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Job Quality of Portuguese Health Professionals: 2011 vs 2015

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Abstract

The present research uses data from European Union Labour Force Survey to analyse job quality of Portuguese health professionals, comparing data from the years 2011 and 2015. The data from both years were processed separately through Fuzzy Clustering Analysis, which enabled the identification of employment profiles within each year. The empirical findings identified sets of three and four profiles to 2011 and 2015, respectively. In these sets, the duality of bad and good jobs is distinguishable. The bad jobs are characterized by affecting mainly young professionals and are identified by the existence of precarious situations such as limited duration contracts, part-time jobs and having low income. Good jobs have the opposite characteristics. The good jobs are mainly occupied by the older professionals. These professionals have permanent and full-time jobs and are taking home wages placed within the highest deciles of income in the Portuguese society. Medical Doctors is the professional category with better contractual and income indicators, though is the category to be clearly identified as having more weekly working hours. The category Other Health Professionals is the one more affected by the precariousness in the early years of practice, which indicates the need of a deeper research on who these other professionals are, and if there are other relevant differences within the category. Apart from the found duality, this research also found a duality within the duality, which is the existence of atypical work within the profiles with better jobs, creating a distinction between professionals.

Keywords: Job Quality; Health Professionals; Portugal

JEL Classification System:

J2   Demand and Supply of Labour

    J28   Safety • Job Satisfaction • Related Public Policy

J4   Particular Labour Markets

    J44   Professional Labour Markets • Occupational Licensing

J8   Labour Standards: National and International

    J81   Working Conditions

    J82   Labour Force Composition

Resumo

A presente pesquisa utiliza dados do *European Union Labour Force Survey* para analisar a qualidade do emprego dos profissionais de saúde portugueses, comparando dados dos anos de 2011 e 2015. Os dados de cada ano foram tratados através de *Fuzzy Clustering Analysis*, que permitiu a identificação de conjuntos de perfis de emprego dentro de cada ano. Os resultados empíricos identificaram conjuntos de três e quatro perfis de emprego para 2011 e 2015, respetivamente. Nestes conjuntos observa-se a existência da dualidade dos maus e bons empregos. Os maus empregos caracterizam-se por afetar jovens profissionais e são identificados pela existência de situações precárias, como contratos de tempo limitado, empregos a tempo parcial e salários de baixo valor. Os bons empregos são ocupados principalmente pelos profissionais de saúde mais antigos. Estes profissionais têm empregos com contratos sem termo e a tempo inteiro, levando para casa salários colocados nos níveis mais altos de rendimento em Portugal. Os médicos são a categoria profissional com melhores indicadores contratuais e de rendimento mensal, embora seja a categoria que é claramente identificada como tendo mais horas semanais de trabalho. A categoria dos outros profissionais da saúde é a mais afetada pela precariedade nos primeiros anos de prática, o que indicia a necessidade de uma pesquisa aprofundada sobre quem são esses outros profissionais, e se existem outras diferenças relevantes mesmo dentro da categoria. Encontrou-se, ainda, uma dualidade dentro da dualidade, que é a existência de trabalho atípico em alguns dos perfis dos bons empregos, criando separação entre os profissionais.

Palavras-chave: Qualidade do Emprego; Profissionais de Saúde; Portugal

Acknowledgements

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List of Abbreviations

EU LFS – European Union Labour Force Survey

GoM – Grade of Membership

ISCO – International Standard Classification of Occupation

NACE – Nomenclature statistique des activités économiques dans la Communauté européenne

NUTS – Nomenclature of territorial units for statistics

SNS – Portuguese National Healthcare Service, *Serviço Nacional de Saúde*

EJQI - European Job Quality Index

ILO - International Labour Organization

Introduction

This dissertation aims to help fulfil part of the gap in the job quality's research within the health professionals in Portugal. Though studies on these professionals have been produced, only a few of them have some information about job quality. The focus of those studies is the professional's job satisfaction (Martins et al., 2015; Passadouro and Ferreira, 2016; Salvador Ferreira et al., 2017), predictive issues to burnout (Marôco et al., 2016) or reasons that led the professionals to emigration (Pereira, 2015).

The choosing of health professionals as a group of study is related to the rise of public demands these professionals have been producing in recent years and the lack of scientific information to support answering those demands from a point of view different from the financial point of view, that turned the governments into cyclopes.

This research wants to answer questions such as: what were the characteristics of Portuguese health professionals' jobs in the beginning of the financial assistance? What characteristics changed after the period of financial assistance? Which reasons lead health professionals to demand better job conditions? What type of jobs do the Portuguese health professionals face in their work-life? Are they bad or good jobs?

. The dual labour market theoretical approach advocates the existence of two distinguishable sectors within the labour market, a primary and a secondary (Leontaridi, 1998), and on top of that, also states that jobs may be classified as good or bad (Bertrand-Cloodt et al., 2012; Cabral Vieira et al., 2005), providing characteristics that match some of those already mentioned and associated to bad jobs. Social sciences play the most relevant role in helping decision makers about the existence of either good or bad jobs, being crucial to the construct of policies development towards better job quality of all workers.

The empirical data was surveyed in 2011 and 2015 and collected by the European Union Labour Force Survey (EU LFS), regarding information on the job's characteristics of Portuguese health professionals. The choosing of these two years was done because they correspond to the first year of the economic aid Portugal received from 2011 to 2014 and to the first year after that economic aid, 2015, that also corresponds to the ending year of the legislative term of the Portuguese government that was leading the country policies during the economic aid, this is between 2011 and 2015.

The job quality of the Portuguese health professionals must be addressed in order to have better policies that fulfil the job quality needs of these professionals in the long run.

This dissertation has been divided into four chapters. The first chapter refers to the literature review, where are presented the segmentation and dual labour market theory, definitions of job quality and how it may be measured. Some previous researches are discussed in order to give a frame of what is the present context on the research of job quality of health professionals. Chapter two includes the data and methodology, where is discussed the use of the EU LFS as data source and the use of a mixed

methodology approach, that uses fuzzy clustering analysis to quantitative data, and word analysis on qualitative data. Empirical findings are presented in chapter three. The discussion in chapter four, includes observations of what emerges from the empirical findings as well as suggestions to future opportunities.

I. Literature Review

I.1 Labour market

The theory of labour market segmentation contributes to the understanding of job quality, although there is no consensus on what job quality is (Findlay et al., 2013). The diagram in Figure I.1 shows the historical development of economic theories, until the emergence of the theory of labour market segmentation.

Figure I.1 - Chronological development of economic theories that flow into labour market segmentation theory.
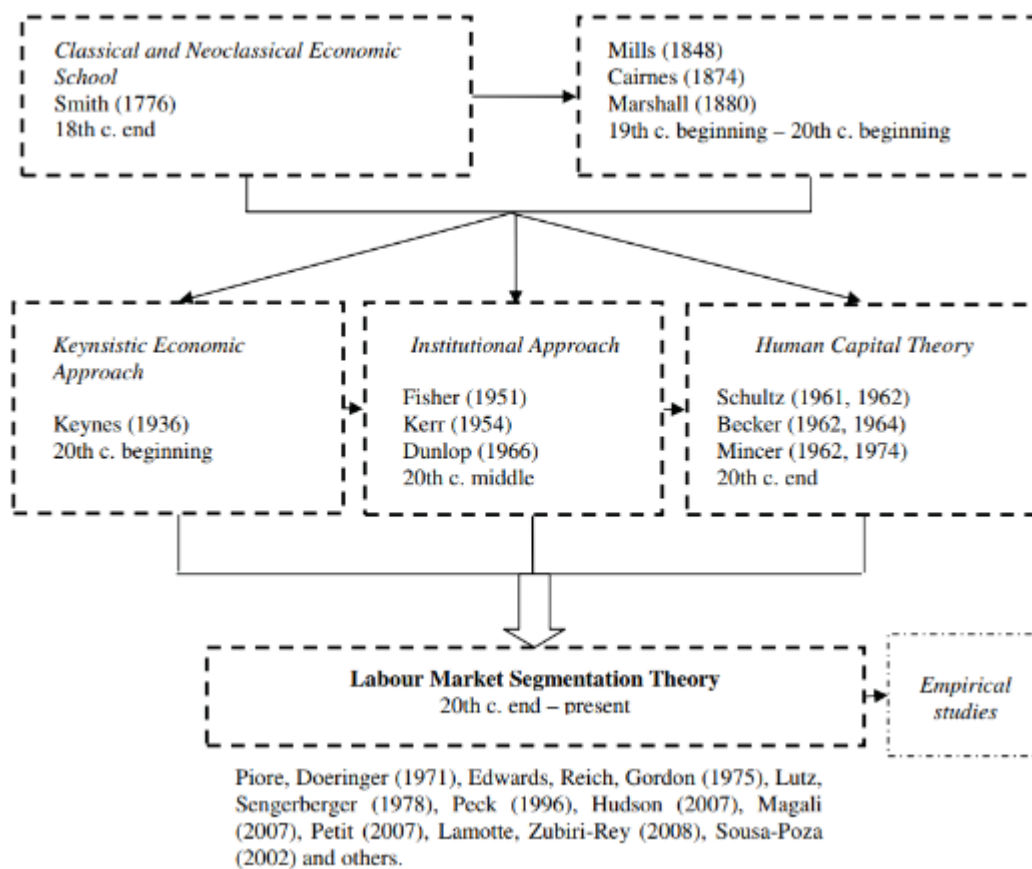
Source: (Jakstiene, 2010)

In 1971, Doeringer and Piore presented the Dual Labour Market (DLM) ideas, where they "stressed the differences between the quality of jobs in different sectors of the economy, and the relative lack of access that some groups (especially disadvantaged minorities) had to (…) the primary labour market" (Holzer, 2005). Following this, Reich et al. (1973) described DLM through four distinct segmentation processes[1]. The first describes labour segmentation as a division between a primary and

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[1] Reich et al. (1973) also considered segmentation within the primary sector, segmentation by ethnicity, and segmentation by gender.

a secondary market. These markets are distinguishable by stability characteristics, such as working habits, skills required for the job, wages or the existence of job ladders, which are more intense in the primary than in the secondary (Reich et al., 1973).

The presence or absence of these characteristics – whether they are stability, career prospects, salary value, routine, required skills, etc. (Findlay et al., 2013) –, in conjunction with the degree of importance given to them, is what will determine the level of contentment with the job and, thus, making the worker take in consideration whether his job is " good "or" bad " (Kalleberg, 2004). Kalleberg's (2004) in-depth analysis treats the quality of work as multidimensional because it carries objective and subjective appraisals of the worker, which fit into disciplines such as sociology, psychology, and economics. Kalleberg uses DLM to define that the primary market contains good jobs and the secondary market contains bad jobs. The author implies that polarization has had an impact on the structure of job quality, "resulting in an increase in good and bad jobs and a substantial reduction in the size of the middle class" (Kalleberg, 2004).

It is clear that the primary market comprises good jobs and the secondary market comprises bad jobs, and there is awareness to the very little mobility between them (Bosworth et al., 1996), which translates into non-competitiveness of both markets (Ehrenberg and Smith, 2012; Grimshaw, 2005). Despite criticism of this model, there is evidence that the duality of the labour market exists: a market where experience and education are associated with higher wages, and another market where neither feature is associated (Ehrenberg and Smith, 2012).

I.2 Defining Job Quality

The definition of job quality[2] is diverse depending on the academic disciplines and/or the politics involved in the analysis, because there are different dimensions to be taken in account (Antón et al., 2012; Davoine, Erhel and Guergoat-Larivière, 2008; Muñoz de Bustillo, 2011; Okay-Somerville and Scholarios, 2013). The need to reach a consensual definition of job quality is of great importance (Green, 2006) to improve job quality research and, for that matter, develop better job focused policies (Findlay et al., 2013).

Also, some authors suggest that job quality definition may vary due to the different contexts where the perspective of analysis falls, thus involving different dimensions accordingly. Smits (2018) and the European Foundation (Jandrić and Molnar, 2018; UNECE, 2010, 2015) mention three possible

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[2] Though "job quality" may be a well-known formulation of the subject, there are others that are also frequently used to refer to "job quality", such as "quality of work", "quality of work life", "employment quality", "job satisfaction", "quality in work", "work quality" or "labour market quality" (Aleksynska, 2018; Barroso, 2018; Green, 2006; Smits, 2018). "Hesitations about the denomination of the concept also reveal some difficulties to define it at the European level" (Davoine, Erhel and Guergoat-Larivière, 2008).

perspectives each, the former mentions the individual, the job and the country, and the latter, societal, corporate and individual perspectives.

Job quality had had much attention by the European Union since the Lisbon summit, in 2000, adding to two other objectives: full employment and social inclusion (Europäische Kommission, 2004). Since the Lisbon summit, the motto of "more and better jobs" has been entangled in the different perspectives of each discipline interests, whether sociological, economical or psychological, and in "tensions between the different perspectives of the social partners: governments, employers and trade unions" (Piasna et al., 2019).

Ensuing the Lisbon summit, the European Union followed up the "better jobs" from the motto to define what were the characteristics of a good job, that would lead, as intended, to the dimensions that would permit the observation of job quality through the available mechanisms. From the Laeken summit, in 2001, emerges one definition of "quality of work" (Davoine, Erhel and Guergoat-Larivière, 2008; Siebern-Thomas, 2005) sustained in ten dimensions: intrinsic job quality; skills, lifelong learning and career development; gender equality; health and safety at work; flexibility and security; inclusion and access to the labour market; work organisation and work-life balance; social dialogue and employee involvement; diversity and non-discrimination; overall employment performance and productivity (Centre d'études de l'emploi (France) and Davoine, 2006; Commission of European Communities, 2003; Green, 2006). These dimensions are "objective characteristics of the job, subjective evaluations by workers, workers' characteristics and the match between the worker and the job" (Drobnič and Guillén, 2011).

These dimensions were agreed to in order to help the cohesion of the European Union objectives and the development of job focused policies within the context of the European Employment Strategy (Cerdeira and Kovács, 2008; Sebastian et al., 2011). The intended cohesion is very difficult to achieve. In 2010, the National Strategic Reports from several countries, from the European Union, were only using between two and eight primary Laeken dimensions (Bothfeld and Leschke, 2012).

The Laeken set of dimensions was criticized for being just a pursuit of political interests (Simoes et al., 2015), thus lacking academic support for not considering important dimensions such as wages[3,4] and work intensity (Bothfeld and Leschke, 2012; Davoine, Erhel and Guergoat-Lariviere, 2008; Muñoz de Bustillo et al., 2009; Smits, 2018). Probably, that is why there are few examples of research using only the Laeken dimensions and, therefore, there is no sufficient evidence to establish their merit (Sebastian et al., 2011).

Green (2006) states that the definition of job quality is worker-centred, i.e., the dimensions used to define job quality are the ones contributing to the worker's well-being. Where well-being is thought both in objective and subjective approaches. Nevertheless, Muñoz de Bustillo considers that the definition of the "job quality is linked (…) to the characteristics of the work performed and its environment

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[3] Bothfield and Leschke inform that wages were "subsumed under 'intrinsic job quality'" (2012).

[4] There is relevant information stating that wages are mentioned by a minority of workers as being a most important dimension to their jobs (Green, 2006; Muñoz de Bustillo, 2011; Muñoz de Bustillo et al., 2009).

(…) and characteristics of the contractual conditions under which such job is performed" (2011), leaving some well-being and labour market dimensions out of the picture. Muñoz de Bustillo et al. consider that "it may be useful to divide job quality into two broad areas, *employment quality* and *work quality*" (2009), see Figure I.2[5]. On other hand, Díaz-Chao et al. proposed a wider definition where "job quality is an overall state of satisfaction that includes objective aspects of material wellbeing, satisfactory relationships with the physical and social environment, and objectively perceived health; and subjective aspects of physical, psychological and social wellbeing" (2016). Simoes et al. (2015) sums up that the objective dimensions are those related to the job characteristics and the subjective ones are those associated with the job-worker match.

Figure I.2 – A sketch of a general model of job quality
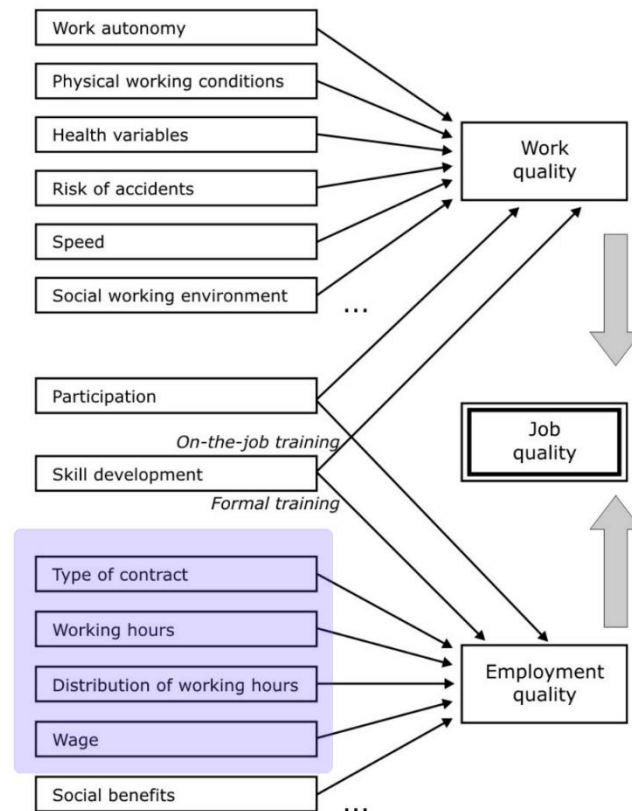
Source: (Muñoz de Bustillo et al., 2009)

Piasna et al. (2019) considers that the policies for successfully implementing quality in jobs, i.e. creating "better jobs", in the European Union countries, have been easily contested, not only in the

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[5] The coloured shape in Figure I.2 focus on which employment quality conditions this research mostly reflects on type of contract, working hours, distribution of working hours and wage.

aftermath of the economic crisis, when the focus was creating new jobs despite their quality[6], but also because of the difficulties in the conceptualization of a consensual job quality's definition. Barroso mentions that "the request of a precise conceptualization has been defended as one possible way of finding a consensual measurement of [job quality], avoiding the diversity of perspectives and results in the field" (2018).

I.3 Measuring Job Quality

Measuring job quality depends on the job quality's definition adopted or constructed to do the research and on the indicators that emerge from the said definition. Hence, measuring job quality is also difficult, in spite of already existing various proposals on how to do it (Findlay et al., 2013). Nevertheless, Muñoz de Bustillo considers that that difficulty is "no more complex than measuring other economic phenomena" (2011).

There are two approaches that have been used in research to measure job quality, one uses aggregated indicators (macro-level) and other uses individual indicators (micro-level) (Simoes et al., 2015). Simoes et al. (2015) explain that with the aggregated indicators is possible to compare information at the country level and, thus, support the construct of policies that may lead to standards of job quality. The individual indicators emerge from the definition where job quality is more worker-related, "focused on the characteristics of the job and on the quality of the match between worker and job" (2015), i.e. closer to the definition Muñoz de Bustillo (2011) formulated and that was mentioned in the previous section.

The Laeken indicators fall into the macro level approach, for they are considered a system of indicators (Simoes et al., 2015) that cover job characteristics, job-worker match and labour market, thus Simoes et al. (2015) agree with Leschke et al. (2012) when the latter states that Laeken indicators go beyond job quality. Also, Leschke et al. (2012) alert to the fact that these indicators are not organized in one index, preventing European Union countries from being benchmarked in terms of job quality under the Laeken indicators.

The existence of indexes is considered also in the macro level approach as composite indicators (Simoes et al., 2015). Leschke and Watt (2008), under the European Trade Union Institute umbrella, proposed a European Job Quality Index (EJQI) , using data from multiple sources[7], to be calculated yearly, though some of the databases are not updated every year (Muñoz de Bustillo et al., 2009). Muñoz de Bustillo (2009) considered this index "a very well-balanced and well-documented index"

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[6] In 2012, Leschke already had written that there was an unclear situation about the creation of "better jobs", considering that there was "a widespread perception that many of the new jobs created are 'bad jobs'" (Leschke et al., 2012).

[7] Some of the data sources used are "the European Labour Force Survey, the European Community Household Panel, relevant specific data collections provided by Eurostat and the European Working Conditions Survey" (Leschke and Watt, 2008).

(2009), though it has the problem of not allowing the visualisation of the distribution within the considered countries. Leschke et al. stated later that the EJQI was a complement to more in-depth studies and its main focus was to be "a monitoring tool cross-country and over-time comparisons across the whole European Union" (2012).

Also within the macro level approach are the "*decent work*" indicators, from the International Labour Organization (ILO), which are considered to carry a broader concept than job quality by both Simoes et al. (2015) and Leschke and Watt (2008), and is focused on developing countries.

Regarding the micro-level approach, Simoes et al. (2015) mention job satisfaction as a proxy for job quality and multidimensional indexes. The first is a methodology that lacks quality on various dimensions of job quality, though it "allows, on the one hand, to overcome data limitations of existing surveys and, on the other hand, to account for the importance that each individual gives to the dimensions of the job" (2015). For the second, the authors divide it in three groups considering the nature of the dimensions the researchers find adequate, i.e., the three groups are one with only objective dimensions, another with only subjective and a last one with both objective and subjective dimensions.

I.4   Previous Research on other countries Health Professionals Job Quality

Most studies found and related to health professional jobs are aimed at job satisfaction. The most relevant preoccupation in the scientific analyses around health professional jobs is, in fact, the professionals and their health, due to the stressful environment, both psychological and physical. Hence, the focus on job satisfaction, which is more related to the professionals' emotional perception of their job and various contextual characteristics (Dilig-Ruiz et al., 2018; Mete et al., 2017), rather than objective data related to the jobs characteristics, that would inform of job quality.

Within six studies, each one from a different country, four from the European Union (Belgium, Greece and Spain) and the other three from Canada, China and Turkey, only the Chinese study has also some focus on job quality characteristics.

The Chinese study by Miao et al. measured week working hours, that go above the 57 hours, being this characteristic the one that affects the most the job quality of the medical doctors in the study (2017). Dilig-Ruiz et al., authors of the Canadian study, propose, based on the systematic review they made on nurses' job satisfaction, that the amount of hours worked in a shift should be limited from 8 to 12 and variable accordingly to the time of day, thus reducing "some of the negative health effects and job dissatisfaction associated with working at night" (2018). The Belgian study proposes that, among other, reducing the working hours would be positive to the respondents medical doctors' job satisfaction (Bragard et al., 2012). The nurses that collaborated in the Greek study also refer the workload as one of the characteristics that displeased them the most (Ioannou et al., 2015). The study produced by Vidal-Blanco et al. with interviews to Spanish nurses concludes that "the way that shifts are arranged causes great discomfort and professional burnout" (2019).

I.5 Previous Research on Portuguese Health Professionals Job Quality

While preparing the present dissertation, few scientific studies have been found that have some information on job quality of health professionals, though their main subject is different from job quality, that is a reality with those presented in the previous section as it happens with the ones to be described in this one. In this section, the studies that were found include nursing professionals, medical doctors or both, but none of the other health professionals.

One study on nursing professionals, published in 2015, focuses on the emigration of Portuguese nurses, starting with the increase of emigration from 2010 onwards. The study uses anthropological and sociological methods and is most relevant for the emigration subject in the course of the years of the economic aid that Portugal received. Further reading may be of interest, see Pereira (2015).

One other study has the objective of assessing nurses' level of job satisfaction through the Work Satisfaction Evaluation Scale for Nurses questionnaire. The questionnaire was responded by 124 health professionals. The study was conducted in the Northeast Local Health Unit, in the district of Bragança, north region of Portugal. This health unit encompasses three hospitals and 14 health care centres. For further study read Salvador Ferreira et al. (2017).

Marôco et al. (2016) presented a study on Portuguese health professionals burnout[8], inviting both medical doctors and nurses to answer the authors' questionnaire. The authors received answers from 1262 nurses and 466 medical doctors, from every region of Portugal, but mostly from Lisbon region (34,5%). Marôco et al. study intersects with this dissertation with the following two conclusions: one is the fact that the "variable (…) perception of working conditions showed to be the best determinant of burnout in our group of participants" (2016), where the worst perception of working conditions motivate higher probability of burnout. The second conclusion is that though the authors did not find any statistically significant differences between nurses and medical doctors, they did notice that "younger professionals are more affected by burnout" (2016).

Afonso et al. (2019) presented a study on medical doctors. The study has a small sample (N=181) and involved only professionals that are associated with the catholic religion (selection bias). The information to this study analysis was retrieved from answers of the health professionals to a questionnaire produced by the authors. The aim of the study is to evaluate the work-family balance. From the empirical findings of this study it is relevant to mention the week working hours, and these professionals' perception of the impact of the week working hours on their work-family balance. The average week working hours of these medical doctors is 46,8h. 60% of the respondents replied working more than 40h and 40% work more than 50h, when the European Union directive promotes the 48h limit to week working hours, including overtime. The study also reveals that 76% of these professional

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[8] Burnout is an issue that has been of major relevance in health professional categories. Some studies, like this by Marôco et al. (2016) and others that are referred in the next section, start from the burnout issue to evaluate the quality of work life or job satisfaction. In 2018, Miguel Guimarães, the chairman of the Portuguese Medical Doctors Board published an essay in the media where he states that "66% of the Portuguese Medical Doctors assume to be exhausted, one of the three main predictors of burnout" (2018).

frequently work at home over those weekly hours. Interestingly, 51% of the medical doctors considered that working above the interval of 35 to 40 week working hours will have a negative impact in the work-family balance, though 23% consider that this will happen only above the 50 week working hours. This study also has information whether the health professionals work in the public, private or both sectors. The public sector, this is, the Portuguese National Health Service (SNS, *Serviço Nacional de Saúde*), contributes for a negative work-family balance to 73% of the professionals, while the private sector is considered negative to 40% of these professionals.

Though relevant, these studies do not intend to make any analysis on job quality, so the information that is related to it only provides clues to some aspects of the job quality of the Portuguese health professionals.

I.6   Research Hypotheses

The studies to which the previous sections refer to are related to nursing professionals and medical doctors, where the main problems health professionals face are the excessive working hours and the probability of burnout.

Following this evidence, some questions arise: Are these the only health professionals in such working conditions? Are there differences that divide the health professionals between those more exposed to worst working conditions and others in better working conditions? In order to answer these questions, here is proposed to test the arguments on segmentation and dual labour market.

This dissertation proposes to give answer to two hypotheses, related to the Portuguese health labour market.

Hypothesis 1: The Portuguese health labour market has a divide that separates good and bad jobs.

Hypothesis 2: Certain health professionals' categories prevail within specific type of jobs, bad or good.

II. Data and methodology

II.1 Labour Force Survey

The dataset analysed in this work has its origin in the EU LFS referring to the years 2011 and 2015. The European Union Labour Force Survey (EU LFS) is a large household sample survey conducted by the national statistical institutes in the 28 member states of the European Union, amongst other countries (European Union Labour Force Survey - Eurostat, n.d.).

The EU LFS has been used to research on job quality, because its micro-data enables "theoretical developments in the understanding of the drivers of job quality" (Piasna et al., 2017).

Research previously produced with micro-data from EU LFS and regarding job quality have examples focused on the following subjects: young graduates on Southern European countries (Dias, 2018), business functions (Vandekerckhove and Ramioul, 2011), youth employability (Scarpetta et al., 2012), youth unemployment (Hadjivassiliou et al., 2017), youth career opportunities (O'Reill et al., 2017), female part-time work (Gallie et al., 2016) or job polarization (Peugny, 2019).

When researching studies for this dissertation, there were not found any studies that have taken advantage of the EU LFS to study job quality of health professionals. In a context of scarcity of studies on this sector, the EU LFS could have been used to bridge the information deficit on health professionals.

II.2 Methodology

This research uses a methodology with a mixed approach that includes quantitative data and qualitative information. This option permits to deepen some issues that could not be extracted from the data.

II.2.1 Grade of membership

The statistical treatment of the data from EU LFS was carried out using the grade of membership (GoM) model (Woodbury and Clive, 1974) [9]. This model aims to represent the discrete data structure by means of fuzzy clusters. The estimation of GoM parameters was done using DSIGoM software (Decision System, Inc., 1999).

The variables used in this analysis were assembled and produced the profiles of job quality and the degree to which observation corresponds to such profiles. This is, the number of profiles correspond to K fuzzy clusters and each observation has a grade of membership to each cluster (i.e., profile).

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[9] More information on grade of membership may be read in Manton et al. (1994), as referred in Andreotti et al. (2009), Guedes et al. (2010) and Suleman et al.(2015).

The grade of membership fluctuates in the interval [0,1], being 0 a zero-membership grade and 1 a full match to the profile the membership is set to. Each observation has a grade of membership to each of the profiles, thus creating a grade of membership of the observation within the set of variables and not between observations. So, there is a variation in between observations but not a random one (Guedes et al., 2010).

II.2.2 Qualitative analysis of a set of news

There is a set of news gathered from the Portuguese media that were submitted to a qualitative analysis. The objective was to identify keywords that relate to the common aspects of the demands made by health professionals.

Twenty online news from major newspapers, one TV channel and professional associations were gathered in order to determine which job quality demands are more relevant in the health professionals demands. Both Nurses and Medical Doctors categories appear in one news, Nurses category appears in six other news and Medical Doctors is the only category appearing in yet another thirteen news. Nine news are from 2010 until 2015, and eleven news are from 2017 to 2019, thus, the demands may be perceived over time.

II.3 Sample and Variables

II.3.1 Sample

The study presented in this dissertation regards the EU LFS micro-data related to Portuguese health professionals with the goal of describing differences to these professionals' job quality and its evolution, if any, between the years 2011 and 2015.

The EU LFS micro-data, from both 2011 and 2015, were filtered to obtain only data from Portugal and then filtered by the International Standard Classification of Occupation (ISCO) variable at its second level, reducing the data to Health Professionals, i.e., sub-major[10] group 22 from ISCO 08 (International Labour Office and International Labour Organization, 2012). In order to keep relevance, data observations from sections A and B of the European Union NACE[11] were removed. Those sections correspond to *Agriculture, forestry and fishing* and *Mining and quarrying* economic activities (EUROSTAT, 2008). Finally, only professionals who are employees were considered for this analysis.

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[10] The International Standard Classification of Occupations cluster the occupations along four levels: Major, Sub-major, Minor and Unit groups (International Labour Office and International Labour Organization, 2012). The micro-data available does not comprise the unit groups of each minor group, thus this analysis could not unveil which specific professionals are of greater importance within Other health professionals.

[11] NACE is the acronym for "Nomenclature statistique des activités économiques dans la Communauté européenne" (EUROSTAT, 2008).

Table II.1 presents the samples' professional categories share of 2011 and 2015. The relative weight of each health professionals' minor group is similar in both years 2011 and 2015. The most relevant minor groups are Medical Doctors, Nursing and midwifery professionals and Other health professionals.

Table II.1 – 2011 and 2015 micro-data samples

	2011		2015	
Health Professionals	N	%	N	%
Medical doctors	320	24,79%	461	27,31%
Nursing and midwifery professionals	643	49,81%	783	46,39%
Traditional and complementary medicine professionals	6	0,46%	1	0,06%
Paramedical practitioners	3	0,23%	2	0,12%
Veterinarians	24	1,86%	29	1,72%
Other health professionals*	295	22,85%	412	24,41%
TOTALS	1291	100%	1688	100%

*Dentists; Pharmacists; Environmental and occupational health and hygiene professionals; Physiotherapists; Dieticians and nutritionists; Audiologists and speech therapists; Optometrists and ophthalmic opticians; Health professionals not elsewhere classified.

Source: EU-LFS

II.3.2 Variables

The set of variables from EU-LFS was chosen taking into consideration their contribution to characterize the health professionals (external variables), and the job quality of health professionals (internal variables), in order to reach better results from the micro-data available. All the variables were chosen so that the outcome analysis would be the most valuable and its empirical findings provided strong insights about the job quality of health professionals.

The internal variables are listed in Table II.2. These variables made possible the profiling, this is, creating the clusters of the observations present in the micro-data considered in this dissertation. As previously discussed, the dimensions of job quality are diverse. The EU LFS provides some indicators that fulfil job quality (Davoine, Erhel and Guergoat-Larivière, 2008) on what Muñoz de Bustillo et al (2009) qualify as employment quality, such as wage, type of contract, working hours and distribution of working hours.

Income is the variable that, in EU LFS, relates to wages, an indicator that must be included when analysing job quality (Leschke and Watt, 2008; Muñoz de Bustillo et al., 2009). Though the variable does not carry an identifying number (Davoine, Erhel and Guergoat-Larivière, 2008), instead it places the observation in a relative position to others, the variable gives important information whether the professional belongs to a less or more favourable profile.

Table II.2 – Job Characteristics (Internal Variables)

Variable short name	Variable Specification	Information provided by the variable	EU LFS variable name
Income			
Income decile	Monthly (take home) pay from main job (decile)	Individual's wage relative position within Portuguese wages	INCDECIL
Work Contract Characteristics			
Full Time or Part-time	Full-time / Part-time distinction	Full-time or part-time characteristic of work contract	FTPT
Duration of Contract	Total duration of job or work contract	The time limit of job or work contract. When the individual has a temporary job or limited work contract, what duration does it have	TEMP + TEMPDUR
Reasons for having a temporary job	Reasons for having a temporary job/work contract of limited duration	When the individual has a temporary job or limited work contract, what is the reason to have it	TEMP + TEMPREAS
Hours worked			
Hours per week	Number of hours per week usually worked	Number of hours per week usually worked.	HWUSUAL
Overtime compensation			
Paid Overtime	Paid overtime in the reference week in the main job	States if there is paid or/and not paid overtime.	HWOVERP transformed
Unpaid Overtime	Unpaid overtime in the reference week in the main job	States if there is unpaid or/and not unpaid overtime.	HWOVERPU transformed
Second job			
Second job	Existence of a second job	Existence of a second job	EXIST2J
Atypical work			
Work at home	Do work at home	Do work at home	HOMEWK
Shift work	Do shift work	Do shift work	SHIFTWK
Evening work	Do evening work	Do evening work	EVENWK
Night work	Do night work	Do night work	NIGHTWK
Saturday work	Do Saturday work	Do Saturday work	SATWK
Sunday work	Do Sunday work	Do Sunday work	SUNWK

The work contract characteristics set of variables provide information on job security, one dimension that the majority of the population of most EU countries consider relevant when questioned on job quality (Muñoz de Bustillo et al., 2009). From this set, the analysis also provides information on who has a temporary contract and the reason why the contract is temporary, giving clues to motives that are related to less secure jobs.

Hours worked is a variable that gives the working hours indicator and it may shed light on the relation to work-life balance (Leschke and Watt, 2008), but also to gender inequality or employers search of flexibility (Piasna, 2017). Since this dissertation is restricted to health professionals, some evidence

may not emerge from this micro-data, since the requirements and legislation of working hours to some of the health professionals are regulated in order to provide patient security. Also, the working hours indicator may provide useful information if whether there is a link, positive or negative, between hours worked per week and income, since it is considered that the disamenities should be compensated (Davoine, Erhel and Guergoat-Larivière, 2008). The existence of a second job relates to the need of more financial resources or to face family responsibilities (Panos et al., 2014). The atypical work variables set relate to working conditions, work-life balance and are regarded as unsocial working hours (Davoine, Erhel and Guergoat-Larivière, 2008; Leschke and Watt, 2008; Piasna, 2017). The overtime compensation is a set of variables that was intended to use as a proxy to add to the quality of work-life balance.

Table II.3 – Health Professional Characteristics (External Variables)

Variable short name	Variable Specification	Information provided by the variable	EU LFS variable
Demographic Background			
Age	Age of interviewed person	Age of interviewed person	AGE
Gender	Gender	Gender	SEX
Employment Characteristics of The Main Job			
Tenure	Time since person started to work	Time since person started to work	STARTIME
Profession	Occupation (coded 3 digit)	Provides the NACE's Minor Group to which the professional belongs	ISCO3D
Region	Region of place of work	Portuguese region of place of work accordingly to NUTS 2 [12]	REGIONW
Firm size	Number of persons working at the local unit	Dimension of the firm where the observation occurs	SIZEFIRM

In Table II.3, there is a summary of the external variables divided into two main characteristics, Demographic Background and Employment Characteristics of the Main Job. The variables of the former were brought into analysis to give some insight on gender difference (sex), and the relevance of the professional's age to each profile or cluster (age). The latter characteristic's set of variables provides useful information on the professional category that is more identifiable with each profile (profession), for how long have they been working to the present employer (tenure), where, in Portugal, do they work (region), and the dimension of the firms where they work (firm size).

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[12] NUTS is the acronym for "Nomenclature of territorial units for statistics" (EUR-Lex - 32017R2391 - EN - EUR-Lex, n.d.)

II.3.3 Descriptive Statistics

On Table II.4 is presented the descriptive statistics of internal variables and on Table II.5 is presented the descriptive statistics of external variables.

Table II.4 – Descriptive statistics of Internal Variables

	Years	2011	2015
Internal Variables		%	%
Income decile	Below the 1st decile	1,46	1,54
	Between the 1st and the 2nd decile	0,45	0,53
	Between the 2nd and the 3rd decile	0,18	0,27
	Between the 3rd and the 4th decile	0,55	1,2
	Between the 4th and the 5th decile	0,45	2,27
	Between the 5th and the 6th decile	1	2,4
	Between the 6th and the 7th decile	4,55	7,55
	Between the 7th and the 8th decile	16,47	28,46
	Between the 8th and the 9th decile	37,58	24,92
	More or equal to the 9th decile	37,31	30,86
Full Time or Part-time	Full-time job	95,82	94,37
	Part-time job	4,18	5,63
Duration of temporary job	no limit	82,37	85,21
	1 to 12 months	13,14	11,32
	13 to 36 months	2,4	0,8
	More than 3 years	2,08	2,66
Reasons for having a temporary job	Person has a permanent job or work contract of unlimited duration	79,63	81,58
	It is a contract covering a period of training (apprentices, trainees, research	2,25	3,85
	Person could not find a permanent job	16,03	12,38
	Person did not want a permanent job	1,78	1,48
	It is a contract for a probationary period	0,31	0,71
Hours per week	Part-time (up to 35 horas)	4,7	7,03
	Full-time (35 to 39h)	45,37	18,45
	Full-time (40 to 42h)	36,44	58,16
	Full-time (more than 42h)	13,48	16,37
Paid Overtime	There is paid overtime	88,11	88,44
	There is not paid overtime	11,89	11,56
Unpaid Overtime	There is unpaid overtime	95,58	91,25
	There is not unpaid overtime	4,42	8,75
Second job	Person had only one job	80,64	79,62
	Person had more than one job	19,36	20,38

Table II.4 – Descriptive statistics of Internal Variables (continued)

	Years	2011	2015
	Internal Variables	%	%
Work at home	Person usually works at home	2,71	3,67
	Person sometimes works at home	4,49	8,89
	Person never works at home	92,8	87,44
Shift work	Person does shift work	43,14	44,19
	Person never does shift work	56,86	55,81
Evening work	Person usually works in the evening	11,93	8,59
	Person sometimes works in the evening	34,31	37,09
	Person never works in the evening	53,76	54,32
Night work	Person usually works at night	5,42	2,73
	Person sometimes works at night	30,13	30,57
	Person never works at night	64,45	66,71
Saturday work	Person usually works on Saturdays	18,82	17,95
	Person sometimes works on Saturdays	36,87	36,91
	Person never works on Saturdays	44,31	45,14
Sunday Work	Person usually works on Sundays	16,42	16,47
	Person sometimes works on Sundays	27,73	25,65
	Person never works on Sundays	55,85	57,88
	N=	1291	1688
Source: EU LFS | Percentage excluding missing values			

From Table II.4, there is evidence that the majority of health professionals' income is situated from the 7th decile onwards. Also, it is observable that these professionals lost income value, when comparing the years presented, within the three major deciles (2011 had 91,36% and 2015 had 84,24% of the observations). It is noticeable that the percentage of observations, in the interval holding from the 2nd to the 6th deciles, grew in a minimum of 50% to a maximum of 404%, from 2011 to 2015.

Amongst health professionals, the full-time job is almost a certainty (more than 94%). As is a certainty, though in a lesser percentage, having unlimited contracts, that had grown 2,84%, from 2011 to 2015. Among the temporary contract's types only grew those who have more than a three years contract. This may be related to the Portuguese legislation[13] and to the natural evolution of contractual relationships. This is, in this five-year period, 2011 to 2015, unlimited contracts grew for their absorbed those who reached the legislation limit, and the growth of those observations that fill the "more than 3 years" contract comes from the two levels with less contract time. The decrease on these latter levels may be related to the existence of fewer newcomers or emigration in the early years of graduation, or employers offered more permanent jobs at start. This last hypothesis has some echo on the 3,65% decrease, from 2011 to 2015, of the reason for having a temporary job that the person could not find a

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[13] Temporary contracts with the same employer are possible to a maximum of six years. Until the reach of those six years, the employer must choose between offering a permanent job to the employee or dismiss the employee.

permanent job. The reason of having a contract a probationary period grew 129%, probably related to the fiscal conditions given to employers that contract 1st job seekers.

Due to the specificities of health professional jobs, the intervals considered to observe the hours worked per week respect the different characteristics held within the careers. The major difference seen in this variable data is the shift of most professionals from a full-time of 35 hours to a full-time of 40 hours. This is due to the Labour Code revision in 2012, that set the 40 hours of work per week as minimum both to the private and public sectors, corresponding to a condition present in the *Memorandum of Understanding on Specific Economic Policy Conditionality* (Portugal, 2011), signed between the Portuguese government and the European Commission, the European Central Bank and the International Monetary Fund.

The existence of overtime does not change greatly over the years in analysis but shows that the majority of health professionals does overtime, paid and unpaid, this is, the real working hours per week exceed the minimum time limits and, probably, the maximum limits legislated for overtime.

The work at home variable shows that remote jobs or tasks grew, in 2015, 35% more health professionals usually work at home and more 98% sometimes work at home.

The various unsocial hours of work, typical of health professionals' specificities, do not change in relevance from 2011 to 2015, except the decrease in evening (-28%) and night (-50%) shifts.

Table II.5 – Descriptive statistics of External Variables

	Years	2011	2015
External Variables		%	%
Age	20 to 24 years old	8,83	4,27
	25 to 29 years old	19,2	15,2
	30 to 34 years old	11,1	15,5
	35 to 39 years old	10,7	12,9
	40 to 44 years old	13,7	13,5
	45 to 49 years old	9,6	8,77
	50 to 54 years old	12,2	11,5
	55 to 59 years old	10,5	10,8
	60 or more years old	4,18	7,7
Sex	Male	25,9	24,9
	Female	74,1	75,1
Tenure	up to 3 years	28,1	21,7
	more than 3 and up to 10 years	20,1	25,5
	more than 10 and up to 20 years	26,9	22,9
	more than 20 and up to 30 years	15,2	18,4
	more than 30 years	9,68	11,4

Table II.5 – Descriptive statistics of External Variables (continued)

Years		2011	2015
External Variables		%	%
Profession	Medical doctors	24,8	27,3
	Nursing and midwifery professionals	49,8	46,4
	Traditional and complementary medicine professionals	0,46	0,06
	Paramedical practitioners	0,23	0,12
	Veterinarians	1,86	1,72
	Other health professionals	22,9	24,4
Region	PT11 - Norte	25,1	29,6
	PT15 - Algarve	7,29	7,78
	PT16 - Centro (PT)	18,5	18,8
	PT17 - Lisboa	20,1	20,6
	PT18 - Alentejo	9,62	6,95
	PT20 - Açores	10,1	8,19
	PT30 - Madeira	9,31	8,02
Firm size	under 10 people	13,3	15,1
	11 to 49 people	25,7	23,8
	more than 50 people	61	61,2
N=		1291	1688
Source: EU LFS	Percentage excluding missing values			

Regarding the age of the health professionals surveyed, data shown in Table II.5, the most relevant differences occur in both ends of the range analysed, this is, the age bands from 20 to 24 and 60 or more years old. In the first age band there is a decrease of 52% health professionals and, in the second age band there is an increase of 84%. The difference in the early age band may be related to fewer graduates and/or emigration, this implies that need of health professionals in the future is something to be considered with preoccupation. This is aggravated by the last age band increasement, that means that there is a growing number of professionals near the retirement age, so leaving their jobs soon.

Health professionals are mostly represented by women, due to women's majority in the *Nursing and midwifery professionals*[14], and because this profession represents 49,8% and 46,4%, in 2011 and 2015, respectively, of the sample in this analysis. The decrease of people in this profession is related to an employment crisis and wage cuts (Pereira, 2015) occurred between the gap years in consideration. In 2011, *Medical doctors* represented 24,8% of the Portuguese health professionals' population, this representation increased to 27,3% in 2015. The difference of 10% growth in between 2011 and 2015 is in line with the Portuguese Medical Doctors Board statistics (Ordem dos Médicos, n.d.). The *Other*

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[14] According to the Portuguese Nurses Board, in 2018, women represented 82,17% of the registered nurses (Ordem dos Enfermeiros, n.d.).

health professionals have the 3rd most significative share of the considered health professionals, in 2011 it had a share of 22,9% and, in 2015, the share raised to 24,4%. Most probably, there is the need to analyse the level 4 of the ISCO variable from EU LFS, to assert the profession(s) that are most relevant in this category and, maybe, let them rise to level 3 of the ISCO variable. In this sample, these three professions represent, in 2015, 98,11%, risen from 97,45%, in 2011.

Looking at the tenure of the sample in analysis, and in between 2011 and 2015, there is a 23% decrease of professionals working for less than three years in a row for the present employer, which might be due to more stable contracts and better conditions, thus the tenure from three and up to 10 years with the same employer increased 27%.

The percentage of health professionals working for employers with more than 50 people is similar, when comparing 2011 and 2015. There is a 14% increase of professionals working to under 10 people size employers and an 8% decrease in 11 to 49 people size employers.

The decrease of health professionals in some Portuguese regions is also noticeable, with the highlight focusing in Alentejo (-28%), followed by Azores (-19%) and Madeira (-14%). All the other regions had an increase of health professional's presence, being Algarve the one that had the biggest increase (7%).

III. Empirical findings

III.1 Year 2011

III.1.1 Year 2011 - Prevailing Characteristics

The data from 2011[15] generated three different profiles as may be appreciated in Table III.1. The observation of these three profiles demonstrates a duality, where Profile 1 represent those professionals in a precarious job situation and both Profiles 2 and 3 represent the professionals with permanent jobs. Within Profiles 2 and 3, there is also a duality that is associated with atypical work, creating a difference of job quality between the two profiles, where Profile 2, that has atypical work, is associated to less good jobs than those within Profile 3, that does not have atypical work.

Table III.1 – Fuzzy Cluster Analysis profiles generated from the 2011 data (prevailing characteristics)

	PREVAILING CHARACTERISTICS 2011		
Dimensions	**Profile 1**	**Profile 2**	**Profile 3**
INTERNAL VARIABLES			
Income			
Monthly Pay (decile)	Mostly 6th and 7th (71,06%); Others bellow 1st (11,58%)	From 7th up (100%)	Mostly from 7th up (99,04%)
Contract			
Permanency of the job	Could not find a permanent job (78,71%) None with permanent jobs	Permanent job (100%)	Permanent job (100%)
Duration of contract	Mostly up to 12 months (74,55%)	no limit (100%)	no limit (100%)
Working time			
Full-time or Part-time	Full-time (66,68%)	Full-time (100%)	Full-time (100%)
Working hours	Full-time between 40h and 42h (57,69%); Part-time (42,31%)	Mostly full-time 35h (47,07%)	Mostly Full-time 35h (54,56%)
Multiple Jobs	No (82,16%)	No (79,59%)	No (81,13%)
Paid overtime	Yes (100%)	Yes (79,52%)	Yes (92,10%)
Unpaid overtime	Yes (100%)	Yes (94,98%)	Yes (94,81%)
Atypical Work			
Working at home	Never	Never	Never
Shift work	No	Yes	No
Evening work	Never	Sometimes or Usually	Never
Night work	Never	Sometimes or Usually	Never
Saturday work	Never or Usually	Sometimes or Usually	Never or Usually
Sunday Work	Never	Sometimes or Usually	Never

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[15] The raw results from the fuzzy clustering analysis from 2011 data may be seen in Table Appendixes.2.

Table III.1 – Fuzzy Cluster Analysis profiles generated from the 2011 data (prevailing characteristics) (continued)

Dimensions	Profile 1	Profile 2	Profile 3
EXTERNAL VARIABLES			
Socio-Demographic			
Age	Mostly between 20 to 29 years old (83,78%)	Mostly between 30 and 44 years old (47,77%)	Mostly between 45 and 59 years old (49,51%)
Gender	Female (85,78%)	Female (67,89%)	Female (76,33%)
Tenure	Mostly up to 3 years (86,87%)	Mostly between 10 and 20 years (37,95%)	Mostly more than 20 years (36,88%)
Professional category	Other Health Professionals (52,11%); Nursing and midwifery professionals (24,85%); Medical Doctors (16,47%)	Nursing and midwifery professionals (73,62%); Medical Doctors (25,09%)	Nursing and midwifery professionals (35,46%); Other Health Professionals (34,32%); Medical Doctors (24,68%)
Location	Mostly Lisboa (30,87%)	Mostly North (23,74%)	Mostly North (25,65%)
Firm Characteristics			
Size-firm	Mostly up to 49 people (70,11%)	Mostly >= 50 people (79,84%)	Mostly >= 50 people (53,44%); Other between 11 to 49 people (32,50%)

The other internal dimensions that create the profiles' distinction are monthly pay, full-time, working hours. Profile 1 represents the professionals that receive lower incomes, with some of them taking home values within the 1st decile. In Profiles 2 and 3, the income starting decile is the 7th. In Profile 1, 42,3% of the professionals cannot find full time jobs, when in Profiles 2 and 3, every professional has a fulltime job. While most of the professionals in Profiles 2 and 3 work fulltime to a maximum of 35 hours, in Profile 1, the fulltime working professional work between 40 and 42 hours.

The external dimensions reinforce the duality. In Profile 1, the most evident professional category is Other Health Professionals, and is where most professionals have ages between 20 and 29 years old (83,78%) and a tenure up to 3 years (86,78%). These dimensions, in Profile 2, change to ages between 30 and 44 years old (47,77%) and a tenure that is mostly between 10 and 20 years. Finally, in Profile 3, most professionals have ages in between 45 and 59 years old (49,51%) and tenures with more than 20 years (36,88%).

All the information from the above dimensions demonstrate the duality that surfaces from the comparison between Profile 1 and the other two profiles. Thus, the duality shows that there is one facet where the young professional faces a precarious job situation and another facet where the older professionals have a stable job situation.

Profile 1 is the one that represents the most precarious status, where 78,71% of the professionals surveyed do not have a permanent job and 74,55% have contracts with a duration of up to 12 months. This is the only profile that aggregates professionals with part-time jobs (42,31%) and those with full-time jobs (57,59%) typically work more hours than most of the ones within Profiles 2 and 3. The professional category that has more representation in Profile 1 is Other Health Professionals

(52,11%), pointing to a more precarious entrance in the labour market in those less evident health professions. Most professionals in Profile 1 work in firms which size is up to 49 people (70,11%), indicating that the bigger health related firms are less open to receive newcomers to labour market, especially those in the category Other Health Professionals. At last, but most relevant, this Profile 1 has the greater percentage of women of all the three profiles, with a value of 86,87%, more than 9% above the value of Profile 3 and almost 18% more than the presence of women in Profile 2.

Profile 2 and Profile 3 have important similarities such as the monthly pay from the 7th decile up (near 100%), the permanent contracts (100%) and full-time jobs (100%), thus revealing that these profiles congregate health professional with better working amenities and contracts. Nevertheless, the differences, apart from those earlier highlighted (age and tenure), are critical to distinguish who is who in these two profiles.

The most resonating information, in Profile 2, is that the professionals that fulfil most of the profile are the Nursery and midwifery professionals (73,62%), seconded by far less by Medical Doctors (25,09%), and both represent almost 99% of professionals in this Profile 2. Since only Profile 2 has shift work, and that happens sometimes or usually in every unsocial hour surveyed: night, evening, Saturday and Sunday, these forms of atypical work reveal a probable bigger difficulty around managing work-life balance to these professionals. This relevant difference between Profile 2 and 3 indicates that shift work may be a core dimension to reveal a duality within the aforementioned duality. Hence, atypical work is a dimension that challenges work-life balance within the health professionals that have more stable job situations.

Most health professionals in this profile work for firms with more than 50 people (79,84%). This may be related to the usual health facilities that contract professionals from the major two categories, in this profile, being hospitals and health centers (state or private owned).

Profile 3 has the most even percentage distribution of the three major categories of health professionals, with the Nursery and midwifery professionals leading with 35,46%, seconded by the Other health professionals (34,32%) and these followed by Medical Doctors (24,68%). Regarding age and tenure as previously described, Profile 3 probably regards those professionals that achieved potential peaks of each profession category, allowing them to continue working in facilities with more than 50 people (53,44%), but also practice in smaller firms with 11 to 49 people (32,50%).

Every one of the three profiles have around 20% of professionals working in at least another job. On the overtime subject, the Portuguese Labour Code has defined which is the maximum overtime allowed, and rules it to be paid and how. As Table III.1 shows, the three profiles have very significative

percentages of paid overtime[16] (from 79,59% to 100%) and unpaid overtime[17] (from 94,81% to 100%), being Profile 1 the one that reaches the 100% value in both indicators.

Adding up the existence of a second job and overtime, it is plausible to consider that there are more working hours than usual, and therefore a bad work-life balance to many health professionals, in any of the profiles here presented.

III.1.2 Year 2011 - Data Distribution

In order to better gauge the information presented in the previous section and how the data it relates to is distributed along all three profiles, are presented Table III.2 and Figure III.1.

Figure III.1 represents a two-dimensional plan of the data from Table III.2, where the relative position of each observation is dot plotted. It is not possible to see how many observations fall in the same dot, though the intensity of the relative position through the edges and in the interior shows well the distribution of the 2011 data.

Table III.2 – 2011 data distribution by profile

2011 distribution: N=1291 and full membership set at 0,80			
Vertices	**796**		
Profile 1	72	9%	**61,66%**
Profile 2	308	39%	
Profile 3	416	52%	
Edges	**430**		
P1 - P2	92	21%	**33,31%**
P1 - P3	87	20%	
P2 - P3	251	58%	
Interior	**65**		**5,03%**

When an observation has 80% or more of characteristics compliance with a profile, it takes a place in the vertex of that profile. So, this means that, regarding 2011 data, there are 796 observations (61,66%) that match in full membership to one of the three profiles that were identified through the fuzzy

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[16] The EU-LFS definition of 'paid overtime' is the following: Paid overtime hours are the number of hours actually worked by an employee in excess of his or her contractual or normal daily or weekly hours of work for which the employee is entitled to compensation, in pay, kind or compensatory leave (EUROSTAT, 2018).

[17] The EU-LFS definition of 'unpaid overtime' is the following: Unpaid overtime hours are the number of hours actually worked by an employee in excess of his or her contractual or normal daily or weekly hours of work for which the employee is not entitled to compensation, in pay, kind or compensatory leave (EUROSTAT, 2018).

clustering. From those 796 observations, 52% correspond to Profile 3, making it the profile with the most representation amongst the health professionals considered.

If an observation has characteristics of two profiles, it will fall in the edge that connects the vertices representing each of those profiles (Figure III.1).

Figure III.1 – Visual distribution of 2011 data by profile
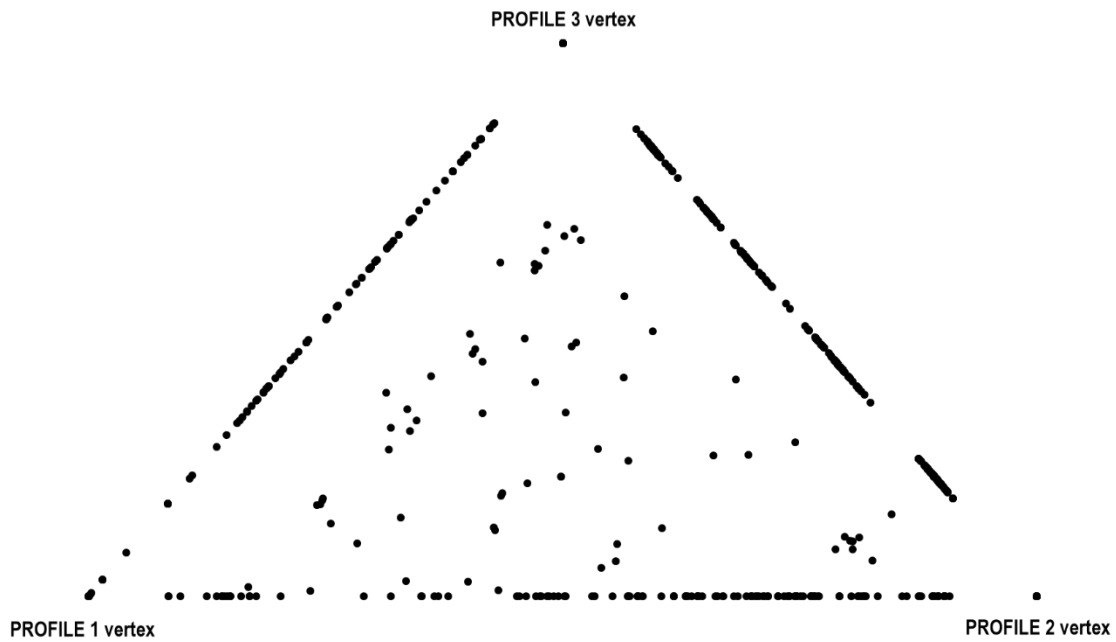
Table III.2 clearly identifies the edge between the vertex of Profile 2 and the vertex of Profile 3 as the most representative of all edges, following the logic that both profiles have greater influence in the health professionals job and job quality characteristics, as seen on the vertices section of Table III.2. Do notice that the influence, of Profile 2 and Profile 3, provides more observations to the edges from those vertices to Profile 1, than the vertex of Profile 1 itself.

The interior section of Table III.2 represents those observations that have characteristics from all three profiles. To the 2011 data this section is particularly small, demonstrating the accuracy of the fuzzy methodology in creating identifiable profiles.

The empirical findings from the 2011 data, either from the characteristics set in the previous section and the distribution here present, demonstrate that Profile 1 configures the entrance in the labour market for many health professionals, but Profile 2 and Profile 3 is where career maturity is settled. Thus, these empirical findings permit to assert the different stages where health professionals' jobs are in 2011.

III.2 Year 2015

III.2.1 Year 2015 - Prevailing Characteristics

The empirical findings from the 2015 data reveal four different profiles[18], as shown in Table III.3. The information provided in the Table III.3 may shed some light on the consequences of the politic decisions, on the job quality of health professionals, under the validity of the Portuguese Memorandum of Understanding (Portugal, 2011), that was in force from 2011 to 2015.

Table III.3 – Fuzzy Cluster Analysis profiles generated from the 2015 data (prevailing characteristics)

Dimensions	PREVAILING CHARACTERISTICS			
	2015			
	Profile 1	Profile 2	Profile 3	Profile 4
INTERNAL VARIABLES				
Income				
Monthly Pay (decile)	Between the 4th and the 6th (48,13%); Others bellow 1st (15,81%)	Between the 7th and the 9th (95,71%)	Mostly from 7th up (88,76%)	Above the 9th (100%)
Contract				
Permanency of the job	Could not find a permanent job (67,20%); Training contracts (20,90%)	Permanent job (100%)	Permanent job (100%)	Permanent job (100%)
Duration of contract	Mostly up to 12 months (76,57%)	no limit (100%)	no limit (100%)	no limit (100%)
Working time				
Full-time or Part-time	Part-time (100%)	Full-time (100%)	Full-time (100%)	Full-time (100%)
Working hours	Part-time (100%)	Mostly Full-time 40h to 42h (78,01%)	Mostly Full-time 40h to 42h (74,38%)	Mostly Full-time >42h (100%)
Multiple Jobs	No (100%)	No (82,58%)	No (100%)	Yes (69,39%)
Paid overtime	Yes (100%)	Yes (100%)	Yes (100%)	No (100%)
Unpaid overtime	Yes (100%)	Yes (100%)	Yes (100%)	No (54,50%)
Atypical Work				
Working at home	Never	Never	Never	Sometimes (52,55%)
Shift work	No	Yes	No	No
Evening work	Never	Sometimes or Usually	Never	Sometimes
Night work	Never	Sometimes or Usually	Never	Sometimes
Saturday work	Never	Sometimes	Never	Usually
Sunday Work	Never	Sometimes	Never	Usually

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[18] The raw results from the fuzzy clustering analysis from 2015 data may be seen in Table Appendixes.3.

Table III.3 – Fuzzy Cluster Analysis profiles generated from the 2015 data (prevailing characteristics) (continued)

Dimensions	Profile 1	Profile 2	Profile 3	Profile 4
EXTERNAL VARIABLES				
Socio-Demographic				
Age	Mostly between 20 to 29 years old (76,57%)	Mostly between 25 and 39 years old (59,45%)	Mostly between 40 and 59 years old (58,83%)	Mostly above 50 years old (63,68%)
Gender	Female (75,12%)	Female (80,21%)	Female (76,74%)	Female (57,81%)
Tenure	Mostly up to 3 years (92,21%)	Mostly between 3 and 20 years (68,96%)	Mostly between 3 and 20 years (54,07%)	Mostly more than 20 years (53,48%)
Professional category	Other Health Professionals (74,97%); Medical Doctors (12,87%)	Nursing and midwifery professionals (96,02%)	Nursing and midwifery professionals (41,52%); Other Health Professionals (36,94%); Medical Doctors (19,40%)	Medical Doctors (95,56%)
Location	Mostly Norte (42,92%); Lisboa (34,19%)	Mostly Norte (29,47%); Centro (23,30%)	Mostly Norte (27,96%); Lisboa (19%)	Mostly Lisboa (39,99%); Norte (26,35%)
Firm Characteristics				
Size-firm	Mostly up to 49 people (88,99%)	Mostly >= 50 people (84,57%)	Mostly up to 49 people (50,97%)	Mostly >= 50 people (84,86%);

Table III.3 provides information on four different profiles that resulted from the fuzzy analysis. As was also depicted by the empirical findings from 2011, in 2015 there is a duality present and characterized by a side of precarious job situation and another side where the job situation was stable. The empirical findings from 2015 confirm this duality, separating Profile 1 from Profiles 2, 3 and 4. In 2015, the health professionals in Profile 1 face a more challenging situation than in 2011, because in 2015 apart from not having a permanent job, there is a rise of major relevance of training contracts and they only engage in part-time jobs.

The interpretation that emerges from the atypical work dimension in 2015, reveals the duality within profiles 2, 3 and 4, where there is a distinction in between the health professionals with stable job situations. This duality created by atypical work separates Profile 2 and 4 from Profile 3, is incremented by another dimension that separates those profiles in the same way, and that is the existence of multiple jobs, that occurs in Profile 2 and 4 and does not occur in Profile 3.

The health professionals in Profile 1 are contracted to part-time jobs (100%) with contracts limited to up to 12 months (76,57%), where 20,90% are training contracts. 67,20% from those health professionals could not find a permanent job. Fact of relevance is that Profile 1 does not have professionals with a second job, despite none of them having a permanent job and all have part-time jobs. The monthly pay, in this profile, concentrates 48,13% in between the 4th and the 6th decile, with 15,81% of these health professionals receiving a monthly pay under the 1st decile. This profile has a representation of Other Health Professionals of 74,97%. Profile 1 congregates most newcomers to the labour market from all profiles, the health professionals here included have ages in between 20 and 29 years old (76,57%).

Profile 2 health professionals take home a monthly pay starting at the 7th decile and ending at the 9th decile (95,71%). These health professionals have permanent jobs (100%), work full-time (100%) and have a regular balance of working hours per week in the interval from 40 to 42 hours (78,01%), doing atypical work through shift work in every unsocial hour considered in the survey. Also, 82,58% professionals do not have multiple jobs. Profile 2 represents mostly Nursing and Midwifery Professionals (96,02%). These professionals have ages in between 30 and 39 years old (42,04%), with tenures from 3 up to 20 years of tenure (68,96%).

Profile 3, like Profile 2, has a line-up of relevant characteristics that qualify well in order to be considered aggregating good jobs. Within Profile 3, 100% of the professionals have permanent jobs and unlimited time contracts. None of them do shift work, nor have a second job. These health professionals have an income from the 7th decile up (88,76%) and are in between the 40 and 59 years old (58,83%). Their tenure in the current job is from 3 to 20 years. The professional categories that have more weight in Profile 3 data are Nursing and midwifery professionals (41,52%) and Others Health Professional (36,94%).

When scanning the information on Profile 4, what stands out more, after the observation of the other three profiles on Table III.3, and the monthly pay being above the 9th decile for all professionals in this profile. Another most relevant information, about these professionals, is that as all of them work more than 42 hours per week and most of these health professionals have more than one job (69,39%), contrary to the other three profiles, where only Profile 2 presents a small share of heath professional having multiple jobs. Also, contrary to the other profiles, these profile's professionals do not have paid overtime and most professionals do not have unpaid overtime, this means that all hours are worked within contract defined hours, reassuring the existence of multiple jobs. Probably due to these multiple jobs and though these professionals do not do shift work, they engage in atypical work, doing sometimes or usually work in every unsocial hour. Still in the atypical work dimension, 52,55% of the health professionals here included do work at home, making this profile the only one from Table III.3 where that happens.

Also, relevant, in Profile 4, is the dominance of Medical Doctors (95,56%) and that 53,48% of these professional are above the 20 years of tenure in the present job. Finally, this Profile 4 reveals the lowest percentage of women within the all four profiles of Table III.3, presenting a 57,81% share, this is, 17,31% below the next lower profile of all four, where Profile 1 with 75,12% of women.

What is striking about the global image presented by all the profiles in Table III.3 is how boundaries emerge around professional categories and age of the health professionals, though there are necessary intersections along the profiles in the considered sample. From this table it is significant that, for the younger Other Health Professionals, jobs are more precarious and bad or less well paid (Profile 1), than those jobs populated by young Nursing or Midwifery Professionals (Profile 2), that have better income and much more secure contracts and jobs. Information from Profile 3 and Profile 4 shows that the health professionals there included represent mostly professionals with a well-defined career maturity, since most of the professionals are above 40 years old. Another interesting difference is that

Profile 3 includes the older Nursing and Midwifery and Other Health Professionals and Profile 4 congregates mostly older Medical Doctors.

III.2.2 Year 2015 - Data Distribution

In Table III.4 is presented the distribution of the 2015 data by profile. In the corresponding section to the 2011 data, it was explained how the table is interpreted.

The 2015 data analysis resulted in four profiles, described in the previous section of prevailing characteristics. The complexity of the data reveals itself through the distribution, with majority of the observations falling into the edges and interior of the distribution.

Table III.4 – 2015 data distribution by profile

2015 distribution: N=1688 and full membership set at 0,80			
Vertices		**756**	
Profile 1	**36**	**5%**	
Profile 2	**284**	**38%**	**44,79%**
Profile 3	**421**	**56%**	
Profile 4	**15**	**2%**	
Edges		**442**	
P1 - P2	**28**	**6%**	
P1 - P3	**80**	**18%**	
P1 - P4	**4**	**1%**	**26,18%**
P2 - P3	**101**	**23%**	
P2 - P4	**117**	**26%**	
P3 - P4	**112**	**25%**	
Interior		**490**	
P1 - P2 - P3	**58**	**12%**	
P1 - P2 - P4	**75**	**15%**	
P1 - P3 - P4	**83**	**17%**	**29,03%**
P2 - P3 - P4	**229**	**47%**	
P1 - P2 - P3 - P4	**45**	**9%**	

The most relevant profiles are, in descending order, Profile 3 and 2, as the correspondent vertices demonstrate. Nevertheless, Profile 4, apart from having a small group of observation with full membership, has a big influence on the edges and interior, mostly when Profile 4 is related to Profile 2 and Profile 3, in one to one relation or when the three are related with each other.

There are two most obvious conclusions, emerging from the interpretation of the 2015 data distribution and the descriptive assertations made in the previous section, 2015 data prevailing characteristics. First, that Profile 1 has characteristics of a difficult entrance in the labour market, but it

is a passing stage to better job conditions present in Profile 2 or Profile 3, depending on the professional category. Second, Profile 4 is the optimal stage for these health professionals, and though full membership is taken by a few of those health professionals, many of the health professionals in Profile 2 and Profile 3, have their jobs quite influenced by Profile 4 characteristics.

When looking to Figure III.2, it is noticeable that the triangular area created by the vertices of Profile 2, Profile 3 and Profile 4 is the most populated area of Figure III.2, that is, where there is more influence of Profile 2, Profile 3 and Profile 4. The relations between Profile 1 and the others are those with less observations, and, in Figure III.2, that is very easy to appreciate.

Figure III.2 – Visual distribution of 2015 data by profile
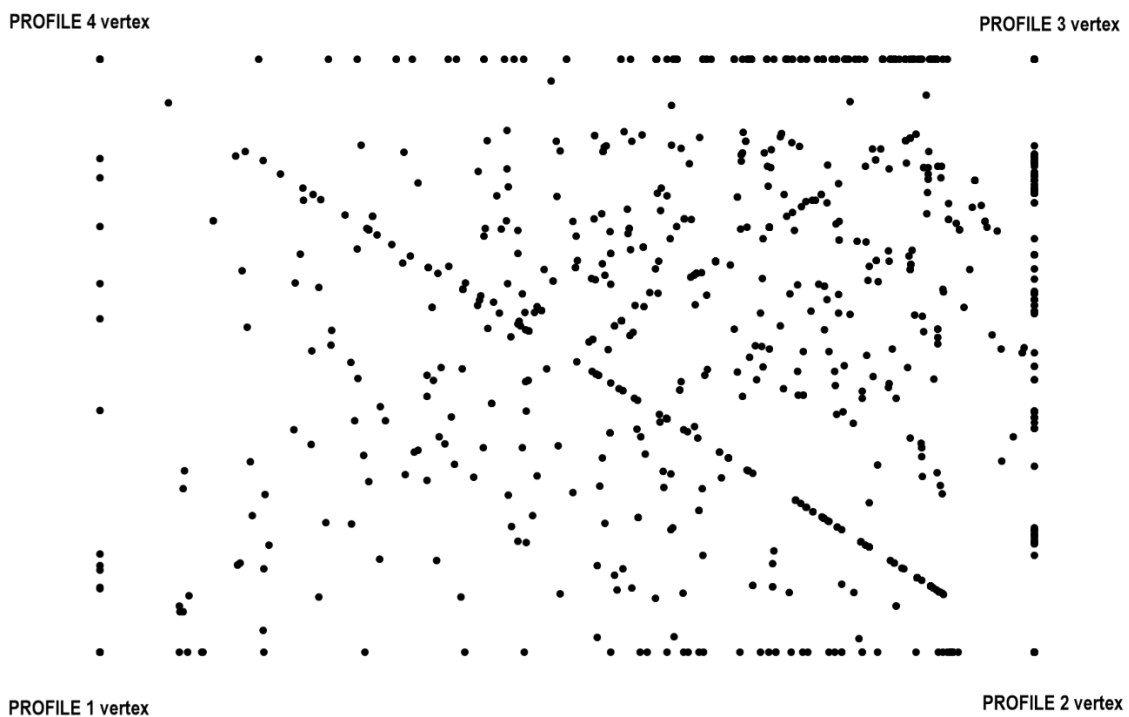
III.3 Comparing 2011 and 2015

Table III.5 helps appreciate the evolution from the 2011's three profiles to the four profiles of 2015. The information details how health professionals' categories and their job quality are divided. In 2015, the existence of a fourth profile makes the characteristics of each profile less diffuse, revealing better defined boundaries.

The gap years from 2011 to 2015 may have brought a transformation on job and job quality characteristics to health professionals, though the changes that emerge from the comparison between 2011 and 2015 occur mostly in the profiles of better jobs.

2015's Profile 1 inherited a set of the more precarious characteristics from 2011's Profile 1, thus reflecting a decrease in earnings and the disappearance of full-time jobs, though keeping on having only limited time contracts. The Nursing and Midwifery professionals' share decreased from 1st more important in 2011's Profile 1 to not so relevant in 2015's homologous profile, being mostly characteristics of those professionals probably transferred to 2015's Profile 2.

Table III.5 – Mains characteristics and liaisons between 2011 and 2015 profiles

	Profile 1	Profile 2	Profile 3		
2011	Nursing and midwifery professionals; Other Health Professionals; Medical Doctors 20 to 29 years old Limited time contracts Part-time (up to 35h) Full-time (40h-42h) Monthly pay in 1st, 6th or 7th decile	Nursing and midwifery professionals; Medical Doctors 30 to 44 years old Permanent job Full-time (35h) Shift work Atypical hours Monthly pay from 7th decile up	Nursing and midwifery professionals; Other Health Professionals; Medical Doctors 45 to 59 years old Permanent job Full-time (35h) Monthly pay from 7th decile up		**2011**
2015	Other Health Professionals; Medical Doctors 20 to 29 years old Limited time contracts Part-time (up to 35h) Monthly pay in 1st and from 3rd to 7th decile	Nursing and midwifery professionals 30 to 39 years old Permanent job Full-time (40h-42h) Shift work Atypical hours Monthly pay between the 7th and the 9th	Nursing and midwifery professionals; Other Health Professionals; Medical Doctors 40 to 59 years old Permanent job Full-time (40h-42h) Monthly pay from 7th decile up	Medical Doctors More than 50 years old Permanent job Full-time (more than 42h) Multiple Jobs Atypical hours Monthly pay above 9th decile	**2015**
	Profile 1	**Profile 2**	**Profile 3**	**Profile 4**	

In 2013, the Portuguese state professionals had their minimum number of hours of work per week increased from 35 hours to 40 hours[19], with no increment of monthly pay, affecting the work life of health professionals. Table III.5 reveals this weekly work hours transformation, as the prevailing full-

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[19] The 2013's version of the Portuguese General Law of Labour in Public Functions was announced as an approach to the characteristics set to the private sector and as required by the Memorandum of Understanding (*Aprovada lei que aproxima regime laboral público ao privado*, 2013).

time hours change, from 2011 to 2015 within Profiles 2 and 3. That is one important reason for 2015's Profile 2 absorbing Nursing and Midwifery professionals from 2011's Profile 1, also, probably, these were the fringe professionals holding full-time jobs and taking home higher monthly pay in 2011's Profile 1.

Profile 2 from 2011 influences both Profile 2 and Profile 3 from 2015. Profile 2 from 2015 has a smaller span of ages, though starting at 30 years old like 2011's Profile 2. The upper limit of monthly pay decile, in Profile 2, is reduced from above the 9th decile, in 2011, to under the 9th decile, in 2015's Profile 2. The professional category of Medical Doctors somewhat relevant share in Profile 2 from 2011 is probably transferred to the 2015's Profile 3, where the monthly pay decile maximum goes above the 9th decile.

As discussed in a previous section, career maturities are observed within 2011's Profile 3 and Profile 3 and Profile 4 from 2015. The year 2015 carries a divide between Medical Doctors and the other professional relevant categories. This divide is materialized with the appearance of Profile 4, where Medical Doctors are the only relevant category, and it is visible that these professional are older, their jobs characteristics imply the biggest number of hours of work per week and there is a prevalence of having more than one job.

Finally, it is possible to observe the existent duality of bad and good jobs that separates Profile 1, in both years, from the rest of the profiles, and, within the other profiles, the duality of atypical work, that differentiates health professional with good jobs.

III.4 Media news on health professionals' demands

The media usually broadcast health professionals related news when there is an announcement of demonstration or strike and during such events. The health professionals involved in these events are always those who work in the SNS[20]. There is not news related to demands of health professionals in the private sector. The manifestations of discontent by the Portuguese health professionals emerge mostly from those professionals working within the SNS.

These professionals are represented by the unions of the different health professional categories. The unions are a central piece to how the demonstration of discontent is managed, since most health facilities are state controlled. Hence, the unions have a privileged liaison in any negotiation of the demands with the government. The private sector, otherwise, has not faced major public critic on

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[20] The SNS was created in 1979 (40anos do SNS - 40anos do SNS, n.d.). The SNS has the function of providing the Portuguese society with healthcare services, since it is a right to the population inscribed in Article 64th of the Constitutional Law (Constituição da República Portuguesa, n.d.).

job quality by either the unions or the media. The qualitative analysis presented in this section focused in finding keywords related with job quality and the professionals demands.

In Table III.6 is presented the number of appearances in the chosen set of news[21] for each keyword and their distribution along the years. The keywords with the most appearances are *hiring* and *workload*. This first pair of keywords are connected between them, since health professionals propose the decrease of their workload through the increase of hiring, in the public sector.

Table III.6 – Keywords found in qualitative analysis of media news

Keywords	# Appearances in the News	2010	2011	2013	2014	2015	2017	2018	2019
emigration	5					2		2	1
career progression	1						1		
hiring	12		1	1	2	2	1	5	
income	6	1	1				3	1	
job satisfaction	4				2	1	1		
overtime	6		1		1	1	1	2	
SNS degradation	5				1	2	1	1	
unpaid overtime	3					1	1	1	
work-life balance	2						1	1	
workload	11			1	2	1	2	5	

The following most used keywords are *overtime* and *income*. The keyword *overtime* is related to the top pair of keywords, because the health professionals involved claim that, in order to the health services to be open, they are required to do overtime, and, for that matter, they constantly surpass the maximum hours of overtime permitted by law.

The keyword *income* is connected to the perception related to the following keywords: *emigration* and *SNS degradation*. Though some Medical Doctors mention that income is not an issue, many health professionals, mostly within the Nurses category, recognize that the offers made by foreigner institutions involve much higher wages than those they receive in the Portuguese public sector, fact that made and makes them decide to take the steps towards emigration. Also, the news state that these professionals observe that there is a SNS degradation that, apart from the lack of physical conditions, includes a lack of professional recognition, something that either foreign health institutions or the Portuguese health private sector offer as an important perk in their invitations.

The keyword of *job satisfaction* is related to a negative perception of the jobs, with a major fear of burnout. Other keywords are almost self-explanatory such as *unpaid overtime*, in existence for there are not enough professionals and that is due in money or leave time; negative *work-life balance*, which is related mostly to the workload and, finally, *career progression*, which brings discontent due to the freeze of career progressions or to the extinction of some special professional levels within the health professionals categories.

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[21] Excerpts and sources may be found in Table Appendixes.1.

IV. Discussion

IV.1 What emerges

Over the course of the period between 2011 and 2015, the boundaries around the job characteristics of the health professional categories became more precise, giving body to the duality of bad and good jobs. In 2015, some of identified profiles are populated by one or two of the health professional categories, bringing to the surface a more acute order of relevance within the Portuguese health professionals categories, as was summed up in Table III.5.

The labour market entrance, for the Portuguese health professionals, has a profile of precariousness, which is represented by Profile 1 of either 2011 or 2015. There is a significant or total prevalence of limited time contracts during the initial years of work plus a very representative percentage of wages within the 1st decile of income. Profile 1 is the representative of bad jobs.

The said precariousness worsened over the years from 2011 to 2015, with the maintenance of a majority not finding a permanent job and the emergence of training contracts, probably a result of politic measures to increase employability, which have the state financial support. In 2011, the entrance Profile 1 still had full-time jobs for a majority of 57,69% of professionals, but in 2015, the equivalent Profile 1 had 100% part-time jobs. Profile 1, either in 2011 or 2015, is most populated by professionals within the *Other Health Professionals* category.

The older Portuguese health professionals have, in general, incomes in the highest deciles of the country as they also have permanent and full-time jobs. The working hours increased mainly as a result of labour laws changes, since the minimum week working hours increased from 35 to 40 hours. The year 2015 reveals that the elder *Medical Doctors* category has the highest income and more weekly working hours than any other category, probably originated by the multiple jobs. Also, as far as can be retrieved from the data, the older Portuguese health professionals have good indicators of job quality, such as permanent jobs and wages in high deciles. This more older professionals pertain to the other profiles (Profiles 2, 3 or 4, from both years), and all these profiles represent the good jobs.

The hypothesis 1 has been validated, for it is shown that there is a divide between bad and good jobs in the health professionals labour market. Profile 1, from either year, represent the bad jobs, and Profiles 2, 3 and 4 represent the good jobs.

Within the good jobs, the categories that prevail more are *Nursing and Midwifery professionals* and *Medical Doctors* and, within the bad jobs the *Other Health Professionals* category is the most relevant. This categories' distribution validates hypothesis 2 that stated that there were certain categories more prone to belong to certain type of jobs (Figure IV.1).

Figure IV.1 – Profile Distribution within Sample and Health Professional Categories (expected in % of population)
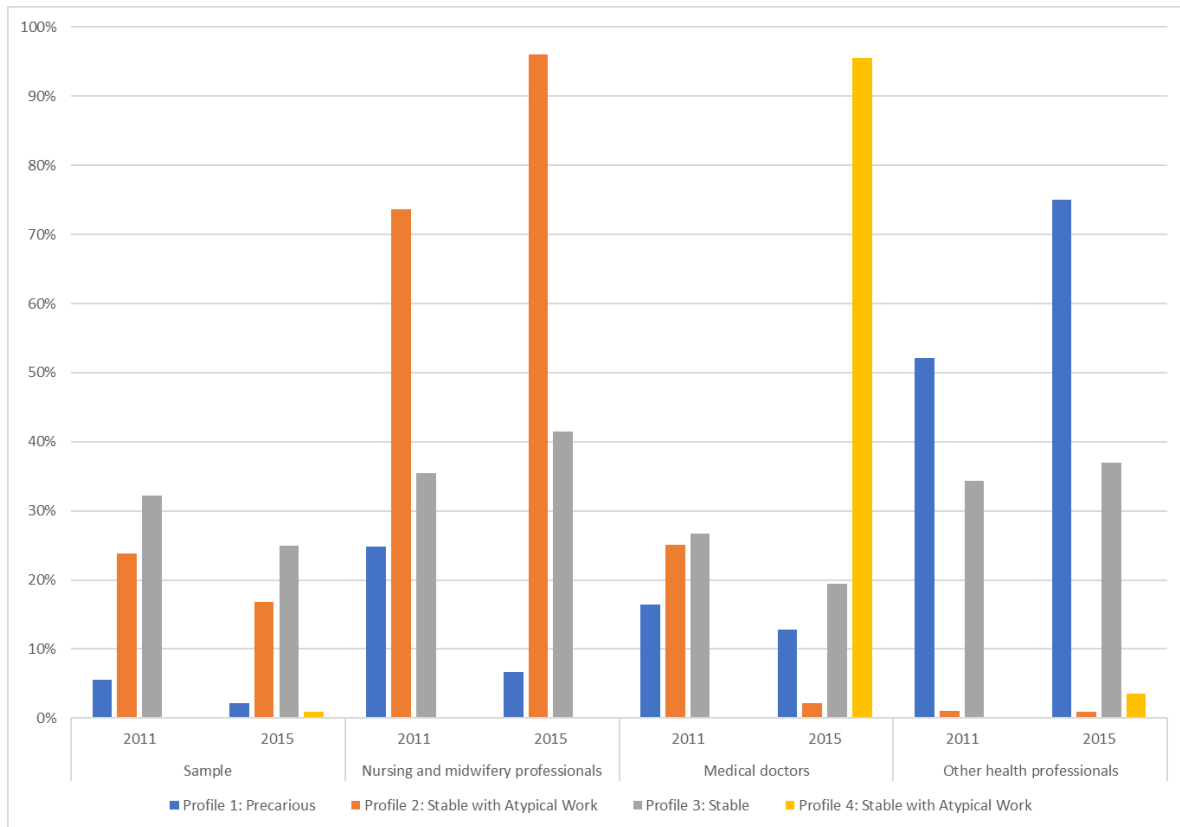
Moreover, there is evidence that many health professionals have working hours within atypical hours (Figure IV.1), though it may be something that is associated to the job, this is a characteristic that worsen their jobs' quality. Thus, the most relevant contribution from this dissertation is the finding of a duality within the duality in this specific labour market, this is, amongst the good jobs there is also a divide of bad jobs and good jobs.

Despite the overall positive indicators in the work time life to most health professionals, it is relevant to notice that there are different levels of goodness depending on the professional category. The *Other Health Professionals* category represents a grey category, since there is no detailed information on the characteristics' distribution through the various professionals that are inside it. This category is the most fragile at entrance level, though, when professionals are older, the category shares the goodness with other specific professionals, but, all in all, this category represents an opaque and unclear set of health professionals.

The public sector, this is the SNS, is the only employer criticized for having health professionals demanding for better conditions. This critic, which is publicized through news either on the media or from the health professionals' media channels, has been brought to surface to challenge governments to protect and offer a better health care in the public sector either to professionals or citizens.

Health professionals should be targeted with protective job policies, that would impede them from leaving Portugal and give them better working conditions. The change for a better job quality in this

sector is certainly advisable. That change could be done by creating conditions to have more investment in the public sector, in order to give leverage to the public sector and promote the possibility of health professionals choosing exclusivity. Those policies should include the hiring of more health professionals, in the different categories within the public sector, and legislating the reduction of week working hours, here including both public and private sectors.

IV.2 Present limitations

In the present analysis there is a some limitation to the evaluation of job quality, since the EU-LFS does not have all the indicators considered necessary to optimal analysis, lacking information mostly on the working conditions (Muñoz de Bustillo et al., 2009). Muñoz de Bustillo et al., however, considers the EU-LFS has "some good measures of employment quality (contractual conditions and working time)" (2009). Following the authors' remark and proposal, it is important to state that this research reflects mostly employment quality conditions: type of contract, working hours, distribution of working hours and wage (refer to the coloured shape in Figure I.2).

The separation between the public and private sectors was not possible, and it is very important to have some focused data, to evaluate correctly the health professionals demands within the SNS.

Table IV.1 – Graduates in year, in higher education in the area of health: total, by area of education and training

	How many students graduate in medicine, nursing, pharmaceutical sciences or other areas of health?							
	Area of education and training							
Years	**Medicine**	**General nursing and obstetric nursing**	**Dental studies**	**Medical diagnostic and treatment technology**	**Therapy and rehabilitation**	**Pharmacy**	**Traditional and complementary medicine and therapy**	**Health Programmes not elsewhere classified**
	Total	**Total**	**Total**	**Total**	**Total**	**Total**	**Total**	**Total**
2011	2 287	4 091	976	1 587	1 750	1 774	7	1
2012	2 464	3 951	860	1 370	1 734	1 911	10	18
2013	2 452	3 408	830	1 187	1 758	1 850	8	29
2014	2 270	3 349	816	1 167	1 823	1 913	13	25
2015	2 439	3 328	909	1 016	1 774	1 838	27	37

Data Sources: DGEEC/MEd - MCTES - DIMAS/RAIDES
Source: PORDATA
Last updated: 2018-09-24
Data rectified by the relevant body (24-09-2018)
Data obtained in https://www.pordata.pt in 09-08-2019

Another limitation, that is considered important, is the information available regarding the professional categories under the *Other Health Professionals* category. Since the high importance of this generic category in the output data, should be considered the availability of the 4th level of the ISCO08 variable, in the EU-LFS micro-data. At least, the 4th level availability should permit consider

taking to the 3rd level other individual categories, probably more relevant than *Traditional and complementary medicine professionals* or *Paramedical practitioners*.

The proposal is focused in the necessity of evaluating job quality of other relevant professional categories, mainly in the arrival to the labour market. As may be seen in Table IV.1, *Traditional and complementary medicine professionals* are very few, where other classified graduates are many, apart from *Medical Doctors* (Medicine) and *Nursing and Midwifery Professionals* (General nursing and obstetric nursing).

The availability of that data would bring to the surface relevant information on such professionals as *Dentists*, *Pharmacists* and some health professionals, which may be facing bad job characteristics that should be addressed.

IV.3 Future opportunities

The relevance of health professionals and their merit within the Portuguese society are very meaningful. Hence, there should be a permanent evaluation of job quality associated with their careers. Profiling the various health professional categories since the beginning of the careers is of extreme importance. It is important to evaluate the worst side of the found duality, this is, the duality between the good and bad jobs, where the bad jobs are comprised mostly of newcomers to the labour market.

Portugal needs these professionals to stay in the country and fulfil their career goals. The country has also the obligation of evaluating the ratio between health professionals and the population, nationwide and regionally, thus avoiding professional's emigration and promoting the training of new professionals to occupy the vacancies to be left by retiring professionals.

For a better use of the empirical findings, the source data for future evaluations of job quality should permit to distinguish between health professionals in the public sector and the private sector. As it was evident from the news targeted for the qualitative analysis, the public sector has many problems that should be addressed. Also, there must be a disclosure of which job quality characteristics prevail within the private sector. The use of other databases, either complementary or in alternative to the EU-LFS, would probably help in finding this dichotomy.

This would allow an informed stance to, probably, avert the main claims from health professionals in the public sector and avoid the flight from the public to the private sector and emigration. Thus, the state would recover the investment done[22,23] in the formal training of the professionals at an optimal level. The private sector's hunger for the less young professionals may deplete the public

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[22] In 2011, the Medical Doctors Board chairman, informed the media that would not make sense if the young doctors leaving SNS within the first four years of employment had the duty to indemnify the state for the loss in investment (*Jornal Expresso*, 2011b).

[23] News from 2014 report the emigration increase of young Medical Doctors to countries in Northern and Central Europe and the related loss of the investment in their training. Example: (*Jornal Expresso*, 2014).

sector's ability to offer good services with older professionals and the best on job health professional trainers.

The second duality, which was found within the good jobs and that differentiates professionals that must work in atypical hours, should be addressed and studied in order to evaluate its impact on the work life quality of the professionals. For example, if more health professionals are hired, their turn to work in atypical hours would have a longer time interval, and that interval without atypical work might resonate positively in their job and life quality.

With the increase in hiring, it would promote also, and most probably, the elimination of overtime, or at least it would be greatly diminished. This option would promote more jobs and a better quality of life to these professionals and ending with unpaid overtime.

Since the policy of providing health care to the society is always an issue in development, having regular information on job quality is crucial for the protection of health professionals, and would allow a special following of the entrance in the labour market.

Having comprehensive research and analysis on the Other Health Professionals category, should also be something advisable to do. For example, the SNS offers very limited services related to primary stomatology care, and nowadays it is known that quality of life and longevity is related also with care provided by dentists. Overall, in order to develop human resources policies to enhance the public service is by no means something that should be done with common sense, thus, these proposals.

Conclusion

As the empirical findings in this dissertation demonstrate, the Portuguese health professionals face the problems that Dual Market Theory discuss, mainly the existence of bad and good jobs.

The empirical findings demonstrate that is true that the Portuguese health professionals have access to jobs that, over time, are considered good jobs: permanent working contracts, full-time, mostly worked in social hours and incomes within the upper third of Portuguese deciles. This description translates the common sense definition that the Portuguese society has of this professional class.

However, for the society in general, it may go unnoticed that the entrance in the labour market, for the health professionals, is full of perils that match the bad jobs description. This entrance is difficult and precarious to many of the professions within this class, thus, the reality establishes that these young workers are accessing bad jobs. Previous studies, such as Schmitt's[24], "found that the likelihood that younger workers (age 18–34) would have access to good jobs has declined over time" (Boccuzzo and Gianecchini, 2015). The fact of facing labour market entrance with the perspective of a bad job may be a catalyst to search for alternatives. Many professionals invest themselves with the courage to emigrate to some other country that offers better job quality within these professional categories. The health professionals with more difficulty on being exported, and, for that reason, staying in Portugal, face the first and not so friendly ripples of the labour market. They are exposed to bad jobs and, then, will probably be affected on the attainment to conquer social and economic autonomy.

Medical doctors and nursing professionals are the more prominent categories within the health professional class, they are the ones that the population relates to in a more empathetic way, for they are those who care for the population in a more intense relation. This situation creates a position from where it is easier, for those professionals, to communicate their demands. But, what about the others, that, has could be seen from the empirical findings in this dissertation, are more exposed to precariousness? There is the need to have detailed information on the other professionals, so that may be disclosed who they are and why they are being disconcerted by precariousness.

Ultimately, building a career as a health professional in Portugal, gives that professional a social and economic status well regarded by the society. Nevertheless, many questions arise and should be answered soon. Questions such as: What are the working and life costs to be a successful Portuguese health professional? Where are the job quality fragilities of the public sector that make the class demand for better conditions so many times? How does a health professional develop his career while keeping training updated? Where does stand the work-life balance of these professionals, not just in general, but in each category?

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[24] Schmitt, J. (2008). The decline of good jobs: How have jobs with adequate pay and benefits done? Challenge, 51(1), 5–25

This dissertation shed some light on job quality amongst Portuguese health professionals, and it is expected that this contribution may be a humble start for many to come forward.

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Appendixes

Table Appendixes.1 – News Excerpts qualitative analysis

News Excerpts	Source	Professional category	Keywords
Os enfermeiros contestam a última proposta salarial do Ministério da Saúde, "inferior à apresentada anteriormente".	(*Jornal Expresso*, 2010)	Nurses	income
Os médicos vão aderir à greve de 6 de maio da Função Pública para exigir a reposição imediata das "verbas indevidamente descontadas" às horas extraordinárias e a negociação da grelha salarial única para a carreira, anunciaram os sindicatos. A "reposição imediata das verbas indevidamente descontadas a nível do trabalho extraordinário efetuado até final do ano passado", a "negociação da grelha salarial única para a carreira médica", a "contratação imediata" dos jovens especialistas e a "extinção dos regimes empresariais na saúde que têm originado o descalabro financeiro do setor" são outras reivindicações dos clínicos.	(*Jornal Expresso*, 2011a)	Medical Doctors	overtime; income; hiring
"É preocupante", acrescenta Guadalupe Simões, porque "os colegas que se aposentaram eram os que faziam a integração dos mais jovens". Pior: "Estes enfermeiros não estão a ser substituídos, dado que não tem havido admissões nem nos hospitais nem nos centros de saúde, e os relatórios da ACSS mostram de forma clara que na maioria dos hospitais, e em serviços onde os graus de dependência são mais elevados, há enfermeiros que estão a ser utilizados a 250% da sua capacidade, isto é, fazem o seu trabalho mais o trabalho de outro enfermeiro e meio que devia lá estar e não está".	(Faria, 2013)	Nurses	hiring; workload
os quatro médicos portugueses têm o sentimento de desalento que os fez sair e nenhum acredita que seja possível voltar um dia. Todos tinham emprego em Portugal e garantem que os salários no estrangeiro – que chegam a ser cinco vezes superiores – não foram o mais importante para a concretização da mudança. A falta de condições de trabalho e a degradação do Serviço Nacional de Saúde foram a gota de água para todos eles	(Borja-Santos, 2014c)	Medical Doctors	job satisfaction; SNS degradation
O principal motivo da paralisação, à semelhança do que tem acontecido noutras unidades de saúde, é a falta de profissionais e a sobrecarga de trabalho que coloca em risco a qualidade dos cuidados prestados.	(Borja-Santos, 2014a)	Nurses	hiring; workload

Table Appendixes.1 – News Excerpts qualitative analysis (continued)

O protesto, marcado para 24 e 25 de Setembro, nas palavras do presidente do SEP, foi "determinado pelo Ministério da Saúde", que José Carlos Martins acusa de se ter limitado a dar "respostas políticas" às reivindicações destes profissionais, relacionadas com a carência de enfermeiros e a deterioração das condições de trabalho. Da carta de reivindicações apresentada pelo SEP faz parte a exigência de mais profissionais de enfermagem, mas o sindicato também considera "essencial que as administrações tenham mais autonomia financeira". Com o protesto, o SEP pretende ainda apelar a que sejam cumpridas as regras sobre horários, falando num "total abalroamento" da lei, com "trabalho extraordinário programado, que é ilegal, e profissionais com 15 ou 20 dias de trabalho seguidos e turnos que chegam a atingir as 24 horas". Reivindicam também que a tutela recue no aumento do horário de trabalho de 35 para 40 horas semanais.	(Borja-Santos, 2014b)	Nurses	hiring; job satisfaction; overtime; workload
Neste momento, já estamos a formar médicos acima das necessidades do país e o que é preciso é ter a capacidade de os fixar em Portugal. Os médicos estão a emigrar às centenas por ano e se não fizermos o que for necessário para os fixar, é uma grande perda, tanto em termos de investimento como de conhecimento científico. Estamos a exportar cérebros."	(*tvi24*, 2015)	Medical Doctors	hiring; emigration
Trata-se, disse, de uma "autêntica fuga de cérebros", com a saída de "pessoas altamente qualificadas". Porque, segundo Mário Jorge Neves, não são apenas os profissionais em início de carreira a emigrar, havendo alguns que atingiram mesmo o topo da carreira médica. Merlinde Madureira, presidente da FNAM, sublinhou ainda que, no caso dos jovens médicos, há muitos países "ávidos de contratar" portugueses, como os países nórdicos, que chegam mesmo a oferecer propostas de contrato antes de acabarem a especialidade. Já no caso do abandono do SNS para o sector privado, a presidente da FNAM considera que são os médicos mais experientes ou diferenciados que mais têm oportunidades, muitos recorrendo à reforma antecipada para continuar a exercer apenas no privado. Merlinde Madureira sublinha que as reformas antecipadas não estão a ser usadas para os médicos deixarem de trabalhar, mas antes para abandonarem o setor público.	(*Jornal Expresso*, 2015a)	Medical Doctors	emigration; SNS degradation

Table Appendixes.1 – News Excerpts qualitative analysis (continued)

os dados da adesão demonstram "na realidade o que é o descontentamento dos enfermeiros" e a "sua revolta pelo facto de se ter vindo a assistir a esta degradação das condições de trabalho", além da "escassez" de profissionais que existe nos serviços. A responsável acrescenta ainda que existem enfermeiros que trabalham "milhares de horas" sem que as mesmas sejam pagas e sem sequer sejam haja possibilidade de serem gozadas em tempo, solução que os enfermeiros prefeririam que acontecesse. "Os enfermeiros sentirem que independentemente de terem taxas de produtividade acima de 150 % não têm qualquer valorização por parte do ministério da Saúde a essa produtividade acima dos 10%", avançou. O Sindicato acusa o atual governo de ter poupado cerca de 190 milhões de euros à custa dos enfermeiros, nomeadamente com o aumento do horário de trabalho para as 40 horas semanais, com os cortes nas horas de penosidade, bem como através do congelamento de escalões. Além de mais recursos humanos, o Sindicato insiste na necessidade de valorizar a profissão que tem sofrido vários constrangimentos ao longo dos últimos anos, como congelamento das progressões, corte nos salários, nas horas extraordinárias e nas horas penosas.	(*Jornal Expresso*, 2015b)	Nurses	job satisfaction; workload; unpaid overtime; hiring; overtime; SNS degradation
As condições de trabalho continuam a agravar-se. O contexto laboral e salarial mantém-se em níveis de decadência elevados. A capacidade formativa está amputada devido à escassez de capital humano e requisitos no SNS.	(Fórum Médico, 2017)	Medical Doctors	job satisfaction; income; hiring
Queremos a abertura de concursos para a contratação de mais médicos. Queremos que cada cidadão possa ter um Médico de Família. Queremos a diminuição da lista de utentes por Médico de Família, para que cada cidadão tenha um tempo digno de consulta. Queremos o máximo de 12 horas de trabalho nas urgências, e não as atuais 18 ou 24 horas, para termos mais tempo para as consultas e internamento e assim prestar melhores cuidados de saúde aos utentes.	(SIM, 2018)	Medical Doctors	hiring; workload
Uma diminuição das listas de espera através da redução (de 18 para 12 horas) do horário de trabalho no serviço de urgência permitiria que nessas "seis horas" os médicos estivessem disponíveis para outras actividades, designadamente consultas, cirurgias, acompanhamento dos doentes internados e formação, defendeu o secretário-geral do SIM.	(Lusa, 2018b)	Medical Doctors	workload

Table Appendixes.1 – News Excerpts qualitative analysis (continued)

Os resultados indicam que, neste grupo, a maior parte reformou-se (43,4%), um terço foi trabalhar exclusivamente para o sector privado e uma minoria (7%) emigrou. Por que saíram então estes profissionais do SNS? Genericamente porque estavam insatisfeitos com a remuneração oferecida, mas também com a falta de perspectivas de progressão na carreira e de participação na tomada de decisão. Mas a falta de tempo disponível para a família, amigos e actividades sociais de lazer foi a razão mais invocada. Como seria de esperar, os médicos que emigraram foram os que evidenciaram níveis mais elevados de insatisfação em quase todas as dimensões, mas é particularmente notório o seu desencanto com as oportunidades de progressão na carreira. Também o número de horas de trabalho por semana é grande fonte de descontentamento para a maioria - que diz que ultrapassa o que está estipulado, situação muitas vezes agravada pelo não cumprimento dos períodos de descanso compensatório. (...) Seja como for e apesar de ser causa relevante de insatisfação, a remuneração não é elencada como a dimensão que mais conta para o descontentamento, sublinha Marianela Ferreira. "Não é sobretudo por razões económicas que os médicos ponderam deixar o SNS", frisa. Entre os especialistas, os médicos em cargos de chefia são uma minoria e para a generalidade dos clínicos a carreira está estagnada. Confessando-se "uma admiradora, uma fã deste grupo profissional de élite, que tem um poder enorme, mas trabalha muito por vezes até à exaustão", a investigadora lamenta que a carreira médica seja "desvalorizada" e avisa que, se este cenário não se alterar, "a continuidade do SNS pode estar em causa". "Não podemos desperdiçar estes recursos altamente qualificados", sustenta.	(Campos, 2017)	Medical Doctors	SNS degradation; career progression; income; work-life balance; workload;
Noutro estudo conduzido pela investigadora Marianela Ferreira, do Instituto de Saúde Pública da Universidade do Porto, em colaboração com a Secção Regional Norte da Ordem dos Médicos, 60,5% dos médicos admitiram estar insatisfeitos ou muito insatisfeitos com o excesso de horas de trabalho. O número sobe (74,1%) para apontar o descontentamento face ao tempo disponível para a família, amigos ou lazer. Mais: quase metade (46,6%) considerou que os descansos compensatórios legais não são respeitados e um quarto (26%) admitiu que ultrapassa o horário de trabalho estipulado todos os dias.	(Guimarães, 2018)	Medical Doctors	workload; work-life balance; overtime
Perdida a validade do generalizado convite à emigração nos anos da troika, a emigração registou uma diminuição nos últimos anos. Mas, no caso dos enfermeiros, os pedidos do certificado de equivalência para poderem exercer no estrangeiro voltaram a aumentar para mais do dobro, em 2018: 2736, contra os 1286 de 2017 e os 1614 do ano anterior.	(Faria, 2019)	Nurses	emigration

Table Appendixes.1 – News Excerpts qualitative analysis (continued)

Limitação do trabalho suplementar em serviço de urgência a 150 horas anuais, em vez das 200 horas anuais atuais; - Imposição de um limite de 12 horas de trabalho em urgência como horário normal de trabalho, sendo contra a realização de urgências por períodos de 24 horas, sob pena de colocar em risco a qualidade do atendimento e a segurança do doente; - Redução da lista de utentes por médico de família; - Pagamento integral do trabalho extraordinário. Atualmente os médicos têm um corte de 50% e pretendem voltar a receber a 100% com efeitos retroativos a janeiro de 2017. O Governo comprometeu-se a devolver 25% dos cortes a todos os médicos a partir de abril e os restantes 25% até final do ano; - Negociação de uma grelha salarial que respeite a diferenciação técnica e profissional dos trabalhadores médicos; - Recuperação dos dias de férias acrescidos que tinham sido concedidos em função da idade do trabalhador, uma medida que deve ser estendida aos médicos com contrato individual de trabalho; - Convergência da idade de aposentação dos médicos com as restantes profissões de maior desgaste; - Implementação efetiva da Medicina do Trabalho e saúde ocupacional em todos os estabelecimentos do Serviço Nacional de Saúde (SNS); - Melhoria dos incentivos à fixação em zonas e especialidades médicas carenciadas; - Recuperação do subsídio de insularidade para todos os médicos que trabalhem nas regiões autónomas da Madeira e dos Açores; - Lançamento dos concursos para assistente graduado sénior e assistente graduado que estiveram previstos para 2016, mas não foram efetivados na prática; - Colocação dos atestados médicos para as cartas de condução apenas em Centros de Avaliação Médica e Psicológica para todos os condutores, retirando este serviço dos centros de saúde; - Implementação da carreira médica aos profissionais que trabalham nos quadros dos ministérios da Justiça e da Defesa; - Remunerar o trabalho prestado ao sábado além da urgência de um modo específico, uma vez que o trabalho ao sábado das 08:00 às 13:00 ainda é equiparado a dias de semana.	(Médico, 2017)	Medical Doctors	overtime; workload; unpaid overtime; income
Falta de pessoal, equipamentos "fora de prazo" e sem manutenção e falhas de material clínico adequados são os principais problemas apontados pelos profissionais. Os médicos "não vão ficar de braços cruzados perante uma injustiça sem precedentes que está a afectar de forma insidiosa os portugueses e os profissionais de Saúde", refere o documento.	(Lusa, 2018a)	Medical Doctors	SNS degradation; hiring

Table Appendixes.1 – News Excerpts qualitative analysis (continued)

Para lançar o debate, foram apresentados alguns dados sobre a situação dos recursos humanos no SNS, com base no último relatório social do Ministério da Saúde. De acordo com retrato traçado, o número de médicos no SNS entre 2010 e 2017 cresceu 21%, enquanto o número de enfermeiros cresceu 8% no mesmo período. As restantes áreas profissionais registaram a tendência inversa. Também ficou claro que existe uma disparidade entre hospitais quando se contabiliza o número de médicos por camas. Mas a realidade dos números que estão no papel, não é a mesma que os hospitais reportam. Ana Paula Gonçalves, administradora do CHUA, afirmou que no caso do Algarve o "rácio de médico por cama é de 0,39", valor que classificou de "muito pouco" para a resposta que precisam de dar à população. "Temos escassez de médicos em quase todas as especialidades. Também temos falta de enfermeiros e outra área complicada é a dos assistentes operacionais", que assume ser difícil atrair "com os salários mínimos que pagamos". O bastonário dos médicos corroborou a situação do Algarve, dando o exemplo de uma carência grave: "A cirurgia pediátrica tem um médico. Não chega. Quer dizer que uma criança se tiver de fazer uma intervenção mais delicada tem de vir para Lisboa. Tem de fazer 300 quilómetros." Miguel Guimarães salientou que é preciso ver o aumento do número de médicos no SNS de outra forma, referindo que o grande acréscimo se deu pelo número de internos. Jovens médicos que ainda estão a tirar a especialidade e por isso com autonomia mais limitada. Ana Rita Cavaco, bastonária da Ordem dos Enfermeiros, afirmou que "faltam 30 mil enfermeiros no SNS" e que 15 mil estão a trabalhar no estrangeiro. A responsável lembrou que para colmatar a passagem das 40 horas para as 35 horas semanais de horário de trabalho são preciso 1700 destes profissionais. "Contrataram 1100 e prometeram mais 600 para agora. Não entraram", disse, lembrando que os hospitais têm "dois milhões de horas" de descanso em dívida aos enfermeiros. "Preocupa-nos muito a taxa de absentismo dos enfermeiros, que a nível nacional ronda os 13%, nalguns hospitais os 15%, e isto acontece porque os enfermeiros estão completamente desmotivados."	(Maia, 2018)	both	hiring; emigration

Table Appendixes.1 – News Excerpts qualitative analysis (continued)

Foi definida, na discussão, a resolução de problemas dos cadernos reivindicativos a resolver dentro da legislatura: Suplemento de autoridade de saúde para os médicos de Saúde Pública; Equalização no número de dias de férias dos Contratos Individuais de Trabalho (CIT) em relação aos Contratos de Trabalho em Funções Públicas (CTFP) e reposição integral dos direitos prévios ao Programa de Assistência Económica e Financeira; Descongelamento da progressão salarial (incluindo médicos que transitam para as 40 horas); Passagem das 200 para as 150 horas anuais em Serviço de Urgência, em igualdade com os restantes trabalhadores da Função Pública (FP); Abertura de concursos de mobilidade hospitalar e aplicação das mesmas condições de mobilidade para a Medicina Geral e Familiar em CIT e em CTFP; Aplicação do regime de disponibilidade permanente para os médicos de Saúde Pública do Instituto Ricardo Jorge e Direção Geral da Saúde; Regularização do pagamento do trabalho noturno para os médicos sindicalizados, das 7h às 8h, nos locais onde se processa incorretamente; Concursos de provimento para assistentes 30 dias após a homologação das notas (Lei 55/2018); Colocação em concurso das vagas ocupadas por médicos reformados.	(FNAM, 2018)	Medical Doctors	income; workload; unpaid overtime; hiring
REDUÇÃO DAS HORAS DE TRABALHO SUPLEMENTAR ANUAL E LIMITE DE 12 HORAS DE TRABALHO SEMANAL EM SERVIÇO DE URGÊNCIA Este é um dos pontos fulcrais de descontentamento dos médicos de hoje em dia e que enfrenta maior desconhecimento e compreensão por parte do resto da população. A realização de 12 horas (ou mais) de trabalho no serviço de urgência, também conhecido na classe médica como "banco", é sem dúvida uma actividade que requer muito empenho, dedicação e espírito de sacrifício. Arrisco-me a dizer que só quem já fez "bancos" consegue perceber o que quero dizer com "muito empenho, dedicação e (sobretudo) espírito de sacrifício". Tal como em muitas outras profissões, existem determinadas tarefas e serviços que exigem uma atenção e empenho redobrados, motivo pelo qual devem ser realizados por profissionais competentes e em posse de todas as suas faculdades. Como será isto possível com as actuais condições de trabalho? Já imaginaram o que seria um professor a dar aulas durante 24 horas seguidas, muitas vezes sem parar sequer para almoçar ou jantar? Ou como seria o atendimento ao público se o trabalhador por trás do balcão estivesse a trabalhar há mais de 20 horas? Ou que artigo estaria eu a escrever se estivesse na hora 23 de um turno de 24 horas sem parar?	(Brandão and Magalhães, 2018)	Medical Doctors	overtime; workload

Table Appendixes.1 – News Excerpts qualitative analysis (continued)

Falta de pessoal, equipamentos "fora de prazo" e sem manutenção e falhas de material clínico adequados são os principais problemas apontados pelos profissionais. Os médicos "não vão ficar de braços cruzados perante uma injustiça sem precedentes que está a afectar de forma insidiosa os portugueses e os profissionais de Saúde", refere o documento.	(Lusa, 2018a)	Medical Doctors	SNS degradation; hiring

Table Appendixes.2 – Fuzzy Clustering Analysis of data from 2011

Year		Freq	Profile 1	Profile 2	Profile 3
Dimensions				2011	
Income					
Monthly pay from main job (deciles)	missing	14,87	33,84	15,26	8,83
	Below the 1st decile	1,46	11,58	0,00	0,00
	Between the 1st and the 2nd decile	0,45	3,62	0,00	0,00
	Between the 2nd and the 3rd decile	0,18	1,45	0,00	0,00
	Between the 3rd and the 4th decile	0,55	4,34	0,00	0,00
	Between the 4th and the 5th decile	0,45	0,00	0,00	0,97
	Between the 5th and the 6th decile	1,00	7,96	0,00	0,00
	Between the 6th and the 7th decile	4,55	36,17	0,00	0,00
	Between the 7th and the 8th decile	16,47	34,89	14,71	13,06
	Between the 8th and the 9th decile	37,58	0,00	48,59	38,18
	More or equal to the 9th decile	37,31	0,00	36,70	47,80
Contract					
Permanency of the job	Person has a permanent job or work contract of unlimited duration	79,63	0,00	100,00	100,00
	It is a contract covering a period of training (apprentices, trainees, research)	2,25	11,03	0,00	0,00
	Person could not find a permanent job	16,03	78,71	0,00	0,00
	Person did not want a permanent job	1,78	8,75	0,00	0,00
	It is a contract for a probationary period	0,31	1,52	0,00	0,00
Duration	missing	3,33	24,49	0,00	0,00
	no limit	82,37	0,00	100,00	100,00
	1 to 12 months	13,14	74,55	0,00	0,00
	13 to 36 months	2,40	13,64	0,00	0,00
	More than 3 years	2,08	11,82	0,00	0,00
Working time					
Full-time / Part-time distinction	Full-time job	95,82	66,68	100,00	100,00
	Part-time job	4,18	33,32	0,00	0,00
Number of hours per week usually worked	missing	2,87	4,20	4,77	0,74
	Part-time (up to 35 horas)	4,70	42,31	0,00	0,00
	Full-time (35 to 39h)	45,37	0,00	47,07	54,56
	Full-time (40 to 42h)	36,44	57,69	36,17	31,68
	Full-time (more than 42h)	13,48	0,00	16,76	13,76
Existence of more than one job or business	Person had only one job	80,64	82,16	79,59	81,13
	Person had more than one job	19,36	17,84	20,41	18,87
Paid overtime	missing	2,25	0,00	5,13	0,31
	There is paid overtime	88,11	100,00	79,52	92,10
	There is not paid overtime	11,89	0,00	20,48	7,90

Table Appendixes.2 – Fuzzy Clustering Analysis of data from 2011 (continued)

	missing	1,86	0,00	4,06	0,43
Unpaid overtime	There is unpaid overtime	95,58	100,00	94,98	94,81
	There is not unpaid overtime	4,42	0,00	5,02	5,19
Atypical Work					
	Person usually works at home	2,71	2,80	2,39	2,96
Working at home	Person sometimes works at home	4,49	0,00	0,00	9,66
	Person never works at home	92,80	97,20	97,61	87,38
Shift work	Person does shift work	43,14	0,00	100,00	0,00
	Person never does shift work	56,86	100,00	0,00	100,00
	Person usually works in the evening	11,93	0,00	25,80	0,00
Evening work	Person sometimes works in the evening	34,31	0,00	74,20	0,00
	Person never works in the evening	53,76	100,00	0,00	100,00
	Person usually works at night	5,42	0,00	15,25	0,00
Night work	Person sometimes works at night	30,13	0,00	84,75	0,00
	Person never works at night	64,45	100,00	0,00	100,00
	Person usually works on Saturdays	18,82	19,33	25,75	10,30
Saturday work	Person sometimes works on Saturdays	36,87	0,00	74,25	0,00
	Person never works on Saturdays	44,31	80,67	0,00	89,70
	Person usually works on Sundays	16,42	0,00	37,19	0,00
Sunday Work	Person sometimes works on Sundays	27,73	0,00	62,81	0,00
	Person never works on Sundays	55,85	100,00	0,00	100,00
Socio-Demographic					
	20 to 24 years old	8,83	39,93	4,38	0,29
	25 to 29 years old	19,21	43,85	19,89	8,95
	30 to 34 years old	11,08	5,57	12,32	12,21
	35 to 39 years old	10,69	0,54	16,74	9,66
Age	40 to 44 years old	13,71	0,00	18,71	14,95
	45 to 49 years old	9,60	0,59	9,02	13,64
	50 to 54 years old	12,24	1,80	10,29	17,96
	55 to 59 years old	10,46	0,00	6,44	17,91
	60 or more years old	4,18	7,73	2,22	4,42
Gender	Male	25,87	14,22	32,11	23,67
	Female	74,13	85,78	67,89	76,33
	00 to 36 months	28,12	86,87	17,33	13,48
	48 to 120 months	20,14	11,14	22,94	21,42
Tenure	132 to 240 months	26,88	0,57	37,95	28,22
	252 to 360 months	15,18	0,48	13,88	22,19
	more than 360 months	9,68	0,94	7,90	14,69

Table Appendixes.2 – Fuzzy Clustering Analysis of data from 2011 (continued)

Profession	Medical doctors	24,79	16,47	25,09	26,68
	Nursing and midwifery professionals	49,81	24,85	73,62	35,46
	Traditional and complementary medicine professionals	0,46	3,14	0,00	0,18
	Paramedical practitioners	0,23	1,17	0,22	0,00
	Veterinarians	1,86	2,26	0,02	3,37
	Other health professionals	22,85	52,11	1,05	34,32
Region of place of work	missing	0,15	0,00	0,00	0,34
	PT11 - Norte	25,14	27,66	23,74	25,65
	PT15 - Algarve	7,29	2,11	5,84	10,14
	PT16 - Centro (PT)	18,46	22,48	18,18	17,53
	PT17 - Lisboa	20,09	30,87	17,49	19,25
	PT18 - Alentejo	9,62	5,52	11,23	9,37
	PT20 - Açores	10,09	4,77	12,70	9,30
	PT30 - Madeira	9,31	6,59	10,81	8,75
Firm Characteristics					
Size firm	under 10 people	13,25	36,15	4,84	14,07
	11 to 49 people	25,72	33,96	15,32	32,50
	more than 50 people	61,04	29,89	79,84	53,44
Economic activity of the local unit	C - Manufacturing	1,08	4,42	0,00	1,08
	E - Water supply; sewerage, waste management and remediation activities	0,08	0,00	0,00	0,17
	F - Construction	0,15	0,00	0,00	0,34
	G - Wholesale and retail trade; repair of motor vehicles and motorcycles	5,73	5,67	4,80	6,58
	H - Transportation and storage	0,08	0,00	0,46	0,17
	I - Accommodation and food service activities	0,15	0,00	0,00	0,34
	J - Information and communication	0,08	0,00	0,19	0,00
	M - Professional, scientific and technical activities	0,85	2,50	0,00	1,14
	O - Public administration and defence; compulsory social security	2,71	4,49	1,14	3,61
	P - Education	0,85	5,62	0,00	0,22
	Q - Human health and social work activities	87,53	75,58	93,42	85,32
	R - Arts, entertainment and recreation	0,23	1,73	0,00	0,00
	S - Other service activities	0,46	0,00	0,00	1,02

Table Appendixes.3 – Fuzzy Clustering Analysis of data from 2015

	Year	2015				
Dimensions		Freq	Profile 1	Profile 2	Profile 3	Profile 4
Income						
Monthly pay from main job (deciles)	missing	11,32	32,00	7,10	9,93	10,67
	Below the 1st decile	1,54	15,81	0,00	0,00	0,00
	Between the 1st and the 2nd decile	0,53	5,50	0,00	0,00	0,00
	Between the 2nd and the 3rd decile	0,27	0,69	0,66	0,00	0,00
	Between the 3rd and the 4th decile	1,20	12,38	0,00	0,00	0,00
	Between the 4th and the 5th decile	2,27	23,38	0,00	0,00	0,00
	Between the 5th and the 6th decile	2,40	24,75	0,00	0,00	0,00
	Between the 6th and the 7th decile	7,55	17,50	3,63	11,24	0,00
	Between the 7th and the 8th decile	28,46	0,00	56,30	27,00	0,00
	Between the 8th and the 9th decile	24,92	0,00	39,41	30,73	0,00
	More or equal to the 9th decile	30,86	0,00	0,00	31,03	100,00
Contract						
Permanency of the job	Person has a permanent job or work contract of unlimited duration	81,58	0,00	100,00	100,00	100,00
	It is a contract covering a period of training (apprentices, trainees, research)	3,85	20,90	0,00	0,00	0,00
	Person could not find a permanent job	12,38	67,20	0,00	0,00	0,00
	Person did not want a permanent job	1,48	8,04	0,00	0,00	0,00
	It is a contract for a probationary period	0,71	3,86	0,00	0,00	0,00
Duration	missing	4,27	43,20	0,00	0,00	0,00
	no limit	85,21	0,00	100,00	100,00	100,00
	1 to 12 months	11,32	76,57	0,00	0,00	0,00
	13 to 36 months	0,80	5,44	0,00	0,00	0,00
	More than 3 years	2,66	17,99	0,00	0,00	0,00
Working time						
Full-time / Part-time distinction	Full-time job	94,37	0,00	100,00	100,00	100,00
	Part-time job	5,63	100,00	0,00	0,00	0,00
Number of hours per week usually worked	missing	3,02	9,66	3,54	1,32	2,50
	Part-time (up to 35 horas)	7,03	100,00	0,00	0,00	0,00
	Full-time (35 to 39h)	18,45	0,00	21,99	25,62	0,00
	Full-time (40 to 42h)	58,16	0,00	78,01	74,38	0,00
	Full-time (more than 42h)	16,37	0,00	0,00	0,00	100,00
Existence of more than one job or business	Person had only one job	79,62	100,00	82,58	100,00	30,61
	Person had more than one job	20,38	0,00	17,42	0,00	69,39
Paid overtime	missing	2,13	0,00	1,64	0,65	9,34
	There is paid overtime	88,44	100,00	100,00	100,00	0,00
	There is not paid overtime	11,56	0,00	0,00	0,00	100,00
Unpaid overtime	missing	1,78	1,70	1,87	0,80	4,65
	There is unpaid overtime	91,25	100,00	100,00	100,00	45,50
	There is not unpaid overtime	8,75	0,00	0,00	0,00	54,50

Table Appendixes.3 – Fuzzy Clustering Analysis of data from 2015 (continued)

Atypical Work						
Working at home	Person usually works at home	3,67	0,00	0,00	0,00	21,72
	Person sometimes works at home	8,89	0,00	0,00	0,00	52,55
	Person never works at home	87,44	100,00	100,00	100,00	25,73
Shift work	Person does shift work	44,19	0,00	100,00	0,00	0,00
	Person never does shift work	55,81	100,00	0,00	100,00	100,00
Evening work	Person usually works in the evening	8,59	0,00	25,18	0,00	0,00
	Person sometimes works in the evening	37,09	0,00	74,82	0,00	100,00
	Person never works in the evening	54,32	100,00	0,00	100,00	0,00
Night work	Person usually works at night	2,73	0,00	9,90	0,00	0,00
	Person sometimes works at night	30,57	0,00	90,10	0,00	100,00
	Person never works at night	66,71	100,00	0,00	100,00	0,00
Saturday work	Person usually works on Saturdays	17,95	0,00	0,00	0,00	100,00
	Person sometimes works on Saturdays	36,91	0,00	100,00	0,00	0,00
	Person never works on Saturdays	45,14	100,00	0,00	100,00	0,00
Sunday Work	Person usually works on Sundays	16,47	0,00	0,00	0,00	100,00
	Person sometimes works on Sundays	25,65	0,00	100,00	0,00	0,00
	Person never works on Sundays	57,88	100,00	0,00	100,00	0,00
Socio-Demographic						
Age	20 to 24 years old	4,27	23,64	1,09	0,98	0,00
	25 to 29 years old	15,23	52,93	17,41	4,45	1,10
	30 to 34 years old	15,46	11,46	22,20	13,15	11,50
	35 to 39 years old	12,86	2,54	19,84	13,41	6,53
	40 to 44 years old	13,45	0,58	15,04	17,71	11,03
	45 to 49 years old	8,77	0,00	10,24	11,69	6,17
	50 to 54 years old	11,49	0,00	10,25	15,25	15,69
	55 to 59 years old	10,78	0,00	3,33	14,18	29,71
	60 or more years old	7,70	8,86	0,60	9,19	18,28
Gender	Male	24,88	23,03	19,79	23,26	42,19
	Female	75,12	76,97	80,21	76,74	57,81
Tenure	00 to 36 months	21,74	92,21	9,88	5,06	11,12
	48 to 120 months	25,53	7,79	35,05	28,70	16,34
	132 to 240 months	22,87	0,00	33,91	25,37	19,07
	252 to 360 months	18,42	0,00	19,71	24,30	20,48
	more than 360 months	11,43	0,00	1,45	16,58	33,00
Profession	Medical doctors	27,31	12,87	2,20	19,40	95,56
	Nursing and midwifery professionals	46,39	6,73	96,02	41,52	0,00
	Traditional and complementary medicine professionals	0,06	0,00	0,01	-0,01	0,33
	Paramedical practitioners	0,12	1,13	0,00	0,00	0,00
	Veterinarians	1,72	4,31	0,85	2,14	0,62
	Other health professionals	24,41	74,97	0,92	36,94	3,50

Table Appendixes.3 – Fuzzy Clustering Analysis of data from 2015 (continued)

	missing	0,24	2,40	0,00	0,00	0,00
	PT11 - Norte	29,63	42,92	29,47	27,96	26,35
	PT15 - Algarve	7,78	10,70	6,13	7,95	8,98
Region of place of work	PT16 - Centro (PT)	18,82	5,69	23,30	18,57	18,36
	PT17 - Lisboa	20,61	34,19	10,06	19,00	39,99
	PT18 - Alentejo	6,95	0,00	10,05	7,41	3,23
	PT20 - Açores	8,19	6,01	6,32	11,90	2,42
	PT30 - Madeira	8,02	0,50	14,66	7,22	0,68
Firm Characteristics						
	under 10 people	15,05	43,74	1,63	21,64	2,72
Size firm	11 to 49 people	23,76	45,25	13,80	29,33	12,43
	more than 50 people	61,20	11,01	84,57	49,03	84,86
	C - Manufacturing	1,36	0,00	0,00	3,04	0,00
	F - Construction	0,30	0,00	0,00	0,66	0,00
	G - Wholesale and retail trade; repair of motor vehicles and motorcycles	8,95	17,98	5,39	12,31	0,00
	H - Transportation and storage	0,12	0,62	0,00	0,13	0,00
	I - Accommodation and food service activities	0,12	0,07	0,00	0,26	0,00
	K - Financial and insurance activities	0,12	1,23	0,00	0,00	0,00
	M - Professional, scientific and technical activities	2,13	5,58	0,00	3,56	0,00
	N - Administrative and support service activities	0,18	0,00	0,67	0,40	0,00
Economic activity of the local unit	O - Public administration and defence; compulsory social security	1,66	0,00	0,00	2,34	4,25
	P - Education	1,24	10,47	0,00	0,53	0,00
	Q - Human health and social work activities	83,23	60,10	93,23	76,68	94,98
	R - Arts, entertainment and recreation	0,41	2,91	0,32	0,07	0,00
	S - Other service activities	0,06	0,62	0,21	0,00	0,00
	T - Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	0,06	0,00	0,19	0,00	0,38
	U - Activities of extraterritorial organisations and bodies	0,06	0,42	0,00	0,00	0,38