

Gender Differences in Fairness Perception and Concern and the Wage Gap

Fernanda Mazzotta, Anna Papaccio and Lavinia Parisi

Abstract

This paper investigates on the mechanisms behind the gender wage gap in Europe considering three factors affecting the willingness of women (compared to men) to ask (or compete) for higher wages. In particular, we consider fairness concerns (FCs) based on egalitarian (FCE) and libertarian (FCL) ideals and the perception of fairness (FP) regarding jobs and education in the country. Moreover, to disentangle potential differences across countries and welfare regimes in Europe, we consider selected countries from the European Social Survey (ESS) 2018. Our results weakly confirm hypotheses about FP and FC. Fairness Concern based on both an egalitarian ideal (FCE) and the libertarian ideal (FCL) only partially explains the gender wage gap. The results differ across countries of different types.

Keywords: gender, wage disparities, fairness

JEL Classification: J70; J16; J31

1. Introduction

Starting from the consideration that women's fairness concern (FC) and women's fairness perception (FP) is often based on considerations shaped by social norms (Elster, 1989; Sunstein, 1996; Akerlof and Kranton, 2000, 2010), we analyse the relationship between the wage gender gap and the difference in fairness perception (FP) and fairness concern (FC) between men and women, in particular, to what extent these factors lie behind the gender wage gap, also considering cross-country differences.

It has been shown that women perceive their wages to be fair more often than men do (Pfeifer and Stephan, 2018). The main consequence is that women also have a lower subjective motivation to start negotiations (i.e., to ask for higher wages or start other activities) than men. Caliendo et al. (2017), for instance, show that a gender gap in reservation wages exists and that differences in reservation wages are due partly to differences in productivity and

partly to differing expectations. Regarding social norms, some analyses show that they may lead to different gender roles and identities for men and women concerning the labour market and the household (e.g. Akerlof and Kranton, 2000; Stuhlmacher and Linnabery, 2013; Bertrand, Kamenica and Pan, 2015; Blau and Kahn, 2017), which might influence the FP of individuals' own wages.

On the theoretical side, Marshall (1887, 1890) and Hicks (1963) argued for the relevance of FC in wage negotiations. Authors such as Slichter (1920), Akerlof (1982), and Rees (1993) stressed similar concerns. Various theories have been suggested for modelling this type of social preference (Rabin, 1993; Fehr and Schmidt, 1999; Bolton and Ockenfels, 2000; Dufwenberg and Kirchsteiger, 2004; Benjamin, 2005; Falk and Fischbacher, 2006). Although they differ in how they model the details of preferences for fairness and reciprocity, these theories share the important common feature that individuals with such preferences are willing to pay to reduce unfair outcomes or to punish unfair behaviours.

Our focus is twofold: we first aim to examine the mechanisms behind the gender wage gap considering different hypotheses on FC, FP and self-evaluation that can help us explain why women present lower wage expectations than men, as highlighted by the literature. Second, we aim to disentangle potential differences across countries in Europe.

In the first part of the analysis, we study the overall gender gap in the four countries analysed. Then, we concentrate on three factors that may affect the willingness of women (compared to men) to ask (or compete) for a higher wage. In particular, Fairness Concern (FC), can be based on an egalitarian ideal (FCE) or libertarian ideal (FCL), as shown in the next section (i.e., how much the individual cares about fair treatment). The third factor, the Fairness Perception (FP) in the country, is based on the perception of fair opportunities in education and job.

We make use of the European Social Survey (ESS) 2018, and we select some representative countries to disentangle differences across different welfare regimes, i.e., Spain (representing Southern countries), Germany (representing Continental countries), Sweden (representing Nordic countries) and the United Kingdom (representing Anglo-Saxon countries).

When we consider the whole sample of countries, our results indicate the following pattern: for the first two variables, the FC based on both FCE and FCL only partially explains the gender wage gap. However, we find great differences between countries; for instance, Spain strongly confirms our hypothesis on FCE (e.g., only less competitive women earn less than men, and this is true with respect to both men more and less competitive), while in Great Britain, women without FCL earn less than men with FCL. Regarding FP, gender gap

increases for women who perceive fewer opportunities and then make less effort to exploit them, especially when compared to men with FP in job opportunities. These results are confirmed in most countries, notably Sweden, but with the exception of Germany. Great Britain, strongly confirms our hypothesis on fairness perception in education, in fact, women with FP in education have lower gender gap than female with FP (with no difference compared to male with FP). In the next section, we briefly review the main literature on the subject. The data and sample selection are presented in Section 3. In Section 4, we describe the estimation strategy. Section 5 highlights the preliminary results. Section 6 draws some conclusions.

2. Theoretical and empirical background

Analyses of the concept of fairness in the economic and psychological literature have connected it to individuals' behaviour in very different ways depending on the interpretation of the concept itself. In this section, we try to clarify the concept, distinguishing FC from FP, and link it to the problem of the gender wage gap to finally formulate some interesting hypotheses.

The economic literature has paid special attention to the study of gender differences in pay expectations and wage gaps since gender inequality in salaries remains despite policies to reduce the gap. Scholars have generally focused on different aspects of the gender wage gap. A strand of the literature focuses on the well-known "paradox of the contented female worker"; that is, while women are generally shown to obtain lower wages than men, they still declare greater job satisfaction than men (Mueller and Wallace, 1996)¹.

Only a few scholars have based their analysis on the difference in fairness concerns and perceptions as a factor influencing the gender wage gap (Khoreva, 2011; Auspurg, Hinz and Sauer, 2017). For instance, Auspurg et al. (2017) test two approaches that explain wage gaps: same-gender referent theory and reward expectations theory²; they find evidence that

¹ Two kinds of explanations have been considered to explain the paradox: preferences and expectations. The first can be understood by considering that women's lower earnings may be counterbalanced with certain objective and subjective job characteristics that women may prefer (Groot and Maassen van den Brink, 1999; Sloane and Williams, 2000). The second argument, based on the evidence that women's wage expectation is lower than men's, has been subject to several analyses. Among them, scholars have focused on the relationship between salary expectation and actual wage differences. Generally, it has been shown that differences in self-pay expectation between men and women can explain the gender wage gap (Jackson, Gardner and Sullivan, 1992).

² The same-gender referent approach states that women compare their lower earnings primarily with those of other underpaid women; reward expectations theory argues that both men and women value gender as a status

supports reward expectations theory. Khoreva (2011) examines the factors that have an impact on the way individuals perceive the gender pay gap (i.e., pay expectations, gender role orientation, perceived pay fairness, gender, age, marital status and education) by adopting social comparison.

Regarding the concept of FC, it is important to make some crucial distinctions. In general, according to Cappelen et al. (2007), three fairness ideals are present in societies. *The strict egalitarian doctrine* argues that people should not at all be considered responsible for their effort and talent, concluding that equal sharing is the fair solution even in cases involving production. A second FC ideal is the so-called *libertarian ideal*, claiming that people should be held responsible for both their talent and their effort, which implies that the fair solution is to give each person what she produces. The third ideal, as an intermediate position, corresponds to *liberal egalitarians*, who consider effort to be controlled by individuals, while talent is beyond individual control. In this way, through redistributive policies, only differences deriving from talent should be equalized, not differences in effort (Konow, 1996). In the experimental literature, FC has been linked to distributional preferences. Distributional preferences have been used to describe a world where decision makers have a genuine concern for the (material) welfare of others in the sense that their well-being and behaviour depend not only on their own material payoff but also on the (material) payoffs of other agents. According to Balafoutasa, Kerschbamera and Suttera (2012 p. 126), “Inequality averse subjects who incur a disutility when other agents have either higher or lower payoffs (as in the model by Fehr and Schmidt, 1999) or when their payoff differs from the average payoff of other agents (as in Bolton and Ockenfels, 2000) might be less inclined to compete than spiteful types who enjoy increased well-being when others are worse off (as in Levine, 1998)”. For Fehr and Schmidt (1999), FC assumes the value of inequity aversion. Specifically, they assume that a player is altruistic towards other players if her material payoffs are below an equitable benchmark, but she feels envy when the material payoffs of the other players exceed this level. They introduce the concept of inequity aversion to include fairness in the model. According to them, an individual is inequity averse if he dislikes outcomes that are perceived as inequitable. The literature on FC described thus far highlights an important connection between the definition of fairness and the behaviour of individuals in the labour market, from which we can derive our first hypothesis: we expect that the wage gender gap increases if women have higher FCE since they might be less inclined to compete

variable that yields lower expectations about how much each gender should be paid for otherwise equal work (Auspurg, Hinz and Sauer, 2017).

for higher salaries (Groschen and Levine, 1998). On the other hand, if women have higher FCL, they compete more, and the gender wage gap decreases.

Regarding FP, Pfeifer and Stephan (2018) show that women are more likely than men to perceive their wages to be fair. As a consequence, women do not ask for higher wages or seek changes in employment, or they do so less often than men. With a survey of 112 male and 66 female employees, Jackson and Grabski (1988) find that perceptions of fair pay were influenced by the employee's gender such that lower pay compared with others' pay was perceived as fair for female employees.

However, FP, according to another strand of the literature, may be directly connected to the extent of inequality aversion, considering that people have preferences regarding inequality. Two broad types of individual attitudes towards the distribution of income in a society are considered: a normative evaluation and a comparative evaluation of inequality. The normative evaluation refers to the evaluation of income distribution in a society, while the comparative attitude is represented by a situation in which individuals care not only about how much income they receive but also about how much they receive compared to others (D'Ambrosio and Clark, 2015). Breza et al. (2018) by means of a field experiment with full-time Indian manufacturing workers, test whether relative pay comparisons affect effort and labour supply. They find that when workers are paid less than their peers, they reduce output, giving up substantial earnings. Other scholars have found similar results. For instance, Capelli and Sherer (1990), Pfeffer and Langton (1993), Clark and Oswald (1996), Law and Wong (1998), Bygren (2004), and Ferreri Carbonell (2005) conclude that relative wages are important in determining workers' job or pay satisfaction. Clark et al. (2009) and Amendola, Dell'Anno and Parisi, (2019) provide evidence on the relationship between individual well-being and reference group income. In particular, Clark et al. (2009) find that the more others earn (belonging to the reference group), the better the co-workers feel, if the information effects (of future earnings) are stronger than the comparison effects (status). Amendola, Dell'Anno and Parisi, (2019) empirical findings show that overall and within-group inequality negatively affect individual happiness. Finally, some authors (Bowles and Samuel, 1973; Conlisk, 1974; Schminke, Caldwell and McMahon, 2014) have evaluated FP in terms of the perceived equality of opportunities in the environment where the individual lives. They find that inequality of income, such as the gender wage gap, is almost completely due to unequal opportunities. Gender tends to be the second most important factor explaining inequality of opportunity in most countries. Inequality of opportunity also plays an important

role in income inequality among women in the southern and eastern Mediterranean³. However, the concept of inequality of opportunity and its effect on the wage gap have also been questioned in the literature. For instance, personal responsibility is a central factor for Roemer (1998), who distinguishes between an individual's "circumstance" and an individual's "effort" in determining the outcome. Circumstance, which is outside of the individual's control, includes variables such as race, ethnicity, gender and parental characteristics. Effort is that which the individual controls and can be considered responsible for. Only the part of inequality in outcome that can be attributed to differences in circumstances can be defined as inequality of opportunity. What can explain the wage gap in terms of equality of opportunities then is not only what the individual can achieve (given her opportunities) but also what she chooses and is able to achieve. In other words, as Sen (1991) describes in capability theory, we should consider both functioning (i.e., what a person manages to do or to be) and capabilities (i.e., closely related to the idea of opportunity, freedom, and advantage). The literature on fairness in terms of the perception of equality of opportunities, considered above (Sen, 1991; Roemer, 1998), helped us build our second hypothesis on the link between fairness and the gender wage gap. Specifically, we expect that if women have FP in opportunities (and exploit such opportunities), the gender wage gap decreases.

In a survey among undergraduate students at the Business School of Bern University of Applied Sciences (BUAS) and the Faculty of Economic and Social Sciences of the University of Fribourg, Fernandes et al. (2021) compare student wage expectations with realized wages for similar groups of graduates. By an information experiment, they analyse how information on average income for groups in the population alters wage expectations and how such an adjustment of expectations varies by gender. They confirm the presence of a gender gap in expected wages and find that men and women overestimate their expected wages compared to the actual wages, with men responding in an overconfident manner to information about outside wages. Other studies find that differences in reservation wages are due partly to differences in productivity and partly to differing expectations (Depaola, Lupi and Ordine, 2005; Bettio and Mazzotta, 2011; Stancanelli and van Soest, 2012; Caliendo, Lee and Mahlstedt, 2017).

2. Data and sample selection

³ EBRD Transition Report 2016-17. Transition for all: Equal opportunities in an unequal world. ISBN:978-1-898802-45-7

The analysis is based on data from the ESS 2018⁴. The ESS is a cross-national survey that is conducted every two years across Europe. It aims to achieve comparability in the data collected across all countries. The questionnaires consist of a core section and a rotating module, and in 2018, the theme of the rotating module was Justice and Fairness (see europeansocialsurvey.org). Of course, we should clarify that this cross-sectional data set does not allow for a causal link between gender and wages. Therefore, we can test only whether the indicators proposed are mediating variables explaining this relationship.

For this analysis, the sample is restricted to employees aged 20–65 working at least 10 hours a week. To analyse cross-country comparisons, we estimate the model for some representative countries: Spain (representing Southern countries), Germany (representing Continental countries), Sweden (representing Nordic countries) and the United Kingdom (representing Anglo-Saxon countries). The final sample comprises 1121 individuals for Germany, 769 for Sweden, 640 for Spain and 976 for Great Britain.

These countries were chosen to reflect different institutional frameworks and labour market institutions, family policy models and work-family practices, such as differences in total paid maternity and parental leave, spending per child in GDP, female employment rate, maternal employment rate, and employment protection legislation.

Grönlund and Magnusson (2016) report accurate statistics distinguishing among three of the four countries we consider. They define the UK as a liberal market economy based on hire-and-fire principles and Germany and Sweden as coordinated market economies promoting long-term employment relations. In terms of family policy, Sweden is considered a dual-earner model, where there is strong support for female employment and the reconciliation of work and family. Germany, in contrast, is considered to support the traditional family model, where there is a lack of public day-care services. Finally, in the UK, family policy is classified as a market model, since the state does not strongly support either dual-earner or traditional households; thus, there is little public support for childcare compared to the case in other countries.

In contrast, in Mediterranean countries, a dualistic labour market prevails, with robust labour protections in the primary market (i.e., for permanent employees, who usually coincide with the householder) and much less protections for workers with atypical contracts (usually young or new entrants to the labour market). For the latter type of workers, family-type

⁴ ESS Round 9: European Social Survey Round 9 Data (2018). Data file edition 3.1. NSD - Norwegian Centre for Research Data, Norway – Data Archive and distributor of ESS data for ESS ERIC. [doi:10.21338/NSD-ESS9-2018](https://doi.org/10.21338/NSD-ESS9-2018).

welfare often replaces state welfare (to support young people who are unemployed or have uncertain employment).

Some authors identify Southern cultural roots associated with poor economic conditions (related to labour market outcomes) (Saraceno, 2015) and with the welfare system characterized by a lack of support for unemployed young people and the crucial role the family plays in helping them (Esping-Andersen, 1999). On the other hand, Nordic and Continental countries are characterized by weak family ties and a sense of social, rather than familial, solidarity with elderly or frail members of society (Reher, 1998). Finally, Saraceno and Keck (2010) define countries that demonstrate “familialism by default”, where the family plays a crucial role and sometimes is the only provider of care for an individual (such as in Southern countries); countries that demonstrate “supported familialism”, where family support is fostered by public policies, and the family provides help for members to maintain independence (such as in Continental countries); and finally, countries that demonstrate “defamilialism”, where there is high individualism, and family support is nearly absent (such as in Nordic countries).

3. Estimation strategy

Based on the main results of the literature shown in Section 2, we aim to test three main hypotheses. Namely, we postulate that the gender wage gap depends on the differences between women and men regarding fairness concerns and fairness perceptions.

Specifically, our hypotheses are as follows:

1) Regarding FC, we consider, as in Cappelen et al. (2007), two different types of fairness ideals, strictly egalitarian (FCE⁵) and liberal egalitarian (FCL⁶).

1.a) We expect that an individual with FCE might be less inclined to compete and then would obtain a lower salary. If women have FCE, they compete less, and the gender wage gap should increase.

1.b) We expect that an individual with FCL might be more inclined to compete and then would obtain a higher salary. If women have FCL, they compete more, and the gender wage gap should decrease.

⁵ FC based on an egalitarian ideal, according to which the total income should always be distributed equally among individuals.

⁶ FC based on a libertarian ideal, according to which the fair distribution is simply to give each person exactly what he or she produces.

2) Regarding FP⁷, we consider, as in Roemer (1998) and Sen (1991), that individuals with high FP make efforts to exploit the opportunities they have and would obtain a higher salary. If women have high FP, the gender wage gap should decrease.

To test the hypotheses above, ordinary least square (OLS) regressions are adopted, with the logged annual wage (converted into Euros) as the dependent variable. As it is common in the labour market literature to use a logarithmic model, this supports the interpretation of results given that a one-unit change in the independent variable produces a percentage change in the dependent variable. Pooled and separate regressions are carried out for the four countries.

In the first part of the analysis, we study the overall gender gap in the four countries analysed. In particular, we use a linear model to obtain a regression-adjusted gender pay gap using individual-level data. The dependent variable is $\log w_{ic}$, which is the log of annual income, with $i = \{1, \dots, N\}$ individuals, $c = \{1, \dots, 4\}$ countries. We start by fitting the following formula:

$$\text{Log}w_{ic} = \alpha_0 + \beta_1 F_{ic} + \beta_2 E_{ic} + \beta_3 \text{Log}H_c + \beta_4 X_{ic} + u_{ic} \quad (1)$$

That is, to explain the gap, we first estimate a standard equation including the female dummy (F), dummy variables measuring levels of education (E), the log of total hours worked (LogH) and additional controls (X) on a set of socio-demographic characteristics (i.e., age, marital status, occupation type, parents' education). The interpretation of the female dummy gives us a measure of the residual gender pay gap. If β_1 is negative and significantly different from zero, it means that women earn less than men.

In the second part of the analysis, we try to test whether some important indicators are mediating variables that explain the link between gender and wages. We replicate the analysis as shown above, including additional covariates as follows:

$$\text{Log}w_{ic} = \alpha_0 + \delta_1 FCE_{ic} * F_{ic} + \beta_2 E_{ic} + \beta_3 \text{Log}H_c + \beta_4 X_{ic} + u_{ic} \quad (2)$$

$$\text{Log}w_{ic} = \alpha_0 + \delta_1 FCL_{ic} * F_{ic} + \beta_2 E_{ic} + \beta_3 \text{Log}H_c + \beta_4 X_{ic} + u_{ic} \quad (3)$$

$$\text{Log}w_{ic} = \alpha_0 + \gamma_1 FP * F_{ic} + \beta_2 E_{ic} + \beta_3 \text{Log}H_c + \beta_4 X_{ic} + u_{ic} \quad (4)$$

⁷ The perception of fairness in the country, such as fair opportunities in education and jobs.

In particular, we include in our regression different explanatory variables, and we interact them with the female coefficient to test our three hypotheses. As stated above, the first hypothesis relates to a measure that indicates the FC; in other words, it describes how much the worker cares about fairness in his country. We include both a proxy of fairness conceived as strictly egalitarian (FCE) and a proxy of fairness conceived as libertarian (FCL) (eqs. 2 and 3). The second variable aims to test our second hypothesis and indicates the FP in the country as a proxy of equality of opportunity in the country (eq. 4).

With regard to FCE, we include in the model a variable indicating whether each individual thinks it is important that every person in the world should be treated equally and whether he believes that everyone should have equal opportunities in life. This variable is measured on a scale from 0, “not like me at all”, to 5, “very much like me”⁸, which we code as a dummy. Therefore, we consider an individual to have FCE if FCE=1; that is, the individual responds with at least “always like me”, while an individual is considered to have no FCE if FCE=0; that is, the individual answered “somewhat like, a little like or not like me”.

With regard to FCL, we include in the model a variable indicating whether an individual think that, by and large, people get what they deserve in his/her country. This variable is measured on a scale from 0, “strongly disagree”, to 4, “strongly agree”⁹, and we code it as a dummy. We consider an individual to have FCL if FCL=1, meaning that the individual at least agrees that people get what they deserve, and we consider an individual to have no FCL if FCL=0, meaning that the individual answers “neither agree nor disagree” or disagrees with the statement that people get what they deserve.

With regard to the measure of FP, it comprises 2 variables indicating a general perception of fairness in the country (i.e., each individual indicates whether everyone in the country has a fair chance of achieving the level of education and the job they seek). These variables are measured on a scale from 0 to 10, where 0 indicates “does not apply at all” and 10 indicates that the statement applies completely¹⁰. We then code them as dummies; therefore, we consider an individual to have FP if FP=1 and an individual to have no FP if FP=0, where FP

⁸ The corresponding question is the following: “Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you, He/She thinks it is important that every person in the world should be treated equally. He/She believes everyone should have equal opportunities in life.”

⁹ The corresponding question is the following: How much do you agree or disagree with each of the following statement? “I think that, by and large, people get what they deserve.”

¹⁰ The corresponding question is the following: To what extent do you think this statement applies in [country]? “Overall, everyone in [country] has a fair chance of achieving the level of education (job) they seek.”

is equal to 1 if individuals respond with a value higher than the weighted average in the country and 0 otherwise.¹¹

Having defined our key variables, we may sum up our hypothesis in the following way: according to Hypothesis 1.a, we expect that, *ceteris paribus*, women with FCE (FCE=1) would earn less than women without FCE (FCE=0); their earnings would be not very different than those of men with FCE, while they earn much less than men without FCE (the opposite applies to women without FCE).

According to Hypothesis 1.b, we expect that (under the same conditions) women with FCE (FCL=1) earn more than women without FCE (FCL=0); their earnings might be not very different than those of men with FCE and higher than those of men without FCL (the opposite applies to women without FCE).

According to Hypothesis 2, we expect that (under the same conditions), women with FP in opportunities (FP=1) would earn more than women without FP (FP =0), and their earnings would be not very different than those of men with FP in opportunities and higher than those of men without FP (the opposite applies to women without FP).

4. Results

The following section presents results related to some descriptive statistics and estimates; moreover, we present the results separately by country.

Table 1 reports the number of observations for each sample. Overall, the male sample is larger than the female sample, except for Great Britain, where 53.5% of the sample consists of women.

With regard to the annual wage, as expected, men earn more than women, on average. The pay gap is larger in Germany and Spain, while in Great Britain, we find that it is not significantly different from zero (see Table 2). Table 3 reports descriptive statistics on key variables, we find that FCE is slightly higher for women with respect to men, while all the other FPs are higher for men than women.

Tables 1, 2 and 3 around here

¹¹ This variable, different from the other two, is coded with 11 different values, and it indicates an individual's perception regarding everyone in his/her country. We opt for a different classification in determining the presence of FP to enable a comparison with the weighted average instead of simply determining a priori a set of values corresponding to 1 (having a perception of fairness) as also requested by the literature on FP (D'Ambrosio and Clark, 2015).

Tables 4 and 5 report the estimates on key variables¹². We first consider the female coefficient in equation 1, as reported in Table 4 in the column labelled “base”. We then include all the additional variables as reported in equations 2-5. In particular, Table 4 reports estimates that aim to test our first hypothesis, i.e., considering the FCE and FCL variables both in a pooled regression and in the regression estimated across countries. The test for our second hypothesis, i.e., the inclusion of FP (distinguishing between education and job) is reported in Table 5 (pooled and across countries).

For the sake of clarity, when including the interaction of the key additional variable and the female variable, we estimate three different specifications excluding the three reference categories one by one, with this method, we aim to test the differences among all our added variables. For instance, in Table 4, we report estimates considering the FC variables, and we consider four categories: whether the individual is male or female and whether he/she is concerned about fairness. Column (1) is estimated considering men without FC as the reference category accordingly we may test whether the salaries of women without FC as well as the salaries of men without FC are significantly different from the salaries of men with FC. Column (2) is estimated considering men with FC as the reference category, in this way we may test whether the salaries of men and women with FC are significantly different, and finally column (3) is estimated considering women with FC as the reference category aiming to test whether the salaries of women with and without FC are significantly different. The same method applies with all other variables.

Our first hypothesis (Hypothesis 1a) is slightly confirmed; in fact, as expected, compared to men without FCE, women have lower salaries, and the negative effect on salaries is higher for women with FCE than for women without FCE (respectively, -0.234 vs. -0.190, Table 4 column 1a). However, the negative effect on women’s salary is even higher when compared with the effect for men with FCE (- 0.308 and -0.264, Table 4 column 2a). We do not find any difference when comparing women without FCE with women with FCE (Table 4 column 3a), and the same applies for men, which reduces the support for our hypothesis. If we interpret this variable as a proxy of competition, we can state that we do not find differences in terms of wages between competitive and non-competitive men or between competitive and non-competitive women, although as expected, women who are more competitive have a higher salary than those who are less competitive (but the difference is not statistically

¹² Results for all covariates are reported in Appendix A.

significant, +0.044, Table 4, column 3a). In summary, FC based on an egalitarian ideal that affects the inclination to compete only partially explains the gender wage gap.

However, we do find great differences between countries. Germany follows the general results, although the negative effect on salary is higher both for women with FCE and for women without FCE (-0.400 and -0.407, Table 4) and for men with and without FCE (Table 4). On the other hand, Spain strongly confirms our hypotheses because only women who are not competitive earn less than men who are competitive (-0.370, Table 4, Spain column 1a). The negative effect on the salary is also less pronounced when comparing women with FCE with men with FCE (Table 4, Spain column 2a). Sweden and Great Britain follow the same general pattern, where women with FCE earn less than men with FCE (Table 4, column 1a), but there are no differences between women (or men) with or without FCE; then again, FCE is not the main aspect causing the difference.

Our findings only slightly confirm Hypothesis 1b: the negative effect on salary is high and significant both for women without FCL and women with FCL (respectively -0.313 and -0.255, Table 4, column 1b) with respect to both men with and without FCL (-0.285, -0.227, Table 4, column 2b). However, we find a slightly higher gap for women without FCL who are assumed less competitive (-0.313 vs. -0.255). Again, we do not find any significant difference between women without FCL and women with FCL (Table 4, column 3b).

Moreover, we do find differences between countries; in fact, the hypothesis 1b is strongly confirmed in Great Britain: the negative effect is significant only for women without FCL with respect to both men with and without FCL (Table 4, Great Britain, columns 1b and 2b). For all the other countries, the negative effect on salary is significant for both women without and with FCL (Table 4, column 1b); however, for Spain, we find a higher gap between women without FCL with respect to men without FCL, thus indicating that women are less competitive (Table 4, Spain, column 1b).

Table 4 around here

The second hypothesis is weakly confirmed in the whole sample; in fact, the negative effect on salary is high and significant for both women without FP and women with FP for education (respectively -0.312 and -0.290, Table 5, column 1a) and with respect to men with and without FP (-0.285, -0.262, Table 5, column 2a). However, as expected, we find a higher wage gap (negative coefficient) for women who perceive few opportunities and then make little effort to exploit them, and this difference is significant when we consider the FP of job

opportunities (women without FP in jobs earn -0.098 less than women with FP in jobs, see Table 5, column 3b). Then, Hypothesis 2 is stronger when considering the FP of jobs.

With regard to country differences, we find that Spain follows the general results described above (Table 5-Spain), in Sweden we find a difference between women with and women without FP in job opportunities (Table 5, Sweden, column 3b), however with regards to education in Sweden it seems that our hypothesis is not confirmed, given that the negative effect on salary is significant only for females with FP that earn less than males (these both with or without FP).

Great Britain (Table 5 – Great Britain) strongly confirms Hypothesis 2 because the negative gap is significant, especially for women without FP and, above all, when considering FP in job opportunities. In contrast, in Germany, we find that the gender wage gap is very high and even higher for women with FP; thus, it seems that women, despite the perception of having job or education opportunities, do not make enough effort to exploit the opportunities they have; in turn, the gender wage gap increases (Table 5, Germany). In general, the fact that there are job or education opportunities in a country does not guarantee that these opportunities will be exploited because there are other factors that can influence individuals' choices, such as family and social norms (Maier 2007). Moreover, if we consider only the perception of fairness in education, we find very different results among countries. For some countries, like Sweden, an opposite result arises, the negative effect on salary is significant for females with FP in education that earn less than males (both with or without FP). Also in Germany, the gender wage gap is higher for females with fairness perception in education; it seems that females, despite the perception of having education opportunities, does not make enough effort to exploit the opportunities they have. Great Britain, strongly confirms our hypothesis on education, in fact, females with FP in education have lower gender gap than female with FP (with no difference compared to male with FP).

Table 5 around here

4. Conclusion

The economic literature has paid special attention to the study of gender differences in wages since gender inequality in salaries remains despite policies to reduce the gap. We tried to shed light on this puzzle focusing on three factors (fairness concern, the perception of fairness and

individual self-confidence) that may affect the willingness of women (compared to men) to ask (or compete) for a higher wage to bring insights into the relation between these features and the gender wage gap across countries in Europe. First, studying the overall gender gap in the four countries analysed, with regard to the annual wage, we find that, as expected, men earn more than women, on average, with a larger difference in Germany and Spain. On the other hand, in Great Britain, the difference between men and women is not significantly different from zero.

Second, we considered different hypotheses regarding FC and FP. Regarding FC, considering, as in Cappelen et al. (2007), two different types of fairness ideals, strictly egalitarian (FCE) and libertarian (FCL) ideals. We expected that if women have higher FCE than men do, they might be less inclined to compete for higher salaries; then, we expected that the wage gender gap would increase (Levine, 1998). On the other hand, if women have more FCL than men do, they compete more, and the gender wage gap should decrease. Our results weakly confirm the hypotheses regarding both concepts of FC. In particular, the gender wage gap is higher for more egalitarian women than for less egalitarian women. We find, in fact that compared to men without FCE, women have lower salaries, and the negative effect on salaries is higher for women with FCE than for women without FCE.

This result is linked to the literature on equality aversion and pluralism of ideals (Groshen and Levine, 1998; Fehr and Schmidt, 1999; Bolton and Ockenfels, 2000; Cappelen *et al.*, 2007; Balafoutas, Kerschbamer and Sutter, 2012) and their effect on the inclination to compete or to ask for a higher wage, which indirectly affects the gender wage gap. In some of these studies, it has been stressed that the gender gap in competitiveness reported in the literature is largely driven by important traits that correlate with gender, such as the extent of distributional preferences. Our analysis highlights that when women care (more than men) for “equal sharing as the fair solution”, they are less competitive, and in turn, their wage level is lower than men’s wage level.

When considering the second form of FC, the “equal effort solution”, we see that the wage gap is lower for women with FCL than for women without such an ideal, indicating that this kind of personality is more inclined to competition- or effort-driven results. Even though the negative effect on salary is high and significant both for women with and without FCL (and with respect to both men with and without FCL), we find a slightly higher gap for women without FCL, who are less competitive.

We observe different results depending on the type of country considered. For instance, Spain strongly confirms our hypotheses when FCE is considered because only less competitive

women earn less than more competitive men. The negative effect on the salary is also less pronounced when comparing women with FCE and men with FCE. This result might be due to social norms and culture (related to gender roles in paid and unpaid work) and may explain some differences between women and men. For instance, women who are more inclined to consider jobs from an egalitarian perspective may be more affected by social norms that maintain the deep differences between men and women.

To support this interpretation, we find that in countries such as Sweden and Great Britain, where there is strong support for female employment and the reconciliation of work and family, women with FCE earn less than men with FCE, but there are no differences between women (or men) with and without FCE, showing that in these countries, FCE does not make a difference. However, in Great Britain, the gender gap is high and significant only for women without FCL even with respect to all men, with or without FCL. Great Britain strongly confirms our hypothesis since we find no wage difference for female with fairness concern libertarian with respect both men with and without FCL. It seems then that less competitive women are more strongly affected in a country where competition and liberal ideas are common. In other words, women who go against the system are negatively affected in terms of the gender pay gap.

Regarding the second factor, FP, we expected that if women have higher FP in opportunities than men (and exploit such opportunities), the gender wage gap should decrease. Our results confirm that the gender gap increases for women who perceive fewer opportunities and then make less effort to exploit them, especially when compared to men with FP in job opportunities. In fact, we find that women without FP in jobs have lower salaries than women who perceive that they live in a country that gives fair chances to everyone. These results are confirmed in most countries, notably Sweden, but with the exception of Germany, where the gender gap is very high, independent of whether individuals present FP of opportunities, and the gender gap is still high for women who perceive fair opportunities in education and jobs. Maier (2007) argues that the high and persistent gender pay gap in Germany is due to some factors that are mainly structural, such as vertical and horizontal segregation, especially in the workplace. In particular, he finds that women's distribution over sectors, occupations and firms (distinguished by size) very strongly influences the wage gap. Moreover, the economic cost of motherhood seems to be one of the main factors behind Germany's gender pay gap. According to Maier, "Mothers stay at home for a relatively long time after childbirth, resulting in shorter periods of gainful employment compared to men". Furthermore, "After returning to the labour market, women's jobs are concentrated in certain low-paying sectors

of the German economy, especially in retail trade, healthcare, hotels, restaurants, elderly care and so on.”

This result follows Roemer (1998) and Sen (1993) and links the wage gap and equality of opportunities, showing that it is not only what the individual can achieve (given her opportunities) but also what she chooses and is able to achieve that affect the wage level.

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Table 1 - Number of observations and percentages for each sample (unweighted and weighted)

	N	N weig.	% weig.	N	N weig.	% weig.
	Germany			Sweden		
Male	602	589.33	52.57	402	407.37	52.97
Female	519	531.67	47.43	367	361.63	47.03
Total	1,121	1,121	100	769	769	100
	Spain			UK		
Male	369	356.32	55.67	452	508.71	52.12
Female	271	283.68	44.33	524	467.29	47.88
Total	640	640	100	976	976	100

Source: authors' elaboration on ESS, 2018.

Table 2 – Mean Annual wage by gender and country

	Male	Female	Difference	Sig.
Germany				
Annual wage	29453.2	19962.94	-9490.26	***
N.Obs	602	519		
Sweden				
Annual wage	31184.11	25158.56	-6025.55	**
N.Obs	402	367		
Spain				
Annual wage	20199.39	13784.9	-6414.49	***
N.Obs	369	271		
Great Britain				
Annual wage	30431.79	28009.82	-2421.97	
N.Obs	452	524		

Note: *p-value < .10, ** p-value < .05, and ***p-value < .01

Source: authors' elaboration on ESS, 2018.

Table 3 – Mean Fairness variable by gender and country

	Male	Female	Difference	Male	Female	Difference
	Germany			Spain		
Concern of fairness egalitarian (1/0)	0.79	0.82	0.03	0.88	0.90	0.02
Concern of fairness libertarian (1/0)	0.44	0.35	-0.09	0.28	0.18	-0.10
Fairness perception education (1/0)	0.52	0.46	-0.06	0.59	0.48	-0.11
Fairness perception job (1/0)	0.54	0.43	-0.11	0.59	0.49	-0.10
	Sweden			Great Britain		
Concern of fairness egalitarian	0.81	0.78	-0.03	0.74	0.77	0.03
Concern of fairness libertarian	0.4	0.25	-0.14	0.44	0.32	-0.11
Fairness perception education	0.59	0.56	-0.02	0.56	0.54	-0.02
Fairness perception job	0.47	0.39	-0.08	0.43	0.4	-0.03

Source: authors' elaboration on ESS, 2018. None of these differences are statistically difference from zero.

Table 4 – Pooled and Countries OLS regression – Base equation (eq.1) and Base + Fairness Concern equations (eq.2 and 3) – Key variables

Including FCE					Including FCL			
All	0	1a	2a	3a	All	1b	2b	3b
Female	-0.286***							
Female*No-FCE		-0.190*	-0.264***	0.044	Female*No-FCL	-0.313***	-0.285***	-0.057
Male*FCE		0.074		0.308***	Male*FCL	-0.028		0.227***
Female*FCE		-0.234***	-0.308***		Female*FCL	-0.255***	-0.227***	
Male*No-FCE			-0.074	0.234***	Male*No-FCL		0.028	0.255***
Sweden	0	1a	2a	3a	Sweden	1b	2b	3b
Female	-0.176**							
Female*No-FCE		-0.114	-0.259	-0.076	Female*No-FCL	-0.192**	-0.079	0.106
Male*FCE		0.145		0.184**	Male*FCL	-0.113		0.185
Female*FCE		-0.038	-0.184**		Female*FCL	-0.298*	-0.185	
Male*No-FCE			-0.145	0.038	Male*No-FCL		0.113	0.298*
Spain	0	1a	2a	3a	Spain	1b	2b	3b
Female	-0.269***							
Female*No-FCE		-0.184	-0.091	0.186	Female*No-FCL	-0.302***	-0.202	-0.034
Male*FCE		-0.093		0.278***	Male*FCL	-0.101		0.168
Female*FCE		-0.370***	-0.278***		Female*FCL	-0.269***	-0.168	
Male*No-FCE			0.093	0.370***	Male*No-FCL		0.101	0.269***
Germany	0	1a	2a	3a	Germany	1b	2b	3b
Female	-0.353***							
Female*No-FCE		-0.400***	-0.334**	0.007	Female*No-FCL	-0.366***	-0.395***	-0.077
Male*FCE		-0.066		0.341***	Male*FCL	0.029		0.317***
Female*FCE		-0.407***	-0.341***		Female*FCL	-0.288**	-0.317***	
Male*No-FCE			0.066	0.407***	Male*No-FCL		-0.029	0.288**
Great Britain	0	1a	2a	3a	Great Britain	1b	2b	3b
Female	-0.281**							
Female*No-FCE		0.006	-0.238	0.131	Female*No-FCL	-0.342**	-0.329**	-0.172
Male*FCE		0.244		0.369***	Male*FCL	-0.013		0.157
Female*FCE		-0.125	-0.369***		Female*FCL	-0.17	-0.157	
Male*No-FCE			-0.244	0.125	Male*No-FCL		0.013	0.17

Note: *p-value < .10, ** p-value < .05, and ***p-value < .01; FCE stands for Fairness concern strictly egalitarian, FCL stand for Fairness concern libertarian.

Source: own calculations on ESS, 2018.

Table 5 – Pooled and Countries OLS regression – Base + Fairness Perception for everyone in education and job (eq.4) – Key variables

Fairness Perception Education				Fairness Perception Job			
All	1a	2a	3a	All	1b	2b	3b
Female*No-Fair-Ed	-0.312***	-0.285***	-0.022	Female*No-Fair-Job	-0.321***	-0.334***	-0.098*
Male*Fair-Ed	-0.028		0.262***	Male*Fair-Job	0.014		0.236***
Female*Fair-Ed	-0.290***	-0.262***		Female*Fair-Job	-0.222***	-0.236***	
Male*No-Fair-Ed		0.028	0.290***	Male*No-Fair-Job		-0.014	0.222***
Sweden	1a	2a	3a	Sweden	1b	2b	3b
Female*No-Fair-Ed	-0.174	-0.165	0.012	Female*No-Fair-Job	-0.228*	-0.268**	-0.186*
Male*Fair-Ed	-0.009		0.177*	Male*Fair-Job	0.041		0.083
Female*Fair-Ed	-0.186*	-0.177*		Female*Fair-Job	-0.042	-0.083	
Male*No-Fair-Ed		0.009	0.186*	Male*No-Fair-Job		-0.041	0.042
Spain	1a	2a	3a	Spain	1b	2b	3b
Female*No-Fair-Ed	-0.323***	-0.323***	-0.114	Female*No-Fair-Job	-0.261***	-0.358***	-0.103
Male*Fair-Ed	-0.0002		0.209***	Male*Fair-Job	0.097		0.256***
Female*Fair-Ed	-0.209***	-0.209***		Female*Fair-Job	-0.159**	-0.256***	
Male*No-Fair-Ed		0	0.209***	Male*No-Fair-Job		-0.097	0.159**
Germany	1a	2a	3a	Germany	1b	2b	3b
Female*No-Fair-Ed	-0.358***	-0.312***	0.038	Female*No-Fair-Job	-0.333***	-0.329***	0.05
Male*Fair-Ed	-0.046		0.350***	Male*Fair-Job	-0.003		0.380***
Female*Fair-Ed	-0.396***	-0.350***		Female*Fair-Job	-0.383***	-0.380***	
Male*No-Fair-Ed		0.046	0.396***	Male*No-Fair-Job		0.003	0.383***
Great Britain	1a	2a	3a	Great Britain	1b	2b	3b
Female*No-Fair-Ed	-0.331**	-0.284*	-0.041	Female*No-Fair-Job	-0.390***	-0.315*	-0.19
Male*Fair-Ed	-0.047		0.243	Male*Fair-Job	-0.075		0.126
Female*Fair-Ed	-0.291*	-0.243		Female*Fair-Job	-0.2	-0.126	
Male*No-Fair-Ed		0.047	0.291*	Male*No-Fair-Job		0.075	0.2

Note: *p-value < .10, ** p-value < .05, and ***p-value < .01

Source: own calculations on ESS, 2018.