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The (Non-)Effect of Unemployment Benefits

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The (Non-) Effect of Unemployment Benefits – Variations in the effect of unemployment on life-satisfaction between EU countries

Abstract

A negative effect of unemployment on subjective well-being has been demonstrated in many studies casting substantial doubt about assumptions of decisions of individuals to choose unemployment voluntarily as the utility-maximising option. These studies have been extended to take into account national-level context factors which have been shown to moderate the relationship between unemployment and life-satisfaction.

So far most studies focussed mainly on economic indicators, although demographic and cultural differences between countries also affect how unemployment is perceived. An important variable that is not included in the majority of proper multilevel studies is the extent of unemployment benefits. Traditional micro-economic approaches argue that more extensive provisions should reduce the cost of unemployment and therefore reduce the motivation to regain employment – reflected in a reduction of the negative impact of unemployment.

This study investigates this claim by using European Values Study data from all European Union countries and Norway as well as harmonised macroeconomic statistics from Eurostat. It finds that the effect of unemployment on life-satisfaction is indeed moderated by economic and demographic national-level factors, but not by unemployment benefits. To what extent unemployment reduces life-satisfaction varies greatly between countries, but appears to not be influenced by the extent of state unemployment provisions.

Through the advancement of happiness research it has been established robustly that unemployment leads to a decrease in subjective well-being (Clark et al. 2001). This is not a trivial finding considering that traditional micro-economic approaches viewed (non-temporary) unemployment merely as a misallocation of labour due to distortions in the price of labour (Frey and Stutzer 2002: pp. 85). Accordingly, those unemployed for reasons other than transition or seasonality were considered to have chosen to be unemployed because the wage level was not high enough for them or the cost of unemployment not high enough.

Studies in the field of happiness studies cast substantial doubts on this. Unemployment has been shown to be associated with decreases in mental and subjective well-being (Lucas et al. 2004). Furthermore, it has been demonstrated convincingly that people have other motivating factors than income for taking up employment, considering that paid work is meaningful for people in many different ways (Diener and Biswas-Diener 2008; Salanova et al. 2006). This suggests that people may not always choose the most economically "optimal" option (Frey 2008: pp. 127) even when it comes to taking up jobs as other positive effects than income are derived from doing work (Grün et al. 2010). All these findings together have established a rather wide consensus that unemployment indeed is a complex state that depends on a multitude of factors, including personal motivations, but also several external factors individuals only have limited control over (Bosco 2005).

While these findings are meaningful, they do not allow for a fully comprehensive assessment to understand the effects of unemployment on well-being. This is mainly because most initial studies focussed on analyses aimed at the individual-level only. However, how unemployment affects life-satisfaction is dependent on contextual factors. The extent of the effect may be more or less pronounced depending on certain societal factors. Many discussions have focused on economic factors and showed important reference group effects. In their seminal study Clark and Oswald (1994) already suggest that the effect of

unemployment on well-being may be less strongly pronounced in communities that have higher levels of unemployment as the experience would be more common and therefore shared. Being unemployed than is less deviant from the norm. This moderating effect of unemployment rates has been replicated several times (Clark 2003; Di Tella and MacCulloch 2006), however several studies cautioned about a too far-reaching generalisation. The level of aggregation appears to be very important: It appears that unemployment rates at the national level may not be robust moderating factors (Pittau et al. 2010) when other factors are controlled for, but prevalence of unemployment at lower levels of aggregation (region or community) does lead to a partial reduction of the negative effect of unemployment on subjective well-being, which in these studies is usually operationalised as some form of survey-measure of life-satisfaction.

Some other macro-economic factors, such as for example inflation (Di Tella et al. 2001) or income inequality (Graham 2009, pp. 173) have been shown to be potentially relevant moderators as well. However, considering the cultural differences in the meaning of doing paid work in a society, it is plausible that non-economic factors would also affect the relationship between unemployment and life-satisfaction (Hadler 2005). Eichhorn (2012) has demonstrated this for some socio-demographic factors (in particular the age-dependency ratio of a country) as well as cultural differences (in particular the mean perception of personal autonomy in a country). When including these factors, the effect sizes of the economic factors were reduced substantially, indeed highlighting the importance of considering non-economic contextual factors.

One major shortcoming the studies cited above have is that they do not engage comprehensively with the question of how social security provisions affect the effect of unemployment on well-being. Following a traditional micro-economic driven understanding one would hypothesise that unemployment would have a lower negative effect when welfare

state provisions were higher and thus state intervention in market happenings distorting prices should be treated with caution (Scheepers et al. 2002). Higher levels of state provisions for the unemployed would result in a comparatively lower cost of unemployment. This in turn would lead to choices for unemployment as compared to (in particular low-pay) employment to become more likely.

However, doubts have been raised about this assumption. Di Tella et al. (2003) show that changes in welfare provisions in Europe and America between 1975 and 1992 have not resulted in a moderating effect of the unemployment and life-satisfaction relationship. Ouweneel (2002) could not demonstrate an association between welfare provisions and variations in subjective well-being or health for either employed or unemployed people for a wide range of countries. Cahuc and Fontaine (2002) have illustrated that job search intensity does not decrease when welfare provisions are higher, thus arguing against the notion that motivation to gain employment is solely dependent on the calculation of relative costs of employment versus unemployment. Eichhorn (2012) also shows that the effects of other context factors appear to be largely robust to controlling for welfare regime types through dummy variables for Anglo-Saxon and European countries.

While rational decisions about income do play a role in people's decision making, it appears highly plausible that other factors may be important as well, suggesting that the effect of welfare state provisions may not be as clear cut as traditional approaches may have suggested. However, while the studies cited above provide important insights, there are also several shortcomings. Studies looking at change over time tend to simplify the range of relevant contextual factors that have been shown to be relevant in multi-level approaches (e.g. Di Tella et al. 2003). Cross-sectional work, like the study done by Ouweneel (2002) closely corresponds to other multilevel studies that have investigated the relationship between unemployment and subjective well-being. However, the measures used for the

extent of social security are only limitedly comparably across a wide range of countries and results are therefore limited in comprehensiveness.

This paper therefore aims to provide an analysis in which the effects of unemployment on life-satisfaction are contextualised by a number of relevant national-level factors, particularly including a comparable measure of unemployment benefits. It enhances the insights from studies by conducting analyses that contextualise individual-level processes with national-level factors explicitly including a measure of unemployment benefit provisions for a set of countries where these measures can be compared meaningfully. Studies that have done the latter previously (see for example Di Tella et al. 2003) have not taken into account non-economic contextual influences so far which have been shown to be relevant though (Eichhorn 2012). This paper therefore provides new insights combining multilevel perspectives with economic and non-economic measures and an explicit integration of unemployment benefit measures.

To achieve this, multilevel models will be applied to data from the countries of the European Union, with harmonised macro-economic measures. While limitations always apply to such measures the models presented here will provide a more comprehensive insight into whether higher unemployment welfare provisions indeed decrease the magnitude of the negative effect of unemployment on life-satisfaction. By using actual measures of social security provisions rather than regime type dummies or rough measures for a set of countries that would be less comparable new insights can be developed. In doing so, the analyses will take into account other relevant national-level factors, to establish their effects' robustness against welfare state provisions, while also ensuring that any effects found for welfare state provisions are not spurious either. The focus is on the moderating effects of national-level factors, a cross-sectional, multi-level approach therefore seems to be appropriate. It does not allow to draw causality inferences however which needs to be kept in mind. Considering

that the dominant causal path has been repeatedly demonstrated to run from unemployment to life-satisfaction through a variety of panel studies in particular (Winkelmann 2009; Clark et al. 2010; Green 2011; Kassenböhmer and Haisken-DeNew 2009), this limitation does not hinder the objective of this particular investigation.

Data and Methods

Data has been collated for 28 countries (all countries of the European Union and Norway) from Eurostat (2012) – the central statistics office of the European Commission. All country-level variables have been taken directly from the harmonised Eurostat datasets, with the exception of one variable (Autonomy) which has been aggregated from individual-level data. Individual-level data stems from the fourth wave of the cross-sectional European Values Study (EVS 2008) conducted . In order to relate the country-level data to the time point of collection of the EVS data, all aggregate variables were taken for 2007. As the individual-level data was collected during 2008 it is plausible to have the closest contextual situation prior to the individual-level data collection reflected.

The EVS contains a larger set of countries (47) in the fourth wave. However, macro-economic data available to compare welfare provisions (for example through the Worldbank) provides substantially less in-depth breakdowns of particular types of social security programs and is less comparable. Therefore the smaller set of countries has been selected. This of course has consequences with regards to the models that can be computed meaningfully. Maas and Hox (2004) and Kreft (1996) have shown that approximately 30 aggregate units can be appropriate for inclusion in multilevel models, though Hox (2010) advises to aim to increase the number for cross-level interactions (which are needed to model the moderation effects of country-level factors on the unemployment and life-satisfaction relationship). This means that the analyses in this paper can be undertaken with

the sample, however, only few aggregate predictors should be included in any model. Otherwise there would be a strong danger of overfitting and increasing collinearity too extensively.

Linear 2-level multilevel models were estimated[1] with a random intercept and a random slope for unemployment and life-satisfaction as the dependent variable. This variable is measured on a 10-point scale (1-dissatisfied … 10-satisfied). The robustness of the indicator has been demonstrated repeatedly (Lucas 2007; Frey 2008; Martin 2005). Strictly speaking this variable should be treated as an ordinal one. However, several authors have demonstrated that the use of life-satisfaction in such linear, hierarchical models is appropriate (Ferrer-i-Carbonell and Fritjers 2004) as equivalent results are found for ordinal and linear specifications, even when using a shorter scale with a four-point satisfaction measures only (Pittau et al. 2010).

FIGURE 1 about here

The key predictor variable at the individual level distinguishes those employed from those unemployed. As national classifications of "unemployed" differ this paper uses the self-classification provided by respondents of the survey. To be meaningful, only people who could be considered part of the labour market should be part of the sample. Therefore retirees, full-time students and people permanently inhibited from taking up work were not included in the sample.[2] There is substantial variation between countries in mean life-satisfaction for the selected respondents ranging from a mean score of just about 6 for Bulgaria to nearly 8.5 for Denmark (see figure 1).

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[1] All computations were done using HLM 6.06.
[2] The mean number of respondents that were included in the analysis was 860 per country.

Standard socio-economic control variables were applied at the individual level, although they do not form the core interest of this study. It is however important to control for obvious personal differences to reduce spuriousness in the unemployment effect. The controls include sex, age, age squared, income, education (a dummy variable coding for whether a person had a higher education degree or not), being married and having children.[3] Income was skewed, therefore a logarithmic transformation was applied to normalise the distribution. As the focus of the analysis was on the interactions between country-level factors and the personal experience of unemployment no further individual-level predictors beyond the controls were added.

There were very few missing cases (less than 4% list-wise) for all variables with the exception of income that had a high rate of missing values (17.4%). Therefore the missing values for income were imputed, as otherwise an implicit assumption about a very large proportion of the sample missing at random for the income variable would have been made – which seems unreasonable for such a large percentage. The imputation was computed through a simple linear explicit imputation model (Rubin 1988) with a range of relevant predictors[4]. The mean estimate for LN Income hardly changed (from -0.108 (with a standard deviation of 1.047) before the imputation to -0.101 (with a standard deviation of 1.049) after the imputation. The range of values increased slightly, as we would expect with a larger sample, but it do so to similar extent at both ends of the spectrum (with a change from -4.58 to -5.41 at the bottom end and 2.69 to 3.69 at the top end). Also, running a simple Ordinary Least Squares regression with all individual-level variables and life-satisfaction as the dependant, showed no significant differences between parameter estimates when comparing the models based on the original and the imputed income variable. Therefore it appears to be reasonable to use the imputed income variable in the models of this paper.

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[3] Please see the descriptives table for the operationalisation of the variables (table 1).
[4] The predictors included: Sex, age, Dummy: Married, Dummy: Having children, Subjective Health, Dummy: Higher education, Parental education, Happiness, Welfare reliance, Employment status, Achievement orientation, Autonomy perception, Generalised trust

Economic country level variables include unemployment rates, GDP per capita, inflation and income inequality (gini coefficient). All apart from income inequality showed a substantial deviation from normal distributions and were therefore logarithmised to match a normal curve more closely. The age-dependency ratio, represents the amount of older people (aged 65 or above) compared to the (theoretically) economically active population (aged 15-64), and thus acts as an indicator of differences in a very important demographic characteristic of countries. The mean autonomy perception of people in a country was included to model differences in cultural orientations that have been found to be relevant moderators in previous studies cited above.

To model the extent of benefits provided to the unemployed, the expenditure on unemployment benefit payments per capita has been included. Because of a substantial skew, the variable was logarithmised to produce a normal distribution. Alternative formulations have been computed for all models presented in this study as well. This included the expenditure on unemployment benefit payments as proportion of total GDP. Results for the benefit indicators were equivalent and most coefficients for other variables across all models did not change either. Therefore only the results for one specification will be presented here.

TABLE 1 ABOUT HERE

Three sets of models have been computed. In all models country-level factors are included as main effects as well as cross-level interaction effects with unemployment on life-satisfaction. First, each of the aggregate predictors is estimated only together with GDP per capita, as GDP per capita is one of the most relevant and consistent aggregate-level influences found for subjective well-being. This way potential changes in the effects of these

predictors when including unemployment benefits could be identified. Second, models are computed with unemployment benefits and each of the other aggregate predictors paired up respectively. Finally, a set of models is predicted in which both unemployment benefits, GDP per capita and one of the other aggregate predictors are included. Because of restriction in level-2 units and the focus on including cross-level interactions the number of aggregate predictors and interactions estimated simultaneously had to be considered carefully. Full models including all predictors would have been inadequate in with 28 level-2 units available only. Therefore the models were estimated with GDP per capita and Unemployment rates as controls for the other aggregate predictors only.

Results

Figure 2 provides an overview of the size of the unemployment effect on life-satisfaction. It is negative for all countries with the exception of Romania, Spain, Poland and Norway where zero falls into the confidence interval, suggesting that there is no significant negative effect which can be observed for these countries. For all other countries there is quite a large amount of variation from small negative effects to very large ones. Notably, Germany is the country where unemployment seems to have the strongest negative effect on life-satisfaction – by far. In no other EU country is the difference in life-satisfaction between the employed and the unemployed as pronounced as in Germany.

FIGURE 2 ABOUT HERE

We can clearly see that the effect of unemployment is not the same everywhere – differences between the countries appear to exist. The further analyses will demonstrate which national-level context variables may be able to explain some of this difference

systematically. As the key interest of this study is the contextualising effect of unemployment benefits, the countries in the lowest and highest quartile with regards to the extent of benefit payments have been labelled. It is interesting to see that we find both types at both ends and in the middle of the distribution. This initially suggests that there is not systematic difference between countries with higher or lower unemployment benefit provisions with regards to how extensive the effect of unemployment is on life-satisfaction. However, it will be more insightful to consider the results from the models, as other influencing factors are taken into account there.

TABLE 2 ABOUT HERE

The direct effect of unemployment was robust across all model specifications. It was negative, statistically significant and very substantial (-0.733 to -0.749). At the individual level unemployment, on average, was associated with lower levels of life-satisfaction. With regards to the control variables we did not see any surprising results. There was only a weak effect of sex, the well-known U-shaped pattern for age was replicated, while education, income and being married were all positively related to life-satisfaction. Having children did not show a substantial effect. This however is not surprising, as the indicator was rather crude and the effect of having children on life-satisfaction is not stable throughout the aging process of the child. As the variables were only included as simple controls and their results were robust across all model specifications no further attention will be paid to them here.

Most of the aggregate variables in the first set of models (see table 2) showed substantial, significant main effects. Higher levels of GDP per capita were associated with greater levels of life-satisfaction, as we would have expected from previous studies (e.g. Inglehart et al. 2008). Similarly, mean autonomy was associated with substantially larger levels of life-satisfaction (0.463). Greater levels of inflation (-0.373) and income inequality (-0.039) were

associated with lower life-satisfaction. Similarly, living in societies with a greater proportion of older people was associated with lower life-satisfaction as well. The only country-level variable not showing a significant effect on life-satisfaction was the unemployment rate. The greatest amount of variance between countries was explained by the models containing autonomy (0.782) and inflation (0.752).

For two of the context factors significant and substantial cross-level interaction effects could be observed. Greater levels of inflation were not only associated with lower life-satisfaction generally, but also enhanced the negative effect of unemployment. In countries with higher inflation rates unemployment was associated with a greater loss in life-satisfaction (-0.364). This is a plausible result: Higher inflation results in less value of personal wealth accumulated for example through savings. The economic insecurity posed by personal unemployment could thus be expected to have a greater negative effect on life-satisfaction. In societies with a greater population of old people as compared to the young, the same held true: unemployment had a stronger negative effect on life-satisfaction (-0.064). With fewer people at working age becoming unemployed may have a more detrimental effect on personal well-being than in societies with a more extensive age-peer group. Falling out of a smaller, potentially more homogeneous (working) group may result in a greater perceived difference from one's reference group (similar results were found and discussed by Eichhorn 2012). It is worth noting that the models containing GDP per capita only, unemployment rates and autonomy did not explain substantial amounts of variation in the random slope of personal unemployment. The most pronounced reduction in variance was found for the age-dependency ratio (0.163), suggesting that in these models age-dependency ratio was the most insightful measure with regards to explaining differences in the effect of unemployment on life-satisfaction between the countries in the analysis.

TABLE 3 ABOUT HERE

These moderating effects remained robust when replacing GDP per capita with unemployment benefits.[5] Higher levels of inflation and living in societies with a greater proportion of older people remained to be factors that extend the negative effect of unemployment further (-0.352 and -0.065 respectively). Again, the model containing the age-dependency ratio showed the greatest amount of variance explained in the random slope of unemployment (0.167). The main effects of the predictors could largely be reproduced as well. GDP per capita and autonomy both showed positive direct effects, while greater age-dependency ratios, higher inflation and greater income inequality were also associated with lower levels of life-satisfaction. The effect size for the unemployment rate was substantially higher when including unemployment benefits. However, the effect is only marginally significant – and not robustly so. The greatest amount of between-country variation was again explained by the models containing autonomy and inflation.

Unemployment benefits did not show a consistent picture regarding the main effect. When controlling for unemployment rate, age-dependency ratio and autonomy, there was a substantial and significant positive effect of unemployment benefits (0.126 to 0.156), suggesting that greater levels of unemployment welfare provisions were associated with greater levels of life-satisfaction. When controlling for GDP per capita, inequality or inflation however the effect size dropped substantially (to 0.019 for inflation), suggesting that the effect was not robust and may be partially spurious to the controls in these models. For the cross-level interaction the picture is much clearer. There were no significant moderating effects of unemployment benefits for the relationship between unemployment and life-satisfaction – as suggested by the results in figure 2.

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[5] However, the author acknowledges that a holistic assessment of robustness is difficult considering the restricted number of aggregate-level cases and the consequential limitation in applying simultaneous aggregate controls.

TABLE 4 ABOUT HERE

The results found above were mostly also robust when including both GDP per capita and unemployment benefits in the models. A pronounced difference can be observed for the main effect of unemployment benefits however. While a positive effect could be observed when only unemployment benefits were included, as well as when certain aggregate factors were added, this could not be observed in the models where GDP per capita has been controlled for. The effect size for unemployment benefits dropped in all specifications and has been rendered insignificant throughout. The positive main effects of GDP per capita and autonomy have been replicated. The same applies to the negative direct effects of inflation, inequality and age-dependency ratio. The effect of unemployment rates has been rendered insignificant again in these specifications.

The findings for the moderation effects could also be replicated: There were no significant cross-level interactions for unemployment benefits on the relationship between unemployment and life-satisfaction. The same applies to GDP per capita, unemployment rates, income inequality and autonomy. Inflation and the age-dependency ratio on the other hand show significant, negative moderation effects and the model containing the age-dependency ratio again explained the greatest amount of variance in the random slope of unemployment.

Discussion

The findings in this paper replicated the negative direct effect of personal unemployment on life-satisfaction. At the same time the results highlight the importance of considering differences between countries to understand how unemployment affects life-satisfaction, as there was substantial variation in the relationship across the countries in this sample.

Most notably, the extent of welfare state provisions did not robustly affect life-satisfaction directly, once other aggregate factors were controlled for. Even more importantly, there were no significant moderating effects of unemployment provisions on the relationship between unemployment on life-satisfaction. The assumption that being unemployed in countries where benefits are greater would lead to lower loss in life-satisfaction compared to the unemployed in countries with less extensive social security provisions could not be substantiated by these findings.

Other factors play a more important role in this regard and extend beyond economic indicators. Considering the main effects cultural differences, manifested in the mean perception of autonomy contributed substantially to determining the variation in life-satisfaction between societies for example. Two variables were found to moderate the effect of unemployment on life-satisfaction: Most pronounced was the robust effect of the demographic variable age-dependency ratio. Unemployment appeared to be personally more negative for life-satisfaction in societies in which the proportion of people at older age was greater compared to those at working age. While not explaining as much variation, inflation also mattered. In societies with higher inflation rates, personal unemployment also appeared to have a stronger negative effect on life-satisfaction than in societies with lower inflation. It is noteworthy to comment on unemployment rates which did not have a robust direct or moderation effect. Unemployment then did not appear to be less detrimental to life-satisfaction in countries with higher unemployment benefits or unemployment rates.[6]

Reflecting on the starting point of this paper, this of course has implications for our understanding of the mechanisms surrounding people's choices to gain employment. If

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[6] As briefly mentioned earlier, these results also held for other specifications of welfare state provisions for the unemployed and just general estimates of social welfare payments overall.

people would mainly behave in rationally, calculating ways, then surely changes in the material provisions, thus altering the cost of unemployment should have an effect on how unemployment affects subjective well-being. The results from this study cast substantial doubt about this assumption. In consequence this means that welfare state benefits for the unemployed do not affect the level of subjective well-being. It is imperative to understand that this does not disqualify welfare state payments, as there are forms of well-being not comprehensively captured in the subjective evaluations (such as material well-being or health), although there are connections between the different domains of well-being. It does mean however that claims about unemployment benefits helping to reduce the negative impact of unemployment in terms of the feeling and the subjective evaluations could not be upheld uncritically. In turn this means that claims about unemployment benefits resulting in complacent unemployed people who chose the situation and would be satisfied with it cannot be retained uncritically either. Arguments to increase or decrease unemployment benefits therefore should not be based on discussions which use these claims as their foundation as they could not be supported empirically by this study. Other reasons need to be presented in order to justify decisions regarding unemployment benefit levels, not arguments based on discussions of systematic effects on motivation, satisfaction and complacency.

While the results presented here are very insightful, they are not comprehensively conclusive, of course. There are several limitations in this investigation which could be addressed in future research to further develop the findings from this paper. One of the major limitations is the number of countries available. With 28 countries model complexity had to remain rather low. Ideally, full models could be computed in which all aggregate predictors were contained to jointly to properly identify controls and specific effects. Furthermore, because of the restricted number of aggregate units standard errors may be rather large. It may therefore be the case that certain effects were not detected because of

this limitation. Having said this, when considering the amount of variance explained in the slope of unemployment, it did appear that both unemployment benefits and unemployment rates contributed very little. However, it would be helpful to develop indicators that could be applied to wider sets of countries. It should be taken into account that these countries should have relatively similar cultural understandings of life-satisfaction or happiness (Lu and Gilmour 2004; Uchida et al. 2004), but this would be given with the EVS sample.

Another concern is the operationalisation of unemployment social benefits. While the indicator used is plausible and similar indicators yielded equivalent results, there are still limitations regarding the interpretation. The indicators were applied at the macro-level in a merely quantitative way. As a control for unemployment rates was added in some models and did not alter the results concerns about a distortion from countries with higher unemployment rates also spending more on benefits are therefore at least partially addressed. However, these indicators do not distinguish between the differences in the experience of benefits for individuals. They do not take into account the duration of payment for example or the requirements that have to be fulfilled in order to be eligible. Those factors however may well influence whether unemployment benefit provisions moderate the experience of unemployment. While it may not be through the quantitative of payments necessarily, it may be the case that the feeling of social safety could be affected by dimensions, such as the duration of pay or the accessibility thereof. This shortcoming does not invalidate the findings here, but suggests avenues for further work to deepen the understanding of the related processes.

While it makes sense to compare unemployment benefits across countries, other variables may be affecting the experience of unemployment contextually at different levels of aggregation. Contextual unemployment appears to matter substantially at lower levels, such as the community or region (Clark and Oswald 1994, Pittau et al. 2010). A useful extension

would be a three-level model in which large, macro-economic variables may be located at the country level, but other contextual factors may be placed at a more regional sphere. Furthermore, it would be insightful to use panel data to follow individuals that become unemployed and receive benefits to see whether the effects of benefit provisions change over time, when, for example, their extent may be reduced following a certain period.

These limitations restrict obviously the comprehensiveness of the findings from this paper. They do not allow to infer conclusions about the processes that relate the provision of unemployment benefits to individuals' personal experience of unemployment. The analyses presented here do substantiate doubts about the role of social security provisions for the unemployed with regards to subjective well-being. When these concerns are considered seriously, then simplistic assumptions about individuals making decisions simply on materially driven cost-benefit calculations have to be reflected on very carefully with regards to unemployment. These evaluations have to be investigated in a multi-level framework that takes into account a person's personal characteristics as well as their context and includes, but also extends beyond economic measures.

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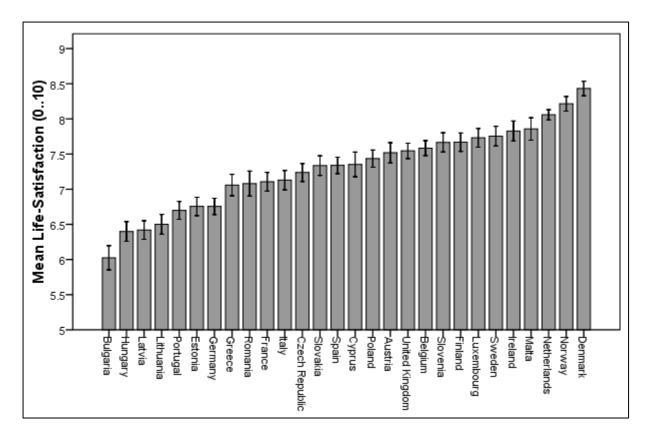Winkelmann, R. (2009). Unemployment, Social Capital, and Subjective Well-Being. Journal of Happiness Studies, 10, 421-430.

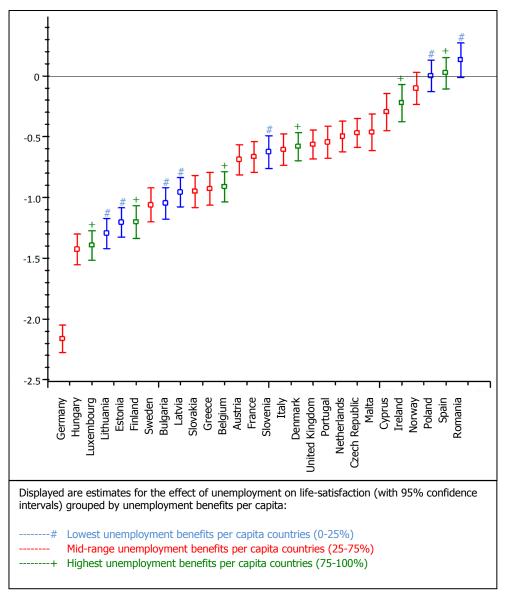*Figure 1: Life-Satisfaction means across 28 countries (with 95% confidence intervals)*

Figure 2: Unemployment effects on life-satisfaction by country

Table 1: Descriptives

	Source	Operationalisation	Mean (s.d.)	Min..Max
INDIVIDUAL				
Life-Satisfaction	EVS	10-point scale: 1 - dissatisfied ... 10 - satisfied	7.27 (0.29)	1..10
DV Unemployed	EVS	Self-classified (0-No, 1-Yes)	0.09 (0.39)	n/a
Female	EVS	Sex of respondent (0-Male, 1-Female)	0.51 (0.50)	n/a
Age	EVS	In years	41.9 (12.4)	16..103
Age²	EVS	In years squared	1907 (1080)	256..10609
LN Income	EVS	LN monthly household income (PPP, 1000 €)	0.24 (0.88)	-5.41..3.69
DV Higher degree	EVS	Holder of a higher education degree (0-No, 1-Yes)	0.29 (0.45)	n/a
DV Married	EVS	Respondent married (0-No, 1-Yes)	0.54 (0.50)	n/a
DV Children	EVS	Respondent has children (0-No, 1-Yes)	0.69 (0.46)	n/a
AGGREGATE				
LN Unemployment benefits	EUstat	Expenditure on unemployment benefits payments per capita (Euro), logarithmised	5.16 (1.05)	3.19..6.85
LN GDP/capita	EUstat	Gross-domestic product per capita in € (PPP), logarithmised (2007)	10.1 (0.43)	9.21..11.1
LN Unemployment rate	EUstat	Inflation rate, logarithmised (2007)	1.77 (0.34)	0.93..2.41
LN Inflation	EUstat	Unemployment rate, logarithmised (2007)	0.97 (0.65)	-0.36..2.31
Inequality	EUstat	Gini Coefficient (2007)	29.4 (4.41)	23.2..37.8
Age-dependency ratio	EUstat	'Old' persons (65+) we percentage of 'working age population' (15-64) (2007)	23.2 (3.55)	15.8..30.2
Autonomy	EVS	Mean Score for respondents' evaluation of their freedom of choice and control (1- none at all ... 10 - a great deal)	6.94 (0.51)	6.00..7.86

Table 2: Models with GDP per capita and covariates

Dep.: Life-Satisfaction	1		2		3		4		5		6	
	Unstd. (s.e.)	Std.	Unstd. (s.e.)	Std.	Unstd. (s.e.)	Std.	Unstd. (s.e.)	Std.	Unstd. (s.e.)	Std.	Unstd. (s.e.)	Std.
Intercept	7.035 (0.08)***		7.036 (0.08)***		7.036 (0.07)***		7.036 (0.08)***		7.036 (0.07)***		7.038 (0.07)***	
Societal Level												
LN Unemployment benefits												
LN GDP/cap	0.547 (0.17)**	0.81	0.486 (0.19)*	0.72	0.216 (0.13)+	0.32	0.345 (0.18)+	0.51	0.562 (0.18)**	0.83	0.396 (0.12)**	0.59
LN Unemployment rate			-0.171 (0.21)	-0.20								
LN Inflation					-0.373 (0.06)***	-0.84						
Inequality							-0.039 (0.02)*	-0.59				
Age-dependency ratio									-0.043 (0.01)**	-0.53		
Autonomy											0.463 (0.10)***	0.81
Fixed Individual												
Female	0.076 (0.04)+	0.13	0.076 (0.04)+	0.13	0.076 (0.04)+	0.13	0.076 (0.04)+	0.13	0.076 (0.04)+	0.13	0.076 (0.04)+	0.13
Age	-0.077 (0.01)***	-3.29	-0.077 (0.01)***	-3.29	-0.077 (0.01)***	-3.29	-0.077 (0.01)***	-3.29	-0.077 (0.01)***	-3.29	-0.077 (0.01)***	-3.29
Age²	0.001 (0.00)***	3.72	0.001 (0.00)***	3.72	0.001 (0.00)***	3.72	0.001 (0.00)***	3.72	0.001 (0.00)***	3.72	0.001 (0.00)***	3.72
DV Higher degree	0.197 (0.04)***	0.31	0.197 (0.04)***	0.31	0.197 (0.04)***	0.31	0.197 (0.04)***	0.31	0.197 (0.04)***	0.31	0.195 (0.04)***	0.30
LN Income	0.412 (0.04)***	1.25	0.413 (0.04)***	1.25	0.411 (0.04)***	1.25	0.412 (0.04)***	1.25	0.413 (0.04)***	1.25	0.412 (0.04)***	1.25
DV Married	0.424 (0.04)***	0.73	0.424 (0.04)***	0.73	0.423 (0.04)***	0.73	0.425 (0.04)***	0.73	0.424 (0.04)***	0.73	0.424 (0.04)***	0.73
DV Children	0.018 (0.06)	0.03	0.018 (0.06)	0.03	0.019 (0.06)	0.03	0.017 (0.06)	0.03	0.017 (0.06)	0.03	0.017 (0.06)	0.03
Cross-level interactions												
DV: Unemployed	-0.743 (0.09)***	-1.00	-0.734 (0.08)***	-0.99	-0.744 (0.08)***	-1.00	-0.747 (0.09)***	-1.00	-0.741 (0.08)***	-1.00	-0.747 (0.08)***	-1.00
X LN Unemployment benefits												
X LN GDP/cap	-0.117 (0.25)		-0.231 (0.31)		-0.437 (0.25)+		-0.082 (0.28)		-0.086 (0.24)		-0.222 (0.23)	
X LN Unemployment rate			-0.363 (0.39)									
X LN Inflation					-0.364 (0.13)**							
X Inequality							0.011 (0.02)					
X Age-dependency ratio									-0.064 (0.03)*			
X Autonomy											0.309 (0.19)	
	Var expl.	Var	Var expl.	Var	Var expl.	Var	Var expl.	Var	Var expl.	Var	Var expl.	Var
Within societies	0.094	3.545	0.094	3.545	0.094	3.545	0.094	3.545	0.094	3.545	0.094	3.545
Between societies	0.662	0.113	0.656	0.115	0.767	0.078	0.716	0.095	0.722	0.093	0.812	0.063
Unemployed	-0.028	0.242	-0.039	0.243	0.064	0.215	-0.068	0.256	0.163	0.195	0.019	0.228

Significance values: +p≤0.10 *p≤0.05, **p≤0.01, ***p≤0.001.
N: 23396 individuals in 28 societies
Calculations done using HLM 6.06. Entries are un-standardised regression coefficients with robust standard errors in parentheses, followed by standardised scores (based on Hox (2010: p.22): (unstandardised score x s.d. predictor)/ s.d. outcome). Variables are grand-mean centred (apart from binary variables). Included are individuals categorised as employed/self-employed or unemployed. Respondents outside the labour market (students, pensioners etc). are excluded. Variation explained is calculated as proportional reduction in error to respective null-models. Data comes from the European Values Study (individual-level indicators and mean autonomy) and EuroStat (aggregate indicators).

Table 3: Models with unemployment benefits and covariates

Dep.: Life-Satisfaction	1		2		3		4		5		6	
	Unstd. (s.e.)	Std.	Unstd. (s.e.)	Std.	Unstd. (s.e.)	Std.	Unstd. (s.e.)	Std.	Unstd. (s.e.)	Std.	Unstd. (s.e.)	Std.
Intercept	7.036 (0.08)***		7.037 (0.09)***		7.036 (0.07)***		7.036 (0.08)***		7.037 (0.08)***		7.038 (0.07)***	
Societal Level												
LN Unemployment benefits	-0.041 (0.08)	-0.15	0.156 (0.06)*	0.56	0.019 (0.05)	0.07	0.068 (0.06)	0.25	0.182 (0.05)**	0.66	0.126 (0.04)**	0.46
LN GDP/cap	0.625 (0.23)*	0.93										
LN Unemployment rate			-0.426 (0.21)+	-0.50								
LN Inflation					-0.442 (0.05)***	-0.99						
Inequality							-0.049 (0.01)**	-0.75				
Age-dependency ratio									-0.048 (0.01)**	-0.59		
Autonomy											0.522 (0.11)***	0.92
Fixed Individual												
Female	0.076 (0.04)+	0.13	0.076 (0.04)+	0.13	0.076 (0.04)+	0.13	0.077 (0.04)+	0.13	0.076 (0.04)+	0.13	0.076 (0.04)+	0.13
Age	-0.077 (0.01)***	-3.29	-0.077 (0.01)***	-3.29	-0.077 (0.01)***	-3.29	-0.077 (0.01)***	-3.29	-0.077 (0.01)***	-3.29	-0.077 (0.01)***	-3.29
Age²	0.001 (0.00)***	3.72	0.001 (0.00)***	3.72	0.001 (0.00)***	3.72	0.001 (0.00)***	3.72	0.001 (0.00)***	3.72	0.001 (0.00)***	3.72
DV Higher degree	0.197 (0.04)***	0.31	0.196 (0.04)***	0.30	0.196 (0.04)***	0.30	0.196 (0.04)***	0.30	0.197 (0.04)***	0.31	0.195 (0.04)***	0.30
LN Income	0.412 (0.04)***	1.25	0.414 (0.04)***	1.26	0.413 (0.04)***	1.25	0.414 (0.04)***	1.26	0.415 (0.04)***	1.26	0.414 (0.04)***	1.26
DV Married	0.424 (0.04)***	0.73	0.424 (0.04)***	0.73	0.422 (0.04)***	0.73	0.424 (0.04)***	0.73	0.422 (0.04)***	0.73	0.423 (0.04)***	0.73
DV Children	0.018 (0.06)	0.03	0.018 (0.06)	0.03	0.019 (0.06)	0.03	0.017 (0.06)	0.03	0.018 (0.06)	0.03	0.017 (0.06)	0.03
Cross-level interactions												
DV: Unemployed	-0.743 (0.09)***	-1.00	-0.735 (0.08)***	-0.99	-0.734 (0.08)***	-0.99	-0.738 (0.09)***	-0.99	-0.734 (0.08)***	-0.99	-0.736 (0.08)***	-0.99
X LN Unemployment benefits	-0.034 (0.16)		-0.055 (0.11)		-0.165 (0.12)		-0.038 (0.12)		-0.019 (0.09)		-0.071 (0.10)	
X LN GDP/cap	-0.051 (0.38)											
X LN Unemployment rate			-0.253 (0.33)									
X LN Inflation					-0.352 (0.13)*							
X Inequality							0.009 (0.02)					
X Age-dependency ratio									-0.065 (0.03)*			
X Autonomy											0.293 (0.17)	
	Var expl.	**Var**	**Var expl.**	**Var**	**Var expl.**	**Var**	**Var expl.**	**Var**	**Var expl.**	**Var**	**Var expl.**	**Var**
Within societies	0.094	3.545	0.094	3.545	0.094	3.545	0.094	3.545	0.094	3.545	0.094	3.545
Between societies	0.650	0.117	0.629	0.124	0.752	0.083	0.677	0.108	0.650	0.117	0.782	0.073
Unemployed	-0.072	0.252	-0.059	0.244	0.054	0.215	-0.066	0.253	0.167	0.193	0.006	0.229

Significance values: +p≤0.10 *p≤0.05, **p≤0.01, ***p≤0.001.
N: 23396 individuals in 28 societies
Calculations done using HLM 6.06. Entries are un-standardised regression coefficients with robust standard errors in parentheses, followed by standardised scores (based on Hox (2010: p.22): (unstandardised score x s.d. predictor)/ s.d. outcome). Variables are grand-mean centred (apart from binary variables). Included are individuals categorised as employed/self-employed or unemployed. Respondents outside the labour market (students, pensioners etc). are excluded. Variation explained is calculated as proportional reduction in error to respective null-models. Data comes from the European Values Study (individual-level indicators and mean autonomy) and EuroStat (aggregate indicators).

Table 4: Models with unemployment benefits, GDP per capita and covariates

Dep.: Life-Satisfaction	1		2		3		4		5		6	
	Unstd. (s.e.)	Std.	Unstd. (s.e.)	Std.	Unstd. (s.e.)	Std.	Unstd. (s.e.)	Std.	Unstd. (s.e.)	Std.	Unstd. (s.e.)	Std.
Intercept	7.036 (0.09)***		7.035 (0.08)***		7.036 (0.07)***		7.036 (0.08)***		7.036 (0.07)***		7.038 (0.07)***	
Societal Level												
LN Unemployment benefits	0.160 (0.62)*	0.58	0.008 (0.12)	0.03	-0.073 (0.06)	-0.26	-0.061 (0.06)	-0.22	0.027 (0.15)	0.10	0.009 (0.06)	0.03
LN GDP/cap			0.467 (0.37)	0.69	0.347 (0.16)*	0.51	0.457 (0.33)*	0.68	0.567 (0.24)*	0.84	0.378 (0.16)*	0.56
LN Unemployment rate			-0.180 (0.31)	-0.21								
LN Inflation					-0.383 (0.06)***	-0.86						
Inequality							-0.040 (0.01)*	-0.61				
Age-dependency ratio									-0.043 (0.01)**	-0.53		
Autonomy											0.465 (0.11)***	0.82
Fixed Individual												
Female	0.076 (0.04)+	0.13	0.076 (0.04)+	0.13	0.076 (0.04)+	0.13	0.076 (0.04)+	0.13	0.076 (0.04)+	0.13	0.076 (0.04)+	0.13
Age	-0.077 (0.01)***	-3.29	-0.077 (0.01)***	-3.29	-0.077 (0.01)***	-3.29	-0.077 (0.01)***	-3.29	-0.077 (0.01)***	-3.29	-0.077 (0.01)***	-3.29
Age²	0.001 (0.00)***	3.72	0.001 (0.00)***	3.72	0.001 (0.00)***	3.72	0.001 (0.00)***	3.72	0.001 (0.00)***	3.72	0.001 (0.00)***	3.72
DV Higher degree	0.197 (0.04)***	0.31	0.197 (0.04)***	0.31	0.197 (0.04)***	0.31	0.197 (0.04)***	0.31	0.197 (0.04)***	0.31	0.195 (0.04)***	0.30
LN Income	0.414 (0.04)***	1.26	0.412 (0.04)***	1.25	0.412 (0.04)***	1.25	0.412 (0.04)***	1.25	0.413 (0.04)***	1.25	0.412 (0.04)***	1.25
DV Married	0.423 (0.04)***	0.73	0.424 (0.04)***	0.73	0.423 (0.04)***	0.73	0.425 (0.04)***	0.73	0.424 (0.04)***	0.73	0.424 (0.04)***	0.73
DV Children	0.018 (0.06)	0.03	0.018 (0.06)	0.03	0.018 (0.06)	0.03	0.016 (0.06)	0.03	0.017 (0.06)	0.03	0.017 (0.06)	0.03
Cross-level interactions												
DV: Unemployed	-0.733 (0.09)***	-0.99	-0.735 (0.08)***	-0.99	-0.743 (0.08)***	-0.10	-0.749 (0.09)***	-1.01	-0.742 (0.08)***	-1.00	-0.746 (0.08)***	-1.00
X LN Unemployment benefits	-0.052 (0.10)		0.093 (0.15)		-0.072 (0.14)		-0.011 (0.16)		0.027 (0.15)		0.001 (0.15)	
X LN GDP/cap			-0.451 (0.46)		-0.305 (0.27)		-0.069 (0.36)		-0.140 (0.41)		-0.222 (0.34)	
X LN Unemployment rate			-0.470 (0.42)									
X LN Inflation					-0.374 (0.14)*							
X Inequality							0.011 (0.22)					
X Age-dependency ratio									-0.065 (0.03)*			
X Autonomy											0.310 (0.19)	
	Var expl.	Var	Var expl.	Var	Var expl.	Var	Var expl.	Var	Var expl.	Var	Var expl.	Var
Within societies	0.094	3.545	0.094	3.545	0.094	3.545	0.094	3.545	0.094	3.545	0.094	3.545
Between societies	0.575	0.142	0.641	0.120	0.641	0.079	0.710	0.097	0.710	0.097	0.803	0.066
Unemployed	-0.031	0.242	-0.082	0.253	0.033	0.222	-0.113	0.267	0.127	0.203	-0.025	0.238

Significance values: +p≤0.10 *p≤0.05, **p≤0.01, ***p≤0.001.
N: 23396 individuals in 28 societies
Calculations done using HLM 6.06. Entries are un-standardised regression coefficients with robust standard errors in parentheses, followed by standardised scores (based on Hox (2010: p.22): (unstandardised score x s.d. predictor)/ s.d. outcome). Variables are grand-mean centred (apart from binary variables). Included are individuals categorised as employed/self-employed or unemployed. Respondents outside the labour market (students, pensioners etc). are excluded. Variation explained is calculated as proportional reduction in error to respective null-models. Data comes from the European Values Study (individual-level indicators and mean autonomy) and EuroStat (aggregate indicators).