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Self-Employment after Socialism: Intergenerational Links, Entrepreneurial Values, and Human Capital¹

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May 2012

Abstract

Drawing on representative household data from the German Socio-Economic Panel, we examine the role of an early precursor of entrepreneurial development – parental role models – for the individual decision to become self-employed in the post-unified Germany. The findings suggest that the socialist regime significantly damaged this mechanism of an intergenerational transmission of entrepreneurial attitudes among East Germans with a tertiary degree that have experienced a particularly strong ideological indoctrination. However, we find a significant and positive relationship between the presence of a parental role model and the decision to become self-employed for less-educated people. For West Germans the positive relationship holds irrespective of the level of education.

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1. Introduction

After World War II, the Eastern part of Germany was 40 years under a socialist regime. The German Democratic Republic (GDR) tried to more or less completely extinguish private firms and entrepreneurship. As a result, the self-employment rate in East Germany in the final days of the GDR, in 1989, was at a rather low level. Literature suggests that the socialist regime had a significant influence on the formation of individual preferences and attitudes (Alesina & Fuchs-Schündeln, 2007), especially those that foster entrepreneurial behavior (Bauernschuster, Falck, Gold, & Heblich, 2009). However, after the demise of the socialist regime, self-employment in East Germany converged to the West German level and exceeded that level after approximately 15 years, indicating an impressive re-establishment of an entrepreneurial culture (Fritsch, Kritikos, & Rusakova, 2012a, b; Wyrwich, 2012). Such developments raise the question about the effect of the socialist GDR regime on the early formation of entrepreneurial attitudes, which are important precursors of life-long entrepreneurial outcomes (Obschonka, Silbereisen, Schmitt-Rodermund, & Stuetzer, 2011).

In the present study we examine whether the socialist GDR regime could disturb an important intergenerational mechanism through which entrepreneurial attitudes are transmitted, namely, the presence of parental role models for an individual's decision to become an entrepreneur. In market economies, the presence of a parental role model has been found to be one of the strongest precursors of an individual's decision to become self-employed (Dunn & Holtz-Eaken, 2000; Laspita, Breugst, Heblich, & Patzelt, 2012; Schmitt-Rodermund, 2004). However, the socialist regime might have decoupled this intergenerational link among East Germans inducing long-lasting effects on an individual's willingness to become self-employed. We argue that East Germans have been subject to socialist indoctrination to different degrees depending on their level of education. Those who have acquired a tertiary degree in the former GDR have experienced a considerably stronger ideological treatment than people with lower levels of education. Hence, we expect that the link between the parental role model and the decision to pursue an entrepreneurial career was to a lesser degree disrupted by the socialist regime for persons without tertiary education. We find indeed, that shortly after German unification East Germans without a tertiary

education during GDR times were significantly more likely to follow the path of their entrepreneurial parents, while this link was disrupted for university graduates. The results for East Germany are confronted with the findings for West Germany, where the relationship between a parental role model and the decision to become self-employed appears to be positive irrespective of the educational level.

The following section (Section 2) briefly describes the general historical background of East and West Germany since the Second World War. The special ideological indoctrination of students in the socialist GDR regime is described in Section 3. Based on an introduction of data and measures (Section 4) the results of the empirical analysis are presented in Section 5. Section 6 concludes.

2. Historical background: Different developments in East and West Germany

Until 1945, the end of the Second World War, the national framework conditions in what is today's Germany were identical. Right after the end of the war, the country was divided into four zones, each governed by one of the allied powers. In 1949, the Soviet zone became the German Democratic Republic (GDR), commonly referred to as East Germany; the other occupation zones became the Federal Republic of Germany (FRG), or West Germany. The FRG was set up as a capitalistic market economy and soon experienced vigorous economic recovery. In contrast, East Germany became part of the Soviet bloc and was under a socialist regime for 40 years, followed by a shock-treatment-like transformation process that caused severe economic problems as well as considerable out-migration. During the socialist regime, the region was host to a great deal of policy intended to eradicate entrepreneurship. In this time, collectivist values were strongly favored and entrepreneurship was perceived as a bourgeois anachronism (e.g., Pickel, 1992; Thomas, 1996). Hence, an anti-entrepreneurship policy strategy was adopted that included massive socialization of private enterprises and the suppression of any remaining private-sector activity (for details, see Brezinski, 1987; Pickel, 1992). As a result, the self-employment rate at the end of the GDR regime in 1989 was only about 1.8 percent compared to 10.5 percent in West

Germany.² The few private firms in existence were primarily found in those small trades ill-served by inflexible centrally planned state firms.

The introduction of a market economy in East Germany in the year 1990 can be regarded as a “shock transition”; the ready-made formal institutional framework of West Germany was adopted practically overnight (e.g., Brezinski & Fritsch, 1995; Hall & Ludwig, 1995). Between 1989 and 1991, the share of manufacturing employment dropped from 48.7 percent to 16.0 percent (Hall & Ludwig, 1995) and unemployment rose from virtually zero in 1989 to more than 15 percent in 1992 (Burda & Hunt, 2001). These developments induced massive out-migration, especially of young and qualified workers (Hunt, 2006). Even now, more than 20 years after this transformation process began, nearly all East German regions lag considerably behind their West German counterparts.

With the transformation to a market economy system, new business formation in East Germany started to boom, particularly in the services and construction sectors. However, it took until 2005—15 years—before the self-employment rate in East Germany matched that of West Germany (Fritsch et al., 2012b). Despite a now slightly higher level of self-employment in East Germany, the characteristics of the new businesses in terms of industry affiliation, survival, and number of employees are quite different between the two regions. Start-ups in East Germany since 1990 have been much more concentrated in sectors that are focused on local demand and are characterized by low entry barriers in terms of minimum efficient size, particularly construction, tourism, and consumer services. East German start-ups have lower survival rates and, on average, fewer employees than new businesses set up in West Germany during the same period. In short, East Germany did not become a carbon copy of West Germany but is instead, due to its socialist legacy, a distinct regional growth regime (Fritsch, 2004).

² According to Kawka (2007), self-employment activities in the former GDR in the year 1989 was at 1.8 percent of the working population, mostly comprising master craftsmen (‘Handwerksmeister’). Also, there was a certain limit with regard to the number of people that these private firms were allowed to employ.

3. Impact of Socialism on the intergenerational transmission of entrepreneurial attitudes

Many studies have shown that one of the major precursors of an individual's entrepreneurial development is the parental role models of self-employment (Bosma, Hessels, Schutjens, Van Praag, & Verheul, 2012; Dunn & Holtz-Eakin, 2000; Laspita, Breugst, Heblich, & Patzelt, 2012; Scherer, Adams, Carley, & Wiebe, 1989). There are at least three channels through which this effect might work. First, self-employed parents might transmit to their offspring entrepreneurship-related experience, human capital, contacts in a social network, and reputation. Second, self-employed parents might be more willing and able to provide to their children financial capital for setting up a new business. Third, children of self-employed parents might inherit family businesses. The available evidence suggests that a most important way through which a parental role model affects an individual decision to become an entrepreneur is by the transmission of entrepreneurial attitudes, such as need for autonomy and willingness to take risks, among others.

Self-employed parents in the GDR could not be full-fledged role models to their children because the socialist system put severe restrictions on private sector firms, e.g. with regard to prices, profits, growth, and the accumulation of financial capital. Hence, parental role models of entrepreneurship in socialist East Germany were not comparable to their West German counterparts. In particular, they were not able to provide their children with the same level of human and financial capital as was the case in the West.³ Nevertheless, self-employed in the GDR showcased values and a kind of behavior that became welcome in the post-unified Germany and that could increase the individual's willingness to become self-employed. These considerations can be summarized in the following hypotheses:

H1a: For former FRG residents there is a positive relationship between the presence of a parental role model of self-employment and being self-employed.

³ That entrepreneurship under the conditions of the socialist regime was hardly comparable to entrepreneurship in a market economy is, for example, indicated by Koch and Thomas (1996) who report that about half of the GDR entrepreneurs were forced to exit the market in the first two years after unification.

H1b: For former GDR residents there is a positive relationship between the presence of a parental role model of self-employment and being self-employed.

H1c: The positive relationship between the presence of a parental role model and being self-employed is stronger for former FRG residents than for former GDR residents.

In a socialist regime that propagated anti-entrepreneurial values the effect of parental role models of self-employment on an individual's decision to become an entrepreneur may have been influenced by the level of experienced indoctrination. In the GDR, the system of education was a rather strong channel of such an ideological indoctrination. This indoctrination was particularly pronounced in tertiary education that aimed at nurturing the future state "elite." One of the major aims of the education system in socialist East Germany was to increase the proportion of university students with working-class and peasant background. For this reason, the share of university students from the upper-middle class was limited (Pinquart, Juang, and Silbereisen, 2004). Moreover, party membership and extended service in the army have been important criteria for being admitted to the university.⁴ Political indoctrination at the East German universities included obligatory attainment of classes on Marxism-Leninism ideology for students of all disciplines, which was not the case, for instance, at institutions of vocational education. Thus, people who have acquired a tertiary degree in the GDR had not only declared conformity with socialist values but had also experienced relatively long periods of intensive indoctrination. In contrast, vocational training was marked by a considerably lesser degree of ideological indoctrination suggesting that the behaviour and the values of persons without a tertiary degree were to a greater extent influenced by their families. Hence, East Germans with a tertiary degree might have been less likely to follow the career path of their entrepreneurial parents because this career choice is not consistent with their values, while this intergenerational link might have been damaged to a lesser degree among less-educated GDR residents. Hence, we assume that:

H2a: Among former GDR residents the relationship between the presence of a parental role model and being self-employed differs depending on the level of education.

⁴ This might not necessarily hold for all specializations, but was especially true for disciplines such as philosophy, law, medicine, and other humanities.

H2b: Among former FRG residents the relationship between the presence of parental role model and being self-employed does not differ depending on the level of education.

4. Data and Methodology

Sample

Our empirical analysis is based on the German Socio-Economic Panel data (SOEP), which is an annual representative survey of German households with approximately 20,000 respondents (Wagner, Frick, & Schupp, 2007). The SOEP started in 1984 in West Germany, and shortly after German reunification in the year 1990, respondents in East German regions have been included into the survey. Thus, the SOEP allows us to compare the characteristics of self-employed people in East and West Germany starting shortly after the unification. To test our hypotheses we employ the waves 1991-1997 of the SOEP.

The individual's self-reported self-employment status is used as a proxy for entrepreneurship. This measure is common in the entrepreneurship literature (see Parker, 2009). We only consider those who are self-employed in their primary activity and do not regard persons who are engaged in self-employment activities only occasionally or in addition to their primary activity in dependent employment. We further exclude helping family members from the analysis because they represent rather special cases of entrepreneurship. In order to be able to use the information about the industry in which the respondents are active, we have to exclude the unemployed persons, those who are in full-time education, or retired. We also exclude individuals who are currently in military or community service. Hence, our variable for being self-employed has the value one if the employment status is "self-employed" or "freelance professional" and it is zero for the dependently employed persons. In order to guarantee that the process of socialization and educational attainment occurred during the GDR period, we restrict our sample to those who were born between the years 1933 and 1964. Thus, at the beginning of the socialist period the oldest respondent in our sample was about 15 years old, and at the fall down of the regime in 1989 the youngest respondent was 25 years old. After deleting observations for which variables of interest have missing values, the final sample contains 28,849 observations, among them 2,220 self-employed (7.7 percent of the sample).

Measures

A key variable for our analysis is whether or not an individual has lived in the former GDR in the year 1989. The average weighted self-employment rates⁵ are 7.3 percent for former GDR residents and 8.9 percent for former FRG residents.⁶

Our predictor variable, the presence of a parental role model of self-employment, is operationalized by the binary variable which equals one if either parent has been self-employed as a respondent has been about 15 years old and equals zero otherwise. The moderator variable is a binary variable that equals one if an individual has acquired a tertiary degree and is zero otherwise.⁷ The set of control variables includes age, gender (male = 1, female = 0), years of experienced unemployment, the industry in which a person is working (at the one-digit-level of NACE), and a dummy for the Federal State (‘Bundesland’) in which a respondent currently resides. These variables have been often found to have a significant effect on entrepreneurial behavior (Parker, 2009) and, thus, should be included in the analysis.⁸

Method

Since our dependent variable is binary, we estimate a probit regression to analyze the effect of the presence of a parental role model on the probability of self-employment. The models are estimated separately for former GDR residents and former FRG residents. In order to test whether the relationship between the parental role models of self-employment and the decision to become self-employed differs depending on the individual’s level of education, we include an interaction of these two variables into the models.

⁵ The self-employment rate is calculated as a share of self-employed people in the employed population.

⁶ These numbers are consistent with those reported for East and West Germany on the basis of the German Micro-Census (see Fritsch et al., a,b).

⁷ We are aware about differences in educational degrees in East and West Germany. However, their interpretation should not be problematic since we use rather rough category for tertiary education and estimate models for East and West Germans separately.

⁸ A correlation matrix is provided in Table A1 in the Appendix.

5. Results

Table 1 contains the results of a t-test of equal means for the subgroups of self-employed and dependently employed persons. On average, self-employed persons are significantly more likely to have a parental role model than employees. About 10 percent of self-employed East Germans in our sample had a self-employed parent, while the share of self-employed West Germans with entrepreneurial parents was about 23 percent. The descriptive evidence further suggests that self-employed people are on average more likely to hold a tertiary degree than employees. Remarkably, the share of tertiary graduates among self-employed East Germans is almost twice as high as among West Germans in the period under observation. The results for the control variables are in accordance with the previous research conducted with the same database (see, e.g., Caliendo, Fossen, & Kritikos, 2009).

Table 1: T-test of equal means by employment status and place of residence

	Former GDR resident		Former FRG resident	
	Self-employed	Dependently employed	Self-employed	Dependently employed
Self-employed parents at age 15	0.096*** (0.295)	0.054 (0.226)	0.229*** (0.421)	0.106 (0.307)
Tertiary degree	0.424*** (0.495)	0.344 (0.475)	0.227*** (0.419)	0.127 (0.333)
Age	42.963 (7.999)	42.633 (8.194)	44.139 (8.516)	43.765 (8.786)
Gender (male=1;female=0)	0.732*** (0.443)	0.508 (0.500)	0.701*** (0.458)	0.597 (0.490)
Experienced unemployment (years)	0.225** (0.526)	0.183 (0.517)	0.325*** (0.926)	0.420 (1.252)
Number of observations	668	9,039	1,552	17,590

Notes: *** p<.001; ** p<.05; * p<.10; standard deviations in parentheses.

Table 2: Results of probit regression for the decision to become self-employed in 1991-1997

	Former GDR residents			Former FRG residents		
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Control variables</i>						
Age	0.0189 (0.0289)	0.0144 (0.0289)	0.0112 (0.0288)	0.0566*** (0.0172)	0.0674*** (0.0175)	0.0690*** (0.0175)
Age, squared	-0.000256 (0.000331)	-0.000217 (0.000330)	-0.000183 (0.000329)	-0.0006*** (0.000194)	-0.0008*** (0.000197)	-0.0008*** (0.000197)
Male	0.594*** (0.0472)	0.591*** (0.0473)	0.591*** (0.0474)	0.328*** (0.0321)	0.323*** (0.0324)	0.325*** (0.0325)
Experienced unemployment	0.0768** (0.0369)	0.0784** (0.0369)	0.0789** (0.0367)	-0.0433*** (0.0132)	-0.0346*** (0.0128)	-0.0338*** (0.0128)
Tertiary degree	0.378*** (0.0451)	0.376*** (0.0452)	0.433*** (0.0467)	0.424*** (0.0384)	0.403*** (0.0391)	0.440*** (0.0423)
<i>Main effects</i>						
Parental role model		0.274*** (0.0744)	0.549*** (0.0900)		0.445*** (0.0376)	0.490*** (0.0422)
<i>Interaction effects</i>						
Parental role model × tertiary degree			-0.751*** (0.160)			-0.195** (0.0901)
Industry	YES	YES	YES	YES	YES	YES
Region	YES	YES	YES	YES	YES	YES
Year	YES	YES	YES	YES	YES	YES
Intercept	-2.365*** (0.634)	-2.254*** (0.633)	-2.190*** (0.632)	-2.533*** (0.382)	-2.835*** (0.389)	-2.880*** (0.389)
Number of observations	9,707	9,707	9,707	19,142	19,142	19,142
Number of self-employed	668	668	668	1,552	1,552	1,552
Log-Likelihood	-2,183	-2,178	-2,167	-4,906	-4,840	-4,838
Chi2	453.4***	461.5***	489.5***	852.3***	930.0***	926.0***
Pseudo R2	0.102	0.105	0.109	0.0891	0.101	0.102

Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

The results of the multivariate analysis are reported in Table 2. In a first step we estimate models for former GDR and FRG residents with only the control variables included (model 1 and 4). We then add the variable for existence of a parental role model (model 2 and 5), and in a final step the interaction effect between the parental role model and tertiary degree is included. With regard to the main effect, we find a positive and highly significant relationship between the presence of a parental role model and the probability of a person's engagement in self-employment for both East Germans and West Germans, supporting our

hypotheses 1a and 1b. The test of whether this effect is of a different magnitude among East and West Germans yielded a significant χ^2 ($p=0.041$) suggesting that the presence of a parental role model on self-employment is significantly stronger among West Germans, thus, providing support for our hypothesis 1c. Moreover, in the East German sample there is a highly significant interaction effect between parental role model and tertiary degree that supports our hypothesis 2a about different effectiveness of parental role models for persons with and without tertiary education. However, the above and the interaction effect is also significant in the sample for West Germans what contradicts our hypothesis 2b.

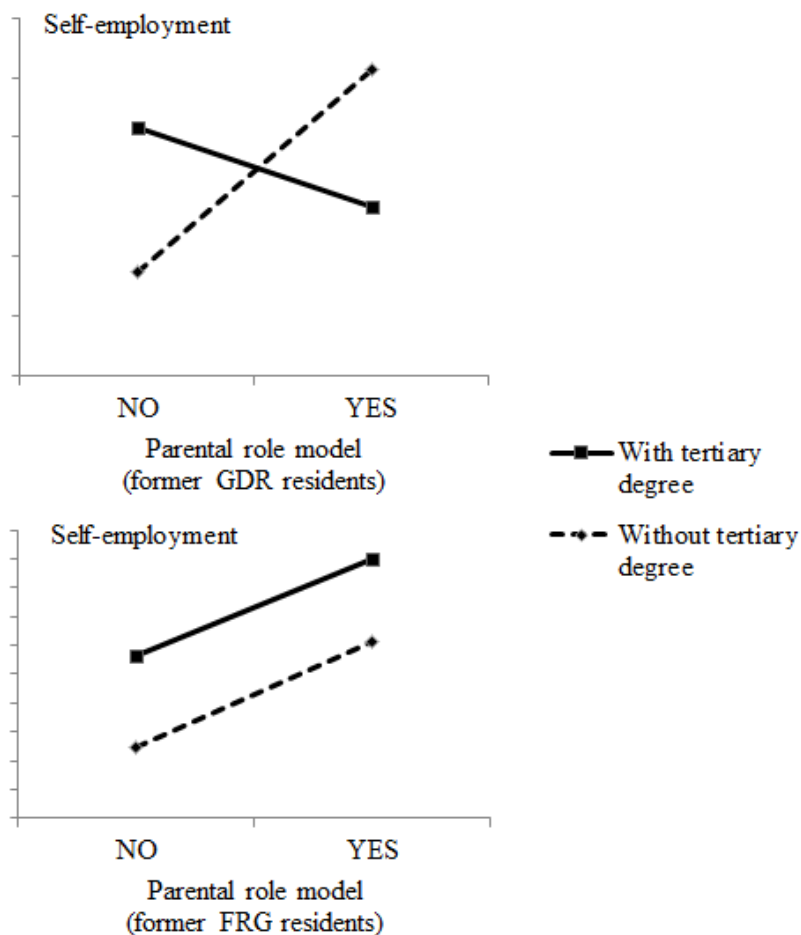


Figure 1: Interactions between parental role model and tertiary education for former GDR residents and former FRG residents

To illustrate the form of interaction we plot predicted values for the probability of self-employment of persons with and without a tertiary degree according to the presence of a parental role model (Fig. 2). For former GDR residents without a tertiary degree the probability of self-employment increases in the presence of parental role model. However, there is a slight decline in the likelihood of self-employment for East Germans who had self-employed parents and have attended university. In contrast, for FRG residents the relationship between the presence of parental role model and the probability of self-employment is increasing for both groups with and without tertiary degree. Interestingly, for West Germans this relationship is more positive when they have not attended university.⁹ Thus, hypothesis 2b can only partly be supported, since the relationship between parental role model and the probability of self-employment is positive for West Germans with and without tertiary degree. However, there is significant difference in the magnitude of this positive effect depending on the level of education.

Table 3: Marginal effects of having experienced a parental role model on the probability of self-employment after probit regression

	With tertiary degree	Without tertiary degree
Former GDR residents	-0.0144 (0.0145)	0.0646*** (0.0171)
Former FRG residents	0.0648*** (0.0199)	0.0719*** (0.00817)

*** p<0.01, ** p<0.05, * p<0.1.

To test whether each slope in Fig.1 significantly differs from zero we run probit regressions for the probability of self-employment separately for those with and without a tertiary degree, and calculate marginal effects for having experience a parental role model (Table 3). For former GDR residents the relationship between having experienced a parental role model and the probability of self-

⁹ This smaller effect for West Germans with tertiary education might be explained by better labor market opportunities for academics that reduces the pressure for necessity entrepreneurship.

employment is only statistically significant for those who do not hold a tertiary degree (marginal effect = 0.065, $p < 0.000$). For West Germans both slopes are statistically significant and positive.

6. Conclusions

After the demise of the socialist GDR regime, East Germans have demonstrated a high willingness to become self-employed in spite of all pessimistic projections. Accordingly, the level of self-employment in East Germany has reached the level of West Germany only 15 years after the German reunification (Fritsch et al., 2012b). In this paper, we have questioned whether or not intergenerational transmission of entrepreneurial values through parental role models of self-employment has been disturbed by ideological indoctrination during the socialist regime. We have argued that former GDR residents have been indoctrinated at different extents depending on their level of education. The strongest indoctrination with anti-capitalist and particularly anti-entrepreneurial ideology took place at universities that were supposed to nurture the future “elite.” This ideological conditioning of university graduates was supported by a pronounced tendency to admit only those persons to higher education that declared conformity with socialist values. For this reason, we expected to find a rather strong disruption of parental role models of self-employment among university graduates.

Our empirical analysis for the early period of transformation, the years 1991-1997, confirms this expectation. The results suggest that shortly after the reunification there was a significant and positive link between the presence of a parental role model and the decision to become self-employed for former GDR residents without a tertiary degree, whereas this relationship was not statistically significant for university graduates. For the former FRG residents we find a strong positive effect of the presence of parental role models irrespective of the education level. However, this effect was less positive for university graduates than for less-educated people. Overall, our results suggest that socialist propaganda had a particularly disruptive effect on the intergenerational transmission of entrepreneurial attitudes for those East Germans that have attained

a tertiary degree in the GDR system.¹⁰ Still, we cannot exclude the possibility that the selection of students with anti-capitalistic values for university education also contributed to damage the link between parental role models and self-employment of highly educated people in the GDR. Particularly, universities might have restricted the access to human capital of those with pronounced entrepreneurial attitudes. The resulting lack of human capital might have tremendous negative effects on the development of start-up, its quality and survival chances.

To conclude, the present research illustrates that the mechanism that allows intergenerational transmission of entrepreneurial attitudes could not be fully eradicated by a 40-years-period of Socialism in Eastern Germany. However, this mechanism has been significantly damaged in a very important part of the population, those with high levels of human capital.

¹⁰ There are indications that ideological indoctrination at the universities in GDR has been considerably more intensive than was the case in other countries of the socialist bloc like Poland or Czechoslovakia (see Connelley, 2000, for details) so that our results may not be fully transferable to these countries.

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Appendix

Table A1: Correlation matrix

	Mean	Standard deviation	Minimum	Maximum	1	2	3	4	5	6
1 Self-employed	0.077	0.266	0	1	1					
2 Self-employed parents at age 15	0.096	0.295	0	1	0.091	1				
3 Tertiary degree	0.207	0.405	0	1	0.057	0.028	1			
4 Former GDR resident	0.336	0.473	0	1	-0.022	-0.094	0.25	1		
5 Age	43.406	8.592	27	64	0.012	0.042	-0.023	-0.063	1	
6 Gender (male=1;female=0)	0.578	0.494	0	1	0.077	0.012	-0.008	-0.078	0.034	1
7 Experienced unemployment (years)	0.337	1.052	0	18.7	-0.012	-0.039	-0.079	-0.102	-0.01	-0.016