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Personality, Ability, Marriage and the Gender Wage Gap - Evidence from Germany

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Abstract

This study investigates the interplay between personality traits, cognitive ability, marriage and the gender wage gap for West Germany by using data from the GSOEP. The findings indicate that personality traits in the form of the five factors of personality account for 11% of the total gender wage gap, while ability does not have an effect on the wage differential. There also seems to be a strong and significant marriage premium for men. Comparing unmarried men to unmarried women, a gender wage gap of 4.7 log points remains. This study also takes selection into the labor market into account, which hardly changes the results.

Keywords: gender wage gap; big five; Germany

JEL-Codes: J16; J31;

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1 Introduction

The wage differential between men and women, typically referred to as gender wage gap or gender pay gap, is a topic widely discussed in research as well as public debate. Political actions like equal pay bills and women's quotas for executive boards of companies are specifically introduced to tackle wage discrimination and promote equal opportunity in the labor market. The raw gender wage gap, that means just comparing the mean wages of working men and women in Germany, is typically around 20% (Gartner and Hinz, 2009). But even when comparing women with equal job characteristics to men, research typically still finds significant wage gaps, which often raises a heated debate on the reasons for the remaining gap. While some attribute it to discrimination on the employer side, others argue that women do not perform as well as men in pay negotiations or do not even try to achieve higher wages through bargaining.

The research concerning the gender wage gap typically focuses on the comparison of men and women with equal job characteristics. Additionally, human capital characteristics are taken into account in most estimations. The remaining wage differential when controlling for these variables is typically considered to be discriminatory. However, despite the vast advancements in statistical methodology as well as quality and quantity of the data sets used in the analysis, some scholars (Huber, 2015) argue, that the correct identification of a discriminatory gap still remains a point of concern because the wages are not only influenced by human capital endowments and occupational characteristics, but also individual characteristics that are hardly taken into account. For example, personality traits could influence bargaining behavior which could result in different wages. Also, human

capital may not directly represent ability, a variable also often not taken into account in wage estimations.

Personality is taken into account by adding the five factors of personality into the estimations. Ability, which should directly correspond to performance in the job is measured via the symbol correspondence test-score (SCT), a short cognitive test. The findings indicate that, when taking personality into account, the gender wage gap diminishes by 1 percentage point. The ability itself has a significant effect on wages, but has no effect on the gender wage gap. Taken marriage in interaction with the gender into account and controlling for the time spent on homework, the remaining gender wage gap for unmarried women shrinks further to 4.7 log points. Furthermore, there is a significant wage premium for males only.

In contrast to Braakmann (2009), who investigates the effects of personality traits on the gender wage gap and Heineck and Anger (2010) who investigate the wage impacts of personality traits for men and women respectively , this paper aims to be a full take on the German gender wage gap. It connects the literature on the gender wage gap, personality, productivity, marriage and pay and therefore is the first study to take all these considerations into account in one estimation.

The study is structured as follows: in section 2, prior research results concerning the main subjects of this article are presented and discussed. Next, section 3 contains information on the data set and variables used. Section 4 presents the results of the estimations. The article closes with a discussion of the results and their implications.

2 Previous Findings

This section is split into four parts: The first one deals with the gender wage gap for Germany in general, the second one is dedicated to research considering the effect of personality traits on wages, the third part reviews the literature on ability and wages and the fourth part discuss the marriage premium theory and its implications.

The Gender Wage Gap

The gender wage gap in Germany is typically estimated on a job-cell level. The basic idea is to compare men and women with the same occupation and same human capital characteristics. Estimations using the LIAB data set from the Germany Institute for Labor Market Research (IAB) typically find wage gaps around 10% (Gartner and Hinz, 2009; Hinz and Gartner, 2005). Another estimation using data from the statistical agency confirms these results (Finke, 2010). A recent estimation with the LIAB comes from Hirsch and Schnabel (2013) who find a wage gap of 12% for West Germany.

Based on these results, the following hypothesis arises:

H1: There is a significant wage differential between men and women in Germany

While the validity of human capital information and general data quality in these estimations is high, none of these studies takes personality traits or ability into account. Therefore, these topics are discussed in the next two subsections.

Personality & Pay

Braakmann (2009) investigates the effect of the big five, locus of control and risk aversion on employment and wages. He finds significant correlations of personality traits with both variables and estimates that they make up for 5% to 18% of the gender wage gap, varying based on the respective estimation.

A study for Russia Semykina and Linz (2007) estimate that personality traits account for 8% of the gender wage differential and find strong returns for personality traits for women, but no significant effects for men.

Nyhus and Pons (2012) investigate the effect of personality traits, including the big five, locust of control and time preference on the gender wage gap for the Netherlands. The findings indicate that these traits explain 11.5% of the total wage differential, while different returns for men and women to these traits do not play a significant role.

Based on these findings, two hypotheses can be constructed. The first one is related to absolute returns to personality traits in the labor market:

H2: Personality traits are significantly correlated with wages

The second hypothesis from this area of research connects personality traits to the gender wage gap:

H3: Taking personality traits into account leads to a lowering of the gender wage gap

Cobb-Clark and Tan (2011) find significant effects of personality traits on labor market participation and occupational attainment that are different for men and women. This could also lead to different monetary returns and is a reminder to also control for selection in the following estimations.

Ability & Pay

Heineck and Anger (Anger and Heineck, 2010; 2010) investigated the returns to cognitive ability and personality in Germany with the GSOEP. They find positive wage effects for cognitive ability for males only and significant effects of the big five traits on wages for both genders.

International studies (Bronars and Oettinger, 2006; Green and Craig Riddell, 2003) find a significant relationship between cognitive ability and earnings, even when controlling for education.

The prior research results therefore suggest the following two hypotheses:

H4: There is a significant correlation between cognitive ability and wages

H5: Taking ability into account leads to a lowering of the gender wage gap

The Marriage Premium

A constantly debated and controversial topic in labor market research is the marriage premium theory which argues that marriage leads to a positive wage effect for males. According to this theory, marriage leads to specialization: typically, males specialize in the job to support the family while women specialize in home work or tend to support their husbands' careers indirectly. This then leads to a wage premium for men and a wage penalty for married women, in theory (Daniel, 1995). However, studies show that the effect is much more complex und not simply explainable with specialization (Hersch and Stratton, 2000; Pollmann-Schult, 2011), even though specialization seems to play an important role in the case of Germany (Grunow et al., 2007).

Nevertheless, because this study is not concerned with the causal effect of marriage, it still serves as a helpful control variable. It is a plausible explanation that unobserved factors

influence marriage as well as labor market outcomes. This paper tries to reduce these unobserved factors by including personality, ability and the time spent with house work during the week in the estimations, but there could still be other factors that are correlated with marriage and not controlled in the estimations. Still, even if this is the case, the addition of the marriage variable in the estimations should at least lead to a clearer comparison in the wage gaps for unmarried men and women which is missing in most studies for Germany despite the typically strong effect of marriage on wages of men. Therefore, the following hypothesis can be constructed:

H6: There are significantly different returns to marriage in wages for men and women

To conclude, there is a vast amount of research dedicated to identify gender wage gaps, but none of the studies for Germany takes personality traits and ability into account. There is research on the wage effects of ability as well as personality traits, but these studies do not connect to the gender wage gap, even if some studies assume different effects for men and women. There are also studies which investigate wage effects of marriage, but none connect their findings to personality, cognitive ability and the gender wage gap.

This is where this paper comes in: It connects the gender wage gap research to the wage effects of personality traits, ability and marriage and aims to deliver an unbiased estimation of the unexplained gender wage gap for Germany.

3 The Data

The data set used for this analysis is the GSOEP (German Socio-Economic Panel) with the wave of 2013 which contains control variables as well as the big five personality items. Additionally, the SCT-score as an ability measure is added from the wave of 2012. Because

of too few observations in East Germany, the analysis is only based on the West German sample, which consists of 1961 individuals that report valid values in all relevant variables and work full or part time[2]. The wage is reported as the gross monthly wage. Based on the typical working hours per week, the hourly wages were computed and logarithmized and are used as the dependent variable in the estimations. The variables used in the analysis are reported in table 1 and for both genders respectively in tables 2 and 3.

The Five-Factor Personality Inventory

The so called big five personality traits, in this version in the form of the NEO-FFI-scale (McCrae and Costa, 2008) are widely used in social sciences to measure personality. The five factors in this model are:

- Neuroticism: This measure displays emotionality and self-confidence. A low score in this category indicates security and calmness, a high score emotional lability and insecurity. Concerning the effect on wages, high values in neuroticism should result in a negative effect on wages.

- Extraversion: A low score in this variable indicates reservedness and restraint. This should result in a negative effect on wages because it could for example lower the success of wage bargaining.

- Openness to Experience: A low score on this item indicates cautiousness, a high score curiosity. This could have adverse effect on wages. One could interpret this

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[2] The mean values in all relevant variables were compared to the means of the full data set. There does not seem to be a selection bias in the reduced sample

measure as a variant of risk aversion which could either have a positive payoff or result in a loss of wage.

- Conscientiousness: A high score in conscientiousness displays a high degree of organization, while a low score indicates carelessness. Therefore, a higher rating in this item should result in a wage premium.

- Agreeableness: A high value in agreeableness indicates empathy and cooperation, while a low value displays competitiveness. Concerning the wages, agreeableness could lead to lower wages because friendly und empathic employers could possibly be exploited more easily.

The big five personality items in the GSOEP are each asked with three individual scales whose range goes from one to seven. This measurement is short, bur reliable (Schupp and Gerlitz, 2008). An additive index was generated by simply summarizing the scores on the three individual items for each of the five factors. The Cronbach's alpha values of the indices range from 0.46 to 0.67. The low value of 0.46 for the agreeableness-scale is surprising. Nevertheless, it was decided to keep the score this way because of the theoretical foundation of these items. The five dimensions as well as the corresponding items are reported in table 4. Additionally, the table reports the mean values for men as well as women. The gender differences in the mean values are quite small and are highest on the neuroticism-scale with 1.7 of a maximum of 18 points difference.

However, are these personality traits exogenous? Srivastava et al. (2003) find changes in the personality items for young adults through environment effects while Costa and McCrae (1994) suggest that personality stays relatively stable from the age of 30. With a mean age of 46 years in the dataset, this should not pose a problem. Cobb-Clark and Schurer (2012)

also show that the personality measurements are stable for around four years. To address the concerns of endogeneity through age in the character traits, Heineck and Anger (2010) and Nyhus and Pons (2005) replace the variables for the big five personality traits with the residuals of a linear regression from the respective trait on age and age-squared. This way, potential age effects are accounted for. Since age is a covariate in the following estimations itself, this should not be necessary in this study.

The SCT-Score as a measure of ability

The measure for cognitive ability in this study is the symbol correspondence test (SCT). In the version chosen for this study, respondents get a scale that assigns different symbols to number. The task consists of the respondents is to match as many correct signs to corresponding digits displayed in 90 seconds. This test was shown to be a short and comprehensive measure for ability that is highly correlated with IQ-scores (Lang et al., 2005; Lang et al., 2007).

The SCT-scores in the GSOEP were collected in 2012 range from 4 to 56 correctly assigned numbers in 90 seconds with a mean value of 32.7. The test results from 2012 are appended to the data set of 2013. Cognitive ability is relatively stable over time (Carr, 2005; Deary et al., 2000), so this should generally not lead to a bias. The GSOEP also contains a so-called word fluency test in which respondents have 90 seconds to name as many animals as possible. The analysis will only include the SCT-score because it yields the advantage that it is not dependent on language skills in German and it cannot be learned as easy as animal names. As discussed above, exogeneity of this ability measure is a point of concern. For example, age could have a negative effect on fluid intelligence (Baltes et al., 1999). Again, these effects should be accounted for by including the age in the estimations. Considering

the potential endogeneity of the personality traits as well as the SCT-score, it should be noted that, even if these variables are endogenous, their addition in the estimations still lead to a better measure of the gender wage gap due to the reduction of unobserved heterogeneity between the genders.

In addition to the big five and the SCT-Score, the GSOEP contains a vast set of control variables like: marriage, the existence of a child under the age of 16 in the household, years of schooling, age, tenure, years of experience in full time- and part time employment as well as unemployment, the number of employees at his current employer, weekly working hours, overtime work, temporary employment, part time employment, the change of employees at the current employer in the last year, a dummy that shows in the employee is a "match" for his or her current job, if the respondent takes a leading position as well as reasons for leaving the last employer, which differentiates between quitting and being fired. To test the specialization-hypothesis brought up in the marriage premium theory, the mean hours per day spent with homework are included as a covariate. This also delivers some first, interesting results because this variable varies harshly across marriage status and gender: married men spend the least time on house work, married women the most. This descriptive results supports the specialization hypothesis.

Additionally, the data set includes information on the occupation in the form of the ISCO-classification as well as the NACE-classification for industry branches. Due to the small number of observations in the two-digit categories, only the top categories of both classifications are used as control variables in the analysis. The data set also contains a dummy variable that indicates working in the public sector.

4 Results

All estimates were computed as OLS-regressions. The results are shown in Table 5. To make these estimations comparable to the literature on the German gender wage gap, a hierarchical modelling was chosen to comprehend the biases that are part of the standard estimations without personality, marriage and ability.

The first column reports the coefficients for the standard set of control variables, which consists of human capital and occupational information. This estimation yields a gender wage gap of 9.9 log points and is a first temporary verification of hypothesis H1. The finding is largely consistent with the gender wage gaps typically found in Germany with a set of covariates accounting for differences in human capital (Finke, 2010; Gartner and Hinz, 2009; Hirsch and Schnabel, 2013).

The second column introduces the big five personality items. Despite the small rise in the explained variance, the gender wage gap declines to 8.8 log points. This suggests a temporary verification of hypothesis H3, even if the change is not statistically significant. Considering the big five items their selves, agreeableness and openness to experience are the only items which show highly significant negative effects on the wage. The negative direction seems plausible because it is possible that agreeableness could lead to exploitation through the employer. Openness to experience could lead to a wage penalty due to higher risk taking which does not pay off. Neuroticism is significant on a 10%-level and also shows a negative sign. Again, the direction of the coefficient is easy to grasp because neuroticism could lead to problem between employer and employee and could also be associated with lower bargaining motivation. Overall, personality traits seem to be a valuable addition in the wage estimation which leads to a temporary verification of hypothesis H2.

The third column adds the SCT-score as a measure of ability. As expected, this measure has a significant, positive correlation with wages, as stated in hypothesis H4. Interestingly, the addition of this variable to the estimation does not change the gender wage gap at all. This leads to a rejection of hypothesis H5.

In the fourth column, an interaction term between gender and "married" is introduced. Interestingly, this drastically reduces the gender wage gap for unmarried women to 5.4 log points. In contrast, the wage of married respondents varies drastically between men and women: while men have a significant premium from marriage, the interaction term for women is negative and statistically significant. Both correlations and directions are consistent with the marriage premium-theory and indicate a near zero effect of marriage for women (Interaction+marriage-coefficient) and positive returns for men. Hypothesis H6, which predicted these results can therefore not be rejected. As argued above, the coefficients of marriage and the interaction term could be biased due to selection and other unobserved factors.

To test the argument which states that the marriage premium is based on specialization, the mean daily hours of housework are added as a covariate in the fifth column. The working hours themselves are statistically significant and even cancel out the significance of the negative interaction term of marriage for women. Nevertheless, the coefficient of this term stays relatively large and the marriage-coefficient is still statistically significant. Specialization is, as it seems and most of the literature find, not the key to explain the marriage premium. Interestingly, there are also no significantly different coefficients of housework for men and women as well as married and unmarried individuals[3]. However,

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[3] Estimated via interaction term; not shown in the paper.

one should keep in mind that this cross-level correlation does not always indicate a causal effect. Another interesting finding concerns the wage gap itself: The female coefficient loses statistical significance on the 5%-level and is reduced to 4.7 log point.

Because selection into the labor market is most likely non-random and only working respondents have valid wage information, this selection should be taken into account. This is done by estimation a heckman two-step model for sample selection (Heckman, 1979). In the first stage, a probit model on labor market participation is estimated. A term that indicates selection, the inverse mills ratio, is then included in a second step estimation on the wages as λ. In addition to the standard set of control variables used in the wage estimations, the self-rated health of the years 2013, 2012 and 2011 is included as an additional covariate because health is likely to correlate with labor market participation and not only in the current year. Another covariate introduced in the first stage is the household net income excluding the respondent. A high household income without the respondent should reduce the incentive to work. Both of these variables could also be related to wages, but showed no significant coefficients in OLS-estimations. Therefore, they are only includes in the Heckman-estimation. Additionally, interaction terms between gender, marriage and the existence of a child younger than 16 in the household are included. While married women are likely to work less than married men, in line with the specialization hypothesis from the marriage premium theory, a child functions as an additional constraint to take part in the labor market, especially for women since they are still typically responsible for childcare.

Concerning the first stage estimates in column five, it is interesting to see that the gender itself does even have a positive effect for unmarried women without children. There is also

no significant effect of marriage on labor market participation. This effect could be explained with the existence of children in the household, whose interaction term with female is negative (not shown). Another surprising finding concerns personality traits and ability: Both seem to play a minor role for participation into the labor market. Only conscientiousness has a significant positive effect.

The second stage reported in column six shows the selection-adjusted OLS estimate on the wage. Selection into the labor market does only affect this estimation significantly on the 10%-level, as can be seen in the λ-coefficient. Nevertheless, this estimation yields some interesting results. One typical problem of the Heckman-approach is that the standard errors in the second stage tend to rise compared to simple OLS-regressions, because many variables in the second stage are also used to estimate the first stage regression. However, this seems not to be the case here: Even if the coefficients hardly change, the effect of neuroticism and openness gain statistical significance. The coefficient for women is still statistically significant on the 10%-level, but only changes 0.01 log points and is therefore not significantly different from the standard OLS-approach.

The marriage coefficient still stays significant and leads to a wage premium of 5.0 log points, despite including ability, personality and time spent in homework. This finding is largely consistent with prior research results (Grunow et al., 2007; Linde Leonard and Stanley, 2015; Pollmann-Schult, 2011). It could be a hint that there are still unobserved factors that are correlated with marriage as well as wages. It could also be that marriage leads to further ambition in the job, which results in higher wages (Pollmann-Schult, 2011). Due to more relaxed underlying assumptions, the final OLS-estimation is treated as the best fitting model

in this paper. The Heckman estimation should rather be seen as an additional check of robustness.

To conclude, these estimations show particularly two points of interest: First, the addition of personality traits leads to a decrease of 1.1 log points in the gender wage gap, which means that the five factors explain 11.1 % of the overall gender wage gap compared to a model which does not take them into account. This finding is consistent with previous research results (Braakmann, 2009; Nyhus and Pons, 2012; Semykina and Linz, 2007). The second interesting finding concerns the SCT-score as a measure for ability: Despite some research results, the addition of the SCT-score does not lead to a change in the gender wage gaps.

Robustness & other concerns

It should also be mentioned that models with interaction terms between gender and the big five and gender and the SCT-Score have been estimated (as OLS-models due to the low significance of selection effects), in the case that the returns to these characteristics are different for men and women. In contrast to this suspicion, no interaction term showed significant effects. This is somewhat surprising since many studies (Heineck and Anger, 2010; Nyhus and Pons, 2005; Semykina and Linz, 2007) find different returns to different traits for men and women. One explanation for these findings could be the relatively low number of cases in the estimations. An estimations with a bigger sample of 5484 respondents (by excluding the SCT-Score from the estimations; the results are presented in column 1 of table 6) does not lead to significantly different returns for men and women with the exception of agreeableness, which has a negative coefficient for men and a nearly zero-coefficient for women, and which is consistent with the literature (Heineck and Anger, 2010). Interestingly, the returns to neuroticism are negative for males, but add up to zero

for women. There are also significant coefficients for openness to experience and conscientiousness for women, but they do not differ significantly from the male coefficients. An explanation for not finding significantly different coefficients might be structural changes in the labor market. Heineck and Anger (2010) use a sample from 2006. Since then, great attention has been given to equality actions in the workplace. A rise in equal treatment of women in the workplace could also result in equal returns for equal traits.

Another topic concerning wages and gender is the motherhood penalty (Budig and England, 2001; Correll et al., 2007) which argues that there are positive returns for men with children and negative returns of motherhood for women. This was additionally tested by interaction the gender variable with the indicator of a child under the age of 16 in the household. The results are presented in columns 3 and 4 of table 6 in models with and without the SCT-score to estimate with a higher number of observations. However, since the interaction term is never significant and the gender wage gap does not chance significantly compared to the final OLS-estimation, it was decided to drop this effect for the final estimations. Still, this phenomenon should be discussed, especially because it is inconsistent with the literature on motherhood penalty for Germany (Gangl and Ziefle, 2009). Again, structural changes in the labor market and equal treatment bills just introduced recently could be an explanation.

5 Discussion

This study examined the correlation of personality traits, ability and marriage on the gender wage gap in West Germany. Agreeableness, Neuroticism and Openness are all associated with a significant wage penalty and lead to a lowering of the gender wage gap of 1.1

percentage points. No significant differences in the returns to personality and ability for men and women were found.

Despite some research results, the introduction of a measurement for ability does not have a significant effect on the gender wage gap. Marriage in contrast is associated with a wage penalty for women and a wage premium for men. These findings are largely consistent with the typical expectation as argued by the marriage premium theory.

Controlling for selection into the labor market does hardly lead to significantly different results, which may be somewhat surprising because one might suspect a positive selection of women into the labor force.

Still, some problems remain: First, even if the five-factor model of personality is a well-established measurement in social sciences, it would be interesting to use alternative scales that may be more relevant for the job as measurements for personality that influence wages, like specific scales for risk aversion.

The second question is, whether the SCT-score reality completely eliminates the ability bias. Ability may not directly translate to productivity in the job, which is the latent variable it should most likely represent. Again, it would be interesting to analyze the gender wage gap with specific measurements for productivity as done by Azmat and Ferrer (2015) for other industries or firm.

Third, the marriage premium argumentation still leaves room for interpretation. Some studies find different wage effects for marriage for different lengths of marriage or other factors (Linde Leonard and Stanley, 2015). Even if a closer look at the marriage premium

was not the main concern of this study, it would still be interesting to see how marriage affects motivation and aspiration in the job for men and women.

To conclude, there is still much room for future research to address this topic with more specific measurements. Nevertheless, this study adds to the literature on gender wage gap by identifying wage effects on personality, ability, marriage and their interplay with gender in one estimation which has never been done before for Germany. It also has implications for international research since it adds to the literature that shows that estimating the gender wage gap just with a mincer-type income equation is insufficient.

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Table 1: Variables in the Dataset

Variable	Mean	Std.Dev.	Min	Max	N
Female	0.51	0.50	0	1	1961
Ln(Wage)	2.74	0.49	0.33	5.85	1961
Married	0.622	0.48	0	1	1961
Child under 16	0.35	0.48	0	1	1961
SCT-Score	32.76	8.27	4	56	1961
Extraversion	14.83	3.30	3	21	1961
Agreeableness	16.08	2.86	4	21	1961
Neuroticism	10.70	3.61	5	21	1961
Openness	13.85	3.52	3	21	1961
Conscientiousness	17.59	2.59	3	21	1961
Exp. Full time	17.27	11.99	0	48	1961
Exp. Part time	4.24	6.93	0	41.8	1961
Exp. Unemployment	0.51	1.42	0	15.2	1961
Age	45.92	10.43	19	65	1961
Years of schooling	12.81	2.76	7	18	1961
Tenure	13.18	11.27	0	46.2	1961
Lemon	0.01	0.10	0	1	1961
Quit	0.03	0.18	0	1	1961
Leader	0.35	0.48	0	1	1961
Temporary	0.09	0.29	0	1	1961
Match	0.64	0.48	0	1	1961
Overtime	0.52	0.50	0	1	1961
Change Employees Firm (categories)	0.61	0.79	0	2	1961
Hours per Week	37.7	10.97	4.5	80	1961
Part time	0.30	0.46	0	1	1961
Contract Work	0.02	0.13	0	1	1961
Employees Firm (categories)	5.17	1.81	1	7	1961
Public Employment	0.29	0.46	0	1	1961
Homework per Weekday (hrs)	1.22	1.01	0	11	1961

Table 2: Mean Values (Female)

Variable	Mean	Std.Dev.	Min	Max	N
Female	1	-	1	1	999
Ln(Wage)	2.62	0.46	0.33	4.25	999
Married	0.59	0.49	0	1	999
Child under 16	0.34	0.47	0	1	999
SCT-Score	32.52	8.07	4	55	999
Exp. Full time	12.71	10.42	0	45	999
Exp. Part time	7.57	8.14	0	41.8	999
Exp. Unemployment	0.50	1.35	0	13.7	999
Age	45.77	10.09	19	65	999
Years of schooling	12.83	2.71	7	18	999
Tenure	12.38	10.95	0	43.8	999
Lemon	0.01	0.09	0	1	999
Quit	0.03	0.18	0	1	999
Leader	0.27	0.44	0	1	999
Temporary	0.11	0.31	0	1	999
Match	0.62	0.49	0	1	999
Overtime	0.48	0.50	0	1	999
Change Employees Firm (categories)	0.55	0.78	0	2	999
Hours per Week	32.56	11.18	5	70	999
Part time	0.54	0.50	0	1	999
Contract Work	0.02	0.13	0	1	999
Employees Firm (categories)	4.98	1.91	1	7	999
Public Employment	0.36	0.48	0	1	999
Homework per Weekday (hrs)	1.72	1.02	0	11	999

Table 3:Mean Values (Male)

Variable	Mean	Std.Dev.	Min	Max	N
Female	0	-	0	0	962
Ln(Wage)	2.87	0.49	0.81	5.85	962
Married	0.65	0.48	0	1	962
Child under 16	0.35	0.48	0	1	962
SCT-Score	33.02	8.46	8	56	962
Exp. Full time	22.01	11.69	0	48	962
Exp. Part time	0.77	2.35	0	26.5	962
Exp. Unemployment	0.51	1.49	0	15.2	962
Age	46.01	10.77	19	65	962
Years of schooling	12.79	2.81	7	18	962
Tenure	14.02	11.53	0	46.2	962
Lemon	0.01	0.11	0	1	962
Quit	0.04	0.19	0	1	962
Leader	0.44	0.49	0	1	962
Temporary	0.08	0.27	0	1	962
Match	0.65	0.48	0	1	962
Overtime	0.57	0.50	0	1	962
Change Employees Firm (categories)	0.68	0.80	0	2	962
Hours per Week	43.06	7.71	4.5	80	962
Part time	0.05	0.21	0	1	962
Contract Work	0.02	0.14	0	1	962
Employees Firm (categories)	5.37	1.69	1	7	962
Public Employment	0.22	0.41	0	1	962
Homework per Weekday (hrs)	0.71	0.68	0	5	962

Table 4: The Five Factors of Personality

Dimension	Item	Mean Male	Mean Female
Extraversion (alpha=0.67)	Am communicative	14.31	15.34
	Am sociable		
	Reserved		
Agreeableness (alpha=0.46)	Able to forgive	15.64	16.49
	Friendly with others		
	Am sometimes too coarse with others		
Neuroticism (alpha=0.63)	Deal well with stress	9.88	11.49
	Worry a lot		
	Somewhat nervous		
Openness (alpha=0.58)	Am original	13.56	14.13
	Value artistic expression		
	Have lively imagination		
Conscientiousness (alpha=0.50)	Thorough Worker	17.39	17.8
	Tend to be lazy		
	Carry out tasks efficiently		

Table 5: Results of the Regressions

Variables	OLS					Heckman LIML	
	Standard Controls	Big Five	Ability	Interaction	Housework	Labor (Probit)	Wage (OLS)
Female	-0.099***	-0.088***	-0.088***	-0.054*	-0.047+	0.209+	-0.046+
	(0.019)	(0.020)	(0.020)	(0.027)	(0.027)	(0.118)	(0.026)
Female*Married				-0.064*	-0.050	-0.135	-0.048
				(0.032)	(0.033)	(0.150)	(0.032)
Married	0.021	0.022	0.023	0.058*	0.052*	0.104	0.050*
	(0.017)	(0.016)	(0.016)	(0.024)	(0.025)	(0.122)	(0.024)
Agreeableness		-0.010***	-0.010***	-0.010***	-0.010***	-0.008	-0.010***
		(0.003)	(0.003)	(0.003)	(0.003)	(0.012)	(0.003)
Neuroticism		-0.004+	-0.004+	-0.004+	-0.004+	-0.012	-0.005*
		(0.002)	(0.002)	(0.002)	(0.002)	(0.010)	(0.002)
Openness		-0.005*	-0.005+	-0.005+	-0.004+	-0.014	-0.004*
		(0.002)	(0.002)	(0.002)	(0.002)	(0.010)	(0.002)
Conscientiousness		-0.002	-0.002	-0.002	-0.002	0.023+	-0.003
		(0.003)	(0.003)	(0.003)	(0.003)	(0.013)	(0.003)
Extraversion		0.002	0.002	0.002	0.002	-0.007	0.001
		(0.002)	(0.002)	(0.002)	(0.002)	(0.011)	(0.002)
SCT			0.003**	0.003**	0.003**	0.004	0.002*
			(0.001)	(0.001)	(0.001)	(0.004)	(0.001)
Housework					-0.025*	-0.342***	-0.036***
					(0.011)	(0.034)	(0.011)
λ (IMR)							0.076+
							(0.045)
N	1961	1961	1961	1961	1961	2627	1874
(Pseudo-)R2	0.568	0.573	0.575	0.576	0.578	0.448	0.591

$^{+}$ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; dependent variable: ln(hourly wage);

heteroskedascity-robust standard errors in parentheses;

also accounts for: occupation, industry, age, age², job experience, unemployment experience, tenure, reason for quitting the last job, child, years of schooling, temporary employment, public employment, leading position, match between qualification and job, contract work, overtime, part time, change of employees in the firm in the last year;

Heckman first stage additionally accounts for: child*female, health (2011-2013), household income excluding respondent

Table 6: Robustness checks & alternate specifications (OLS-estimations)

Variables	Female	Male	Motherhood Penalty	Motherhood Penalty (w/o SCT)
Female			-0.042	-0.067***
			(0.028)	(0.017)
Female*Married			-0.042	-0.038+
			(0.033)	(0.020)
Married	-0.003	0.033*	0.044+	0.041**
	(0.014)	(0.015)	(0.025)	(0.014)
Agreeableness	-0.002	-0.009***	-0.010***	-0.005**
	(0.002)	(0.002)	(0.003)	(0.002)
Neuroticism	-0.001	-0.005*	-0.004+	-0.002
	(0.002)	(0.002)	(0.002)	(0.001)
Openness	-0.005*	-0.001	-0.004+	-0.003*
	(0.002)	(0.002)	(0.002)	(0.001)
Conscientiousness	0.005*	-0.001	-0.002	0.002
	(0.003)	(0.003)	(0.003)	(0.002)
Extraversion	-0.001	0.003	0.002	0.002
	(0.002)	(0.002)	(0.002)	(0.002)
SCT			0.003**	
			(0.001)	
Child	-0.010	0.028+	0.040+	0.030*
	(0.018)	(0.015)	(0.023)	(0.014)
Child*Female			-0.037	-0.030
			(0.033)	(0.021)
N	2715	2733	1961	5448
R2	0.485	0.563	0.578	0.544

$^+ p < 0.1$, $^* p < 0.05$, $^{**} p < 0.01$, $^{***} p < 0.001$; dependent variable: ln(hourly wage);
heteroskedascity-robust standard errors in parentheses;
also accounts for: occupation, industry, age, age², job experience, unemployment experience, tenure, reason for quitting the last job, child, years of schooling, temporary employment, public employment, leading position, match between qualification and job, contract work, overtime, part time, change of employees in the firm in the last year, daily time spent on housework