



The effects of working conditions on health status: Simultaneous decisions on health and job satisfaction domains



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Abstract

The present paper seeks to examine the impact of working conditions on self-assessed health besides that expected to affect job satisfaction. We undertake this analysis assuming simultaneous decisions on reporting both satisfaction domains. For this purpose, we estimate simultaneously two probit procedures (those reporting a bad self-assessed health and being dissatisfied). Our results show that indicators for working conditions besides affecting job satisfaction do not condition self-assessed health status. Notwithstanding, our most relevant finding constitutes that job satisfaction would be conditioning self-assessed health. As a consequence, we can assure that job satisfaction presents association with health status. Hence, working conditions would have an indirect effect through job satisfaction on self-assessed health status. Furthermore, results should distinguish differential feelings by gender, especially when examining job satisfaction domain.

JEL Classification: I10, J28, J81

Key words: Health status; job satisfaction; socioeconomic factors.

1. Introduction

The effects of working conditions on health have both a policy and research agenda of their own. Safety and health at work constitutes one of the European Union's most concentrated and most important social policy sectors. Recent research results point to job insecurity, job strain and job dissatisfaction showing independent, consistent and strong associations

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with physical and mental health (D'Souza et al., 2003; Ferrie et al. 2005; Marchand and Durand, 2005 and Strazdins et al., 2004). Furthermore, some studies explore such variables and associations in particular pathological conditions including back pain or the incidence of coronary events (de Bacquer et al., 2005 and Schneider et al., 2005). Therefore, labour policies would be complementary to those correcting social inequalities in the health dimension. Moreover, Cai and Kalb (2006) argue that it is strongly relevant to understand the relationship between health and the labour market as a consequence of ageing population in developed countries.

The present paper addresses whether working conditions have an impact on self-assessed health besides that expected to affect individual job satisfaction. We will consider self-reported measures for both interrelated individual dimensions (health and labour). Thus, we argue that job satisfaction and self-assessed health are jointly determined since both indicators are two domains of individual satisfaction (see Van Praag and Ferrer-i-Carbonell, 2004). Therefore, endogeneity will be present, i.e. we would obtain biased estimations when estimating this relationship just through one side. Individuals are expected to be able to value satisfaction domains disentangling several aspects of life, e.g. health and job, although personality traits are under both responses. For this reason, we estimate simultaneously both domains of satisfaction.

Strictly with regards to job satisfaction, Faragher et al. (2005), using a meta-analysis procedure, state that policies addressed to increase job satisfaction, i.e. working conditions, would improve health status. Note that it is expected that workers with a low level of satisfaction are more likely to experience emotional burn-out, to have reduced levels of self-esteem and to have raised levels of anxiety and depression. Furthermore, job dissatisfaction encourages employees to resign. Freeman (1978) showed that job satisfaction is a good indicator of labour market mobility as well as reflecting either worker experience or preferences for outside opportunities (Lévy-Garboua et al., 2007). These authors state that those people who are satisfied with their present job would be deciding to choose the same job again related to what happened with available alternatives. On the contrary, resignations lead to instability in the workplace, which in turn results in lower productivity. This analysis, then, is highly relevant for the Spanish economy since productivity rates are fairly low in comparison to their counterparts in the OECD.

Notwithstanding, it is well known that the relationship between labour market behaviour and health suffers an endogeneity problem. For instance, reverse causation is shown between labour supply and health status (Cai and Kalb, 2006). Although using an objective measure of

health, the problem will arise as a consequence of a worse labour performing pattern for those reporting a bad degree of health. So, the lower the degree of health, the lesser the worker productivity. The latter will lead to those individuals more likely to become unemployed or to achieve lower salary records.

In relation to our empirical evidence, the study of determinants of health status in Catalonia (Spain) point to the persistence of relevant inequalities across social classes, income and occupation levels, and gender (Borrell et al., 2004; Artazcoz et al., 2004 and García-Gómez and López-Nicolás, 2005). However, little is known regarding the importance of individual working conditions. Thus, the present paper addresses a pending issue in the study of health determinants in Catalonia. In this regard, we report evidence using a quite homogeneous sample of individuals, i.e. those living in the city of Barcelona which allows us to focus on a concrete Spanish local labour market. Although this labour market could turn out to be quite specific, the Barcelona city concentrates more or less 70% of the Catalan GDP, the Spanish region where Barcelona is located, Catalonia being one of the richest Spanish regions. In our opinion, the latter permits us to consider specific labour market particularities. Likewise, the region of study is also interesting for two reasons: its labour market characteristics have many features in common with Southern Europe countries (where women face worse employment conditions than in other northern EU countries) and the Spanish economy presents rather lower productivity rates than OECD countries.

This paper is structured as follows. The next section discusses the relationship between both domains of satisfaction. The second section describes the survey characteristics and the main variables considered. The following section explains the econometric model used whilst the fourth section shows the main findings of the study. The final section concludes with the main results.

2. Health status and job satisfaction: the relationship between both individual domains of satisfaction

Psychologists separate satisfaction among various domains of life. Thus, one may be rather unhappy with his or her health status but, on the contrary, very satisfied with his or her own job occupation. However, individuals who answer to a job satisfaction question in a health questionnaire will tend to make a choice by means of a joint evaluation instead of a separate one. Moreover, both dimensions are treated by

individuals as human capital (Grossman, 1972). Note that people invest either in health or education so as to achieve higher job ability, among other goals. Ability at work, or ability in a broad sense, makes people more productive. Hence, these concepts are quite closely related (see Currie and Madrian, 1999).

Given this relationship, on one hand, labour market status has consequences on health status. For instance, those people who either experience mismatch or report lower salary records would be less satisfied with their present jobs. Then, job dissatisfaction likely would produce health shocks. Therefore, the underpinning factors on health dissatisfaction interact with those ones occasioning job dissatisfaction. On the other, we can expect that unhealthier individuals will need further medical care, although Spanish public health insurance guarantees full coverage (except for very few health care services such as odontology). Hence, these people will increase their labour supply, maybe by means of working a higher number of hours. The latter is likely to produce better earnings and maybe an improvement in individual physical or mental activity which would result in a better health status.

Additionally to the above mentioned interrelations, personality traits would be under both domains. Therefore, responses will be highly correlated as a consequence of psychological personal characteristics when answering the questionnaire. Judge, Erez and Bono (1998) point out core self-evaluations represent an ability or skill factor. Then, individual self-esteem would be under both domains of satisfaction. Core-evaluations affect people's appraisal of themselves subconsciously. Thus, specific appraisals are conditioned by these deeper self-appraisals although individuals are not conscious of the influence of their self-evaluations on their perceptions about health status, job satisfaction or their degree of well-being (Bono and Judge, 2003). Hence, individual evaluations in multiple domains are determined by core evaluations. The latter will give rise to self evaluations being analysed simultaneously and not isolated.

Furthermore, to a certain extent, people respond to several life satisfaction domains indicating their own preferences determined to retrospective evaluations of experiences. Thus, someone asked about his or her satisfaction in health or job would be conditioned by biased memories deteriorating remembered utility. Then, a bad or a good recent experience in any life dimension would be conditioning well-being responses. For instance, being promoted in one's job six years ago or during the month previous to the interview would cause workers to show a dissimilar evaluation of their job satisfaction. Now, let's think about those who did not obtain a promotion contrary to their expectations, for instance during the fifteen days before the interview. A low self-esteem would determine

self-assessed health status besides its obvious considerable effect on job satisfaction. Likewise, making choices can be also conditioned by the individual emotional state when the evaluation is made. Therefore, unobserved factors will be present when answering satisfaction domains throughout the questionnaire. Additionally, “focusing illusion” could be present. Schkade and Kahneman (1998) state that people exert themselves into the asked question when thinking about it. At this juncture, an exaggerated relevance would arise in those requested satisfaction domains.

The present paper analyses both dimensions simultaneously through focusing on the negative responses. As expressed in the introductory section, the conducted analysis examines whether measures for working conditions alter health individual perception besides that operating on job dissatisfaction. Thus, we will examine the factors which are determining a negative health self perception and a negative response on job satisfaction. Note that conducting an analysis for the negative responses is strongly relevant since both indicators would be lying on social inequalities, although the main determinant reasons for each dimension could be different. The reason for coding into binary both dimensions is threefold. First, we capture enough sample size for the categories. It is well known that negative responses to satisfaction questions present very low frequencies. The same applies for our sample. Second, negative responses would simplify those problems that arise when we take satisfaction scores assuming interpersonal comparability because of the tendency of people to compare their health status or job achievements to those of their peers. At the ordinal level, this implies that individuals reporting a 4 are assumed to be more satisfied with their work than those reporting a 2. At the cardinal level, the distances between the answers provide information, i.e. someone reporting a 4 is twice as satisfied as someone reporting a 2. In this paper we will assume ordinality but simplifying response categories. Third and finally, Etilé and Milcent (2006) demonstrated that dichotomizing these kinds of responses allows to avoid much of reporting heterogeneity bias in self-reported health status, especially because of income-related effects.

3. The data

The empirical analysis is based on a data set provided by the Public Health Agency of the city of Barcelona. The survey was conducted in 2000 and covered all the individuals living in this city. The main aim of

this survey was to study the health status of the residents in Barcelona (Catalonia, Spain). The survey is representative of the ten districts which make up this city. For this study, we eliminate all individuals that do not participate in the labour market (this restriction also eliminates those younger than 16 and older than 64) because we are interested in the relationship between a labour market outcome and a health status dimension. After cleaning for age and for missing observations, we obtain a final sample of more than 3,400 individuals. Fortunately, attrition was not an issue since non-respondents represented only 2.57% for the highest not attended item from the questionnaire. However, twice drawbacks are worthy of mention because of cross sectional data availability. First, the investigated period experienced a positive economic growth rate. Thus, we are not able to explore economic cycle effects which could alter working conditions in a different way based on the economic sector of activity. Second and since we do not dispose a panel, unobserved heterogeneity may alter estimation results. Notwithstanding, we were able to introduce a large list of covariates into the econometric analysis.

The dependent variable related to self-assessed health status was obtained using respondents' answers to a question concerning their general health status in a five category Likert scale. We grouped negative responses into a dichotomous variable – bad or very bad due to abovementioned reasons (gain enough sample size for responses, to obtain comparability and avoid much of reporting heterogeneity bias). Likewise we did the same operation with job satisfaction although in this case original scores were grouped in a four category Likert scale. Descriptive statistics indicate that a negative self-perceived health status is declared by 10.49% of respondents (1.03% for those reporting bad health and 9.46% for those with regular health) for the restricted sample (those who participate in the labour market) and a percentage of 9.74% report job dissatisfaction (1.93% for those very dissatisfied and 7.81% for those reporting dissatisfaction). Note that, when rating individuals' dissatisfaction with their job the survey makes use of a single question. It is reasonable to think that respondents provide an aggregated score in their responses reflecting satisfaction with the work itself, pay, promotion and supervision, for which we cannot infer which specific areas are of most relevance and interest for policy makers and employers to address.

Note that if we only address to those participating in the labour market we avoid to treat the well known healthy worker effect. That is, those gainfully employed exhibit lower overall death rates and so does for self-assessed health. The latter lies on severely ill and chronically disabled are excluded from employment. Empirical evidence show mixed size impact when accounting for this specific effect. Specifically and regards

our sample, we observe 31.28% of men reporting bad health but this rate decrease to 9.07% once we only examine those participating in the labour market. These rates are slightly higher for women (36.84% and 12.60%, respectively). We prefer to work with this sub-sample although we know we cannot infer results to whole population. It is reasonable because paper's interest on analyzing working conditions effects on health degree besides job dissatisfaction influence. For this purpose, we use a sample of people who participate in the labour market. Even though, in order to avoid sample selection bias, we included labour participation predictions into our estimated equations. No significant changes were observed even disentangling by gender. The latter is strongly relevant for the women equation since their activity rate is considerably lower than that of their counterparts. Finally, we have examined a very specific sample, those gainfully employed men between 30 and 45 years old. Indeed, healthy worker effect might be minimized since a 91.67% of them are employed. Again, our results evidence no significant changes. Notwithstanding, we cannot infer to the rest of men cohorts and obviously, no conclusions can be extended for women sub-samples.

Table 1 reports the summary statistics for those people reporting negative satisfactions for the restricted sample (those participating in the labour market). We show percentages for both endogenous variables disentangling by district of residence and educational attainment level besides other interesting covariates. Both conditioning variables are very strongly related to income household differences. Since income was not a variable included in the interview survey we used education as the main socioeconomic variable. Likewise and as usual, we assume that education is predetermined, given that most investment occurs early in the lifecycle. Moreover, the educational levels will indicate the presence of what have been called the non-monetary benefits from education. See Behrman and Stacey (1997) and Grossman (1972) for an assessment of the non-monetary benefits on health. Even though, we also included other covariates which can be considered as a proxy for wealth disparities, e.g. job occupational levels or the district in which the individual resides inside the city of Barcelona.

Four main results arise from the reported figures in table 1. First, residence location shows relevant differences in average negative self evaluations since those districts characterised by a lower average income per capita (and minor life expectancy rates) present a higher significant percentage of people either with job dissatisfaction or reporting a negative self-assessed health.

Table 1. Summary of statistics for those reporting negative satisfactions for the restricted sample (labour force participation).

	Satisfied with job		Dissatisfied with job		Not reporting bad health		Reporting bad health	
	Male	Female	Male	Female	Male	Female	Male	Female
<i>Individual features</i>								
Age (in years)	39.73 (11.70)	38.19 (11.44)	37.74 (12.56)	37.72 (11.44)	38.94 (11.59)	37.31 (11.16)	46.65 (11.56)	44.21 (11.59)
Single	0.34 (0.47)	0.35 (0.48)	0.42 (0.49)	0.36 (0.48)	0.36 (0.48)	0.37 (0.48)	0.20 (0.40)	0.21 (0.41)
Divorced	0.02 (0.14)	0.07 (0.26)	0.03 (0.17)	0.08 (0.27)	0.02 (0.14)	0.07 (0.26)	0.04 (0.19)	0.09 (0.28)
Widowed	0.00 (0.06)	0.03 (0.16)	0.01 (0.07)	0.01 (0.12)	0.00 (0.05)	0.02 (0.14)	0.01 (0.12)	0.05 (0.21)
<i>Household features</i>								
Deprivation (not full-equipped houses)	0.74 (0.44)	0.72 (0.45)	0.79 (0.41)	0.78 (0.41)	0.74 (0.44)	0.72 (0.45)	0.87 (0.34)	0.85 (0.36)
Household size	3.41 (1.16)	3.34 (1.19)	3.35 (1.11)	3.28 (1.25)	3.40 (1.16)	3.32 (1.17)	3.35 (1.08)	3.43 (1.33)
<i>Educational attainment levels</i>								
Non-primary studies	0.06 (0.24)	0.05 (0.22)	0.08 (0.27)	0.12 (0.33)	0.06 (0.23)	0.04 (0.20)	0.13 (0.34)	0.18 (0.38)
Primary studies	0.23 (0.42)	0.21 (0.41)	0.18 (0.39)	0.18 (0.39)	0.21 (0.41)	0.19 (0.40)	0.37 (0.48)	0.34 (0.48)
Secondary studies	0.27 (0.45)	0.26 (0.44)	0.30 (0.46)	0.24 (0.43)	0.28 (0.45)	0.27 (0.44)	0.27 (0.44)	0.21 (0.40)
Vocational studies	0.12 (0.32)	0.12 (0.32)	0.17 (0.38)	0.16 (0.37)	0.13 (0.33)	0.12 (0.33)	0.09 (0.28)	0.11 (0.32)
University studies	0.33 (0.47)	0.37 (0.48)	0.28 (0.45)	0.32 (0.47)	0.34 (0.47)	0.38 (0.49)	0.16 (0.37)	0.18 (0.39)
<i>Geographical location inside the city</i>								
District1 (Ciutat Vella)	0.10 (0.30)	0.09 (0.28)	0.10 (0.30)	0.11 (0.32)	0.09 (0.29)	0.09 (0.28)	0.14 (0.35)	0.12 (0.32)
District2 (Eixample)	0.10 (0.30)	0.10 (0.30)	0.08 (0.27)	0.10 (0.30)	0.09 (0.29)	0.10 (0.30)	0.09 (0.29)	0.12 (0.33)
District3 (Sants-Montjuïc)	0.10 (0.30)	0.09 (0.28)	0.12 (0.33)	0.12 (0.33)	0.10 (0.30)	0.09 (0.28)	0.11 (0.32)	0.13 (0.33)
District4 (Les Corts)	0.10 (0.30)	0.11 (0.31)	0.06 (0.24)	0.07 (0.26)	0.10 (0.30)	0.11 (0.31)	0.06 (0.24)	0.08 (0.28)
District5 (Sarrià-Sant Gervasi)	0.10 (0.30)	0.11 (0.31)	0.08 (0.27)	0.11 (0.31)	0.10 (0.30)	0.11 (0.31)	0.06 (0.23)	0.09 (0.29)
District6 (Gràcia)	0.09 (0.29)	0.11 (0.31)	0.15 (0.36)	0.13 (0.34)	0.10 (0.30)	0.12 (0.32)	0.10 (0.29)	0.07 (0.26)
District7 (Horta-Guinardó)	0.10 (0.30)	0.10 (0.30)	0.11 (0.32)	0.11 (0.31)	0.10 (0.31)	0.10 (0.30)	0.10 (0.31)	0.12 (0.32)
District8 (Nou Barris)	0.11 (0.31)	0.10 (0.30)	0.12 (0.33)	0.10 (0.30)	0.10 (0.30)	0.10 (0.30)	0.15 (0.36)	0.12 (0.33)
District9 (Sant Andreu)	0.11 (0.31)	0.10 (0.30)	0.05 (0.22)	0.06 (0.24)	0.11 (0.31)	0.10 (0.30)	0.07 (0.26)	0.08 (0.28)

District10 (Sant Martí-Poble Nou)	0.10 (0.30)	0.10 (0.29)	0.12 (0.33)	0.09 (0.29)	0.10 (0.30)	0.10 (0.30)	0.11 (0.32)	0.06 (0.24)
<i>Born location</i>								
Born in Barcelona city	0.65 (0.48)	0.69 (0.46)	0.71 (0.46)	0.66 (0.48)	0.68 (0.47)	0.71 (0.45)	0.46 (0.50)	0.52 (0.50)
Born in Barcelona province	0.04 (0.19)	0.04 (0.19)	0.03 (0.17)	0.04 (0.19)	0.03 (0.18)	0.04 (0.19)	0.06 (0.23)	0.03 (0.17)
Catalan Born (not in Barcelona province)	0.03 (0.17)	0.03 (0.17)	0.02 (0.12)	0.02 (0.15)	0.03 (0.16)	0.03 (0.17)	0.04 (0.19)	0.03 (0.18)
Born in Spain (outside Catalonia)	0.23 (0.42)	0.19 (0.39)	0.19 (0.39)	0.20 (0.40)	0.21 (0.41)	0.17 (0.37)	0.36 (0.48)	0.35 (0.48)
Born in South-America	0.02 (0.13)	0.02 (0.14)	0.02 (0.12)	0.03 (0.17)	0.01 (0.12)	0.02 (0.15)	0.02 (0.15)	0.02 (0.15)
Born in Magreb	0.01 (0.08)	0.00 (0.04)	0.01 (0.10)	0.00 (0.07)	0.01 (0.08)	0.00 (0.04)	0.01 (0.12)	0.00 (0.00)
Born in Asia	0.01 (0.08)	0.01 (0.09)	0.01 (0.07)	0.01 (0.10)	0.00 (0.07)	0.01 (0.09)	0.01 (0.12)	0.01 (0.09)
Born in the European Union	0.01 (0.10)	0.01 (0.12)	0.02 (0.14)	0.02 (0.15)	0.01 (0.11)	0.02 (0.13)	0.01 (0.10)	0.01 (0.09)
<i>Objective health status</i>								
Number of chronic diseases	1.11 (1.60)	1.82 (2.07)	1.60 (2.18)	2.59 (2.55)	0.98 (1.43)	1.58 (1.81)	3.03 (2.59)	4.17 (2.86)
Having experienced an accident	0.14 (0.35)	0.11 (0.31)	0.15 (0.36)	0.19 (0.39)	0.15 (0.35)	0.11 (0.31)	0.16 (0.36)	0.17 (0.37)
Body Mass Index	25.41 (3.50)	23.04 (3.88)	25.34 (3.65)	23.01 (3.65)	25.32 (3.44)	22.75 (3.62)	26.35 (4.09)	25.24 (4.73)
<i>Lifestyle conditions</i>								
Doing physical activity	0.44 (0.50)	0.35 (0.48)	0.46 (0.50)	0.39 (0.49)	0.44 (0.50)	0.35 (0.48)	0.49 (0.50)	0.45 (0.50)
Doing sport	0.41 (0.49)	0.26 (0.44)	0.33 (0.47)	0.22 (0.41)	0.42 (0.49)	0.27 (0.44)	0.22 (0.41)	0.13 (0.34)
Smoking regularly	0.44 (0.50)	0.38 (0.49)	0.49 (0.50)	0.41 (0.49)	0.45 (0.50)	0.38 (0.49)	0.45 (0.50)	0.36 (0.48)
Heavy drinkers	0.23 (0.42)	0.08 (0.27)	0.27 (0.44)	0.07 (0.26)	0.23 (0.42)	0.07 (0.26)	0.32 (0.47)	0.09 (0.28)
Drug consumers	0.17 (0.37)	0.11 (0.31)	0.25 (0.44)	0.17 (0.37)	0.17 (0.38)	0.12 (0.32)	0.16 (0.36)	0.10 (0.30)
<i>Job occupational levels</i>								
Managers	0.10 (0.30)	0.06 (0.24)	0.06 (0.23)	0.05 (0.21)	0.10 (0.30)	0.06 (0.24)	0.09 (0.29)	0.04 (0.20)
Technical staff	0.22 (0.41)	0.23 (0.42)	0.20 (0.40)	0.14 (0.35)	0.22 (0.42)	0.23 (0.42)	0.10 (0.30)	0.14 (0.35)
Technical support	0.14 (0.35)	0.11 (0.31)	0.14 (0.35)	0.11 (0.32)	0.15 (0.35)	0.12 (0.32)	0.10 (0.30)	0.04 (0.20)
Administrative	0.13 (0.34)	0.28 (0.45)	0.14 (0.35)	0.26 (0.44)	0.13 (0.34)	0.29 (0.45)	0.12 (0.33)	0.22 (0.41)
Services employees	0.09 (0.29)	0.17 (0.38)	0.09 (0.29)	0.17 (0.38)	0.09 (0.28)	0.17 (0.37)	0.15 (0.36)	0.22 (0.41)
Industrial employees	0.15 (0.35)	0.03 (0.17)	0.11 (0.32)	0.01 (0.12)	0.14 (0.34)	0.03 (0.16)	0.20 (0.40)	0.04 (0.19)
Operators	0.12 (0.32)	0.02 (0.14)	0.16 (0.37)	0.02 (0.15)	0.12 (0.32)	0.02 (0.14)	0.14 (0.35)	0.03 (0.16)

Non-qualified operators	0.05 (0.23)	0.10 (0.29)	0.09 (0.28)	0.23 (0.42)	0.05 (0.23)	0.09 (0.29)	0.09 (0.29)	0.28 (0.45)
<i>Working conditions</i>								
Number of working hours	42.58 (9.91)	36.98 (10.13)	42.76 (12.23)	36.20 (11.37)	42.53 (10.01)	37.14 (10.14)	42.82 (11.05)	34.92 (11.23)
Commuting (minutes to arrive job)	34.40 (24.72)	34.52 (24.85)	38.79 (26.40)	39.67 (27.81)	34.84 (24.87)	34.88 (24.85)	34.09 (25.02)	36.16 (27.65)
Short term contract	0.14 (0.34)	0.20 (0.40)	0.22 (0.42)	0.32 (0.47)	0.14 (0.35)	0.21 (0.41)	0.15 (0.36)	0.23 (0.42)
Likely to lose their job	0.11 (0.31)	0.13 (0.34)	0.30 (0.46)	0.38 (0.49)	0.12 (0.32)	0.16 (0.36)	0.18 (0.38)	0.20 (0.40)
Having experienced an accident in job place	0.05 (0.21)	0.03 (0.16)	0.07 (0.26)	0.06 (0.24)	0.05 (0.21)	0.03 (0.16)	0.08 (0.27)	0.06 (0.23)
Working in Agricultural sector	0.00 (0.04)	0.00 (0.02)	0.00 (0.00)	0.00 (0.00)	0.00 (0.04)	0.00 (0.02)	0.00 (0.00)	0.00 (0.00)
Working in Manufacturing sectors	0.25 (0.43)	0.14 (0.35)	0.26 (0.44)	0.13 (0.34)	0.25 (0.43)	0.14 (0.35)	0.25 (0.44)	0.11 (0.32)
Splitting working day	0.56 (0.50)	0.50 (0.50)	0.61 (0.49)	0.37 (0.48)	0.56 (0.50)	0.50 (0.50)	0.53 (0.50)	0.37 (0.48)
Continuous working day: morning	0.21 (0.40)	0.28 (0.45)	0.19 (0.39)	0.31 (0.46)	0.21 (0.41)	0.28 (0.45)	0.19 (0.39)	0.32 (0.47)
Continuous working day: afternoon	0.03 (0.18)	0.05 (0.22)	0.03 (0.16)	0.11 (0.32)	0.03 (0.17)	0.06 (0.23)	0.06 (0.24)	0.09 (0.29)
Continuous working day: night	0.02 (0.15)	0.02 (0.13)	0.02 (0.12)	0.02 (0.14)	0.02 (0.14)	0.01 (0.12)	0.04 (0.19)	0.04 (0.19)
Shifts working day	0.04 (0.20)	0.04 (0.19)	0.07 (0.25)	0.03 (0.18)	0.04 (0.21)	0.04 (0.19)	0.05 (0.22)	0.03 (0.17)
Irregular working day	0.14 (0.35)	0.12 (0.32)	0.09 (0.29)	0.16 (0.37)	0.14 (0.34)	0.12 (0.32)	0.13 (0.34)	0.15 (0.35)
Sample size	2,074	1,617	194	212	2,088	1,616	204	226

Note: Standard deviations are reported into brackets.

Second and, compared to men, females report poorer health than men. The latter is in line with previous empirical evidence for the Catalan case. Likewise, women are on average less satisfied with their jobs although this may be a consequence of their worse job occupations. However, we should attempt to establish whether gender differences can be explained by job-related or individual characteristics. Sousa-Poza and Sousa-Poza (2000) demonstrated that the gender gap is a result of work-role inputs and outputs rather than subjective factors. Then, this may come as a consequence of the presence of many statistically significant differences in working conditions and education attainments. For this reason, we will consider job occupational levels as regressors. Note that, we can observe that those reporting a bad state of health are more likely to be in the lower occupational levels whereas job dissatisfaction does not show this pattern as clearly as self-assessed health. Notwithstanding, we observe that the lower job occupational levels display higher heterogeneity

than the rest of the categories which conditions the interpretation of above commented percentages.

Third, opposite percentages were found regards the relationship between educational attainment levels and both analysed satisfaction domains. Whilst, the positive relationship between the higher number of schooling years and better self-assessed health is rather clear, the latter does not apply for the job dissatisfaction percentages. Thus, income or non-monetary benefits of education are strongly relevant, as usual, when explaining health inequalities. However, job satisfaction is more dependent on individual references except to those having achieved a university degree. Then, someone attaining the highest educational level would be comparing his or her labour status with those people who can achieve the same labour market opportunities.

Fourth and finally, the average age for those reporting a bad state of health is significantly greater than those people indicating job dissatisfaction although higher heterogeneity is obtained for the second average. Again, health is obviously determined by biological features. On the contrary, job dissatisfaction would be determined by labour achievements, e.g. promotion in higher labour careers and, other factors rather than being explained by age.

4. The econometric approach

As mentioned above we will concentrate on examining the underpinning factors on reporting the worst satisfaction categories for both considered domains, i.e. labour dissatisfaction and reporting a bad degree of state of health. Thus, we conducted an analysis where both endogenous variables are dichotomous variables and where both indicators are self-reported measures. However, as has been already mentioned in the second section, job satisfaction and self-assessed health are jointly determined through personality traits and unobserved factors. As a consequence, we estimate both responses through a simultaneous equation as expressed in equation (1). This procedure is a simultaneous equations model that controls for the endogeneity of two related choices (Maddala, 1983) and at the same time allows for different covariates for each equation. Note that, as we mentioned before in the introductory section, job dissatisfaction influence on reporting bad health degree would be biased when using a standard causal procedure.

The true quality of both health and job satisfaction correspond to two latent variables that cannot be observed directly and which account

for individual preferences. As mentioned above, what we observe are two self-reported measures. Thus, $y_{1,i}^*$ is the latent variable for a negative self-assessed health whereas $y_{2,i}^*$ denotes individual job dissatisfaction. These latent measures are conditioned to $x_{1,i}$ and $x_{2,i}$ which are the k-vector of explanatory variables, respectively, β and δ are the k-vectors of unknown parameters and, finally, $\varepsilon_{1,i}$ and $\varepsilon_{2,i}$ represent the random error terms which are normally distributed. This can be easily estimated although it is necessary to correct the parameter standard errors as proposed by Maddala (1983, p.246).

$$\begin{aligned} y_{1,i}^* &= \gamma_1 y_{2,i}^* + x_{1,i}' \beta + \varepsilon_{1,i}; \text{ where } y_1 = \begin{cases} 1 & \text{if } y_{1,i}^* > 0 \\ 0 & \text{otherwise} \end{cases} \\ y_{2,i}^* &= \gamma_2 y_{1,i}^* + x_{2,i}' \delta + \varepsilon_{2,i}; \text{ where } y_2 = \begin{cases} 1 & \text{if } y_{2,i}^* > 0 \\ 0 & \text{otherwise} \end{cases} \end{aligned} \quad (1)$$

For the purpose of exploring simultaneous decisions in responding to a negative score either in self-assessed health status or job dissatisfaction, for those people residing in the city of Barcelona, we made use of a wide set of explanatory variables. Specifically, we introduced four measures so as to detect individual working conditions. First, we included two dichotomous variables: one for those with a fixed term contract and a second one denoting labour instability in their present job. Besides these dichotomous indicators we also included two continuous measures: the number of working hours in a week and commuting time (in minutes). Those reporting a higher number of hours would be evidence for commuting. We also introduced other individual measures of health status: the number of chronic diseases and a dummy indicating those having experienced an accident in the last twelve months. Our interest was to determine the effects of suffering diseases rather than obtaining the effect of a specific one. In doing so, when considering the covariates related to a bad health status we will obtain the net effect of the number of working hours because it is well known that those who reduce their working hours are more likely to report a lower degree of health, seemingly to the above mentioned healthy worker effect.

Among the remaining covariates we can distinguish between common covariates and specific ones for each domain for identification reasons. We make use of those variables which have been included by previous literature. Related to common exogenous determinants we use the usual determinants: (i) individual characteristics (the individual age for which we also assumed a non-linear relationship; the civil status; the individual Body Mass Index which is the ratio of individual weight, measured in kilograms, to squared height, measured in metres; the

individual nationality and; a few dummies, being the city of Barcelona our base category, denoting whether the individual was born in: the Barcelona province, the rest of the Catalan provinces, other Spanish regions, South America, Asia, Magreb or, in an OECD country); (ii) familiar features (the household size; a dummy indicating those living in a non fully-equipped house and; the district of residence in Barcelona city which denotes differences in household wealth or socioeconomic interactions based on neighbouring); (iii) individual educational level and the job occupational levels (managers, technical staff, technical support, administrative, services employees, industrial employees, operators and non-qualified employees). Finally, for identification, we introduced specific determinants of self-assessed health ($x_{1,i}$) such as lifestyle conditions (doing physical activity, smoking regularly, heavy drinkers and drug consumers) and for job dissatisfaction ($x_{2,i}$): industrial/services branch of activity, the kind of labour workday and having experienced an accident at place of work.

5. Empirical results

Table 2 outlines the results in this study. Our findings point to the statistically significant effects only in one direction between both self-assessed considered measures. Job dissatisfaction seems to be affecting reported self-assessed health status but reported health does not impact directly on the job satisfaction dimension. Notwithstanding, we might consider an indirect effect. It should be stressed that job dissatisfaction coefficient results underestimated when using a standard causal procedure (results are available upon request).

As was expected, commuting time and people who are likely to lose their job during the next year show negative effects on job satisfaction. We can conclude that indicating a longer commuting time and reporting negative job expectancy on the next year which are likely to be originated by worse working conditions have positive effects on job dissatisfaction. Note that these results hold significant once we account for job occupational levels, educational attainment levels and a few indicators which are closely related to household income (e.g. district residence and the dichotomous indicator of some kind of deprivation).

However, the only significant effect on reporting a bad health degree is detected by the number of working hours. In this regard, those people who work harder display a better health degree which is in concordance with previous literature findings (the above mentioned healthy worker effect).

Table 2. Simultaneous estimation: marginal effects

	Job dissatisfaction				Reporting bad health		
	All	Males	Females		All	Males	Females
Estimated bad health status	0.0110 (0.02)	0.0857 (0.04)b	-0.0170 (0.01)	Estimated job dissatisfaction	0.1006 (0.03)a	0.0268 (0.04)	0.1383 (0.04)a
<i>Individual features</i>			<i>Individual features</i>				
Gender	0.0076 (0.01)			Gender	-0.0019 (0.01)		
Age (in years)	-0.0004 (0.00)	-0.0003 (0.00)	-0.0003 (0.00)	Age (in years)	0.0018 (0.00)a	0.0020 (0.00)a	0.0013 (0.00)c
Single	-0.0104 (0.01)	0.0135 (0.02)	-0.0362 (0.02)b	Single	0.0037 (0.01)	0.0004 (0.01)	0.0077 (0.02)
Divorced	0.0017 (0.02)	0.0185 (0.04)	-0.0125 (0.03)	Divorced	-0.0136 (0.02)	-0.0176 (0.02)	-0.0123 (0.02)
Widowed	-0.0465 (0.03)	0.0534 (0.12)	-0.0741 (0.02)a	Widowed	-0.0201 (0.02)	0.0043 (0.07)	-0.0246 (0.03)
<i>Household features</i>			<i>Household features</i>				
Deprivation (not full-equipped houses)	-0.0035 (0.01)	-0.0141 (0.02)	0.0157 (0.02)	Deprivation (not full-equipped houses)	0.0299 (0.01)a	0.0225 (0.01)b	0.0392 (0.01)a
Household size	-0.0048 (0.00)	-0.0038 (0.01)	-0.0032 (0.01)	Household size	0.0056 (0.00)c	-0.0019 (0.00)	0.0139 (0.00)a
<i>Individual education (non-primary)</i>			<i>Individual education (non-primary)</i>				
Primary studies	-0.0442 (0.02)b	-0.0342 (0.02)	-0.0699 (0.02)a	Primary studies	-0.0089 (0.02)	0.0043 (0.02)	-0.0325 (0.02)
Secondary studies	-0.0200 (0.02)	-0.0167 (0.03)	-0.0272 (0.03)	Secondary studies	-0.0094 (0.02)	0.0035 (0.02)	-0.0318 (0.02)
Vocational studies	0.0057 (0.03)	-0.0062 (0.03)	0.0110 (0.04)	Vocational studies	-0.0222 (0.02)	-0.0163 (0.02)	-0.0347 (0.02)
University studies	0.0000 (0.03)	-0.0164 (0.03)	0.0178 (0.04)	University studies	-0.0301 (0.02)c	-0.0159 (0.02)	-0.0499 (0.03)c
<i>Geographical location (Ciutat Vella)</i>			<i>Geographical location (Ciutat Vella)</i>				
District2 (Eixample)	-0.0237 (0.02)	-0.0243 (0.02)	-0.0200 (0.03)	District2 (Eixample)	-0.0121 (0.01)	-0.0250 (0.01)c	0.0168 (0.03)
District3 (Sants-Montjuïc)	-0.0090 (0.02)	-0.0021 (0.03)	-0.0231 (0.03)	District3 (Sants-Montjuïc)	-0.0208 (0.01)	-0.0295 (0.01)a	-0.0045 (0.03)
District4 (Les Corts)	-0.0363 (0.02)b	-0.0244 (0.02)	-0.0448 (0.02)b	District4 (Les Corts)	-0.0173 (0.01)	-0.0249 (0.01)c	0.0043 (0.03)

District5 (Sarrià-Sant Gervasi)	-0.0214 (0.02)	-0.0292 (0.02)	-0.0098 (0.03)	District5 (Sarrià-Sant Gervasi)	-0.0285 (0.01)b	-0.0387 (0.01)a	-0.0073 (0.03)
District6 (Gràcia)	0.0032 (0.02)	0.0159 (0.03)	-0.0070 (0.03)	District6 (Gràcia)	-0.0209 (0.01)	-0.0179 (0.01)	-0.0189 (0.02)
District7 (Horta-Guinardó)	0.0046 (0.02)	0.0109 (0.03)	-0.0038 (0.03)	District7 (Horta-Guinardó)	-0.0057 (0.02)	-0.0092 (0.02)	0.0036 (0.03)
District8 (Nou Barris)	-0.0222 (0.02)	-0.0168 (0.02)	-0.0315 (0.02)	District8 (Nou Barris)	-0.0273 (0.01)b	-0.0219 (0.01)c	-0.0295 (0.02)
District9 (Sant Andreu)	-0.0428 (0.02)a	-0.0371 (0.02)b	-0.0472 (0.02)b	District9 (Sant Andreu)	-0.0135 (0.01)	-0.0158 (0.02)	-0.0021 (0.03)
District10 (Sant Martí-Poble Nou)	-0.0141 (0.02)	0.0025 (0.03)	-0.0388 (0.02)c	District10 (Sant Martí-Poble Nou)	-0.0312 (0.01)a	-0.0178 (0.01)	-0.0454 (0.02)a
<i>Born location (Barcelona city)</i>			<i>Born location (Barcelona city)</i>				
Born in Barcelona province	-0.0137 (0.02)	-0.0291 (0.02)	-0.0004 (0.04)	Born in Barcelona province	0.0011 (0.02)	0.0231 (0.03)	-0.0171 (0.02)
Catalan Born (not Barcelona province)	-0.0217 (0.02)	-0.0216 (0.03)	-0.0373 (0.03)	Catalan Born (not Barcelona province)	0.0099 (0.02)	0.0325 (0.04)	-0.0213 (0.02)
Born in Spain (outside Catalonia)	-0.0130 (0.01)	-0.0179 (0.01)	-0.0038 (0.02)	Born in Spain (outside Catalonia)	0.0157 (0.01)	-0.0011 (0.01)	0.0328 (0.02)c
Born in South-America	-0.0115 (0.03)	-0.0133 (0.05)	-0.0122 (0.04)	Born in South-America	-0.0203 (0.02)	0.0210 (0.04)	-0.0503 (0.02)a
Born in Magreb	-0.0182 (0.07)	-0.0021 (0.07)		Born in Magreb	0.0020 (0.05)	0.0122 (0.05)	
Born in Asia	-0.0262 (0.05)	-0.0340 (0.05)	-0.0601 (0.03)c	Born in Asia	0.0339 (0.06)	0.0509 (0.08)	-0.0092 (0.05)
Born in the European Union	0.0202 (0.04)	-0.0105 (0.04)	0.0266 (0.06)	Born in the European Union	-0.0520 (0.01)a	-0.0026 (0.04)	-0.0685 (0.01)a
<i>Objective health status</i>			<i>Objective health status</i>				
Number of chronic diseases	0.0101 (0.00)a	0.0067 (0.00)c	0.0116 (0.00)a	Number of chronic diseases	0.0255 (0.00)a	0.0211 (0.00)a	0.0295 (0.00)a
Having experienced an accident	0.0122 (0.02)	-0.0215 (0.02)	0.0630 (0.03)c	Having experienced an accident	0.0068 (0.01)	-0.0076 (0.01)	0.0195 (0.02)

Body Mass Index	-0.0011 (0.00)	0.0004 (0.00)	-0.0044 (0.00)b	Body Mass Index	0.0022 (0.00)b	0.0007 (0.00)	0.0038 (0.00)b
<i>Job occupations (non-qualified)</i>				<i>Lifestyle conditions</i>			
Managers	-0.0525 (0.01)a	-0.0310 (0.02)	-0.0700 (0.02)a	Doing physical activity	0.0037 (0.01)	-0.0017 (0.01)	0.0071 (0.01)
Technical staff	-0.0632 (0.02)a	-0.0118 (0.03)	-0.1161 (0.02)a	Doing sport	-0.0250 (0.01)a	-0.0210 (0.01)b	-0.0239 (0.01)c
Technical support	-0.0473 (0.01)a	-0.0197 (0.02)	-0.0724 (0.02)a	Smoking regularly	-0.0052 (0.01)	-0.0158 (0.01)c	0.0100 (0.01)
Administrative	-0.0436 (0.02)a	-0.0058 (0.03)	-0.0859 (0.02)a	Heavy drinkers	0.0123 (0.01)	0.0176 (0.01)	0.0093 (0.02)
Services employees	-0.0480 (0.01)a	-0.0098 (0.03)	-0.0822 (0.01)a	Drug consumers	0.0062 (0.01)	0.0090 (0.01)	-0.0075 (0.02)
Industrial employees	-0.0648 (0.01)a	-0.0409 (0.02)b	-0.0844 (0.01)a	<i>Job occupations (non-qualified)</i>			
Operators	-0.0288 (0.02)	0.0016 (0.03)	-0.0462 (0.03)	Managers	-0.0185 (0.02)	0.0102 (0.03)	-0.0387 (0.02)b
Branch of activity (services sectors)				Technical staff	-0.0250 (0.01)c	-0.0138 (0.02)	-0.0288 (0.02)
Working in industrial branch of activity	0.0049 (0.01)	0.0028 (0.01)	0.0143 (0.02)	Technical support	-0.0441 (0.01)a	-0.0186 (0.02)	-0.0616 (0.01)a
<i>Kind of labour journey (splitting)</i>				Administrative	-0.0154 (0.01)	0.0051 (0.02)	-0.0306 (0.02)
Continuous journey (e.g. 8 to 15 pm)	-0.0013 (0.01)	-0.0148 (0.01)	0.0178 (0.02)	Services employees	0.0010 (0.02)	0.0607 (0.04)c	-0.0321 (0.02)b
Continuous journey (e.g. 13 to 21 pm)	0.0460 (0.03)c	-0.0450 (0.02)a	0.1585 (0.05)a	Industrial employees	-0.0162 (0.01)	0.0151 (0.02)	-0.0400 (0.02)b
Continuous journey (night)	-0.0257 (0.03)	-0.0357 (0.02)	0.0036 (0.06)	Operators	-0.0255 (0.01)b	-0.0058 (0.02)	-0.0174 (0.03)
Shifts	0.0346 (0.03)	0.0314 (0.03)	0.0290 (0.05)	<i>Working conditions</i>			
Irregular journey	0.0043 (0.02)	-0.0380 (0.01)a	0.0821 (0.03)b	Number of working hours	-0.0013 (0.00)a	-0.0009 (0.00)b	-0.0017 (0.00)a
<i>Working conditions</i>				Short term contract	0.0110 (0.01)	0.0252 (0.02)	0.0043 (0.02)
Number of working hours	0.0004 (0.00)	0.0001 (0.00)	0.0011 (0.00)	Likely to lose their job	0.0038 (0.01)	0.0261 (0.02)	-0.0216 (0.02)

Commuting (minutes to arrive job)	0.0004 (0.00)b	0.0003 (0.00)	0.0006 (0.00)b	Commuting (minutes to arrive job)	0.0000 (0.00)	-0.0001 (0.00)	0.0000 (0.00)
Short term contract	0.0034 (0.01)	0.0016 (0.02)	-0.0033 (0.02)				
Likely to lose their job	0.1419 (0.02)a	0.1072 (0.03)a	0.1850 (0.03)a				
Having experienced an accident in job place	0.0388 (0.03)	0.0784 (0.05)	0.0001 (0.04)				
Number of observations	3,469	1,895	1,573	Number of observations	3,469	1,895	1,573
Wald χ^2	203.87 (0.00)	96.83 (0.00)	167.29 (0.00)	Wald χ^2	416.12 (0.00)	197.94 (0.00)	285.05 (0.00)
Pseudo R ²	0.0898	0.0823	0.1463	Pseudo R ²	0.2236	0.2199	0.2692

Note: superscripts a, b, c denote significance at 1%, 5% and 10%. t statistics are reported into brackets.

Therefore, we should conclude that working conditions, obviously, affect job satisfaction but they do not play a statistically significant direct effect on health status. Nevertheless, we have to point out that being dissatisfied with the job, which is conditioned by personality characteristics (the same applies for self-assessed health status), would be associated to poorer health status. This association appears to be very plausible due to endogeneity between both domains of satisfaction. Hence, our indicators for working conditions would have an indirect effect through job satisfaction on self-assessed health status. For instance, pessimism aroused as a consequence of labour conditions would cause, maybe, a health shock contrary to our findings related to working conditions.

Next, and regarding occupational job levels, we found statistically significant effects on labour dissatisfaction and, although to a minor degree with the health status category. This highlights the presence of a socio-economic gradient in the way state of health is distributed in the population when taking job occupational level as the variable of social stratification once we control through educational levels. Note that occupational levels are closely related to individual earnings. This result corroborates previous literature empirical evidence for the Catalan case. Likewise, we found educational attainment poorly related either to health status or job dissatisfaction. However, and corroborating our thinking,

these variables were statistically significant when omitting job occupational levels which would be enclosing this effect. In addition, immigrants do not report poorer health status than those born in Barcelona city. Again, these differences would be collected through the job occupational categories.

Likewise, the measures for health status, i.e. the number of chronic disease and the self-reported BMI, are two of the most relevant factors. This result corroborates our expectations about the effects of diseases on several domains of satisfaction (Van Praag and Ferrer-i-Carbonell, 2004). In fact, diseases have consequences on satisfaction that could be estimated equivalent to income changes (Ferrer-i-Carbonell and Van Praag, 2002).

Gender, which deserves special attention, does not appear as statistically significant. In this regard, we corroborate Sousa-Poza and Sousa-Poza's (2000) findings. These authors, as was previously commented, state that the gender gap in job satisfaction disappears once we account for work-role inputs (our job occupational levels would be a proxy for this). However, in our opinion, the latter is true throughout our empirical results but perhaps would be hiding the existence of a gender gap when we disentangle job dissatisfaction into specific dimensions. In this regard and, only focusing on the better positioned women, higher educated women have been shown to report a lower job satisfaction specifically for job promotion than men although expectations became closer (Mora and Ferrer-i-Carbonell, 2007).

At this juncture, we finally considered dissimilar responses by gender. Thus, although the gender coefficient was statistically insignificant in table 2, we decided to corroborate this by means of separate regressions. In our opinion, the latter is specifically relevant for the job satisfaction domain. A different behaviour by gender in responding satisfaction domains throughout the questionnaire would be a consequence of the argument that women are more orientated towards the intrinsic aspects of their jobs, such as feelings of self-determination and personal development, rather than to the extrinsic job characteristics, such as financial rewards (see Kim, 2005). In the region of study, women face worse employment conditions than in northern EU countries corroborated by the considerably lower activity rate for Spanish women than men. In 2006, (16-64) participation rate of women in Catalonia was 53%; while rate of activity for men was 72% (Spanish female rate was even lower 48.6%). These numbers contrast with countries such as Sweden and Denmark where female activity rates are over 70% and also with the Lisboa target of 70% by 2010.

Our new results indicate that there arise differences in our conclusions once we disentangle the sample by gender. Hence, the non

significance of gender variable in the previous regressions would be hiding some factors accounting for the specific feelings for each gender. The later relies on the fact that covariates display different effects after estimating separately based on gender. This is particularly relevant for the incidence of either working conditions or job characteristics since women permanently suffer discrimination. Indeed, the incidence of job dissatisfaction on being more likely to report a bad health degree only holds for females. Additionally, self-assessing a bad health status affects job satisfaction only for males although this relationship was previously non-statistically significant different to zero (the same applies for women equation). Moreover, we find dissimilar coefficients for the a few covariates which would be a signal that men and women report in a different way, especially for job occupation categories and individual demographic features. Note that 6 out of 7 job occupational categories turn out to be statistically significant for women results whilst in the case of men estimation results only one is determinant. That is, working conditions and steeper career profile are more relevant when analysing women answers to job dissatisfaction than men counterparts. Additionally, we should take into account that, as abovementioned, we only address to those participating in the labour market (we do not treat the healthy worker effect and we are introducing sample selection, especially in the case of women).

Furthermore, other covariates effects are worthy of mention. Main lifestyle indicators (smoking, drinking or consuming drugs) are non significant determinants of health status although these results suggest that individuals, as usual, may underreport bad habits. Notwithstanding, we found negative and significant association between poor health and doing physical activity. Since these concrete parameters come out of this paper's scope we avoided solving bias as a consequence of underreporting. Finally, the individual age variable –we also tested for non-linearity in ageing– is also statistically significant for the bad state of health equation. Hence, as expected, ageing implies a lower state of health.

6. Conclusions

It is argued there are important benefits derived from good working conditions (Siegrist, 1996 and Faragher et al., 2005). This has proven to be important for job satisfaction domain since key labour variables explored are strongly associated, just as was expected. Our results find a statistically significant effect on self-assessed health status

once we account for measures of individual health besides those well known effects of ageing and social inequalities which are included by means of job occupational levels and educational attainments.

Notwithstanding, in our opinion, the most relevant finding is that our analysed satisfaction domains are subject to personality traits or individual past experiences. Thus, the individual behaviour (being pessimistic or optimistic) also conditions the responses either for experiencing labour dissatisfaction or reporting a bad state of health. Hence, both domains of satisfaction should be estimated simultaneously. In this regard, previous literature has not included a simultaneous procedure. The latter would produce biased estimations for the effects of measures for working conditions on self-assessed health status. Note that, we can not infer in a broad sense, since our evidence is strictly related to a specific Spanish labour market. Notwithstanding and, contrary to previous empirical evidence, when estimating simultaneously, we have obtained non significant effects from working conditions on health when we have considered simultaneity. Furthermore, specific consequences arise when we disentangle the sample by gender probably due to men and women reporting satisfaction domains and self-assessed health in a different way.

However, we can assure that job satisfaction presents association with health status since both domains are simultaneously determined. Hence, working conditions would have an indirect effect through job satisfaction on self-assessed state of health. This finding is of interest to policy-makers. It points to some avoidable inequalities in health that should be addressed with the implementation of adequate policies. Thus, the improvement of working conditions would be considered as priority policies in this respect. It is important to address the causes of inequalities in health before they can lead to severe problems. Indeed, the later is especially relevant for disadvantaged social groups (poor, ethnic minorities, women) that systematically experience greater health risks than more advantaged social groups. Additionally, this becomes an opportunity to cut down health care expenditures which should rely on the responsibility of diverse government levels since the administration of social issues has been gradually transferred to the regional governments.

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