

Job Satisfaction and its link with Mental Health in Catalonia

Student's name: Alejandro Acosta Orozco

Tutor's name: Helena Hernández Pizarro

June 2020

TFG Final Memory

2019-2020
BAIM

Abstract

The relationship between job satisfaction and mental health is an object of intense research. The present study aims to determine the existence of a statically significant relationship between job satisfaction and mental health in the Catalan workforce. Through the use of multiple OLS regression models drawing data from the ESCA survey conducted twice per year by the Health Department of Catalonia to its population. It was found that being satisfied with your current job position is negatively correlated to an increase in the risk of developing poor mental health. We used in this study the renowned index GHQ-12, which is used to identify psychiatric disorders in the general population. In addition, the correlation between variables holds true when accounting for different measurements of mental and a logistic model. Furthermore, we identified factors that further exacerbate the detriment of mental health like a worsening of working conditions. Although a reverse causality between variables cannot be ruled out, our results help deepen the understanding between the Catalan workforce and their health which could contribute to reducing mental disorders and the issuance of public policies to prevent them.

Table of contents

1. Justification of the research subject	4
2. Theoretical framework	7
2.1 Job satisfaction and mental health	9
2.2 Level of studies and Gender in job satisfaction	13
2.3 Conclusions extracted from the theoretical framework	15
3. Research questions	17
4. Methodology	18
4.1 Data:	18
4.2 Data analysis:	20
5. Results:	21
5.1 Descriptive analysis	21
5.2 Econometric Analysis	26
6. Conclusions:	34
7. Acknowledgments	37
8. References	38
9. Appendix	43

1. Justification of the research subject

Mental health and neurological disorders have become more common in modern societies and are increasingly affecting them in several dimensions. Statistics have shown that at least 10 percent of the world's population is affected by different mental disorders, something that can lead to premature deaths and disabilities (Chisholm et al. 2016). The World Health Organization (WHO) recently found that mental illness represents 30 percent of non-fatal diseases worldwide. Mental disorders are causing very serious social and economic effects on citizens, families, and nations. It is very concerning that many governments and public authorities are ignoring or underestimating the serious consequences that mental disorders are causing on the overall health of the population and on human capital associated with the economic and cultural production of nations. On the other hand, the Organization for Economic Development and Cooperation (OECD) has stated that within its member countries, 20 percent of the workforce has been affected by depression and anxiety. The losses caused to the world economy because of depression and anxiety are estimated to be about US\$1 trillion per year (Chisholm et al., 2016). Therefore, it is increasingly important to investigate and characterize the extent to which job satisfaction is contributing to mental disorders. In order to recommend possible interventions through the most appropriate public policies aimed at reducing the mental health figures, we anticipate that the present study will be very useful.

Regarding the discipline I have chosen for my professional career, I have always held the deep conviction that the physical and mental health of human beings is essential to ensure productivity, wealth creation, and well-being for society as a whole. According to this conviction, I have had a particular motivation for knowing about the psychological environment surrounding the employees' duties, not only as an academic interest, but also as a purpose of applying the research findings on job satisfaction and mental health to the design of public policies. In the present case, I have attempted to gain insights into the working conditions in

which Catalonia's workforce fulfills its duties and the extent to which this force is satisfied. The generation of these insights would allow me to feel that I am contributing to safeguarding the employees' rights in the workplace.

In the last couple of decades, there has been an abundant amount of literature suggesting that work conditions are a major cause of increasing mental health disorders such as depression, anxiety and stress that can impact all dimensions of everyday life (Twenge et al., 2019). Some studies have suggested that mental illness could be related to biochemical imbalances in the brain. However, others have challenged this medical approach and have proposed that mental illnesses are actually correlated with social, economic, and cultural determinants, which could explain their rapid increase (Stolzer, 2016). The European Study of Epidemiology of Mental Disorders has shown that mental illness needs urgently to be treated (Gaebel et al., 2014). This epidemiological study also indicated that only 23% of the participants declared that they were seeking treatment for their mental problems at any moment of their life course.

Within this context, the following study seeks to estimate the contribution of job satisfaction to the mental health disorders in employees in Catalonia. For this purpose, this investigation will use the data from the Department de Salut (Health Department), which conducted the Health Survey of Catalonia. This study attempted to find a correlation between job satisfaction and mental health disorders, which has not been previously established.

Human capital is considered an important asset and production factor as it increases the productivity and earnings of firms. In this sense, companies invest to obtain the best and most productive employees. Human capital is the embodiment of knowledge and skills that are crucial for reaching any companies' goals. In other words, human capital is important for economic growth, not only for companies, but also for ensuring the competitiveness of nations and regions (Hendarmin and Kartika M. 2019). Investment in human capital is associated with education and some forms of training in the workplace. To improve the workforce quality gives

positive returns to individuals and the whole economy (de la Fuente, 2011). Thus, with the understanding that mental illnesses or disorders are causes for job absence, low physical and intellectual productivity and other negative work behaviors, the study of the relationship between job satisfaction and mental health would be useful to ensure the productivity and satisfaction of human capital.

The productivity of human capital has been found to be driven by a number of factors, including job satisfaction, management support, and physical work environment. In particular, job satisfaction is strongly correlated with job performance and staff work output (Shobe, 2018). Job satisfaction has also been related to human capital development in terms of independent variables such as training, performance appraisal, salary, and employee recognition (Manuere, 2017). Furthermore, human resources practices are important for employee engagement and job satisfaction. There is an influence between human capital practices and productivity on the companies' performance. Job satisfaction and productivity are heavily impacted by the physical workplace environment and also by the work itself, payment, promotion, superintendence/associates, and opportunities (Siddiqui, 2015). Job satisfaction correlates with job performance, job involvement, absenteeism, turnover, organizational commitment, perceived stress, motivation, and mental health (Maamari, 2014). Job satisfaction and productivity are a relevant concern for employers as performance strongly correlates with increased mental health on the job.

The impact of mental health disorders on the productivity of human capital can be detrimental, affecting the performance of both private companies and public offices. Addressing the issue of job satisfaction and mental health disorders is very important for designing public health policies aimed at improving work conditions needed for ensuring the productivity of the workforce and competitiveness in Catalonia. The present work attempts to test the hypothesis that an eventual correlation between job satisfaction and mental health is occurring in

Catalonia's workforce using the data from the Health Survey of Catalonia (ESCA, henceforth) and applying a multi-regression model assuming job satisfaction as a dependent variable.

2. Theoretical framework

Literature regarding previous studies on job satisfaction and mental health commonly use representative studies published in peer-refereed journals addressing job satisfaction, working conditions, and mental health disorders. To select the most relevant literature, keyword searches in ScienceDirect, Jstor, and Web of Science and other databases were performed. Specifically, the keyword "job satisfaction" was used alone or in combination with the following words in separated searches: mental health, physical health, depression, anxiety, stress, self-esteem, burnout, and gender differences.

The characteristics of a job can contribute to the exacerbation of some psychological states that are able to affect personal life and work performance (Bohlander 2013). Work motivation, high satisfaction with the job, high-quality work performance, and low turnover, and absenteeism has been associated with positive psychological states (Bohlander, 2013; Cascio, 2010). Some human activities or professions, such as policing, teaching, nursing, and health caring, have been frequently related to distress and mental disorders (Kim et al., 2018; Violanti et al., 2017).

Excessive job demands and insufficient work support can generate stress in workers. Stress has been linked to depression as stressful job conditions such as workers under high psychological and physical demands, lack of help from colleagues are more prone to suffer higher levels of depression (Wang and Patten, 2001). However, a study about the association of job characteristics with depression and perceived stress showed that job characteristics lack confidence as an indicator of depression and stress in a management worker sample. Instead,

other factors, including organizational culture and interpersonal relations have been highlighted as a subject for further research (Steyna and Vawda, 2014).

Some occupations associated with low reward, social status, and control have been identified as stressful ones, whereas other occupations, including teaching, policing, and nursing have been assumed as very demanding occupations. Higher education staff has also been included in the catalog of stressful occupations. Stressful conditions have been assumed to be present in academic institutions in comparison with the general population (Winefield and Jarrett, 2001). It is suggested that university staff is oftentimes affected by a heavy load of stress, anxiety, depression (Mark and Smith, 2011).

The recruitment and retention of personnel working in facilities where stress and mental health nursing take place is an issue of special concern. These facilities are usually very busy, under-resourced, and fraught with psychological pressure. The nurses working in mental health facilities are subjected to aggressive environments (Leifer, 2004). Mental health nursing is also a field in which additional stressors are in place and are represented by administrative and organizational conditions such as insufficient staffing and too much paperwork.

It is well established that recruitment and retention of workers in an employment place include the consideration of some factors related to job satisfaction, wage, benefits for education, and safety, among other factors (Ward, 2011). However, according to a research interview involving nurses exercising jobs within mental health facilities, it was concluded that the participants in this research interview considered their jobs to be highly rewarding and satisfying (Ward, 2011). These findings suggest that although the employment environment is sometimes challenging, the interaction with patients and the professional dedication to them give the nurses great satisfaction (Ward, 2011).

Regarding well-being through life, some authors have found a U-shaped profile. This particular research involving a sample of Americans and Western Europeans used a test that controlled cohort effects but held constant other factors such as demographic and income variables (Blanchflower and Oswald, 2008). For the population sample tested, an individual's happiness reached its minimum in middle age when mental distress tends to reach a maximum. A similar profile for well-being through life course was found in the case of East European, Latin American and Asian nations

2.1 Job satisfaction and mental health

Some investigators see “*job satisfaction as positive emotional reactions and attitudes*” that an employee exhibits towards his/her particular job. However, others view job satisfaction as a concept that incorporates both intrinsic and extrinsic dimensions of satisfaction or dissatisfaction (Oshagbemi, 1999; Warr et al., 1979). Mental health disorders have been understood as derived from negative attitudes about work (Brown and McIntosh, 2003). Job satisfaction and mental health disorders relationships can vary across professional careers (Plickerta et al., 2017). Early stages of professionals’ careers are particularly stressful as during these early stages the professionals are working to develop their specialized work skills. Careers are an important component of the individual’s life, mainly in the case of professionals that are subjected to demanding jobs. In this vein, job satisfaction can be taken as a well-established factor that can determine mental health and well-being.

The work environment conditions have experienced crucial changes during the last three decades. These changes have been caused by economic recessions, technological progress, and globalization. These modifications have affected the employment conditions leading to tough consequences for many employees (Scott-Marshall, 2010). The employment quality is related to the job characteristics associated with tasks that should be performed, as well as with employment conditions such as the characteristics of the contract, and working hours, amongst

others. Studies addressing the link between employment quality and mental health are relatively recent. Types of contracts have been found to impact job satisfaction. The effects of temporary employment contracts on job satisfaction have been studied as temporary employment is becoming very prevalent in many sectors, including the sectors of professional occupations (Waijjer et al., 2017; Bruno et al., 2013). The lack of stability associated with temporary contracts is having negative effects on job satisfaction. The perception of being fired at any time seems to be causing negative mental conditions that can affect job satisfaction.

Job satisfaction has also been associated with the eventual comparison workers make in terms of the wages earned by other workers in the same establishment. It has been assumed that workers with low wages tend to reduce their well-being when they compare themselves to a reference group. However, it has been shown in a research paper that job satisfaction is positively correlated with own wages as those with low-income experience a signal effect in the sense that the higher wages of colleagues are understood as a future opportunity for better wages (Clark et al., 2009).

Employment quality has been studied using the Standard Employment Relationship (SER) as a reference. In this context, seven dimensions have described: *“employment stability, material rewards, workers’ rights, and social protection, working times, employability opportunities, collective organization, and interpersonal power relations”* (Van Aerden et al., 2015; Van Aerden et al., 2014). In a study concerning the correlation between the current employment in Europe and the health and well-being of workers five job types were identified: *“SER-like, instrumental, precarious un-sustainable jobs, precarious intensive and portfolio jobs”* (Van Aerden et al., 2016). These job types were related to mental health, general health, and self-perceived job satisfaction. The SER-like job was found to be the most advantageous employment, while the precarious intensive employment was the worst in terms of mental and general health.

Studies about the job and its relation with mental health and well-being in general address the consequences of the situations lived in the workplace, attitudes about work, and mainly job satisfaction (Sloan, 2012). During the last few years, many studies have shown that low job satisfaction has a strong relationship with burnout, low esteem, and depression-associated symptoms (Koutsimani et al., 2019). Many workers are commonly subjected to work beyond the time agreed in the contract to ensure some goals. However, the link between job satisfaction and mental health problems varies through the life course stages in some professions (Plickerta et al., 2017).

Measures of job satisfaction include some indicators and questionnaires such as the *“War Job Satisfaction Questionnaire, the Occupational Stress Indicators, the Michigan Organizational assessment, the Job Diagnostic Survey, the Job Descriptive Index, the Minnesota Satisfaction Questionnaire and the Brayfield-Roth Questionnaire”* (Faragher et al., 2005). The life course perspective is used to study the effect of *“early-life socioeconomic status”* (SES) and health. Research using this perspective has found that persistent disadvantage, in addition to downward mobility, has negative consequences on mental health (Pudrovskaja and Anikputa, 2013). In this context, two models involving life-course have been used in order to investigate the link between job satisfaction and mental health. One of these models is referred to as the *“accumulation of risk model”*, indicating that the reiterated detrimental exposures to socioeconomic, environmental, or psychological conditions through the life course lead to accumulative effects affecting health quality (Pudrovskaja and Anikputa, 2013). The other life-course model corresponds to the so-called *“social mobility model”*, which implicates early deleterious exposures that are counteracted by future job conditions that are improved by the employer (Ferraro and Shippee, 2009). In this way, the early negative impacts of job dissatisfaction affecting health can be counteracted by future growing levels of job satisfaction. These two models are neither necessarily incompatible nor mutually exclusive as they are strongly interdependent (Hallqvist et al., 2004).

Health outcomes can be assessed by applying scales for mental health and physical health. Scales of mental health measure anxiety, depression, self-esteem, burnout, and general mental health, whereas scales of physical health, which are considered subjective, measure some psychosomatic complaints, including dizziness, muscle pains, headaches, digestive disorders, muscular-skeletal disorders, and cardiovascular disease (Faragher et al., 2005). In these measurements, high levels of job satisfaction are correlated with improved health. In general, the research is aimed at finding a correlation between the dependent variable job satisfaction and independent health variables. The correlations found can be positive or negative.

Understanding the consequences of job dissatisfaction on the workers' health has become a very important research subject during the last decades as mental problems have shown an alarming increase during the last decade in the United States (Dirlam and Zheng, 2017). These problems have included depressive symptoms, stress-associated illness, and job insecurity. It is well documented that job satisfaction is associated with both mental and physical health. However, a meta-analysis of studies concerning this association found that job satisfaction has a strong link with mental health, whereas physical health was only slightly linked with job satisfaction (Faragher et al., 2005). Stress levels associated with jobs have been implicated in several negative physical and mental health outcomes, including a less effective immune system, depression, self-esteem, burnout, and anxiety (Faragher et al., 2005; Fischer and Sousa-Poza, 2009). Using the life course perspective indicated above, another study addressing job satisfaction and its relation with health outcomes identified four job satisfaction trajectory groups according to the degree of satisfaction. This study showed that physical health was less related to job satisfaction than mental health when job trajectory was taken into account (Dirlam and Zheng, 2017).

It has been found that reduction of the workforce has a significant negative impact on the mental health of employees that remain employed because such staff reduction seems to worry employees about their employment (Reichert and Tauchmann, 2017). These worries also

negatively affect general life satisfaction. Furthermore, the reduction of staff generates job insecurity in addition to the health problems. The research results suggest that the reduction of workforce and the subjective work insecurity are producing mental health problems in vulnerable groups.

2.2 Level of studies and Gender in job satisfaction

Using a life perspective and theory about the interface work-family, and job-demand control, the careers of legal professionals (lawyers) were studied in terms of how the mental health trajectories are related to job satisfaction through the different moments of the life course (Plickerta et al, 2017). This study found that the trajectories of depressive symptoms show a decline in the life course. In addition, job satisfaction resulted to be an important factor affecting predominantly the time course of depressive symptoms through the early phases of the professional career. This means that the early stages of the career are more susceptible to be affected by the depression-associated symptoms, leading to lower job satisfaction. Other findings derived from this study showed that authority in the workplace is associated with improved mental health (Plikerta et al., 2017), contributing in this way to greater job satisfaction (Karasek and Theorell, 1990). Although men and women were relatively similar about the overall depressive symptom trajectories, these symptoms were more likely to affect women through the early stages of their careers, since during these stages women face greater challenges.

Professionals form a class of workers that are supposed to be far from monotonous or unpleasant working conditions (Gorman, 2015). Some studies have shown that stress and some mental health disorders are more common in jobs which have low control and high demands. In contrast, healthier mental outcomes are more likely to be found in jobs having high control and low demands (Siegrist et al., 2004). The high work involvement characterizing professions of higher status has been linked to detrimental effects on mental health and job satisfaction

(Fischer and Sousa-Poza, 2009). A life-course perspective has proved to be useful in studies that follow the trajectories of depressive symptoms through age. Using this perspective, it is possible to observe the age-related variations associated with the work characteristics and family circumstances during the different phases of career and life development (Moen and Roehling, 2005).

A number of studies confirm the role that job satisfaction plays in the provision of the mental health of workers. However, in some studies, it has been found that women show higher job satisfaction in comparison to men (Nadinloyi et al., 2013). In the past couple of decades, several studies have found that job satisfaction is significantly influenced by gender. These studies show that women usually declare greater job satisfaction when compared to men. For instance, the European Social Survey, including 14 European countries, indicated that women continue to declare greater job satisfaction in comparison to men, after considering other variables related to working conditions and personal and job characteristics (Hauret and Williams, 2017). The gender differences in job satisfaction seem to be explained by the gender differences in the characteristics of jobs. In other studies, gender-job satisfaction differences are very interesting as women's jobs are generally worse than men's jobs. Despite this well-established difference in job conditions, women declare higher job satisfaction levels in comparison to men. Some speculations suggest that women's expectations are lower than men's expectations (Clark, 1997; Miao et al., 2017). However, some studies addressing gender differences about job satisfaction in university professors have shown that job satisfaction of women is more related with their work, while the job satisfaction of men is more related with their salary, with their supervision, promotions, and job as a whole (Okpara et al., 2005). A study involving university library professionals found significant differences in job satisfaction between women and men. These differences were centered in the supervision parameter, whereas both genders showed equal job satisfaction regarding the job as a whole (Marasinghe and Wijayaratne, 2018.).

Some studies involving medical professionals in China found gender differences in both job quality and job satisfaction. Female doctors had better job quality and greater job satisfaction than their male counterparts (Miao et al., 2017). Gender-associated differences have been related to some characteristics of job quality, such as type of contract, working hours, wages, opportunities for promotion and training, and other working conditions. As the most common pattern, women are at a disadvantage regarding these job characteristics. However, research frequently shows that women perceive greater or equal job satisfaction levels than men, despite having lower wages and working in less attractive jobs (Aletraris, 2010). This perception has been explained in terms of the expectations (Clark, 1997). This means that job satisfaction depends on expectations. Women seem to have lower expectations about the labor market. On the other hand, studies in non-Western societies like China, indicate that women working in retail stores have lower levels of job satisfaction than their men counterparts (Huang and Gamble, 2015). These levels of job dissatisfaction were mainly associated with low wages, interaction with customers, and hours of work. Mental health illnesses affect both men and women but, in statistical terms, some reports suggest that women seem to develop psychological disorders at higher rates than men. However, recent meta-analyses addressing depression and life satisfaction at a national large-scale showed contradictory results (Gigantesco et al., 2019). Studies comparing job satisfaction and mental well-being of medical doctors showed that women are less likely to be diagnosed with depression, despite male and female doctors being subjected to essentially the same job stress (Rout, 1999). These results appear to be in line with previous findings showing that working mothers are less depressed than non-working mothers (Rout et al., 1997).

2.3 Conclusions extracted from the theoretical framework

Having studied the literature and the theoretical framework we can see some patterns amongst several studies that allow us to reach some conclusions. Job satisfaction, understood as emotional reactions and attitudes toward the job are strongly linked to mental health and

physical health. The experiences in the workplace have significant impacts on the mental health of employees, leading in many cases to depression, anxiety, stress, burnout, and low esteem. Several models and methods have been introduced for searching correlations between job satisfaction and mental health disorders. It deserves to be highlighted that significant gender differences have been found by many studies concerning job satisfaction. Despite the fact that work conditions are generally worse for women in comparison to men, female workers usually report greater job satisfaction than male workers in different countries. In addition, the type of contract seems to affect mental health and job satisfaction in connection with the perception of being fired at any time.

Furthermore, it is relevant to mention there is a lack of research on the effect that the type of contract an employee might have on its mental health or job satisfaction. No previous research has been conducted involving Catalonia's workforce concerning the impact of the type of contract on job satisfaction and mental health disorders. However, it is true that some articles have studied the possible repercussions of the feeling of insecurity when it comes to holding a position. It is not a far stretch to say this feeling of insecurity might be linked to the contract an employee might have and makes it worthy of research.

Most research about job satisfaction and mental health addresses employees of professional-level showing some differences depending on the kind of profession, nature of work, working place facilities, and gender. There are too few studies involving employees having lower education levels. Thus, the present study aims at investigating the relationship between job satisfaction and mental health including employees with different education levels and types of contracts.

3. Research questions

With the purpose of finding an eventual correlation between job satisfaction and mental illness risk for the Catalan population and mental health disorders of Catalonia's employees, the present study will focus on the following four research questions:

1- Are there mental health disorders in the Catalan employee population (women and men) that can be linked with the levels of job satisfaction as has been established in other countries and at a similar rate? Objective: To identify any correlation between the levels of job satisfaction and mental health disorders in Catalonia's employees (women and men). Hypothesis: The mental health disorders present in Catalonia's employees (women and men) are correlated with job satisfaction levels as other studies performed in different countries. (Nadinloyi et al., 2013; Hunefeld et al., 2020).

2- Do female employees declare higher job satisfaction levels than male employees in the Catalan workforce? And thus, do they have lower cases of mental disorders? Objective: To determine gender differential job satisfaction levels in Catalan employees and its effects on mental health. Hypothesis: Female employees will report lower levels of mental disorders as they have higher job satisfaction than their male counterparts in the Catalonia workforce. (Miao et al., 2017; Aletraris, 2010; Rout, 1999; Huret and Williams, 2017)

3- Do Catalonia's most educated employees report higher job satisfaction levels than the ones with lower education? And thus, do they have lower cases of mental disorders? Objective: To determine differential job satisfaction levels according to educational levels of the Catalan workforce and their effects on mental health. Hypothesis: Most educated employees will report lower levels of mental disorders as they have higher job satisfaction levels than ones having lower education.

4- Do female employees show a lower number of mental health disorders than their male counterparts? Objective: Estimate the number of female Catalan employees that are affected by mental disorders. Hypothesis: Female employees have a lower number of mental health disorders than their male counterparts. (Gigantesco et al., 2019; Smith et al., 2016)

4. Methodology

4.1 Data:

The present study will use information taken from *Enquesta de Salut de Catalunya* (ESCA) conducted by the Department de Salut de Catalunya (Health Department). This survey collects every year since 1994 information about the state of health, the lifestyle, and the use of health services by the population of Catalonia.

This study will consider data between 2011-2018, the survey included 31,823 participants older than 15 years old, encompassing a similar number of men and women with diverse types of jobs. The survey included information classified in different categories that will be used in this study, such as gender and date of birth, use of medicines, mental health, mental well-being, family context, and socio-demographic data. The used variables will be chosen based on the pertinence for the topic and previous studies regarding the present subject in other populations of employees. However, when the study is further developed, we realize that the sample size will be heavily narrowed. When taking into account specific variables like job satisfaction, we found that not all surveys included the job satisfaction question and not everyone surveyed had a job position by the time of filling the survey. Thus, this fact led to narrowing the initial size of the sample to 7,756, and after adding the remaining variable, the final sample was made up of 6,921 participants.

Measures of job satisfaction

To measure job satisfaction, questionnaires have been used with the goal of evaluating emotional reactions and attitudes of workers towards their job position. Job satisfaction will be categorized in different levels: very dissatisfied, dissatisfied, satisfied, and very satisfied. We will analyze the employees' characteristics contributing to the relationship between job satisfaction and mental health.

Measures of health outcomes

The health outcomes will be assessed using arbitrary scales to measure mental health outcomes such as depression, anxiety, and stress. The 12-item General Health Questionnaire/ Goldberg's index (GHQ-12) will be also applied as a screening instrument for measuring mental health disorders using data from ESCA as a source. The GHQ is used to identify psychiatric disorders in the general population and in the community. The GHQ-12 is made up of 12 items that assess the severity of mental problems during the past few weeks. A scale of 4-points is used (from 0 to 3) where a total score ranging from 0 to 36 is generated. Higher scores indicate worse conditions. The GHQ-12 items include the ability to concentrate, the capability of making decisions, facing up to problems, feeling unhappy and depressed, losing confidence, among others. The questionnaire includes both positively worded and negatively worded items. The negatively worded items are coded as 0 = Not at all; 1 = Seldom; 2 = Usual; and 3 = More than usual, while the positively worded items are reversely scored. All items are added to generate the total score (0 to 36) making it the most complete and simple index in the ESCA database. Moreover, other mental state measurements will be considered as the diagnosis of a doctor of depression and/or anxiety, two of the most common mental illnesses. It will also be considered whether a person was prescribed antidepressants and is currently using them and finally a self-assessment of the feeling of anxiety and/or depression (SAAD).

Control variables

In the present study, independent variables include job satisfaction, age; divided into different intervals or generations: The Silent Generation (before 1945), Baby Boomer Generation

(1946-1964), Generation X (1965-1976), Millennials (1977-1995), Gen z(1996-today), sex (male and female), Home structure; Living alone, Living as a couple, Living as a couple with kids and possibly other people, Single parent possibly living with other people, no nucleus; people flat sharing, and other possibilities, Having dependant children. Study level; I do not know how to read, incomplete primary school, complete primary school, complete middle school [ESO], complete high school, middle-level training program, higher-level training cycle, complete bachelor's degree, complete graduate school, labor contracts; undefined contract, temporary contract less than 6 months, temporary contract more than 6 months less than 1 year, temporary contract more than 1 year less than 2 years, temporary contract more than 2 years, temporary contract with no time specified, a worker with temporary work for a company, Work without a contract, Freelancer [Autonomo] or professional without employees, an employer with less than 10 employees, an employer with more than 10 employees.

4.2 Data analysis:

The data from the ESCA was pooled and the statistical analysis and econometric analysis were done using the ordinary least squared (OLS) regression. The aim of the regression is to try to explain the dependent (Y variables) in our case mental health, and the relation with job satisfaction (X variable). First, a bivariate analysis was done between the variables, later a multi-regression model was incorporated to test additional covariates such as age, sex, level of studies, and type of working contract to obtain the adjusted results of the relation between job satisfaction and mental health. Special attention was given to the possible differences in the relation between the studied variables; job satisfaction and mental health based on sex using t-test. Moreover, the results were adjusted to pre-existent mental health conditions. Possible multicollinearity was tested during the analysis. The statistical analysis was performed using statistical software STATA 15 - 64 for windows. An analysis of job satisfaction throughout the labor life-course would be desirable but the primary data only allow for a cross-section study. (See codebook located at the appendix for a better understanding variable construction)

The following equation will be used to approach the relationship between job satisfaction and mental health disorders:

$$MH_i = \alpha + \beta JS_i + \delta_j \sum X_{ji} + \partial FE_{t,r} + \varepsilon_i$$

MH is how we measure mental health for the individual i , set in terms of the GHQ-12 index of whether or not a person is likely to develop a mental illness. α is the value of MH when all variables are equal to 0. β is the coefficient of the main independent variable Job Satisfaction and δ is the coefficient for the set j of covariates X . The coefficient time and regional fixed effects in this regression are given by ∂ . Ultimately, ε_i represents the error term of the regression.

5. Results:

5.1 Descriptive analysis

For approaching the statistical significance of the relationship between the chosen variables and the perception about job satisfaction, several OLS regression models were conducted. This descriptive analysis included the relationship between the perception of being satisfied (or unsatisfied) and variables including individual characteristics, satisfaction by work, generation of birth, formal education, working conditions, type of contract, and mental health. The description included means percentage values, standard deviation (SD), and their significance indicated by p-values. The results are shown in Table 1.

Table 1.Descriptive table

Variable	Entire Sample			Satisfied		Unsatisfied		p-value
	Obs	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	
Individual characteristics								
Sex(female)	31823	0.503	0.500	0.457	0.498	0.471	0.499	0.368
Age	31823	49.227	20.049	42.274	11.258	41.549	11.161	0.039
Age Squared	31823	2825.247	2135.060	1913.860	972.570	1850.757	950.359	0.037
Living alone	31823	0.100	0.300	0.077	0.267	0.080	0.271	0.723
Living as a couple	31823	0.246	0.431	0.194	0.396	0.205	0.404	0.371
Living as a couple with children or other people	31823	0.515	0.500	0.598	0.490	0.554	0.497	0.005
Single parent + Other people	31823	0.084	0.277	0.072	0.258	0.084	0.278	0.130
No nucleus	31823	0.029	0.167	0.030	0.171	0.047	0.213	0.002
Other kind of cohabitation	31823	0.027	0.161	0.029	0.168	0.029	0.168	0.978
Having dependent children	31823	0.572	0.495	0.653	0.476	0.618	0.486	0.019
Satisfaction								
Satisfied by work	11614	0.902	0.297					
Generations by birth								
Silent gen (before 1945)	31823	0.193	0.395	0.003	0.051	0.002	0.042	0.598
Baby boomers (1946-1964)	31823	0.269	0.444	0.261	0.439	0.259	0.438	0.906
Gen x (1965-1976)	31823	0.214	0.410	0.343	0.475	0.313	0.464	0.043
Millennials & Gen Z (1977-Today)	31823	0.323	0.468	0.394	0.489	0.426	0.495	0.034
Formal Education								
Universitaray studies	31782	0.185	0.388	0.297	0.457	0.262	0.440	0.016
Secondary education	31782	0.569	0.495	0.609	0.488	0.614	0.487	0.769
Primary education	31782	0.151	0.358	0.078	0.268	0.093	0.291	0.064
No education	31782	0.095	0.294	0.017	0.128	0.031	0.173	0.001
Working conditions								
Perception of probability of being fired	14976	0.129	0.336	0.085	0.279	0.285	0.452	0.000
Extra hours worked	11593	0.213	0.410	0.207	0.405	0.264	0.441	0.000
Type of Contract								
Indefinite contract	26098	0.602	0.490	0.636	0.481	0.516	0.500	0.000
Temporary < 12 months	26098	0.083	0.276	0.058	0.233	0.097	0.297	0.000
Temporary >= 1 year	26098	0.018	0.132	0.016	0.126	0.016	0.126	0.987
Temporary not specified	26098	0.067	0.250	0.053	0.224	0.151	0.359	0.000
No contract	26098	0.043	0.204	0.019	0.136	0.055	0.228	0.000
Autonomo	26098	0.187	0.390	0.218	0.413	0.165	0.371	0.000
Mental Health								
Self-perception of depression or anxiety	24124	0.177	0.382	0.087	0.282	0.211	0.408	0.000
Diagnosed anxiety	3743	0.116	0.320	0.072	0.258	0.145	0.353	0.001
Diagnosed depression	3745	0.106	0.308	0.048	0.214	0.094	0.293	0.012
Diagnosed depression and/or anxiety	7824	0.125	0.330	0.076	0.266	0.188	0.392	0.000
Goldberg's Index (GHQ-12)	23026	0.091	0.287	0.049	0.215	0.174	0.380	0.000
Taking antidepressants	28075	0.077	0.267	0.036	0.185	0.070	0.256	0.000
Observations	31823			10,475		1,139		

Note: Significant at a 99% $p < 0.01$, 95% $p < 0.05$, 10% $p < 0.1$. The independent variable satisfied by work is defined by 1 when the employee is satisfied or 0 when is unsatisfied. Individual variables: Sex, Home structure, Age and having dependent children which is defined by 1 if they have children living with them and 0 if not. Generation by birth is divided in silent generation, baby boomers, gen x, millennials and gen z. Formal education are defined by education level: no education, primary education, secondary education, and university education where having a level education is represented by 1 and lacking by 0. Working conditions are defined by 1 when perception of being fired is present and 0 when this perception is absent. Working extra hours is defined by 1 and no working extra hours by 0. Type of contract is divided into indefinite, temporary < 12 months, temporary >= 1 year, temporary not specified, and autonomo. Having a type of contract is defined by 1 and lacking a type of contract is defined 0. Mental health is defined by 1 when having a mental illness or at risk of having it.

Table 1 shows the descriptive statistics of the variables used in this study/TFG. Columns 1, 2, and 3 are displaying the entire sample while columns 4 and 5 display only the labor force sample that considers itself satisfied with its current job. Columns 6 and 7 display the people that considered themselves unsatisfied with their job, while the last column (8) presents the p-value of the t-test for the mean differences found in the correlation between two variables such as job satisfaction and each of the corresponding variables per row. Furthermore, the variables were divided into seven groups: Individual characteristics, Satisfaction, Generation by birth, Formal Education, Working conditions, Type of contract, and Mental health. Table 1 also shows in its columns the number of observations, the mean and standard deviation of the variables, and the effect that satisfaction has on these variables.

Considering the aforementioned data, we should start describing the demographics of Table 1 to better understand the sample of the Catalan population that was taken as the object of study. Table 1 shows that the sample is well balanced when it comes to sex since the sample included a similar proportion of people from each sex: 50.2% female and 49.8% male. Moreover, women are less unsatisfied when considering the mean for unsatisfied workers, for which females amount to 47.1%. The sample also has a representative number of people from each generation when the year of birth was considered since each generation has the participation of at least 19%. Moreover, we can see from the variable age that the average age for the participants was 49 years old and we included an age squared variable to check for a possible U-shaped tendency when it comes to the relationship between age and mental health. Now the family structure of each individual was considered in the study bearing in mind each cohabitation style a person might have, which included living in a couple with children and possibly with other people that are currently the most common type of cohabitation and represented 51% of cases. There is another variable that aims to measure the number of interviewees with dependent children, which represents 57% of the Catalan population. Furthermore, people were also divided into 4 levels according to the education reached finding that the majority (56.9%) only reached secondary education.

It is also relevant to take into account some of the conditions of the workers such as the number of people doing extra working hours (21%) and the perception of people about their job security in terms of how likely they are to be fired (13%). Finally, we look at the surveyed data regarding the mental health conditions of participants. For this purpose, they were divided into different variables in such a way that we could take into account the people who according to a doctor's diagnosis are mentally ill, the self-perception of each individual of their mental state, the mental condition according to the Goldberg's index (GHQ-12) and finally whether or not they are currently taking antidepressants. Depending on the variable considered, the measurement of people with mental illnesses or with the risk of developing them may range between 9% and 12% of the Catalan society.

Now, regardless of the variable for mental health used, we found that when we studied the relationship between mental health and job satisfaction there was always a significant correlation. This is seen from the difference between mean values. For instance, taking the Goldberg's index we found that only 4.9% of the people satisfied with their job are mentally at risk whilst their counterpart, the unsatisfied employees, exhibited 17.4% of people who are mentally at risk, which is about three times higher than that for satisfied employees. This data is only reinforced when comparing it with the p-values representing a relevant significance in the correlation between the two variables GHQ-12 and job satisfaction as its p-value is lower than 0.05. The present results support our hypothesis that mental health disorders affecting Catalanian employees are correlated with job satisfaction levels.

Furthermore, when considering the generations to which people belong to, it is important to highlight in the case of the older generation, like the silent generation and baby boomers, that there is not a significant relationship between the year the participants were born and their level of work satisfaction. This result is supported by the fact that for both generations their p-values exceeded 0.05. However, the younger generations, like gen x, millennials, and gen z, were found to have a significant correlation between the year of their birth including the context in which they grew up, and their level of job satisfaction. This is especially true for

millennial and gen z whose p-value for this correlation is 0.034 and the mean percentage of unsatisfied people is 43% compared to 39% for satisfied people, a very worrying result. When considering age as a whole, we found that indeed the variable age shows a significant level of correlation when tested against job satisfaction, having a p-value of 0.039.

As mentioned before, living with your couple, children, and possibly other people like other family members is the most common type of family structure in Catalonia. When considering variables related to the family structure, we found that living with your couple with children and possibly other people and those living with no nucleus which means cohabitations like flat-sharing (flatmates), are significantly correlated to job satisfaction. We found a similar relationship when taking into account the variable having “dependent children”. This significant relationship is evident when looking at the p-value 0.019.

Additionally, when looking at the level of education achieved, we find the very interesting fact that only those who have only achieved a secondary level of education seem to be the only ones who are not affected when it comes to the relationship between education and job satisfaction, as this correlation has a p-value of 0.769. In the case of all the others surveyed, it seems to be that a significant correlation between job satisfaction and level of study certainly exists.

Regarding our hypothesis related to education levels, our study supports the hypothesis that most educated employees will report lower levels of mental disorders as they have higher job satisfaction levels than ones having lower education. However, we found that people with only a secondary education level don't seem to be affected by the relationship between education level and job satisfaction. According to previous reports, our findings strengthen the general trend about the positive relationship between job satisfaction and education level.

Likewise, the fear of being fired and working extra hours seems to have a significant correlation when job satisfaction was addressed. Both of their p-values are 0.00 and both of their means are considerably higher when comparing the unsatisfied people with the satisfied ones. This is

not a definite conclusion but it is important to note that if the mentioned above work conditions lead to poor mental health, proper measures should be applied to prevent further development of mental illnesses. Finally, we found that the type of contract a person has, except for temporary contracts longer than or equal to one year, seems to have a significant correlation with job satisfaction according to the p-value found, although we must take these values as preliminary ones since the sample analyzed is not big enough to draw any definite conclusions.

5.2 Econometric Analysis

Job satisfaction has been reported as having effects on mental health. Studies addressing these effects can be performed through a cross-section event. The present study corresponds to the later one in which OLS regression models were used to test for a significant correlation between job satisfaction and the GHQ-12. In searching for the significance of this correlation, we also used different covariates. The results of this regression analysis are shown in Table 2.

Table 2. OLS Regression model analysis of mental health, job satisfaction and covariates

	1	2	3	4	5	6	7	8
VARIABLES	GHQ-12	GHQ-12	GHQ-12	GHQ-12	GHQ-12	GHQ-12	GHQ-12	GHQ-12
Satisfied by work	-0.1258*** (0.009)	-0.1242*** (0.009)	-0.1243*** (0.009)	-0.1238*** (0.009)	-0.1104*** (0.009)	-0.1169*** (0.010)	-0.1135*** (0.010)	-0.1128*** (0.010)
Observations	7,756	7,756	7,756	7,752	7,514	6,921	6,921	6,921
R-squared	0.025	0.035	0.036	0.038	0.049	0.054	0.066	0.070
Individual Characteristics	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Generation by Birth	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Level of Education	No	No	No	Yes	Yes	Yes	Yes	Yes
Working Conditions	No	No	No	No	Yes	Yes	Yes	Yes
Type of Contract	No	No	No	No	No	Yes	Yes	Yes
Year FE	No	No	No	No	No	No	Yes	Yes
Region FE	No	No	No	No	No	No	No	Yes

Note: Standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The independent variable satisfied by work is defined by 1 when the employee is satisfied or 0 when is unsatisfied. Individual variables: Sex, Home structure and having dependent children which is defined by 1 if they have children living with them and 0 if not. Generation by birth is divided in silent generation, baby boomers, gen x, millennials and gen z. Formal education are defined by education level: no education, primary education, secondary education, and university education where having a level education is represented by 1 and lacking by 0. Working conditions are defined by 1 when perception of being fired is present and 0 when this perception is absent. Working extra hours is defined by 1 and no working extra hours by 0. Type of contract is divided into indefinite, temporary < 12 months, temporary ≥ 1 year, temporary not specified, and autonomo. Having a type of contract is defined by 1 and lacking a type of contract is defined 0. Mental health is defined by 1 when having a mental illness or at risk of having it.

Drawing on the effects of job satisfaction on mental health from an empirical point of view, we use data from the ESCA done by the Department of Health of Catalonia from the years 2011-2018. This data combines answers from thousands of Catalan residents randomly selected. Despite the fact the study is not longitudinal, the possibility of cohort effects is partly addressed by collecting data two times per year in a representative manner being cross-sectional research. Several multilinear regression lines were made in order to check the relationship between the studied variables. In this study, every single variable is given a coefficient that was categorized by stars (or asterisks) depending on their p-values. Those with no stars did not reach the minimum threshold of significance, however, this does not mean that they should not be commented upon. Furthermore, every regression includes an R-squared, which shows what percentage of mental health explained by each individual model. Taking into account the nature of this research low values for the R-squared are expected.

After doing the OLS regression models, we can safely say there exists a significant negative correlation between job satisfaction and the GHQ-12. This is shown in Table 2 where from column 1 until 8 is displayed the evolution of the satisfaction variable and its negative coefficient. The negative coefficient suggests a relationship of around 12% points between our main studied two variables. In the subsequent analysis done between job satisfaction and the GHQ-12 it was taken into account different covariates categorized by individual Characteristics, Generation By Birth, Level of Education, Working Conditions, Type of Contract, fixed by time, and regional location. The results showed a decrease in the coefficient of the relation between job satisfaction and the GHQ-12 by less than 2 percent% with the largest effect done by working conditions.

Table 3 (See Appendix) shows a complete view of the regressions with all the variables taken into account. We can see each coefficient for every single variable and its interaction with GHQ-12, which are indicated in columns 1 to 8. In order to discuss the results, we can first address the variables that show a significant relationship with mental health. We found positive significant correlations between mental illnesses and variables such as being female (0.0465***), belonging to the silent generation (0.1192*), perception of probably being fired (0.0733***), and performing extra hours (0.0190***). Further analysis of these variables showed that being female increased 4.7% the likelihood of suffering from a mental illness. This might be due to the fact that women's stress starts earlier in their career (Plikerta et al., 2017). However, most research suggests that women are more likely to develop mental illness, besides the fact women are more likely to look for professional help when suffering from anxiety or depression hence there is a higher count of women linked to these diseases.

On the other hand, older people also appear to tend to develop more mental problems due to age deterioration but further research is needed. That is why people belonging to the silent generation are more likely to develop mental problems. It is worth mentioning that we used dummy variables of generations rather than the continuous variable age because in our model age did not have a significant p-value while generations did. Another advantage of using

generations is that we can see more clearly the effects of mental health on specific groups of society for example the youth and the elderly.

As mentioned before the worsening of working conditions leads to lower job satisfaction and worsening mental health. This was confirmed by the fact that both of our variables related to the working conditions were positively associated with the probability of developing mental conditions. When there is uncertainty, as it is the case of the perception of the possibility of losing your job, it creates constant worrying that is believed to decrease job satisfaction and worsen mental health (Reichert and Tauchmann, 2017). This previous finding was well aligned with our research. The performance of extra hours has a positive correlation with our GHQ-12 variable of about 2% which further strengthens the belief that a worsening of the working conditions has a negative effect on people's health.

In contrast, we now address the variables that are negatively correlated with the GHQ-12. These are: living with your couple $-(0.0401)$, finishing a university degree $-(0.0141)$, having a temporary contract shorter than 12 months $-(0.0209)$, and having a temporary non-specific contract $-(0.0310)$. Studies have shown that living with a partner might be beneficial for one's health as he/she will care for the partner and call him/her out on possibly harmful decisions. This might explain the inverse correlation that we found with mental health. People with college degrees appear to be more frequently in jobs where they are more mentally stimulated and have better working conditions than those who do not have a degree. Hence, it is expected that their mental health is better due to the fact they keep their brains stimulated by more intellectual challenges and are supposed to have less work stress-related issues. Finally, as mentioned in the theoretical framework, there is a lack of research when it comes to the effects of the type of contract produced on both mental health or job satisfaction. Regarding this particular subject, we could speculate about the reason why this kind of contract: temporary contracts shorter than 12 months and having a temporary non-specific contract is inversely related to the likelihood of being mentally ill. This appears to be due to the freedom these kinds of contracts grant, freedom in the sense these contracts can easily allow switching

between job positions, and in the case of the temporary nonspecific contract employees have the freedom to set their schedules and time frames when performing a job.

Table 5. OLS Regression model analysis of the relationship between job satisfaction and different measures of mental health

VARIABLES	1 (GHQ-12)	2 (Diagnosed)	3 (Drug prescription)	4 (SAAD)
Satisfied by work	-0.1128*** (0.009)	-0.1049*** (0.009)	-0.0301*** (0.009)	-0.1082*** (0.009)
Observations	6,921	3,478	8,747	6,990
R-squared	0.070	0.063	0.039	0.066
Individual Characteristics	Yes	Yes	Yes	Yes
Generation By Birth	Yes	Yes	Yes	Yes
Level of Education	Yes	Yes	Yes	Yes
Working Conditions	Yes	Yes	Yes	Yes
Type of Contract	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes

Note: Standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ The independent variable satisfied by work is defined by 1 when the employee is satisfied or 0 when is unsatisfied. Individual variables: Sex, Home structure and having dependent children which is defined by 1 if they have children living with them and 0 if not. Generation by birth is divided in silent generation, baby boomers, gen x, millennials and gen z. Formal education are defined by education level: no education, primary education, secondary education, and university education where having a level education is represented by 1 and lacking by 0. Working conditions are defined by 1 when perception of being fired is present and 0 when this perception is absent. Working extra hours is defined by 1 and no working extra hours by 0. Type of contract is divided into indefinite, temporary < 12 months, temporary \geq 1 year, temporary not specified, and autonomo. Having a type of contract is defined by 1 and lacking a type of contract is defined 0. Mental health is defined by 1 when having a mental illness or at risk of having it

To attempt to further test the hypothesis of the relationship between job satisfaction and mental health, it was required to repeat the final regression model with all the covariates and accounting for the different fixed effects with different measurements of mental health stability. In the first column of Table 5 we have as our baseline the GHQ-12 index, in the second column, the people who have been diagnosed with either depression or anxiety, the two most common mental illnesses related to work burnout, and overall in the mental disease spectrum. Then, the third column displays the people with prescriptions for antidepressants and that have taken them within a 2-day span before the survey. The fourth column shows the self-perception of feelings of depression and/or anxiety. Across the different measures of mental health, we

noticed a very important trend that all of the just mentioned are inversely related to job satisfaction and most notably they all have a 99% significance level. These results contribute to a robustness test and confirm the inverse relationship we have found. Looking deeper into the regressions with different Y measurements, it was found in table 4 (appendix), which includes all variables used that variables like sex, the perception of being fired, university studies, and living as a couple remained significant among all or almost all of the regressions. It is also important to note that the number of observations and r-squared values also vary significantly depending on the measure used for mental health.

Table 6. Logistic regression analysis

VARIABLES	(1) (GHQ-12)	(3) (Logistic)
Satisfied by work	-0.1141*** (0.009)	-1.2760*** (0.127)
Sex(female)	0.0474*** (0.006)	0.9178*** (0.113)
Silent gen (before 1945)	0.1138* (0.062)	1.5131* (0.867)
Universitary studies	-0.0168*** (0.007)	-0.3335** (0.131)
Perception of probability of being fired	0.0707*** (0.009)	0.8654*** (0.132)
Extra hours worked	0.0168** (0.007)	0.3290*** (0.127)
Temporary not specified	-0.0272** (0.012)	-0.3667 (0.237)
Observations	6,921	6,921
R-squared	0.067	
Individual Characteristics	Yes	Yes
Generation By Birth	Yes	Yes
Level of Education	Yes	Yes
Working Conditions	Yes	Yes
Type of Contract	Yes	Yes
Year FE	Yes	Yes
Region FE	Yes	Yes

Note: Standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The independent variable satisfied by work is defined by 1 when the employee is satisfied or 0 when is unsatisfied. Individual variables: Sex, Home structure and having dependent children which is defined by 1 if they have children living with them and 0 if not. Generation by birth is divided in silent generation, baby boomers, gen x, millennials and gen z. Formal education are defined by education level: no education, primary education, secondary education, and university education where having a level education is represented by 1 and lacking by 0. Working conditions are defined by 1 when perception of being fired is present and 0 when this perception is absent. Working extra hours is defined by 1 and no working extra hours by 0. Type of contract is divided into indefinite, temporary < 12 months, temporary ≥ 1 year, temporary not specified, and autonomo. Having a type of contract is defined by 1 and lacking a type of contract is defined 0. Mental health is defined by 1 when having a mental illness or at risk of having it.

Moreover, we get further confirmation thanks to a logistic regression shown in Table 6, although we are not interested in predicting values using this model. Instead, the fact that the signs of the variables are the same between both models supports the claims of the relationship between job satisfaction and mental health. The findings of our study are also giving strong support to our research hypothesis about the existence of the above-mentioned relationship in the population sample studied that was taken from Catalonia's employee

community. Our results not only extend the knowledge about the effects that job satisfaction has on the employees' mental health but also support the issuance of public policies aimed at preventing and monitoring the mental health of the workforce to ensure the best job conditions.

Table 7. Analysis of integrations of the interaction variable

VARIABLES	(1) (Normal)	(2) (Interaction)
Satisfied by work	-0.1128*** (0.010)	-0.0812*** (0.013)
Women satisfied		-0.0682*** (0.018)
Sex(female)	0.0465*** (0.006)	0.1079*** (0.018)
Observations	6,921	6,921
R-squared	0.070	0.072
Individual Characteristics	Yes	Yes
Generation By Birth	Yes	Yes
Level of Education	Yes	Yes
Working Conditions	Yes	Yes
Type of Contract	Yes	Yes
Year FE	Yes	Yes
Region FE	Yes	Yes

Note: Standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The independent variable satisfied by work is defined by 1 when the employee is satisfied or 0 when is unsatisfied. Individual variables: Sex, Home structure and having dependent children which is defined by 1 if they have children living with them and 0 if not. Generation by birth is divided in silent generation, baby boomers, gen x, millennials and gen z. Fomal education are defined by education level: no education, primary education, secondary education, and university education where having a level education is represented by 1 and lacking by 0. Working conditions are defined by 1 when perception of being fired is present and 0 when this perception is absent. Working extra hours is defined by 1 and no working extra hours by 0. Type of contract is divided into indefinite, temporary < 12 months, temporary \geq 1 year, temporary not specified, and autonomo. Having a type of contract is defined by 1 and lacking a type of contract is defined 0. Mental health is defined by 1 when having a mental illness or at risk of having it.

It is important to understand the differences between sexes and how women and men are affected differently in terms of their coefficients of satisfaction. Regarding our hypothesis that female employees have a lower number of mental health disorders than their male counterparts as women have higher job satisfaction than men, we have to conclude that our previous hypothesis was not supported by the analysis of the empirical data. Table 7 displays the integrations of interactions that allowed us to measure satisfaction by gender. Men display an 8.12% fewer chance of developing a mental illness. Women on the other hand have a 14.94% lower probability of developing mental disorders hence women seem to be more affected when it comes to the effects of job satisfaction on mental health.

6. Conclusions:

Job satisfaction is linked to having an inverse relationship with developing mental illnesses. This research has found that the renown Goldberg's index, or GHQ-12, is negatively associated with positive levels of satisfaction for the Catalan workforce in other words if you are satisfied with your job you are less likely to develop mental health problems. This statement holds true when replacing the Y (dependent variable) with different measurements of mental health status. Using covariates we tried to get a refined and more complete outlook of how we could explain the GHQ-12. Accounting for potential confounding factors, we realized that working conditions had the most significant effect on both mental health and job satisfaction. Based on the results shown in Table 3, in which a 99% significance was obtained, when the working conditions are included in the estimation of the correlation between job satisfaction and mental health, two effects are observed: the coefficient of job satisfaction decreases and the coefficient of each of the variables of working conditions are positively associated with the worsening of mental health.

Based on the results from the data analysis, female employees in Catalonia have a similar proportion of satisfied participants (45%) against unsatisfied participants (47%) (Table 1). This result could be affected by a disproportionate number of male respondents to that particular question. Furthermore, the females in the sample who showed lower job satisfaction had an

increased risk to develop a mental health illness. This is due to the fact that women are more sensitive to changes in job satisfaction. It is also true that being a woman increases the likelihood to develop a mental disorder. Amounting for both tendencies is only normal that women exhibit a higher proportion of mental illnesses compared to their male counterparts.

The colinearity of different variables due to their close relationship limited our study by decreasing the significance of such variables. Nonetheless, it is important to mention that despite there being a clear correlation between job satisfaction and ill mental state in our study, we cannot claim a direct causal effect of dissatisfaction on mental illnesses because it can not be excluded that a reverse causality can occur. This means that pre-existent mental health disorders generated in external environments (e.g. family environment) could affect subjective job satisfaction. However, trying to differentiate the internal and external factors affecting the aforementioned relationship, would be beyond the scope of the present study.

Additionally, other studies could be made to increase the richness of the study like performing an odd ratio in logistic regression to interpret the results and predict future outcomes. Adding more control variables such as socioeconomic status, the number of children, and type of industry working in, would be very interesting to further understand the effect of individual conditions on mental health and job satisfaction. Other ways to improve the study could imply deeper research about the already tested variables. Taking university education as an example, this level of education was found to be significantly correlated with both mental health and job satisfaction; nonetheless, it would be quite interesting to examine the probable specific effects the different levels of university studies have (undergraduate, graduate, and doctoral studies) on the above-mentioned variables. A similar analysis could be made by considering more levels of job satisfaction that, for our purposes, this variable was divided into either satisfied or not satisfied. However, if we wish to study this variable more in-depth, we could address the effects of being very satisfied with only satisfied or the effects of being very unsatisfied with only unsatisfied. To get a more complete picture of the effects of the variables studied in our

research, it would be very desirable to have a larger sample of data to be analyzed or ideally data throughout the working life course to facilitate a longitudinal study.

Finally, the results presented here provided bases for strengthening public policies aimed at preventing harmful working conditions especially for women as they are being more affected in their mental health by the current working conditions and job satisfaction. These public policies should consider stricter labor regulations about the overtime hours allowed during the workday. In addition, it is recommended the issuance of public policies aimed at encouraging and supporting access and success in terms of completion of higher education levels.

Acknowledgments

I would like to thank my tutor Dr. Helena Hernández Pizarro for her involvement and guidance during this research, Dr. José Ignacio Monreal Galán for his assistance and the Acosta - Orozco family for their support.

References

- Aletraris, L. 2010. How satisfied are they and why? A study of job satisfaction, job rewards, gender and temporary agency workers in Australia. Human Relations, 63: 8, 1129–1155.
- Blanchflower, D. G. and Oswald, A. J. 2008. Is well-being U-shaped over the life cycle? *Social Science and Medicine* 66(8): 1733–1749. doi: 10.1016/j.socscimed.2008.01.030
- Bohlander, GW., Snell, SA. 2013. Principles of human resources management. Jersey City, NJ: South-Western Cengage Learning India.
- Brown, D., McIntosh, S. 2003. Job satisfaction in the low wage service sector. *Applied Economics*, 35: 1241–1254
- Bruno SF, Catoleo FE, Dessy O. 2013. Temporary Contracts and Young Workers' Job Satisfaction in Italy. The Institute for the Study of Labor (IZA). Discussion Paper Series. <http://repec.iza.org/dp7716.pdf>.
- Cascio, WF. *Managing human resources: Productivity, quality of work life, profits*. Boston, MA: McGraw-Hill Irwin.
- Chisholm D, Sweeny K, Sheehan P, Rasmussen B, Cuijpers P, et al. 2016. Scaling up treatment of depression and anxiety: a global return on investment analysis. *The Lancet* 3(5): 415-424.
- Clark, A. E., Kristensen, N. and Westergård, N. 2009. Job satisfaction and co-worker wages: Status or signal. *Economic Journal* 119: 430–447. doi: 10.1111/j.1468-0297.2008.02236.x
- Clark AE. 1997. Job satisfaction and gender; Why are women so happy at work?. *Journal of Human Capital* 4(4): 341-372.
- de la Fuente A. 2011. Human capital and productivity. Instituto de Análisis Económico (CSIC). Barcelona Economics Working Paper Series. Working paper No. 530. Graduate School of Economics. <http://www.iae.csic.es/investigadoresMaterial/a12114115634archivoPdf97221.pdf>
- Dirlam J., Zheng H. 2017. Job satisfaction developmental trajectories and health: A life course perspective. *Social Science & Medicine* 178: 95-103.
- Faragher, E.B., Cass, M., Cooper, CL. 2005. The relationship between job satisfaction and health: a meta-analysis. *Occup. Environ. Med.* 62: 105e112.
- Ferraro, KF., Shippee, TP. 2009. Aging and cumulative inequality: how does inequality get under the skin? *Gerontologist* 49: 333e343.

Fischer, JA., Sousa-Poza A. 2009. Does job satisfaction improve the health of workers? New evidence using panel data and objective measures of health. *Health Economics* 18(1): 71–89.

Gaebel, W., Muijen, M., Baumann, A., Bhugra, D., Wasserman, D., van der Gaag, R. et al. 2014. EPA guidance on building trust in mental health services. *European Psychiatry*, 29, 83-100. doi:10.1016/j.eurpsy.2014.01.001

Gigantesco A, Fagnani C, Toccaceli V, Stazi MA, Lucidi F, Violani C, Picardi A. 2019. The Relationship Between Satisfaction With Life and Depression Symptoms by Gender. *Frontiers in Psychiatry* 10: 419.

Gorman EH. 2015. Getting ahead in professional organizations: Individual qualities: Socioeconomic background and organizational context. *Journal of Professions and Organization* 1: 1:26.

Hallqvist, J., Lynch, J., Bartley, M., Lang, T., Blane, D., 2004. Can we disentangle life course processes of accumulation, critical period and social Mobility? An analysis of disadvantaged socio-economic positions and myocardial infarction in the stockholm Heart epidemiology program. *Soc. Sci. Med.* 58,: 1555e1562.

Hauret L., Williams DR. 2017. Cross-national analysis of gender differences in job satisfaction. *Industrial Relations* 56(2): 203-235.

Hendarmin H., Kartika M. 2019. The Relationship Between Human Capital and the Regional Economy Productivity. *Journal of Economics and Policy* 12(1): 138-152.

Huang O, Gamble J. 2015. Social expectations, gender and job satisfaction: Front-line employees in China’s retail sector. *Human Resources Management Journal* 25(3): 331 – 347

Karasek R., Theorell T. 1990. *Healthy work: Stress, productivity and the reconstruction of working life.* New York, NY: Basic Books.

Kim M-S., Kim T., Lee D., Yook J-H., Hong Y-C., Lee S-Y., Yoon J-H., Kang M-Y. 2018. Mental disorders among workers in the healthcare industry: 2014 national health insurance data. *Annals of Occupational and Environmental Medicine* 30: 31.

Koutsimani P., Montgomery A., Georganta K. 2019. The Relationship Between Burnout, Depression, and Anxiety: A Systematic Review and Meta-Analysis. *Front. Psychol* 10: 284. <https://doi.org/10.3389/fpsyg.2019.00284>

Leifer, D. 2004. On the up. *Nursing Standard* 18(30): 18.

Maamari BE. 2014. Changing management history, gender moderating pay to job satisfaction for IS users. *Journal of Management History* 20: 311-332.

Manuere F. 2017. Human Capital Development Programmes and their Effect on the Job Satisfaction of Workers in Zimbabwe Urban Municipalities: The Case of Chinhoyi. *International Journal of Academic Research in Business and Social Sciences* 7(12): 874-889.

Marasinghe MPLR., Wijayaratne A. 2018. The Impact of Gender Differences on Job Satisfaction of University Library Professionals. *Journal of the University Librarians Association of Sri Lanka* 21(2): 1-20 DOI: <https://doi.org/10.4038/jula.v21i2.7905>

Mark G., Smith A.P. 2011. Effects of occupational stress, job characteristics, coping, and attributional style on the mental health and job satisfaction of university employees. *Anxiety, Stress, & Coping* <http://dx.doi.org/10.1080/10615806.2010.548088>

Miao Y., Li L., Bian Y. 2017. Gender differences in job quality and job satisfaction among doctors in rural western China. *BMC Health Services Research* 17:848 DOI 10.1186/s12913-017-2786-y

Moen, P., & Roehling, P. 2005. *The career mystique: Cracks in the American dream*. Lanham, MD: Rowman & Littlefield.

Nadinloyi KB., Sadeghib H., Hajlooc N. 2013. Relationship Between Job Satisfaction and Employees Mental Health. *Procedia - Social and Behavioral Sciences* 84: 293 – 297.

Okpara, J., Squillace, M. and Erondy, E. 2005. Gender differences and job satisfaction: a study of university teachers in the United States. *Women in Management Review* 20(3): 177-190. <https://doi.org/10.1108/09649420510591852>

Oshagbemi T. 1999. Overall job satisfaction: how good are single vs. multiple-item measures? *Journal of Managerial Psychology* 1999;14: 388–403.

Plickerta G., Kay F., Hagan J. 2017. Depressive symptoms and the salience of job satisfaction over the life course of professionals. *Advances in Life Course Research* 31: 22–33.

Pudrovska T., Anikputa B. 2013. Early-life socioeconomic status and mortality in later life: an integration of four life-course mechanisms. *Journals Gerontology, Ser. B Psychol. Sci. Soc. Sci.* 69 (3): 451e460.

Reichert AR., Tauchmann H. 2017. Workforce reduction, subjective job insecurity, and mental Health. *Journal of Economic Behavior & Organization* 133: 187-212.

Rout U. 1999. Gender differences in stress, satisfaction and mental wellbeing among general practitioners in England. *Psychology, Health & Medicine* 4(4): 345 – 354.

Rout U., Cooper, CL. & Kerslake H. (1997). Working and non-working mothers: a comparative study. *Women in Management Review* 12(7,8): 264 - 275.

Scott-Marshall, H., 2010. The social patterning of work-related insecurity and its health consequences. *Soc. Indic. Res.* 96 (2): 313e337.

Shobe K. 2018. Productivity Driven by Job Satisfaction, Physical Work Environment, Management Support and Job Autonomy. *Business and Economics Journal* 9: 2 DOI: 10.4172/2151-6219.1000351

Siddiqui NN. 2015. An Empirical Study on Job Satisfaction among Faculties in Selected Personal Universities Of Uttar Pradesh. *International Journal of Management Research and Reviews* 5: 238-245.

Siegrist, J., Starke, D., Chandola, T., Godin, I., Marmot, M., Niedhammer, I., et al. 2004. The measurement of effort-reward imbalance at work: European comparisons. *Social Science and Medicine*, 58: 1483–1499.

Sloan, M. 2012. Unfair treatment in the workplace and worker well-being: The role of coworker support in a service work environment. *Work and Occupations*, 39 (1): 3–34.

Smith DT, Mouzon DM, Marta Elliott M. 2016. Reviewing the assumptions about men's mental health: An exploration of the gender binary. *American Journal of Men's Health* 12(1) DOI: 10.1177/1557988316630953

Steyna R., and Vawda N. 2014. Job characteristics: their relationship to job satisfaction, stress and depression. *J Psychol Afr.* 24(3): 281–284.

Stolzer JM. 2016. The meteoric rise of mental illness in America and implications for other countries. *The European Journal of Counselling Psychology* 4(2): 228-246 doi:10.5964/ejcop.v4i2.77

Twenge JM, Cooper AB., Joiner TE., Duffy ME., Binau SG. 2019. Age, period, and cohort trends in mood disorder indicators and suicide-related outcomes in a nationally representative dataset, 2005–2017. *Journal of Abnormal Psychology*, DOI: [10.1037/abn0000410](https://doi.org/10.1037/abn0000410)

Van Aerden K., Moors, G., Levecque K., Vanroelen, C. 2014. Measuring employment arrangements in the European labour force: a typological approach. *Soc. Indic.* 116: 771e791.

Van Aerden K., Moors G., Levecque K., Vanroelen, C. 2015. The relationship between employment quality and work-related well-being in the European Labor.

Van Aerden K., Puig-Barrachina V, Bosmans K., Vanroelen C. 2016. How does employment quality relate to health and job satisfaction in Europe? A typological approach. *Social Science and Medicine* 158: 132-140.

Violanti JM., Luenda E. Charles, et al. 2017. Police stressors and health: a state-of-the-art review. *Policing* 40(4): 642-656.

Waaiker, C.J.F, Belder, R., Sonneveld, H., Van, Bochove C.A., Van, der Weijden I.C.M. 2017. Temporary contracts: effect on job satisfaction and personal lives of recent PhD graduates. *Higher Education* 74: 321–339.

Wang JL, Patten SB. 2001. Perceived work stress and major depression in the Canadian employed population, 20–49 year olds. *Journal of Occupational Health Psychology*. 6(4):283–289.

Ward, L. 2011. Mental health nursing and stress: Maintaining balance. *International Journal of Mental Health Nursing* <https://doi.org/10.1111/j.1447-0349.2010.00715.x>

Warr P, Cook J, Wall T. 1979. Scales for the measurement of some work attitudes and aspects of psychological well-being. *J Occup Psychol* 52:129–48.

Winefield, A. H., & Jarrett. R. 2001. Occupational Stress in University Staff. *International Journal of Stress Management*, 8(4): 285-298. doi: 10.1023/A:1017513615819

Appendix

Table 3. Regression analysis of variables affecting mental health

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	GHQ-12	GHQ-12	GHQ-12	GHQ-12	GHQ-12	GHQ-12	GHQ-12	GHQ-12
Satisfied by work	-0.1258*** (0.009)	-0.1242*** (0.009)	-0.1243*** (0.009)	-0.1238*** (0.009)	-0.1104*** (0.009)	-0.1169*** (0.010)	-0.1135*** (0.010)	-0.1128*** (0.010)
Sex(female)		0.0424*** (0.005)	0.0427*** (0.005)	0.0451*** (0.005)	0.0480*** (0.006)	0.0481*** (0.006)	0.0467*** (0.006)	0.0465*** (0.006)
Having depedent children		-0.0194 (0.021)	-0.0170 (0.021)	-0.0146 (0.021)	-0.0181 (0.021)	-0.0189 (0.021)	-0.0196 (0.021)	-0.0193 (0.021)
Living alone		-0.0116 (0.025)	-0.0094 (0.025)	-0.0091 (0.025)	-0.0063 (0.025)	-0.0099 (0.026)	-0.0144 (0.026)	-0.0126 (0.025)
Living as a couple		-0.0426* (0.024)	-0.0418* (0.024)	-0.0379 (0.024)	-0.0385 (0.024)	-0.0399* (0.024)	-0.0417* (0.024)	-0.0401* (0.024)
Living as a couple with children or other people		-0.0167 (0.010)	-0.0161 (0.010)	-0.0154 (0.010)	-0.0159 (0.010)	-0.0123 (0.011)	-0.0155 (0.011)	-0.0147 (0.011)
No nucleus		-0.0010 (0.028)	0.0019 (0.028)	0.0029 (0.028)	-0.0177 (0.028)	-0.0141 (0.028)	-0.0198 (0.028)	-0.0193 (0.028)
Other kind of cohabitation		-0.0286 (0.028)	-0.0257 (0.028)	-0.0221 (0.028)	-0.0269 (0.028)	-0.0248 (0.029)	-0.0315 (0.029)	-0.0295 (0.029)
Silent gen (before 1945)			0.1055** (0.053)	0.1053** (0.053)	0.0765 (0.055)	0.1169* (0.062)	0.1242** (0.062)	0.1192* (0.062)
Baby boomers (1946-1964)			0.0081 (0.007)	0.0054 (0.007)	0.0072 (0.007)	0.0104 (0.007)	0.0111 (0.007)	0.0108 (0.007)
Millennials & Gen Z (1977-Today)			-0.0021 (0.006)	-0.0019 (0.006)	-0.0038 (0.006)	0.0008 (0.007)	0.0023 (0.007)	0.0019 (0.007)
No education				0.0335 (0.022)	0.0258 (0.023)	0.0202 (0.023)	0.0190 (0.023)	0.0189 (0.023)
Primary education				0.0006 (0.010)	0.0030 (0.010)	0.0013 (0.010)	0.0054 (0.010)	0.0078 (0.010)
Universitaray studies				-0.0171*** (0.006)	-0.0126** (0.006)	-0.0127** (0.006)	-0.0145** (0.007)	-0.0141** (0.007)
Perception of probability of being fired					0.0749*** (0.009)	0.0799*** (0.009)	0.0755*** (0.009)	0.0733*** (0.009)
Extra hours worked					0.0195*** (0.007)	0.0223*** (0.007)	0.0196*** (0.007)	0.0190*** (0.007)
Temporary < 12 months						-0.0178 (0.012)	-0.0205* (0.012)	-0.0209* (0.012)
Temporary >= 1 year						-0.0196 (0.023)	-0.0222 (0.023)	-0.0205 (0.023)
Temporary not specified						-0.0394*** (0.012)	-0.0334*** (0.013)	-0.0310** (0.013)
No contract						0.0135 (0.019)	0.0144 (0.019)	0.0136 (0.019)
Autonomo						-0.0105 (0.007)	-0.0101 (0.007)	-0.0098 (0.007)
Observations	7,756	7,756	7,756	7,752	7,514	6,921	6,921	6,921
R-squared	0.025	0.035	0.036	0.038	0.049	0.054	0.066	0.070
Individual Characteristics	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Generation By Birth	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Level of Education	No	No	No	Yes	Yes	Yes	Yes	Yes
Working Conditions	No	No	No	No	Yes	Yes	Yes	Yes
Type of Contract	No	No	No	No	No	Yes	Yes	Yes
Year FE	No	No	No	No	No	No	Yes	Yes
Region FE	No	No	No	No	No	No	No	Yes

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Note: The independent variable satisfied by work is defined by 1 when the employee is satisfied or 0 when is unsatisfied. Individual variables: Sex, Home structure and having dependent children which is defined by 1 if they have children living with them and 0 if not. Generation by birth is divided in silent generation, baby boomers, gen x, millennials and gen z. Formal education is defined by education level: no education, primary education, secondary education, and university education where having a level education is represented by 1 and lacking by 0. Working conditions are defined by 1 when perception of being fired is present and 0 when this perception is absent. Working extra hours is defined by 1 and no working extra hours by 0. Type of contract is divided into indefinite, temporary < 12 months, temporary >= 1 year, temporary not specified, and Autonomo. Having a type of contract is defined by 1 and lacking a type of contract is defined 0. Mental health is defined by 1 when having a mental illness or at risk of having it

Table 4. Complete OLS Regression relationship between job satisfaction and different measures of mental health

VARIABLES	(1) (GQH-12)	(2) (Diagnosed)	(3) (Drug prescription)	(4) (SAAD)
Satisfied by work	-0.1128*** (0.010)	-0.1049*** (0.017)	-0.0301*** (0.007)	-0.1082*** (0.012)
Sex(female)	0.0465*** (0.006)	0.0620*** (0.010)	0.0396*** (0.004)	0.0777*** (0.007)
Having depedent children	-0.0193 (0.021)	0.0147 (0.037)	-0.0396** (0.016)	-0.0208 (0.026)
Living alone	-0.0126 (0.025)	-0.0419 (0.044)	-0.0525*** (0.019)	-0.0139 (0.032)
Living as a couple	-0.0401* (0.024)	-0.0556 (0.042)	-0.0641*** (0.018)	-0.0536* (0.030)
Living as a couple with children or other people	-0.0147 (0.011)	-0.0792*** (0.018)	-0.0304*** (0.008)	-0.0363*** (0.014)
No nucieous	-0.0193 (0.028)	-0.0778 (0.048)	-0.0721*** (0.021)	-0.0599* (0.036)
Other kind of cohabitation	-0.0295 (0.029)	-0.0776 (0.048)	-0.0734*** (0.021)	-0.0586 (0.036)
Silent gen (before 1945)	0.1192* (0.062)	0.0084 (0.086)	0.0645 (0.042)	0.2129*** (0.078)
Baby boomers (1946-1964)	0.0108 (0.007)	0.0046 (0.013)	0.0286*** (0.005)	0.0343*** (0.009)
Millenians and Gen Z (1977- Today)	0.0019 (0.007)	-0.0437*** (0.011)	-0.0225*** (0.005)	-0.0327*** (0.008)
No education	0.0189 (0.023)	-0.0234 (0.031)	0.0083 (0.015)	0.0287 (0.027)
Primary education	0.0078 (0.010)	-0.0076 (0.017)	0.0105 (0.007)	0.0090 (0.013)
Universitary studies	-0.0141** (0.007)	-0.0104 (0.011)	-0.0080* (0.005)	-0.0384*** (0.008)
Perception of probability of being fired	0.0733*** (0.009)	0.0441** (0.018)	0.0115* (0.007)	0.0755*** (0.012)
Extra hours worked	0.0190*** (0.007)	-0.0042 (0.012)	-0.0067 (0.005)	0.0030 (0.009)
Temporary < 12 months	-0.0209* (0.012)	-0.0004 (0.020)	-0.0050 (0.009)	0.0049 (0.016)
Temporary >= 1 year	-0.0205 (0.023)	-0.0093 (0.035)	0.0028 (0.016)	-0.0148 (0.029)
Temporary not specified	-0.0310** (0.013)	0.0164 (0.022)	0.0030 (0.009)	-0.0396** (0.016)
No contract	0.0136 (0.019)	0.0391 (0.031)	-0.0085 (0.014)	-0.0206 (0.024)
Autonomo	-0.0098 (0.007)	0.0019 (0.012)	-0.0021 (0.005)	-0.0023 (0.009)
Observations	6,921	3,478	8,747	6,990
R-squared	0.070	0.063	0.039	0.066
Individual Characteristics	Yes	Yes	Yes	Yes
Generation By Birth	Yes	Yes	Yes	Yes
Level of Education	Yes	Yes	Yes	Yes
Working Conditions	Yes	Yes	Yes	Yes
Type of Contract	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes
Standard errors in parentheses				
*** p<0.01, ** p<0.05, * p<0.1				

Note: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1. The independent variable satisfied by work is defined by 1 when the employee is satisfied or 0 when is unsatisfied. Individual variables: Sex, Home structure and having dependent children which is defined by 1 if they have children living with them and 0 if not. Generation by birth is divided in silent generation, baby boomers, gen x, millennials and gen z. Formal education is defined by education level: no education, primary education, secondary education, and university education where having a level education is represented by 1 and lacking by 0. Working conditions are defined by 1 when perception of being fired is present and 0 when this perception is absent. Working extra hours is defined by 1 and no working extra hours by 0. Type of contract is divided into indefinite, temporary < 12 months, temporary >= 1 year, temporary not specified, and Autonomo. Having a type of contract is defined by 1 and lacking a type of contract is defined 0. Mental health is defined by 1 when having a mental illness or at risk of having it

CodeBook

Satisfied by work is defined by 1 when the employee is satisfied or very satisfied and 0 when is unsatisfied or very unsatisfied.

Sex is defined by 1 when the employee is female or 0 when is male.

Having dependent children is defined by 1 if they have children living with them and 0 if not

Home structure is divided into 5 subsections

Living alone is defined by 1 when living alone or 0 when not.

Living as a couple is defined by 1 when living as a couple or 0 when not.

Living as a couple with children or other people is defined by 1 when living as a couple with children or other people and 0 when not.

No nucleus is defined by 1 when living with no nucleus or 0 when not.

Other kinds of cohabitation are defined by 1 when living with other kinds of cohabitation or 0 when not.

Generation by birth is divided into 4 subsections

Silent generation is defined by 1 when born before 1945 or 0 when not.

Baby boomers are defined by 1 when born between 1946 and 1964 or 0 when not.

Gen X is defined by 1 when born between 1965 and 1976 or 0 when not.

Millennials and Gen Z are defined by 1 when born between 1977 and today (2020) or 0 when not.

Formal education is divided into 4 subsections

No education is defined by 1 if the interviewed had no education or 0 when not.

Primary education is defined by 1 if the interviewed had reached a maximum of primary education or 0 when not.

Secondary education is defined by 1 if the interviewed had reached a maximum of secondary education or 0 when not.

University education is defined by 1 if the interviewed had reached a maximum of university education or 0 when not.

Perception of probability of being fired is defined by 1 if the interviewed feels s/he is likely to be fired or 0 when not.

Extra hours worked is defined by 1 if currently working more than 40h per week or 0 when not.

Type of contract is divided into 6 categories

Indefinite Contract is defined by 1 having an indefinite contract or 0 when not.

Temporary < 12 months is defined by 1 when having a temporary contract shorter than 1 year or 0 when not.

Temporary >= 1 year is defined by 1 when having a temporary contract longer or equal to 1 year and 0 when not.

Temporary not specified is defined by 1 when having a temporary not specified contract or 0 when not.

No Contract is defined by 1 when having no contract or 0 when not.

Autonomo is defined by 1 when being a boss or self-employed or 0 when not.