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ABSTRACT

Self-Reported Health and Gender: The Role of Social Norms*

We investigate the role of social norms in accounting for differences in self-reported health as reported by men and women. Using the European Working Conditions Survey (EWCS, 2010), we first replicate the standard result that women report worse health than men, whatever the health outcome we consider – i.e. general self-assessed health but also more specific symptoms such as skin problems, backache, muscular pain in upper and lower limbs, headache and eyestrain, stomach ache, respiratory difficulties, depression and anxiety, fatigue and insomnia. We then proxy social norms by the gender structure of the workplace environment and study how the latter affects self-reported health for men and women separately. Our findings indicate that individuals in workplaces where women are a majority tend to report worse health than individuals employed in male-dominated work environments, be they men or women. These results are robust to controlling for a large array of working condition indicators, which allows us to rule out that the poorer health status reported by individuals working in female-dominated environments could be due to worse job quality. We interpret this evidence as suggesting that social norms associated with specific gender environments play an important role in explaining differences in health-reporting behaviours across gender, at least in the workplace.

JEL Classification: I12, I19, J16

Keywords: health, gender, social norms, job quality

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1. Introduction

The literature on health and gender has long evidenced a striking paradox: women consistently report worse self-rated health than men while their probability of dying is lower than men's throughout their life – see Lahelma et al. (1999) and Cambois et al. (2011).

A first explanation of this paradox relies on "true" health differences: women would suffer more than men from chronic diseases generating serious limitations in their activity. Case and Paxson (2005) indeed show that gender differences in self-rated health can be entirely explained by the distribution of chronic conditions. However, the authors also find that men with some specific health conditions are more likely to be hospitalised and die. The reason they consider most plausible to account for this specific pattern is that the symptoms that individuals experience convey little information about the severity of their disease.

Another – potentially complementary – explanation for the gender gap in self-reported health has to do with sex differences in health-reporting behaviour: for given health conditions, women would report worse health status than men do. Health-reporting biases have long been studied in the literature. They have been shown to be potentially large and to vary according to a number of dimensions, including education (Bago d'Uva et al, 2011; Schneider et al, 2012), income (Etilé and Milcent, 2006; Johnston et al, 2009; Schneider et al, 2012), age (Bago d'Uva et al, 2008; Lindeboom and van Doorslaer, 2004) and gender (Bago d'Uva et al, 2008; Lindeboom and van Doorslaer, 2004). Another strand of the literature focuses specifically on the health-reporting behaviour of women as compared to men's and the debate is still open as to whether women tend to over-report minor health problems as compared to men and, if so, why – see the special issues of Social Science & Medicine, 36(1), 1993 and 48(1), 1999.

A new way to shed light on this issue is to consider whether differences in health-reporting behaviours across genders may be influenced by social norms. The role of social norms has been considered in the health literature mostly in relation with body weight. Christakis and Fowler (2007) provide evidence that weight gains tend to spread through a population via social networks. The extent to which this result can be interpreted as a causal effect of peers' weight on own weight or is, alternatively, due to endogenous peer-group formation has been much discussed since then – see Cohen-Cole and Fletcher (2008), Fowler and Christakis (2008), Halliday and Kwak (2009). Complementary evidence shows that individuals are sensitive to peers' weight: the probability for them to feel overweight or dissatisfied with their weight increases with their relative BMI – computed as the ratio of own BMI to average BMI in the reference group, the latter being defined with reference to age, gender and possibly geographic localisation (see Blanchflower et al, 2009). Similarly, life satisfaction appears to decrease with relative BMI. Etilé (2007) goes one step further and shows that social norms play a key role in the determination of ideal body weight, in particular for women. Social norms are captured by the average of ideal BMI in the reference group, where the ideal BMI is computed using the weight individuals report as the one they would like to "reach or keep". The results show that the elasticity of women's ideal BMI to the norm is as high as 0.5. In contrast, men do not seem to be sensitive to social norms. Similarly, Gil and Mora (2011) show that women tend to underestimate their weight and that the gap between measured and self-reported weight is affected by social norms: it increases when the ideal weight decreases in the reference group.

Beyond body weight preferences, the literature has not much analysed the potential impact of social norms on other health outcomes. Raspe et al (2007) mention that "social influences" may be one of the explanations for the convergence in prevalence rates of self-reported back pain in Western and Eastern Germany after reunification. The prevalence rate was 10

percentage points higher in Western than in Eastern Germany as of 1991, while the gap had virtually gone down to zero in 2003, because of a sharp increase in reported back pain in the Eastern part of the country over the period. One of the reasons mentioned by the authors to account for this increase is the fact that "back myths and misconceptions about back pain being pervasive in Western societies were immediately disseminated in East Germany". Unfortunately, the authors cannot test this assumption with the data they have. Powdthavee (2009) considers the impact of social norms within the household on potential health-reporting biases. He shows that the specific health problems individuals suffer from have a negative impact on their self-assessed health, but that this impact is significantly lower for individuals living in households where the number of health problems per other family member is high. This result suggests that self-assessed health is potentially biased owing to the "confounding health norm effects", although the bias turns out to be economically very small. One issue raised by Powdthavee has to do with the definition of the reference group. His paper innovates in considering the household as the reference group but he underlines that other people in close proximity, such as friends, colleagues or people in the same region could also be relevant.

In this paper, we investigate the importance of social norms in the working environment in accounting for differences in self-reported health across men and women. Using the European Working Conditions Survey (EWCS, 2010), we first replicate the standard result that women report worse health than men, whatever the health outcome we consider – except hearing problems and cardiovascular diseases. We then proxy social norms by the gender structure of the workplace environment and study how the latter affects self-reported health for men and women separately. Our findings indicate that individuals in workplaces where women are a majority tend to report worse health than individuals employed in male-dominated work environments, be they men or women. These results are robust to controlling for a large array

of working-condition indicators, which allows us to rule out that the poorer health status reported by individuals working in female-dominated environments could be due to worse job quality. We interpret this evidence as suggesting that social norms associated with specific gender environments play an important role in explaining differences in health-reporting behaviours across gender, at least in the workplace.

2. Health, Gender and Social Norms

We refer to social norms as defined by Akerlof and Kranton (2000) in terms of "prescriptions", i.e. "shared expectations about how the group members ought ideally to behave". In their model, prescriptions affect identity so that social norms enter in the individual's utility function. A number of authors consider that individuals' utility depends on the dominant social norm within their group – see Brock and Durlauf (2001) and Blanchflower et al. (2009), for example. As a matter of fact, there is evidence that perceptions of social norms influence health behaviours in terms on alcohol consumption, tobacco use, dietary habits etc. – Malahlik et al. (2007). In such a framework we may expect individuals to be more inclined to report poor self-assessed health and/or more health symptoms when belonging to a group in which doing so is more legitimate because it is a commonly-held norm. As underlined by Manski (1993), proper identification of a social-norm effect requires that the group to which individuals are assigned be adequately defined. In what follows, the social group we consider is the group of work colleagues with similar job titles as the individual. We hypothesise that when discussing or even mentioning health problems is considered more legitimate in the reference professional group, individuals will tend to report such problems more easily when asked about their health.

Our assumption here is that health-reporting norms differ across genders in general, and in the workplace in particular. There is evidence in the literature that women tend to report higher morbidity rates than men, which is in contrast with their longevity advantage. The existence of such a gender-morbidity gap has been highly debated since the 1980s – see Hunt and Annandale (1999). Marshall and Funch (1986) study sex differences in the lag between first recognition of symptoms and definitive diagnosis and treatment for colorectal cancer. Report of pre-diagnostic symptoms and ratings of severity of symptoms did not differ significantly between men and women. Similarly, Macintyre (1993) studies a group of British volunteers who have been inoculated with a cold virus or an inert substance in hospital. The severity of their colds was evaluated both by the respondents themselves and by a clinical observer with double-blind ratings. The results suggest that women were not more likely than men to assess themselves as having a cold. Men were significantly more likely than women to over-rate their cold symptoms as compared to the observer's ratings. Another example is Arber and Cooper (1999) who consider men and women over 60 with similar levels of disability and find that men rather than women are more likely to assess their health as being poor, after accounting for structural factors.

In contrast, a large strand of literature does find greater reported morbidity among women. Hibbard and Pope (1983) use US data covering adults, most of whom are husband and wife pairs. The sample under study is restricted to respondents who rated their health as good or excellent. The authors find that women report more symptoms than men do. Similar results are found by Verbrugge (1989) on the *Health in Detroit* survey: women show higher morbidity on almost all health indicators with an especially large gap for circulation and nervous conditions over the past twelve months. Popay et al. (1993) also find that women report more affective disorders and minor physical morbidity than men in a survey covering individuals aged 18 and above in England, Wales and Scotland (the Health and Lifestyles

Survey). Using the UK Whitehall II survey of London-based Civil Servants, Emslie et al (2002) find that women report greater psychiatric morbidity, especially when employed in higher positions. This is confirmed by Zunzunegui et al. (2009) on data collected in San Paolo, Santiago and Mexico: women showed poorer health outcomes than men for all health indicators in all cities.

This gender gap in health reporting has been found to be partly due to different health attitudes across genders. According to Kessler et al (1981), women are more likely to interpret symptoms associated with depression and low well-being as signs of emotional problems and hence to get psychiatric help. This suggests that women perceive symptoms in a different way as compared to men, so that they also seek more medical care. Hibbard and Pope (1983) find that women also report higher interest and concern about health than men do. This is confirmed by Verbrugge (1989) who finds that health matters are more salient among women, that they value health more than men do and that they have more responsibility in caring for ill family members. Such findings are consistent with the idea that women pay more attention to health than men do. Hibbard and Pope (1986) also find evidence that the largest gaps in health symptoms reported by women as compared to men are found for those categories which represent milder morbidities and those where there is a great degree of discretion in defining illness and/or the need for care. This brings the authors to the conclusion that sex differences reflect differences in the way in which men and women come to define themselves as "ill". More recent evidence goes in the same direction. Emslie et al (1999) study gender differences in physical symptoms, malaise symptoms (i.e. difficulties sleeping, nerves, always feeling tired, difficulties concentrating and worrying over every little thing) and GHQ-12 psychiatric morbidity. They investigate the impact on those symptoms of gender-role orientation as captured by the Bem Sex Role Inventory. This index is based on individuals' evaluation of themselves through a series of adjectives and characteristics which

are considered as culturally characteristic of either males or females – see Bem (1981). Emslie et al (1999) find that gender-role orientation plays an important role: the masculinity score is associated both with fewer reported malaise symptoms and better psychiatric health while the femininity score is associated with more malaise symptoms. All these findings suggest that health matters may be more important to women than to men and that admitting illnesses and discussing symptoms may be socially more acceptable for women.

In what follows, we test whether gender differences in health reporting can be partly ascribed to different social norms across men and women, as showing up in the workplace. In the literature, social norms are usually captured by the average corresponding characteristic – for example the average ideal weight in the obesity literature – in the reference group – see Etilé (2007) and Gil and Mora (2011). In our framework, the reference group is work colleagues. Following the standard methodology, social norms should be proxied by the average gender-specific health reporting behaviour in that group. Given that the European Working Conditions Survey that we use does not contain such direct information, we proxy gender-specific health-reporting norms by the gender composition of the group. We therefore hypothesise that reporting health symptoms and/or poor general health will be considered more legitimate in female-dominated work environments than in male-dominated environments. In the rest of the paper, we test this assumption by estimating whether women (resp. men) report worse self-assessed health and/or more health problems when working in female than in male-dominated environments.

3. The econometric model

As a first step, we estimate the effect of gender on self-reported health either by probit (for all health outcomes that are binary) or by ordered probit (for general self-assessed health which is rated from 1 to 5). The probit specification is the following:

$$Health^{*}_{ijs} = \alpha + \beta Female_{ijs} + X_{ijs}\gamma + D_j + D_s + u_{ijs} \quad (1)$$

where $Health^{*}_{ijs}$ denotes the latent health status of individual *i* in country *j* and industry *s*:

$$\begin{cases} Health_{ijs} = 1 \text{ if } Health^{*}_{ijs} > 0 \\ Health_{ijs} = 0 \text{ otherwise} \end{cases}$$

$Female_{ijs}$ is an indicator of gender, X_{ijs} is a vector of individual and establishment-level controls including age, education, occupation, marital status, the number of children, establishment size and individual's tenure in the plant. D_s and D_j denote industry and country dummies respectively.

Once established that women systematically report poorer self-rated health than men, we investigate the potential role of social norms in explaining this pattern of results. To do so, we estimate the impact of the gender structure of individuals' work environment on the health outcomes that they report, for men and women separately. More specifically, for each gender group, we estimate the following probit model:

$$Health^{*}_{ijs} = \alpha + X_{ijs}\gamma + \delta_1 Male\_Env_{ijs} + \delta_2 Female\_Env_{ijs} + D_j + D_s + v_{ijs} \quad (2)$$

where $Male\_Env$ (respectively $Female\_Env$) is an indicator of a male (resp. female) dominated work environment – i.e. of an environment in which males (resp. females) are a majority. In this specification the reference is a mixed-gender environment. We interpret the marginal effects on the $Male\_Env$ and $Female\_Env$ variables as capturing the impact of gender-related social norms in the work environment and systematically test the significance of the difference between $\hat{\delta}_1$ and $\hat{\delta}_2$. These parameters indeed indicate how a work environment respectively dominated by males or females may affect self-reported health for men and women, all other things equal.

One problem when estimating equation (2) arises if male-dominated work environments are systematically of better (or worse) quality than female-dominated environments. In this case, our estimates suffer from an omitted-variable bias and we may attribute to social pressure health-reporting behaviours that are, in fact, due to differences in job quality. In order to overcome this problem, we take advantage of the very rich information on job quality available in our data – see Section 4 – and estimate a more complete specification in which we control for 13 indices of job quality covering a uniquely large range of job characteristics and working conditions:

$$Health^{*}_{ijs} = \alpha + X_{ijs}\gamma + \delta_1 Male\_Env_{ijs} + \delta_2 Female\_Env_{ijs} + JobQual_{ijs}\vartheta + D_j + D_s + \epsilon_{ijs} \quad (3)$$

where $JobQual_{ijs}$ is a vector of job-quality indicators. Assuming that the latter properly control for systematic differences in the quality of work across male and female-dominated work environments, we can validly interpret $\hat{\delta}_1$ and $\hat{\delta}_2$ as capturing the "true" effect of gender-related social pressure in the work environment on self-reported health outcomes.

We choose to estimate equations (2) and (3) separately for men and women rather than interacting male and female-dominated work environments with gender. We do so because this specification allows the impact of the job quality and control variables to differ across gender, which would not be the case in a general model with interactions. This is potentially important for a number of job-quality indicators. In particular, the impact of work-family balance, emotional stress, work harassment or painful physical working conditions, for example, may be different across gender.

4. Data

The European Working Conditions Survey

The data we use come from the fifth wave of the European Working Conditions Survey (EWCS). This survey has been commissioned by the European Foundation for the Improvement of Living and Working Conditions and carried out in 2010. It is the first wave having information on the gender composition of the working environment. Face-to-face interviews were conducted with persons in employment in the 28 member states as well as in Norway, Macedonia, Turkey, Albania, Kosovo and Montenegro. The dataset contains detailed information on individual working conditions, earnings, work-life balance, hours worked and work organisation. It also covers several aspects of health as well as demographic and socio-economic characteristics. Using international data to investigate the impact of the work environment on self-reported health may raise concerns, both because health perceptions may vary across country, and because labour market participation – particularly of women – differs substantially from one country to the other. We deal with this issue by including a full set of country dummies in our analysis. These capture all country-specific factors, including health-reporting and labour market behaviours, thereby ensuring that our results are not driven by systematic cross-country differences in individual perceptions or labour-market decisions. In addition, we check that our results are robust to removing countries one-by-one from the sample, in order to make sure that our findings are not driven by one specific country.

Given that the focus of our analysis is on the health impact of social norms as measured in the work environment, we consider only salaried individuals. We exclude employees for which we do not have information on the sector in which they are employed and those working in agriculture, mining and fuel production because of scarce data reliability. Overall, the sectors included in our study correspond to sectors 15 to 95 in the Nomenclature of Economic

Activities in the European Union (NACE Rev. 1 classification). Only individuals aged 65 and below are included in our study. Our final sample consists of 30,124 individuals from 30 countries.

Variables

Individual health is measured using several self-reported variables. The first one is general self-assessed health which is captured by the following question: "How is your health in general? Would you say it is … Very good, Good, Fair, Bad, Very bad" with very bad being rated 1 and very good, 5. There is evidence in the literature that self-rated health is a good indicator of individual overall health (Ferrie et al., 1995). It has been found to be a good predictor of mortality even after controlling for more objective measures of health (Idler and Kasl, 1991; Idler and Benyamini, 1997; Bath, 2003). However, the probability of reporting good or bad health may suffer from individual reporting heterogeneity (Etilé and Milcent, 2006; Tubeuf et al., 2008). So, we also use more precise measures of health capturing specific diseases or symptoms. In the EWCS database, respondents are asked whether they have suffered over the last 12 months from either hearing problems, backache, skin problems, muscular pain in shoulders, neck and/or upper limbs, muscular pain in lower limbs, headache or eyestrain, stomach ache, respiratory difficulties, cardiovascular diseases, depression or anxiety, overall fatigue, or insomnia. For each of these health disorders, we build a corresponding dummy variable taking value 1 if the individual suffered from it, 0 otherwise.

Our baseline specification includes individual and plant characteristics. More specifically, we control for age (8 classes), education (higher education, secondary education and below secondary), occupation (managers, professionals, technicians and supervisors, skilled and unskilled white collars and skilled and unskilled blue collars), marital status (presence of a

spouse or partner), the number of children (entered as a continuous variable), establishment size (5 classes), individual's tenure in the plant, industry and country dummies.

The gender structure of the work environment is assessed using the answer to the following question: "At your place of work are workers with the same job title as you mostly men, mostly women, more or less equal numbers of men and women?". We capture a male environment with a dummy variable equal to 1 if the individual answers "Mostly men" (0 otherwise) and a female environment with a dummy variable equal to 1 if she answers "Mostly women" (0 otherwise). Answers indicating "More or less equal numbers of men and women" are considered as capturing a mixed-gender environment. Note that these variables capture gender-related social pressure arising from interactions with the closest colleagues, insofar as they regard individuals with the same job title.

Our complete specification includes indicators of job quality. As recommended by the literature on job quality – see Green et al. (2013) and OECD (2013), for example –, we consider several dimensions of it: job quality is measured on the basis of 47 raw indicators that we aggregate into 13 variables in most specifications. Most variables are indices taking values 0 to 10 and are the normalised sum of a specific number of raw indicators. The first index captures *painful physical working conditions* such as working at high or low temperature, being exposed to vibrations from tools or machinery, loud noise, smokes or fumes, vapours, painful positions, handling or being in direct contact with chemical products or materials that can be infectious, lifting or moving people, carrying heavy loads, standing and performing repetitive movements. Other dimensions of job quality include: *work pressure* (working more than 48 hours a week, not having enough time to get the job done, working at high speed or to tight deadlines and commuting more than one hour a day), *work harassment* (being the object of verbal abuse, threats or bullying), *emotional stress* (carrying out tasks that are in conflict with one's personal values, having to hide one's feelings, handling angry

clients), *decision latitude* (ability to choose the order of tasks, the methods and speed of work, ability to make a break when one wishes and to apply one's own ideas in one's work), *learning opportunities* (benefiting from on-the-job training and/or employer-paid or provided training, having the opportunity of learning new things and solving unforeseen problems), *task clarity* (knowing what is expected from one's work, getting feedback from one's supervisor about one's work and having a supervisor who is good at planning the work), *managerial support* (getting help from one's supervisor, having a supervisor who respects you, who is good at resolving conflicts and who encourages you to participate in important decisions), *support from colleagues* (getting help from colleagues, feeling "at home" in the organisation, having good friends at work). Eventually, our job quality controls also include *job insecurity* (perceived risk of losing one's job in the next six months, ranging from 1 to 5), monthly *earnings* (grouped into quintiles), *employability* (ability to find a new job easily if one should lose the current one, ranging from 1 to 5) and *work-family balance* (how well working hours fit with family and social commitments, ranging from 0 to 3).

Some robustness checks are also conducted including additional controls: a dummy variable for working part-time versus full-time, individual satisfaction with working conditions (ranging from 1 to 4) and psychological well-being (ranging from 0 to 4).

Descriptive statistics

Descriptive statistics are provided in Appendix Tables A1-A2 and A4-A6. In our sample, women are slightly older than men, a smaller proportion of them live in couple and they have marginally more children – see Appendix Table A1. They are also more educated and tend to be more often in professional and white-collar occupations whereas men are more concentrated in managerial and blue-collar occupations. Women also, work in smaller establishments and have lower tenure than men on average.

When considering health variables, women appear to report poorer health in general but they also report more specific health symptoms, except for hearing problems – see Appendix Table A2. As regards job quality, women seem to benefit from a better work environment in terms of physical working conditions, support from managers and colleagues and work-family balance, as well as reduced work pressure and job insecurity. In contrast, they suffer more than men from work harassment and emotional stress and report lower decision latitude, learning opportunities and employability. They work part-time more often than men do, have almost identical satisfaction with working conditions but report lower psychological well-being.

The largest proportion of respondents in our sample comes from Belgium, France and Germany – see Appendix Table A4 – while the smallest group are the Greeks. As regards male and female-dominated environments, they turn out to be highly polarised – see Figure 1: men represent 87% of employees in the former while women represent 89% in the latter. In contrast, mixed-gender environments are clearly balanced with 56% of women and 44% of men. Overall, manufacturing industries represent 23.2% of male-dominated environments, as compared to 16.2% for the construction sector, 9.4% for transports and 8.6% for the public administration/defense sector – see Appendix Table A5. In contrast, female environments are highly concentrated in health and social work (22.6% of these environments), education (18.5%) and retail trade (14.7%). Female-dominated environments also tend to be more educated than male-dominated ones. They are highly concentrated in professional and unskilled white-collar occupations whereas male-dominated environments are concentrated in blue-collar occupations. As evidenced in Figures 2 and 3, women report slightly poorer self-assessed health and more specific health symptoms when employed in female-dominated work environments. This is not the case for men who appear to report worse health when employed in male-dominated environments, at least when we consider only the raw data.

Eventually male-dominated environments appear to be characterised by poorer job quality as regards physical working conditions, work pressure, job insecurity and work-family balance in particular – see Appendix Table A6. In contrast, female-dominated environments turn out to be disadvantaged in terms of work harassment and emotional stress. Regarding the other dimensions of job quality, there is no systematic pattern across work environments, since some job-quality indicators are higher in female-dominated environments while others are higher in male-dominated environments.

5. Results

The gender gap in self-reported health

We first estimate the impact of gender on self-reported health controlling for a series of individual and establishment-level characteristics – see equation (1). The results presented in Table 1 suggest that women systematically report poorer health than men. They report lower self-assessed health and declare suffering from specific health symptoms more frequently than men do. This is the case for all the health outcomes we consider (skin problems, backache, muscular pain in upper and lower limbs, headache and eyestrain, stomach ache, respiratory difficulties, depression and anxiety, fatigue and insomnia) and the difference with men is always significant at the 1% level. The only exceptions are hearing problems which women report less frequently than men do and cardiovascular diseases for which there is no significant difference across gender.

When estimating all health outcomes, we control for several individual characteristics. The marginal effects on these control variables are shown for one specific health outcome – namely self-assessed health – in Appendix Table A3. As expected, age turns out to have a negative impact on health; individuals with higher levels of education are in better health as are employees in more highly-skilled occupations. Conditional on these variables, neither the

individual's marital status, nor the number of children nor tenure appear to have any significant effect on health. In contrast, working in a small establishment (less than 10 employees) seems to be positively correlated with health.

When considering the results in Table 1, it may be interesting to notice that women systematically report a lower health status than men for all outcomes that can be, to some extent, self-diagnosed – except hearing problems: worse self-assessed health, more health "problems" (related to skin or respiration), more pain (backache, muscular pain, headache, stomach ache) and more mental health problems (depression and anxiety, fatigue and insomnia). In contrast, there is no difference between men and women for cardiovascular diseases, which is arguably the health problem most likely to have been diagnosed by a physician. This suggests that, beyond differences in actual health across genders, there may also be differences in reporting with women being systematically more pessimistic about their health than men are. In what follows, we investigate the potential role of social norms in the work environment in shaping health-reporting differences across genders.

Social norms and gender differences in self-reported health

We capture social norms in the work environment by the gender structure of this environment. More specifically, we estimate equation (2) separately for women and men and interpret the impact of working in a male or female-dominated environment as a proxy of the role of social norms in that environment.

When considering the sample of women, we find important differences in health-reporting behaviours across types of work environments: women working in female-dominated environments report more frequently specific health symptoms than women working in mixed-gender environments, whereas this is not the case for women working in male-dominated environments – see Table 2 – cols (1) and (2). More specifically, women working

in environments where women are a majority report significantly more hearing problems, skin problems, backache, muscular pain both in upper and lower limbs as well as cardiovascular diseases, and the difference with women employed in male-dominated environments is statistically significant – see Table 2 – col (3). We also find that women working in female-dominated environments report poorer self-assessed health, more headaches and eyestrain, more respiratory difficulties as well as more depression and anxiety, overall fatigue and insomnia than women employed in mixed-gender environments, but the difference with women working in male-dominated environments is not statistically significant at conventional levels. This pattern of results is found, to a lower extent, for men too. Men working in female and in male-dominated environments both report more health problems than men employed in mixed gender environments – e.g. backache and muscular pain in upper and lower limbs ; see Table 2 – cols (4) and (5). But interestingly, men employed in female-dominated environments report significantly more health symptoms than men employed in male-dominated environments. This is the case for skin problems, headaches and eyestrain, cardiovascular diseases, depression and anxiety and insomnia – see Table 2 – col (6).

Overall, women appear to report more health problems when employed in female-dominated than in male-dominated work environments, and the same holds for men. One explanation for this pattern of results is that health-reporting behaviours are affected by social norms. In environments where women are a majority, it would be "legitimate" to mention health problems, so that both men and women would report more of them when asked in a survey, whereas, in environments in which men are a majority, this would not be the case. Of course, a competing explanation would be that work is more harmful to health in female-dominated than in male-dominated work environments so that all individuals – whatever their gender – tend to report poorer health in the former than in the latter.

We test this hypothesis by re-estimating equation (2) controlling for a large array of job quality indicators – see equation (3). The specification presented in Table 3 includes 13 aggregate indices of job quality covering aspects as varied as painful physical working conditions, work harassment, decision latitude, learning opportunities, task clarity, managerial support and support from colleagues, work pressure, emotional stress, employability, job insecurity, work-family balance and earnings. As evidenced in Table 3, our results are robust to the inclusion of these additional controls. Women working in male-dominated environments do not report worse health status than women working in mixed-gender environments – see col (1). In contrast, women working in environments where females are a majority report more skin problems, backache, muscular pain both in upper and lower limbs and greater overall fatigue – see col (2). The difference with women working in male-dominated environments is significant for all these health outcomes as well as for self-assessed health and cardiovascular diseases which are respectively worse and more frequent in female than in male-dominated work environments – see col (3). The pattern of results obtained for men goes in the same direction: men working in male-dominated environments report, if anything, fewer health symptoms than men working in mixed-gender environments: this is the case for cardiovascular diseases and depression and anxiety – see col (4). In contrast, men working in female-dominated environments report more health symptoms, in particular skin problems, backache and muscular pain in upper limbs – see col (5). As regards the direct comparison between male and female-dominated environments, it turns out that men working in environments where females are a majority report significantly more skin problems, muscular pain in upper limbs, headaches and eyestrain, cardiovascular diseases and depression and anxiety than men working in male-dominated environments.

Another way to investigate the impact of gender-specific work environments on self-reported health with our data is to consider the total number of health problems reported by

individuals. Using it as a dependent variable, we estimate a negative binomial model and find consistent results with those presented in Table 3: women employed in female-dominated environments report a higher number of health problems than women employed in male dominated environments. The same holds for men and the difference between the marginal effects associated with both types of work environments is always significant at the 1% level.

Robustness checks

A key methodological issue here is whether we have properly controlled for job quality in our estimations. If this is not the case our results could indeed still be due to the fact that working conditions are more adverse in female-dominated than in male-dominated environments. In order to make sure that we do properly control for job quality, we run several robustness checks which are only summarised here due to space limitation. The first one consists in controlling for the 47 raw job quality indicators that we have in our data instead of the 13 aggregate indices used in Table 3. Thus doing, we allow for a much more flexible model of job quality to the extent that each single indicator may have a different health impact. Our results are robust to the inclusion of this very extensive set of controls: both women and men still report more health symptoms when employed in female than in male-dominated work environments.

One could be concerned that our measures of job quality do not include part-time work. This is standard in the literature since in a number of countries working part-time is essentially voluntary, hence results from positive choices made by individuals. But part-time work may, in some circumstances, be involuntary in which case it is legitimate to consider it as an additional indicator of (poor) job quality. When re-estimating equation (3) including job quality as an additional regressor, our results are unchanged with respect to Table 3.

Another concern could arise from the way we capture work-family balance. Our indicator is based on a question on how well working hours fit with family or social commitments. But the impact of own working hours on individuals' health may vary with the intensity of work of the partner. Our data do not have information on partners' working hours, but we can control for whether he/she is working full-time, part-time or is inactive (on leave from work or full-time homemaker). We interact our work-family balance variable with this indicator in order to capture the health impact of potential work-hour interactions within the family. When doing so, our results are unchanged: both women and men still report more health symptoms when employed in female-dominated than in male-dominated work environments.

A final test consists in controlling for individuals' satisfaction with working conditions. The underlying assumption is that any dimension of poor job quality that would not be captured by our indicators but would be of importance to workers should materialise into lower satisfaction with working conditions. When re-estimating equation (3) controlling for this variable, our results are unchanged with respect to those reported in Table 3. This suggests that our extensive set of controls does properly capture the main dimensions of job quality.

To the extent that we use international data, one concern could be that our findings are driven by one specific country. In order to make sure that this is not the case, we re-run our estimates in Table 3 removing countries one-by-one from our sample. Our results are robust to this test: the significance of the difference between the marginal effects associated with male and female-dominated work environments is unchanged for almost all health outcomes, whatever the country we remove. The least robust of our outcomes is overall fatigue for which the difference across male and female-dominated work environments is not significant anymore for women when removing either Belgium, Latvia, Malta or Norway. All other outcomes are essentially unaffected.

A last issue raised by our methodology is that, since we do not have panel data, we cannot control for individual fixed effects. This may be a problem all the more that our health outcomes are self-reported. If some individuals tend to be more pessimistic than others, this may lead them to report poorer health for a given "true" health status. Note that this will bias our estimates in Table 3 only if pessimistic (resp. optimistic) individuals tend to concentrate in a disproportionate way in work environments in which either males or females are a majority. By definition, we cannot control for unobserved individual characteristics. However, our data allow us to build an indicator of psychological well-being. To the extent that pessimistic individuals will tend to report lower psychological well-being than others, controlling for this variable should allow us to make sure that our results are not driven by unobserved heterogeneity in individual psychology. When re-estimating equation (3) with psychological well-being as an additional regressor, our results are unchanged with respect to Table 3, which suggests that unobserved individual characteristics do not generate a major bias in our results.

Our results in Table 3 and the robustness tests that we have conducted suggest that the differences in self-reported health observed across male and female-dominated work environments cannot be entirely ascribed to differences in job quality. At least part of them is due to social norms, which make it more legitimate to discuss and hence report health problems in female than in male-dominated environments.

6. Discussion and Conclusion

This study analyses the role of social norms associated with specific gender environments in the workplace in accounting for differences in health-reporting behaviours across men and women. As a first step, we provide evidence that women report poorer health than men on all health outcomes except hearing problems and cardiovascular diseases. This contributes to the

literature showing significant differences in reported morbidity across genders. This difference is still a puzzle and one possible explanation is that health-reporting behaviour varies across genders. Results by Spiers et al. (2003) go in this direction since they find that self-rated health is less strongly associated with mortality for women than for men and that this is unlikely to be explained by differences in the nature of their physical health problems.

In the second part of this study, we investigate to what extent the difference in self-reported health between men and women may be partly ascribed to gender-based social norms as they materialise in the work environment. We capture social norms by the gender composition of the work environment and show that men and women employed in workplaces where women are a majority tend to report worse health than individuals employed in male-dominated work environments. We interpret our results are suggesting that reporting health symptoms is more legitimate in female than in male-dominated work environments.

Our results contrast with Case and Paxson's (2005) who conclude that health-reporting behaviours do not differ across genders based on the observation that men and women with the same chronic conditions report the same self-rated health. However, most of the chronic conditions they consider are also self-reported and may hence be subject to some form of bias (Bago d'Uva et al, 2008; Johnston et al, 2009). Some of them have most likely been diagnosed by a doctor. This is the case of the various types of cancers (skin, stomach, reproductive, respiratory) or of cardiovascular diseases, emphysema or diabetes. However, other chronic conditions may be reported in a different way by men and women. This is the case for headaches, other pain, arthritis, lung problems, vision problems or depression. For the latter, the fact that they be correlated in the same way with general self-assessed health does not prevent men and women from having different reporting behaviours since women may over-report both poor self-assessed health and chronic conditions.

A limitation of our study lies in the fact that we do not directly measure gender-specific health-reporting social norms. The strategy we adopt is to proxy them by the gender composition of the work environment. A key advantage of the EWCS data is that it contains a wealth of information on job quality which allows us to rule out that female-dominated work environments could be of poorer quality which would account for worse reported health. However, one of its drawbacks is the lack of information – beyond its gender composition – on the characteristics of the work environment. More generally, information on the characteristics of individuals' work environment is usually scarce in available survey data. Collecting such information is however a necessity to allow researchers to investigate the role of social norms in shaping health and, more generally, social attitudes as well as interpersonal relationships in the workplace.

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Figures

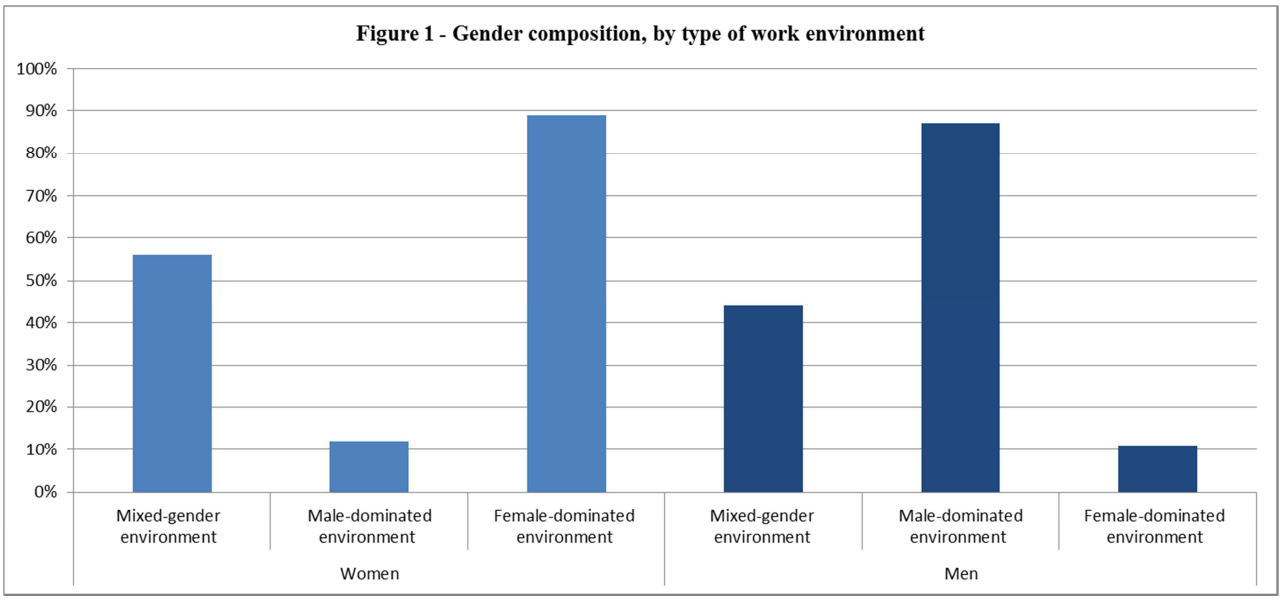


Figure 1 - Gender composition, by type of work environment
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Mixed-gender environment
Male-dominated environment
Female-dominated environment
Mixed-gender environment
Male-dominated environment
Female-dominated environment
Women
Men

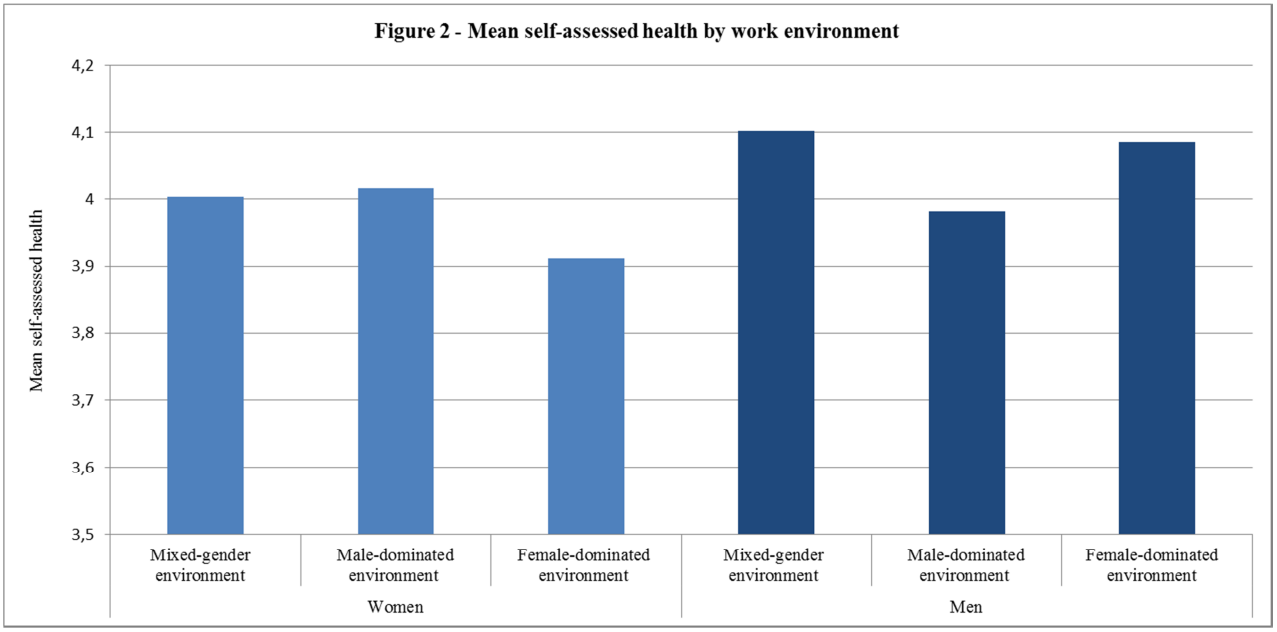
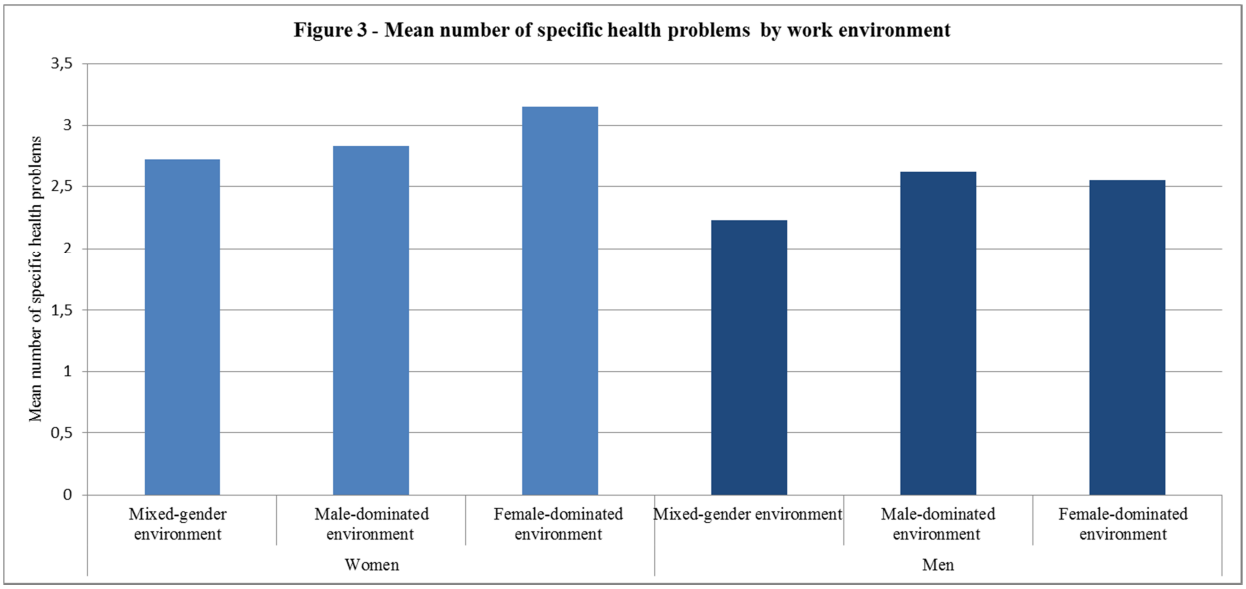


Figure 2 - Mean self-assessed health by work environment
Mean self-assessed health
4,2
4,1
4
3,9
3,8
3,7
3,6
3,5
Mixed-gender environment
Male-dominated environment
Female-dominated environment
Mixed-gender environment
Male-dominated environment
Female-dominated environment
Women
Men

Figure 3 - Mean number of specific health problems by work environment



Tables

Table 1 - Marginal Effects of being a woman

Health outcomes	Marginal Effects	Standard errors
Self-assessed health	-0.042***	(0.006)
Hearing problems	-0.015***	(0.004)
Skin problems	0.034***	(0.005)
Backache	0.077***	(0.009)
Muscular pain in upper limbs	0.112***	(0.008)
Muscular pain in lower limbs	0.048***	(0.008)
Headache/eyestrain	0.136***	(0.008)
Stomach ache	0.028***	(0.006)
Respiratory difficulties	0.018***	(0.004)
Cardiovascular diseases	-0.002	(0.004)
Depression and anxiety	0.031***	(0.006)
Overall fatigue	0.083***	(0.008)
Insomnia	0.050***	(0.007)
Observations	17 103	

Notes: (1) Control variables include: age, education, occupation, marital status, number of children, establishment size, tenure, industry and country dummies. (2) All estimates are obtained by simple probits except for self-assessed health for which they are obtained by ordered probit. (3) Robust standard errors are in parentheses ***: significant at the 1% level, **: significant at the 5% level, *: significant at the 10% level.

Table 2 – Marginal effects of male and female-dominated work environments

	Subsample: Women			Subsample: Men		
Health outcomes	Male-dominated Environment (*ref. mixed-gender environment*)	Female-dominated Environment (*ref. mixed-gender environment*)	Significance of the difference across marginal effects in (1) and (2)	Male-dominated Environment (*ref. mixed-gender environment*)	Female-dominated Environment (*ref. mixed-gender environment*)	Significance of the difference across marginal effects in (4) and (5)
	(1)	(2)	(3)	(4)	(5)	(6)
Self-assessed health	-0.000 (0.010)	-0.016*** (0.006)	ns	-0.013* (0.007)	-0.008 (0.012)	ns
Hearing problems	-0.002 (0.007)	0.010** (0.004)	*	0.003 (0.006)	-0.002 (0.010)	ns
Skin problems	0.000 (0.010)	0.024*** (0.006)	**	0.008 (0.006)	0.031*** (0.008)	***
Backache	0.020 (0.015)	0.050*** (0.010)	**	0.042*** (0.010)	0.043** (0.017)	ns
Muscular pain in upper limbs	0.013 (0.015)	0.053*** (0.010)	***	0.040*** (0.010)	0.054*** (0.017)	ns
Muscular pain in lower limbs	-0.004 (0.015)	0.048*** (0.010)	***	0.033*** (0.010)	0.028* (0.016)	ns
Headache / eyestrain	-0.000 (0.015)	0.020** (0.009)	ns	-0.017* (0.010)	0.014 (0.016)	**
Stomach ache	0.008 (0.011)	0.003 (0.007)	ns	0.008 (0.007)	0.017 (0.011)	ns
Respiratory difficulties	-0.000 (0.008)	0.010** (0.005)	ns	0.003 (0.005)	0.006 (0.008)	ns
Cardiovascular diseases	-0.005 (0.008)	0.009** (0.004)	*	-0.007 (0.004)	0.010 (0.007)	**
Depression and anxiety	0.007 (0.011)	0.013** (0.006)	ns	-0.002 (0.006)	0.023** (0.009)	***
Overall fatigue	0.012 (0.015)	0.031*** (0.010)	ns	0.016 (0.010)	0.028* (0.016)	ns
Insomnia	0.011 (0.013)	0.014* (0.010)	ns	0.007 (0.008)	0.028** (0.013)	*

Notes: (1) Control variables include: age, education, occupation, marital status, number of children, establishment size, tenure, industry and country dummies. (2) All estimates are obtained by simple probits except for self-assessed health for which they are obtained by ordered probits. (3) Robust standard errors are in parentheses ***: significant at the 1% level, **: significant at the 5% level, *: significant at the 10% level.

Table 3 – Marginal effects of male and female-dominated work environments – Controlling for job quality

	Subsample: Women			Subsample: Men		
Health outcomes	Male-dominated Environment (*ref. mixed-gender environment*)	Female-dominated Environment (*ref. mixed-gender environment*)	Significance of the difference across marginal effects in (1) and (2)	Male-dominated Environment (*ref. mixed-gender environment*)	Female-dominated Environment (*ref. mixed-gender environment*)	Significance of the difference across marginal effects in (4) and (5)
	(1)	(2)	(3)	(4)	(5)	(6)
Self-assessed health	0.014 (0.012)	-0.009 (0.007)	*	-0.001 (0.010)	-0.014 (0.015)	ns
Hearing problems	-0.002 (0.010)	0.010 (0.006)	ns	0.003 (0.007)	-0.002 (0.012)	ns
Skin problems	-0.009 (0.013)	0.021*** (0.008)	**	0.005 (0.007)	0.031*** (0.011)	**
Backache	0.000 (0.020)	0.038*** (0.012)	**	0.015 (0.013)	0.037* (0.021)	ns
Muscular pain in upper limbs	-0.006 (0.020)	0.033*** (0.011)	**	0.005 (0.013)	0.041** (0.021)	*
Muscular pain in lower limbs	-0.029 (0.018)	0.032*** (0.011)	***	0.011 (0.012)	0.023 (0.020)	ns
Headache / eyestrain	-0.004 (0.019)	0.004 (0.012)	ns	-0.040 (0.013)	0.017 (0.020)	***
Stomach ache	-0.001 (0.014)	0.009 (0.010)	ns	0.005 (0.009)	0.016 (0.013)	ns
Respiratory difficulties	-0.007 (0.011)	0.005 (0.006)	ns	-0.002 (0.007)	-0.001 (0.010)	ns
Cardiovascular diseases	-0.017 (0.011)	0.007 (0.006)	**	-0.017*** (0.005)	0.003 (0.008)	**
Depression and anxiety	-0.006 (0.013)	0.010 (0.008)	ns	-0.015** (0.007)	0.013 (0.011)	**
Overall fatigue	-0.012 (0.020)	0.022** (0.011)	*	0.009 (0.012)	0.021 (0.020)	ns
Insomnia	0.008 (0.016)	0.009 (0.010)	ns	-0.003 (0.010)	0.020 (0.016)	ns

Notes: (1) Control variables include: age, education, occupation, marital status, number of children, establishment size, tenure, industry, country dummies and 13 indicators of job quality. (2) All estimates are obtained by simple probits except for self-assessed health for which they are obtained by ordered probits. (3) Robust standard errors are in parentheses ***: significant at the 1% level, **: significant at the 5% level, *: significant at the 10% level.

Appendix Tables

Table A.1 – Descriptive statistics: individual and firm characteristics

Variables	Whole sample		Women		Men	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Age						
Between 15 and 24	0.082	(0.27)	0.076	(0.26)	0.089	(0.28)
Between 25 and 30	0.143	(0.35)	0.132	(0.34)	0.156	(0.36)
Between 31 and 35	0.125	(0.33)	0.123	(0.33)	0.126	(0.33)
Between 36 and 40	0.141	(0.35)	0.143	(0.35)	0.138	(0.34)
Between 41 and 45	0.136	(0.34)	0.140	(0.35)	0.132	(0.34)
Between 46 and 50	0.137	(0.34)	0.146	(0.35)	0.126	(0.33)
Between 51 and 55	0.118	(0.32)	0.124	(0.33)	0.112	(0.31)
Between 56 and 65	0.118	(0.32)	0.114	(0.32)	0.121	(0.33)
Couple	0.663	(0.47)	0.641	(0.48)	0.686	(0.46)
Number of children	0.900	(1.05)	0.963	(1.03)	0.859	(1.07)
Education						
Higher education	0.362	(0.48)	0.398	(0.49)	0.322	(0.47)
Secondary education	0.397	(0.49)	0.380	(0.49)	0.415	(0.49)
Below secondary	0.241	(0.43)	0.221	(0.41)	0.262	(0.44)
Occupation						
Managers	0.052	(0.22)	0.039	(0.19)	0.066	(0.25)
Professionals	0.017	(0.38)	0.207	(0.40)	0.130	(0.34)
Technicians/supervisors	0.155	(0.36)	0.167	(0.37)	0.142	(0.35)
Skilled white collars	0.108	(0.31)	0.138	(0.34)	0.075	(0.26)
Unskilled white collars	0.206	(0.40)	0.267	(0.44)	0.138	(0.34)
Skilled blue collars	0.123	(0.33)	0.035	(0.19)	0.219	(0.41)
Unskilled blue collars	0.185	(0.39)	0.145	(0.35)	0.229	(0.42)
Tenure						
Less than 1 year	0.091	(0.29)	0.091	(0.29)	0.091	(0.29)
1 to 5 years	0.377	(0.48)	0.383	(0.49)	0.371	(0.48)
5 to 10 years	0.194	(0.40)	0.202	(0.40)	0.186	(0.39)
More than 10 years	0.337	(0.47)	0.323	(0.47)	0.352	(0.48)
Establishment size						
Less than 10 employees	0.315	(0.46)	0.343	(0.47)	0.282	(0.45)
11 to 49 employees	0.334	(0.47)	0.333	(0.47)	0.334	(0.47)
50 to 99 employees	0.121	(0.33)	0.118	(0.32)	0.123	(0.33)
100 to 499 employees	0.152	(0.36)	0.137	(0.34)	0.167	(0.37)
More than 500 employees	0.079	(0.27)	0.068	(0.25)	0.091	(0.29)

Table A.2 – Descriptive statistics: Health variables and job quality indicators

Variables	Whole sample		Women		Men	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Health variables						
Self-assessed health						
Very good	0.25	(0.43)	0.23	(0.42)	0.27	(0.44)
Good	0.51	(0.50)	0.51	(0.50)	0.51	(0.50)
Fair	0.21	(0.41)	0.23	(0.42)	0.19	(0.40)
Bad	0.02	(0.15)	0.03	(0.16)	0.02	(0.14)
Very bad	0.002	(0.05)	0.002	(0.05)	0.003	(0.05)
Specific health problems (0/1)						
Hearing problems	0.06	(0.25)	0.05	(0.22)	0.08	(0.27)
Skin problems	0.09	(0.28)	0.10	(0.30)	0.07	(0.26)
Backache	0.46	(0.50)	0.48	(0.50)	0.44	(0.50)
Muscular pain in upper limbs	0.44	(0.50)	0.48	(0.50)	0.41	(0.49)
Muscular pain in lower limbs	0.32	(0.46)	0.32	(0.47)	0.31	(0.46)
Headache/eyestrain	0.41	(0.49)	0.48	(0.50)	0.34	(0.47)
Stomach ache	0.14	(0.34)	0.15	(0.36)	0.12	(0.32)
Respiratory difficulties	0.06	(0.25)	0.07	(0.25)	0.06	(0.24)
Cardiovascular diseases	0.06	(0.23)	0.06	(0.24)	0.05	(0.22)
Depression and anxiety	0.11	(0.32)	0.14	(0.34)	0.09	(0.29)
Overall fatigue	0.41	(0.49)	0.44	(0.50)	0.37	(0.48)
Insomnia/sleep difficulties	0.21	(0.40)	0.23	(0.42)	0.18	(0.38)
Number of specific health problems	2.76	(2.39)	2.99	(2.44)	2.51	(2.29)
Job quality						
Painful physical working conditions (indicator ranging from 1 to 10)	2.05	(1.58)	1.78	(1.36)	2.34	(1.75)
Work harassment (1 to 10)	0.75	(2.01)	0.79	(2.06)	0.70	(1.96)
Decision latitude (1 to 10)	5.83	(2.74)	5.79	(2.68)	5.88	(2.80)
Learning opportunities (1 to 10)	5.55	(3.05)	5.52	(3.09)	5.59	(2.99)
Task clarity (1 to 10)	8.70	(1.61)	8.73	(1.59)	8.68	(1.64)
Managerial support (1 to 10)	7.48	(2.38)	7.51	(2.40)	7.44	(2.36)
Support from colleagues (1 to 10)	7.19	(1.83)	7.21	(1.86)	7.17	(1.80)
Work pressure (1 to 10)	3.77	(2.36)	3.58	(2.37)	3.97	(2.33)
Emotional stress (1 to 10)	2.60	(2.01)	2.77	(2.02)	2.41	1.99
Employability (1 to 5)	2.67	(1.26)	2.66	(1.27)	2.69	(1.25)
Job insecurity (1 to 5)	2.31	(1.23)	2.29	(1.23)	2.33	(1.23)
Work-family balance (0 to 3)	2.09	(0.76)	2.13	(0.74)	2.04	(0.78)
Additional controls						
Part time job (0/1)	0.18	(0.39)	0.27	(0.44)	0.09	(0.28)
Satisfaction with working conditions (1 to 4)	3.03	(0.70)	3.02	(0.70)	3.00	(0.71)
Psychological well-being (0 to 4)	3.02	(1.33)	2.94	(1.36)	3.10	(1.28)

Table A.3 – Self-assessed health (ordered probit) – average marginal effects on all control variables

Dependent variable: Self-Assessed Health		
	Average marginal effect	Robust Standard errors
Women	-0.042***	(0.006)
Age classes (Ref. Between 15 and 24)		
Between 25 and 30	-0.059***	(0.012)
Between 31 and 35	-0.112***	(0.013)
Between 36 and 40	-0.148***	(0.013)
Between 41 and 45	-0.187***	(0.013)
Between 46 and 50	-0.218***	(0.013)
Between 51 and 55	-0.258***	(0.013)
Between 56 and 65	-0.294***	(0.013)
Education (Ref: Below secondary education)		
Higher education	0.064***	(0.009)
Secondary education	0.041***	(0.007)
Occupation (Ref. Unskilled blue collars)		
Managers	0.074***	(0.014)
Professionals	0.079***	(0.011)
Technicians/supervisors	0.084***	(0.010)
Skilled white collars	0.057***	(0.010)
Unskilled white collars	0.038***	(0.010)
Skilled blue collars	0.003***	(0.010)
Marital status (Ref. Does not live with a spouse nor a partner)	0.000	(0.006)
Lives with a spouse or partner	0.000	(0.003)
Number of children		
Tenure (Ref. Less than one year)	0.004	(0.010)
Between 1 and 5 years	0.013	(0.011)
Between 6 and 10 years	0.008	(0.011)
More than 10 years		
Establishment size (Ref. Less than 10 employees)	-0.021**	(0.006)
Between 10 and 49 employees	-0.044***	(0.009)
Between 50 and 99 employees	-0.012	(0.008)
Between 100 and 499 employees	-0.020*	(0.011)
More than 500 employees		-
Country dummies	yes	-
Industry dummies	yes	
Pseudo R-squared	0.074	-
Observations	17,103	-

Table A.4: Descriptive statistics – Countries, frequency (%)

Variables	Whole sample	Women	Men
Austria	2.62	2.79	2.44
Belgium	10.12	9.20	11.13
Bulgaria	2.56	2.77	2.32
Cyprus	2.51	2.34	2.70
Croatia	2.80	2.72	2.89
Czech Republic	2.28	2.77	2.04
Denmark	3.07	3.00	3.15
Estonia	2.59	3.27	1.83
Finland	2.88	3.23	2.49
France	8.17	8.84	7.43
Germany	5.95	5.50	6.44
Greece	2.07	1.77	2.41
Hungary	2.62	2.74	2.50
Ireland	2.60	2.61	2.59
Italy	3.38	3.46	3.29
Latvia	2.76	3.53	1.90
Lithuania	2.50	3.03	1.91
Luxembourg	2.62	2.29	2.98
Malta	2.71	2.10	3.38
Netherlands	2.60	2.48	2.73
Norway	2.98	3.08	2.88
Poland	3.28	3.48	3.06
Portugal	2.45	2.51	2.38
Romania	2.22	2.08	2.37
Slovenia	3.70	3.97	3.42
Slovakia	2.47	2.60	2.34
Spain	2.69	2.60	2.79
Sweden	2.68	2.93	2.40
Turkey	4.10	2.23	6.17
United Kingdom	4.02	4.34	3.68
Observations	30 124	15 787	14 337

Table A5 - Descriptive statistics: Characteristics of the various work environments, frequency (%)

Variables	Mixed-gender environment	Male-dominated environment	Female-dominated environment
Industry			
Food and beverages	2.73	2.99	2.40
Textiles, wearing apparel	1.07	0.93	3.11
Leather	0.33	0.24	0.45
Wood and wood products	0.50	1.37	0.20
Paper, printing and publishing	1.65	1.54	0.54
Refined petroleum and nuclear fuel	0.03	0.13	0.04
Chemicals and chemical products	1.04	1.19	0.55
Rubber and plastics	0.54	1.22	0.25
Non-metallic mineral products	0.41	1.07	0.20
Basic metals and fabricated metal	1.17	4.42	0.43
Machinery	0.76	2.28	0.29
Electrical and optical equipment	1.40	1.48	1.04
Transport equipment	0.72	2.34	0.44
Manufacturing, recycling	1.03	1.99	0.51
Electricity, gas and water supply	1.33	3.84	0.90
Construction	2.56	16.22	0.69
Motor trade and repair	1.34	4.56	0.42
Wholesale trade	3.16	3.46	1.39
Retail trade	11.83	6.53	14.65
Hotels and restaurants	6.78	3.28	4.68
Transport and storage	3.46	9.40	1.62
Post and telecommunications	2.11	2.22	1.02
Financial intermediation	4.49	2.06	2.81
Real estate activities	1.44	0.62	0.43
Renting and business activities	1.27	2.29	0.25
Research and development	6.95	5.35	5.56
Public administration and defense	9.34	8.63	6.75
Education	10.36	2.27	18.49
Health and social work	9.89	2.35	22.56
Social and personal services	7.03	3.45	6.42
Private households with employed persons	1.95	0.14	0.76
Extra-territorial organisations and bodies	0.31	0.15	0.15
Education			
Higher education	43.63	25.85	40.57
Secondary education	35.02	45.01	38.19
Below secondary	21.34	29.14	21.23
Occupation			
Managers	8.46	4.94	2.80
Professionals	19.10	8.77	23.61
Technicians/supervisors	18.02	13.28	15.83
Skilled white collars	14.86	7.17	11.18
Unskilled white collars	20.10	12.38	29.00
Skilled blue collars	4.91	27.36	3.52
Unskilled blue collars	14.55	26.09	14.05
	100	100	100

Table A6- Descriptive statistics: Average job quality (47 indicators) by work environment

Variables	Mixed-gender environment	Male-dominated environment	Female-dominated environment
Painful physical working conditions			
Being exposed to vibrations from tools or machinery (1 to 7)	1.54	2.70	1.49
Loud noise (1 to 7)	1.83	2.81	1.98
Working at high temperatures (1 to 7)	1.65	2.31	1.70
Working at low temperatures (1 to 7)	1.63	2.38	1.58
Smokes or fumes (1 to 7)	1.39	2.37	1.31
Vapours (1 to 7)	1.29	1.72	1.34
Handling or being in skin contact with chemical products or substances (1 to 7)	1.44	1.78	1.60
Handling or being in direct contact with materials that can be infectious (1 to 7)	1.40	1.46	1.74
Painful positions (1 to 7)	2.58	3.21	2.99
Lifting or moving people (1 to 7)	1.32	1.24	1.72
Carrying or moving heavy loads (1 to 7)	1.91	2.78	2.06
Standing (1 to 7)	3.79	4.35	4.35
Repetitive hand or arm movements (1 to 7)	3.72	4.10	4.00
Work pressure			
Working more than 48 hours a week (0 to 5)	0.14	0.19	0.08
Commuting more than one hour a day (0 to 5)	0.34	0.36	0.28
Not having enough time to get the job done (0 to 5)	2.05	2.09	2.08
Working at very high speed (0 to 5)	3.47	3.70	3.57
Working to tight deadlines (0 to 5)	3.59	3.93	3.43
Work harassment			
Verbal abuse (0/1)	0.11	0.11	0.13
Threats and humiliating behaviours (0/1)	0.05	0.05	0.07
Bullying (0/1)	0.05	0.04	0.05
Emotional stress			
Having to hide one's feelings (1 to 5)	2.67	2.43	2.83
Carrying out tasks that are in conflict with one's personal values (1 to 5)	1.75	1.70	1.71
Handling angry clients (1 to 7)	2.27	2.11	2.43
Job insecurity			
Perceived risk of losing one's job (1 to 5)	2.23	2.40	2.28
Decision latitude			
Ability to choose task order (0/1)	0.69	0.57	0.65
Ability to choose methods of work (0/1)	0.68	0.60	0.65
Ability to choose speed of work (0/1)	0.71	0.66	0.69
Ability to make a break when one wishes (1 to 5)	3.22	3.18	2.77
Ability to apply one's own ideas in one's work (1 to 5)	3.52	3.33	3.43
Learning opportunities			
Solving unforeseen problems (0/1)	0.80	0.82	0.78
Having the opportunity of learning new things (0/1)	0.68	0.70	0.80
Benefiting from on-the-job training (0/1)	0.35	0.35	0.39
Benefiting from employer-paid or provided training (0/1)	0.32	0.38	0.35

Task clarity			
Knowing what is expected from one's work (1 to 5)	4.58	4.57	4.64
Getting feedback from one's supervisor about one's work (0/1)	0.78	0.79	0.78
Having a supervisor who is good at planning work (0/1)	0.83	0.83	0.83
Managerial support			
Getting help from one's supervisor (1 to 5)	3.73	3.68	3.74
Having a supervisor who respects you (0/1)	0.94	0.95	0.82
Having a supervisor who is good at resolving conflicts (0/1)	0.82	0.82	0.81
Having a supervisor who encourages you to participate in important decisions (0/1)	0.69	0.64	0.65
Support from colleagues			
Getting help from colleagues (1 to 5)	3.93	4.00	4.05
Feeling "at home" in the organisation (1 to 5)	3.78	3.63	3.73
Having very good friends at work (1 to 5)	3.87	3.92	3.91
Employability			
Ability to find a new job easily (1 to 5)	2.65	2.65	2.68
Work-family balance			
How well working hours fit with family and social commitments (0 to 3)	2.13	2.00	2.13