ISCTE ◈ Business School
Instituto Universitário de Lisboa

JOB QUALITY BY EDUCATIONAL LEVEL IN PORTUGAL: SIMILARITIES AND DIFFERENCES

Inês Marques Pires

Dissertation submitted as partial requirement for the conferral of Master in Human Resources Management and Organizational Consultancy

Supervisor:

Prof. Fátima Suleman, Assistant Professor, ISCTE-IUL, Department of Political Economy

Co-supervisor:

Prof. Maria da Conceição Figueiredo, Assistant Professor, ISCTE-IUL, Department of Quantitative Methods for Management and Economics

September 2018

Abstract

The purpose of this study is to examine how job quality varies across educational level in Portugal. The analysis of job quality by educational level is quite unexplored in the literature, as it focuses mainly on wages. This study contributes to fill this gap and provide a broader analysis on several dimensions of job quality. The empirical analysis draws on 2015 EU-LFS data and an extensive descriptive analysis of job quality variables by level of education, controlling gender and age. Findings suggest that higher educational level originates positive variations on job quality, particularly on working conditions. Female and young employees have lower quality jobs as they are more often in precarious situations, and although it improves for higher educated, the variations caused by educational level is not enough to eliminate these inequalities. Higher educated employees were found to have lower job satisfaction. Overall the investment in higher education has benefits for the worker, particularly in the long term, related to higher experience of employees. Being a descriptive study, it does not allow to correlate variable or conclude regarding cause and effect, being mostly based on assumption which may introduce bias in the interpretation. In a context of labour market flexibility and growing precariousness, education is vital both for the individual and for the society, and therefore this study attempts to raise awareness of its importance and its association to job quality.

Resumo

O objetivo deste estudo é examinar como varia a qualidade do emprego em Portugal consoante o nível educacional. A análise da qualidade do emprego por nível educacional é pouco explorada na literatura, uma vez que se foca principalmente nos salários. Este estudo contribui para preencher essa lacuna e fornecer uma análise mais ampla sobre diversas dimensões da qualidade do emprego. A análise empírica baseia-se nos dados de 2015 do EU-LFS e numa extensa análise descritiva das variáveis da qualidade do emprego, por nível educacional, controlando género e idade. Os resultados sugerem que o nível de educação mais elevado origina variações positivas na qualidade do emprego, particularmente nas condições de trabalho. As mulheres e os trabalhadores mais jovens têm empregos de qualidade inferior, uma vez que apresentam situações mais precárias e, embora melhore quanto maior o nível educacional, as variações causadas pela educação não são suficientes para eliminar essas desigualdades. Verificou-se que os funcionários com maior nível educacional têm menor satisfação no trabalho. No geral, o investimento na educação acarreta benefícios para o trabalhador, especialmente a longo prazo, relacionado com uma maior experiência dos trabalhadores. Sendo um estudo descritivo, não permite correlacionar variáveis ou concluir sobre causa e efeito, sendo principalmente baseado em pressupostos que podem introduzir tendências na interpretação. Num contexto de flexibilidade do mercado de trabalho e crescente precariedade, a educação é vital tanto para o indivíduo quanto para a sociedade e, portanto, este estudo tenta consciencializar sobre sua importância e a sua associação com a qualidade do emprego.

Index

1. Introduction

Nowadays there is a strong movement towards a more flexible labour market. This phenomenon is originating an increase in precarious jobs, which can be interpreted as uncertain or unpredictable jobs, including activities in the informal sector and temporary work in the formal sector (Kalleberg, 2009). According to the OECD (2004, 2006), the dominant trend since the late 1990s has been easing of protections for hiring and dismissal, which has increased the share of non-permanent employment and expanded dual labour markets, characterised by the decrease of permanent jobs and the growth of precarious jobs (Betcherman, 2013).

As the labour market is becoming more polarized, the precariously employed are the ones in the disempowered segment of the dualized labour market (Rueda 2005; Autor *et al.,* 2006), earning low wages, having little income and job security and occupying low quality jobs (Emmeneger *et al.,* 2009; Kalleberg 2009; Rueda 2005). Therefore, in recent years, awareness of the importance of the quality of jobs has grown in Europe, which is reflected in the Lisbon Strategy and the Europe 2020 targets of the EU, where quantitative employment targets are complemented with the objective of increasing job quality (Aerden, Moors, Levecque & Vanroelen, 2013). This picture raises the question of factors that increase (reduce) the probability of being assigned to such jobs.

Policy-makers and social scientists recognize that both the quantity and quality of jobs are important in improving individual and firm well-being, as well as national competitive advantage (Findlay, Kalleberg & Warhurst, 2013). Empirical evidence shows that high quality jobs improve working conditions, increase workers' development and skills, reduce unemployment, increase firm productivity, improve an economy's competitiveness and foster social wellbeing in an increasingly globalised environment (European Commission 2003, 2008; Davoine *et al.,* 2008a, b; Dahl *et al.,* 2009). In a global economy, where knowledge, technology and innovation are key to developing firm competitiveness and to overcoming the economic crisis, new value generation processes and innovative sources of productivity inevitably call for quality jobs (Torrent & Ficapal, 2010).

Kretsos & Livanos (2016) found that jobs under precarious situations cannot be examined in isolation of the national or even regional context as the structures of each country may reinforce or prevent it, with Mediterranean countries, Portugal in particular, being the

ones with the most risk of precariousness. In fact, low quality jobs are very present in the Portuguese labour market, which was considered by OECD (2017) as an aspect of urgent improvement, to increase both individual and firm well-being, as well as national competitiveness.

Due to the changes in the labour market and its increased competition for the best jobs and positions, there has been a growing investment is education, meaning that the highest level of education in adults is growing and so employees are becoming more educated (OECD, 2017). Although current schooling levels in Portugal continue to be particularly low in the context of the developed countries, over the past thirty years there has been a significant educational transition in Portugal, with a marked rise in the average schooling level and an increase in the dispersion of the educational distribution (Alves, Centeno & Novo, 2010). Is the educational level an important factor to reduce the likelihood of having a precarious job?

In the literature there are some studies that have shown that the educational level increases the quality of jobs (Simões *et al.,* 2015; Crespo *et al.,* 2017), however there is little evidence available on the association between educational level and the main dimensions of job quality. Therefore, with the aim of contributing new evidence, the empirical study in this dissertation focuses on three education level, lower secondary education, upper secondary education and higher education, crossing them with several variables of job quality. With data from the 2015 European Union Labour Force Survey, the purpose of this study is to understand to what extent job quality varies according to the educational level of employees, and to what extent there are differences within each level of education, so as to understand if, in the context of the current labour market, the time spent and investment made in education is related to better job quality for employees in Portugal. The specific goals can be summarised as follow: i) examine economic dimensions of job quality, notably contractual arrangements and wages; ii) analyse job satisfaction indicators; iii) analyse the factors that are associated with high (low) job quality; iv) compare job quality by educational level; v) and consequently identify similarities and differences among jobs assigned to individuals with different level of education.

The dissertation is organised as follows. Initially, there is a review of the literature on the changes in the labour market, job quality, precarious jobs, the Portuguese labour market

and on education, providing a theoretical framework to the study. Then, the methodology is displayed, explaining the data used, the dimensions and indicators of job quality, and the procedure followed to perform the analysis. Afterwards, the main results are presented, being divided into two main groups: labour market results and job quality results, from which there is a subgroup of results regarding the contractual situation in Portugal, in which job quality is analysed within different contractual arrangement. The results are followed by the discussion, wherein the main results are discussed and compared with the literature. Lastly, the main conclusions of the dissertation are presented along with limitations and suggestions for future research. References and annexes follow the conclusion.

2. Theoretical Framework

2.1. Labour market changes

After the Second World War, during the period of capitalism, the standardisation of employment took place in the Western World, being considered as the 'good employment' (Mückenberger, 1989). The standard employment relationship was described by Cranford *et. al* (2003) as a normative model of employment where the worker, mostly encountered by male employees, has one employer, works full time, year-round on the employer's premises, under supervision, enjoys extensive statutory benefits and entitlements, and expects to be employed indefinitely. However, during the last decades, the traditional employment relationship underwent crucial changes. The shift from a Fordist to a Post-Fordist mode of socioeconomic regulation resulted in an emphasis on flexibility and competitiveness, which lead to a decline of standard employment relationships and a rise of non-standard employment arrangements (Standing, 1997; Scott-Marshall, 2005). Non-standard employment is an employment situation which differs from a defined standard benchmark (Horemans, 2014). A variety of features may define this standard (Eichhorst & Marx, 2012; Bernhardt & Marcote, 2000; Kalleberg, 2000; Schmid, 2010), therefore, by definition, non-standard employment can be very diverse, including part time employment, temporary employment, day labour and on-call work, temporary-help agency, contract-company employment, and self-employment (Kalleberg *et al.,* 2000).

Labour flexibility was first highlighted by Atkinson (1984) referring to the now common practices deployed at the level of the firm, in which the author distinguishes different types of flexibility. Numerical flexibility involves enhancing firms' ability to adjust the level of labour supply to meet fluctuating demand (Atkinson, 1988). It can be achieved by firms by resorting to non-standard forms of employment such as part-time, temporary contract and casual workers, or by adjusting working-time patterns, altering the size of the firms' work force. On the other hand, according to the same author, functional flexibility involves training core employees to do a variety of tasks. Additionally, firms use other strategies to deepen these practices, such as distancing strategies which involve reducing the core workforce in exchange for commercial relationships (eg. subcontracting) to enable them to hire specialized workers on a fixed term basis. Similarly, pay flexibility allows firms to adjust rewards structures so as to maintain income polarisation between numerically and functionally flexible workers (Atkinson, 1988).

In the flexible firm model, segmentation occurs because two different employment strategies are applied to two different segments of the workforce. On the one hand, the core workforce is functionally and temporally flexible, with other characteristics highly resembling the standard employment relationship. On the other hand, the employment situation of the peripheral workforce, which is numerically flexible, deviates from the standard employment relationship in a broad number of aspects, giving place to the non-standard employment relationship. Therefore, these managerial practices designed to achieve labour flexibility amount to a segmentation strategy that divides workers based on the nature of their employment relations, involving a small, functionally-flexible core and a rapidly expanding, numerically-flexible periphery (Vosko, 1998).

Firms are usually the beneficiaries of numerical flexibility while employees may be quite vulnerable to its potential consequences, which are normally related to precarious forms of employment (Vosko, 1998). Yet, whether the growth of non-standard employment is problematic depends on the quality of non-standard jobs. Belous (1989) argues that non-standard arrangements can benefit both employers and employees. On the one hand, the flexibility inherent in many types of non-standard work allows employers to cut labour costs during slack times, and employers can screen non-standard workers before hiring them permanently, thus reducing recruitment and training expenses (Houseman, 1997). If companies are faced with declining demand for products or poorly performing

employees, allowing fixed-term employees' labour contracts to expire is a low-priced way to dismiss personnel since it is excluded from all redundancy procedures and severance pay obligations companies face when firing permanent workers. Moreover, temporary employment agencies supply workers on short notice, which makes it possible for companies to adjust their workforce quickly. On the other hand, employees can also benefit insofar, as non-standard jobs let them control their schedules, samples a variety of jobs, and have more time for other activities (Belous, 1989; Polivka & Nardone, 1989). Therefore, these types of work arrangements represent a potential source of employment flexibility for both employers and employees, being doubly attractive to employers due to the reduction in labour costs. However, for many non-standard workers any gains in flexibility come at a high price if the situation is involuntary, where qualified workers who seek regular full-time jobs must settle for less desirable alternatives (Kalleberg, *et al.*, 2000), which reflects in the quality of the job.

According to dual labour market theory, flexible work may be related to so-called 'bad jobs' in the secondary (peripherical) labour market segment (Doeringer & Piore, 1971; Reich *et al.*, 1973; Rebitzer & Taylor, 1991). In the Segmented Labour Market literature, duality in the labour market implies that all jobs belong to either the 'primary sector' or the 'secondary sector' of the labour market. While the primary sector comprehends the 'good' jobs, characterised by high negotiated wages, economic security and rapid turnover leading to career advancement, the secondary sector contains the 'bad' jobs which are typically unskilled, offer no regular career ladders and wage rates are low and determined competitively. Jobs in the primary sector are normally found within firms with internal labour market structures, where institutional rules replace market purposes. The Internal Labour Market (ILM) is defined as an administrative unit, within which the pricing and allocation of labour is determined by a set of institutional rules and procedures (Kerr, 1954). It is to be distinguished from the external labour market of conventional economic theory where economic variables directly control pricing, allocation and training. Nevertheless, these two markets are interconnected and movement between them occurs at certain job classifications which establish ports of entry and exit to and from the internal market (Doeringer & Piore, 1971). In an attempt to connect both theories, the Dual Labour Market theory and the Internal Labour Market theory, Doeringer and Piore (1971) defined the primary sector as being composed of a series of well-developed ILMs, protected against external pressures, while jobs in the secondary sector are those outside ILMs or in poorly developed ILMs. Therefore, the primary sector

is organised in order to shelter workers and firms from the uncertainty and fluctuations of the market, which in turn originates labour market segmentation (Piore, 1975; Rebitzer & Taylor, 1991).

Jobs positioned in the peripherical or secondary labour market are especially likely to occur for groups that traditionally have a weak position in the labour market, including young people entering the labour market, immigrants, low-skilled workers, and female workers. Individuals within these vulnerable groups may move from one flexible job to another, interrupted by periods of unemployment or inactivity.

2.2. Job quality

During the nineties, the gradual fall in unemployment and the worrying rise in job insecurity in Europe placed the issue of job quality at the heart of the design of public policies in the labour, economic and social fields (Kalleberg, 2009; Drobnic & Guillén, 2011). In recent years, awareness of the importance of the quality of jobs has grown in Europe, which is reflected in the Lisbon Strategy and the Europe 2020 targets of the EU, where quantitative employment targets are complemented with the objective of increasing job quality (Van Aerden, Moors, Levecque & Vanroelen, 2014).

Policy-makers and social scientists recognize that both the quantity and quality of jobs are important in improving individual and firm well-being, as well as national competitive advantage (Findlay, Kalleberg & Warhurst, 2013). Empirical evidence shows that high quality jobs improve working conditions, increase workers' development and skills, reduce unemployment, increase firm productivity, improve an economy's competitiveness and foster social wellbeing in an increasingly globalised environment (European Commission 2003, 2008; Davoine *et al.* 2008; Dahl *et al*. 2009). In a global economy, where knowledge, technology and innovation are key to developing firm competitiveness and to overcoming the economic crisis, new value generation processes and innovative sources of productivity inevitably call for quality jobs (Torrent & Ficapal, 2010).

But what is in fact job quality? Job quality is a multidimensional and contextual phenomenon, differing between persons, occupations and labour market segments, societies and historical periods, with multiple factors and forces operating at multiple levels influencing it (Findlay *et al.*, 2013). Therefore, it isn't easy to define and measure

it (Sengupta *et al.*, 2009). Although several definitions, measures and indexes of job quality exist, there is no consensus about what constitutes job quality. At a basic level, there are disputes about indicators: some measures rely on a single indicator (e.g. Osterman & Shulman, 2011), others use multiple indicators (e.g. Clark, 2005) and, when multiple measures are used, there are challenges and disagreements around the weighting of each indictor (e.g. Muñoz de Bustillo *et al.*, 2012).

In the neo-classical view of the perfectly competitive labour market, job quality was mainly related to wage level, whereas the first macroeconomic approaches suggested that market failings could lead to a lack of investment in human capital. In this respect, human capital theory (Becker, 1964) came to acknowledge the importance of education and training as a job quality indicator, by introducing a crucial distinction between generic and specific skills. Becker defended that the more educated and with more skills the employees were, the greater their chances of earning higher wages and finding better jobs. The sociotechnical approach began to advocate the need for a change in Taylorist and Fordist models of work organisation by introducing job quality considerations (Cherns, 1987). In this early literature, job quality was linked to job satisfaction, understood as a worker's reactions, sensations, feelings and motivation towards his job. It also began to be associated with a worker's physical, mental and emotional health, which had clear effects on organisations' results (May & Lau, 1999).

In later literature, two different perspectives began to appear: the objective perspective, relating to the working and employment environment; and the subjective perspective, relating to workers (Elizur & Shye, 1990; Muñoz de Bustillo *et al.,* 2011). The empirical approaches to measuring job quality vary in terms of the importance given to the objective and subjective dimensions. While the dominant approach combines both dimensions (e.g. Kalleberg *et al.,* 2000; Clark, 2005; Green, 2006), some authors base their analysis on dimensions related to job conditions, such as wages, lifelong learning and career development, working time, autonomy/discretion over job tasks, employment and physical security, technology, management systems and organisational processes, focusing on objective facets of jobs (Wilcock & Wright, 1991; Souza-Poza, 2000; McGovern *et al.*, 2004; Vieira & Díaz-Serrano, 2005; Amossé & Kalugina, 2010), whereas others follow a strategy closer to the literature on job satisfaction, in which the weight of the subjective dimensions (i.e. dimensions strongly influenced by the perceptions of employees) is predominant (Brown *et al*., 2007). In the subjective

dimension, job quality is related to certain characteristics of the worker, such as satisfaction, attitudes, expectations, motivation, commitment and pride (Marks *et al*., 1986; Cohen *et al*., 1997; Sirgy, 2001). However, a job identified as objectively worse (better) cannot be instantly associated with lower (higher) levels of satisfaction in subjective evaluation. Leontaridi *et al.* (2004) found that, on average, higher-paid workers do not have higher job satisfaction. Therefore, a person's report of his or her job satisfaction is not directly related to the trends in job quality not only because the characteristics of jobs that people consider relevant may change over time as may the relative weights that people give to these characteristics (Osterman, 2013), but also because the levels of job satisfaction vary according to differences in expectations (Lincoln & Kalleberg, 1990). Cooke *et al*. (2013) highlighted the importance of analysing job quality in relation to individual needs and aspirations and the embeddedness of these individuals in family, community, labour market and economic circumstances, making the subjective perspective much harder to measure.

More recently, the flexibilization, the segmentation of labour markets, the beginning of new work organisation practices, the technological revolution and the growing strain between job quantity and quality arising from the global economic crisis have fostered new approaches to labour market research (Díaz-Chao, 2008; Torrent, 2008; Torrent & Ficapal, 2009), particularly to job quality research (Salais & Villeneuve, 2004; Osterman 2013). Some studies have noted the influence of the labour market's growing flexibility and the dawn of new contracts and labour relations frameworks (Eyraud & Vaughan-Whitehead, 2007; Esser & Olsen, 2012; Bryson *et al*., 2013). Clark and Senik (2006) discovered that permanent jobs provide increased satisfaction with job security and promotion prospects, and higher wages. In its turn, Booth *et al.* (2002) found that flexible contract workers were generally paid less, received less training and were less satisfied, having jobs considered of lower quality.

Following these developments in the labour market, some approaches of job quality make a distinction between intrinsic 'work quality' and 'employment quality' (Holman & McClelland, 2011). Work quality includes job content, which refers to the nature of work tasks, such as the extent of autonomy for workers; and working conditions, pointing to the physical, biochemical, and psychosocial exposures and demands of the job. On the other hand, employment quality includes employment conditions, which concern mutual agreements between employees and their employer about the organisation of employment

in terms of contract, rewards, working hours, learning opportunities, among others (Van Aerden *et al.*, 2014); and employment relations, referring to the formal and informal relationships between employees and employers (Vets *et al.,* 2009). Despite de change that has been occurring in employment relations and conditions in the labour market, most research concerning job quality has focused on job content or working conditions. Therefore, in this study, I will pay a greater focus on the employment quality of employees analysing characteristics such as type of contract, permanency of the contract, atypical work, hours worked, income, and job insecurity and job insatisfaction as the main reasons for looking for another job.

According to the literature, two major sets of characteristics influence the level of job quality: socio-economic characteristics of the worker and characteristics of the firm, which have a significant impact on the job features mentioned above (Crespo, Simões & Pinto, 2017). As for the worker characteristics, these authors identified gender, age, nationality, employment status and education to be the more relevant ones. There is considerable literature studying the differences between men and women in the labour market, specifically in what concerns wages, occupations and promotions (Altonji & Blank, 1999; Blau & Kahn, 2006; Stier & Yaish, 2014). Crespo *et al.* (2017) attribute as three main explanations for the gender gap: differences in productivity, differences in preferences, and discrimination in the labour market. With age being another important determinant of job quality, it must be indirectly linked to job quality, because it is strongly associated with work experience and tenure (Mumford & Smith, 2004), which in turn are associated to job quality. The theoretical arguments for the gap between natives and non-natives in what concerns job quality are also differences in productivity and discrimination, with the aggravating problem of international transferability of human capital, i.e. the fact that human capital acquired in one country is not fully transferable to other countries due to insufficient quality or imperfect adaptation to the context of the destination country (Crespo *et al.,* 2017). As for the employment status, the main differences in the level of job quality occur between self-employed and employees, as it affects several aspects related to the process and content of job, such as autonomy, use of skill, and the interest for the job itself. However, still according to Crespo *et al.* (2017), the employee group is not homogeneous, as the type of contract is a differentiating factor for job quality. Fixed-term contracts and permanent contracts have shown significant differences in respect to pay, training, and career prospects (Farber, 1999; Brown and Sessions, 2003). Finally, education is one of the more important characteristics in

determining the level of job quality as its investment leads to numerous returns. According to a vast literature, education has impact on job searching ability (Arrow, 1997), and consequently on monetary benefits (Card, 1999), on the productivity of workers (Becker, 1964; Mincer, 1974), and on job content, work environments, job security, and autonomy (Vila, 2000; Fabra & Camisón, 2009).

In what regards the characteristics of the firm that determine job quality, Crespo *et al.* (2017) highlight the firm size and the economic sector. The firm size influences the existence of internal labour markets and therefore has an impact on wages, promotions, and opportunities for internal mobility, reflecting the labour market segmentation theory (Rebitzer, 1986). The income level and stability of the job has also been pointed as a result of the firm size by other authors (Brown & Medoff, 1989; Oi & Idson, 1999). As for the economic sector, the analysis in the literature of inter-industry differences has its focus on wage differentials. Several studies suggest the existence of a considerable wage disparity between sectors (e.g. Krueger & Summers, 1988; Genre *et al.,* 2005; Gannon *et al.,* 2007). The importance of this determinant factor is mainly attributed to differences in the quality of individuals employed in different sectors, differences in working conditions, and sectoral differences regarding the propensity to implement mechanisms such as efficiency wages (Crespo *et al.,* 2017).

2.3. Precarious jobs

Due to changing patterns of production and consumption, slower economic growth and substantive changes in social and economic policy in recent years, labour markets have become more polarized (Autor *et al*., 2006; Barbier, 2004; Kalleberg, 2011). On one pole there are the individuals who obtain high wages, have employment security and hold jobs of decent overall quality. On the opposite pole are the individuals who earn low wages, have little income security and job security and occupy jobs that can generally be deemed low quality (Emmeneger *et al.,* 2009; Kalleberg, 2009; Rueda, 2005). These employees are in the disempowered segment of the dualized labour market (Rueda, 2005; Autor *et al*., 2006), and are considered precariously employed.

Precarious jobs can be interpreted as uncertain or unpredictable jobs, including activities in the informal sector and temporary work in the formal sector (Kalleberg, 2009). According to the OECD (2004, 2006), the dominant trend since the late 1990s has been

easing of protections for hiring and dismissal, which has increased the share of non-permanent employment and expanded dual labour markets, characterised by the growth of precarious jobs and decrease of permanent jobs (Betcherman, 2013).

The expression precarious employment is normally associated with lack of "good work", being often linked to negative concepts such as insecure work (Heery & Salmon, 2000), vulnerability at work (Pollert & Charlwood, 2009) and even under-employment (Bell & Blanchflower, 2013). Rodgers and Rodgers (1989) defined precarious employment as a situation in which, among other characteristics, employment does not provide employees with the security of a minimum standard of decent living. Since then, most publications, including Kalleberg's (2009, 2011), have explained precarious employment as a state of threatening insecurity or risk. In early literature on precarious employment, the insecurity implicit in it referred to the insecurity of the ability to secure a sufficient income, linking precarious employment to poverty and deprivation (Barbier, 2004), still implicit in Vosko (2006). However, insecurity may also refer to the insecurity of being dismissed, defining job insecurity as the risk of job-loss (Böckerman, 2004; Clark & Postel-Vinay, 2005). This perspective on precariousness is implicit in Kalleberg (2009, 2011) and has strong interrelations with the use of non-standard employment contracts as indicators for precarious employment, because non-standard contracts might be used as proxy for dismissal.

According to Olsthoorn (2014), precarious employment exists when vulnerable individuals occupy insecure jobs with unsupportive entitlements on the institutional level, in which vulnerable employees are workers who can be expected to suffer strongly from the conditions that insecure jobs offer because of their personal situations. Several studies indicate that specific workforce groups as being more likely to be employed under precarious situations, regardless of the influence of the welfare state and national culture. These groups of more vulnerable employees most frequently mentioned are women (Vosko *et al.,* 2010), young workers (Kretsos, 2010), older workers (D'Amours, 2009), agency workers (Elcioglu, 2010), migrants (Porthé *et al.,* 2009) and low skilled workers (Kretsos & Livanos, 2016).

Mühlau (2011) obtained evidence of significant gender differences in working conditions, concluding that men tend to have jobs that involve more investment in human capital, greater autonomy, more complex tasks, more opportunities for career advancement, and more participation. On the other hand, women have less risky jobs and achieve a better

balance between family and work. Similarly, several studies sustain the idea that female-dominated occupations are characterised by lower wages and fewer job opportunities (Levanon *et al.,* 2009; Stier & Yaish, 2014). Crespo *et al.* (2017) found that on average, younger workers have worse jobs than older ones, especially concerning pay, autonomy, and intrinsic rewards. Older workers are in a more favourable position particularly in terms of work-life balance and satisfaction with the work performed, better physical working conditions, increased autonomy, lower intensity, higher job security, and lower risks for health. According to Treu (1992), young people must often accept temporary rather than permanent jobs when they are faced with poor market conditions. This is very common for people with a weak link to the labour market, including new entrants such as recent graduates. Schmitt (2008) also found that the likelihood of young workers (age 18-34) to have access to good jobs has been declining. Another vulnerable group highlighted by Crespo *et al.* (2017) is the migrants, in which they concluded that this characteristic has a negative effect on job quality, particularly on wages, autonomy and job security. As for the type of contract, García-Serrano (2004) concluded that temporary workers hold jobs with poorer working conditions than those of permanent workers. Also, Crespo *et al.* (2017) found that employees with permanent contracts have access to better jobs, with a favourable situation regarding pay, autonomy, job security, and promotion prospects. Finally, according to Simões *et al.* (2015), education is a key determinant of the quality of jobs leading to a considerable level of inequality between individuals. High levels of education generate skills that allow individuals to more efficiently get jobs that better match their aspirations. The gains obtained from higher levels of education are mainly in terms of pay, autonomy, promotions, and learning. Several studies have shown that there are considerable non-monetary benefits associated with additional education levels (McMahon, 1998; Vila, 2000; Fabra & Camisón, 2009; Jung & Cho, 2016; Crespo *et al.,* 2017). This leads to a paradox where higher educated people attain better jobs and at the same time young graduates are faced with precarious jobs. Recent graduates, when compared to the entire population of employees, are often used by firms as a buffer for dealing with fluctuations in the demand for workers (Bertrand-Cloodt *et al.,* 2012)

Moreover, precariousness is acknowledged as being associated with particular sectors and types of job, such as the media and cultural work where temporary contracts and sub-contracted work is highly common. Also, there are strong association between precarious work and certain economic sectors, namely construction (mainly self-employment), agriculture and hospitality (season work), and food processing (fixed-term or temporary

work) (Perulli, 2003). Firm size has shown to have divergent conclusion. Some authors have found small and medium firms to provide better jobs (Díaz-Chao et al., 2016), while others found that larger firms not only offer higher wages but also provide more stable jobs (Brown & Medoff, 1989; Oi & Idson, 1999). The wage differential has been stated to be a compensation for poorer working conditions, which has in fact been verified by Crespo et al. (2017) who found that large firms have an advantage regarding pay and interpersonal relations and a disadvantage in terms of physical working conditions, intensity, autonomy, work-life balance, and intrinsic rewards.

According to these authors, it is important to analyse the impact of these characteristic in order to understand the implication they have on the overall quality of jobs and to avoid misleading or only partial interpretations of a phenomenon which, by definition, is complex and multidimensional.

2.4. Portuguese labour market

Pressures of social and economic forces associated with intense globalization, technological advances specially in information and communication technologies, greater mobility of capital and labour, new forms of organizational interdependence, and pressures that served to weaken unions affect the majority of countries (Kalleberg, 2012). However, different locations in the productive system are confronted with different economic realities, so it is expected that they adopt different adaptation strategies in what employment is concerned. Countries differ in the type of social rights and protections accorded regarding full time permanent employment and the way these rights and protections were negotiated (Bosch, 2009). Therefore, these different 'starting positions' are expected to influence the way countries responded to the challenges of the post-Fordist period (Rubery & Grimshaw, 2003). In countries with strong protection of permanent contracts, as it is the case for Portugal (European Commission, 2017), non-standard forms of employment can be expected to shape the main road towards higher flexibility (Vives, 2010).

In general, changes in job quality and the growth of precarious work are a result of the interaction of two major sets of dynamics: macrostructural economic, political and social forces, such as the intensification of global competition, rapid technological innovation and change, deregulation of markets, increased mobility of capital and growing

financialization of the economy, and the decline in unions and worker power; and demographic changes in the labour force that increased labour force diversity and created a larger group of workers who are more vulnerable to exploitation (Kalleberg, 2012). However, as Duell (2004) hypothesised, countries' and regions' production models, flexibility strategies, and social security systems are to a large extent a determining factor of the incidence of precarious employment. Kretsos & Livanos (2016) found significant differences in the risk of precariousness across different countries, attributing the reasons for these differences to the national context and institutional characteristics of each country. Therefore, they concluded that precariousness cannot be examined in isolation of the national or even regional context as the structures of each country may reinforce or prevent it. Countries with economic uncertainty, high levels of unemployment and low spending on active labour market policies, as it is the case for Portugal and other Mediterranean countries, may trigger the risk of precariousness. This is consistent with the statements of OECD (2017), in which low quality jobs are very present in the Portuguese labour market, being as aspect that needs urgent improvements.

According to the OECD (2017), despite having been hard-hit by the crisis, Portugal's labour market performance had been worsening even prior to 2008, pointing towards some deep-rooted structural weaknesses. Portugal implemented several labour market reforms over the period 2011 to 2015 to address these structural weaknesses, which were a step in the right direction, and partly helped explain the quick recovery of the Portuguese labour market in recent years. However, despite the progress made, many challenges remain, such as the need to tackle the widespread labour market segmentation, where certain groups are more likely to be employed on temporary and other forms of atypical contracts, which also raises concerns about inclusiveness. Thereafter, the quality of jobs was also pointed as an aspect that needs to be improved in Portugal (OECD, 2017). Thus, these developments in the labour market make it a high importance and high relevance topic to study and understand who the most affected individuals are, with particular emphasis in Portugal.

2.5. Educational level

Human behaviour is reflected in economic behaviour, in which individuals organize themselves to meet their needs and enhance their well-being. Therefore, changes at a macro level are expected to impact individuals' behaviour and development.

With the increased competition in the labour market for the best jobs and positions, there has been a growing investment in education, meaning that the highest level of education in adults is growing and so employees are becoming more educated (OECD, 2017). Weisbrod (1962) notes that 'persons having more education are likely to be in a position to adjust more easily than those with less education', stating that education gives greater flexibility and facilitates access to more and better job offers. When the environment changes, a better educated worker will adapt faster (Weber, 2014).

Educational attainment level is an essential factor for explaining the employment rates' variation between different groups of the labour force, in which employment rates tend to be higher for people with higher education levels while those with a lower educational level are more vulnerable to job loss. Indeed, the largest falls in employment rates since the beginning of the financial and economic crisis were witnessed for people with at most primary or lower secondary education and smallest falls for people with a tertiary education (Eurostat in Pavel, 2015). The educational attainment level is determinant to fostering long-term socio-economic growth, both at micro and macro levels, measuring the level of education that people from a particular area have reached, which provides vital information about a region's economic potential and quality of life (Pavel, 2015). Therefore, higher education benefits not only the individual, but society as a whole as well. According to the World Bank (2017), graduates of higher education are more environmentally conscious, have healthier habits, and have a higher level of civic participation. Also, stronger nations are built due to the increased tax revenues from higher earnings, healthier children, and reduced family size. All in all, higher education institutions prepare individuals by simultaneously providing them with adequate and relevant job skills, and by preparing them to be active members of their communities and societies.

Being such a relevant and impactful issue on the labour market, the European Commission has been adopting several strategies, policies and targets both for the employment and education sectors, as it is the Europe 2020 strategy. People are in fact investing longer in education and consequently becoming more educated. Nowadays, the number of people who completed a degree in higher education is around 200 million students in the world, compared to 89 million in 1998 (World Bank, 2017).

Current schooling levels in Portugal are still particularly low in the context of the developed countries. During more than two thirds of the 20th century the median

schooling level of the Portuguese population was four years of formal education. Despite the progress made in the past few decades, the educational structure in Portugal remains rather fragile compared with the other advanced economies which, as seen before, acts as a constraint to the growth of the Portuguese economy in the present and in the future (Alves *et al.,* 2010). This can also be reflected in the expenditure on educational institutions in Portugal which is still below the OECD average (2014) in all levels of education: pre-primary, primary, lower secondary, upper secondary, post-secondary non-tertiary, and tertiary education. The high incidence of low qualified workers in the Portuguese labour market has been considered as one of the most significant constrains to national competitiveness and development. It has appeared in the political agenda since Portugal joined the European Union, and many efforts have been devised to combat that prevalence (Eurofond, 2009). However, according to Alves *et al.* (2010), over the past thirty years there was a significant educational transition in Portugal, with a marked rise in the average schooling level and an increase in the dispersion of the educational distribution.

According to the literature, on the labour market, higher educated workers seem to be in a favourable position. They are better paid and work in jobs of better quality (for example, there are less physically demanding job characteristics) (Verhofstadt, Witte & Omey, 2007). According to Aceleanu (2012), a high educational level increases labour market insertion and gives individuals the chance to get higher income, which was demonstrated by Moretti's econometric model (2004) in which as education increased, wage increased as well. Also, according to statistics provided by some international organizations (e.g. Eurostat, 2017), a high level of education increases employability. This is explained by the fact that better preparation of individuals leads to higher productivity and easier adaptation to the changes and demands of globalization and development of new technologies, being able to acquire more easily new skills, and therefore having greater possibilities of a better job quality.

Although it is currently a very discussed topic, most studies that compare education levels in the labour market focus only on its impact on the employee's wage (Becker, 1964; Ben-Porath, 1967; Mincer, 1974; Card, 1999; Moretti, 2014), not contemplating other aspects of the job that are as much or even more important for the employee. Therefore, it is relevant to study to what extent the main dimensions of job quality vary according with the level of education of employees, and to what extent there are differences within

each level of education, so as to understand if, in the context of the current labour market, the time spent, and investment made in education is associated to better job quality. In accordance with the existing research, it is expected that individuals with higher levels of education have better quality jobs, with employees with higher education being the ones with greater levels of job quality, followed by the employees who only have a upper secondary diploma, and finally, with the lower job quality, the ones with lower secondary education, in the majority of the dimensions and variables studied.

3. Methodology

3.1. Data

The empirical analysis draws on an existing database, the 2015 European Union Labour Force Survey (EU-LFS). This year has been chosen because it was the most recent data available for analysis at the time this dissertation was written, making the results the most updated with the conditions of the labour market described. As mentioned before, the study focuses only on one country, Portugal, in order to specify the analysis to a country which is on the spotlight at the European level for the improvement of both job quality and education level of its population.

The Labour Force Survey suits well for investigating job quality due to the rich data content, including the main dimensions of job quality. It describes employment conditions, such as the type of contract, permanency of the job and duration of the contract; income level; working conditions, such as shift work, evening and night work, weekend work, number of hours worked per week and possibility to work from home; and job satisfaction, which can be deduced from the search for another job and involuntary type and permanency of the contract.

The survey was applied quarterly to the whole Portuguese geographical territory, i.e. mainland, Madeira and Azores, and each quarter around 22 572 residence units were selected. The target sample of the EU-LFS are individuals older than 15 years old, living in private households, who during the reference week of the survey performed work, even for just one hour, for pay, profit or family gain, or were not at work but had a job or business from which they were temporarily absent, for example because of illness, holidays, industrial dispute or education and training. For this analysis, only people with

professional status of 'Employee' were included, meaning people who work for a public or private employer and who receive compensation in the form of wages, salaries, fees, gratuities, payment by results or payment in kind, and therefore excluding self-employed and family workers. Also, for the case of people with more than one job, only the main one was considered in order to avoid duplicating respondents and to better capture the main employment situation of the Portuguese labour market. Armed forces occupations, and jobs in the agriculture, forestry and fishing sector of activity were not included.

This study focuses on three main educational levels: lower secondary education, which corresponds to the 9th grade in Portugal, upper secondary education, corresponding to the 12th grade, and higher education, which includes bachelor and master's degrees. Thus, the sample includes only individuals whose highest level of education attained is one of the three, from age 15 to 64, both natives and migrants, representing a total of 38.288 individuals. Besides information on socio-demographic characteristics, the dataset includes detailed information on the occupation of the employee, firm economic activity, tenure, firm size, income, employment contracts, permanency of the contract, atypical work, working time, involuntary situation of contracts, the search for another job and its main reasons.

3.2. Measures

Job quality is analysed mainly through objective measures as the EU-LFS is composed by variables representing objective characteristics of the job. These include type of contract, temporary contract duration, income, hours per week, atypical work, and work from home, which were grouped into two distinct dimensions: employment relations and working conditions. Some variables are used as proxy for a third dimension, job satisfaction, in order to have a broader approach of job quality in Portugal, as it is the case of involuntary part time, involuntary temporary job, looking for another job and its main reason (job insecurity and job insatisfaction). In accordance to the literature, all variables used to analyse job quality have the same weight, as it is the most common practice (Tangian, 2005). As Green (2006) highlighted as the best procedure, the main components of job quality are measured through the evaluations of the workers in a survey, the Labour Force Survey. More comprehensive measures are affected by potential limitations and subjective data, reason why in this study the main focus is on objective

job characteristics, in order to avoid limitations and to provide a more accurate measure of job quality. Although some variables are self-descriptive, it is important to clarify all variables' definitions and indicators to better understand the presented results.

Employment Relations' Measures:

Type of contract. Aggregated variable combining employees with part time/full time contracts and temporary/permanent contracts, which results in four types of contract: full time and permanent (FT&Perm), full time and temporary (FT&Temp), part time and permanent (PT&Perm), and part time and temporary (PT&Temp).

Temporary contract duration. Duration of the contracts of limited duration, in which the indicators are the same proposed by the EU-LFS, with the shortest type of contract being of less than 1 month and the longest of more than 3 years. In the Portuguese labour law there are two types of temporary contracts: fixed term contracts and term contracts with indefinite duration. According to the Portuguese labour law (Lei n.º 7/2009, de 12 de Fevereiro, Article 148), the maximum duration of fixed term contracts is 3 years, while term contracts with indefinite duration have a maximum duration of 6 years, whereby it is possible to assume that the longest indicator refers only to the second type of temporary contract. Up to 3 years contract it is not possible to distinguish between the type of contract.

Working conditions' Measures:

Income. Monthly take home pay from main job presented in deciles, from below the 1st decile to more or equal to the 9th decile.

Hours per week. Number of hours usually worked per week in the main job. As this information was given in the survey through a free numerical answer, the responses were grouped in accordance with the scales in the National Report 'Quadros de Pessoal' presented yearly by the Ministry of Labour, Solidarity and Social Security (30 hours or less, from 31 to 35 hours, 36 to 39 hours, 40 hours, and 41 hours or more). According to the Portuguese labour law, the normal working period cannot exceed forty hours a week (Lei n.º 7/2009, de 12 de Fevereiro, Article 203), which can lead to assume that the last indicator represents overtime work.

Atypical work. Includes five variables to classify working time conditions that do not conform to the standard or 'typical' model defined as a job from Monday to Friday

from 9 a.m. to 6 p.m. This information was collected in the EU-LFS through 'Yes' or 'No' questions (whether or not the employee does this type of work), and include: Shift work, Evening work, Night work, Saturday work and Sunday work.

Work from home. Represents employees that usually or occasionally work at home, also collected through an 'Yes' or 'No' question.

Job Satisfaction Measures:

A dimension of job quality that includes three variables that will be used as proxy to measure it.

Involuntary Part Time contract/Involuntary Temporary contract. Variables created based on the reason for working in part time (FTPTREAS) and for having a temporary contract (TEMPREAS), by selecting only individuals who 'could not find a full-time job' and 'could not find a permanent job', respectively. All the other options of answers were considered voluntary, and although they may not be in fact voluntary situations, for the purpose of this analysis, they were assumed to be.

Looking for another job. Represents employees who affirmed to be actively looking for another job, information collected in the EU-LFS through a direct 'Yes' or 'No' question.

Job insecurity. Variable created from the variable in the EU-LFS database Reason for looking for another job (LOOKREAS), which was transformed into a 'Yes' or 'No' variable, being that the 'Yes' includes only the first indicator of the original variable 'because of risk or certainty of loss or termination of present job'. Although other employees looking for another job may feel job insecurity, for the purpose of this analysis I assumed only those who answered with this option.

Job insatisfaction. Variable created from the variable in the EU-LFS database Reason for looking for another job (LOOKREAS), which was transformed into a 'Yes' or 'No' variable, being that the 'Yes' includes only three indicators of the original variable: 'seeking a job with more hours worked than in present job', 'seeking a job with less hours worked than in present job', and 'because of wish to have better working conditions (e.g. pay, working or travel time, quality of work). Although other employees looking for another job may feel job insatisfaction, for the purpose of this analysis I assumed only those who answered

with these options. This variable is not used as an overall indicator of the sample job satisfaction because it refers only to those who are looking for another job.

Explanatory variables of job:

Firm Economic Activity. Corresponds to the classification of economic activities in the European Union, the NACE Rev. 2 codes. Based on the frequencies, some indicators were grouped to facilitate the analysis. The indicator *Energy and water* includes 'Electricity, gas, steam and air conditioning supply' (section D) and 'Water supply; sewerage, waste management and remediation activities' (section E). The indicator *Residual activities* includes 'Mining' (section B), 'Real estate activities' (section L), 'Other service activities' (section S), 'Activities of households as employers' (section T), and 'Activities of extraterritorial organisations and bodies' (section U). The remaining activities were kept disaggregated due to the significant differences found between educational levels.

Occupation. Corresponds to the classifications from ISCO-08, i.e. the International Standard Classification of Occupation from 2008, which is used from 2011 onwards.

Firm Size. Corresponds to the number of individuals employed at the firm. To allow a simpler interpretation of the results, this variable was recoded to have only three indicators: '10 persons or less', 'between 11 and 49 persons', and '50 persons or more'.

Tenure. Variable created from a derived variable of the EU-LFS database, STARTIME, which is the time since the person started the current employment in months. For the purpose of the study and to simplify its analysis, it was recoded into the following indicators: 'less than 1 year', '1 to 3 years', '4 to 9 years', '10 to 19 years', and '20 years or more', according to the scale used in the National Report 'Quadros de Pessoal'. The last two items of the scale in Quadros de Pessoal were grouped into'20 years or more' due to the extremely reduced number of employees with more than 50 years of tenure.

Other variables:

Age range. The age of respondents was aggregated into ranges also according to the 'Quadros de Pessoal' Report, with a small change in the first range due to the fact

that the age of the individuals in the sample starts at 15. Therefore, the ranges are '15 to 24', '25 to 34', '35 to 44', '45 to 54', and '55 to 64'.

3.3. Procedure

As mentioned before the aim of the study is to analyse the variations in the several dimensions of job quality in accordance with the educational level, in order to conclude regarding the association between educational level and job quality. To do that, the analysis was divided into several steps. In a first moment, using SPSS, a descriptive analysis was performed to all the variables used in the study, to better know the sample, by analysing frequencies and valid percent of the sample. Then, through several crosstabs, I crossed each variable with the educational level variable to understand the behaviour of the sample in what concerns variations between educational levels, allowing to characterise each level.

The following moment was dedicated to characterizing the labour context and job quality in Portugal and their behaviours, by crossing explanatory variables of the job and job quality variables defined before with some variables assumed as the main determinants of job quality, allowing to control other variables besides educational level. As Crespo, Simões & Pinto (2017) highlighted, these include characteristics of the worker and of the firm, and for this study, apart from educational level, the variables used were gender, age, and firm size. From the characteristics proposed by Crespo *et al.* (2017), I opted to leave out nationality because of the very small expression of non-natives in the sample; employment status due to the fact that the sample only includes employees; and firm economic activity to simplify the analysis as this variable has too many indicators. Besides this analysis, to help characterizing job quality, some of its variables were crossed between themselves. The aggregated variable 'Type of contract', being considered representative of employment relation's dimension, was crossed with variables of the other job quality dimensions, in order to examine de contractual situation in Portugal, by analysing working conditions and job satisfaction within and between different contractual arrangement.

In order to have a deeper knowledge of the variations of job quality caused by the educational level, the following phase of the analysis consisted in splitting the database into three different ones, creating one for each educational level. Afterwards, and as the

last step, the previous analysis to the labour context, to job quality, and to the contractual situation was repeated allowing to determine the differences within and between levels of education.

The fact the sample size is very large and mainly that it was randomly selected from the Portuguese population contributes for ensuring a high internal validity. Internal validity is also improved by controlling other variables, such as age, gender, and firm size of the employees, and by using standardized instructions in data collection (McLeod, 2013), as it was the case for the EU-LFS.

4. Results

4.1. Labour context

The sample in analysis is composed by 38.288 individuals (N=38.288), from which 55,8% are women, and 97,6% native, being its majority in the range between 35 and 54 years old (58,7%), as summarized in Table 1. The educational level of the sample is rather equally distributed as 30,3% have a lower secondary education level, 35,2% an upper secondary education level and 34,5% have a higher education level.

Regarding explanatory variables of the job, the occupations with the highest frequency are professionals (25,0%), service and sales workers (19,9%), and technicians and associate professionals (16,5%). The individuals of the sample work mainly in firms with the following economic activity: wholesale and retail trade (15,6%), manufacturing (13,5%), education (13,4%), and human health and social work activities (12,5%). 40,8% of the sample works in firms with more than 50 employees, while only 28,7% work in firms with 10 employees or less. Finally, 49,7% have worked in the company for more than 10 years, with 15,9% with tenure inferior than 1 year, meaning that overall the sample has a high tenure.

It is important to cross the level of education with these variables in order to better understand the sample and its behaviour in what concerns the variations between educational levels (Table 1). Apart from lower secondary education, in the other educational levels women are in a higher proportion than men, particularly for higher educated women (65,4%) which means that overall, in the sample, female employees are more educated.

Table 1 - Sample descriptive statistics: sociodemographic and explanatory variables of the job (%)

Variables		Descriptive statistics (%)		
	Total	Lower Secondary (N=11 611)	Upper Secondary (N=13 477)	Higher Education (N=13 200)
Female	**55,8**	47,8	53,1	65,4
Migrant	**2,4**	1,9	3,4	1,8
Age range				
15-24	**7,7**	6,9	12,0	4,1
25-34	**23,0**	20,4	24,6	23,7
35-44	**34,3**	32,0	32,7	37,8
45-54	**24,4**	28,3	21,9	23,4
55-64	**10,7**	12,3	8,8	11,1
Educational level				
Lower secondary education	**30,3**	-	-	-
Upper secondary education	**35,2**	-	-	-
Higher education	**34,5**	-	-	-
Firm Economic Activity				
Manufacturing	**13,5**	20,4	14,4	6,5
Energy and water	**1,5**	1,4	1,7	1,1
Construction	**3,6**	5,6	3,1	2,3
Wholesale and retail trade	**15,6**	19,5	19,1	8,7
Transportation and storage	**4,3**	5,7	5,2	2,1
Accommodation and food service activities	**6,0**	8,2	7,8	2,3
Information and communication	**2,7**	0,9	2,6	4,4
Financial and insurance activities	**3,3**	0,9	3,6	5,1
Professional, scientific, and technical activities	**3,9**	1,4	3,4	6,6
Administrative and support service activities	**3,4**	4,4	4,0	2,0
Public administration and defence	**10,4**	8,6	11,4	11,0
Education	**13,4**	5,3	7,0	27,1
Human health and social work activities	**12,5**	10,7	10,3	16,4
Arts, entertainment, and recreation	**1,9**	1,5	2,2	2,0
Residual activities	**4,0**	5,4	4,1	2,3
Occupation				
Managers, senior officials, and legislators	**4,5**	1,8	3,7	7,5
Professionals	**25,0**	1,0	4,0	67,6
Technicians and associate professionals	**16,5**	12,6	23,9	12,4
Clerical support workers	**11,0**	9,0	18,0	5,6
Service and sales workers	**19,9**	29,6	26,5	4,5
Skilled agriculture, fishery, and forestry workers	**0,4**	1,1	0,3	0,0
Craft and related trade workers	**7,5**	14,9	7,8	0,7
Plant and machine operators and assemblers	**6,6**	13,7	6,2	0,7
Elementary occupations	**8,7**	16,3	9,6	1,2
Firm Size				
10 persons or less	**28,7**	34,4	31,9	20,6
11 - 49 persons	**30,4**	31,6	31,1	28,7
50 persons or more	**40,8**	34,1	37,0	50,8
Tenure				
Less than 1 year	**15,9**	16,0	17,6	14,0
1 - 3 years	**14,2**	14,8	15,5	12,4
4 - 9 years	**20,3**	20,8	20,0	20,0
10 - 19 years	**27,4**	26,5	26,7	28,8
20 years or more	**22,3**	21,9	20,2	24,8

Similarly, in all education levels there are more individuals between 35 and 44 years old. On the other hand, within each educational level, the youngest and oldest age range are the ones with lowest proportion. Comparing the three levels, individuals with upper secondary education have a higher proportion of employees up to 34 years old and, considering that it is the educational level with more employees represented (N=13.477), it means that upper secondary education is the educational level with more young employees. There are some differences in what concerns both the most dominant occupation and firm's economic activity in each educational level. In the group of lower secondary education, service and sales workers (29,6%), elementary occupations (16,3%) and craft and related trade workers (14,9%) are the most relevant occupations. Those are service and sales workers (26,5%), technicians and associate professionals (23,9%) and clerical support workers (18,0%) for the intermediate level of education; and professionals (67,6%) for the higher educated. Lower and upper secondary education individuals work mainly in firms in the manufacturing (20,4% and 14,4%, respectively) and wholesale and retail trade sector (19,5% and 19,1%, respectively), while higher educated individuals work mainly in the education (27,1%) and human health sector (16,4%). The proportion of employees working in firms with more than 50 people is larger for the higher educated (13.200 x 50,8% ≈ 6.706), when compared to upper secondary (13.477 x 37,0% ≈ 4.987) and lower secondary education individuals (11.611 x 34,1% ≈ 3.959). Regarding tenure between education levels there aren't many differences, as they all follow the same tendency of having more employees with higher tenure.

There are also some interesting findings when analysing these explanatory variables by gender (Annex 1), which allows to control and understand the variations of gender in the labour market, therefore allowing a deeper analysis of the labour context. There are some gender differences regarding both positions occupied and sectors of activity. Women occupy mainly positions of professionals and service and sales workers, while the positions occupied by men are more diversified: being mainly professionals, technicians and associate professionals, service and sales workers, and craft and related trade workers. However, when comparing both genders, results show that female workers are more representative in the professional, service and sales, clerical support, and elementary positions. On the other hand, there is a higher proportion of men in craft and related trade occupations (16.940 x 14,1% ≈ 2.389 compared to 21.348 x 2,4% ≈ 512), and plant and machine operators and assembles (16.940 x 10,4% ≈ 1.762 compared to 21.348 x 3,5% ≈

747), and in manager and senior official positions (16.940 x 6,3% ≈ 1.067 compared to 21.348 x 2,9% ≈ 619). As for the firm economic activity, women are more present in education and in human health and social work activities, these being the most frequent sectors for female employees and in a higher proportion than men, followed by wholesale and trade retail, in which men have a similar proportion of workers. Besides this, male employees work mainly in manufacturing, and public administration and defence. However, there are some sectors of activity where men have a higher proportion than women, such as manufacturing (16.940 x 18,3% ≈ 3.100 compared to 21.348 x 9,7% ≈ 2.071), construction (16.940 x 6,9% ≈ 1.169 compared to 21.348 x 0,9% ≈ 192), and transport and storage (16.940 x 7,3% ≈ 1.237 compared to 21.348 x 1,9% ≈ 406).

There are more employees of both genders working in bigger firms, however, although the difference is small, there is a higher proportion of women working in smaller firms, and there are more female employees with higher tenure (10 years or more).

However, the results present a slight change when analysing gender differences by educational level (Annex 2). Although overall women occupy mainly professional positions, this only verifies for higher educated women (68,9%), wherein this occupation in other educational levels is very insignificant. On the other hand, service and sales' positions are more frequent in lower and upper secondary education female worker (39,4% and 31,5 %, respectively). Elementary occupations are very common among women with lower secondary education (23,4%) but becomes less significant as educational level increases. Male employees with lower secondary education occupy mainly positions of craft and related trade (23,6%), service and sales (20,7%), and plant and machine operators and assembles (18,5%). The proportion of men in these positions also decreases as education increases, being that the position with greatest weight for men with upper secondary education is technician and associate professional (25,1%), and with higher education is professionals (65%). Occupations of managers and senior officials become more relevant for both genders as educational level increases, however men are always in a higher proportion than women, even in higher education level when there are considerably more women than men, (4.561 x 12,4% ≈ 566 men compared to 8.639 x 5,0% ≈ 431 women). Education is the sector of activity with higher frequency for both genders with higher education level, although women have a higher proportion. Human health and social work activities' sector is also significant for women in this level of education, having a similar frequency in other levels. For lower and upper education

employees, wholesale and retail trade is a significant sector, with male workers being also representative in the manufacturing sector.

The percentage of employees both male and female working in bigger firms increases with educational level. It was not verified any significant variation of tenure among genders, between the different educational levels.

4.2. Job quality

As mentioned before, there are several equally weighted variables that may help determine job quality of employees, being these summarized in Table 3. In what concerns the employment relation, 6,3% of the individuals have a part time contract and 21,9% have a temporary duration contract, from which 76,9% are from 4 to 12 months duration. There are 14,3% of individuals in the sample whose contract has a duration lower than 3 months, and only 3% of more than 3 years duration. The aggregated variable of the type of contract, highlighted in Table 2, shows that the most predominant type of contract is FT&Perm (75,7%), followed by FT&Temp (18,0%), PT&Temp (3,9%), and at last PT&Perm (2,4%). From the individuals working in part time, 61,2% represent an involuntary situation, as it is 81,9% of temporary contract workers (Table 3). Also on the job satisfaction dimension, there are 6,4% of individuals looking for another job, from which 71,6% is due to job insatisfaction and only 5,7% due to job insecurity.

Table 2 – Employees' distribution by type of contract (%)

	Full time (FT)	Part time (PT)	Total
Permanent (Perm)	75,7	2,4	78,1
Temporary (Temp)	18,0	3,9	21,9
Total	93,7	6,3	N = 38 288

As for working conditions, it can by highlighted that the majority of the sample works 40 hours per week (56,8%), followed by 20% who works less than 35 hours and 19,6% who works more than 41 hours per week. There are 15,3% of employees who have the possibility to work from home. The income decile frequency is crescent from the first range, which represents below the 1st decile of income (7,4%), up to between the 8th and 9th decile (13,2%), decreasing in the last decile (above the 9th decile) to 12,5%. The atypical work is represented by 38,1% of Saturday work, 26,8% of evening work, 23,5%

Table 3 - Sample descriptive statistics by educational level: job quality variables (%)

Variables		Descriptive statistics (%)		
	Total	Lower Secondary (N=11 611)	Upper Secondary (N=13 477)	Higher Education (N=13 200)
Part time	**6,3**	6,3	6,9	5,6
Temporary contract	**21,9**	21,0	23,6	21,0
Temporary contract duration				
Less than 1 month	**4,9**	6,3	5,6	3,0
1 - 3 months	**9,4**	10,8	10,9	6,3
4 - 6 months	**31,6**	34,8	36,1	23,6
7 - 12 months	**45,3**	39,8	39,8	56,3
13 - 18 months	**1,8**	2,6	1,8	1,2
19 - 24 months	**2,2**	2,1	2,1	2,4
25 - 36 months	**1,8**	1,8	1,6	2,2
More than 3 years	**3,0**	1,8	2,1	5,0
Type of contract				
Full time and Permanent	**75,7**	76,0	73,7	77,4
Full time and Temporary	**18,0**	17,7	19,3	17,1
Part time and Permanent	**2,4**	3,0	2,6	1,6
Part time and Temporary	**3,9**	3,3	4,3	4,0
Income (deciles)				
]0;1[	**7,4**	10,5	8,6	3,5
[1;2[	**7,4**	11,3	9,1	2,2
[2;3[	**8,3**	14,4	9,3	1,9
[3;4[	**8,8**	12,6	11,3	2,9
[4;5[	**9,4**	13,2	11,2	4,2
[5;6[	**10,1**	11,8	12,4	6,1
[6;7[	**10,8**	10,5	13,0	8,7
[7;8[	**12,2**	7,5	11,0	17,5
[8;9[	**13,2**	5,3	8,2	25,1
[9;10[	**12,5**	2,9	5,9	27,8
Hours per week				
30 hours or less	**7,1**	6,5	7,3	7,5
31 - 35 hours	**12,9**	9,0	11,3	17,9
36 - 39 hours	**3,6**	3,4	4,5	2,7
40 hours	**56,8**	63,8	59,3	48,1
41 hours or more	**19,6**	17,3	17,7	23,7
Atypical Work				
Shift work	**20,5**	25,0	24,3	12,6
Evening work	**26,8**	26,3	26,7	27,4
Night work	**11,7**	13,5	11,7	10,1
Saturday work	**38,1**	44,0	40,7	30,2
Sunday work	**23,5**	26,4	26,0	18,5
Work from home	**15,3**	3,3	6,5	34,8
Involuntary Part time	**61,2**	62,7	60,7	60,3
Involuntary Temporary contract	**81,9**	86,2	82,2	78,0
Looking for another job	**6,4**	5,0	6,1	7,9
Job insecurity	**5,7**	7,5	4,0	6,0
Job insatisfaction	**71,6**	65,7	70,5	75,8

of sunday work, 20,5% of shift work and 11,7% of night work.

When crossing the educational level with the job quality variables, it is possible to retrieve some information regarding employment relation, working conditions and job satisfaction of the employees in each educational level (Table 3). Comparing the three levels, upper secondary education is the level with the highest proportion of part time workers and temporary workers. Of the employees with temporary contracts, its durations follow the same tendency of the overall sample, with the majority of individuals in each level having contracts between 4 and 12 months. Although the difference is not very significative, it is possible to verify that higher educated employees have a higher proportion of contracts longer than 25 months (more than 2 years). Looking at the type of contract within each level, the frequency distribution between type of contract is similar to the overall sample, however if we compare these values between educational levels it is possible to point out some differences. These differences are more evident by analysing the distribution of educational levels within each type of contract (Graphic 1). Higher educated employees have the highest proportion of FT&Perm contracts and the lowest of PT&Perm; employees with upper secondary have the highest proportion of the three types of non-standards contracts (FT&Temp, PT&Perm and PT&Temp), being closely followed by higher educated workers in PT&Temp. As for the individuals with lower secondary educational, the most common contract is PT&Perm, very close to the intermediate level, and the one with the lowest weight is PT&Temp.

Graphic 1 – Type of contract by educational level (%)
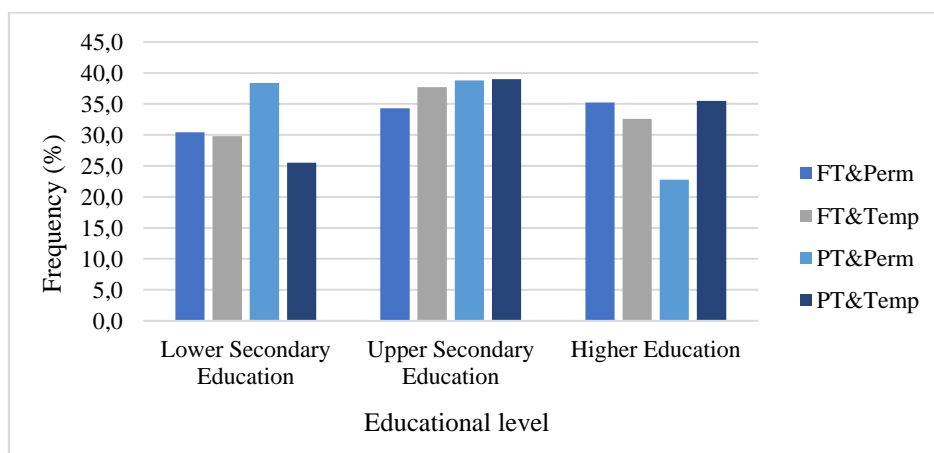
The variations between educational levels are clearer when it comes to working conditions. Regarding income, the more educated the employees are, the higher the

income received as seen in Graphic 2. While higher frequencies of lower secondary education employees are in the beginning of the income scale, those of upper secondary level are in the middle, and of higher educated are mainly above the seventh decile of the scale, representing the highest salaries. In all educational levels, the highest frequency of working time per week is 40 hours however, higher educated employees are the ones who have the highest proportion of reduced schedule, from 31 to 35 hours per week, (13.200 x 17,9% ≈ 2.363 compared to 13.477 x 11,3% ≈ 1.523 with upper secondary) and more than 40 hours per week (13.200 x 23,7% ≈ 3.128 compared to 13.477 x 17,7% ≈ 2.385 with upper secondary). Analysing the five variables of atypical work, the results are rather linear: in each educational level saturday work is the type of atypical work with highest proportion and night work with the lowest proportion. Analysing the possibility to work from home, higher educated employees have a significant higher proportion.

Graphic 2 – Income deciles by educational level (%)
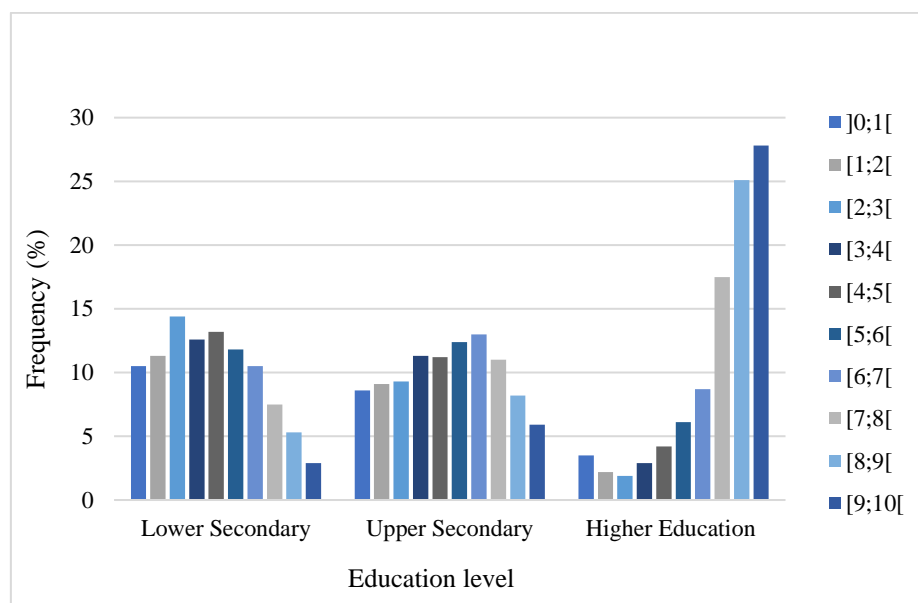
At last, with regard to job satisfaction dimension, in every educational level the proportion of employees in involuntary temporary contracts is higher than in involuntary part time contracts. As for employees looking for another job, although they represent a small percentage, these are in a higher proportion among the higher educated (13.200 x 7,9% ≈ 1.043), compared to those with upper secondary education (13.477 x 6,1% ≈ 822) and lower secondary education (11.611 x 5,0% ≈ 592). From the higher educated employees in an active search for another job, 75,8% state it is due to job insatisfaction and only 6% due to job insecurity. These frequencies are similar in every educational group, with the

proportion of the reason being job insatisfaction being considerably higher than job insecurity.

Once again, it is essential to analyse other possible determinants of job quality, such as gender, age range and firm size (Annex 3, 4 and 5), in order to have a broader analysis of job quality. Regarding employment relation, there is a higher proportion of female workers in part time jobs (21.348 x 7,9% ≈ 1.686 compared to 16.940 x 4,3 ≈ 728) and in temporary jobs (21.348 x 21,6% ≈ 4.611 compared to 16.940 x 22,3 ≈ 3.778) (Annex 3). As summarized in Table 4, women are in a greater proportion than men in each type of contract. The most stable contract, FT&Perm, is the most frequent type of contract with a considerably higher proportion amongst individuals older than 35 (Annex 4). Among employees aged between 25 and 34, FT&Perm contracts are also the ones with higher weight, however FT&Temp and PT&Temp also become relevant. As for the youngest range, aged from 15 to 24, FT&Temp in the type of contract with the highest proportion, followed by FT&Perm and PT&Temp. PT&Perm contracts are the less representative types of contract in every age range. As for the association between firm size and employment relations (Anexo 5), FT&Perm are in a higher proportion in firms with more than 50 employees, while PT&Temp are in a greater proportion for firms with 10 employees or less (11.002 x 6,0% ≈ 660, compared to 11.647 x 4,3% ≈ 501 and to 15.639 x 2,1% ≈ 328). From the employees working in temporary contracts, their durations are longer for bigger firms.

Table 4 - Employees' distribution by gender in each type of contract (%)

| Variables | Total (N=38 288) | | | |
	FT&Perm (N=28 974)	FT&Temp (N=6 913)	PT&Perm (N=916)	PT&Temp (N=1 485)
Male	44,7	47,2	22,3	35,1
Female	55,3	52,8	77,7	64,9

Income level is where the inequalities between female and male workers is more notorious, as summarized in Annex 3. While women are rather similarly distributed between income deciles, men are more concentrated in the highest deciles, with a higher proportion in these levels. This means that men earn the higher salaries in the samples, as seen in Graphic 3. Although the majority of employees of both genders work 40 hours per week, women have a higher proportion of having a reduced schedule, working less than 40 hours, some of which may correspond to part time workers. In contrast, male

employees work more overtime, having a greater proportion in working more than 41 hours per week (16.940 x 24,7% ≈ 4.184 compared to 21.348 x 15,7% ≈ 3.352). Saturday work is the most reported type of atypical work for both genders. But there are some differences between gender, as there are more male employees doing evening work (16.940 x 32,0% ≈ 5.421 compared to 21.348 x 22,8% ≈ 4.867) and night work (16.940 x 16,4% ≈ 2.2778 compared to 21.348 x 8,0% ≈ 1.708). On the other hand, the proportion of women with the possibility of working from home is higher than men's.

Graphic 3 – Income deciles' distribution by gender (%)
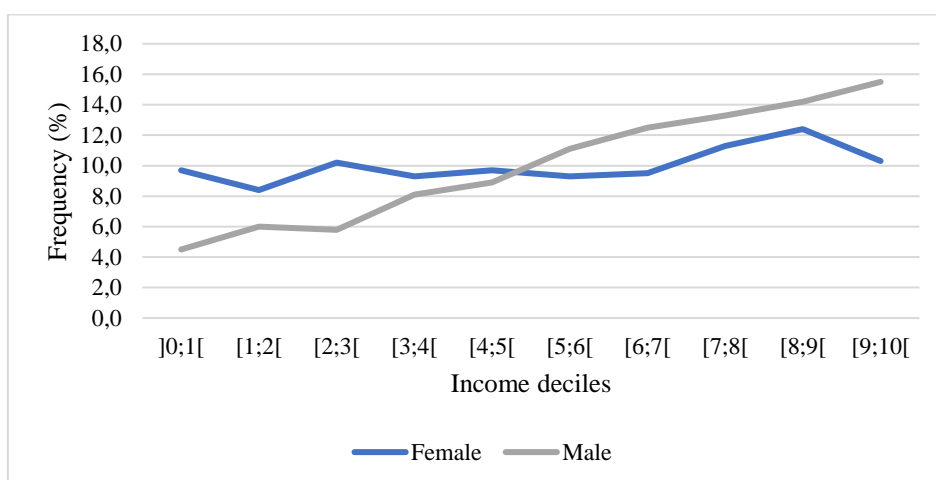
Regarding the age of employees, younger ones receive lower income (Annex 4), which can be related to their lower tenure and experience. The youngest age range has its highest proportion of workers concentrated in the lowest deciles, and as the age range increases, within each age range, the highest proportion of workers moves to higher deciles, up to the oldest age range, which has a greater weight on the last income decile, representing the highest salaries of the sample. Employees between 25 and 44 are the ones that work more overtime, and for the youngest age range working less than 30 hours has a significant proportion, possibly being related to part time contracts. Atypical work follows the same pattern as the overall results in each age range, with older employees having a higher proportion of work from home. Firms with 50 employees or more have a greater share of workers concentrated in higher income deciles, have a higher weight in all types of atypical work, and more employees with the possibility to work from home. The biggest firms also have the greatest proportion of employees working overtime and with a reduced schedule.

From the employees working in part time and in temporary contracts, women have a higher proportion of involuntary situation compared to men. Female workers also state a higher incidence of being looking for another job. Ages comprehended between 25 and 54 years old are the ones who present higher proportion of involuntary part time and involuntary temporary contract. These involuntary types of contract have its higher proportion for firms with more than 50 employees.

In order to have a more profound knowledge of variations of job quality according to the educational level, it is highly relevant to cross this variable with the determinants just presented, with special focus on gender (Annex 6) and age (Annex 7) which were the ones that caused greater changes in the job quality variables. The share of women in part time jobs is higher than men in every educational level. As for temporary contracts, these are in a greater proportion for male employees within lower educational level, and for female employees within higher education. It is interesting to verify in Table 5 and Table 6 that female workers with lower secondary education represent 81,0% of PT&Perm contracts and less than 50% of FT&Perm and FT&Temp contracts, and that while the number of women in the first type of contract decreases as education increases, the inverse happens with the other two types of contracts. Also, there is a significant increase in PT&Temp contracts for female employees as they become more educated. There are no significant differences regarding duration of temporary contracts.

Table 5 - Type of contract distribution by gender, by educational level: full time contracts (%)

	FT & Perm (N=28 974)			FT & Temp (N=6 913)		
	Lower Secondary (N=8 822)	Upper Secondary (N=9 939)	Higher Education (N=10 213)	Lower Secondary (N=2 058)	Upper Secondary (N=2 604)	Higher Education (N=2 251)
Male	53,1	47,2	35,0	56,7	50,3	35,0
Female	46,9	52,8	65,0	43,3	49,7	65,0

Table 6 - Type of contract distribution by gender, by educational level: part time contracts (%)

	PT & Perm (N=916)			PT & Temp (N=1 485)		
	Lower Secondary (N=352)	Upper Secondary (N=355)	Higher Education (N=209)	Lower Secondary (N=379)	Upper Secondary (N=579)	Higher Education (N=527)
Male	19,0	23,4	25,8	36,1	40,4	28,5
Female	81,0	76,6	74,2	63,9	59,6	71,5

From 45 years old onwards the proportion of employees in part time contracts and in temporary contracts decreases as educational level increases, with the reverse happening for employees from 25 to 34. Although in terms of frequency, there is also an increase in temporary contracts for the youngest age range as educational level increases, that does not reflect in the number of employees because higher educated individuals belonging to the age range 15-24, actually only include employees above 20 years old, as it is the age by which they have completed a superior diploma, therefore reducing the sample size. Looking at the aggregated variable of the type of contract, FT&Perm contracts have a higher frequency in individuals between 45 and 64, increasing even more as educational level increases. Within the youngest age range, the percentage of FT&Temp contracts increases as educational level increases, being counterbalanced by the decrease of the percentage of FT&Perm contracts, which decrease as education increases.

As it has been verified before, female earn lower wage, however, this gap is more evident in women with lower secondary education and reduces as educational level increases. It was shown that overall income level increases with the educational level, yet now it is possible to see that it is not is the same proportion for men and women. While male workers are in a higher proportion in higher income deciles in both lower and upper secondary levels of education, there is a considerable leap regarding income level in higher educational level for female workers. This originates a reduction in the income gaps between men and women for higher educated employees, with female workers being more representative in higher wages. Regarding working hours, there are no relevant differences between gender, comparing educational levels, as the gaps are similar for each indicator in the three levels. On the other hand, concerning atypical work there are some variations. Overall, the proportion of men doing atypical work is higher than women's in lower and upper secondary education. While weekend work decreases for both genders from lower secondary education to higher education, the proportion of employees with the possibility to work from home is significantly higher for higher educated, particularly for female employees.

Educational level also originates some changes in income levels by age. It has been verified that the older the employees are, the higher the income level, and in parallel that the higher educated the higher the income level. It is confirmed that indeed within each age range the income level is higher as educational level increases, with the increase being particularly pronounced for higher educated workers older than 35. The proportion of

employees working overtime is higher for higher educated of all age ranges above 25 years old, between which the highest share is for employees between 35 and 54. The frequency of employees between 15 and 34 working overtime decreases from lower to upper secondary education, increasing again for those with higher education, becoming the age ranges to work less overtime. Similarly, the proportion of employees working between 31 and 35 hours per week is higher for higher educated in all age ranges, particularly for those older than 35. Employees younger than 25 with upper secondary education have the highest proportion of working less than 30 hours per week, which is consistent with the highest share of part time contracts for these individuals. Overall the proportion of atypical work is higher for individual with upper secondary education, particularly for those younger than 44, and decreases for individuals in all age ranges with higher education. In each educational level, the proportion of employees with the possibility to work from home is higher for those from 45 to 54 years old, being particularly high among the most educated employees.

Finally, in the job satisfaction dimension of job quality, it is possible to verify that the frequency of involuntary part time remains constant for women as education increases, representing a higher proportion of female employees in higher educated due to the fact that there are considerably more women with this level of education. On the other hand, the share of involuntary part time for male workers decreases as educational level increases, which originates a greater gender gap in higher educated individuals. There is also a decrease in the share of male workers in involuntary temporary contracts as education increases. The proportion of both gender employees looking for another job increases with educational level, with female workers having a higher share in all levels of education. From the employees looking for another job, higher educated women have a greater proportion of job insatisfaction and job insecurity, when compared to women in other educational levels, and to men in the same level.

Involuntary situation of contracts by age follows the same tendency presented before in every educational level, in which involuntary part time and involuntary temporary is higher for individuals from 25 to 54. It is relevant to highlight the pronounced decrease of involuntary contract for the oldest age range with higher education. The proportion of employees looking for another job increases for every age range as educational level increases, with the exception of the oldest age range, which decreases considerably. From those who state both job insecurity and job insatisfaction as the reason, the proportion is

higher for employees between 35 and 44 in every educational level, with the proportions being higher for higher educated, particularly for job insatisfaction.

4.2.1. Contractual situation in Portugal

As job quality is the central topic in analysis in this study, it is important to have a deeper understanding of its dimensions. Therefore, I crossed the aggregated variable 'Type of contract', with the other variables of job quality so as to have a greater knowledge of the conditions within each type of contract and between types of contract, allowing to have a better perception of the contractual situation and what the employment relation implies in terms of working conditions and job satisfaction in the Portuguese labour market. Similarly to the previous methodology, it was also performed a breakdown of this analysis by educational level to determine the variations according to it.

Starting by looking at some explanatory variables of the job (Annex 8), while FT&Perm contracts are in a higher proportion in the biggest firms in analysis, FT&Temp are more frequent in firms between 11 and 49 employees, and PT&Perm and PT&Temp in the smallest firms in analysis. As for tenure and as it would be expected, employees in FT&Perm contracts have higher tenure, while those with less tenure are FT&Temp contract workers. However, it is interesting to highlight that there are still some people in temporary contracts with more than 10 years of tenure, 4,6% for FT&temp and 6,0% for PT&Temp.

The differences in income level are clear, as seen in Annex 8. FT&Perm contract employees earn higher salaries, with 57,1% of individuals with this type of contract having salaries above the 6th decile (cumulative percentage from [6;7[to [9;10[) and having as mode decile [8;9[. The most frequent decile for FT&Temp contracts is [2;3[, and 55,8% of employees earn salaries between above the 1st decile and below the 5th (cumulative percentage), showing a great decrease in remuneration conditions. As for both part time contracts, PT&Perm and PT&Temp, more than 75% of individuals receive an income lower than the 1st decile. When analysing the variations by educational level (Annex 9), it is possible to verify that within each type of contract, the proportion of workers in higher income deciles increases as educational level increases, and decreases for the lowest income deciles. For employees with lower secondary education, with FT&Perm contracts, the mode decile is [4;5[, rising to [7;8[for those with upper

secondary education and to [9;10[for higher educated with the same type of contract. Regarding FT&Temp contracts, the difference is not so evident, especially between lower and upper secondary employees. The majority of individuals with the lowest educational level receive below the 3rd decile of income, while more than 50% of those with the intermediate level receive between above the 1st and below the 4th decile of income (cumulative percentage). However, the mode decile is higher for lower secondary education, [2;3[, compared to upper secondary education, [1;2[. For the same type of contract, there is a big jump in income decile for higher educated employees, as the majority receive between above the 4th and below the 8th decile, having as most frequent one [7;8[, displaying a great increase in payment conditions. As for PT&Perm and PT&Temp contracts, although being always the most frequent income level (]0;1[), the frequency of employees receiving below the 1st decile decreases as educational level increases, with frequencies becoming more distributed among higher income levels. As it would be expected, the type of contract with lowest remuneration in all educational levels is the most unstable one, PT&Temp.

Being gender such a relevant determinant of job quality, especially when it comes to compensations, the previous analysis was split by gender, to determine any inequalities. As presented in Annex 10, female employees show a higher proportion in lower income deciles compared to men, with the exception being for higher educated in full time contracts, in which employees are more concentrated in the highest income deciles and women are in a greater proportion, particularly for FT&Perm. For the cases where the mode decile is the same, as it is for part time contracts (Table 7), the proportion of women in the lowest levels of income is higher in the three level of education. As summarized in Table 7, the gender gap is more significant for FT&Perm contracts, however it reduces as educational level increases, as the increase in women's income level with the educational level is very sharp, getting much closer to men's in higher education level. It is also interesting to highlight that for FT&Temp contracts, employees with lower secondary education of both genders have the same mode decile, yet for employees with upper secondary education, mode decile decreases for women and increases for men, originating a greater gap. Income level becomes higher and more equal for higher educated employees, showing once more a positive association between income and this level of education. Regarding PT&Perm and PT&Temp contracts, the tendency is the same previously seen, due to the essence of the contract itself, which has reduced hours, the compensations are much lower regardless of the gender.

Table 7 – Mode income decile by gender, by type of contract, by educational level

Educational Level	Type of Contract	Mode Decil	
		Male	Female
Total	FT & Perm	[9;10[	[8;9[
	FT & Temp	[3;4[	[2;3[
	PT & Perm	]0;1[	]0;1[
	PT & Temp	]0;1[	]0;1[
Lower Secondary	FT & Perm	[6;7[	[2;3[
	FT & Temp	[2;3[	[2;3[
	PT & Perm	]0;1[	]0;1[
	PT & Temp	]0;1[	]0;1[
Upper Secondary	FT & Perm	[7;8[	[5;6[
	FT & Temp	[3;4[	[1;2[
	PT & Perm	]0;1[	]0;1[
	PT & Temp	]0;1[	]0;1[
Higher Education	FT & Perm	[9;10[	[8;9[
	FT & Temp	[7;8[	[7;8[
	PT & Perm	]0;1[	]0;1[
	PT & Temp	]0;1[	]0;1[

The number of hours worked per week is only relevant for full time contracts (Annex 8), as part time contracts have mainly as working time 30 hours or less, with a small percentage up to 35 hours which can be considered overtime in these types of contract. FT&Temp contract have a higher proportion of employees working 40 hours per week, while FT&Perm contracts' frequencies are more dispersed through other indicator of working time, with 21,2% of employees working overtime and 14,5% having a reduced schedule (between 31 and 35 hours per week). When analysing working time by type of contract in each educational level (Annex 9), it is possible to verify that there are no differences for part time workers comparing the three educational levels, which makes it similar to the general overview. As for full time contracts, lower and upper secondary education employees work mainly 40 hours per week, yet, for higher educated employees in FT&Perm and FT&Temp contracts, there is a decrease in the frequency of those who work 40 hours a week and an increase in overtime and in working between 31 and 35 hours.

Overall, the most common type of atypical work in all types of contract is saturday work, however, while for PT&Perm and PT&Temp it is followed by sunday work, for both full time contracts (FT&Perm and FT&Temp), it is followed by evening work (Annex 8). Despite being the lowest frequency type of atypical work within each contract, there is a

higher proportion of employees doing night in both full time contracts, particularly in FT&Perm. The possibility to work from also has a higher proportion for those with the most stable type of contract, FT&Perm. However, when splitting by educational level (Annex 9), the results are slightly different. For employees with FT&Perm contracts, there is an increase in the proportion of evening work as educational level increases, accompanied with a decrease in weekend and shift work. It is interesting to point out that for both part time contract, the highest proportion of atypical work occurs in individuals with upper secondary education. The proportion of employees doing night work is higher in FT&Perm contracts in every educational level, followed by FT&Temp contracts. The share of employees who can work from home is lower in lower and upper secondary education levels in all types of contracts, and increases considerably for higher educated employees, meaning that these have a greater possibility of working from home, with full time contracts having a higher proportion in every educational level, particularly FT&Perm contracts.

Concerning job satisfaction dimension, from part time contracts, PT&Temp have a higher proportion of employees in an involuntary situation, while for those in temporary, FT&Temp show a greater share of being involuntarily (Anexo 8). Comparing the three levels of education (Annex 9), while involuntary part time for PT&Perm reduces as educational level increases, involuntary part time for PT&Temp increases for higher educated workers. For this last type of contract, the situation is reversed regarding involuntary temporary, as it decreases considerable for higher educated. The proportion of employees looking for another job increases for every type of contract as educational level increase, being higher in higher educated individuals in all contracts. For both temporary contracts, this active search intensification is accompanied by an increase in job insatisfaction as the main reason. In all educational levels, the great majority of employees is looking for another job due to job insatisfaction in the current job, being the proportions considerably higher than job insecurity. This last reason is a more regular justification along levels of education, being its share very reduced in all types of contract and almost inexistent for PT&Perm.

5. Discussion

According to the OECD (2004, 2006), the dominant trend since the late 1990s has been easing of protections for hiring and dismissal, which has increased the share of non-permanent employment and expanded dual labour markets, characterised by the decrease of permanent jobs and the growth of precarious jobs (Betcherman, 2013). Precarious jobs are strongly related to poorer job quality as the precariously employed are the ones in the disempowered segment of the dualized labour market, generally occupying low quality jobs (Emmeneger *et al.,* 2009; Kalleberg, 2009; Rueda, 2005). Portugal is considered a country with risk of precariousness, and according to the OECD (2017), despite the progress made, low quality jobs is still a very present issue that needs to be improved. Being a country with strong protection of permanent contracts (European Commission, 2017) it would be expected for non-standard forms of employment to be main way to achieve higher flexibility (Vives, 2010), and therefore to be the most representative forms of employment. According to Kalleberg *et al.*'s (2000) definition of non-standard employment, only two types were studied: part time and temporary employment. However, results showed that in the Portuguese labour market, while temporary employment is moderately relevant (21,9%), part time is not very significative, with only 6,3%. According to Atkinson (1988), these forms of employment contribute to numerical flexibility, by allowing firms to adjust the level of labour supply to fluctuating demand. From these two types of employment, four types of contract were analysed: full time and permanent (FT&Perm), full time and temporary (FT&Temp), part time and permanent (PT&Perm), and part time and temporary (PT&Temp). Consistent with the previous findings, and unlike what would be expected, standard employment, here represented by FT&Perm contracts, is the labour situation for about three quarters of the sample, followed by FT&Temp contract with a much smaller percentage, and by both part time contracts in an even smaller proportion. However, numerical flexibility, first highlighted by Atkinson (1988), can also be achieved by adjusting working-time patterns. This was verified in the sample, as approximately 40% work either overtime (more than 40 hours per week) or less than 35 hours per week, and on average approximately 24% of the sample does atypical work, which allows to adjust the size of the firm's workforce.

The employment relation and the contractual situation by itself are not sufficient to conclude regarding job quality because, as Belous (1989) stated, whether non-standard employment is problematic depends on the quality of non-standard jobs, reason why it

essential to examine other features of the job. Non-standard employment allows higher flexibility for the employees, nevertheless, according to Kalleberg *et al.* (2000), any gains in flexibility can be overthrown if the situation is involuntary, and indeed, findings show that from the employees working in part time approximately 60% is an involuntary situation and from those in temporary contracts 80% are involuntary, which reflects negatively on the quality of jobs, as it can be assumed as job insatisfaction. Also on the job satisfaction dimension of job quality, only a small percentage of the sample stated to be looking for another job, however from those the majority said it was due to job insatisfaction, with only a minor proportion attributing the reason to job insecurity. Although there are few who report to be looking for another job due to job insecurity, this can also be assumed to be the case for those in an involuntary situation because non-standard employment contracts might be used as proxy for dismissal (Kalleberg, 2009, 2011).

Results on the working conditions within each type of contract show that full time and permanent contract employees similarly have a higher proportion of working overtime and less than 40 hours per week, which means that the companies allow some flexibility to work less than the established by law. This can happen informally or due to company agreements but either way, it can be assumed as an advantage for the employee. Moreover, not only is the income level considerably higher than the other types of contracts, but also they are the ones who present higher frequency of employees with the possibility to work from home, demonstrating more flexibility and autonomy for the employee. This is consistent with the findings of Crespo *et al.* (2017) in which employees with permanent contracts have access to better jobs, with a favourable situation regarding pay, autonomy, job security and promotion prospects. Also, according to Clark and Senik (2006), permanent jobs provide, besides higher salaries, increased satisfaction with job security and promotion prospects. This was verified in the job satisfaction dimension, as FT&Perm contract workers are the ones with highest tenure, in which the majority works in the company for more than 10 years, having similarly a very reduced percentage of those who report to be looking for another job (2,6%), from which one can assume that they do not want to leave the firm, possibly because they are satisfied with the conditions and have career prospects.

On the other hand, according to the literature, temporary contract workers hold jobs with poorer working conditions (García-Serrano, 2004), are paid less and are less satisfied,

being considered jobs of lower quality (Booth *et al.,* 2002). Indeed, results show that FT&Temp contract workers have lower salaries and have a considerable share of atypical work, particularly saturday and evening work. The conditions are similar for PT&Temp contracts worker, in which, although both part time contracts have substantially lower salaries than full time due to the nature of the contract itself, the income level in this type of contract is the lowest. These employees also present a significant proportion of atypical work (mostly weekend work and evening work). Although most employees in temporary contracts has tenure lower than 3 years, there are still some who are working in the same company for more than 10 years, which is a sign of precariousness (Heery & Salmon, 2000; Kalleberg, 2009). All this helps explaining not only the high rate of involuntary contract situation, but also the high proportion of people looking for another job, particularly for PT&Temp contract employees which represents almost 40%. Existing research on the consequences of temporary work indeed suggests that it can be considered as an indicator of reduced job quality (De Witte & Näswall, 2003), which is sometimes also related to lower job satisfaction (De Cuyper & De Witte, 2005). Curiously PT&Perm contract workers report less involuntary contractual situation and less job insecurity, from which one can assume that, having the security of having a permanent contract, there are more people who opt for this contract as it allows them to reconcile the job with other activities or tasks (Belous, 1989; Polivka & Nardone, 1989).

According to existing research, there are certain groups who are more vulnerable in the labour market, being more prone to having worse working conditions and therefore less quality jobs. Findings in this study are consistent with those from other studies in which women tend to have less risky jobs, lower wages, fewer job opportunities, and better balance between family and work (Muhlau, 2011; Levanon *et al.,* 2009; Stier & Yaish, 2014). In fact, results show that men are more present in occupations such as craft and related trade workers, plant and machine operators and assemblers, and technician and associate professional, and in areas such as manufacturing, construction and transport, and storage, which are considered more risky jobs and sectors of activity. Also, women earn considerably lower wages, being positioned in terms of income level mainly in the first half of the scale, while men are mostly in the second half of the scale. The gap between gender is more significative for both full time contracts, with part time contract workers' salaries being more similar but still having women earning lower than men. On the other hand, women are in a better position regarding balance between work and family as they do less overtime, less evening and night, have more a reduced schedule, and have

more possibility to work from home. Women are also more representative in part time contracts which could be considered a positive aspect to allow work-life balance, however it is important to highlight that more than half of female employees working in part time are in an involuntary situation, which has a negative impact on job satisfaction and consequently on job quality.

Another group that has been studied as to being more prone to worse conditions in the labour market are young employees, because they are considered new entrants and so they have a weaker link to the market (Treu, 1992), reason why age is considered a characteristic with significant impact on job quality (Crespo *et al.*, 201). This study has shown that the youngest age range has a very high proportion of temporary contracts (70%) and a moderately high proportion of part time contracts (21%), which reflects in the fact that FT&Temp contracts are the most common among these individuals. This can be explained by the fact that younger employees have less experience, therefore temporary contracts are used as a way to screen workers before hiring them permanently, thus reducing recruitment and training expenses (Houseman, 1997). On the other hand, within other age ranges, the percentage of employees in non-standard contracts is considerably low, particularly above 35 years old, being FT&Perm contracts the most representative types of contract, therefore enhancing job conditions and job security (Crespo *et al.,* 2017). As for working conditions, young employees receive lower wages, which once again is related to experience and tenure (Mumford & Smith, 2004), have less flexibility in terms of having a reduced schedule and of working from home, but they also do less overtime. Young employees have the lowest proportion of involuntary contractual situation because these individuals are aware that they have little experience and therefore must often accept non-standard jobs when they are faced with poor market conditions (Trey, 1992). Contrarily, those who account higher involuntary temporary work (more than 90%) are employees from 35 to 54, because by this age they have reached their career peak and created a family, therefore they want more job security and are less willing to submit to non-standard contracts.

Firm size has also been studied as a characteristic with strong impact on job features, and ultimately on job quality, and results actually meet some existing research. Regarding employment relations and salaries, large firms are in a better position as not only have they higher proportion of FT&Perm contracts, but also have higher salaries, as it has been demonstrated by some authors (Brown & Medoff, 1989; Oi & Idson, 1999; Crespo *et al*.,

2017). On the other hand, Crespo *et al*. (2017) have also verified that large firms are in a worse position in terms of work intensity, autonomy and work-life balance, which cannot be fully confirmed in this study because results have shown that, although overall they have a greater weight of atypical work and overtime, they have a larger proportion of employees with the possibility of having a reduced schedule and of working from home. Moreover, although they have the lowest proportion of employees working in temporary contracts, these employees report the highest level of involuntary situation, which as seen before, has a negative impact on the overall satisfaction and consequently on job quality.

Although all these characteristics are relevant when analysing job quality, education is considered one of workers' characteristics with more impact on job features (Crespo *et al.,* 2017) and ultimately on job quality, being low skilled and low educated workers considered another vulnerable group to precarious work and low quality jobs (Simões *et al.,* 2015; Kretsos & Livanos, 2016). But being education the focal job quality determinant in analysis, besides being studied individually, it was also analysed with the two other main worker characteristics that have been studied as having the greater association with job quality (gender and age), allowing to have a deeper knowledge and therefore come to some conclusions regarding the variations of job quality. Findings in this study show mixed results because, if on the one side, there is a clear advantage for higher educated employees in terms of working conditions, on the other, regarding employment relation, the differences between educational levels aren't so evident. Higher educated workers, which occupy mainly positions of associate professional, professionals and managers, receive substantially higher salaries, and have a higher proportion of employees with the possibility to have a reduced schedule and to work from home, situation which becomes reversed as educational level decreases, making employees with lower secondary education the ones with overall worse working conditions. This can be related by findings of Marshall e*t al*. (1988) in which the level of education is strongly associated with the occupational position of workers, because the educational level may be used as an access criterion in order to achieve a higher position, which in turn is associated to most indicators of job quality, such as income and job characteristics (Spector, 1997; Warr,1987). As for employment relations, upper secondary education is the level where there is the biggest proportion of both types of non-standard employment. When looking at types of contract, FT&Temp, PT&Perm and PT&Temp are more present among employees with the intermediate level of education, followed closely by higher educated in PT&Temp, with lower educated being the ones with the lowest report of

temporary contracts, unlike what would be expected. On the other hand, the lowest educational level in study reported a highest rate of PT&Perm contracts, very close to the intermediate level. Therefore, it is not possible to assume that lower educated are more prone to non-standard contracts, only that the higher educated the employees are, the higher are the chances of having a standard contract, as results show that the proportion of FT&Perm contracts increases with educational level. Income level within each type of contract also increases with education, particularly for FT&Perm contracts, in which the difference between educational levels is more accentuated. For FT&Temp, although remuneration conditions are similarly low for both lower and upper secondary educational levels, there is a significant increase for employees in these contracts with higher education, showing once again the wage benefit of tertiary education.

This is also reflected in gender differences, as employment relations and income conditions become more homogenous as educational level increases. Female employees have a greater proportion of part time jobs than male, however this gap is more significative for lower secondary education workers, reducing with the increase of education. Higher educated women represent more than half of the employees in every type of contract, which is consistent with the finding that women are more educated than men, as in the sample there are more female workers with a superior diploma. Overall for women, up to the higher educational level there is an increase in full time contracts and decrease in part time, with the exception of PT&Temp, which becomes more significative in the highest level of education. The fact that this is the type of contract furthest from the standard and with the worst working conditions, contradicts the advantage proven so far of having a higher educational level, being considered a precarious situation for these employees.

The influence of gender on income level is counterbalanced by the educational level. The gender gap in income level is lower the more educated employees are, with male and female workers being in a situation of greater equality. For higher educated, the proportion of individuals receiving higher salaries is larger for female workers, opposite to the overall situation and to the situation in the other educational levels, which means that educational level is able to eliminate gender disparities. Analysing this situation by type of contract, gender gap reduces in all types of contract as educational level increases, with the greatest differences being in full time contracts. The standard contract, FT&Perm, is the one that shows larger inequalities, and where the advantage of being

more educated is more evident, as de gap reduces considerable from lower secondary to higher education, to the point where there is a greater share of women receiving the highest wages. Male employees with secondary education levels are the ones who do more atypical work, with the gender gap being more relevant for evening and night work, which once again reduces for higher educated. Higher educational level also reflects higher proportion of those with the possibility to work from home, as there is a big increase for higher educated employees, with women having a greater weight. These aspects of working conditions can also be associated to the findings that higher educated have jobs of higher occupational position and responsibility, and work mainly in larger firms, which has been discussed as providing better conditions for the employees.

For the youngest age range, from 15 to 24 years old, FT&Temp contracts are the most representative contracts in every educational level. Although FT&Perm contracts are in a greater proportion in all the other age ranges and educational levels, for those between 25 and 34 there is an increase in both types of temporary contract as educational level increases, showing deterioration of the employment relations for younger employees. This confirms findings that young graduates are a vulnerable group to precariousness due to their weak link to the labour market, being more submitted to temporary contracts as a way to deal with fluctuations in the demand for workers (Bertrand-Cloodt *et al.,* 2012). On the other hand, from 45 years old onwards, the proportion of employees in part time contracts and in temporary contracts decreases as educational level increases, demonstrating better conditions for older educated employees. Although income level increases for all age ranges as educational level increases, the increase is particularly pronounced for higher educated workers older than 35, leaving younger employees in disadvantage. Higher educated individuals of all age ranges above 25 years old do more overtime than those with lower educational level. This is related to the fact that the more educated and the older workers are, the higher is their occupational position in the firms, and therefore their job intensity and job responsibilities. Also job autonomy is higher under these circumstances (Fabra & Camisón, 2009) which can be seen in the higher proportion of higher educated, particularly older ones, to have the possibility to work from home.

Overall employees in the highest level of education report the highest proportion of employees looking another job, possibly because higher educated individuals have higher expectations regarding their job which, if not met, can have a negative impact on the

levels of job satisfaction (Lincoln & Kalleberg, 1990). When taking into consideration gender, the proportion of those looking for another job increase with education for both genders, being higher for higher educated female workers, reflecting less job satisfaction for these individuals. When it comes to age, the proportion of employees looking for another job increases for every age range as educational level increases, with the exception of the oldest age range, which decreases considerably. These findings come to corroborate conclusions of Verhofstadt *et al.* (2007), in which they found that higher educated employees are less satisfied in their first job, because higher education induces higher expectations (Hall, 1994), which can result in lower satisfaction when they are not met. The proportion of female workers in involuntary part time increases with educational level, while the proportion of male employees decreases, originating a greater gender gap for higher educated, which reflects lower job satisfaction for high educated women. Also, the share of male employees in an involuntary temporary contract decreases for the highest level of education, being this level more advantageous in terms of satisfaction for men. It is also to note that, similarly to what has been discussed, there is a more accentuated decrease in involuntary contracts for the oldest individuals with higher education, particularly in part time, which be related to situations of retirement or preparation for retirement. According to Taylor Carter & Cook (1995), employees with high attachment to work, such as managers, who have worked in the company for several years and enjoy the activities central to the profession may find satisfaction in taking on part-time work that involves critical elements of the old job. Also, for those who have not yet retired and who are attached to work, as it may also be the case for these older higher educated individuals, part-time work may allow time to plan and psychologically prepare for retirement (Gray & Morse, 1980), being used to slowly phase a worker out to retirement, which may be viewed by some employees as an attractive alternative to total retirement.

6. Conclusion

This study aimed to investigate to what extent job quality dimensions vary according to the level of educations of employees in the Portuguese labour market, and the variations within each level, in order understand if the time spent and investment made in education is related to better job quality in Portugal.

In a context of increased labour market flexibility and growth of precarious jobs, education is expected to be positively related to better quality jobs, because those who invest in education have greater stability in the labour market (Aceleanu, 2012). However, most studies that relate educational levels in the labour market focus only on the benefits in income level, not contemplating other variables of job quality. Job quality is a topic on which there is a vast literature and research, and on which there is no consensus. It is a multidimensional and contextual phenomenon, with multiple factors and forces influencing it (Findlay *et al.,* 2013). In the incapability of controlling every possible feature that is involved in this complex subject, we focused on three main dimensions of job quality: employment relations, working conditions and job satisfaction. These were analysed by three levels of education: lower secondary education, upper secondary education and higher education, the three most predominant attainment levels in Portugal. Indeed, overall, employees with higher education have better working conditions, particularly concerning pay, atypical work, work autonomy and flexibility. In the working conditions' dimension, it was possible to verify that educational level has a double effect, as it also increases conditions within the levels. Educational level was found to counterbalance the negative influence of gender, as gender differences become much more reduced as education increases. Although in a less notorious way, the same phenomenon happens for age, as working conditions improve for every age range in higher education.

However, unlike what would be expected, employment relations' dimension showed mixed findings. From the four types of contracts analysed (full time and permanent, full time and temporary, part time and permanent and part time and temporary), it was not possible to conclude that lower educated are more prone to non-standard contracts, only that the higher educated the employees are, the higher are the chances of having a standard contract, as this is the only type of contract that increases with educational level. Yet, within higher educated, there are also considerable amount of non-standard employment contracts, particularly for female workers, and young employees. This can be associated with the job satisfaction dimension in which, although overall higher educated are less in an involuntary situation, having a positive association with job satisfaction, this isn't the case for higher educated female employees who remain in a similarly involuntary situation, and therefore are less satisfied. Educational level proved to have a negative association with job satisfaction in what concerns the search for another job, because results showed that the more educated the more employees are looking for another job,

except for the oldest range of employees. This may be related to the fact that education raises both opportunities and aspirations, and if education-elasticity of aspirations is greater than education-elasticity of opportunities, individuals may regret the investment made in education (Ferrante, 2009), justifying the lower satisfaction.

In conclusion, educational level has a partially positive association with the dimensions of job quality and therefore with its evaluation as a whole, since there are still some relevant factors that don't allow education variations to express fully, such as gender and age inequalities. Nevertheless, overall the investment in higher education has benefits for the worker, particularly in the long term when employees have more working experience.

There were several limitations in this study, such as the fact that it is a randomly selected sample from only one database, which may not have captured the full reality of the Portuguese labour market. Also, analysing more years and countries would allow a greater perception of the labour market situation and its evolution. Furthermore, this is a purely descriptive analysis which by itself has some limitations bound to it: it only describes the presented data, not allowing to determine correlate variables or determine cause and effect, with the associations made being assumptions based on cross data, and therefore it is more open to bias in the interpretation. Also, this type of analysis generates a lot of information from which some of it may be lost in the interpretation.

Future research should be developed to overcome these limitations. The results of this study should encourage future research on the impact of educational level, controlling the effect of other characteristics of the worker and of the firm in order to have a deeper understanding of the variations and to what extent other variables affect the influence of educational level. It would be a richer research if compared with other countries through the years so as to determine the evolution of the role of educational level over time. At last, due to the high amount of information resulted from this type of analysis and to the associations made from cross data, I would suggest a deeper analysis besides purely descriptive, such as a multinomial logistic regression or a clusters analysis, in order to to clearly analyse the different levels of job quality originated from the different educational levels, allowing to avoid bias and lost information.

7. References

Aceleanu, M. I. 2012. Links between education, employment and quality of life: The case of Romania. *Management & Marketing Challenges for the Knowledge Society*, 7(4): 717-730.

Altonji, J., & Blank, R. 1999. Race and Gender in the Labor Market. In Ashenfelter, O., Card, D. (Eds.), *Handbook of Labor Economics*, Vol. 3C: 3143–3259. North-Holland, Amsterdam.

Alves, N., Centeno, M. & Novo, A. 2010. *Investment in education in Portugal: returns and heterogeneity*. Economic Bulletin, Banco de Portugal.

Amossé, T., & Kalugina, E. 2010. *Work quality indicators and job dynamics: Is there a trade-off? A Micro-econometric Analysis on 10 European Countries*. Working paper, XXVIII Journées de Microéconomie Appliquée.

Arrow, K. 1997. The Benefits of Education and the Formation of Preferences. In Behrman, J., & Stacy, N. (Eds.), *The Social Benefits of Education*: 11–16. Ann Arbor: University of Michigan Press.

Atkinson, J. 1984. *Flexibility, uncertainty and manpower management.* Report No. 89, Institute of Manpower Studies, University of Sussex, Brighton.

Atkinson, J. 1988. Recent changes in the internal labour market in the UK. In W. Buitelaar (Eds.), *Technology and Work: Labour Studies in England, Germany, and the Netherlands,* 133-149. Aldershot: Avebury.

Autor, D. H., Katz, L., & Kearney, M. 2006. *The polarization of the U.S. labour market.* Working Paper No. 11986, National Bureau of Economic Research.

Barbier, J. 2004. A comparative analysis of 'employment precariousness' in Europe. In: Latablier M (Eds.) *Learning from Employment and Welfare Policies in Europe*, Cross-National Research Papers 7(3): 7-18.

Becker, G. 1964. *Human capital: A theoretical and empirical analysis with special reference to education*. Chicago: University of Chicago Press.

Bell, D. & Blanchflower, D. 2013. Underemployment in the UK revisited. *National Institute Economic Review*, 224: 8-22.

Belous, R. (1989). How Human Resource Systems Adjust to the Shift toward Contingent Workers. *Monthly Labour Review*, 112(3): 1-12.

Ben-Porath, Y. 1967. The production of human capital and the life cycle of earnings. *Journal of Political Economy*, 75 (4): 352-365.

Bernhardt, A., & Marcote, D. E. 2000. Is ''Standard Employment'' still what it used to be? In F. Carré, M. A. Ferber, L. Golden, & S. A. Herzenberg (Eds.), *Nonstandard work: The nature and challenges of changing employment arrangements,* 21–40. Champaign: Industrial Relations Research Association.

Bertrand-Cloodt, D., Cörvers, F., Kriechel, B., & Van Thor, J. 2012. Why do recent graduates enter into flexible jobs? *De Economist*, 160: 157-175.

Betcherman, G. 2013. *Labor Market Institutions: A Review of the literature*. Background Paper for the World Development Report 2013, World Bank, Washington, DC.

Blau, F., & Kahn, L. 2006. The U.S. Gender Pay Gap in the 1990s: Slowing Convergence. *Industrial & Labor Relations Review*, 60: 45–66.

Böckerman, P. 2004. Perception of job instability in Europe. *Social Indicators Research*, 67: 283–314.

Booth, A., Francesconi, M., & Frank, J. 2002. Temporary jobs: Stepping stones or dead ends? *The Economic Journal*, 112(480): 189-213.

Bosch, G. 2009. Low-wage work in five European countries and the United States. *International Labour Review*, 148(4): 337–356.

Brown, C., & Medoff, J. 1989. The employer-size wage effect. *Journal of Political Economy*, 97: 1027–1059.

Brown, S., & Sessions, J. 2003. Earnings, education, and fixed-term contracts. *Scottish Journal of Political Economy*, 50: 492–506.

Brown, A., Charlwood, A., Forde, C., & Spencer, D. 2007. Job quality and the economics of new labour: A critical appraisal using subjective survey data. *Cambridge Journal of Economics*, 31: 941–971.

Bryson, A., Barth, E., & Dale-Olsen, H. 2013. The effects of organizational change on worker well-being and the moderating role of trade unions. *Industrial and Labor Relations Review*, 66(4): 989–1011.

Card, D. 1999. The Causal Effect of Education on Earnings. In Ashenfelter, O., & Card, D. (Eds.), *Handbook of Labor Economics*, 3A: 1801–1863. North-Holland, Amsterdam.

Carter, M. A. T., & Cook, K. 1995. Adaptation to retirement: role changes and psychological resources. *The Career Development Quarterly*, 4(1): 67-82.

Cherns, A. 1987. Principles of sociotechnical design revisted. *Human Relations*, 40(3): 153-161.

Clark, A. 2005. Your money or your life: Changing job quality in OECD countries. *British Journal of Industrial Relations*, 43: 377–400.

Clark, A., & Postel-Vinay, F. 2005. *Job security and job protection*. Discussion paper no. 1489. IZA – Institute of Labor Economics, Bonn.

Clark, A. E. & Senik, C. 2006. The (unexpected) structure of "rents" on the French and British labour markets. *Journal of Socio-Economics*, 35: 180–96.

Cohen, S., Chang, L., & Ledford, G. E. 1997. A hierarchical construct of self-management leadership and its relationship to quality of work life and perceived work group effectiveness. *Personnel Psychology*, 50: 275–308.

Cooke, G. B., Donaghey, J., & Zeytinoglu, I. U. 2013. The nuanced nature of work quality: Evidence from rural Newfoundland and Ireland. *Human Relations*, 66(4): 503–527.

Cranford, C., Vosko, L.F., & Zukewich, N. 2003. The gender of precarious employment in Canada. *Relations Industrielles/Industrial Relations*, 58(3): 454-482.

Crespo, N., Simões, N., & Pinto, J.C. 2017. Determinant factors of job quality in Europe. *Argumenta Oeconomica*, 1(38).

Dahl, S., Nesheim, T., & Olsen, K. 2009. Quality of work: Concept and measurement. In Guillén, A. & Dahl, S. (Eds.), *Quality of work in the European union: Concept, data and debates form a transnational perspective*. Brussels: P.I.E. Peter Lang.

D'Amours, M. 2009. Non-standard employment after age 50: how precarious is it?. *Relations Industrielles-Industrial Relations*, Vol. 64 (2): 209-229.

Davoine, L., Erhel, C., & Guergoat-Larivière, M. 2008. *A Taxonomy of European Labour Markets Using Quality Indicators.* Working paper, HAL, University Paris 1 Panthéon-Sorbonne, Paris.

De Cuyper, N., & De Witte, H. 2005. Employment Contracts and Well-Being among European Workers. Introduction. In De Cuyper, N., Isaksson, K., & De Witte, H. (Eds.), *Employment Contracts and Well-Being among European Workers*, Hampshire, UK: Ashgate, 1-14.

De Witte, H., & Näswall, K. 2003. 'Objective' versus 'subjective' job insecurity: consequences of temporary work for job satisfaction and organizational commitment in four European countries. *Economic and Industrial Democracy*, 24 (2): 149-88.

Díaz-Chao, A. 2008. *Nuevas tecnologı́as, nuevos mercados de trabajo [New technology, new labor markets].* Madrid: Mundi-Prensa.

Díaz-Chao, A., Ficapal-Cusí, P., & Torrent-Sellens, J. 2016. Economic crisis and job quality in Spain: A multi-dimensional and micro-data empirical approach. *Social Indicators Research*, 125: 613-633.

Doeringer, P., & Piore, M. 1971. *Internal labour markets and manpower analysis*. Lexington, MA: D. C. Heath.

Drobnic, S., & Guillén, A. 2011. *Work-life balance in Europe: The role of job quality*. Houndmills: Palgrave Macmillan.

Duell, N. 2004. *Defining and assessing precarious employment in Europe: a review of main studies and surveys*. Discussion paper, Economix Research & Consulting, Munich.

Edmondson, A. C., & McManus, S. E. 2007. Methodological fit in management field research. *Academy of Management Review*, 32(4): 1246-1264.

Eichhorst, W., & Marx, P. 2012. Whatever works: Dualisation and the service economy in Bismarckian Welfare States. In P. Emmenegger, S. Häusermann, B. Palier, & M. Seeleib-Kaiser (Eds.), *The age of dualization: The changing face of inequality in deindustrializing societies,* 73–99. Oxford: Oxford University Press.

Elcioglu, E. F. 2010. Producing precarity: the temporary staffing agency in the labor market. *Qualitative Sociology*, 33(2): 117-136.

Elizur, D., & Shye, S. 1990. Quality of work life and its relation to quality of life. *Applied Psychology*, 39: 275–291.

Emmeneger, P., Häusermann, S., Palier, B., & Seeleib-Kaiser, M. 2009. *The dualisation of European societies?* Unpublished Background Paper, University of Oxford, Oxford.

Esser, I., & Olsen, K. M. 2012. Perceived job quality: Autonomy and job security within a multi-level framework. *European Sociological Review*, 28(4): 443–454.

Eurofond. Portugal: Quality of work and employment of low-qualified workers. Available in https://www.eurofound.europa.eu/publications/report/2009/portugal-quality-of-work-and-employment-of-low-qualified-workers. Published on 12 November 2009.

European Commission. 2003. *Improving quality in work: A review of recent progress*. Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee, and the Committee of the Regions, COM (2003) 728 final. Luxembourg: European Commission.

European Commission. 2008. *Measuring the quality of employment in the EU*. In Employment in Europe Report 2008. Luxembourg: European Commission.

Eurostat. 2017. *Employment rate by educational attainment level.* LFS series - detailed annual survey results, European Union.

Eyraud, F., & Vaughan-Whitehead, D. 2007. *The evolving world of work in the enlarged EU: Progress and vulnerability*. Geneva: International Labour Organization.

Fabra, M., & Camisón, C. 2009. Direct and indirect effects of education on job satisfaction: A structural equation model for the Spanish case. *Economics of Education Review*, 28: 600–610.

Farber, H. 1999. Alternative and part-time employment arrangements as a response to job loss. *Journal of Labor Economics*, 17: 142–169.

Ferrante F. 2009. Education, aspirations and life satisfaction. *Social Science Research Network,* 62(4): 542-562.

Findlay, P., Kalleberg, A., & Warhurst, C. 2013. The challenge of job quality. *Human Relations,* 66: 441-451.

Gannon, B., Plasman, R., Rycx, F., & Tojerow, I. 2007. Inter-industry wage differentials and the gender wage gap: Evidence from European countries. *Economic and Social Review*, 38: 135–155.

García-Serrano, C. 2004. Temporary employment, working conditions and expected exits from firms. *Labour*, 18: 293–316.

Genre, V., Momferatou, D., & Mourre, G. 2005. *Wage diversity in the euro area – An overview of labour cost differentials across industries*, Occasional Paper No. 24, European Central Bank.

Gray, S., & Morse, D. 1980. Retirement and re-engagement: Changing work options for older workers. *Aging and Work*, 3(1): 103-111.

Green, F. 2006. *Demanding work: The paradox of job quality in the affluent economy*. Princeton: Princeton University Press.

Hall, R. 1994. *Sociology of work: Perspectives, analysis and issues*. Thousand Oaks, CA: Pine Forge Press.

Heery, E., & Salmon, J. 2000. *The insecure workforce*. London: Routledge.

Holman, D., & McClelland, C. 2011. *Job quality in growing and declining economic sectors of the EU*. Working paper 2011.3. Manchester Business School, University of Manchester, Manchester.

Horemans, J. 2014. Polarisation of non-standard employment in Europe: Exploring a missing piece of the inequality puzzle. *Social Indicators Research*, 125(1): 171-189.

Houseman, S. N. 1997. *Temporary, part-time, and contract employment in the United States: New evidence from an employer survey*. Manuscript, W.E. Upjohn Institute for Employment Research, Kalamazoo, MI.

Jung, H., & Cho, J. 2016. Quality of jobs for female workers: A comparative study of South Korea and Australia. *Applied Research in Quality of Life*, 11: 1–22.

Kalleberg, A. L. 2000. Nonstandard employment relations: Part-time, temporary and contract work. *Annual Review of Sociology*, 26: 341-365.

Kalleberg, A. 2009. Precarious work, insecure workers: Employment relations in transition. *American Sociological Review*, 74(1): 1–22.

Kalleberg, A. 2011. *Good jobs, bad jobs: The rise of polarized and precarious employment in the United States, 1970s to 2000s*. New York: Russel Sage Foundation.

Kalleberg, A. 2012. Job quality and precarious work: Clarifications, controversies, and challenges. *Work and Occupations*, 39(4): 427-448.

Kalleberg, A., Reskin, B., & Hudson, K. 2000. Bad jobs in America: Standard and nonstandard employment relations and job quality in the United States. *American Sociological Review*, 65: 256–278.

Kerr, C. 1954. The balkanisation of labour markets. In Bakke, E.W. *et al.* (Eds.), *Labour Mobility and Economic Opportunity*: 92-110. Cambridge, MA: Technology Press of M.I.T.

Kretsos, L. 2010. The persistent pandemic of precariousness: young people at work. In Tremmel, J. (Eds.), *A Young Generation Under Pressure?*: 3-21. New York: Springer.

Kretsos, L., & Livanos, I. 2016. The extent and determinants of precarious employment in Europe. *International Journal of Manpower*, 31(1): 25-43.

Krueger, A., & Summers, L. 1998. Efficiency wages and inter-industry wage structure. *Econometrica*, 56: 259–293.

Lei n.º 7/2009 de 12 de fevereiro, Diário da República, Código do Trabalho.

Leontaridi, R., Sloane, P., & Jones, R. 2004. *Are Low Paid Jobs of Low Quality? Some British Evidence*. WELMERC Discussion paper Nº. 2004-02, University of Wales Swansea, Swansea.

Levanon, A., England, P., & Allison, P. 2009. Occupational Feminization and Pay: Assessing Causal Dynamics Using 1950–2000 US Census Data. *Social Forces*, 88: 865–892.

Lincoln, J. R., & Kalleberg, A. L. 1990. *Culture, control and commitment. A study of work organization and work attitudes in the United States and Japan*. Cambridge: Cambridge University Press.

Marks, M. L., Mirvis, P., Hackett, E., & Grady, J. 1986. Employee participation in a quality circle program: Impact on quality of work life, productivity, and absenteeism. *Journal of Applied Psychology*, 71: 61–69.

May, B. E., & Lau, R. S. M. 1999. A longitudinal study of quality of work life and business performance. *South Dakota Business Review*, 58(2): 3–7.

McGovern, P., Smeaton, D., & Hill, S. 2004. Bad jobs in Britain. *Work and Occupations*, 31: 225–249.

McMahon, W. 1998. Conceptual framework for the analysis of the social benefits of lifelong learning. *Education Economics*, 6: 309–346.

Mincer, J. 1974. *Schooling, experience and earnings*. New York: Columbia University Press.

Moretti E. 2004. Estimating the social returns to higher education. *Journal of Econometrics,* 121(1-2): 175-212.

Mückenberger, U. 1989. Non-standard forms of employment in the Federal Republic of Germany: The role and effectiveness of the state. In G. Rodgers & J. Rodgers (Eds.), *Precarious jobs in labour market regulation: The growth of atypical employment in Western Europe*. Geneva: International Institute for Labour Studies.

Mühlau, P. 2011. Gender Inequality and Job Quality in Europe. *Management Revue*, 22: 114–131.

Mumford, K., & Smith, P. 2004. Job tenure in Britain: Employee characteristics versus workplace effects. *Economica*, 71: 275–297.

Muñoz de Bustillo, R., Fernández-Macías, E., Antón, J., & Esteve, F. 2012. *Measuring more than money: The social economics of job quality*. Cheltenham: Edward Elgar.

OECD. 2004. *OECD Employment Outlook 2004*. Paris: OECD Publishing.

OECD. 2006. *OECD Employment Outlook 2006*. Paris: OECD Publishing.

OECD. 2017. *OECD Employment Outlook 2017.* Paris: OECD Publishing.

Oi, W., & Idson, T. 1999. Firm size and wages In Ashenfelter, O., Card, D. (Eds.), *Handbook of Labor Economics*, Vol. 3B: 2165–2214. North-Holland, Amsterdam.

Olsthoorn, M. 2014. Measuring precarious employment: A proposal for two indicators of precarious employment based on set-theory and tested with Dutch labor market-data. *Social Indicators Research*, 119: 421-441.

Osterman, P. 2013. Introduction to the special issue on job quality: What does it mean and how much we think about it? *Industrial and Labor Relations Review*, 66(4): 739–752.

Osterman, P., & Shulman, B. 2011. **Good Jobs America: Making Work Better for Everyone.** New York: Russell Sage Foundation.

Pavel, A. P. 2015. *An analysis between the employment rates in EU and the level of educational attainment*. The Institute of Doctoral Studies, Bucharest, Romania.

Perulli, A. 2003. *Economically dependent/quasi-sub ordinate (Parasubordinate) employment: Legal, social and economic Aspects*, European Commission, Brussels.

Piore, M. J. 1975. Notes for a theory of labour market stratification. In Edwards, R. et al. (Eds.), *Labour Market Segmentation*. Lexington, MA: Heath.

Pollert, A., & Charlwood, A. 2009. The vulnerable worker in Britain and problems at work. *Work, Employment and Society*, 23(2): 343-362.

Polivka, A. E., & Nardone, T. 1989. On the definition of contingent work. *Monthly Labour Review*, 112(12): 9-16.

Quadros de Pessoal. 2016. Ministério do Trabalho, Solidariedade e Segurança Social, Gabinete de Estratégia e Planeamento, Lisboa.

Rebitzer, J. 1986. Establishment Size and Job Tenure. *Industrial Relations*, 25: 292–302.

Rebitzer, J. & Taylor, L. J. 1991. A model of dual labour markets when product demand is uncertain. *The Quarterly Journal of Economics*, 106(4): 1373-1383.

Reich, M.S., Gordon, D.M., & Edward, R.C. 1973. A theory of labour market segmentation. *American Economic Review Papers and Proceedings of the Eighty-Fifth Annual Meeting*, 63: 359-365.

Rodgers, G., & Rodgers, J. 1989. *Precarious jobs in labour market regulation: The growth of atypical employment in Western Europe*. Geneva: International Institute for Labour Studies.

Rubery, J., & Grimshaw, D. 2003. *The organization of employment. An international perspective. New* York: Palgrave-Macmillan.

Rueda, D. 2005. Insider-outsider politics in industrialized democracies: The challenge for social democratic parties. *American Political Science Review*, 99(1): 61–74.

Salais, R., & Villeneuve, R. 2004. *Europe and the politics of capabilities*. Cambridge: Cambridge University Press.

Schmidt, G. 2008. *Full employment in Europe. Managing labour market transitions and risks*. Cheltenham and Northampton: Edward Elgar.

Scott-Marshall, H. 2005. *A political economy lens on work-related insecurity in the new economy: Evaluating the consequences for health*. Unpublished dissertation, University of Toronto, Toronto.

Sengupta, S., Edwards, P. K., & Tsai, C. 2009. The good, the bad and the ordinary: Work identities in "good" and "bad" jobs in the UK. *Work and Occupations*, 36: 26-55.

Simões, N., Crespo, N., & Pinto, J. C. 2015. Determinants of Job Quality—Evidence for European Country Groups. *Acta Oeconomica*, 65: 299–323.

Sirgy, M. J. 2001. *Handbook of quality-of-life research: An ethical marketing perspective*. Berlin: Springer.

Souza-Poza, A. 2000. Well-being at work: A cross-national analysis of the levels and determinants of job satisfaction. *Journal of Socio-Economics*, 29: 517–538.

Standing, G. 1997. Globalization, labour flexibility and insecurity: The era of market regulation. *European Journal of Industrial Relations*, 3(1): 7–37.

Stier, H., & Yaish, M. 2014. Occupational segregation and gender inequality in job quality: A multi-level approach. *Work, Employment & Society*, 28: 225–246.

Tangian, A. 2005. *A Composite Indicator of Working Conditions in the EU-15 for Policy Monitoring and Analytical Purposes*. Discussion paper no. 135, Institute of Economic and Social Research (WSI), Düsseldorf.

Taylor Carter, M. A., & Cook, K. 1995. Adaptation to retirement: Role changes and psychological resources. *The Career Development Quarterly, 44*(1): 67-82.

Torrent, J. (2008). *Cambio tecnológico digital sesgador de habilidades (e-SBTC), ocupación y salarios: un estado de la cuestión [e-Skill Biased Technological Change, Employment and wages: a survey]. Open University of Catalonia Papers*, 6: 1–13.

Torrent, J., & Ficapal, P. 2009. *TIC, conocimiento, redes y trabajo [ICT, knowledge, networks and employment].* Barcelona: Open University of Catalonia Publishing.

Torrent, J., & Ficapal, P. 2010. TIC, co-innovación y productividad empresarial: Evidencia empírica para Catalunya y comparación internacional de resultados [ICT, co-innovation and firm productivity: Empirical evidence from Catalonia and international results comparison]. *Revista de Economía Mundial*, 26: 203–233.

Treu, T. 1992. Labour flexibility in Europe. *International Labour Review*, 131: 497–512.

Van Aerden, K., Moors, G., Levecque, K., & Vanroelen, C. 2014. Measuring employment arrangements in the European labour force: A typological approach. *Social Indicators Research*, 116(3): 771-791.

Verhofstadt, E., De Witte, H., & Omey, E. 2007. Higher educated workers: Better jobs but less satisfied? *International Journal of Manpower*, 28(2): 135-151.

Vets, C., De Witte, H., & Notelaers, G. 2009. *Werkkenmerken en het welzijn van Belgische werknemers gedurende het laatste decennium [Work characteristics and well-being of Belgian employees during the last decade]*. Brussels: FPS Employment, employment and social dialogue.

Vieira, J. A., & Díaz-Serrano, L. 2005. *Low pay, higher pay, and job satisfaction within the European Union: Empirical evidence from fourteen countries*. Discussion Paper No. 15558, IZA – Institute of Labor Economics, Bonn.

Vila, L. 2000. The non-monetary benefits of education. *European Journal of Education*, 35: 21–32.

Vives, A. 2010. *A multidimensional approach to precarious employment: Measurement, association with poor mental health and prevalence in the Spanish workforce*. Barcelona: UPF.

Vosko, L. F. 1998. Regulating precariousness? The temporary employment relationship under the NAFTA and the EC treaty. *Relations Industrielles - Industrial Relations*, 53: 123–153.

Vosko, L. 2006. *Precarious employment: Understanding labour market insecurity in Canada*. Montreal: McGill-Queen's University Press.

Vosko, L., Macdonald, M., & Cambell, I. 2010. *Gender and the Countours of Precarious Employment*, Routledge: London and New York, NY.

Weber, S. 2014. Human capital depreciation and education level. *International Journal of Manpower*, 35(5): 613-642.

Weisbrod, B. A. 1962. Education and investment in human capital. *Journal of Political Economy,* 70(5): 106-123.

Wilcock, A., & Wright, M. 1991. Quality of work life in the knitwear sector of the Canadian textile industry. *Public Personnel Management*, 20: 457–468.

World Bank. Higher education; Understanding poverty. Available in https://www.worldbank.org/en/topic/tertiaryeducation. Published on 5 October 2017.

8. Annex

Annex 1 – Employees' distribution by gender: explanatory variables (%)

Variables	Total (N=38.288)		
	Male (N=16 940)	Female (N=21 348)	Δ
Firm Economic Activity			
Manufacturing	18,3	9,7	8,6
Energy and Water	2,4	0,7	1,7
Construction	6,9	0,9	6,0
Wholesale and retail trade	16,2	15,2	1,0
Transportation and storage	7,3	1,9	5,4
Accommodation and food service activities	5,3	6,6	-1,3
Information and communication	4,0	1,7	2,3
Financial and insurance activities	4,0	2,7	1,3
Professional, scientific and technical activities	3,4	4,3	-0,9
Administrative and support service activities	4,1	2,8	1,3
Public administration and defence	12,1	9,1	3,0
Education	6,6	18,9	-12,3
Human health and social work activities	4,7	18,7	-14,0
Arts, entertainment and recreation	2,5	1,4	1,1
Residual Activities	2,2	5,4	-3,2
Occupation			
Managers, senior officials and legislators	6,3	2,9	3,4
Professionals	19,9	29,0	-9,1
Technicians and associate professionals	18,0	15,3	2,7
Clerical support workers	8,2	13,2	-5,0
Service and sales workers	16,1	22,9	-6,8
Skilled agriculture, fishery and forestry workers	0,8	0,2	0,6
Craft and related trade workers	14,1	2,4	11,7
Plant and machine operators and assemblers	10,4	3,5	6,9
Elementary occupations	6,2	10,7	-4,5
Firm Size			
10 persons or less	27,3	29,9	-2,6
11 - 49 persons	30,5	30,4	0,1
More than 50 persons	42,2	39,7	2,5
Tenure			
Less than 1 year	16,5	15,4	1,1
1 - 3 years	15,0	13,6	1,4
4 - 9 years	20,4	20,2	0,2
10 - 19 years	26,3	28,2	-1,9
More than 20 years	21,8	22,7	-0,9

Annex 2 – Employees' distribution by gender, by educational level: explanatory variables (%)

Annex 2.1. Employees' distribution by gender: lower secondary education

Variables	Lower Secondary (N=11 611)		
	Male (N=6 057)	Female (N=5 554)	Δ
Firm Economic Activity			
Manufacturing	23,9	16,6	7,3
Energy and Water	2,5	0,3	2,2
Construction	10,0	0,8	9,2
Wholesale and retail trade	19,9	19,0	0,9
Transportation and storage	9,6	1,4	8,2
Accommodation and food service activities	6,0	10,6	-4,6
Information and communication	1,2	0,5	0,7
Financial and insurance activities	1,1	0,6	0,5
Professional, scientific and technical activities	1,1	1,7	-0,6
Administrative and support service activities	5,3	3,4	1,9
Public administration and defence	10,9	6,2	4,7
Education	1,8	9,2	-7,4
Human health and social work activities	2,4	19,8	-17,4
Arts, entertainment and recreation	2,0	0,9	1,1
Residual Activities	2,3	9,0	-6,7
Occupation			
Managers, senior officials and legislators	2,7	0,9	1,8
Professionals	1,2	0,6	0,6
Technicians and associate professionals	14,5	10,6	3,9
Clerical support workers	7,4	10,8	-3,4
Service and sales workers	20,7	39,4	-18,7
Skilled agriculture, fishery and forestry workers	1,6	0,5	1,1
Craft and related trade workers	23,6	5,4	18,2
Plant and machine operators and assemblers	18,5	8,4	10,1
Elementary occupations	9,8	23,4	-13,6
Firm Size			
10 persons or less	32,2	36,8	-4,6
11 - 49 persons	31,7	31,4	0,3
More than 50 persons	36,1	31,9	4,2
Tenure			
Less than 1 year	17,0	15,0	2,0
1 - 3 years	14,8	14,7	0,1
4 - 9 years	20,2	21,4	-1,2
10 - 19 years	25,8	27,2	-1,4
More than 20 years	22,2	21,6	0,6

Annex 2.2. Employees' distribution by gender: upper secondary education (%)

Variables	Upper Secondary (N=13 477)		
	Male (N=6 322)	Female (N=7 155)	Δ
Firm Economic Activity			
Manufacturing	19,0	10,4	8,6
Energy and Water	2,6	0,9	1,7
Construction	5,5	1,0	4,5
Wholesale and retail trade	17,6	20,4	-2,8
Transportation and storage	8,1	2,5	5,6
Accommodation and food service activities	7,1	8,5	-1,4
Information and communication	3,5	1,8	1,7
Financial and insurance activities	5,1	2,3	2,8
Professional, scientific and technical activities	2,8	4,0	-1,2
Administrative and support service activities	4,8	3,3	1,5
Public administration and defence	13,5	9,6	3,9
Education	2,5	11,0	-8,5
Human health and social work activities	3,0	16,8	-13,8
Arts, entertainment and recreation	2,7	1,8	0,9
Residual Activities	2,2	5,7	-3,5
Occupation			
Managers, senior officials and legislators	5,5	2,1	3,4
Professionals	5,3	2,8	2,5
Technicians and associate professionals	25,1	22,8	2,3
Clerical support workers	12,3	23,0	-10,7
Service and sales workers	20,9	31,5	-10,6
Skilled agriculture, fishery and forestry workers	0,5	0,1	0,4
Craft and related trade workers	14,3	2,0	12,3
Plant and machine operators and assemblers	9,3	3,5	5,8
Elementary occupations	6,7	12,1	-5,4
Firm Size			
10 persons or less	28,4	35,0	-6,6
11 - 49 persons	31,2	31,1	0,1
More than 50 persons	40,4	33,9	6,5
Tenure			
Less than 1 year	17,7	17,6	0,1
1 - 3 years	15,7	15,3	0,4
4 - 9 years	20,2	19,9	0,3
10 - 19 years	25,9	27,4	-1,5
More than 20 years	20,7	19,7	1,0

Annex 2.3. Employees' distribution by gender: higher education (%)

Variables	Higher Education (N=13 200)		
	Male (N=4 561)	Female (N=8 639)	Δ
Firm Economic Activity			
Manufacturing	9,8	4,8	5,0
Energy and Water	1,9	0,7	1,2
Construction	4,9	0,9	4,0
Wholesale and retail trade	8,8	8,6	0,2
Transportation and storage	3,0	1,7	1,3
Accommodation and food service activities	2,0	2,5	-0,5
Information and communication	8,3	2,4	5,9
Financial and insurance activities	6,4	4,5	1,9
Professional, scientific and technical activities	7,3	6,3	1,0
Administrative and support service activities	1,8	2,1	-0,3
Public administration and defence	11,9	10,6	1,3
Education	18,6	31,6	-13,0
Human health and social work activities	10,2	19,6	-9,4
Arts, entertainment and recreation	2,9	1,5	1,4
Residual Activities	2,2	2,2	0,0
Occupation			
Managers, senior officials and legislators	12,4	5,0	7,4
Professionals	65,0	68,9	-3,9
Technicians and associate professionals	12,8	12,1	0,7
Clerical support workers	3,5	6,7	-3,2
Service and sales workers	3,3	5,1	-1,8
Skilled agriculture, fishery and forestry workers	0,0	0,0	0,0
Craft and related trade workers	1,1	0,4	0,7
Plant and machine operators and assemblers	1,2	0,4	0,8
Elementary occupations	0,2	1,4	-1,2
Firm Size			
10 persons or less	19,3	21,2	-1,9
11 - 49 persons	27,8	29,1	-1,3
More than 50 persons	52,9	49,6	3,3
Tenure			
Less than 1 year	14,3	13,8	0,5
1 - 3 years	14,4	11,4	3,0
4 - 9 years	20,9	19,6	1,3
10 - 19 years	27,5	29,5	-2,0
More than 20 years	22,9	25,8	-2,9

Annex 3 – Employees' distribution by gender: job quality variables (%)

| Variables | Total (N=38 288) | | |
	Male (N=16 940)	Female (N=21 348)	Δ
Part time	4,3	7,9	-3,6
Temporary contract	22,3	21,6	0,7
Temporary contract duration			
Less than 1 month	5,0	4,9	0,1
1 - 3 months	10,1	8,8	1,3
4 - 6 months	31,3	31,8	-0,5
7 - 12 months	43,7	46,6	-2,9
13 - 18 months	2,0	1,7	0,3
19 - 24 months	2,3	2,1	0,2
25 - 36 months	2,1	1,6	0,5
More than 3 years	3,5	2,6	0,9
Type of contract			
FT&Perm	76,5	75,0	1,5
FT&Temp	19,3	17,1	2,2
PT&Perm	1,2	3,3	-2,1
PT&Temp	3,1	4,5	-1,4
Income (deciles)			
]0;1[	4,5	9,7	-5,2
[1;2[	6,0	8,4	-2,4
[2;3[	5,8	10,2	-4,4
[3;4[	8,1	9,3	-1,2
[4;5[	8,9	9,7	-0,8
[5;6[	11,1	9,3	1,8
[6;7[	12,5	9,5	3,0
[7;8[	13,3	11,3	2,0
[8;9[	14,2	12,4	1,8
[9;10[	15,5	10,3	5,2
Hours per week			
30 hours or less	4,5	9,1	-4,6
31 - 35 hours	9,5	15,5	-6,0
36 - 39 hours	2,9	4,1	-1,2
40 hours	58,4	55,6	2,8
41 hours or more	24,7	15,7	9,0
Shift work	21,8	19,4	2,4
Evening work	32,0	22,8	9,2
Night work	16,4	8,0	8,4
Saturday work	41,0	35,8	5,2
Sunday work	24,3	22,9	1,4
Work from home	14,4	16,0	-1,6
Involuntary Part time	55,6	63,6	-8,0
Involuntary Temporary contract	80,3	83,3	-3,0
Looking for another job	5,7	6,9	-1,2
Job insecurity	5,4	5,9	-0,5
Job insatisfaction	72,8	70,8	2,0

Annex 4 – Employees' distribution by age range: job quality variables (%)

Variables	Total (N=38 288)				
	15-24 (N=2 961)	25-34 (N=8 800)	35-44 (N=13 118)	45-54 (N=9 327)	55-64 (N=4 082)
Part time	21,1	7,5	4,6	3,6	4,4
Temporary contract	70,4	33,9	16,1	9,6	7,8
Temporary contract duration					
Less than 1 month	6,7	3,7	4,1	6,2	7,4
1 - 3 months	12,6	8,9	8,9	6,2	4,3
4 - 6 months	39,2	31,7	26,5	27,8	24,5
7 - 12 months	36,2	46,7	50,1	49,1	49,4
13 - 18 months	1,2	2,3	1,8	1,9	0,8
19 - 24 months	1,4	2,0	2,5	3,4	3,5
25 - 36 months	1,7	1,4	2,4	2,3	1,9
More than 3 years	1,1	3,3	3,7	3,0	8,2
Type of contract					
FT&Perm	25,4	63,3	82,0	88,3	89,8
FT&Temp	53,5	29,2	13,4	8,1	5,8
PT&Perm	4,2	2,8	1,9	2,1	2,4
PT&Temp	17,0	16,1	2,6	1,5	2,0
Income (deciles)					
]0;1[	27,5	9,5	5,2	4,3	4,2
[1;2[	17,6	11,0	5,6	5,1	4,0
[2;3[	14,8	10,8	7,0	7,0	5,8
[3;4[	12,7	12,5	7,9	6,7	6,3
[4;5[	11,6	12,4	8,9	8,0	6,2
[5;6[	7,6	12,7	10,4	8,9	7,6
[6;7[	4,3	10,2	13,0	10,4	9,6
[7;8[	2,7	10,6	15,8	12,3	9,7
[8;9[	0,7	7,0	15,8	18,7	13,1
[9;10[	0,4	3,2	10,4	18,6	33,6
Hours per week					
30 hours or less	21,2	8,4	5,1	4,9	6,0
31 - 35 hours	6,2	8,2	12,4	17,2	19,3
36 - 39 hours	1,8	2,7	3,7	3,9	5,2
40 hours	57,4	60,8	57,4	54,6	50,8
41 hours or more	13,4	19,9	21,3	19,4	18,7
Shift work	29,3	25,9	20,0	16,6	12,5
Evening work	35,0	30,9	26,8	23,7	19,3
Night work	12,1	13,3	12,2	10,9	8,1
Saturday work	53,6	46,7	37,1	31,7	26,0
Sunday work	37,4	29,0	22,1	19,7	15,4
Work from home	4,6	10,4	17,0	19,0	19,4
Involuntary Part time	51,3	69,3	65,2	66,0	43,3
Involuntary Temporary contract	65,7	83,9	90,6	92,7	82,0
Looking for another job	13,4	10,0	6,1	3,3	1,5
Job insecurity	5,3	6,2	5,3	6,3	3,2
Job insatisfaction	67,3	74,7	73,9	63,5	66,7

Annex 5 – Employees' distribution by firm size: job quality variables (%)

Variables	Descriptives (%)		
	10 persons or less (N=11 002)	11 to 49 persons (N=11 647)	50 persons or more (N=15 639)
Part time	10,7	6,1	3,3
Temporary contract	26,2	24,3	17,2
Temporary contract duration			
Less than 1 month	7,9	3,3	3,7
1 - 3 months	8,5	9,5	10,0
4 - 6 months	34,9	33,1	26,8
7 - 12 months	42,1	46,1	47,6
13 - 18 months	1,9	1,6	1,9
19 - 24 months	1,5	2,3	2,7
25 - 36 months	1,2	1,9	2,3
More than 3 years	1,8	2,2	5,0
Type of contract			
Full time and Permanent	69,1	73,9	81,6
Full time and Temporary	20,2	20,0	15,1
Part time and Permanent	4,8	1,8	1,2
Part time and Temporary	6,0	4,3	2,1
Income (deciles)			
]0;1[	12,3	7,9	3,8
[1;2[	11,0	7,6	4,8
[2;3[	11,7	8,7	5,7
[3;4[	11,5	8,5	7,3
[4;5[	11,2	9,5	8,0
[5;6[	10,3	10,8	9,4
[6;7[	10,6	11,7	10,2
[7;8[	8,1	12,7	14,5
[8;9[	7,1	12,3	17,8
[9;10[	6,2	10,2	18,5
Hours per week			
30 hours or less	11	7	4,6
31 - 35 hours	8,8	12,6	15,9
36 - 39 hours	2,2	4,2	4
40 hours	57,3	58,3	55,3
41 hours or more	20,7	17,9	20,2
Shift work	13,6	21,7	24,4
Evening work	19,6	26	32,5
Night work	5,2	10,9	16,9
Saturday work	42,1	37,4	35,8
Sunday work	19,8	24,3	25,5
Work from home	9,8	14,5	19,7
Involuntary Part time	63,3	59,8	58,1
Involuntary Temporary contract	78,8	83,1	84,1
Looking for another job	8,6	6,7	4,5
Job insecurity	4,5	6,9	5,9
Job insatisfaction	73,3	72,3	68,6

Annex 6 – Employees' distribution by gender, by educational level: job quality variables (%)

Annex 6.1. Employees' distribution by gender: lower secondary education (%)

Variables	Lower Secondary (N=11 611)		
	Male (N=6 057)	Female (N=5 554)	Δ
Part time	3,4	9,5	-6,1
Temporary contract	21,5	20,4	1,1
Temporary contract duration			
Less than 1 month	6,3	6,4	-0,1
1 - 3 months	11,7	9,7	2,0
4 - 6 months	34,2	35,4	-1,2
7 - 12 months	39,7	40,0	-0,3
13 - 18 months	2,2	2,9	-0,7
19 - 24 months	1,9	2,3	-0,4
25 - 36 months	1,9	1,7	0,2
More than 3 years	2,1	1,5	0,6
Type of contract			
FT&Perm	77,4	74,5	2,9
FT&Temp	19,3	16,1	3,3
PT&Perm	1,1	5,1	-4,0
PT&Temp	2,3	4,4	-2,1
Income (deciles)			
]0;1[	5,4	15,7	-10,3
[1;2[	8,0	14,8	-6,8
[2;3[	8,7	20,4	-11,7
[3;4[	11,3	14,0	-2,7
[4;5[	12,8	13,6	-0,8
[5;6[	14,9	8,6	6,3
[6;7[	14,8	6,1	8,7
[7;8[	10,8	4,0	6,8
[8;9[	8,5	1,9	6,6
[9;10[	4,8	0,8	4,0
Hours per week			
30 hours or less	3,1	10,1	-7,0
31 - 35 hours	7,1	11,0	-3,9
36 - 39 hours	2,6	4,2	-1,6
40 hours	64,8	62,8	2,0
41 hours or more	22,4	11,9	10,5
Shift work	25,9	24,0	1,9
Evening work	31,8	20,3	11,5
Night work	19,2	7,3	11,9
Saturday work	44,6	43,3	1,3
Sunday work	25,9	27,0	-1,1
Work from home	4,2	2,3	1,9
Involuntary Part time	59,3	63,9	-4,6
Involuntary Temporary contract	84,7	87,8	-3,1
Looking for another job	4,5	5,6	-1,1
Job insecurity	7,3	7,7	-0,4
Job insatisfaction	68,7	63,0	5,7

Annex 6.2. Employees' distribution by gender: upper secondary education (%)

Variables	Upper Secondary (N=13 477)		
	Male (N=6 322)	Female (N=7 155)	Δ
Part time	5,0	8,6	-3,6
Temporary contract	24,4	22,9	1,5
Temporary contract duration			
Less than 1 month	5,6	5,6	0,0
1 - 3 months	11,4	10,5	0,9
4 - 6 months	36,2	36,1	0,1
7 - 12 months	38,0	41,4	-3,4
13 - 18 months	2,0	1,6	0,4
19 - 24 months	2,2	2,1	0,1
25 - 36 months	1,5	1,6	-0,1
More than 3 years	2,9	1,3	1,6
Type of contract			
FT&Perm	74,3	73,3	1,0
FT&Temp	20,7	18,1	2,6
PT&Perm	1,3	3,8	-2,5
PT&Temp	3,7	4,8	-1,1
Income (deciles)			
]0;1[	5,1	11,7	-6,6
[1;2[	7,2	10,6	-3,4
[2;3[	6,2	12,0	-5,8
[3;4[	9,3	13,1	-3,8
[4;5[	9,2	12,8	-3,6
[5;6[	11,6	13,1	-1,5
[6;7[	14,0	12,1	1,9
[7;8[	14,4	8,1	6,3
[8;9[	13,1	4,1	9,0
[9;10[	9,8	2,5	7,3
Hours per week			
30 hours or less	5,1	9,1	-4,0
31 - 35 hours	8,9	13,3	-4,4
36 - 39 hours	3,8	5,2	-1,4
40 hours	59,2	59,3	-0,1
41 hours or more	23,1	13,1	10,0
Shift work	26,3	22,5	3,8
Evening work	33,7	20,6	13,1
Night work	18,0	6,2	11,8
Saturday work	44,2	37,6	6,6
Sunday work	28,2	24,0	4,2
Work from home	8,9	4,3	4,6
Involuntary Part time	55,5	63,4	-7,9
Involuntary Temporary contract	80,0	84,1	-4,1
Looking for another job	5,4	6,7	-1,3
Job insecurity	3,5	4,4	-0,9
Job insatisfaction	72,1	69,4	2,7

Annex 6.3. Employees' distribution by gender: higher education (%)

Variables	Higher Education (N=13 200)		
	Male (N=4 561)	Female (N=8 639)	Δ
Part time	4,5	6,2	-1,7
Temporary contract	20,5	21,3	-0,8
Temporary contract duration			
Less than 1 month	2,3	3,3	-1,0
1 - 3 months	5,8	6,6	-0,8
4 - 6 months	19,4	25,8	-6,4
7 - 12 months	58,4	55,3	3,1
13 - 18 months	1,6	1,0	0,6
19 - 24 months	3,0	2,0	1,0
25 - 36 months	3,2	1,7	1,5
More than 3 years	6,4	4,3	2,1
Type of contract			
FT&Perm	78,3	76,9	1,4
FT&Temp	17,3	16,9	0,4
PT&Perm	1,2	1,8	-0,6
PT&Temp	3,3	4,4	-1,1
Income (deciles)			
]0;1[	2,5	4,0	-1,5
[1;2[	1,5	2,5	-1,0
[2;3[	1,4	2,1	-0,7
[3;4[	2,4	3,2	-0,8
[4;5[	3,5	4,6	-1,1
[5;6[	5,4	6,5	-1,1
[6;7[	7,2	9,5	-2,3
[7;8[	15,1	18,7	-3,6
[8;9[	23,4	26,0	-2,6
[9;10[	37,5	22,9	14,6
Hours per week			
30 hours or less	5,7	8,5	-2,8
31 - 35 hours	13,5	20,3	-6,8
36 - 39 hours	2,2	3,0	-0,8
40 hours	48,8	47,7	1,1
41 hours or more	29,8	20,5	9,3
Shift work	10,1	13,9	-3,8
Evening work	29,8	26,1	3,7
Night work	10,6	9,9	0,7
Saturday work	31,6	29,5	2,1
Sunday work	16,9	19,4	-2,5
Work from home	35,4	34,5	0,9
Involuntary Part time	52,0	63,5	-11,5
Involuntary Temporary contract	74,4	79,8	-5,4
Looking for another job	7,7	8,0	-0,3
Job insecurity	5,7	6,1	-0,4
Job insatisfaction	76,8	75,4	1,4

Annex 7 – Employees' distribution by age range, by educational level: job quality variables (%)

Annex 7.1. Employees' distribution by age range: lower secondary education (%)

Variables	Lower Secondary (N=11 611)				
	15-24 (N=799)	25-34 (N=2 369)	35-44 (N=3 721)	45-54 (N=3 291)	55-64 (N=1 431)
Part time	20,5	5,5	4,8	5,3	5,8
Temporary contract	64,3	25,8	18,7	13,9	11,2
Temporary contract duration					
Less than 1 month	9,3	4,0	5,2	7,8	6,1
1 - 3 months	16,6	9,2	10,8	7,8	6,1
4 - 6 months	38,8	38,7	31,5	32,0	29,0
7 - 12 months	29,0	39,4	43,8	42,8	51,1
13 - 18 months	1,1	4,2	2,6	2,5	0,8
19 - 24 months	1,8	1,5	2,3	2,8	2,3
25 - 36 months	2,2	1,2	1,8	2,8	0,0
More than 3 years	1,1	1,7	2,0	1,8	4,6
Type of contract					
FT&Perm	31,3	71,8	78,8	82,7	85,0
FT&Temp	48,1	26,7	16,4	11,9	9,2
PT&Perm	4,4	2,4	1,8	3,4	3,8
PT&Temp	16,1	3,1	2,0	2,3	1,9
Income (deciles)					
]0;1[	33,6	12,0	8,2	7,9	8,2
[1;2[	18,8	16,1	10,7	8,9	7,0
[2;3[	18,7	18,1	14,0	12,4	12,3
[3;4[	12,0	15,5	13,1	10,5	11,8
[4;5[	10,3	14,0	14,6	12,7	10,8
[5;6[	4,0	12,4	12,3	12,6	11,8
[6;7[	1,4	5,7	12,1	13,3	12,5
[7;8[	1,1	3,3	8,2	9,2	11,6
[8;9[	0,0	2,3	4,9	7,8	8,0
[9;10[	0,0	0,7	1,9	4,7	6,0
Hours per week					
30 hours or less	20,0	6,2	4,7	5,7	5,9
31 - 35 hours	4,0	4,7	6,8	12,1	17,7
36 - 39 hours	0,8	2,2	2,7	4,0	6,9
40 hours	59,7	68,1	66,8	61,6	56,4
41 hours or more	15,4	18,9	19,0	16,5	13,0
Shift work	22,6	28,3	28,5	22,2	18,3
Evening work	29,7	31,1	28,5	23,3	17,7
Night work	10,6	14,7	15,3	13,0	9,5
Saturday work	50,3	61,7	48,5	38,2	29,4
Sunday work	31,3	31,6	28,6	23,2	16,8
Work from home	2,0	2,5	3,0	4,3	4,0
Involuntary Part time	43,9	74,8	71,2	67,0	53,0
Involuntary Temporary contract	67,7	88,5	91,5	93,4	92,5
Looking for another job	11,0	5,9	5,3	4,0	2,2
Job insecurity	9,0	9,3	6,6	6,1	6,2
Job insatisfaction	59,1	69,1	69,4	59,5	71,9

Annex 7.2. Employees' distribution by age range: upper secondary education (%)

Variables	Upper Secondary (N=13 477)				
	15-24 (N=1 619)	25-34 (N=3 305)	35-44 (N=4 408)	45-54 (N=2 953)	55-64 (N=1 192)
Part time	22,6	8,0	3,8	3,3	3,6
Temporary contract	70,4	32,2	14,2	8,8	7,6
Temporary contract duration					
Less than 1 month	6,8	4,3	5,9	5,2	7,7
1 - 3 months	12,8	12,9	9,2	4,4	1,3
4 - 6 months	42,0	36,7	31,3	29,3	25,6
7 - 12 months	32,9	42,6	45,1	50,7	42,3
13 - 18 months	1,4	2,9	1,8	2,2	1,3
19 - 24 months	1,2	2,6	2,5	2,2	6,4
25 - 36 months	1,6	1,1	1,4	3,1	3,8
More than 3 years	1,3	1,5	2,8	3,1	11,5
Type of contract					
FT&Perm	25,1	64,2	83,8	89,3	90,6
FT&Temp	52,3	27,8	12,4	7,5	5,8
PT&Perm	4,5	3,6	1,9	1,9	1,8
PT&Temp	18,1	4,4	1,8	1,3	1,8
Income (deciles)					
]0;1[	28,3	10,7	5,3	3,9	2,8
[1;2[	21,0	12,8	6,1	5,2	4,7
[2;3[	15,3	12,4	7,7	7,5	4,2
[3;4[	14,9	16,1	10,3	7,9	6,2
[4;5[	10,1	14,3	11,2	9,6	7,7
[5;6[	6,2	14,4	14,7	10,9	10,2
[6;7[	2,6	9,3	17,3	14,5	15,8
[7;8[	1,0	5,9	13,7	16,7	13,6
[8;9[	0,4	3,0	9,6	12,7	15,7
[9;10[	0,3	1,1	4,1	11,2	19,0
Hours per week					
30 hours or less	23,1	8,7	3,8	3,8	4,0
31 - 35 hours	5,3	6,6	10,9	17,9	16,9
36 - 39 hours	2,1	3,3	5,4	5,2	6,2
40 hours	58,1	63,6	59,8	55,7	55,7
41 hours or more	11,5	17,8	20,1	17,4	17,3
Shift work	34,3	30,7	24,3	16,7	11,6
Evening work	38,7	32,1	26,7	19,5	13,5
Night work	13,4	13,5	13,2	9,0	5,9
Saturday work	59,1	52,3	39,5	27,5	20,7
Sunday work	43,3	33,3	24,1	16,6	12,0
Work from home	2,6	4,1	7,6	9,0	7,5
Involuntary Part time	54,9	70,0	58,4	67,7	46,5
Involuntary Temporary contract	70,7	87,3	90,4	91,9	80,0
Looking for another job	11,9	8,1	5,5	3,3	1,6
Job insecurity	3,6	4,8	2,9	6,3	0,0
Job insatisfaction	72,4	71,0	74,4	58,3	57,9

Annex 7.3. Employees' distribution by age range: higher education (%)

Variables	Higher Education (N=13 200)				
	15-24 (N=543)	25-34 (N=3 126)	35-44 (N=4 989)	45-54 (N=3 083)	55-64 (N=1 459)
Part time	17,7	8,5	5,2	2,0	3,6
Temporary contract	79,6	41,9	15,8	5,9	4,6
Temporary contract duration					
Less than 1 month	3,4	3,2	1,7	3,7	10,4
1 - 3 months	7,3	5,9	7,0	5,0	4,2
4 - 6 months	32,4	25,6	18,4	15,5	10,4
7 - 12 months	53,0	54,6	59,5	62,7	56,3
13 - 18 months	0,8	1,6	1,1	0,0	0,0
19 - 24 months	1,3	1,8	2,8	6,8	2,1
25 - 36 months	1,3	1,8	3,6	0,0	4,2
More than 3 years	0,5	5,5	5,9	6,2	12,5
Type of contract					
FT&Perm	17,5	55,9	82,7	93,3	93,9
FT&Temp	64,8	35,6	12,1	4,6	2,5
PT&Perm	2,9	2,2	1,6	0,8	1,5
PT&Temp	14,7	6,3	3,6	1,3	2,1
Income (deciles)					
]0;1[	16,7	6,3	2,8	0,9	1,2
[1;2[	6,2	5,1	1,3	0,8	0,4
[2;3[	7,9	3,6	1,3	0,8	0,7
[3;4[	7,1	6,4	2,0	1,4	0,9
[4;5[	17,6	9,2	2,7	1,3	0,3
[5;6[	17,0	11,2	5,3	3,0	1,2
[6;7[	13,5	14,8	9,9	3,5	1,5
[7;8[	9,9	21,3	23,2	11,5	4,7
[8;9[	2,8	14,8	29,3	36,3	16,0
[9;10[	1,3	7,3	22,2	40,6	73,2
Hours per week					
30 hours or less	16,9	9,9	6,6	5,1	7,6
31 - 35 hours	12,5	12,6	17,9	21,9	23,0
36 - 39 hours	2,4	2,4	3,0	2,6	2,8
40 hours	52,1	42,3	48,3	46,0	41,1
41 hours or more	16,1	22,1	24,2	24,4	25,4
Shift work	24,3	19,1	9,9	10,5	7,6
Evening work	31,5	29,5	25,7	28,2	25,6
Night work	10,5	12,0	9,1	10,5	8,4
Saturday work	42,2	36,9	26,6	28,8	26,9
Sunday work	28,5	22,3	15,3	18,8	16,9
Work from home	14,2	23,1	35,6	44,4	44,3
Involuntary Part time	50,0	65,9	65,5	60,3	25,0
Involuntary Temporary contract	50,2	79,0	89,9	91,8	59,7
Looking for another job	21,7	15,1	7,2	2,5	0,8
Job insecurity	5,0	6,1	6,1	6,5	0,0
Job insatisfaction	65,3	78,4	76,0	76,6	66,7

Annex 8 – Employees' distribution by type of contract: explanatory and job quality variables (%)

Variables	Total (N=38 288)			
	FT & Perm (N=28 974)	FT & Temp (N=6 913)	PT & Perm (N=916)	PT & Temp (N=1 485)
Firm Size				
10 persons or less	26,2	32,2	57,1	44,3
11 - 49 persons	29,7	33,7	22,3	33,9
More than 50 persons	44,1	34,1	20,6	21,8
Tenure				
Less than 1 year	4,0	56,2	18,3	59,1
1 - 3 years	9,3	31,2	24,5	24,7
4 - 9 years	23,4	8,0	30,7	10,2
10 - 19 years	34,3	4,0	18,9	5,2
More than 20 years	29,0	0,6	7,6	0,8
Income (deciles)				
]0;1[	2,0	9,3	75,3	77,4
[1;2[	5,9	14,1	6,5	6,0
[2;3[	7,1	15,3	3,7	1,2
[3;4[	8,1	13,6	3,7	2,8
[4;5[	9,1	12,8	2,6	2,8
[5;6[	10,5	10,5	2,1	2,9
[6;7[	11,9	8,5	1,6	2,8
[7;8[	14,0	7,2	2,2	2,2
[8;9[	15,8	5,3	1,0	1,0
[9;10[	15,4	3,4	1,3	0,9
Hours per week				
30 hours or less	1,2	2,6	97,1	96,0
31 - 35 hours	14,5	9,5	1,6	2,0
36 - 39 hours	4,2	1,9	0,6	0,7
40 hours	58,9	66,4	0,5	0,8
41 hours or more	21,2	19,6	0,2	0,5
Shift work	19,4	23,8	19,7	25,4
Evening work	25,8	31,4	22,6	29,6
Night work	12,1	12,2	4,4	6,1
Saturday work	35,3	46,2	46,5	49,4
Sunday work	21,5	29,2	26,4	35,2
Work from home	16,4	11,4	8,1	14,6
Involuntary Part time	-	-	55,6	64,6
Involuntary Temporary contract	-	82,7	-	78,6
Looking for another job	2,6	13,8	20,4	36,1
Job insecurity	4,6	9,0	0,5	3,2
Job insatisfaction	85,4	57,6	84,0	72,8

Annex 9 – Employees' distribution by type of contract, by educational level: job quality variables (%)

Annex 9.1. Employees' distribution by type of contract: lower secondary education (%)

Variables	Lower Secondary (N=11 611)			
	FT & Perm (N=8 822)	FT & Temp (N=2 058)	PT & Perm (N=352)	PT & Temp (N=379)
Income (deciles)				
]0;1[	3,9	16,2	84,0	91,5
[1;2[	10,5	16,9	5,3	4,2
[2;3[	13,4	23,3	3,0	0,4
[3;4[	12,8	14,9	3,0	1,5
[4;5[	14,3	12,0	1,7	0,8
[5;6[	13,6	7,2	1,0	0,4
[6;7[	12,4	5,1	0,3	0,4
[7;8[	9,2	1,9	0,7	0,4
[8;9[	6,5	1,4	0,0	0,4
[9;10[	3,4	1,0	1,0	0,0
Hours per week				
30 hours or less	0,6	2,1	96,6	96,4
31 - 35 hours	10,0	7,2	1,2	2,4
36 - 39 hours	4,0	1,3	1,2	0,6
40 hours	67,2	70,3	0,3	0,6
41 hours or more	18,2	19,1	0,6	0,0
Shift work	25,3	26,4	13,9	20,8
Evening work	25,7	30,4	17,6	25,9
Night work	14,3	13,1	2,6	6,3
Saturday work	42,6	49,6	41,8	47,8
Sunday work	25,8	29,9	18,2	30,3
Work from home	3,6	2,2	2,6	2,6
Involuntary Part time	-	-	59,7	65,4
Involuntary Temporary contract	-	88,0	-	76,0
Looking for another job	1,6	11,7	18,2	37,7
Job insecurity	6,5	11,7	1,6	4,2
Job insatisfaction	83,5	46,7	84,4	72,0

Annex 9.2. Employees' distribution by type of contract: upper secondary education (%)

Variables	Upper Secondary (N=13 477)			
	FT & Perm (N=9 939)	FT & Temp (N=2 604)	PT & Perm (N=355)	PT & Temp (N=579)
Income (deciles)				
]0;1[	2,2	10,2	78,7	84,9
[1;2[	6,8	18,8	7,0	7,0
[2;3[	7,8	17,5	5,0	1,1
[3;4[	10,5	17,6	2,0	1,3
[4;5[	11,5	13,0	1,0	2,0
[5;6[	14,1	9,4	2,7	1,1
[6;7[	15,5	6,6	2,3	0,9
[7;8[	13,8	3,3	0,7	0,7
[8;9[	10,4	1,9	0,7	0,4
[9;10[	7,4	1,7	0,0	0,4
Hours per week				
30 hours or less	0,7	2,0	97,6	96,0
31 - 35 hours	13,1	7,4	1,5	1,9
36 - 39 hours	5,4	2,3	0,3	0,8
40 hours	61,7	70,1	0,6	0,8
41 hours or more	19,1	18,1	0,0	0,6
Shift work	22,5	28,8	25,1	34,7
Evening work	24,2	34,2	26,8	36,1
Night work	11,8	13,4	6,2	6,0
Saturday work	36,1	51,8	56,3	61,1
Sunday work	22,0	34,6	36,3	48,9
Work from home	7,0	4,7	4,5	5,5
Involuntary Part time	-	-	57,7	62,5
Involuntary Temporary contract	-	83,4	-	76,5
Looking for another job	2,2	13,2	22,3	30,9
Job insecurity	3,2	5,5	0,0	3,9
Job insatisfaction	82,9	60,1	84,8	69,3

Annex 9.3. Employees' distribution by type of contract: higher education (%)

Variables	Higher Education (N=13 200)			
	FT & Perm (N=10 213)	FT & Temp (N=2 251)	PT & Perm (N=209)	PT & Temp (N=527)
Income (deciles)				
]0;1[	0,3	2,2	54,3	60,7
[1;2[	1,1	6,1	7,5	6,0
[2;3[	1,1	5,5	2,9	1,9
[3;4[	1,7	7,8	8,1	5,2
[4;5[	2,2	13,4	6,9	4,8
[5;6[	4,4	14,6	2,9	6,4
[6;7[	8,0	13,6	2,3	6,2
[7;8[	18,4	16,5	7,5	5,0
[8;9[	29,2	12,8	3,5	1,9
[9;10[	33,7	7,6	4,0	1,9
Hours per week				
30 hours or less	2,3	3,6	96,9	95,7
31 - 35 hours	19,8	14,2	2,6	1,8
36 - 39 hours	3,0	2,0	0,0	0,6
40 hours	49,2	58,2	0,5	1,0
41 hours or more	25,7	22,0	0,0	0,8
Shift work	11,4	15,7	20,1	18,4
Evening work	27,2	29,0	23,9	25,0
Night work	10,5	9,9	4,3	6,1
Saturday work	28,2	36,7	37,8	37,8
Sunday work	17,3	22,2	23,4	23,7
Work from home	36,7	27,6	23,4	33,2
Involuntary Part time	-	-	45,0	66,4
Involuntary Temporary contract	-	76,9	-	20,1
Looking for another job	4,0	16,5	21,1	40,6
Job insecurity	4,6	10,5	0,0	1,9
Job insatisfaction	87,3	62,4	81,8	76,2

Annex 10 – Income deciles' distribution by gender by type of contract, by educational level (%)

	Total (N=34 386)							
Income	FT&Perm (N=28 974)		FT&Temp (N= 6 913)		PT&Perm (N=916)		PT&Temp (N=1 485)	
	Male (N=12 951)	Female (N=16 023)	Male (N=3 263)	Female (N=3 650)	Male (N=204)	Female (N=712)	Male (N=521)	Female (N=964)
]0;1[	1,1	2,8	7,0	11,3	59,1	79,5	71,7	80,2
[1;2[	4,3	7,1	12,5	15,5	6,9	6,3	7,6	5,2
[2;3[	4,1	9,5	13,5	16,8	6,3	3,1	1,4	1,2
[3;4[	7,0	9,0	13,8	13,4	5,0	3,4	2,4	3,0
[4;5[	8,1	9,8	13,5	12,2	5,7	1,8	3,0	2,6
[5;6[	11,2	10,0	12,2	9,0	2,5	2,0	4,9	2,0
[6;7[	13,5	10,7	10,0	7,1	3,8	1,0	2,7	2,8
[7;8[	15,3	13,1	7,2	2,1	2,5	2,1	3,0	1,8
[8;9[	16,8	15,0	5,7	5,0	2,5	0,7	1,6	0,7
[9;10[	18,6	12,9	4,6	2,4	5,7	0,2	1,6	0,5

	Lower Secondary Education (N=10 413)							
Income	FT&Perm (N=8 822)		FT&Temp (N=2 058)		PT&Perm (N=352)		PT&Temp (N=379)	
	Male (N=4 684)	Female (N=4 138)	Male (N=1 167)	Female (891)	Male (N=67)	Female (285)	Male (N=137)	Female (N=242)
]0;1[	1,8	6,2	11,8	21,7	70,0	86,8	82,7	95,1
[1;2[	6,7	14,7	13,7	21,0	6,0	5,2	6,7	3,2
[2;3[	6,5	20,8	19,0	28,7	0,0	3,6	0,0	0,5
[3;4[	10,6	15,3	15,3	14,4	2,0	3,2	4,0	0,5
[4;5[	12,8	15,9	13,8	9,7	8,0	0,4	2,7	0,0
[5;6[	16,3	10,7	10,7	2,8	2,0	0,8	1,3	0,0
[6;7[	16,7	7,8	8,3	1,1	2,0	0,0	0,0	0,5
[7;8[	12,8	5,2	3,2	0,0	4,0	0,0	1,3	0,0
[8;9[	10,2	2,5	2,3	0,3	0,0	0,0	1,3	0,0
[9;10[	5,6	1,1	1,8	0,0	6,0	0,0	0,0	0,0

	Upper Secondary Education (N=12 102)							
Income	FT&Perm (N=9 939)		FT&Temp (N=2 604)		PT&Perm (N=355)		PT&Temp (N=579)	
	Male (N=4 691)	Female (N=5 248)	Male (N=1 310)	Female (N=1 294	Male (N=83)	Female (N=272)	Male (N=234)	Female (N=345)
]0;1[	0,9	3,3	5,6	14,6	65,2	82,6	80,2	88,1
[1;2[	4,8	8,5	16,6	21,0	1,5	8,5	7,9	6,3
[2;3[	4,2	11,0	14,3	20,7	13,6	2,6	1,7	0,7
[3;4[	7,6	13,1	17,2	18,0	3,0	1,7	0,6	1,9
[4;5[	8,2	14,4	14,4	11,6	3,0	0,4	3,4	1,1
[5;6[	11,9	16,0	12,5	6,3	3,0	0,7	2,3	0,4
[6;7[	16,1	15,0	8,6	4,8	7,6	0,3	1,7	0,4
[7;8[	17,7	10,4	5,0	1,6	0,0	0,4	1,1	0,4
[8;9[	16,4	5,2	3,0	0,9	3,0	0,0	0,6	0,4
[9;10[	12,2	3,2	2,8	0,6	0,0	0,0	0,6	0,4

	Higher Education (N=11 871)							
Income	FT&Perm (N=10 213)		FT&Temp (N=2 251)		PT&Perm (N=209)		PT&Temp (N=527)	
	Male (N=3 575)	Female (N=6 638)	Male (N=788)	Female (N=1 463)	Male (N=54)	Female (N=155)	Male (N=150)	Female (N=377)
]0;1[	0,3	0,3	2,2	2,2	37,2	60,0	51,7	64,1
[1;2[	0,6	1,3	3,9	7,3	16,3	4,6	7,8	5,3
[2;3[	0,9	1,2	4,2	6,2	2,3	3,1	1,7	2,0
[3;4[	1,5	1,8	5,9	8,7	11,6	6,9	4,3	5,6
[4;5[	1,7	2,4	11,7	14,3	7,0	6,9	2,6	5,6
[5;6[	3,4	4,9	13,8	15,0	2,3	3,1	11,2	4,6
[6;7[	5,7	9,1	14,8	12,9	0,0	3,1	6,0	6,3
[7;8[	15,2	20,1	16,6	16,4	4,7	8,5	6,9	4,3
[8;9[	26,1	30,7	15,0	11,7	4,7	3,1	3,4	1,3
[9;10[	44,5	28,2	11,9	5,4	14,0	0,8	4,3	1,0