

What Explains the Gender Gap in Entrepreneurship? A New Decomposition Approach based on Personality

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1 Motivation

- Female self-employment rate is still significantly lower than male rate for most developed countries
 - Out of all self-employed in Germany only 32% are female
- Previous studies on Gender Gap in Entrepreneurship and personality/preferences:
 - Fossen (2012)
 - Verheul, Thurik, Grilo, and van der Zwan (2011)
 - Bönte and Piegler (2011)
- Our contribution:**
 - Large sample of almost 60,000 observations
 - Detailed information on socio-demographics, education, employment history, employment status, intergenerational background and capital
 - Large set of personality traits
- Research question:**
 - Do personality traits influence the gender gap in entrepreneurial choices?
 - Non-linear decomposition of the entry decision into self-employment by gender

2 Data

- German Socio Economic Panel (SOEP)
 - Years 2000-2009
 - Age 20-58
- Observations:
 - Not entering self-employment: **58,797** person-years
 - Entering self-employment: **656** person-years
- Variables we control for:
 - Year and region dummies
 - Socio-demographic variables
 - Employment history and duration in current employment status
 - Big Five** and **8 other personality traits**

3 Descriptives

	Full Sample		Entry Sample	
	Men	Women	Men	Women
<i>Big Five</i>				
Conscientiousness	5.93	6.03 ***	5.92	5.98
Extraversion	4.68	4.98 ***	5.03	5.18 *
Agreeableness	5.24	5.57 ***	5.38	5.54 **
Neuroticism	3.64	4.14 ***	3.48	3.98 ***
Openness	4.39	4.57 ***	4.79	5.13 ***
<i>Locus of Control</i>				
Internal	5.46	5.45	5.64	5.45 ***
External	3.33	3.42 ***	3.14	3.31 **
<i>Reciprocity</i>				
Positive	5.89	5.91 ***	5.99	5.91
Negative	3.33	2.97 ***	3.35	2.93 ***
Willingness to take Risk	5.05	4.20 ***	6.08	5.07 ***
Trust	2.33	2.33	2.42	2.45
Impulsiveness	4.97	5.30 ***	5.09	5.57 ***
Patience	6.04	6.04	6.21	5.95
Number of observations	27,137	32,316	346	310

Note: ***/**/* indicates a significant difference on the 1/5/10% level.

4 Estimation Results

- Holding everything else constant, women are 47% less likely to enter self-employment
 - Two different effects of including personality traits into estimation of becoming an entrepreneur:
 - Big Five:** Gender Gap becomes larger
 - Other Personality traits:** Gender Gap becomes smaller
 - Personality traits have differing influences on entry probability by gender:
 - Highly significant influence for men
 - Only small influence on probability for women
 - Influences of other controls vary highly by gender

5 Decomposition

- Non-linear decomposition approach
- Fairlie (1999, 2005) applied Oaxaca-Blinder decomposition to a non-linear model:

$$\bar{Y}^M - \bar{Y}^W = \left[\sum_{i=1}^{N^M} \frac{F(X_i^M \hat{\beta}^M)}{N^M} - \sum_{i=1}^{N^W} \frac{F(X_i^W \hat{\beta}^M)}{N^W} \right] + \left[\sum_{i=1}^{N^W} \frac{F(X_i^W \hat{\beta}^M)}{N^W} - \sum_{i=1}^{N^W} \frac{F(X_i^W \hat{\beta}^W)}{N^W} \right]$$

- Raw Gender Gap=**
 - First term: **Explained** gender gap due to different distribution of characteristics
 - Second term: **Unexplained** gender gap due to different coefficients

6 Decomposition Results

- Explained gap is negative
 - Given their characteristics women should be more likely to enter self-employment
- The distributions of human capital characteristics and other socio-demographic factors increase the size of the unexplained gender gap
- Personality traits point in two directions:
 - The specific personality traits partly explain the gender gap
 - Big Five and duration in current employment status would suggest a higher probability for women to become entrepreneurs than for men

	Decomposition Results	
	Differential	%
Raw Differential	0.0032	100.00
Explained Gap	- 0.0055	-172.53
<i>Big Five</i>	- 0.0020 **	- 62.62
Conscientiousness	0.0002	7.63
Extraversion	- 0.0009 ***	- 28.82
Agreeableness	- 0.0004	- 14.04
Neuroticism	- 0.0003	- 9.48
Openness	- 0.0005 **	- 15.39
<i>Other Personality Traits</i>	0.0043 ***	137.03
Internal LOC	0.0001	3.97
External LOC	0.0003	8.12
Positive Reciprocity	- 0.0000	0.03
Negative Reciprocity	0.0007 **	22.64
Risk	0.0026 ***	83.30
Trust	0.0001	2.42
Impulsiveness	0.0001	4.11
Patience	- 0.0000	- 0.66
Other characteristics	Yes	- 247.99

Note: ***/**/* indicates a significant difference from zero on the 1/5/10% level.

7 Preliminary Conclusions

- Personality traits have explanatory power when analyzing the gender gap in entrepreneurship
- Findings imply that personality traits are rewarded differently between men and women
- Gender Gap can not be fully explained by observable characteristics including personality
- Differential might rather be due to unobservable discrimination
- Outlook:**
 - Decomposition of gender gap due to different coefficients

References:

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- Fossen, F. (2012): *Gender differences in entrepreneurial choice and risk aversion – a decomposition based on a microeconomic model*, Applied Economics 44(14), pp. 1795-1812
- Verheul, I., T. Roy, I. Grilo, and P. van der Zwan (2011): *Explaining preferences and actual involvement in self-employment: Gender and the entrepreneurial personality*, Journal of Economic Psychology 33, pp. 325-341