Unemployment as a social norm revisited: Novel evidence from German counties

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Unemployment is associated with a loss in utility. This utility loss can be mitigated through coping strategies, which vary with age and gender. Using highly detailed German county level data, we test whether the social norm effect of unemployment is age-dependent. The well-being differential between the unemployed and the employed is found to increase with the local unemployment rate at the beginning of the working life but to remain steady or even to decrease in older age. Individual unemployment, however, remains an extremely unpleasant experience even if local unemployment is high.

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1 Introduction

It is well-known that job loss strongly reduces individuals' subjective well-being (e.g., Clark & Oswald, 1994) and that it creates negative externalities for both the employed and the unemployed through changes in others' unemployment (Clark, 2003). More precisely, despite the worsening of future job prospects (the 'prospect effect'), others' unemployment may also reduce the unemployed's distress through less stigmatization. This latter result is interpreted as a 'social norm' effect of unemployment.[1] However, the social norm effect is typically only found for men but not for women (e.g., Clark, 2003) and the effect of others' unemployment is approximated by the unemployment rate at the state level – a rather crude measure.

The aim of this paper is to carefully reexamine the norm-dependence of psychological costs of unemployment. The contribution of our paper is twofold: First, it provides novel evidence using a refined norm approximation based on German county-level data (i.e. 403 'Kreise'). This is important as local unemployment rates are shown to vary considerably across counties within states. Second, it allows for age-specific norm effects, which proves useful in understanding the seemingly inconsistent patterns between men and women documented by the previous literature.

Using data from the German Socio-Economic Panel, we show that the relative importance of the social norm effect is age-dependent: While the well-being *differential* between the employed and the unemployed increases with the local unemployment rate for young individuals at the beginning of their working life, it remains steady or decreases in older age. Such a life-cycle pattern is found for both men and women. More precisely, the overall effect (of the local unemployment rate on the well-being differential between the employed and the unemployed) becomes less negative for women over time, whereas it becomes even positive for men.

These findings can be rationalized by (i) a lower importance of the unemployment rate in individual prospect formation over time, e.g., due to a gain in professional experience and the reliance on alternative information sources, and (ii) an increased importance of a social working norm over the life cycle, as the availability of different coping strategies with unemployment may be age- and gender-specific (e.g., Schöb, 2013). Specifically, we expect the social norm effect to increase with age, as older unemployed have a more restricted access to urban subculture, implying fewer alternative identies and thus coping strategies. Therefore, older unemployed are expected to benefit more from a less intense norm to work. The economic relevance of the social norm effect, however, turns out to be relatively weak in the sense that it does not at all offset the individual distress of being unemployed. Hence, for reasonable levels of the local unemployment rate, individual unemployment remains an extremely

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[1]See, e.g., Shields & Wheatley Price (2005), Powdthavee (2007) and Clark *et al.* (2009).

unpleasant experience even if local unemployment is high.

The remainder is structured as follows. Section 2 describes the data and our main results. Section 3 concludes.

2 Empirical analysis

Our empirical analysis uses data from the German Socio-Economic Panel (SOEP, v30), see Wagner *et al.* (2007). The analysis is restricted to individuals aged 18 to 64 and to the time period from 1998–2012 as consistent information on county-level unemployment are, at the moment, only available for these years.[2] Summary statistics can be found in Table 1. Moreover, to emphasize the importance of using more disaggregated data, figure 1 plots the deviations of the county unemployment rate from the respective state level in 2009. These deviations turn out to be large, thereby suggesting that the state level unemployment rate might be a poor proxy of the local social norm to work. For example, in North Rhine-Westphalia, the most populous German state, the average unemployment rate is equal to 8.9% whereas unemployment at the county level varies from 4.4% to 15.1%.

The empirical baseline model is the same as in Clark (2003):

$$Y_{it} = \gamma_1 UE_{it} + \gamma_2 uerate_{st} + \gamma_3 UE_{it} \times uerate_{st} + \beta' x_{it} + \mu_i + \mu_t + \epsilon_{it} \tag{1}$$

where Y_{it} is the respondents' general life satisfaction evaluated on a scale ranging from 0 ('completely dissatisfied') to 10 ('completely satisfied') and UE_{it} is a dummy variable which equals one if individual i at date t is unemployed and zero otherwise. The set of explanatory variables x_{it} is fairly standard in the literature[3], including e.g. income, age and education as well as person and time fixed effects μ_i, μ_t. Moreover, $uerate_{st}$ is the local unemployment rate of county s in period t. In line with the previous literature, we expect $\gamma_1 < 0$, $\gamma_2 < 0$ and, for a dominating social norm effect, $\gamma_3 > 0$. To investigate a possible age-dependence of the social norm effect we also interact the term $UE_{it} \times uerate_{st}$ with three different age brackets, i.e., [18,25], [26,55] and [56,64] (referred to as young, middle-aged and old, respectively).[4] An increased relative importance of the social norm effect over the life-cycle implies an increasing, i.e. a more positive or less negative, effect of the unemployment rate on the life satisfaction differential. More specifically, we expect a negative effect for the reference group of individuals aged 18–25, and increasingly positive coefficients for the age group interactions with the unemployment-rate.

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[2]Data on county-level unemployment rates are taken form the INKAR database (available at www.inkar.de).

[3]See, e.g., Kassenböhmer & Haisken-DeNew (2009).

[4]Our main result are robust against alternative choices of these brackets.

In our baseline specification, we estimate the models using linear fixed effects (LFE). However, we also use the recently developed probit-adapted ordinary least squares (POLS) method by van Praag & Ferrer-i-Carbonell (2008). The most important advantage of this method, compared to standard ordered probit models, is that it can be applied within a fixed effects environment. Moreover, as interaction variables play a key role in our analysis, the POLS method is considered here to be superior to standard non-linear regression models and their well-known shortcomings (see Clark *et al.* (2009, p.257) for more details).

Table 2 provides our main results for men (columns (1)-(4)) and women (columns (5)-(8)), for both empirical models and for both estimation methods. Our main findings are as follows. First, both own unemployment and a higher local unemployment rate strongly reduce individuals' subjective well-being in line with the existing literature. Second, for the models without age-interactions, the local unemployment rate has a strong positive and thus opposing effect for men, but a negative and thus amplifying effect for women. These results reproduce the overall, well-established effect that a higher unemployment rate leads in general to a lower well-being differential between the employed and the unemployed for males when using county level data. Third, for the more detailed age-dependent specifications, however, a higher local unemployment rate significantly increases the life satisfaction of middle-aged men, older men and older women whereas it strongly reduces individuals' subjective well-being for young women. Finally, the results from the linear fixed effects and the POLS estimator turn out to be qualitatively similar.

To analyze how the unemployment rate affects the well-being differential between the employed and the unemployed, we calculate the overall effect for each age group: For young unemployed men and women this overall effect simply equals the interaction term, whereas the coefficients of the two age-group-unemployed interaction terms indicate the difference in the effect of the local unemployment rate on individual well-being relative to these reference groups. Figure 2 plots the results of our calculations, i.e. the life satisfaction differential between employed and unemployed men and women by age group for different levels of county unemployment rates. The coefficient of the interaction term for young unemployed men is insignificant and equals -0.0121. Hence, for young men we do not find evidence in favor of a positive, i.e. attenuating, effect of the unemployment rate and thus for a dominating social norm effect. By contrast, for middle-aged men, the overall effect on the well-being gap is $-0.0121 + 0.0230 = 0.0109$ (with $t = 1.708$), suggesting that the social norm effect now dominates the prospect effect. Consequently, the well-being differential of the unemployed and the employed is decreasing with the local unemployment rate for this age group. For older men the overall effect is even larger (0.0234) and also significant ($t = 1.748$). For young women the social norm effect seems to be rather weak as it is

dominated by the prospect effect. The overall effect is significantly negative. The net effect of the unemployment rate on the well-being gap for mid-aged women equals -0.0227 and is significant with $t = -3.566$. Finally, for older women the interaction term is much larger and positive (0.0356) with $t = 2.08$, implying an insignificant positive overall effect of the local unemployment rate on the life satisfaction differential (0.00487) with $t = 0.476$.

Overall, for the age-dependent specifications, a consistent pattern for both men and women thus emerges: The well-being *differential* between the employed and the unemployed increases with the local unemployment rate for young individuals at the beginning of their working life, but remains steady or decreases in older age. Hence, the social norm effect becomes relatively more important over the life cycle. Moreover, for women, the social norm effect seems to be weaker than for men, since it is mostly dominated by the prospect effect.[5]

We consider two sensitivity checks. First, and importantly, we compare our results with the existing literature. To do so, we show the same estimation results for the state (instead of the county) level unemployment rate. As can be inferred from table 3, the use of highly detailed data at the county level indeed turns out to be crucial for our findings. More precisely, with unemployment rates at the state level, we do not find any significant coefficients of the unemployment rate interaction terms for men whereas for women the effects remain qualitatively similar, though the coefficient of the interaction term is significant only at the ten percent level for older women. Second, we calculate two-way clustered standard errors by county and wave, following the procedure outlined in Cameron & Miller (2015). In the present application, as shown in table A.1 of the Appendix, both clustering methods yield very similar results since the size of the standard errors does not differ much.[6]

Our results from the baseline models generally confirm the presence of negative externalities for the employed and also the asymmetry between men and women for which the existing literature has not yet found a convincing explanation (e.g., Clark (2003)). Both gender-specific effects and our finding that the strength of the norm effect varies over the life-cycle can be rationalized by the availability of different age- and gender-specific coping strategies with unemployment. Psychological research, indeed, emphasizes the importance of alternative social roles as mediators of one's own negative unemployment experience. Many studies focus on gender-specific dif-

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[5]Note that if we were interested in calculating the overall cost (in terms of individual well-being) of an increasing local unemployment rate, the simple coefficient of the unemployment rate would come into play, which is significantly negative. This effect, however, reduces the life satisfaction of both the employed and the unemployed and therefore cancels out in our analysis as we are interested in the life satisfaction differential between the employed and the unemployed.

[6]Our main results are also robust against the inclusion of a dummy variable indicating urban density or whether an individuals has experienced an unemployment spell in the past (these results are available upon request).

ferences, in particular the availability of additional roles for women, such as 'being a housewife' or 'parent'.[7] The availability of social roles, however, also varies with age since alternative lifestyles or urban subcultures are easier to maintain at young age (Schöb, 2013). Specifically, young individuals have easier access to different scenes, which may provide alternative identities and thus eclipse the importance of own employment as identity-providing source; see Hitzler & Niederbacher (2010).

Finally, figure 2 also reveals that for reasonable levels of the local unemployment rate individual unemployment remains an extremely unpleasant experience. Even if the local unemployment rate (centered around its average level, which equals nine percent) is high, the well-being gap barely vanishes.

3   Concluding Remarks

This paper revisits the social norm effect of unemployment. Previous research inspired by identity economics suggests coping strategies, i.e. alternative identities, to vary with both age and gender. Since older people have restricted acess to urban subcultures, we expect older unemployed to benefit more from a less intense norm to work. We test this age-dependence of the social norm effect using highly detailed data at the German county level. The results indeed suggest that the well-being differential between the employed and the unemployed increases with local unemployment at the beginning of the working life but remains steady or decreases in older age. Our findings are thus consistent with identity economics.

The existence of a social norm effect is typically considered to be an explanation of unemployment hysteresis (Clark, 2003). However, as the economic importance of the norm effect turns out to be weak, our findings put some caution on the hysteresis argument. Rather, alternative explanations, e.g., the access to social networks, may be important (Kunze & Suppa, 2017). Hence, an adequate policy response to unemployment should consist of a prompt policy reaction with a particular focus on supporting the unemployed in retaining their social networks.

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[7]See Warr & Parry (1982), Waters & Moore (2002).

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Table 1: Summary Statistics

Individual Data	Men				Women			
	Mean	Sd	Min	Max	Mean	Sd	Min	Max
Life Satisfaction	7.00	1.70	0	10	7.02	1.72	0	10
Log Net Real Household Income (in euro, at 2006 prices)	10.08	0.51	2.73	14.6	10.05	0.53	3.12	13.9
Years of Education	12.43	2.77	7	18	12.41	2.63	7	18
Age < 25 ('Young')	0.10		0	1	0.10		0	1
26 ≤ Age ≤ 55 ('Middle Aged')	0.75		0	1	0.77		0	1
56 ≤ Age ≤ 64 ('Old')	0.15		0	1	0.13		0	1
Unemployed	0.08		0	1	0.08		0	1
Shock: Child born	0.03		0	1	0.01		0	1
Shock: Spouse died	0.00		0	1	0.00		0	1
Shock: Separated / Divorced	0.00		0	1	0.01		0	1
No Work Disability	0.93		0	1	0.94		0	1
Someone in need of care lives in the household	0.02		0	1	0.02		0	1
Married	0.63		0	1	0.60		0	1
East-Germany	0.22		0	1	0.24		0	1
Number of Children: 0	0.59		0	1	0.61		0	1
Number of Children: 1	0.20		0	1	0.21		0	1
Number of Children: 2	0.16		0	1	0.14		0	1
Number of Children: 3+	0.05		0	1	0.03		0	1

Regional Data	State				County			
	Mean	Sd	Min	Max	Mean	Sd	Min	Max
Unemployment rate	11.18	4.48	3.7	20.5	8.99	4.51	1.2	25.4
GDP per capita (in 10.000 EUR)	2.70	8.39	1.51	5.47	2.61	10.95	1.14	11.0

Notes: Data from SOEP 1998-2012. Number of person-year observations: Men $N = 94298$, women $N = 83621$. Number of state/county-year observations: State $N = 240$, county $N = 6030$.

Figure 1: Difference between county and the respective state unemployment rate (in 2009)

(3.5,4.5]
(2.5,3.5]
(1.5,2.5]
(.5,1.5]
(−.5,.5]
(−1.5,−.5]
(−2.5,−1.5]
(−3.5,−2.5]
[−4.5,−3.5]
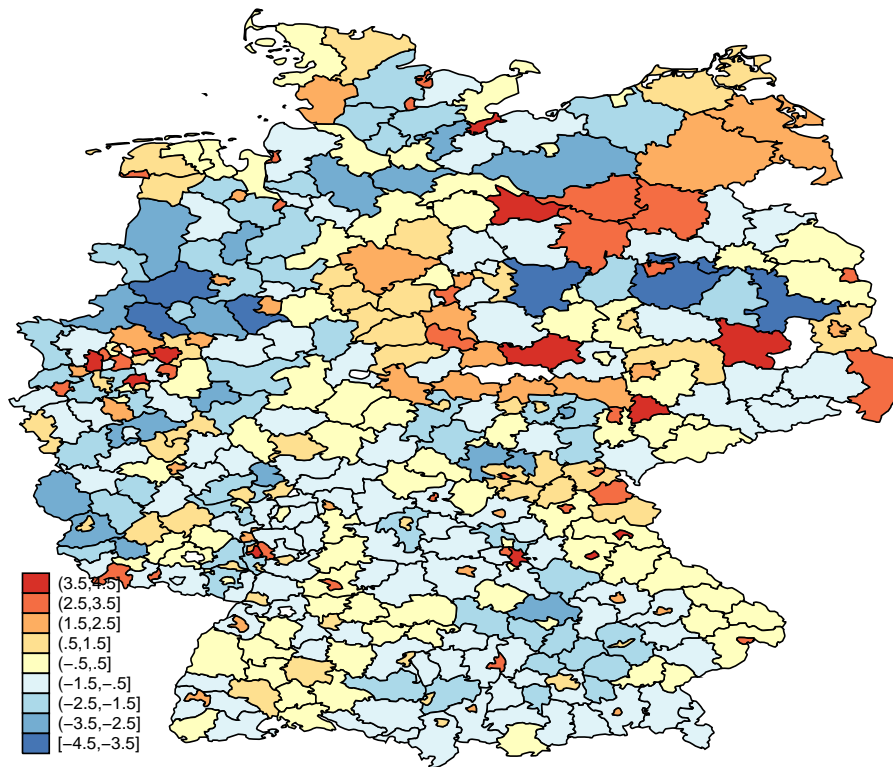
Notes: Data from SOEP 2009.

Figure 2: Life Satisfaction Differential (Employed vs. Unemployed by Age and Gender)
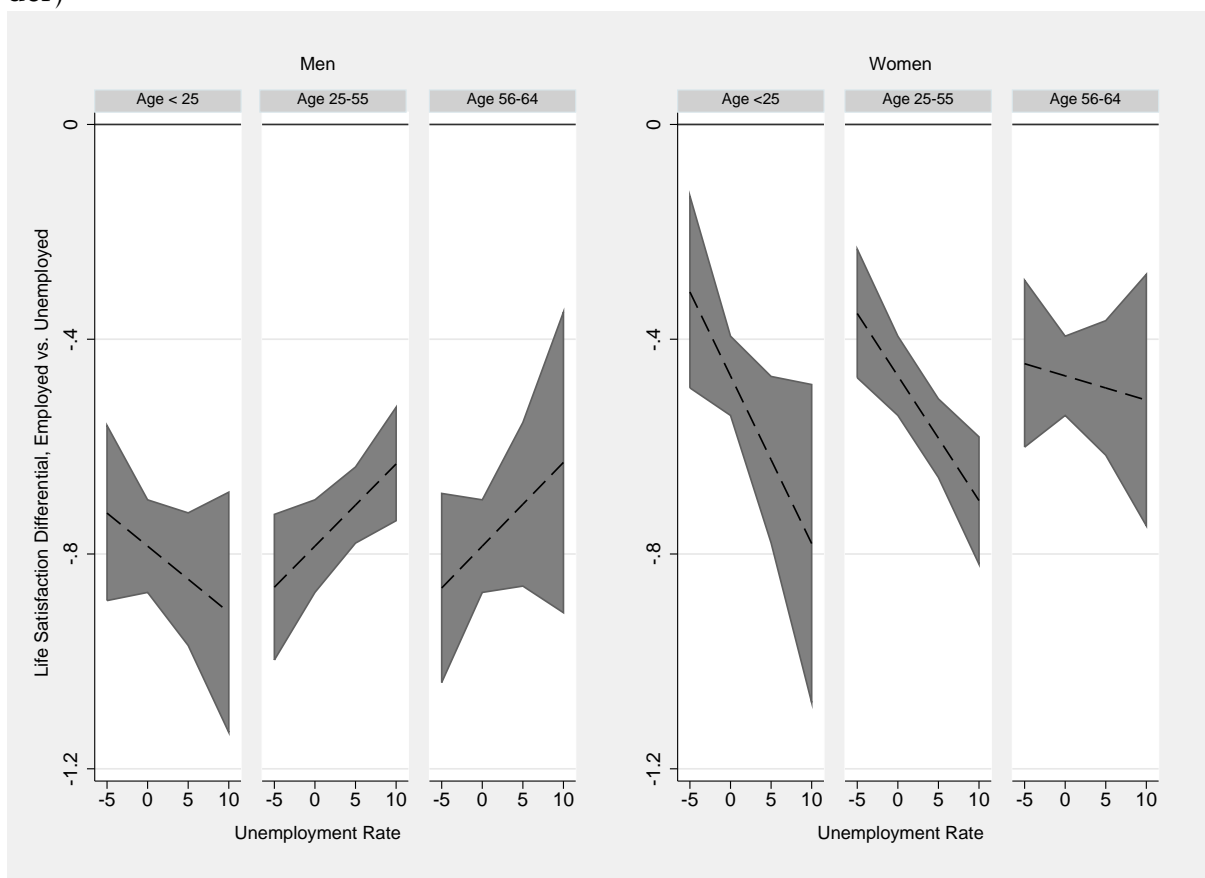
Notes: Data from SOEP 1998-2012. Life Satisfaction Differential, 95% confidence intervals. The figures are based on columns (3) and (7) of table 2.

	Men				Women			
	(1) LFE	(2) POLS	(3) LFE	(4) POLS	(5) LFE	(6) POLS	(7) LFE	(8) POLS
Unemployed	-0.855***	-0.412***	-0.853***	-0.411***	-0.530***	-0.256***	-0.528***	-0.255***
	(-20.28)	(-19.86)	(-20.17)	(-19.75)	(-14.84)	(-14.35)	(-14.72)	(-14.20)
Unemployment Rate	-0.0181***	-0.0105***	-0.0178***	-0.0104***	-0.0171***	-0.0107***	-0.0166***	-0.0104***
	(-3.82)	(-4.04)	(-3.77)	(-4.00)	(-3.89)	(-4.34)	(-3.75)	(-4.20)
Unemployed × Unemployment Rate	0.00964*	0.00617**	-0.0121	-0.00493	-0.0200***	-0.00878***	-0.0307**	-0.0143**
	(1.71)	(2.25)	(-1.03)	(-0.84)	(-3.65)	(-3.30)	(-2.34)	(-2.03)
Unemployed × Middle Aged × Unemployment Rate			0.0230*	0.0116**			0.00807	0.00391
			(1.96)	(2.01)			(0.56)	(0.52)
Unemployed × Old × Unemployment Rate			0.0355*	0.0188**			0.0356**	0.0201**
			(1.97)	(2.15)			(2.08)	(2.28)
Middle Aged	-0.00613	-0.0155	-0.0149	-0.0200	-0.00493	-0.0101	-0.00734	-0.0113
	(-0.17)	(-0.78)	(-0.43)	(-1.01)	(-0.15)	(-0.54)	(-0.22)	(-0.59)
Old	0.0880*	0.0388	0.0772*	0.0332	0.0405	0.0180	0.0318	0.0131
	(1.95)	(1.57)	(1.73)	(1.36)	(0.89)	(0.70)	(0.69)	(0.51)
Log Net Real Household Income (in EUR, at 2006 prices)	0.214***	0.105***	0.214***	0.105***	0.247***	0.128***	0.247***	0.128***
	(9.18)	(8.51)	(9.18)	(8.50)	(11.84)	(11.48)	(11.85)	(11.50)
Shock: partner died	-1.363***	-0.624***	-1.364***	-0.624***	-1.093***	-0.521***	-1.093***	-0.521***
	(-5.21)	(-4.99)	(-5.22)	(-4.99)	(-6.94)	(-6.83)	(-6.94)	(-6.83)
Shock: Child born	0.0871***	0.0516***	0.0874***	0.0518***	0.175***	0.106***	0.175***	0.106***
	(3.61)	(3.76)	(3.63)	(3.78)	(3.84)	(3.99)	(3.85)	(3.99)
Shock: Separated / Divorced	-0.533***	-0.252***	-0.533***	-0.252***	-0.372***	-0.185***	-0.372***	-0.185***
	(-6.14)	(-6.05)	(-6.14)	(-6.05)	(-4.52)	(-4.38)	(-4.52)	(-4.38)
Someone in need of care lives in the household	0.127**	0.0573*	0.128**	0.0578*	0.184**	0.0920**	0.182**	0.0913**
	(2.20)	(1.87)	(2.21)	(1.88)	(2.50)	(2.38)	(2.49)	(2.37)
Years of Education	-0.0220**	-0.00986*	-0.0211**	-0.00939*	0.0164	0.0107*	0.0168	0.0109*
	(-2.22)	(-1.76)	(-2.13)	(-1.68)	(1.55)	(1.84)	(1.59)	(1.88)
No Work Disability	0.332***	0.154***	0.332***	0.154***	0.229***	0.115***	0.229***	0.115***
	(8.49)	(7.80)	(8.49)	(7.80)	(5.01)	(4.70)	(5.01)	(4.70)
Married	0.128***	0.0692***	0.129***	0.0694***	0.0599*	0.0330**	0.0595*	0.0327**
	(4.60)	(4.57)	(4.62)	(4.59)	(1.96)	(2.02)	(1.95)	(2.01)
Number of Children: 1	0.0646***	0.0322***	0.0642***	0.0319***	0.0206	0.00820	0.0206	0.00817
	(3.37)	(3.13)	(3.35)	(3.10)	(0.89)	(0.64)	(0.88)	(0.64)
Number of Children: 2	0.0715***	0.0334**	0.0707***	0.0329**	0.0386	0.0166	0.0385	0.0166
	(2.63)	(2.25)	(2.60)	(2.22)	(1.28)	(1.00)	(1.28)	(1.00)
Number of Children: 3+	0.0963**	0.0363	0.0963**	0.0363	0.0371	0.0227	0.0378	0.0231
	(2.26)	(1.51)	(2.26)	(1.51)	(0.62)	(0.68)	(0.63)	(0.70)
County GDP p.c.	0.0159	0.00906	0.0157	0.00899	0.0295**	0.0157**	0.0292**	0.0155**
	(1.28)	(1.35)	(1.27)	(1.34)	(2.20)	(2.02)	(2.17)	(2.00)
East-Germany	-0.0317	-0.0148	-0.0312	-0.0146	-0.0401	-0.0145	-0.0410	-0.0152
	(-0.40)	(-0.39)	(-0.39)	(-0.34)	(-0.50)	(-0.33)	(-0.51)	(-0.34)
Constant	4.469***	-1.220***	4.463***	-1.223***	3.706***	-1.702***	3.702***	-1.704***
	(15.05)	(-7.69)	(15.01)	(-7.71)	(11.97)	(-10.22)	(11.98)	(-10.25)
Year Dummies	yes	yes	yes	yes	yes	yes	yes	yes
N	94298	94298	94298	94298	83621	83621	83621	83621
Individuals	16233	16233	16233	16233	15091	15091	15091	15091

Notes: Data from SOEP 1998-2012. Indicated levels of significance are * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, t-statistics in parentheses. All models are estimated using either linear fixed effects (LFE) or probit-adapted ordinary least squares fixed effects (POLS). Robust standard errors are clustered on county level. County level unemployment rates are centered around their respective mean.

Table 3: Robustness: Unemployment at State-Level

	Men				Women			
	(1) LFE	(2) POLS	(3) LFE	(4) POLS	(5) LFE	(6) POLS	(7) LFE	(8) POLS
Unemployed	-0.846***	-0.407***	-0.845***	-0.406***	-0.533***	-0.258***	-0.530***	-0.256***
	(-13.51)	(-12.97)	(-13.44)	(-12.93)	(-13.27)	(-13.78)	(-13.26)	(-13.75)
Unemployment Rate	-0.0342***	-0.0199***	-0.0338***	-0.0197***	-0.0305***	-0.0189***	-0.0297***	-0.0184***
	(-5.26)	(-6.03)	(-5.13)	(-5.91)	(-4.83)	(-5.77)	(-4.64)	(-5.58)
Unemployed × Unemployment Rate	0.00813	0.00541	-0.0179	-0.00743	-0.0223***	-0.00950***	-0.0371**	-0.0177**
	(1.13)	(1.64)	(-1.09)	(-0.84)	(-5.66)	(-4.33)	(-2.52)	(-2.47)
Unemployed × Middle Aged × × Unemployment Rate			0.0292	0.0142			0.0123	0.00670
			(1.68)	(1.49)			(0.86)	(0.97)
Unemployed × Old × × Unemployment Rate			0.0368	0.0188			0.0412*	0.0235*
			(1.47)	(1.34)			(1.82)	(1.95)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	94350	94350	94350	94350	83656	83656	83656	83656
Individuals	16252	16252	16252	16252	15103	15103	15103	15103

Notes: Data from SOEP 1998-2012. Indicated levels of significance are * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, t-statistics in parentheses. All models are estimated using either linear fixed effects (LFE) or probit-adapted ordinary least squares fixed effects (POLS). Robust standard errors are clustered on state level. State level unemployment rates are centered around their respective mean.

Appendix A

Table A.1: Robustness: Two way clustered standard errors

	Men				Women			
	(1) LFE	(2) POLS	(3) LFE	(4) POLS	(5) LFE	(6) POLS	(7) LFE	(8) POLS
Unemployed	-0.855***	-0.412***	-0.853***	-0.411***	-0.530***	-0.256***	-0.528***	-0.255***
	(-19.16)	(-18.07)	(-19.00)	(-17.92)	(-15.88)	(-15.83)	(-15.61)	(-15.51)
Unemployment Rate	-0.0181***	-0.0105***	-0.0178***	-0.0104***	-0.0171***	-0.0107***	-0.0166***	-0.0104***
	(-3.72)	(-4.19)	(-3.65)	(-4.13)	(-3.52)	(-3.83)	(-3.34)	(-3.65)
Unemployed × Unemployment Rate	0.00964	0.00617*	-0.0121	-0.00493	-0.0200***	-0.00878***	-0.0307**	-0.0143*
	(1.46)	(1.88)	(-1.02)	(-0.82)	(-3.59)	(-3.22)	(-2.28)	(-1.96)
Unemployed × Middle Aged × × Unemployment Rate			0.0230*	0.0116*			0.00807	0.00391
			(1.80)	(1.87)			(0.57)	(0.53)
Unemployed × Old × × Unemployment Rate			0.0355**	0.0188**			0.0356***	0.0201***
			(2.01)	(2.08)			(2.61)	(2.67)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	94298	94298	94298	94298	83621	83621	83621	83621
Individuals	16233	16233	16233	16233	15091	15091	15091	15091

Notes: Data from SOEP 1998-2012. Indicated levels of significance are * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, t-statistics in parentheses. Robust standard errors are clustered by state and year (two-way clustering). All models include the same controls as in table 2. County level unemployment rates are centered around their respective mean.