhsh, 2015, 720). The results reveal a positive relationship between job satisfaction and the working environment.

Erro-Garces and Ferreira (2019) analyze the impact of the working environment (noise, temperature, etc.) on job satisfaction through survey data drawn from 35 European countries. The independent variables in this study are “individual characteristics, working contract conditions, job and organization characteristics, macroeconomic factors and workplace environment” (Erro-Garces and Ferreira, 2019, 937). Aside from work characteristics, other independent variables were employed in the multivariate regression model as control variables, for they are also related to job satisfaction. Finally, the Ordinary Least Squares (OLS) method was employed for estimation. The results of this study highlight a negative relationship between working environment and job satisfaction. The econometric analysis reveals that the impact of salary on job satisfaction is insignificant, while its changes do have a positive relationship with job satisfaction.

The impact of working conditions on overall job satisfaction is considered by Bakotic and Babic (2013) for a specific Croatian shipbuilding company. The data were collected through a questionnaire administered to 60 employees, who were categorized into two groups: a) those working under pleasant working conditions, and b) those working under severe working conditions. Questions about both individual and job characteristics were included in the questionnaire. The evidence suggests that for those employees who work in an unpleasant working environment, the job characteristics play an essential role in overall job satisfaction.

In Clark and Oswald (1996), the impact of a unionized job, contract type and establishment size along with some demographic variables such as age, gender, education level and marital status is investigated. Data are drawn from the first wave of the BHPS, and 5500 British households were considered. The methodology of this paper, which has been a reference for many subsequent studies, considers a subset utility equation to be a function of some variables such as individual and job characteristics. The data provide interesting information about the sample. The group of women and those who work for small establishments appear to be happier in comparison to men and those who work for big establishments. Also, those who work more and who are highly educated are less happy. The model estimated in this study was the ordered probit model, as in many other papers. Also, the results of this study fail to confirm any positive correlation between

income and satisfaction. Another interesting result of this study is the negative impact of education on the level of job satisfaction.

Health status and well-being are among the determinants of job satisfaction in many studies, such as Viñas-Bardolet et al. (2015) and Ahn and Garcia (2004). In the psychology literature, well-being factors are believed to be essential determinants of life satisfaction. In the economic literature also, the impact of health status has been analyzed by several researchers. Health status can be categorized into different classifications, including disability status, mental health, and overall physical well-being. While some economists consider factors such as anxiousness and feeling stressed in the workplace, others focus on different types of disability status and their relationship with job satisfaction. It is worth noting that even factors such as the amount of exercise and physical activity of employees can be found as determinants of life satisfaction in some papers, such as Heslop et al. (2002) and Augner (2015).

Uppal (2005) uses Canadian data from the *General Social Survey (GSS), cycle 6, 1991*, to elucidate the relationship between workplace characteristics, disability, and job satisfaction using an ordered probit model. In this paper, some work-related properties such as interpersonal relationships, harassment, and job security, along with different kinds of disabilities, are considered, and the utility which is gained from working is defined as a function of income, individual and workplace characteristics. Job satisfaction is a four-level scale variable ranging from *very dissatisfied* to *very satisfied*. Disability was considered to be the only factor affecting job satisfaction in the initial model, and the results revealed that the most significant kind of disability affecting satisfaction is a visual disability. The work-related variables were then added to the second model, and the most influential factor leading to a lower probability of satisfaction is found to be *poor interpersonal relations*.

Augner (2015) studies the role of macroeconomic, personal and job-related factors on job satisfaction in the European Union. Using the data from WHO, Eurostat and Eurofound for 28 European countries, and employing a stepwise logistic regression model, he concludes that the individual's *career advancement perspective*² has a significant positive relationship with job satisfaction. In addition, factors related to well-being (such as physical activity and subjective health) turned out to be significantly associated with job satisfaction.

² This is measured by the proportion of persons indicating that their work offers good prospects for career advancement (Source: Eurofound, European Working Condition Survey).

In light of the dramatic increase in the global rate of obesity, Pagan et al. (2016) analyze the impact of obesity and disability as indicators of health status along with some other control variables on the level of job satisfaction among employees aged between 50-64 in ten European countries for the years 2004, 2007 and 2011. The data were drawn from the *Survey of Health, Ageing and Retirement in Europe* (SHARE) for three available waves. The Body Mass Index (BMI) is used as an indicator of weight. Following the methodology of Clark and Oswald (1996), utility is a function of working hours; demographic variables such as age, marital status and disability status; and some job characteristics. The authors employ a random effects model for estimation. The results indicate a significant and positive impact of obesity on job satisfaction, which from the authors' point of view could be explained by lower expectations of obese workers.

Overall, the literature related to the determinants of job satisfaction reveals that demographic factors such as age, gender, marital status, education level, and immigration status are among the explanatory variables included in many studies. In addition to these factors, in this study, religious affiliation is also considered to be a factor affecting job satisfaction. Although not many studies consider this factor, it can be found in some studies such as Neubert and Halbesleben (2015) and Green and Elliott (2010). Among job characteristics, workplace size, number of hours worked, a good prospect for career advancement and employment benefits are included in several studies. However, factors such as contract type and opportunities provided for employees have not received much attention. This study, therefore, includes variables such as opportunities to provide input into decisions, and whether the job is unionized, along with other job-related factors, as determinants of job satisfaction. Finally, some studies regard health status as a factor affecting job satisfaction, as does this study.

3. Methodology

3.1. Introduction to Discrete Choice

Not all independent variables studied in econometrics analysis are quantitative factors. There are plenty of examples of qualitative variables that have attracted the attention of economists, such as gender, race, marital status, and education level. It is also possible for dependent variables to have qualitative meaning, usually portraying the choice of an individual or the occurrence of an event. In such cases, the econometric methodology that is employed for quantitative variables is no longer appropriate (Greene, 2012).

According to Greene (2012), for such discrete choices probability concepts are used as a tool for examination. Greene (2012, 681-682) categorized discrete choices into four different classes: The first is *Binary choice* in which an individual has two options, which are usually recorded as zero or one. Based on microeconomic theory, the decision depends on the level of utility gained from each option, and consequently, a rational decision-maker chooses the option that maximizes his/her utility.

Another category is the *multinomial choice*, in which individuals face more than two options and choose the one which results in the highest level of utility. The third category is *ordered choice*, in which the strength of options is represented by the numerical values reflecting the ranking of each choice. Finally, the fourth category is *event counts*, which represent how many times a specific event has occurred.

For the analysis of binary outcomes, several models are introduced in econometric theory. The most well-known ones are the *Linear Probability Model (LPM)*, the *binary probit model* and the *binary logit model*. Although the LPM is a well understood model, it has several problems that make the other two models preferable (Long, 1997). In what follows, first, the LPM is described, and its problems are noted. Then, the probit model is illustrated as a better alternative when it comes to discrete choices. Finally, as the dependent variable in this study has more than two categories, the ordered probit model, which is an extended version of the probit model for binary choices, is introduced as an appropriate model to be employed.

3.2. Linear Probability Model

In many cases, the dependent variable (Y) takes on only two values, which are representative of two options. Using probability tools, the probabilities for a binary dependent variable can be defined as follows:

$$P(Y = 1 | x) = F(x, \beta) \quad (1)$$

$$P(Y = 0 | x) = 1 - F(x, \beta), \quad (2)$$

in which x is a vector of explanatory variable and β is a vector of parameters. One suggested solution is to use the *linear probability model*, for which a linear equation is defined as follows:

$$F(x_i, \beta) = x_i' \beta = \beta_1 + \beta_2 X_{2i} + \dots + \beta_k X_{ki},$$

and the expected value of Y conditional on x is:

$$E(Y | x_i) = F(x_i, \beta) = x_i' \beta = \beta_1 + \beta_2 X_{2i} + \dots + \beta_k X_{ki}.$$

Consequently, the regression model is:

$$Y_i = E(Y | x_i) + u_i = x_i' \beta + u_i,$$

in which u_i is the error term. This equation is known as the LPM. It is worth noting that this model has two main drawbacks, making it a less-frequently used model. According to Greene (2012), there exists the problem of heteroscedasticity. Both the expected value and the variance of u_i are presented in the following equations:

$$E(u_i | x) = (1 - x_i' \beta) F(x_i, \beta) + (-x_i' \beta) (1 - F(x_i, \beta)) = 0$$

$$\text{var}(u_i | x) = E(u_i^2 | x) = (1 - x_i' \beta)^2 F(x_i, \beta) + (x_i' \beta)^2 (1 - F(x_i, \beta)) = x_i' \beta (1 - x_i' \beta).$$

It can be observed that the variance of u_i depends on the value of x_i , which implies the existence of heteroscedasticity. The heteroscedasticity problem is solvable by the implementation of the *Feasible Generalized Least Square* (FGLS) technique (Greene, 2012). Another problem with the LPM is that $F(x_i, \hat{\beta}) = x_i' \hat{\beta}$ is not necessarily bounded between zero and one because there is no bound for linear equations, and they can continuously go to positive infinity or negative infinity. In other words, it is possible that the predicted probabilities are negative or higher than one (Greene, 2012, 687).

Long (1997, 39) lists the problems of LPM as *Normality*, *Nonsensical Predictions*, and the *Functional Form*. He claims that the most problematic issue with the LPM is the third problem and suggests the probit and logit model as better alternatives. Due to all the problems mentioned in this section, in almost all the literature reviewed in this section, the LPM is not the selected option.

3.3. Random utility model

In random utility theory, in the case of a binary choice, individuals have a pair of options and attain a certain amount of utility for each of them (Greene, 2012):

$U_a \rightarrow$ the utility of option a

$U_b \rightarrow$ the utility of option b .

According to Greene (2012), if $U_a \geq U_b$ or $U_a - U_b \geq 0$, a rational individual chooses the first option, which results in a higher level of utility. Here, we assume that $Y = 1$ when an individual chooses the first option. Greene (2012) formulates the utility which is gained by each option as follows:

$$U_a = w' \beta_a + z_a' y_a + \varepsilon_a$$

$$U_b = w' \beta_b + z_b' y_b + \varepsilon_b,$$

in which w is the vector of an individual's characteristics, while z is the vector of attributes of each choice and ε is the error term (Greene, 2012). The random utility model gives rise to a latent variable model, described in the next section.

3.4. Latent variable model, functional form and regression

Several models have been introduced as alternatives to the LPM because in the LPM the predicted value of the dependent variable might not necessarily fall in the zero to one interval (Greene, 2012). To solve this problem, the following conditions must be met:

$$\lim_{x_i' \beta \rightarrow \infty} P(Y = 1 | x_i) = \lim_{x_i' \beta \rightarrow \infty} F(x_i' \beta) = 1$$

$$\lim_{x_i' \beta \rightarrow -\infty} P(Y = 0 | x_i) = \lim_{x_i' \beta \rightarrow -\infty} F(x_i' \beta) = 0$$

A latent variable is defined by the *net utility* calculation, which is the difference in utility gained from each option. If we define Y_i^* as:

$$Y_i^* = U_a - U_b, \quad (3)$$

it can be claimed that an individual will choose the first option if $Y_i^* \geq 0$ and will choose the second option if $Y_i^* < 0$. Y_i^* can be influenced by some explanatory variables such as gender, work environment, health status etc. So, there exists an equation for this variable (Soori, 2013):

$$Y_i^* = \beta_1 + \beta_2 X_{2i} + \dots + \beta_3 X_{Ki} + u_i.$$

Y_i^* is an unobserved variable. However, an observable variable, which indicates the choice of the individual, and hence the option with a comparatively higher level of utility, can be employed for the analysis. According to (Greene, 2012), the observable variable Y_i is defined as follows:

$$\begin{aligned}
Y_i = 1 & \quad \text{if} \quad Y_i^* \geq 0 \\
Y_i = 0 & \quad \text{if} \quad Y_i^* < 0.
\end{aligned}$$

The relationship between Y_i and Y_i^* can be defined using probability theory (Soori, 2013):

$$P(Y_i = 1) = P(Y_i^* \geq 0) = P(X_i' \beta + u_i \geq 0) = P(u_i \geq -X_i' \beta). \quad (4)$$

The rest of the model specification is assigning a distribution for the error term. The reason for this requirement is that according to Long (1997, 42), for unobservable dependent variables the method of estimation is the Maximum Likelihood method. Most frequently, the choice is limited to the logistic and the normal distributions, resulting in logit or probit models (Greene, 2012).

3.5. Probit Model

Assuming that u_i has a normal distribution results in a probit model:

$$P(Y = 1 | x) = \int_{-\infty}^{x' \beta} \phi(t) dt = \Phi(x' \beta), \quad (5)$$

in which $\phi(t)$ is the standard normal Probability Density Function (PDF):

$$\phi(t) = \frac{1}{\sqrt{2\pi}} \exp\left(-\frac{t^2}{2}\right),$$

and $\Phi(t)$ is the standard normal Cumulative Distribution Function (CDF). It must be noted that it is assumed that $\sigma^2 = 1$. By assigning different distributions for u_i , other models such as the logit model or the Gumbel model can be employed.

3.6. Ordinal Outcomes

There are four types of discrete choices (Greene, 2012). In this study, the dependent variable, which is the level of job satisfaction, does not take on only two values. So, it cannot be considered to be a binary outcome. Based on the *General Social Survey's (GSS)* data description, the level of job satisfaction in this study is a five-scaled variable from *very dissatisfied* to *very satisfied*. Considering the Greene (2012) description, this variable is categorized as an ordinal outcome, and therefore an appropriate approach is implementing a model for an ordinal outcome. The most frequently used model in this literature is the ordered probit model. Long and Freese (2014) explain that the distance between each category in ordinal outcomes is not the same, and because of that using the LPM is not considered to be the best approach.

Once again, assume that the unobserved latent variable Y^* is explained by the following model:

$$Y^* = x'\beta + u .$$

The ordered probit model is very similar to the latent regression model for binary choice, with the difference being that the dependent variable takes on more than two values and the options are ordered in a way that represents the ranking of each category. So, the observed variable (Y) can be defined as:

$$\begin{aligned} Y = 0 & \quad Y^* \leq 0 \\ Y = 1 & \quad 0 < Y^* \leq \mu_1 \\ Y = 2 & \quad \mu_1 < Y^* \leq \mu_2 \\ & \quad \dots \\ Y = j & \quad \mu_{j-1} \leq Y^* . \end{aligned}$$

As in the probit model for binary outcomes, the underlying assumption of the ordered probit model is that u is normally distributed. Therefore, according to Greene (2012, 788), we can have the following probabilities:

$$\begin{aligned} P(Y = 0 | x) &= \Phi(-x'\beta) \\ P(Y = 1 | x) &= \Phi(\mu_1 - x'\beta) - \Phi(-x'\beta) \\ P(Y = 2 | x) &= \Phi(\mu_2 - x'\beta) - \Phi(\mu_1 - x'\beta) \\ & \quad \dots \\ P(Y = J | x) &= 1 - \Phi(\mu_{J-1} - x'\beta) . \end{aligned}$$

It must be noted that J is the number of possible outcomes and μ_1, \dots, μ_{J-1} are the cutpoints in the ordered probit model and are estimated with β (Greene, 2012). In this study, the dependent variable takes five values from 1 being *very dissatisfied* to 5 being *very satisfied*.³

An important point for interpreting probit and ordered probit models' results is that, as the regression model is a nonlinear model, the coefficients cannot be considered as the marginal effects (Greene, 2012). It is also important to note that the calculation of marginal effects is based on whether the independent variable is a continuous variable or a dummy variable. Considering that

³ The choice of values for the dependent variable in the ordered probit model are arbitrary. While Greene (2012) defines the variable as ranging from 0-J, in this study, the dependent variable, which is job satisfaction, is ranging from 1-5. This difference does not affect the interpretation as the values are just the rankings of options.

all the explanatory variables in this study are dummy variables, the calculation of marginal effects is based on discrete changes (Long, 1997).

In addition, the marginal effect is dependent on the value of x . There are several ways of estimating marginal effects. Cameron and Trivedi (2009, 462-464) introduce three variants for marginal effect including the *Average Marginal Effect* (AME), for which the marginal effect for each individual at its observed value in the estimated sample is calculated, and then the mean of those values is considered as the marginal effect of that variable (Long and Freese, 2014). Another variant is *Marginal Effect at the Mean* (MEM), for which the marginal effect of each variable is computed with all explanatory variables held at their means; and finally *Marginal Effect at a Representative Value* (MER), for which the marginal effect of each explanatory variable is calculated with all variables held at particular values which are called the benchmark values (Cameron and Trivedi, 2009). With this definition, it can be concluded that “the MEM is a special case of the MER” (Long and Freese, 2014, 242).

The question which arises here is which of these variants is a better choice? In the econometric literature, the decision between these variants is a controversial issue. In many studies, the MEM is chosen, probably because of its ease of computation. Computing the AME is much more time-consuming as first the marginal effect for each observation is calculated, and then the mean of those values is computed as the marginal effect. Long (1997) and Cameron and Trivedi (2005) suggest the AME as a better approach in comparison to the MEM. Furthermore, Long and Freese (2014) note that with current Stata versions, the computation of the AME is no longer time-consuming. Besides, since the explanatory variables in this study are all dummy variables, the mean does not necessarily represent an observed value (Long and Freese, 2014). Taking into account all these considerations, the AME is computed in this study for the marginal effect.

4. Data Description

The data used in this study are drawn from the *General Social Survey (GSS), cycle 30, 2016, Canada: Canadians at work and home*. All the dependent and independent variables in this study are categorical, so for each category, a dummy variable is defined. In the following tables, different categories of each variable and their frequencies after dropping the missing values, which resulted in 8283 observations, are presented. It is worth noting that in the dummy-variable-defining process, for some variables, some categories are merged into one category.

Dependent variable

The dependent variable is the level of job satisfaction for which individuals were asked in general how satisfied they are with their job. This variable is a five-scaled variable ranging from one being *very dissatisfied* to five being *very satisfied*. The frequencies for each category are presented in Table 1, and according to this table 1.36% of respondents are *very dissatisfied*, 4.02 are *dissatisfied*, and 8.83% are *neither satisfied nor dissatisfied*. On the other hand, 49.56% of respondents are *satisfied* and 36.23% are *very satisfied* with their job.

Table 1. Level of job satisfaction

| Job satisfaction | Freq. | Percent | Cum. |
|------------------------------------|--------------|----------------|-------------|
| Very satisfied | 3001 | 36.23 | 36.23 |
| Satisfied | 4105 | 49.56 | 85.79 |
| Neither satisfied nor dissatisfied | 731 | 8.83 | 94.62 |
| Dissatisfied | 333 | 4.02 | 98.64 |
| Very dissatisfied | 113 | 1.36 | 100.00 |

Independent variables

The demographic variables related to job satisfaction are age, gender, level of education, marital status, immigration status, and religious affiliation, which are presented in Tables 2-7.⁴ Table 2 shows the frequencies of different age groups. According to this table, 24.54% of respondents are over 55 years. It must be noted that in many studies some age groups were excluded from the sample. Uppal (2005) considers individuals 15 to 64 years while Clark and Oswald (1996) consider individuals over 20 years. This study tries to cover all age groups as based on the survey responses. There are working people in both of these categories and it is worth including them to examine whether there are differences in their level of job satisfaction. It must be noted that in the estimation process, the age groups over 55 years are merged into one category.

⁴ Disability status was also a variable of interest as a determinant of job satisfaction. However, while working with the PUMF in the 2016 General Social Survey, it turned out that many responses for this variable (DDIS_FL) were listed as “Valid skips”, and according to this variable, 79.9% of Canadians would have a disability! After trying to find an explanation, we found out that the incorrect PUMF data file was uploaded in the ODESI website. Therefore, not being provided with correct data for this variable, disability status was not considered as an explanatory variable in this paper.

Table 1. Respondents based on age groups

| Age group of the respondent (groups of 10) | Freq. | Percent | Cum. |
|---|--------------|----------------|-------------|
| 15 to 24 years | 601 | 7.26 | 7.26 |
| 25 to 34 years | 1641 | 19.81 | 27.07 |
| 35 to 44 years | 1998 | 24.12 | 51.19 |
| 45 to 54 years | 2011 | 24.28 | 75.47 |
| 55 to 64 years | 1698 | 20.50 | 95.97 |
| 65 to 74 years | 312 | 3.77 | 99.73 |
| 75 years and over | 22 | 0.27 | 100.00 |

According to Table 3, 51.56% of respondents are female and 48.44% are male. Although the number of women is higher than the number of men, the difference is not remarkable. In Table 4, six different categories for marital status and their frequencies are presented. However, in the econometric analysis those who are married or living common-law are merged into one category as are those who are separated or divorced.

Table 3. Gender of respondents

| Sex of respondent | Freq. | Percent | Cum. |
|--------------------------|--------------|----------------|-------------|
| Male | 4012 | 48.44 | 48.44 |
| Female | 4271 | 51.56 | 100.00 |

Table 4. Marital status of respondents

| Marital status of the respondent | Freq. | Percent | Cum. |
|---|--------------|----------------|-------------|
| Married | 4048 | 48.87 | 48.87 |
| Living common-law | 1029 | 12.42 | 61.29 |
| Widowed | 152 | 1.84 | 63.13 |
| Separated | 295 | 3.56 | 66.69 |
| Divorced | 599 | 7.23 | 73.92 |
| Single, never married | 2160 | 26.08 | 100.00 |

Another demographic variable that can be seen overwhelmingly in the literature is the level of education. Studies such as Uppal (2005), Clark and Oswald (1996) and Ahn and Garcia (2004) examined the impact of education on job satisfaction. In Table 5, different categories for this variable are presented. According to Table 5, 27.96% of respondents do not have an education

higher than a high school diploma or its equivalent, while 22.83% have a bachelor's degree and 11.01% have a degree above the BA level. For this variable the two categories *high school diploma or a high school equivalency certificate* and *Trade certificate or diploma* are combined in one category, as were *college/CEGEP/other non-university certificate or diploma* and *university certificate or diploma below the bachelor's level*.

Table 5. Respondent's level of education

| Education - Highest certificate, diploma or degree | Freq. | Percent | Cum. |
|--|--------------|----------------|-------------|
| Less than a high school diploma or its equivalent | 503 | 6.07 | 6.07 |
| High school diploma or a high school equivalency certificate | 1813 | 21.89 | 27.96 |
| Trade certificate or diploma | 761 | 9.19 | 37.15 |
| College/CEGEP/other non-university certificate or diploma | 2036 | 24.58 | 61.73 |
| University certificate or diploma below the bachelor's level | 367 | 4.43 | 66.16 |
| Bachelor's degree (e.g. B.A., B.Sc., LL.B.) | 1891 | 22.83 | 88.99 |
| University certificate, diploma, a degree above the BA level | 912 | 11.01 | 100.00 |

In Table 6 frequencies for immigration status are presented. It can be seen that 16.01% of the respondents are immigrants. This study also considers religious affiliation as a variable affecting job satisfaction. Not many studies analyzed the impact of religious affiliation on job satisfaction, but it can be found in some studies such as Neubert and Halbesleben (2015) and Green and Elliott (2010). In both studies, data for different types of religions were available, while the data source of this study only provides information about whether individuals have any religious affiliation. According to the results of Greene and Elliott (2010), those who have a religious affiliation, regardless of their religion, are happier. Based on their results, religious affiliation is considered as a determinant of job satisfaction in this study. In Table 7 the frequencies for both categories of this variable are presented. According to this table, 75.12% of respondents have a religious affiliation.

Table 6. Immigration status of respondents

| Immigration status | Freq. | Percent | Cum. |
|---------------------------|--------------|----------------|-------------|
| Immigrant | 1326 | 16.01 | 16.01 |
| Non immigrant | 6957 | 83.99 | 100.00 |

Table 7. Religious affiliation of respondents

| Religious affiliation flag | Freq. | Percent | Cum. |
|-----------------------------------|--------------|----------------|-------------|
| Religious affiliation | 6222 | 75.12 | 75.12 |
| No religious affiliation | 2061 | 24.88 | 100.00 |

Job characteristics can play an essential role in happiness at work. Variables related to job characteristics that are examined in this study are workplace size, unionized job, the number of hours worked per week, opportunities to provide input into decisions, a good prospect for career advancement, employment benefits, and good friends at work. Different categories for each of these variables are presented in the following tables.

Although all these factors can be seen in the literature, it is worth noting that selectivity bias should not be neglected as people may choose workplaces more appealing to them in terms of some job characteristics. Thus, it is possible that variables related to job characteristics might affect estimated marginal effects unwillingly. However, it would be very difficult to control for this selectivity bias. So, it is suggested that appropriate questions be added to future surveys to get better control of this issue.

According to Table 8, there are three categories for *workplace size*: *small*, *midsize* and *large*. Small businesses are those with 1-99 employees, medium businesses are those with 100-499 employees, and large businesses are those with 500 employees or more. Around 60% of respondents in this survey work for small businesses, while only 18.6% work for a large business. Workplace as a determinant of job satisfaction has been examined in many studies, such as Clark and Oswald (1996) and Erro-Garces and Ferreira (2019).

Table 8. Size of workplace

| Workplace size | Freq. | Percent | Cum. |
|-----------------------|--------------|----------------|-------------|
| Small business | 4927 | 59.48 | 59.48 |
| Midsize business | 1852 | 22.36 | 81.84 |
| Large business | 1504 | 18.16 | 100.00 |

Another job-related factor used in studies such as Uppal (2005), Clark (1997) and Clark and Oswald (1996) is *unionized job*. Individuals were asked whether they are a union member or covered by a union contract or collective agreement in their job. As indicated in Table 9, 65% of respondents do not have a unionized job. In addition, hours worked can be seen in the same papers

as a determinant of job satisfaction. Different categories for this variable and their frequencies are presented in Table 10. Those who work less than 29 hours are merged into one group in the econometric analysis.

Table 9. Type of employment agreement

| Unionized job or covered by contract or collective agreement | Freq. | Percent | Cum. |
|---|--------------|----------------|-------------|
| Yes | 2899 | 35.00 | 35.00 |
| No | 5384 | 65.00 | 100.00 |

Table10. Hours of work

| Number of hours worked per week at job | Freq. | Percent | Cum. |
|---|--------------|----------------|-------------|
| >0 to 15 hours | 242 | 2.92 | 2.92 |
| 16 to 29 hours | 783 | 9.45 | 12.37 |
| 30 to 40 hours | 5541 | 66.90 | 79.27 |
| 41 hours and above | 1717 | 20.73 | 100.00 |

In some studies, such as Kinzl et al. (2005) and Raziq and Maulabakhsh (2015), different kinds of opportunities given to employees are considered as determinants of job satisfaction. In the GSS, people were asked to what extent they think that they have opportunities to provide input into decisions. This variable, which has five categories ranging from one (*strongly disagree*) to five (*strongly agree*), is included as one of the explanatory variables of job satisfaction. Frequencies for each category are presented in Table 11.

Table11. Opportunities to provide input into decisions

| Opportunities to provide input into decisions | Freq. | Percent | Cum. |
|--|--------------|----------------|-------------|
| Strongly agree | 2085 | 25.17 | 25.17 |
| Agree | 4292 | 51.82 | 76.99 |
| Neither agree nor disagree | 995 | 12.01 | 89.00 |
| Disagree | 664 | 8.02 | 97.02 |
| Strongly disagree | 247 | 2.98 | 100.00 |

Another job-related factor which is examined as an explanatory variable in this study is *good prospect for career advancement*, which can also be found in other studies such as Erro-Garces and Ferreira (2019), Viñas-Bardolet et al. (2015), Clark (1997), and Raziq and Maulabakhsh (2015). Respondents' answers are grouped into five categories ranging from one (strongly disagree) to five (strongly agree). The frequencies for each category are presented in Table 12. In addition to job prospects, *workplace pension plan* is also among the explanatory variables in this study. According to Table 13, around 40% of individuals have a workplace pension plan.

Table 12. Having good prospects for career advancement

| Good prospects for career advancement | Freq. | Percent | Cum. |
|--|--------------|----------------|-------------|
| Strongly agree | 1029 | 12.42 | 12.42 |
| Agree | 2984 | 36.03 | 48.45 |
| Neither agree nor disagree | 1777 | 21.45 | 69.90 |
| Disagree | 1837 | 22.18 | 92.08 |
| Strongly disagree | 656 | 7.92 | 100.00 |

Table 13. Workplace pension plan

| Employment benefits - Workplace pension plan | Freq. | Percent | Cum. |
|---|--------------|----------------|-------------|
| Yes | 3244 | 39.16 | 39.16 |
| No | 5039 | 60.84 | 100.00 |

In some studies such as Erro-Garces and Ferreira (2019), Raziq and Maulabakhsh (2015), and Clark and Oswald (1996), the individual's relationship with colleagues is considered as a job-characteristics variable affecting job satisfaction. Following the literature, the *number of good friends at work* is considered as an explanatory variable in this study. As can be seen in Table 14, this variable has four categories ranging from one (not having good friends at work) to four (having many good friends at work). According to this table, 9.78% of respondents do not have any good friends at work.

Table 14. Number of good friends at work

| Good friends at work - Number | Freq. | Percent | Cum. |
|--------------------------------------|--------------|----------------|-------------|
| Many | 2623 | 31.67 | 31.67 |
| A few | 2987 | 36.06 | 67.73 |
| One or two | 1863 | 22.49 | 90.22 |
| None | 810 | 9.78 | 100.00 |

Along with individual and job characteristics, health status has also been considered in several studies such as Viñas-Bardolet et al. (2015), Ahn and Garcia (2004), Clark and Oswald (1996) and Clark (1997) as a determinant of job satisfaction. Hence, general health status is included among the independent variables. As indicated in Table 15, five responses were possible:

Table15. Self-rated Health in general

| Self-rated health in general | Freq. | Percent | Cum. |
|-------------------------------------|--------------|----------------|-------------|
| Excellent | 1233 | 14.89 | 14.89 |
| Very good | 3157 | 38.11 | 53.00 |
| Good | 3080 | 37.18 | 90.18 |
| Fair | 715 | 8.63 | 98.82 |
| Poor | 98 | 1.18 | 100.00 |

Finally, since all the independent variables are qualitative factors, to avoid the dummy trap, which results in multicollinearity, for those factors which have more than two categories, one category must be excluded. The decision to exclude a category for most qualitative factors was based on the one which had the greatest frequency. In this study, the reference individual is a single, male, non-immigrant, aged 44-55 years, with a high school diploma or a high school equivalency certificate or trade certificate or diploma, and no religious affiliation while working for 30-40 hours per week in a small business with a few good friends at work, no pension plan, and a non-unionized job, who agrees with both having good job prospects and opportunities to provide input into decisions, and rates his health status as very good.

5. Results

Table 16 contains the estimated coefficients of the ordered probit model of job satisfaction for a pooled sample of both men and women. Some categories for some variables are merged into

one category before running the estimation. For the education level, the categories *High school diploma or a high school equivalency certificate* and *Trade certificate or diploma* were combined, as were *College/CEGEP/other non-university certificate or diploma* and *University certificate or diploma below the bachelor's level*. Among the age groups of respondents, those who are over 55 years old are grouped together. Furthermore, for marital status, those who are *married* or *living common-law* are combined, as are those who are *separated* or *divorced*. Finally, those who worked less than 29 hours are grouped in one category. The results of the ordered probit model are presented in Table 16.

Table 16. Results of Ordered probit model

| Independent Variables | Coef. | St.Err. | p-value |
|--|--------------|----------------|----------------|
| Education Level: | | | |
| -Less than high school diploma or its equivalent | 0.113 | 0.057 | 0.046 |
| -College/CEGEP/other non-university certificate or diploma/ University certificate or diploma below the bachelor's level | 0.040 | 0.034 | 0.235 |
| -Bachelor's degree (e.g. B.A., B.Sc., LL.B) | -0.003 | 0.036 | 0.934 |
| -University certificate, diploma, a degree above the BA level | 0.054 | 0.047 | 0.243 |
| Age Group: | | | |
| 15 to 24 years | -0.395 | 0.060 | 0.000 |
| 25 to 34 years | -0.271 | 0.040 | 0.000 |
| 35 to 44 years | -0.189 | 0.037 | 0.000 |
| over 55 years | 0.135 | 0.037 | 0.000 |
| Marital Status: | | | |
| Married or living common-law | 0.125 | 0.033 | 0.000 |
| Widowed | 0.295 | 0.103 | 0.004 |
| Separated or divorced | 0.146 | 0.049 | 0.003 |
| Immigrant | -0.134 | 0.035 | 0.000 |
| Work place size: | | | |
| Midsized business | -0.081 | 0.032 | 0.012 |
| Large business | -0.108 | 0.036 | 0.003 |
| Unionized Job | 0.001 | 0.029 | 0.973 |
| Number of hours worked per week: | | | |
| 0-29 hours per week | 0.077 | 0.041 | 0.060 |
| 41 hours and above | -0.001 | 0.033 | 0.968 |

| Independent Variables | Coef. | St.Err. | p-value | |
|---|--------------|----------------------|--------------------------|--------|
| Opportunities to provide Input into decisions: | | | | |
| Strongly disagree | -0.832 | 0.074 | 0.000 | |
| Disagree | -0.677 | 0.047 | 0.000 | |
| Neither agree nor disagree | -0.370 | 0.040 | 0.000 | |
| Strongly agree | 0.485 | 0.033 | 0.000 | |
| Good prospect for career advancement: | | | | |
| Strongly disagree | -0.835 | 0.051 | 0.000 | |
| Disagree | -0.485 | 0.035 | 0.000 | |
| Neither agree nor disagree | -0.244 | 0.035 | 0.000 | |
| Strongly agree | 0.366 | 0.046 | 0.000 | |
| Workplace pension plan | 0.065 | 0.028 | 0.022 | |
| Number of good friends at work: | | | | |
| None | -0.238 | 0.045 | 0.000 | |
| One or two | -0.201 | 0.034 | 0.000 | |
| Many | 0.178 | 0.032 | 0.000 | |
| Self-rated health: | | | | |
| Poor | -0.405 | 0.114 | 0.000 | |
| Fair | -0.266 | 0.047 | 0.000 | |
| Good | -0.161 | 0.029 | 0.000 | |
| Excellent | 0.133 | 0.040 | 0.001 | |
| Religious affiliation | 0.143 | 0.030 | 0.000 | |
| Female | 0.084 | 0.027 | 0.002 | |
| Cuts | Coef | St.Error | 95% Conf Interval | |
| cut1 | -2.787 | 0.076 | -2.936 | -2.638 |
| cut2 | -2.059 | 0.068 | -2.192 | -1.927 |
| cut3 | -1.398 | 0.065 | -1.525 | -1.271 |
| cut4 | 0.319 | 0.063 | 0.196 | 0.443 |
| Mean dependent var | 4.153 | SD dependent var | 0.843 | |
| Pseudo R-squared | 0.131 | Number of obs | 8283 | |
| Chi-square | 2421.906 | Prob > chi2 | 0.000 | |
| Akaike crit. (AIC) | 16173.148 | Bayesian crit. (BIC) | 16447.005 | |

Notes: The ordered probit model includes all the explanatory variables discussed in the text. The dependent variable is job satisfaction which is a five-scaled variable from very dissatisfied to very satisfied.

The threshold parameters are different from each other, and the 95% confidence intervals for *cut1*, *cut2*, *cut3*, and *cut4* do not overlap, which indicates that the five levels of job satisfaction are distinct and should not be aggregated. Also, the likelihood ratio statistic of 2421 and with a p-value of less than 0.001 indicates the null hypothesis that all the coefficients of the explanatory variables are simultaneously zero is rejected.

All the estimated coefficients are significant except for *unionized job*, the dummy variable for working *over 41 hours*, and all education levels except *Less than a high school diploma or its equivalent*-which is significant. However, the estimated coefficient of working *less than 29 hours per week* is positive and statistically significant at the 10% level. The result for *unionized job* is somewhat consistent with that of Clark and Oswald (1996), who found the impact of a *unionized job* on satisfaction with pay to be insignificant. However, their results for the impact of *unionized job* on overall job satisfaction shows a significant impact of this variable. Clark (1997) also finds an insignificant impact of a *unionized job* on the level of satisfaction for men. The results for education are somewhat consistent with the study of Clark and Oswald (1996) who found the impact of *medium education* on the level of job satisfaction (defined as satisfaction with pay) to be significant and negative, while the impact of *high education* in their study is found to be insignificant in the same ordered probit model.

The estimated coefficient for the age group *over 55 years old* is positive and statistically significant at the 1% level, while for other age groups, the estimated coefficient is found to be negative and statistically significant at the 1% level. This result is consistent with many studies which have found that older people are happier with their job than younger people. Clark and Oswald (1996) claim that there are plenty of reasons for this effect, such as lower expectations of older people, older workers' specific work values, and cohort differences. They also mention that many older workers have already moved into their favourite job, which makes them more satisfied. These results are also consistent with the findings of Clark (1997).

All the estimated coefficients for the marital status variables are positive and statistically significant at the 1% level. In other words, single people who have never married are less likely to be satisfied with their job than those who are or have been married. This result is consistent with the study of Uppal (2005) in which the impact of *married*, *widowed* and *divorced* is statistically significant and positive, and the study of Clark and Oswald (1996) in which the coefficients for *married* and *widowed* are positive and significant. The estimated coefficient of being an *immigrant* is statistically significant and negative, which is consistent with the study of Uppal (2005). In addition, the estimated coefficients of being *female*, and having a *religious affiliation* were found to be positive and statistically significant.

The estimated coefficients of the first three categories of having *opportunities to provide input into decisions*, for which the individual's responses were respectively *strongly disagree*,

disagree and *neither agree nor disagree*, are negative and statistically significant at the 1% level. The fifth category, however, for which the individuals' responses were *strongly agree*, has a coefficient which is positive and statistically significant at the 1% level. These results indicate that those employees who are given the opportunity of presenting their ideas are more likely to be satisfied with their job. These results are also consistent with the findings of others such as Kinzl et al. (2005) and Raziq and Maulabakhsh (2015), in which this factor is called *esteem needs*. Both studies found that being provided with opportunities to be useful in the workplace impacts job satisfaction significantly and positively. My result is also consistent with the findings of Erro-Garces and Ferreira (2019), who found *involvement in improving workplace* has a significant positive impact on job satisfaction.

The estimated coefficients for *good prospect for career advancement* are statistically significant at the 1% level and negative for the first three levels which are *strongly disagree*, *disagree* and *neither agree nor disagree*, but positive for the fifth one, which is *strongly agree*. This result shows the adverse impact of not having a good prospect for career advancement on the employee's satisfaction. This result is consistent with the findings of Erro-Garces and Ferreira (2019), Viñas-Bardolet et al. (2015), Clark (1997), and Raziq and Maulabakhsh (2015). Furthermore, the estimated coefficients of *midsize business and large business* are found to be negative and statistically significant. On the other hand, the estimated coefficient of *workplace pension plan* is found to be positive and statistically significant.

The estimated coefficients for the dummy variables *number of friends at work* for the first and second category, for which the individual's responses were *none* and *one or two* are statistically significant and negative while for the fourth category for which the response was *many*, the estimated coefficient is statistically significant and positive. This result highlights the importance of having good friends at work. It is also consistent with the study of Erro-Garces and Ferreira (2019), Raziq and Maulabakhsh (2015), and Clark and Oswald (1996).

Finally, the estimated coefficient for self-rated health is negative and statistically significant at the 1% level for the first three categories, *poor*, *fair* and *good*, while for the fifth one, for which the respondent rated his/her health status as *excellent*, the coefficient is estimated to be positive and significant at the 1% level. So, it can be concluded that those who have a better general health condition are more satisfied with their job. This result is also consistent with the findings of Viñas-Bardolet et al. (2015), Ahn and Garcia (2004), Clark and Oswald (1996) and Clark (1997).

The same ordered probit model is also estimated for men and women separately. The results show that there are no major differences between men and women in the signs and statistical significance of the coefficients, except that the coefficient of *workplace pension plan* is insignificant for women while it is still significant for men. This might be an indicator that the financial aspects of jobs are more important for men. The results for men and women are presented in the Appendix.

As was mentioned in the methodology section, the coefficients do not necessarily depict the marginal effect of the independent variables. In this paper, the average marginal effect of each variable at different levels of job satisfaction is estimated, and the results are presented in Table 17. The estimates in this table show the marginal effect of each variable on the related level of job satisfaction. Also, the average predicted probabilities for each outcome are presented in Table 18.

The average predicted probabilities of being *very satisfied* and *satisfied* are 36.3% and 49.6%, while for being *neither satisfied nor dissatisfied*, *dissatisfied* and *very dissatisfied* are respectively 8.8%, 4% and 1.4%. The marginal effect of having *Less than a high school diploma or its equivalent*, on being *very satisfied* is 0.0358 which means that individuals with this level of education in comparison to the reference category, which is *high school diploma or a high school equivalency certificate or trade certificate or diploma*, have a higher probability of being *very satisfied* and this increase in probability is 3.58 percentage points. The same interpretation applies to all marginal effects of variables in comparison to their reference category.

The marginal effect for the age group of *15 to 24 years* on being *very satisfied* with the job is -0.120, while the marginal effect increases with age as it becomes a positive value for the group aged *over 55 years*. These results clearly show that those who are older are probably more satisfied with their jobs holding all else constant. This can be attributed to the fact that after a certain age, people have already found their favourite job or the fact that their expectations are lower and more realistic (Clark and Oswald, 1996).

The marginal effect for being *married or living common-law* on being *very satisfied* is 0.0390, for being *widowed* is 0.0938, and for *separated or divorced* is 0.0456. The estimated marginal effects for all these three categories show that those in these marital status categories have more probability of being *very satisfied* in comparison to the reference category, which is being *single*. These results are similar to those of Uppal (2005), who found the marginal effect of *widowed* to be the highest in comparison to other categories. The marginal effect of having a

religious affiliation is 0.0444, and for being *female* is 0.0262 which means that those who have a religious affiliation are more likely to be very satisfied than those who do not. In addition, females are more likely to be very satisfied than men by 2.62 percentage points.

The marginal effect of being an *immigrant* on being *very satisfied* is -0.0414 which means that those who are immigrant have a lower probability of being *very satisfied* than those who are not by -4.14 percentage points. This effect could be attributed to either unfair opportunities for finding a job for immigrants or feeling discriminated against in the workplace. Also, in recent years, many high-skilled immigrants have had a problem with finding appropriate jobs related to their skills and education. The main reason could be the fact that their non-Canadian degree and work experience are widely believed to be unacceptable by employers.

One of the focuses of this study is the impact of job characteristics on job satisfaction. The marginal effect of *having good friends at work* on job satisfaction increases as the number of good friends at work rises. For those who reported *none*, the marginal effect is found to be -0.0733, while for those who have reported *many*, this value is 0.0582, which highlights the importance of having good friends at work. The marginal effect of having a *workplace pension plan* on being *very satisfied* is 0.0204, which means that those who have the workplace pension plan are more likely to be very satisfied than those who do not.

Another important job-related variable is having a *good prospect for career advancement*. The marginal effect of the first category, which is *completely disagree* with career advancement, on being *very satisfied* is -0.246, while the marginal effect increases as the prospect gets more positive, and for the fifth category, which is *completely agree*, it becomes 0.129. These results again highlight the importance of employees' prospects for the future.

The marginal effect of the first category of opportunities to provide input into decisions, which is *completely disagree* on being *very satisfied*, is -0.223; this effect increases and becomes positive as employees feel they are being provided with this opportunity. For the fifth category, which is *completely agree*, the estimated marginal effect on a high level of job satisfaction is 0.172, indicating that those who are given this opportunity are more satisfied with their job. The estimated marginal effect for the *midsize business* on being *very satisfied* with the job is -0.0254, and for a *large business* is -0.0338, indicating that those who work for midsize and large businesses have a lower probability of being very satisfied in comparison to those who work for small businesses.

Finally, another important factor is self-rated health, and the results show that the marginal effect for *poor* health status is -0.122, for *fair* and *good* health status, are respectively estimated to be -0.082 and -0.0509, while for *excellent* health status is found to be 0.0437. So, those who feel healthier are more satisfied at work. In other words, those who rate their health status as *poor*, *fair*, and *good* have a lower probability of being *very satisfied* than those who rate their health status as *very good*. On the other hand, those who rate their health status as *excellent* have a higher probability of being *very satisfied* than those who rate it as *very good*.

In a nutshell, the findings of the ordered probit model and marginal effects clearly show the importance of individual and job characteristics on employees' satisfaction. Having close friends at work, age, marital status, employment benefits, work size, being an immigrant, having a religious affiliation and health status are all related to the level of job satisfaction. Also, the marginal effects show that the most important factors among all variables are opportunities to provide input into decisions and having a good prospect for career advancement, which are both job characteristics factors.

Table 17. Average marginal effect (AME) for five outcomes of Job Satisfaction

| | Very dissatisfied | Dissatisfied | Neither satisfied nor dissatisfied | Satisfied | Very satisfied |
|--|------------------------------|------------------------|---|-----------------------|---------------------------|
| Education Level: | | | | | |
| <i>Less than high school diploma or its equivalent</i> | -0.00303** (-2.11) | -0.00654** (-2.07) | -0.0107** (-2.03) | -0.0156* (-1.86) | 0.0358** (1.97) |
| <i>College/CEGEP/other non-university certificate or diploma/ University certificate or diploma below the bachelor's level</i> | -0.00114 (-1.19) | -0.00240 (-1.19) | -0.00383 (-1.19) | -0.00513 (-1.19) | 0.0125 (1.19) |
| <i>Bachelor's degree (e.g. B.A., B.Sc., LL.B)</i> | 0.0000899 (0.08) | 0.000187 (0.08) | 0.000294 (0.08) | 0.000373 (0.08) | -0.000943 (-0.08) |
| <i>University certificate, diploma, a degree above the BA level</i> | -0.00153 (-1.19) | -0.00325 (-1.18) | -0.00520 (-1.17) | -0.00709 (-1.14) | 0.0171 (1.16) |
| Age Group: | | | | | |
| <i>15 to 24 years</i> | 0.0133*** (4.96) | 0.0264*** (5.66) | 0.0397*** (6.24) | 0.0409*** (8.17) | -0.120*** (-6.88) |
| <i>25 to 34 years</i> | 0.00812*** (5.83) | 0.0169*** (6.39) | 0.0266*** (6.67) | 0.0328*** (6.74) | -0.0844*** (-6.87) |
| <i>35 to 44 years</i> | 0.00525*** (4.72) | 0.0113*** (4.99) | 0.0182*** (5.10) | 0.0250*** (5.06) | -0.0597*** (-5.15) |
| <i>Over 45 years</i> | -0.00276*** (-3.45) | -0.00665*** (-3.56) | -0.0118*** (-3.59) | -0.0230*** (-3.58) | 0.0443*** (3.61) |
| Marital Status: | | | | | |
| <i>Married or living common-law</i> | -0.00373*** (-3.57) | -0.00778*** (-3.68) | -0.0122*** (-3.75) | -0.0152*** (-4.01) | 0.0390*** (3.86) |
| <i>Widowed</i> | -0.00759*** (-3.48) | -0.0167*** (-3.28) | -0.0276*** (-3.07) | -0.0420** (-2.37) | 0.0938*** (2.79) |
| <i>Separated or divorced</i> | -0.00427*** (-3.01) | -0.00899*** (-3.01) | -0.0142*** (-2.97) | -0.0181*** (-2.77) | 0.0456*** (2.92) |

| | Very dissatisfied | Dissatisfied | Neither satisfied nor dissatisfied | Satisfied | Very satisfied |
|---|------------------------------|------------------------|---|-----------------------|---------------------------|
| Immigrant | 0.00414*** (3.36) | 0.00843*** (3.56) | 0.0131*** (3.69) | 0.0158*** (4.16) | -0.0414*** (-3.83) |
| Work place size: | | | | | |
| <i>Midsize business</i> | 0.00232** (2.40) | 0.00488** (2.45) | 0.00777** (2.49) | 0.0104*** (2.60) | -0.0254** (-2.53) |
| <i>Large business</i> | 0.00318*** (2.79) | 0.00661*** (2.88) | 0.0104*** (2.95) | 0.0135*** (3.17) | -0.0338*** (-3.03) |
| Number of hours worked per week: | | | | | |
| <i>0-29 hours per week</i> | -0.00209* (-1.95) | -0.00448* (-1.93) | -0.00727* (-1.90) | -0.0105* (-1.79) | 0.0244* (1.87) |
| <i>41 hours and above</i> | 0.0000387 (0.04) | 0.0000809 (0.04) | 0.000128 (0.04) | 0.000169 (0.04) | -0.000417 (-0.04) |
| Opportunities to provide Input into decisions: | | | | | |
| <i>Strongly disagree</i> | 0.0393*** (5.92) | 0.0770*** (7.81) | 0.102*** (10.67) | 0.00545 (0.51) | -0.223*** (-15.03) |
| <i>Disagree</i> | 0.0270*** (7.83) | 0.0581*** (10.22) | 0.0827*** (12.59) | 0.0237*** (4.90) | -0.191*** (-16.96) |
| <i>Neither agree nor disagree</i> | 0.0105*** (6.31) | 0.0267*** (7.68) | 0.0436*** (8.53) | 0.0339*** (11.44) | -0.115*** (-9.86) |
| <i>Strongly agree</i> | -0.00548*** (-8.41) | -0.0192*** (-12.63) | -0.0424*** (-14.41) | -0.105*** (-12.70) | 0.172*** (14.39) |
| Good prospect for career advancement: | | | | | |
| <i>Strongly disagree</i> | 0.0308*** (8.42) | 0.0646*** (10.96) | 0.0943*** (13.87) | 0.0563*** (10.08) | -0.246*** (-19.05) |
| <i>Disagree</i> | 0.0121*** (8.50) | 0.0306*** (11.09) | 0.0519*** (12.38) | 0.0614*** (13.07) | -0.156*** (-14.14) |
| <i>Neither agree nor disagree</i> | 0.00462*** (5.57) | 0.0131*** (6.34) | 0.0244*** (6.64) | 0.0400*** (7.04) | -0.0821*** (-6.97) |
| <i>Strongly agree</i> | -0.00354*** (-6.72) | -0.0125*** (-8.23) | -0.0282*** (-8.50) | -0.0848*** (-7.35) | 0.129*** (7.95) |

| | Very dissatisfied | Dissatisfied | Neither satisfied nor dissatisfied | Satisfied | Very satisfied |
|--|------------------------------|------------------------|---|-----------------------|---------------------------|
| Workplace pension plan | -0.00180** (-2.30) | -0.00385** (-2.30) | -0.00619** (-2.29) | -0.00853** (-2.25) | 0.0204** (2.28) |
| Number of good friends at work: | | | | | |
| <i>None</i> | 0.00762*** (4.43) | 0.0160*** (4.76) | 0.0246*** (5.02) | 0.0251*** (6.14) | -0.0733*** (-5.40) |
| <i>One or two</i> | 0.00619*** (5.26) | 0.0132*** (5.59) | 0.0206*** (5.77) | 0.0223*** (6.07) | -0.0622*** (-5.99) |
| <i>Many</i> | -0.00384*** (-5.14) | -0.00933*** (-5.45) | -0.0164*** (-5.51) | -0.0286*** (-5.38) | 0.0582*** (5.54) |
| Self-rated health: | | | | | |
| <i>Poor</i> | 0.0142** (2.57) | 0.0280*** (2.93) | 0.0415*** (3.32) | 0.0385*** (7.53) | -0.122*** (-3.85) |
| <i>Fair</i> | 0.00818*** (4.59) | 0.0170*** (5.01) | 0.0266*** (5.34) | 0.0306*** (6.64) | -0.0824*** (-5.79) |
| <i>Good</i> | 0.00449*** (5.09) | 0.00976*** (5.33) | 0.0157*** (5.41) | 0.0209*** (5.39) | -0.0509*** (-5.49) |
| <i>Excellent</i> | -0.00282*** (-3.39) | -0.00678*** (-3.43) | -0.0120*** (-3.40) | -0.0221*** (-3.20) | 0.0437*** (3.33) |
| Religious affiliation: | -0.00427*** (-4.32) | -0.00889*** (-4.53) | -0.0140*** (-4.65) | -0.0172*** (-5.10) | 0.0444*** (4.85) |
| Female: | -0.00239*** (-3.04) | -0.00503*** (-3.09) | -0.00801*** (-3.11) | -0.0108*** (-3.13) | 0.0262*** (3.13) |
| N | 8283 | 8283 | 8283 | 8283 | 8283 |

Notes: Each value is the marginal effect of each dummy variable on the level of job satisfaction. Marginal effects are calculated for all five outcomes of job satisfaction which are respectively very dissatisfied, dissatisfied, neither satisfied nor dissatisfied, satisfied and very satisfied. *t* statistics are presented in parentheses, and the stars show the level of significance such that: * $p < 0.1$, ** $p < 0.05$, *** $p < 0$

Table 18. Average Predicted Probabilities

| Outcomes | Margin | Std.Err. | P>z |
|--|---------------|-----------------|---------------|
| Outcome (1) , Very dissatisfied | 0.014 | 0.001 | 0.000 |
| Outcome (2) , Dissatisfied | 0.040 | 0.002 | 0.000 |
| Outcome (3) , Neither satisfied nor dissatisfied | 0.088 | 0.003 | 0.000 |
| Outcome (4) , Satisfied | 0.496 | 0.005 | 0.000 |
| Outcome (5) , Very Satisfied | 0.363 | 0.005 | 0.000 |

6. Conclusion

This paper examines the determinants of job satisfaction for the Canadian labour market. Building on the literature, health status, individual and job characteristics were included as the explanatory variables. Data were drawn from the *General Social Survey (GSS), cycle 30, 2016, Canada: Canadians at work and home*. Job satisfaction in this study is a five-scaled variable ranging from *very dissatisfied* to *very satisfied*. An ordered probit model is employed for estimation purposes, and average marginal effects are estimated for all five levels of satisfaction.

According to the ordered probit results, having a degree less than a high school diploma or its equivalent, age, marital status, immigration status, and gender have a statistically significant relationship with the level of job satisfaction. As a large portion of Canadian people are immigrants (22.2% according to the GSS), the adverse impact of being an immigrant on job satisfaction highlights the need for more strict regulation regarding immigrants' opportunities in the Canadian labour market. Having a religious affiliation, which has not gained so much attention in the literature, is found to have a statistically significant and positive impact on the level of job satisfaction. Furthermore, health status which is rarely discussed in the literature has a statistically significant impact on the level of job satisfaction.

The results also reveal the importance of job-related factors. Workplace size, having good friends at work, and workplace pension plans all have a statistically significant impact on the level of job satisfaction. Also, working less than 29 hours has a significant positive impact on the dependent variable. Among job characteristics, however, having a good prospect for career advancement and having opportunities to provide input into decisions revealed to have the largest marginal impact on the level of satisfaction.

According to the results, health status, individual and job characteristics have an impact on job satisfaction, and the largest impact among all variables is found to be for two job-related factors which are having opportunities to provide input into decisions and having a good prospect for

career advancement. These findings have important implications for policymakers and employers, for job satisfaction is of great importance both for employees' psycho-social well-being, and the efficiency of human capital.

Ultimately, this research is faced by some limitations. As noted earlier, the selection bias involving some variables, in particular, job-related factors, should not be neglected. So, even though the estimations are providing information about correlations, causality relationships must be looked at cautiously. Take the number of good friends at work by way of example, where there is the possibility that having good friends at work could be mainly attributed to the individual's characteristics, such as openness and being friendly, and not to the characteristics of the work environment. As another example, some individuals might have been able to choose a job having their ideal characteristics, which led to their high level of satisfaction. The same goes for immigration status as immigration is selective, and those who immigrate are more likely to be highly educated and younger and thus being more likely to be satisfied. Dealing with this problem is not easy, as finding a perfectly random sample is usually believed to be nearly impossible. Yet, having questions regarding these issues in futures surveys or more sophisticated econometric techniques might, to some extent, alleviate the problems. . Finally, it can be concluded that more attention of organizations toward these factors is required as human capital is one of the most important factors of organizations' performance.

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Appendix

Table 19. Results of Ordered probit model for women

| Independent Variables | Coef. | St.Err. | t-value | p-value |
|--|--------------|----------------|----------------|----------------|
| Education Level: | | | | |
| -Less than high school diploma or its equivalent | 0.182 | 0.072 | 2.55 | 0.011 |
| -College/CEGEP/other non-university certificate or diploma/ University certificate or diploma below the bachelor's level | -0.007 | 0.047 | -0.16 | 0.875 |
| -Bachelor's degree (e.g. B.A., B.Sc., LL.B) | -0.053 | 0.052 | -1.02 | 0.306 |
| -University certificate, diploma, a degree above the BA level | -0.012 | 0.067 | -0.18 | 0.859 |
| Age Group: | | | | |
| 15 to 24 years | -0.469 | 0.085 | -5.54 | 0.000 |
| 25 to 34 years | -0.297 | 0.055 | -5.37 | 0.000 |
| 35 to 44 years | -0.263 | 0.051 | -5.12 | 0.000 |
| over 55 years | 0.084 | 0.052 | 1.60 | 0.109 |
| Marital Status: | | | | |
| Married or living common-law | 0.142 | 0.046 | 3.11 | 0.002 |
| Widowed | 0.245 | 0.120 | 2.05 | 0.040 |
| Separated or divorced | 0.086 | 0.065 | 1.31 | 0.188 |
| Immigrant | -0.109 | 0.050 | -2.19 | 0.029 |
| Work place size: | | | | |
| Midsized business | -0.050 | 0.046 | -1.07 | 0.284 |
| Large business | -0.094 | 0.050 | -1.88 | 0.060 |
| Unionized Job | -0.011 | 0.041 | -0.28 | 0.781 |
| Number of hours worked per week: | | | | |
| 0-29 hours per week | 0.023 | 0.050 | 0.47 | 0.640 |
| 41 hours and above | -0.098 | 0.055 | -1.78 | 0.075 |
| Opportunities to provide Input into decisions: | | | | |
| Strongly disagree | -0.743 | 0.108 | -6.88 | 0.000 |
| Disagree | -0.736 | 0.065 | -11.37 | 0.000 |
| Neither agree nor disagree | -0.408 | 0.053 | -7.64 | 0.000 |
| Strongly agree | 0.492 | 0.048 | 10.29 | 0.000 |
| Good prospect for career advancement: | | | | |
| Strongly disagree | -0.766 | 0.069 | -11.04 | 0.000 |
| Disagree | -0.439 | 0.048 | -9.07 | 0.000 |
| Neither agree nor disagree | -0.231 | 0.049 | -4.69 | 0.000 |
| Strongly agree | 0.352 | 0.068 | 5.18 | 0.000 |
| Workplace pension plan | 0.028 | 0.040 | 0.69 | 0.490 |

| | | | | | |
|--|----------|----------------------|-----------------|-------|-------|
| Number of good friends at work: | | | | | |
| None | | -0.137 | 0.063 | -2.17 | 0.030 |
| One or two | | -0.181 | 0.047 | -3.89 | 0.000 |
| Many | | 0.202 | 0.045 | 4.48 | 0.000 |
| Self-rated health: | | | | | |
| Poor | | -0.384 | 0.150 | -2.57 | 0.010 |
| Fair | | -0.293 | 0.068 | -4.33 | 0.000 |
| Good | | -0.166 | 0.041 | -4.04 | 0.000 |
| Excellent | | 0.188 | 0.054 | 3.47 | 0.001 |
| Religious affiliation | | 0.183 | 0.043 | 4.25 | 0.000 |
| Cuts | | Coef | St.Error | | |
| cut1 | | -2.944 | 0.108 | | |
| cut2 | | -2.162 | 0.094 | | |
| cut3 | | -1.529 | 0.091 | | |
| cut4 | | 0.202 | 0.088 | | |
| Mean dependent var | 4.166 | SD dependent var | 0.829 | | |
| Pseudo R-squared | 0.126 | Number of obs | 4271.000 | | |
| Chi-square | 1190.918 | Prob > chi2 | 0.000 | | |
| Akaike crit. (AIC) | 8310.818 | Bayesian crit. (BIC) | 8552.483 | | |

Notes: The ordered probit model includes all the explanatory variables discussed in the text (except gender). The dependent variable is job satisfaction which is a five-scaled variable ranging from very dissatisfied to very satisfied.

Table 20. Results of Ordered probit model for men

| Independent Variables | Coef. | St.Err. | t-value | p-value |
|--|--------------|----------------|----------------|----------------|
| Education Level: | | | | |
| -Less than high school diploma or its equivalent | 0.182 | 0.072 | 2.55 | 0.011 |
| -College/CEGEP/other non-university certificate or diploma/ University certificate or diploma below the bachelor's level | 0.077 | 0.049 | 1.59 | 0.112 |
| -Bachelor's degree (e.g. B.A., B.Sc., LL.B) | 0.051 | 0.052 | 0.99 | 0.323 |
| -University certificate, diploma, a degree above the BA level | -0.012 | 0.066 | 1.91 | 0.056 |
| Age Group: | | | | |
| 15 to 24 years | -0.308 | 0.087 | -3.56 | 0.000 |
| 25 to 34 years | -0.238 | 0.057 | -4.15 | 0.000 |
| 35 to 44 years | -0.097 | 0.053 | -1.83 | 0.068 |
| over 55 years | 0.192 | 0.054 | 3.55 | 0.000 |
| Marital Status: | | | | |
| Married or living common-law | 0.102 | 0.047 | 2.18 | 0.030 |
| Widowed | 0.448 | 0.215 | 2.08 | 0.037 |
| Separated or divorced | 0.224 | 0.077 | 2.92 | 0.003 |

| | | | | |
|---|--------|-------|--------|-------|
| Immigrant | -0.155 | 0.051 | -3.03 | 0.002 |
| Work place size: | | | | |
| Midsize business | -0.115 | 0.045 | -2.57 | 0.010 |
| Large business | -0.125 | 0.052 | -2.39 | 0.017 |
| Unionized Job | 0.032 | 0.043 | 0.75 | 0.453 |
| Number of hours worked per week: | | | | |
| 0-29 hours per week | 0.169 | 0.075 | 2.26 | 0.024 |
| 41 hours and above | 0.067 | 0.042 | 1.60 | 0.110 |
| Opportunities to provide Input into decisions: | | | | |
| Strongly disagree | -0.913 | 0.103 | -8.83 | 0.000 |
| Disagree | -0.607 | 0.070 | -8.72 | 0.000 |
| Neither agree nor disagree | -0.326 | 0.060 | -5.39 | 0.000 |
| Strongly agree | 0.476 | 0.047 | 10.12 | 0.000 |
| Good prospect for career advancement: | | | | |
| Strongly disagree | -0.928 | 0.076 | -12.13 | 0.000 |
| Disagree | -0.532 | 0.052 | -10.24 | 0.000 |
| Neither agree nor disagree | -0.259 | 0.051 | -5.08 | 0.000 |
| Strongly agree | 0.380 | 0.063 | 6.05 | 0.000 |
| Workplace pension plan | 0.096 | 0.040 | 2.38 | 0.017 |
| Number of good friends at work: | | | | |
| None | -0.352 | 0.065 | -5.37 | 0.000 |
| One or two | -0.225 | 0.049 | -4.54 | 0.000 |
| Many | 0.147 | 0.046 | 3.22 | 0.001 |
| Self-rated health: | | | | |
| Poor | -0.446 | 0.179 | -2.50 | 0.013 |
| Fair | -0.233 | 0.067 | -3.50 | 0.000 |
| Good | -0.148 | 0.042 | -3.52 | 0.000 |
| Excellent | 0.076 | 0.059 | 1.28 | 0.201 |
| Religious affiliation | 0.103 | 0.041 | 2.48 | 0.013 |

| Cuts | Coef | St.Error | |
|--------------------|-------------|----------------------|----------|
| cut1 | -2.736 | 0.107 | |
| cut2 | -2.051 | 0.095 | |
| cut3 | -1.354 | 0.091 | |
| cut4 | 0.362 | 0.089 | |
| Mean dependent var | 4.138 | SD dependent var | 0.858 |
| Pseudo R-squared | 0.140 | Number of obs | 4012.000 |
| Chi-square | 1275.682 | Prob > chi2 | 0.000 |
| Akaike crit. (AIC) | 7884.584 | Bayesian crit. (BIC) | 8123.872 |

Notes: The dependent variable is job satisfaction which is a five-scaled variable ranging from very dissatisfied to very satisfied.

