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The role of psychological traits for the gender gap in full-time employment and wages: Evidence from Germany

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Abstract

This paper shows that differences in various non-cognitive traits, specifically the "big five", positive and negative reciprocity, locus of control and risk aversion, contribute to gender inequalities in wages and employment. Using the 2004 and 2005 waves of the German Socio-Economic Panel, evidence from regression and decomposition techniques suggests that gender differences in psychological traits are more important for inequalities in wages than in employment. Differences in the "big five", in particular in agreeableness, conscientiousness and neurocitism matter for both wages and employment. For the latter, the results also show a large effect of differences in external locus of control.

Keywords: Gender wage gap, non-cognitive traits, decomposition
JEL Classification: J24, J31

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The data used in this paper can be obtained from the Socio-Economic Panel Group at the DIW Berlin, see http://www.diw.de for details. Stata 10.1 was used in all calculations. Do-files are available from the author on request. The author would like to thank Joachim Wagner for helpful hints and overall support. All remaining errors are my own.

1 Introduction

Recent research has emphasized the role of personality and other psychological traits like risk-aversion or self-esteem for individual economics success (see Borghans, Duckworth, Heckman and ter Wel 2008 for a comprehensive overview). Two recent studies by Mueller and Plug (2006) and Fortin (2008) show that non-cognitive traits play a significant role in explaining the gender wage gap among American workers. In addition to providing evidence from a different country, this paper builds on these two studies by considering a greater number of traits, specifically the "big five", a commonly used measure of personality, positive and negative reciprocity, locus of control and risk aversion. Furthermore, I also consider the impact of these non-cognitive traits on the gap in full-time employment in addition to providing evidence for hourly wages. Similar to the results by Mueller and Plug (2006) and to a lesser extent Fortin's (2008) results, the evidence from decomposition techniques presented in this paper suggests that psychological traits play a significant and non-negligible role in explaining gender inequalities in employment and wages.

The economic consequences of psychological traits have been documented in a large number of studies. As the early literature is reviewed in Bowles, Gintis and Osborne (2001), the following short exposition focuses on recent evidence. Borghans, ter Wel and Weinberg (2008) present evidence from Britain, Germany and the US that suggests that individuals who were sociable persons in their youth choose different jobs than other people. They also suggest that recent changes in computerization and modern form of work organization like group and team work complement these social skills. Krueger and Schadke (2008) use time use data from the US and France and show that more gregarious workers prefer jobs that involve social interactions and are happier when their jobs involve these interactions. These

results are consistent with earlier evidence by Filer (1986) whose estimates for the US show that individuals' occupational choices are governed by psychological traits. Judge, Tippie and Bono (2001) conduct a meta analysis and show that psychological traits influence job performance and job satisfaction which is similar to the results by Krueger and Schadke (2008).

There is also a large literature on the direct wage effects of various psychological traits, mostly focusing on the US. Goldsmith, Veum and Darity (1997) use NLSY data and find that earnings are influenced by psychological traits. However, they do not look at gender differences. Kuhn and Weinberger (2005) use US data to investigate the effects of leadership skills. Their results indicate that these influence wages and the likelihood to hold a managerial position positively, even when controlling for cognitive skills. Osborne Groves (2005) presents evidence that psychological traits are significant predictors for the earnings of white women in the US. Waddel (2006) finds evidence for the US that poor attitude and low esteem during youth influence the individuals' educational attainment, later employment prospects and later wages negatively. Similar evidence for educational attainment is found by Coleman and DeLeire (2003) who present and estimate an economic model how locus of control influences human capital investment through (wage) return expectations. Heckman, Stixrud and Urzua (2006) present a large body of evidence that cognitive and non-cognitive abilities help to explain a large number of economic outcomes. Using the same dataset as my study, Heineck and Anger (2008) study the monetary returns of various congnitive and non-cognitive traits in Germany.

In addition to the evidence presented in the previously mentioned studies, some papers focus exclusively on gender differences in specific traits. Andreoni and Versterlund (2001) present experimental evidence that men and women differ in altruism with men being more

altruistic when it is cheap to do so and women being more altruistic when this behavior is costly. Barber and Odean (2001) explain gender differences in stock trading behavior by differences in overconfidence, while Gneezy, Niederle, Rustichini (2003) present experimental evidence that women perform differently than men in competitive environments even though performance is similar in non-competitive environments.

Finally, a strand of the literature aims at describing gender differences in the economic consequences of psychological traits. Mueller and Plug (2006) use US data to document gender differences in the returns to the "big five" psychological traits and present decomposition results that differences in traits may explain between 7.3% and 16.2% of the earnings gap (depending on the controls used) while IQ differences play no role for the explantion of the gender wage gap. Similarly, Chevalier (2007) shows that various job related expectations and valuations explain a large share of the wage gap among university graduates in the UK even when controlling for other factors. Fortin (2008) considers the impact of self-esteem, external locus of control and the subjective importance of money/work and family/people on the wages of two cohorts of US workers. Her results indicate a significant though modest contribution of these traits to the gender wage gap. Finally, Heineck (2007) focuses on differences in the wage returns to non-cognitive traits without attempting a formal decomposition analysis and documents gender differences in the magnitude of coefficients of personality traits in wage regressions for the UK.

On a theoretical level, Mueller and Plug (2006) mention differences in productivity and differences in preferences as possible channels through which personality or psychological traits might influence earnings. The first point emphasizes that psychological traits can be seen as skills that enhance or decrease an individuals performance in a job. One might, for instance, imagine that a very shy individual might be more productive as an accountant

than as a salesperson while the opposite might hold for a very communicative individual. Additionally, one could imagine channels that are not directly productivity related and through which traits might influence earnings if, for instance, the tendency to compromise affects the results of wage negotiations (Babcock and Laschever 2003).

Second, psychological traits may influence an individual's preference for certain jobs. For instance, one can imagine that the already mentioned highly communicative individual prefers being a salesperson over being an accountant, while his shy counterpart prefers the opposite. This idea is consistent with the findings by Krueger and Schadke (2008) who report occupational sorting of individuals with different levels of gregariousness into occupations which require different levels of social interactions.

This paper builds on the work by Mueller and Plug (2006) and Fortin (2008) and makes the following contributions: First, I consider a larger set of psychological traits than those used in previous decompositions, specifically the "big five", positive and negative reciprocity, locus of control and risk aversion. Second, this paper is the first to consider the contribution of differences in psychological traits for the gender gap in full-time employment using a decomposition technique developed by Fairlie (1999, 2004). Such a gap might arise, for instance, when there are no jobs available in which an individual with certain traits could work productively or when the available jobs do not fit the preferences of the respective individual. Finally, this paper is also the first to present decomposition results for psychological traits for a country other than the US.

The remainder of the paper is organized as follows: Section 2 describes the data and the estimation model used, while descriptive statistics are found in section 3. Results are found in section 4, section 5 concludes.

2 Data and Methods

The data used come primarily from the 2005 wave of the German Socio-Economic Panel (SOEP, see Wagner, Frick, Schupp 2007 for a general overview) while the measure of risk-aversion is taken from the 2004 wave. The analysis is based on the subsamples A to F. Sample A "Residents in the FRG", surveyed since 1984, is drawn from the population of households whose head does not belong to one of the "guestworker" nationalities (Turkish, Greek, Yugoslavian, Spanish, and Italian). The latter were surveyed in sample B, labeled "Foreigners in the FRG", which oversampled households with a household head with one of the aforementioned nationalities. Households from the (former) German Democratic Republic were included since July 1990 in Sample C "German Residents in the GDR". In 1994/1995 households whose head migrated to Germany after 1984 were surveyed in sample D "Immigrants". Samples E "Refreshment" and F "Innovation" beginning in 1998 and 2000 respectively were drawn from the population of the German households.[1] Further information on the sampling design as well as additional information on the overall structure of the SOEP can be found in Haisken-DeNew and Frick (2005).

I restrict the sample to individuals with a German nationality between 25 and 55 years of age. Note that this includes German individuals from samples B and D who live in a household with a foreign head. As interest lies in both employment and wages, I form two estimation samples. The "employment sample" is not restricted further and consists of 4,216 women and 3,849 men. For the "wage sample" I keep only full-time employed workers and drop individuals in the top and bottom 1% of the outcome distribution which leads to a sample of 1,353 women and 2,770 men. As the working hours of men and women differ

[1] There is also a sample G "Oversampling of High Income", surveyed since 2002, originally drawn from the population of households with a monthly income over 2,835 € (7,000 Deutsche Mark) that is not used in this analysis.

even among the full-time employed and in line with the work by Mueller and Plug (2006) and Fortin (2008) hourly wages are used in the analysis.[2]

The 2005 wave of the SOEP contains a variety of questions related to psychological traits (see table 1 for the exact wording of the questions). Note that the reliability ratios of the constructed traits (Cronbach's α, see Cronbach 1951), the square of the correlation between the constructed scale and the underlying factor, lie between 0.51 (agreeableness) and 0.83 (negative reciprocity) which is rather low but directly related to the relatively few questions for each trait (Mueller and Plug 2006, p. 8 and Heineck and Anger 2008, p. 14-15).

The first group of characteristics is based on the five factor taxonomy that goes back to Thurstone (1934). It distinguishes five basic personality traits, specifically openness (to experience), conscientiousness, extraversion, agreeableness and neuroticism. Openness to experience covers curiosity, creativity and appreciation for new or unconventional ideas, culture and art. Conscientiousness is related to self-discipline, a sense for duty, aim for achievement and a preference for planned instead of spontaneous behavior. Extraversion influences energetic and social behavior and engagement with the world. Agreeablesness broadly reflects an individual's ability and tendencey to get along well with other individuals. It also covers a tendency for cooperation and compromise instead of conflict. Finally, neuroticism can be thought of as emotional instability, e.g. the tendency to experience negative feelings, like anger, sorrow or anxiety, and to suffer from stress. Each of the traits is measured by the average of the responses on a seven point scale to three questions for each trait where higher values represent higher levels of the respective traits.

[2]Using the information on monthly labor income available in the SOEP, these have been calculated as follows: Monthly labor income * 12 months / 52 weeks / typical actual working hours per week.

(Table 1 about here.)

A second characteristic is external locus of control based on the work of Rotter (1966). Individuals with a high external locus of control believe that their lives are largely governed by fate, chance and other events outside their control. The trait is again measured as the average of the responses on a seven point scale to five questions. Another characteristic is reciprocity (see e.g. Fehr and Gächter 2000) that is an individual's willingness to return favorable (positive reciprocity) or hostile/negative acts of other individuals (negative reciprocity). Each of the traits is again measured by the average of the responses on a seven point scale to three questions for each trait.

Finally, a measure of the willingness to take risk is taken from the 2004 wave of the SOEP. Risk is measured on an eleven point scale where "0" corresponds to complete risk aversion and "10" to full preparedness to take risk. The question has been validated experimentally by a real-stake lottery conducted with a subset of the respondents and has been shown to be related to other activities involving risk (Dohmen et al. 2005).

Note at that point that, similar to Mueller and Plug (2006), personality traits and outcomes are measured at the same time which could lead to issues with reversed causality. Evidence from earlier studies, reviewed by Bouchard and Loehlin (2001) and usually based on comparisons between of monozygotic and dizygotic twins, between other members of the same family and combinations of these suggests that about 40% to 60% of the variation in personality is related to genetic factors and hence predermined with respect to labor market outcomes. For the remaining part, some evidence suggests that large parts of personality are formed during childhood and adolescene (Caspi and Roberts 1999, Costa and McCrae 1994, 1997, Digman 1989) which also mitigates endogeneity concerns. Costa, Herbst,

McCrae and Siegler (2000) find only moderate changes in psychological traits caused by various events in life. However, they do find some evidence that changes in economic status might influence personality. There is also evidence that personality traits may change slightly in the process of aging (Allemand, Zimprich and Hertzog 2007). Taken together, this evidence is far from any proof for either the existence or absence of endogeneity problems. However, while some care should be taken with the econometric results, it seems safe to conclude that at least large parts of psychological traits are relatively fixed for adults.

In the first step of the econometric analysis, I run probit regressions for employment and OLS regressions for (log) wages. These regressions are estimated in three models separately for men and women. In model I, only the psychological traits are used as explanatory variables. This allows for the possibility of traits affecting educational and family decisions. In model II, I add information on parental background, specifically whether at least one parent completed higher secondary schooling (Abitur) and whether at least one parent graduated from university, the current family situation, that is dummies for being married and for cohabiting and the number of children under 16 years of age, years of completed schooling and a second order polynomial in age. In model III, additional controls for lifetime full-time work experience and lifetime unemployment experience are added as second order polynomials. Note that these variables can be seen as outcomes of personality in which case they can be expected to capture some of the possible returns to these traits.

For the wage decompositions, I rely on standard Oaxaca-Blinder-decompositions to identify the part of the raw wage differential explained by differences in the covariates and the part of the differential unexplained by these observable differences. More formally, let $\bar{y}^M$ and $\bar{y}^F$ denote the average wage of men and women respectively. The decomposition

is then defined as

$$\bar{y}^M - \bar{y}^F = (\bar{X}^M - \bar{X}^F)'\beta^M + \bar{X}^{M\prime}(\beta^M - \beta^F), \tag{1}$$

where β^M and β^F are the coefficients from a regression on the male or female sample alone and $\bar{X}^M$ and $\bar{X}^F$ are the means of the respective independent variables. The first part of the right hand side of equation (1) is the part of the wage gap related to differences in average endowments, while the second part is related to differences in coefficients. Depending on the choice of the groups whose coefficients are used for weighting the differences, one either models a situation where women are paid like men or vice versa.

As usual, I focus on the explained part of the differential as the unexplained part might be due to genuine differences in the (structural) coefficients as well as due to differences in unobservables. I also rely on the usual practice of using both the female and the male coefficients as weights for the decomposition. Standard errors for the decomposition are calculated by the method proposed in Jann (2008) which is similar to the well-known delta-method.

Note that there are no categorical variables in the analysis which are problematic in decompositions as the explained part of the differential is sensitive to the choice of the excluded base alternative (Oaxaca and Ransom 1999, Gardeazabal and Ugidos 2004).

In the case of the employment regressions, I rely on the decomposition technique developed by Fairlie (1999, 2004) who shows that for binary choice models the raw difference

in the outcome can be decomposed as

$$\overline{Y}^M - \overline{Y}^F = \left[\sum_{i=1}^{N^M} \frac{F(X_i^M \widehat{\beta}^M)}{N^M} - \sum_{i=1}^{N^F} \frac{F(X_i^F \widehat{\beta}^M)}{N^F}\right] - \left[\sum_{i=1}^{N^M} \frac{F(X_i^F \widehat{\beta}^M)}{N^F} - \sum_{i=1}^{N^F} \frac{F(X_i^F \widehat{\beta}^F)}{N^F}\right], \tag{2}$$

where the first term in brackets is the part of the outcome differential that is due to differences in endowments and the second term represents the term attributable to differences in coefficients. Standard errors for that decomposition are computed using 100 bootstrap replications.[3]

3 Descriptives

Consider the descriptive evidence displayed in table 2. Note first that there are considerable gender differences in the outcome measures: Women are much less likely than men to be full-time employed and also earn about 1,200 Euro per month and about 3 Euro per hour less than men.

(Table 2 about here.)

For the control variables, the descriptive results show similar values for the socio-economic background variables and average years of schooling. As one might expect, there are large differences in full-time work experience in favor of men.

(Figure 1 about here.)

Focus now on differences in the psychological traits. To facilitate size comparisons, figure 1 display the percentage deviations of women's mean traits from the corresponding

[3]The decomposition uses the ado-File *fairlie* by Ben Jann (Jann 2006).

value for men. As results are similar for the employment and wage samples, only the former are displayed. Men and women do not differ in positive reciprocity, that is their willingness to return favorable acts, and in external locus of control, that is their belief on their ability to influence the world through their actions. Only small, albeit significant differences are found for openness to experience, extraversion and conscientiousness. Larger differences are found for the remaining traits: In both samples, women have higher levels of agreeableness and higher levels of neuroticism, that is a lower emotional stability. Men are more revengeful as shown by their higher levels of negative reciprocity and more willing to bear risks.

4 Results

4.1 Employment

Consider the results for the probit estimation displayed in table 3. As there is no direct structural model underlying these estimates, coefficients should be seen as suggestive, rather than causal evidence. Focusing on similarities and differences between men and women, we see a relatively pattern of results for most of the psychological traits when it comes to signs and significance: For both men and women, higher levels of conscientiousness (discipline) and positive reciprocity are associated with a higher likelihood to be full-time employed, while high levels of agreeableness, neuroticism and an external locus of control have the opposite effect. Note that some of these effects are correlated with past labor market experiences as their influence diminishes when we control for past experiences.

(Table 3 about here.)

Gender differences are noted for openness for experience that shows a negative association with employment prospects for men while no such effect exists for women and willingness to take risks which has a positive effect for women and none for men. Focusing on the marginal effects at the lower panel of table 3, we see that all significant coefficients also lead to relatively large changes in the probability of full-time employment. Women profit more from higher levels of conscientiousness than men. However, they are also to a greater deal harmed by higher levels of agreeableness. Neurotiscism and positive reciprocity have a relatively similar effect on men and women, while the negative effects of an external locus of control are much larger for men.

Now turn to the decomposition results in table 4. Consider first the results using only the psychological traits in model I. Here, between 1.7 and 3.5 percentage points or between 3.6% and 7.4% of the gap in full-time employment can be explained by differences in psychological traits. Of these, the "big five" and in particular conscientiousness, agreeableness and neurocistism are dominant factors. Openness matters only when using the male coefficients for weighting, but explains only a relatively minor share of the gap. Differences in extraversion do not account for the gap.

(Table 4 about here.)

Looking at the remaining characteristics, we find that both differences in reciprocity and in external locus of control account at best for relatively tiny shares of the gap. Willingness to take risks explains a rather large share in model I when using the female coefficients as weights but matters comparatively less when using the male coefficients.

Adding further background variables in models II and III has the effect of raising the overall explained share to up to 51% of the observed gap, mostly due to the inclusion of

variables related to past labor market experience. The effect of the psychological traits diminishes with the inclusion of additional variablkes in these models. However, the overall pattern of results remains relative similar over models.

4.2 Wages

Turn now to the results for the wage regressions found in table 5. Higher levels of openness to experience are only associated with higher wages for men in models I and III. Extraversion, e.g. on outgoing personality, does not influence wages for either men or women. Conscientiousness (self-discipline) and agreeableness (the ability to get along well with other individuals) are generally related to negative wage effects. Here, the results show that the negative effects of conscientiousness are typically stronger for men, while the opposite holds for agreeablesness. The latter result might be explained by the higher tendency to compromise and shy away from conflicts by individuals with a high levels of agreeablesness. Neurocitism (emotional instability) matters negatively for women in all models with some weakly statistically significant negative effect for men in model III. These results are broadly consistent with the results by Heineck (2007) for the UK and the findings by Mueller and Plug (2006) for the US.

(Table 5 about here.)

Positive reciprocity does not matter for wages, while negative reciprocity hurts the wages of both men and women in model I. Finally, risk aversion does not seem to play a large role with only some small negative effects being found for men, while a high external locus of control leads to large wage penalties for both men and women.

As the psychological traits are measured on a dimensionless scale, the size and economic significance of the results are hard to judge at a first glance. To facilitate interpretation, the lower panel in table 5 displays simulated wage increases for a one standard deviation increase in the respective trait. Standard deviations are taken from the male and female sample respectively. The main result here is that all significant coefficients also lead to associated (log) wage changes in the magnitude of 0.01 to 0.07 which is non-negligible from an economic point of view.

Consider now the decomposition results in table 6. Note first that the results differ considerably between the estimates using the male coefficients as weights and those using the female coefficients. Using the male coefficients, the "big five" personality traits explain between 13.6% and 17.7% of the observed wage gap. In the estimates using the female coefficients, the explained share of the wage gap that can be attributed to these personality differences drops to between 4.9% and 5.8%. While this strong dependence on the weights is unusual, the results can be seen as the range of plausible estimates. Additionally, the qualitative results for the detailed decompositions are also relatively unaffected by the choice of the weights. In all models the major determinants of earnings inequality are the women's higher average levels of agreeableness and neuroticism. Additionally, the rather small differences in conscientiousness play a surprisingly large role for the determination of the gender wage gap. Looking at the remaining traits, we observe that only (negative) reciprocity plays any role for the explanation of the gender wage gap while positive reciprocity, external locus of control and willingness to take risks typically either small or indisignificant or both.

(Table 6 about here.)

If we compare these results with the results for full-time employment in the preceding section, we observe both similarities and differences. For the "big five", we observe relatively similar disadvantages for women in both wages and employment due to their higher levels of agreeableness and the relative minor differences in conscientiousness. The results for neuroticism vary with the coefficients used as weights, but we can note that differences in this trait work mostly in favor of men. Differences in extraversion do not seem to matter for either wages or employment, while differences in openness to experience have no clear effect for the explanation of gender inequalities. Differences in external locus of control which was the biggest single factor for the explanation of the employment gap do not matter at all when considering wage differences. For negative reciprocity that matters only in the models without further control variables, gender differences widen the employment gap but work in favor of women when it comes to wages. Differences in positive reciprocity and willingness to take risks play only relatively minor roles for the gender gap in either employment or wages.

To sum up, the results presented here are relatively similar to earlier results for wage inequality by Mueller and Plug (2006) and to a lesser extent by Fortin (2008) who did not consider differences in the "big five". These differences, especially in agreeableness, neuroticism and to a lesser extent conscientiousness, explain between 5% and 18% of the gender wage gap which is similar to the results by Mueller and Plug (2006) for the US. Regarding the gap in full-time employment, the results show that differences in external locus of control contribute significantly to the observed gap, while differences in agreeableness, neuroscitism and conscientiousness also play a role. Additionally, the results suggest that gender differences in psychological traits play a bigger role for explaining gender differences in wages than in employment.

5 Conclusion

This paper considered the importance of gender differences in various psychological traits, specifically the "big five", positive and negative reciprocity, locus of control and risk aversion for gender inequalities in wages and employment. Building on earlier research by Mueller ad Plug (2006) and Fortin (2008), I show that differences in these traits contribute to the observed wage and employment differences. Differences in psychological traits are more important for inequalities in wages than in employment as they explain up to 18% of the observed wage differences and only up to 7% of the observed differences in full-time employment. However, differences in the "big five", in particular in agreeableness, conscientiousness and neuroticism matter for both wages and employment. In the latter, the results also show a large effect for differences in external locus of control.

These results, that are similar to the findings by Mueller and Plug (2006) and to a lesser extent by Fortin (2008), provide first evidence that personality differences matter for gender wage inequality for a country outside the US. Additionally, the results presented in this paper show that psychological traits have different effects for wages and employment and also contribute differently to gender differences in these variables.

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7 Tables

Table 1: Questions related to personality traits

Question	Trait
Risk aversion:	
Are you generally a person who is fully prepared to take risks or do you try to avoid taking risks? 0 (risk averse) - 10 (fully prepared to take risks)	Willingness to take risks
Big five:	
I see myself as someone who...	
... is original, comes up with new ideas.	
... values artistic experiences.	Openess to experience
... has an active imagination.	
... does a thorough job.	
... tends to be lazy (reversed coding).	Conscientiousness
... does things effectively and efficiently.	
... is communicative, talkative.	
... is outgoing, sociable.	Extraversion
... is reserved (reversed coding).	
... is sometimes somewhat rude to others (reversed)	
... has a forgiving nature	Agreeableness
... is considerate and kind to others	
... worries a lot	
... gets nervous easily	Neuroticism
... is relaxed, handles stress well (reversed)	
Locus of control:	
Compared to other people, I have not achieved what I deserve.	
What a person achieves in life is above all a question of fate or luck.	
I frequently have the experience that other people have a controlling influence over my life.	External locus of control
The opportunities that I have in life are determined by the social conditions.	
Inborn abilities are more important than any efforts one can make.	
Reciprocity:	
If someone does me a favor, I am prepared to return it.	
I go out of my way to help somebody who has been kind to me before.	Positive Reciprocity
I am ready to undergo personal costs to help somebody who helped me before.	
If I suffer a serious wrong, I will take revenge as soon as possible, no matter what the cost.	
If somebody puts me in a difficult position, I will do the same to him/her.	Negative Reciprocity
If somebody offends me, I will offend him/her back.	

Questions taken from the SOEP questionaires using SOEPinfo (http://panel.gsoep.de/soepinfo2007/).

Table 2: Descriptive statistics

Variable	Women		Men		P-Value
	Mean	Std.dev.	Mean	Std.dev.	
Employment sample					
Individual is full-time employed (1 = yes)	0.3615	0.4805	0.8342	0.3719	0.0000
Openess to experience	4.6212	1.1736	4.4411	1.1162	0.0000
Extraversion	4.9870	1.1252	4.7440	1.1010	0.0000
Conscientiousness	6.0342	0.8433	5.9402	0.8815	0.0000
Agreeableness	5.5815	0.9125	5.2645	0.9793	0.0000
Neuroticism	4.1580	1.1942	3.6840	1.1615	0.0000
Positive reciprocity	5.8594	0.8950	5.8746	0.8756	0.4405
Negative reciprocity	2.9621	1.3896	3.3553	1.4595	0.0000
External locus of control	3.6432	0.9179	3.6374	0.9326	0.7789
Willingness to take risks	4.2540	2.1527	5.1878	2.1113	0.0000
At least one parent has higher secondary schooling (1 = yes)	0.1229	0.3283	0.1268	0.3328	0.5948
At least one parent has academic training (1 = yes)	0.1492	0.3563	0.1650	0.3712	0.0519
Children under 16 years of age in HH (1 = yes)	1.5320	0.4990	1.5747	0.4945	0.0001
Individual is married (1 = yes)	0.6525	0.4762	0.6191	0.4857	0.0019
Individual has partner (1 = yes)	0.1366	0.3435	0.1338	0.3405	0.7113
Age (years)	40.5688	8.4167	40.8241	8.2430	0.1690
Years of schooling	12.5042	2.4718	12.6143	2.6369	0.0536
Full-time work experience (years)	10.4861	8.4019	17.1414	9.2920	0.0000
Unemployment experience (years)	0.8931	1.9232	0.7223	1.7051	0.0000
No. of Obs.	4,216		3,849		
Wage sample					
Monthly labor income	1707.5188	998.6657	2938.7668	1288.8521	0.0000
Hourly labor income (€)	12.5129	6.1064	15.7691	6.9377	0.0000
Openess to experience	4.6020	1.1738	4.3909	1.1033	0.0000
Extraversion	5.0211	1.1100	4.7313	1.0990	0.0000
Conscientiousness	6.0882	0.8078	5.9697	0.8457	0.0000
Agreeableness	5.5815	0.9052	5.2569	0.9781	0.0000
Neuroticism	4.1202	1.1827	3.6566	1.1455	0.0000
Positive reciprocity	5.8982	0.8790	5.8834	0.8653	0.5065
Negative reciprocity	2.9658	1.3946	3.3367	1.4449	0.0000
External locus of control	3.6220	0.8988	3.6194	0.8944	0.9071
Willingness to take risks	4.2316	2.1602	5.1076	2.1089	0.0000
At least one parent has higher secondary schooling (1 = yes)	0.1061	0.3080	0.1117	0.3150	0.4813
At least one parent has academic training (1 = yes)	0.1360	0.3428	0.1445	0.3516	0.3357
Children under 16 years of age in HH (1 = yes)	1.5885	0.4922	1.5379	0.4986	0.0001
Individual is married (1 = yes)	0.6381	0.4806	0.6644	0.4723	0.0311
Individual has partner (1 = yes)	0.1454	0.3525	0.1227	0.3282	0.0093
Age (years)	39.6644	8.7402	40.9206	7.9015	0.0000
Years of schooling	12.4574	2.5025	12.4909	2.6364	0.6094
Full-time work experience (years)	11.2948	8.6876	17.5328	9.0736	0.0000
Unemployment experience (years)	0.6067	1.3655	0.4447	1.0796	0.0000
No. of Obs.	1,353		2,770		

All values taken from the 2005 wave of the SOEP except "willingness to take risks" which is taken from the 2004 wave.

Table 3: Employment regression results, Probit estimates

Variable	Model I		Model II		Model III	
	Male results	Female results	Male results	Female results	Male results	Female results
	Full time employment, probit estimates					
Openess to experience	-0.0622*	0.0285	-0.0594*	-0.0062	-0.0304	0.0212
	(0.0253)	(0.0189)	(0.0262)	(0.0204)	(0.0294)	(0.0228)
Extraversion	-0.0208	-0.0168	-0.0100	0.0048	-0.0020	-0.0127
	(0.0252)	(0.0200)	(0.0260)	(0.0212)	(0.0281)	(0.0243)
Conscientiousness	0.2115***	0.1502***	0.1892***	0.2061***	0.1105**	0.1380***
	(0.0295)	(0.0265)	(0.0305)	(0.0304)	(0.0343)	(0.0351)
Agreeableness	-0.1037***	-0.1374***	-0.0913**	-0.1146***	-0.0712*	-0.0639*
	(0.0290)	(0.0248)	(0.0297)	(0.0266)	(0.0334)	(0.0301)
Neuroticism	-0.0625**	-0.0525**	-0.0652**	-0.0482*	-0.0329	-0.0319
	(0.0234)	(0.0177)	(0.0241)	(0.0187)	(0.0273)	(0.0213)
Positive reciprocity	0.0620*	0.0619**	0.0660*	0.0525*	0.0388	0.0500+
	(0.0307)	(0.0238)	(0.0317)	(0.0257)	(0.0355)	(0.0286)
Negative reciprocity	-0.0062	0.0053	0.0183	0.0279	0.0191	0.0082
	(0.0195)	(0.0158)	(0.0200)	(0.0172)	(0.0230)	(0.0195)
External locus of control	-0.2557***	-0.1128***	-0.2422***	-0.0810**	-0.1727***	-0.0627*
	(0.0293)	(0.0231)	(0.0302)	(0.0253)	(0.0341)	(0.0286)
Willingness to take risks	0.0135	0.0380***	0.0207	0.0167	0.0138	0.0214+
	(0.0124)	(0.0096)	(0.0130)	(0.0104)	(0.0144)	(0.0119)
	Marginal effects at means					
Openess to experience	-.0147*	.0106	-.0130*	-.0023	-.0055	.0072
Extraversion	-.0049	-.0063	-.0022	.0018	-.0004	-.0043
Conscientiousness	.0499***	.0561***	.0414***	.0753***	.0198**	.0466***
Agreeableness	-.0245***	-.0513***	-.0120**	-.0419***	-.0128*	-.0216*
Neuroticism	-.0147**	-.0196**	-.0142**	-.0176*	-.0059	-.0108
Positive reciprocity	.0146*	.0231**	.0144*	.0192*	.0070	.0169+
Negative reciprocity	-.0015	.0020	.0040	.0102	.0034	.0028
External locus of control	-.0603***	-.0421***	-.0530***	-.0296***	-.0310***	-.0212*
Willingness to take risks	.0032	.0142***	.0045	.0061	.0025	.0072+
No. of Obs.	3,849	4,216	3,849	4,216	3,849	4,216
Additional controls						
Parental background	(no)	(no)	(yes)	(yes)	(yes)	(yes)
Current family situation	(no)	(no)	(yes)	(yes)	(yes)	(yes)
Age	(no)	(no)	(yes)	(yes)	(yes)	(yes)
Education	(no)	(no)	(yes)	(yes)	(yes)	(yes)
Employment experience	(no)	(no)	(no)	(no)	(yes)	(yes)
Unemployment experience	(no)	(no)	(no)	(no)	(yes)	(yes)

Coefficients, robust standard errors in parentheses. ***/**/*/+ denote significance on the 0.1%, 1%, 5% and 10% level respectively. Full estimation results are available from the author on request.

Table 4: Decomposition results: Share of full-time employed, Fairlie decomposition

Variable	Model I		Model II		Model III	
weighted by:	Male coeffs.	Female coeffs.	Male coeffs.	Female coeffs.	Male coeffs.	Female coeffs.
Share women	0.3615	0.3615	0.3615	0.3615	0.3615	0.3615
Share men	0.8342	0.8342	0.8342	0.8342	0.8342	0.8342
Difference	-0.4728	-0.4728	-0.4728	-0.4728	-0.4728	-0.4728
Total explained	-0.0166	-0.0348	-0.0165	-0.0464	-0.2397	-0.2410
Big Five:	-0.0084*	-0.0214***	-0.0068+	-0.0138**	-0.0085+	-0.0058
	(0.0040)	(0.0049)	(0.0037)	(0.0043)	(0.0046)	(0.0038)
Openess to experience	-0.0015**	0.0017	-0.0014*	-0.0005	-0.0014	0.0011
	(0.0006)	(0.0012)	(0.0005)	(0.0011)	(0.0012)	(0.0010)
Extraversion	-0.0007	-0.0014	-0.0003	0.0003	-0.0001	-0.0007
	(0.0009)	(0.0018)	(0.0009)	(0.0016)	(0.0019)	(0.0013)
Conscientiousness	0.0098***	0.0027***	0.0083***	0.0042***	0.0026**	0.0006***
	(0.0015)	(0.0005)	(0.0015)	(0.0005)	(0.0009)	(0.0002)
Agreeableness	-0.0080***	-0.0156***	-0.0066**	-0.0106***	-0.0052*	-0.0041*
	(0.0022)	(0.0028)	(0.0022)	(0.0024)	(0.0026)	(0.0020)
Neuroticism	-0.0080**	-0.0088**	-0.0068**	-0.0073**	-0.0043	-0.0027
	(0.0029)	(0.0029)	(0.0024)	(0.0028)	(0.0029)	(0.0026)
Reciprocity:	0.0005	-0.0012	-0.0009	-0.0041+	-0.0020	-0.0013
	(0.0015)	(0.0024)	(0.0016)	(0.0021)	(0.0020)	(0.0016)
Positive reciprocity	0.0001	-0.0004*	0.0004*	-0.0006*	-0.0002	-0.0007+
	(0.0001)	(0.0001)	(0.0002)	(0.0003)	(0.0001)	(0.0004)
Negative reciprocity	0.0004	-0.0008	-0.0013	-0.0035	-0.0018	-0.0006
	(0.0014)	(0.0024)	(0.0015)	(0.0021)	(0.0020)	(0.0016)
External locus of control	-0.0055***	0.0004*	0.0042***	-0.0005**	0.0019***	-0.0004*
	(0.0008)	(0.0002)	(0.0007)	(0.0002)	(0.0004)	(0.0002)
Willingness to take risks	-0.0031	-0.0127***	-0.0041+	-0.0046	-0.0037	-0.0040+
	(0.0029)	(0.0032)	(0.0024)	(0.0030)	(0.0031)	(0.0024)
Age			-0.0038***	-0.0066***	0.0265***	0.0092***
			(0.0011)	(0.0012)	(0.0014)	(0.0017)
Parental background			0.0004	0.0003	0.0002	0.0001
			(0.0003)	(0.0004)	(0.0004)	(0.0003)
Current family situation			-0.0018	-0.0167***	0.0022	-0.0145***
			(0.0019)	(0.0012)	(0.0017)	(0.0011)
Education			-0.0037***	-0.0003	-0.0011**	-0.0034***
			(0.0010)	(0.0004)	(0.0004)	(0.0004)
Labor market career					-0.2552***	-0.2208***
					(0.0129)	(0.0088)

Standard errors based on 100 bootstrap replications in parentheses. ***/**/*/+ denote significance on the 0.1%, 1%, 5% and 10% level respectively. Full estimation results are available from the author on request.

Table 5: Wage regression results: Log hourly wages, OLS estimates

Variable	Model I		Model II		Model III	
	Male results	Female results	Male results	Female results	Male results	Female results
			Coefficients			
Openess to experience	0.0298***	0.0167	0.0110	0.0047	0.0112+	0.0056
	(0.0074)	(0.0103)	(0.0069)	(0.0095)	(0.0066)	(0.0092)
Extraversion	-0.0119	-0.0172	-0.0010	-0.0067	-0.0001	-0.0106
	(0.0075)	(0.0104)	(0.0068)	(0.0097)	(0.0065)	(0.0094)
Conscientiousness	-0.0446***	-0.0433**	-0.0313***	-0.0424**	-0.0347***	-0.0416**
	(0.0099)	(0.0147)	(0.0093)	(0.0137)	(0.0089)	(0.0133)
Agreeableness	-0.0201*	-0.0471***	-0.0136+	-0.0361**	-0.0076	-0.0314**
	(0.0088)	(0.0124)	(0.0081)	(0.0116)	(0.0077)	(0.0112)
Neuroticism	-0.0065	-0.0310**	-0.0097	-0.0272**	-0.0114+	-0.0212*
	(0.0071)	(0.0095)	(0.0065)	(0.0089)	(0.0063)	(0.0085)
Positive reciprocity	0.0060	0.0093	0.0033	-0.0018	0.0019	0.0010
	(0.0099)	(0.0120)	(0.0090)	(0.0114)	(0.0087)	(0.0108)
Negative reciprocity	-0.0218***	-0.0235**	-0.0033	-0.0070	-0.0007	-0.0080
	(0.0060)	(0.0086)	(0.0055)	(0.0085)	(0.0054)	(0.0082)
External locus of control	-0.0836***	-0.0720***	-0.0585***	-0.0651***	-0.0506***	-0.0571***
	(0.0092)	(0.0130)	(0.0086)	(0.0126)	(0.0083)	(0.0123)
Willingness to take risks	-0.0089*	-0.0027	-0.0051	-0.0038	-0.0058+	0.0014
	(0.0040)	(0.0053)	(0.0036)	(0.0051)	(0.0035)	(0.0049)
	Simulated wage increases by 1 std.dev. increase in traits					
Openess to experience	0.0329***	0.0184	0.0121	0.0052	0.0124+	0.0062
Extraversion	-0.0131	-0.0189	-0.0011	-0.0074	-0.0001	-0.0116
Conscientiousness	-0.0377***	-0.0366**	-0.0265***	-0.0359**	-0.0293***	-0.0352**
Agreeableness	-0.0197*	-0.0461***	-0.0133+	-0.0353**	-0.0074	-0.0307***
Neuroticism	-0.0074	-0.0355**	-0.0111	-0.0312**	-0.0131+	-0.0243*
Positive reciprocity	0.0052	0.0080	0.0029	-0.0016	0.0016	0.0009
Negative reciprocity	-0.0315***	-0.0340**	-0.0048	-0.0101	-0.0010	-0.0116
External locus of control	-0.0748***	-0.0644***	-0.0523***	-0.0582***	-0.0453***	-0.0511***
Willingness to take risks	-0.0188*	-0.0057	-0.0108	-0.0080	-0.0122+	0.0030
No. of Obs.	2,730	1,343	2,730	1,343	2,730	1,343
R^2	0.0514	0.0634	0.2301	0.1811	0.2837	0.2556
Additional controls						
Parental background	(no)	(no)	(yes)	(yes)	(yes)	(yes)
Current family situation	(no)	(no)	(yes)	(yes)	(yes)	(yes)
Age	(no)	(no)	(yes)	(yes)	(yes)	(yes)
Education	(no)	(no)	(yes)	(yes)	(yes)	(yes)
Employment experience	(no)	(no)	(no)	(no)	(yes)	(yes)
Unemployment experience	(no)	(no)	(no)	(no)	(yes)	(yes)

Coefficients, robust standard errors in parentheses. ***/**/*/+ denote significance on the 0.1%, 1%, 5% and 10% level respectively. Full estimation results are available from the author on request.

Table 6: Decomposition results: Log hourly wages, Oaxaca-Blinder-decomposition

Variable	Model I		Model II		Model III	
weighted by:	Male coeffs.	Female coeffs.	Male coeffs.	Female coeffs.	Male coeffs.	Female coeffs.
Avg. log wage women	2.5156***	2.5156***	2.5156***	2.5156***	2.5156***	2.5156***
	(0.0110)	(0.0110)	(0.0110)	(0.0110)	(0.0110)	(0.0110)
Avg. log wage men	2.6977***	2.6977***	2.6977***	2.6977***	2.6977***	2.6977***
	(0.0078)	(0.0078)	(0.0078)	(0.0078)	(0.0078)	(0.0078)
Difference	-0.1821***	-0.1821***	-0.1821***	-0.1821***	-0.1821***	-0.1821***
	(0.0135)	(0.0135)	(0.0135)	(0.0135)	(0.0135)	(0.0135)
Total explained	-0.0184*	0.0073	-0.0036	-0.0317***	-0.0337**	-0.0397***
	(0.0083)	(0.0063)	(0.0115)	(0.0091)	(0.0124)	(0.0101)
Big five:	-0.0324***	-0.0105*	-0.0277***	-0.0096*	-0.0248***	-0.0089*
	(0.0069)	(0.0050)	(0.0065)	(0.0044)	(0.0061)	(0.0042)
Openess to experience	0.0042	0.0074***	0.0012	0.0028	0.0014	0.0028
	(0.0026)	(0.0022)	(0.0024)	(0.0018)	(0.0023)	(0.0017)
Extraversion	-0.0050	-0.0035	-0.0020	-0.0003	-0.0031	-0.0000
	(0.0032)	(0.0023)	(0.0029)	(0.0020)	(0.0028)	(0.0020)
Conscientiousness	-0.0062*	-0.0064***	-0.0061**	-0.0045**	-0.0059**	-0.0050**
	(0.0024)	(0.0018)	(0.0023)	(0.0015)	(0.0022)	(0.0016)
Agreeableness	-0.0126***	-0.0054*	-0.0097**	-0.0036+	-0.0084*	-0.0020
	(0.0038)	(0.0025)	(0.0035)	(0.0022)	(0.0033)	(0.0021)
Neuroticism	-0.0128**	-0.0027	-0.0112**	-0.0040	-0.0087*	-0.0047+
	(0.0041)	(0.0029)	(0.0038)	(0.0027)	(0.0036)	(0.0026)
Reciprocity:	0.0094**	0.0086***	0.0026	0.0014	0.0031	0.0003
	(0.0035)	(0.0026)	(0.0032)	(0.0022)	(0.0031)	(0.0021)
Positive reciprocity	0.0004	0.0002	-0.0001	0.0001	0.0000	0.0001
	(0.0006)	(0.0004)	(0.0005)	(0.0004)	(0.0005)	(0.0003)
Negative reciprocity	0.0090**	0.0083***	0.0027	0.0013	0.0031	0.0003
	(0.0034)	(0.0025)	(0.0031)	(0.0021)	(0.0030)	(0.0020)
External locus of control	0.0028	0.0033	0.0025	0.0023	0.0022	0.0020
	(0.0022)	(0.0025)	(0.0020)	(0.0018)	(0.0018)	(0.0015)
Willingness to take risks	0.0018	0.0059*	0.0025	0.0034	-0.0009	0.0038+
	(0.0035)	(0.0026)	(0.0033)	(0.0024)	(0.0032)	(0.0023)
Age			-0.0165***	-0.0200***	-0.0089*	-0.0218***
			(0.0035)	(0.0039)	(0.0038)	(0.0059)
Parental background			-0.0013	-0.0003	-0.0010	-0.0001
			(0.0010)	(0.0007)	(0.0009)	(0.0006)
Current family situation			0.0165*	-0.0289***	0.0104	-0.0253***
			(0.0069)	(0.0042)	(0.0066)	(0.0041)
Education (years)			0.0177***	0.0201***	0.0173***	0.0168***
			(0.0042)	(0.0045)	(0.0041)	(0.0039)
Labor market career					-0.0312***	-0.0065
					(0.0070)	(0.0084)

Standard errors in parentheses. ***/**/*/+ denote significance on the 0.1%, 1%, 5% and 10% level respectively. Full estimation results are available from the author on request.

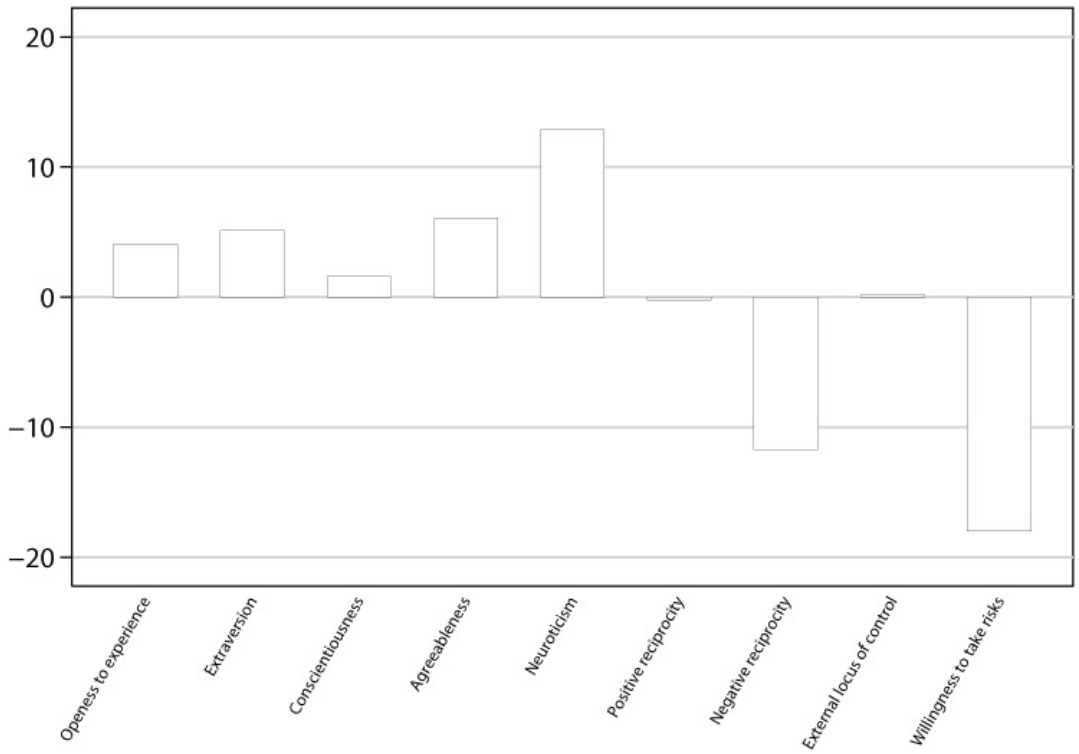

FIGURE 1: PERCENTAGE DIFFERENCES IN MEAN TRAITS BETWEEN MEN AND WOMEN

The bars represent the percentage difference between mean values of women relative to men, calculated as ((Value women)/(Value Men) * 100) - 100.

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