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**Social Insurance as a Collective Resource:
Unemployment Benefits, Job Insecurity and Subjective Well-Being in a
Comparative Perspective**

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Abstract

This article argues that unemployment benefits are providing a crucial but often overlooked function by reducing the insecurity associated with modern labor markets. Since job insecurity is associated with concerns about future financial security, economic support during unemployment may lessen the negative effects of job insecurity on employed individuals' well-being. Using data from the European Social Survey, the article shows that the generosity of unemployment benefits makes a difference to the subjective well-being of employed individuals, especially those with limited economic resources and an insecure position in the labor market. These results indicate that unemployment benefits may be viewed as a collective resource with important external benefits, i.e. benefits to society over and above those to the unemployed who directly utilize such benefits.

Mankind has always been exposed to risks and insecurities of various kinds, and many of the societal institutions of modern society can in fact be seen as ways of dealing with these risks.¹ Whereas natural disasters and individual or epidemic illness have been a continuous concern for societies, industrialization and urbanization not only meant the introduction of new risks related to the emerging labor markets, but also the breakdown of many traditional forms of risk-sharing (Holzman and Jørgensen 2001). The welfare state can be seen as a state-centred solution to the problem of handling the risks and uncertainties people encounter during their life-course. Since the introduction of the first modern social insurance schemes in Bismarckian Germany in the 1880s, the welfare state in the industrialized world has expanded to cover more risks – from the early laws that focused on work-related accidents and old age to the post-Second World War expansion of family policies – as well as higher proportions of the population.

The welfare state and social insurance schemes have many purposes and a large range of both intended and unintended consequences for individuals as well as society as a whole. Focusing on social insurance, redistribution is perhaps the first function that springs to mind: redistribution between rich and poor, as well as over the life cycle. In this article, it is argued that the welfare state – or more specifically unemployment insurance schemes – is providing a crucial but often, at least empirically, overlooked function: it reduces the overall insecurity associated with modern labor markets. A main characteristic of the ‘golden age of welfare capitalism’ in the 1960s and 1970s was not only low unemployment rates, but also an institutional framework for largely secure employment (Wheelock 1999). The insecurity of employment was largely confined to unskilled manual workers. However, since the late-1970s, unemployment rates have been persistently high in the OECD area and insecurity of employment has increasingly become the lived experience of the middle classes too. As we will see, a large amount of research indicates that job insecurity, i.e. the fear (real or perceived) people in work have that they might lose their jobs and become unemployed, is an important stressor and as such associated with a range of adverse health outcomes. Since it seems highly likely that job insecurity is associated with concerns about future financial security, this article argues that economic support during times of unemployment may lessen the negative effects of job insecurity on employed

individuals' subjective well-being. One implication of this is that social policy schemes, such as unemployment benefits, might be viewed as a collective resource that needs not necessarily be utilised in order to have a welfare-enhancing effect; the mere knowledge that they exist may reduce the negative consequences of insecurity for people's well-being.

Against this background, this article will analyze the cross-national relationship between employed individuals' subjective well-being and unemployment benefit generosity, a topic that notwithstanding the increased attention paid to the effect of macroeconomic and institutional factors on subjective well-being has attracted very scant interest previously (Di Tella et al. 2003; Ochs and Welsch 2006). In relation to these studies, this article contributes to the existing body of evidence in several ways. Firstly, a number of 'placebo tests' is designed that allow us to further test the hypothesized relationship between unemployment benefit generosity and subjective well-being. The formulation of such 'placebo tests' (or counterfactuals) and of as many observable implications from the general theoretical argument as possible is a productive way of increasing the leverage over the research problem at hand (King et al. 1994). More specifically, it is argued that for the relationship between unemployment benefit generosity and subjective well-being to be plausible, social protection schemes which do not cover the risk of becoming unemployed should have no effect on employed individuals' subjective well-being, and furthermore that unemployment benefit generosity should have no effect on the subjective well-being of individuals who do not experience job insecurity and of individuals who are not eligible for benefits if they become unemployed. Further test of the hypothesized association between benefit generosity and subjective well-being is provided by differentiating between employed individuals with different risk of unemployment and different levels of vulnerability if they were to become unemployed. Secondly, by using two different measures of subjective well-being, one single-item measure of life satisfaction and one multi-item scale that captures different components of positive well-being (the so-called WHO-5 scale) that to my knowledge never has been used in this line of inquiry before, the present study will provide further insights into how different aspects of subjective well-being is affected by unemployment benefit generosity and other macro-social factors. Moreover, the data used will allow us to control for prior and present health status of individuals as

well as a number of indicators of social support that has been shown to moderate the negative effects of job insecurity on well-being. Thirdly, by distinguishing between different dimensions of unemployment benefit generosity this article will shed further light on the institutional mechanisms whereby unemployment benefit schemes might affect the subjective well-being of employed individuals.

It should be remembered that even if unemployment benefits is found to have a positive effect on worker's well-being, this does not come without costs. Such benefits must be financed through tax revenues, and they might also affect unemployment levels (Nickell et al. 2005). Both taxes and unemployment may then affect individual well-being, directly as well as indirectly through, for example, lower levels of economic growth. Moreover, uncertainty and risk can also have a positive and empowering effect on people, for example by open up investment opportunities for entrepreneurs. In the long run, uncertainty may therefore contribute to economic efficiency and growth and as a result also benefit those less inclined to engage in entrepreneurial activities. However, the direct, short-term costs of uncertainty may be more unequally distributed in society. As a social construct, the labor market incorporates asymmetries of power between its participants, and whereas uncertainty may a window of opportunity for some, it may be a constraint for others.

Job insecurity, insurance and well-being

Insurance, both private and the various forms of income maintenance schemes usually referred to as social insurance, can be defined as a device which offers individuals protection against risk (Barr 1993). Focusing for a moment on private insurance, what induces individuals to buy protection against risks that they know have a very low probability of materializing? At the end of our lives, most of us have spent far more money on premiums to insure our houses, cars and other belongings or on medical insurance premiums than have been paid out to us by the insurance companies. The answer is of course that most of us are risk-averse; meaning that uncertainty *per se* causes disutility and potentially reduces our well-being (Barr 1993). Therefore, certainty in itself is seen by most people as something

worth paying for. Having bought a new and expensive car, most of us will probably sleep better at night if we know that we will be (at least partly) compensated in financial terms if it is stolen.

Admittedly, there are at least two important differences between private insurance and what we usually refer to as social insurance. Firstly, social insurance is often compulsory, so individuals have no option as to whether to buy a particular insurance (let's say against the risk of unemployment) or not. Secondly, social insurance can be provided against risks that private insurance companies have difficulty in handling. The prime example here is unemployment insurance – because of moral hazard (i.e. that the insured can influence the probability that an event, in this case unemployment, will happen), the fact that the risk of unemployment is related to the business cycle and therefore often occurs in waves, and because some groups are simply seen as uninsurable by private insurance companies, privately provided unemployment insurance is very rare around the world.

Despite these differences between private and social insurance, the core argument of this article is that publicly provided unemployment insurance is enhancing people's well-being by reducing uncertainty in the same way as property insurance, for example. It may very well be that some individuals would prefer to opt out of a compulsory unemployment insurance scheme and that their well-being would increase if they were allowed to arrange their protection against the risk of becoming unemployed privately (in the form of private insurance or savings). If they are risk-tolerant, they would perhaps even refrain from arranging any form of protection, which would in fact increase their well-being or utility. However, if people consider unemployment as a real risk and they also are risk-averse, the risk of becoming unemployed may also have a negative effect on their subjective well-being.

A large amount of research has now been accumulated which provides evidence of adverse effects of self-reported job insecurity (i.e. the fear people in work have that they might lose their job and become unemployed) on various forms of health outcomes, ranging from psychological distress, anxiety and depression to an increased level of mental, emotional and physical exhaustion (for useful overviews of the literature, see De Witte 1999; Sverke et al. 2002; De Cuyper and De Witte 2006). Burchell (1999:

437; see also De Witte 1999: 158) even states that the empirical literature provides evidence of a direct causal link between job insecurity and psychological well-being. Longitudinal studies have also suggested that such a causal link is plausible (see Sverke et al. 2002; Ferrie et al. 2003; 2005). However, that the perceived cause (i.e. job insecurity) precedes the effect (i.e. negative psychological well-being) is a necessary but not a sufficient condition for establishing a convincing causal argument. In addition, a causal mechanism whereby job insecurity affects psychological well-being needs to be specified or at least suggested (Elster 1989). Here the literature points at related but slightly different ways of understanding this relationship. In Jahoda's well-known theory (1982) about the latent functions of work, employment fulfils both a manifest function, in the form of generating an income, and a number of latent functions, such as provision of a time structure, social contacts, participation in collective purposes, status and identity, and regular activity. The threat of job loss therefore entails the threat of losing vital tangible as well as intangible resources, and the fear of such losses may then trigger various types of stress reactions such as anxiety and depression (Greenhalgh and Rosenblatt 1984; De Witte 1999). Burchell (1994; 1997), drawing upon agency theory, argues that the causal mechanism should be sought in the individual's ability to plan and control their own life. While individuals' can use different strategies to deal with actual job loss, such coping strategies are very difficult to use when the individual fear the loss of his or her job, but is uncertain about if and when the loss will occur (Lazarus and Folkman 1984). Research has in fact indicated that experiencing job insecurity can be as distressing as experiencing actual unemployment (De Witte 1999). It has also been pointed out that although job insecurity is related to actual change activity, i.e. the process of actually losing one's job, the perception of job insecurity may be triggered by factors beyond specific change activity. In line with Heaney et al. (1994), it can be argued that in contemporary working life, characterized by, or perceived by many as being characterized by rapid change and recurrent organizational restructuring, a certain enhanced level of job insecurity may represent an enduring perceived threat for employees. Thus, if job insecurity may be seen as chronic, job insecurity can be considered to be a chronic stressor (Van Vuuren et al. 1991).

Although the importance of having a feeling of economic security for the psychological well-being of both unemployed and employed has been recognized for long (Eisenberg and Lazarsfeld 1935: 361), the role of economic security as a moderator of the effect of job insecurity on psychologically well-being has nevertheless been conspicuously absent from the literature (Ferrie et al. 2005: 1600). Although unemployment benefits may do little to directly affect the risk that employed individuals will lose their jobs, a central argument of this article is that such benefits may affect the sense of economic vulnerability associated with possible job loss. It seems plausible to assume that an important reason why uncertainty about future unemployment affects people's subjective well-being is because it causes concern about future financial security (Ferrie et al. 2003). Consequently, it can be argued that employed individuals' sense of well-being will increase if there is an unemployment protection scheme which, at least to some degree, will protect them from income losses if they become unemployed.

Although job insecurity and the uncertainty associated with future prospects in the labor market have increasingly come to be the lived experience of the middle classes too, there are strong reasons to believe that the burden of job insecurity still falls disproportionately on those who are the least well equipped to deal with it, i.e. those with limited resources, economic or otherwise. A useful distinction can be made here between risk and vulnerability. People are at risk if something negative might happen, whereas people are vulnerable when, if something negative happens, it will damage them. A person with sufficient economic resources (money in the bank or a high income) but in a low-security occupation is at risk, but not vulnerable, whereas a person who is in secure employment but lacking in economic resources (low income and no money in the bank) is vulnerable, but not at risk. An additional argument of this article is that if unemployment benefits functions as moderator of the effect of job insecurity on well-being, this moderating effect will be most important for those with a high risk of becoming unemployed and/or lacking the private resources to cope with these risks.

Although there is a lack of research on the links between job insecurity, future financial security and well-being, the effect of income maintenances schemes in reducing uncertainty has been noted in a

more general sense. Both Atkinson (1991) and Barr (1993; 2001) argue that the fact that the welfare state reduces uncertainty and provides citizens with a sense of security is an important, but often neglected, objective of the welfare state. Haveman (1985: 449) even argues: “in my view, the primary economic gain from the welfare state is the universal *reduction in the uncertainty* faced by individuals”. Likewise, Sinn (1995: 259) argues that “apart from the benefit of stabilising the political system and avoiding social unrest, the welfare state’s main achievement is the social insurance it provides in an uncertain world”. There is also a nascent body of literature, above all in economics, which has studied the effect of macroeconomic conditions on subjective well-being (e.g. Di Tella et al. 2003; Wolfers 2003; Alesina et al. 2004). An important conclusion from this line of research is that macroeconomics matter, and that people’s subjective well-being is correlated with both levels and trends in macroeconomic factors such as GDP, unemployment and inflation. Also factors such as the quality of governance (Helliwell 2003) and democracy (Frey and Stutzer 2000) has been show to be important in this context. A few of these studies have also analyzed the effect of the welfare state and income protection schemes on various measures of subjective well-being. However, the conclusions from these analyses are ambiguous. Whereas Di Tella et al. (2003) finds that unemployment benefits and self-reported life satisfaction is positively correlated for both unemployed and unemployed, Ochsens and Welsch (2006; see also Veenhoven (2000) and Ouweneel (2002)) finds no evidence of such a link.

Hypotheses

To recapitulate: the main idea guiding this article is that job insecurity is a more or less chronic stressor in modern societies which has adverse effects on employed individuals’ subjective well-being. One important reason for this is that job insecurity is likely to cause concern about future financial security. Since unemployment benefits may reduce the sense of economic vulnerability associated with job loss, such benefits will have a beneficial effect on employed individuals’ subjective well-being. Thus:

H1. *Unemployment benefit generosity will have a positive effect on employed individuals' subjective well-being.*

Besides unemployment benefits which specifically cover the income risk associated with unemployment, modern welfare states provide a host of other benefits covering an array of different risks. The central idea in this article is that it is first and foremost the availability of an economic safety-net during unemployment which can mitigate the effect of job insecurity on well-being, rather than the overall resources devoted to social security. This idea implies that for the hypothesized effect of unemployment benefits on subjective well-being to be credible, the generosity of policy measures that cover life-course risks that are (more or less) irrelevant to an employed individual should have a negligible effect on the well-being of that individual. To test this hypothesis, we will use family policy generosity (see Data and Methods) as an example of a social policy measure which does not cover the income losses associated with unemployment. Crucial in this context is also the identification of individuals where family policy generosity does not cover other relevant risks (i.e. the economic risk associated with having and raising children). This hypothesis will therefore be tested on employed women and men without children above the age of 40 and 45 respectively, thus presumably excluding most individuals who still plan to have children (but without reducing the sample size too much). However, it should be noted that the risk of becoming unemployed and the economic risk associated with having children are probably rather different in character, where for many people becoming a parent is a planned decision where careful attention is paid to the economic circumstances associated with parenthood. Bearing this caveat in mind, the following hypothesis can be formulated:

H2. *Social protection schemes which do not cover the risk of becoming unemployed (in this case family policy benefits) will have no effect on employed individuals' subjective well-being.*

For the hypothesized effect of unemployment benefit generosity on employed people's well-being to be plausible, benefit generosity should also have a negligible effect on the well-being of individuals who are not experiencing job insecurity and for whom the status of 'unemployed with a right to

unemployment benefits' is irrelevant, as well as for individuals who will not be eligible for unemployment benefits if they become unemployed. Possible candidates for the first group of individuals are housewives – since they are not employed they will not experience job insecurity and there will therefore be no moderating role of unemployment benefits on their well-being. Appropriate candidates for the second group of individuals are students - although in some countries students may be eligible for unemployment benefits under certain conditions, as a rule they will not be eligible for such benefits when they have finished studying. Therefore, although both students and housewives will probably also have concerns about future financial security which in turn may affect their well-being, it seems unlikely that these concerns will be mitigated by generous unemployment insurance benefits. However, using students and housewives for testing these kinds of 'placebo effects' is not without problems. First of all, there might be selection mechanisms at work so that women with poor health or weak 'competitiveness' on the labor market choose or are forced to become housewives. Secondly, if a feeling of economic security is important also for the well-being of housewives and if economic resources are pooled within the household, also the well-being of housewives will be affected by the insecurity-reducing effect of unemployment benefits. However, it could be argued that this 'indirect' effect of unemployment benefits on housewives well-being will be lesser in magnitude than the 'direct' effect on employed individuals' well-being. As regards students, there are probably other reasons why their well-being is not affected by the generosity of unemployment benefits besides the fact that they are not eligible for such benefits. Some of these factors are (at least partially) controlled for in the empirical analyses, such as no families to support (which makes the economic consequences of unemployment less severe) and little labor market experience (which may make them less risk averse), while we are unable to control for other factors (such as the fact that many students are financially dependent upon their parents). Keeping these cautions in mind, it is possible to formulate the following hypotheses:

H3. *Unemployment benefit generosity will have no effect on the subjective well-being of individuals who do not directly experience job insecurity (housewives) as well as for individuals who are not eligible for benefits if they become unemployed (students).*

We would also expect unemployment benefit generosity to have a greater effect on employed individuals' sense of well-being the more uncertain their position in the labor market. Since no direct measure of subjective job insecurity is available in the data, prior unemployment spells will serve as a proxy for job insecurity (since past unemployment is a strong predictor of the likelihood of becoming unemployed in the future).² This is also in line with the results of Oliver and Pomicter (1981) that job insecurity becomes far more salient an issue for those who have lost jobs in the past themselves.

Although there are theoretical reasons for defining job insecurity this way, it also entails methodological problems. In short, any difference in well-being between employed individuals with and without prior unemployment experience might simply be due to the fact that those with bad health also are more likely to become unemployed. The use of a large number of control variables is an attempt to control for observable factors that we believe influence both the probability of having experienced unemployment spells and reporting relatively low levels of subjective well-being.

However, there is a possibility that there are unobservable differences between employed individuals with and without prior unemployment spells that will affect the results. One way of tackling this problem is to be restrictive in the definition of the group having experienced prior unemployment spells - in the subsequent analyses prior unemployment experience is defined as having experienced a spell of unemployment more than five years ago. It is worth stressing that our confidence in the results when testing this hypothesis is dependent upon whether we believe that such a definition of prior unemployment experience capture important aspects of labor market risks but minimizes the problem of unobserved heterogeneity. Thus:

H4. *The more uncertain an employed individual's position in the labor market, measured as having experienced spells of unemployment, the greater the effect of unemployment benefit generosity on subjective well-being.*

Since it is hypothesized that the generosity of unemployment insurance benefits will affect the sense of economic vulnerability associated with possible job loss, we would also expect benefit generosity to

have a greater effect the more economically vulnerable the employed individual. To test this hypothesis, we will use a measure of economic vulnerability based on whether the respondent thinks it would be difficult to borrow money if necessary to make ends meet. Thus:

H5. *The more vulnerable the employed individual, measured as the respondent's assessment of the possibility of borrowing money if necessary, the greater the effect of unemployment benefit generosity on subjective well-being.*

Data and methods

This article will use data for 21 countries (Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and the UK) from the second wave of the European Social Survey (ESS) carried out in 2004/05. The ESS data are collected in the form of face-to-face interviews, and the average response rate for the countries included in the analysis in this article is 65.1 per cent.³ A weighting factor has been used in all analyses to correct for sample selection bias.

The studies referred to above on the cross-national relationship between macroeconomic and institutional factors and subjective well-being have typically used single-item measures on either life satisfaction or happiness. Such measures have been shown to correlate highly with both alternative and non-self-report measures of well-being (Sandvik et al. 1993; Kahneman and Krueger 2006). However, evidence also suggests that subjective well-being is composed of several components and that information on these components is lost when single-item scales are used (Diener 1984), and moreover that increasing reliability through the use of multi-item measures may reduce situational effects and simple errors (Sandvik et al. 1993). This article will use two different but related measures of subjective well-being: the main focus will be upon the so-called WHO-5 scale which consists of five items assessing positive mood, vitality and general interest over the past 2 weeks (for a description of the WHO-5 scale and its validity, see Bech et al. 2003; Bech 2004; Henkel et al. 2003).

More specifically, the WHO-5 scale consists of the following five statements: 'I have felt cheerful and in good spirits for the last 2 weeks'; 'I have felt calm and relaxed for the last 2 weeks'; 'I have felt active and vigorous for the last 2 weeks'; 'I have woken up feeling fresh and rested for the last 2 weeks'; and 'My daily life has been filled with things that interest me for the last 2 weeks'. Possible answers range from 'At no time' (which is given a score of 0) to 'All of the time' (which is given a score of 4).⁴ To obtain comparability with other similar scales, the scale is conventionally transformed to range between 0 and 100, where 0 indicates worst conceivable well-being. As a point of reference in relation to other studies in this area, we will also use a single-item question on overall life satisfaction ("All things considered, how satisfied are you with your life as a whole nowadays?"), where the response scale varies between 0 (extremely dissatisfied) and 10 (extremely satisfied).

Since the WHO-5 scale not only is a measure of overall quality of life but may also be used as a screening device for depression (Bech 2004), it could be argued that the WHO-5 scale is more appropriate for measuring psychological reactions to job insecurity, such as anxiety and depression, than the single-item question on overall life satisfaction. There are also indications that the WHO-5 scale and single-item measures of life satisfaction measures different concepts (Tennant et al. 2007). However, it should be noted that these two measures of well-being is fairly highly correlated – the individual-level correlation in the sample of employed individuals is 0.366 ($p=0.000$), ranging from 0.192 in Portugal to 0.485 in Sweden, whereas the country-level correlation is 0.707 ($p=0.000$).

The key explanatory variable, unemployment benefit generosity, will be measured along three dimensions: replacement rate, benefit duration and average expenditure. Replacement rate is net of taxes and calculated as the average for two typical households: a single worker earning an average production worker's wage and a worker with a wife and two children, and pertains to a situation where the worker is unemployed for 26 weeks and employed for 26 weeks during the year 2000.⁵ Duration refers to how long an average production worker will receive regular (i.e. non-means tested) unemployment benefits. Due to low take-up rates and the existence of long-term unemployed whose right to benefit has expired, the stylized situation pertaining to an average worker may misrepresent

the economic conditions facing the unemployed. In an attempt to correct for this, we will also use average benefit expenditure, defined as average sum (in PPP-adjusted dollars) the countries are spending on each unemployed person for the period 1990–1999.⁶ In the analyses, we will use these variables both separately and in the form of an additive index. When constructing this index, all variables were standardised to have a variation between 0 and 1. Since duration has an extremely skewed distribution (the mean duration is 82 weeks whereas the median duration is 52 weeks), maximum duration was set at two years.⁷

The measure of family policy generosity which will be used to evaluate hypothesis two is also based on a type-case approach: a family with two children (aged 0 and 5) where one parent is working and earning an average production worker's wage, and the other parent is non-working due to parental leave (but earned an average production worker's wage prior to the birth of the second child). Benefit generosity refers to benefits paid during the child's first life-year and considers five types of benefits: lump-sum maternity grants paid in relation to confinement, earnings-related maternity, paternity and dual parental insurance, and flat-rate childcare leave paid after the termination of earnings-related benefits.⁸

Research on cross-national differences in subjective well-being suggests a range of potentially confounding factors at the macro level which might affect the relationship between unemployment benefit generosity and subjective well-being. The models will therefore include measures of both levels (average for the period 2000–2004) and trends (average yearly changes 1990-04) in GDP per capita, unemployment, and inflation. Quality of governance is also used as a control variable, since the quality and reliability of government services have been shown to have an impact on cross-national variation in individual well-being (Helliwell 2003). Employment protection legislation is also entered as a control variable in the analyses; whereas unemployment benefit generosity affects the economic conditions during unemployment, employment protection legislation might be seen as influencing the likelihood of becoming unemployed in the first place. Finally, life expectancy, which can be seen as a

crude measure of overall living and health conditions in a country, is also used as a control variable. More information on these variables and how they were constructed can be found in the Appendix.

Although we are primarily interested in the macro-level effects, we will control for a number of characteristics at the individual level which are important in accounting for individual variation in subjective well-being. Social class will be measured using the EGP class schema (small proprietors and agricultural workers are excluded from the analysis). The analyses also control for whether the respondent has experienced any spell of unemployment of between three to twelve months (but not within the last five years), the number of years the respondent has spent working full- or part-time and the degree to which he or she thinks it would be difficult to borrow money in case of financial difficulties. A range of measures of social support is also employed: whether the respondent is currently living with a partner; whether they have children living at home; how often the respondent meets socially with friends, relatives or work colleagues; and how often the respondent takes part in social activities. The last two of these measures were not possible to include in the analyses done by Di Tella et al. (2003) and Oxsen and Welsch (2006), which is unfortunate since it has been shown that social support provided by both family members and friends may moderate the negative effects of job insecurity on life dissatisfaction (Lim 1996).

A range of variables aimed at controlling prior and present health status is also employed. A control for more serious health problems is used in the form of the question “Are you hampered in your daily activities in any way by any long-standing illness, or disability, infirmity or mental health problem?”, where “yes, a lot” and “yes, to some extent” are collapsed into one category. Contacts with the health care system is controlled for by including a variable based on the question “How many times in the past twelve months have you consulted a doctor for yourself, including specialists and GPs” (possible answers range from “never”, “once or twice”, “3-5 times”, “6-10 times”, and “more than 10 times”). Current as well as previous use of medicine is controlled for by including three variables based on the following questions: “Are you regularly taking any pills or using any medication prescribed for you” (“yes”=0, “no”=1); “In the last five years, how often have you taken or used a prescribed medicine

that was prescribed for someone else” (“never in last five years”=1; “once”, “2-3” and “4 times or more”=0); and “What did you do with the prescription the last time the doctor prescribed you a medicine you had not had before” (“never had a prescription from a doctor”=1; “didn’t collect the medicine”, “collected it but did not use it”, “used it but not as prescribed”, and “used I exactly as prescribed”=0).

Since the hypotheses in this article refer to the effect of macro-level variables, results for these individual-level variables have been placed in the Appendix (Table A1). The hypotheses outlined above will be tested using multilevel regression analysis, which is an appropriate technique to use when observations are nested, in this case individuals within countries (Snijders and Bosker 1999).

Results

Let’s start with the general argument of this article, i.e. that unemployment benefit generosity increases the subjective well-being of employed workers. Figure 1 depicts the country-level relationship between average unemployment benefit generosity and average levels of subjective well-being for two groups: unemployed and employed individuals with no experience of unemployment.

Figure 1. Cross-national relationship between subjective well-being (WHO-5) and unemployment benefit generosity among employed and unemployed

There is a significant and strong correlation between unemployment benefit generosity and absolute levels of subjective well-being for both employed and unemployed individuals, an association that is almost identical when life satisfaction is used as a measure of subjective well-being (for a similar result, see Di Tella et al. 2003: 821). An interesting consequence of the fact that the effect of unemployment benefit generosity on subjective well-being is roughly equal for both employed and unemployed individuals is that cross-nationally, the effect of unemployment benefit generosity on relative levels of well-being among the unemployed (i.e. relative to the employed) is close to zero.

Table 1 presents the results from a series of multilevel regression models. The first column displays the results where the macro-level variables were introduced one at a time while controlling for individual-level variables (Table A1), with standard errors within parentheses and the change in deviance value between the full micro model and the full micro model plus this particular variable within brackets.⁹ As we can see, the measure of unemployment benefit generosity has a positive and significant impact on the subjective well-being of employed individuals. A closer examination of the individual components included in the benefit generosity index (i.e. duration, replacement ratio and average expenditure) indicates that all have a positive and significant effect (on at least the 5 per cent level), with replacement rate, followed by average expenditure, as the component with the greatest impact on subjective well-being. This might indicate that it is income replacement and the possibility of maintaining accustomed levels of living which are most important in reducing the effect of perceived job insecurity on subjective well-being.

Table 1. The effect of macro-level variables on subjective well-being (WHO-5 scale and life satisfaction)

Both levels and trends in GDP per capita have a significant positive effect on subjective well-being, whereas only change in unemployment, and not the unemployment level, has a significant effect. However, we should be careful in paying too much attention to conventional significance levels – the coefficient associated with unemployment level has the expected sign and is significant at the 10 percent level. Both governance and above all life expectancy has a positive and significant effect on subjective well-being, whereas inflation and employment protection have no significant effects.

Column two display the result from the model which from a statistical point of view performed best; i.e. the most parsimonious model that still provide a good fit to the data. In this model, change in GDP per capita and unemployment benefit generosity have positive and highly significant (on the 0.1 percent level) effects, and once these two variables are included in the model, no other variables have

a significant effect or improves the models fit to the data. Also in this model all of the individual components included in the benefit generosity index have a positive and significant effect (on at least the 5 per cent level) on subjective well-being, and once again it is replacement rate which has the greatest impact on subjective well-being.

The results from multilevel regressions with only 21 countries can be very sensitive to potential outliers. The results were therefore subjected to sensitivity analysis, whereby countries assessed as potentially having a large impact on the results were excluded. In a first step, post-communist countries were excluded from the analysis, where the results indicate that the effect of unemployment benefit generosity is highly significant also in the sample of only non-post-communist countries. In a second step, influential cases were deleted from the analysis one at the time. Although a range of more or less sophisticated statistical procedures can be used to detect outliers in multilevel analysis (see, e.g. Langford and Lewis 1998), in a cross-sectional dataset with only 21 countries this can be done in a rather straightforward way: the country with the highest influence value (which is a combination of residuals and leverage value) was deleted from the analysis, the model was run again, and the procedure repeated until six countries had been deleted from the analysis. Although the coefficient of unemployment benefit generosity decreases in absolute number throughout these analyses (to around 1.6 when Switzerland, Estonia and the UK is excluded, and thereafter stable when Hungary, Spain and Finland is excluded), the effect always remain significant at the 1 per cent level.

In the second section of Table 1 (columns 6 and 7), the same analyses is performed with the single-item life satisfaction scale as dependent variable. Two main conclusions stand out from these analyses. Firstly, there is a consistently significant effect of the quality of governance variable, an effect that does not appear with the WHO-5 scale as dependent variable in a multivariate framework. Secondly, unemployment benefit generosity has a significant positive effect also on this measure of employed individuals' subjective well-being. However, this effect seems to somewhat weaker in terms of significance levels as compared to the WHO-5 scale. Although any meaningful comparison between the results for the two measures of subjective well-being used here is extremely difficult to make, this

result might indicate that the effect of unemployment benefit generosity is as, if not more, important for rather concrete stress symptoms, such as anxiety and depression, as it is for overall life satisfaction.

Returning to the first section of Table 1, hypothesis number two stated that for the hypothesised effect of unemployment benefit generosity to be credible, social policies which do not cover the income risk associated with unemployment should have no effect on employed individuals' well-being. Family benefit generosity was used to test the hypothesis and, as we can see in column 3, family benefit generosity has no impact whatsoever on the subjective well-being of employed individuals (above 40 (women) and 45 (men) years of age without children). A related hypothesis (hypothesis number three) stated that benefit generosity should have a negligible effect on the subjective well-being of individuals who are not experiencing job insecurity and for whom the status of "unemployed with a right to unemployment benefits" is irrelevant, as well as for individuals who will not be eligible for unemployment benefits if they become unemployed. Housewives and students respectively were identified as possible candidates testing this hypothesis, and in column 4 and 5 we can see that unemployment benefit generosity has no significant effect on the subjective well-being of individuals identified as belonging to these groups. However, the effect of unemployment benefit generosity on housewives well-being is non-trivial and significant at the 10 percent level, possibly indicating a kind of "spill-over effect" of these benefits on other household members. All in all, we must therefore conclude that the first three of our hypotheses are supported by these analyses.

Our penultimate hypotheses argued that unemployment benefit generosity would have a greater effect on employed individuals' sense of well-being the more uncertain their position in the labor market. An alternative way of formulating this hypothesis is to say that when we compare two individuals who experience the same degree of labor market uncertainty but live in countries with different levels of unemployment benefit generosity, the adverse effects of employment uncertainty on subjective well-being will be lower for the person living in the country with the higher level of benefit generosity. So what this hypothesis in effect implies is the existence of so-called cross-level interaction effects between benefit generosity and labor market uncertainty. Table 2 displays the coefficients for such

cross-level interaction effects between benefit generosity (dichotomized into high and low benefit generosity) and the measure of labor market uncertainty identified for this purpose, whether or not the respondents have experienced any spell of unemployment (between 3-12 months but not within the last five years).

These cross-level interaction effects support the hypothesis that unemployment benefit generosity may mitigate the adverse effects of labor market uncertainty on subjective well-being. First of all, we can see that within the group of countries defined as having low or high levels of benefit generosity respectively, those with no experience of unemployment report higher levels of subjective well-being than respondents who have experienced a spell of unemployment. Then if we compare the subjective well-being of individuals who have experienced spells of unemployment in countries with high and low benefit generosity respectively, we see that those living in countries with comparatively high benefit generosity report a significantly higher level of subjective well-being.

Table 2. Cross-level interaction effects between unemployment insurance generosity and whether a) the respondent has experienced unemployment and b) if in financial difficulties think they would have trouble borrowing money.

The last of our hypotheses stated that since the generosity of unemployment insurance benefits will presumably affect the sense of economic vulnerability associated with possible job loss, benefit generosity could be expected to have a greater effect the more economically vulnerable the employed individual. This hypothesis is also tested through the formulation of cross-level interaction effects between levels of unemployment benefit generosity and economic vulnerability, operationalized as whether the respondent thinks it would be difficult to borrow money if necessary to make ends meet. This measure is an attempt to capture the respondent's access to an economic buffer. This hypothesis too is supported by the data. Economically vulnerable individuals living in countries with relatively generous unemployment benefits report significantly higher levels of subjective well-being compared with vulnerable individuals living in countries with less generous unemployment benefits. The results

reported in Table 2 are potentially sensitive to where we draw the line between low and high levels of benefit generosity. A sensitivity analysis excluding the two countries with values closest to the line between low and high benefit generosity from the analyses was therefore performed, without affecting the basic pattern displayed in Table 2.

Discussion

The main argument of this article has been that, by reducing concerns about future financial security, unemployment protection systems may lessen the negative effects of job insecurity on employed individuals' subjective well-being. The empirical assessments presented are supportive of this general argument. In fact, from a cross-national perspective, the generosity of unemployment benefits seems to be as important for the subjective well-being of the employed as it is for the well-being of unemployed individuals. These results indicate that unemployment insurance schemes may have important external benefits, i.e. benefits to society over and above those to the unemployed who directly utilize such benefits. Thus, individuals may not have needed to use unemployment insurance benefits at any point in their working life in order to consider access to such benefits as a source of welfare; the mere knowledge that they will receive help if needed may be considered as contributing to their welfare.

Our belief in the results presented here is crucially dependent upon whether we think that the approach employed has dealt satisfactorily with the methodological problems inherent in this kind of analysis, such as selection problems and unobserved heterogeneity. The formulation of 'placebo tests' (or counterfactuals) and testing many implications from the general theoretical argument has hopefully increased our confidence in the results. Although a number of valid objections may still be raised against the validity of the results, I still believe that they deserve to be taken seriously. Labor markets in advanced capitalist democracies have undergone profound structural changes since the mid-1970s. The decreased significance of long-term attachments between employer and employees and the concomitant growth of atypical/non-standard work means that a declining proportion of the

workforce is holding permanent full time jobs. With job and career patterns being less long term and stable, more and more people suffer insecurity on the labor market. And whereas insecurity may be an important incentive for people to work harder and make investments in their human capital, the results presented here suggest that it may also have harmful effects on their subjective well-being and thus possibly also on their productivity. An important conclusion from this article is therefore that it is important to discuss and evaluate unemployment insurance schemes not only in terms of their poverty-alleviating effects and their effects on incentives to work, but also in terms of their productivity-enhancing quality. However, if it is traditional unemployment insurance schemes that is the best way to offer insurance on a labor market where risks are becoming less predictable and standardized career patterns no longer can be assumed is open for debate.

Notes

¹ Throughout this article, ‘risk’ and ‘insecurity’ will be used interchangeably. Although it has been argued that whereas risks can be transformed into probabilities, insecurity refers to unpredictable events that are not amendable to this sort of calculation (Barr 2001), I would argue that in everyday vocabulary both risk and insecurity essentially mean danger or threats to people’s livelihoods (Holzman and Jørgensen 2001).

² It is important to emphasize that the main hypothesis in this article is that unemployment benefits will reduce the effect of job insecurity on subjective well-being, not job insecurity in itself. Thus, even if we had a measure of (subjective) job insecurity, it would be of limited relevance to the hypotheses tested here.

³ The response rate in individual countries is: Estonia=79.1; Greece=78.8; Poland=73.3; Czech Republic=70.8; Finland=70.7; Norway=66.2; Sweden=65.4; Denmark=64.2; Austria=62.4; Belgium=61.2; Great Britain=54.6; Germany=51.0; Slovakia=63.3; Slovenia=68.9; Switzerland=48.6; Ireland=62.5; Netherlands=64.3; Hungary=66.5.

⁴ The items included in the WHO-5 scale display high internal consistency in the sample used here, with a Cronbach’s alpha of 0.82.

⁵ This is the latest available data point for all variables included in the benefit generosity index.

⁶ The reason for measuring benefit expenditure per unemployed as an average over a longer time-period is that business-cycle effects may have significant effects on this measure.

⁷ Data on benefit generosity and duration for non-post-Communist countries comes from the SCIP database at the Swedish Institute for Social Research. The SCIP data has been used in a large number of books and articles (see <https://dSPACE.it.su.se/dSPACE/handle/10102/7> for access to and information on this data). Data on expenditure for these countries as well as all data for the post-Communist countries have been collected within the project ‘Social Policy Strategies and Welfare Outcomes in East and Central Europe in a Comparative Perspective’ at the Swedish Institute for Social Research.

⁸ Data on family policy generosity for non post-Communist countries has generously been provided by associate professor Tommy Ferrarini at the Swedish Institute for Social Research (see Ferrarini 2006

for a presentation of this data). Data for post-Communist countries have been collected within the project 'Social Policy Strategies and Welfare Outcomes in East and Central Europe in a Comparative Perspective' at the Swedish Institute for Social Research.

⁹ As a statistical measure of the performance of a model estimated with maximum likelihood, the deviance or likelihood ratio test can be used (Snijders and Bosker 1999). The difference in deviance (defined as $-2 \cdot \ln(\text{likelihood})$) between two models has a chi-squared distribution, with the difference in the number of explanatory variables a degrees of freedom. For testing the significance of macro-level variables, the t-value with $21-1-q$ degrees of freedom was used, where q is the number of macro-level variables (Snijders and Bosker 1999: 86).

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Appendix

Macro-level variables

Unemployment and family policy benefits are described in the text. All variables that measures levels is an average for the period 2000-04. All trend variables are calculated as the average yearly change over the period 1990 (or closest possible year) to 2004.

Governance: Data from the World Bank on the quality of governance, divided into six separate aspects: voice and accountability, stability and lack of violence, government effectiveness, the regulatory framework, the rule of law, and the control of corruption. These indicators are summed to a single index of the quality of governance for the year 2002. Source:

<http://info.worldbank.org/governance/wgi2007/>

Unemployment: As a percentage of civilian labor force. Source: OECD Factbook 2008

(<http://lysander.sourceoecd.org/v1=937284/cl=31/nw=1/rpsv/factbook/>)

Inflation: GDP Deflator (Annual growth in percentage). Source: OECD Factbook 2008

GDP: Real GDP per capita, \$ in 2000 constant prices. Source: Penn World Tables

(<http://pwt.econ.upenn.edu/>)

Life expectancy: Life expectancy at birth, men and women. Source: OECD Factbook 2008

Employment protection legislation (EPL): A summary assessment of legal provisions aimed at protecting employees from no-fault dismissal in terms of notice and severance pay requirements and the circumstances surrounding collective lay-offs. The index also includes legal regulation of temporary and fixed-term contracts. The index can vary between 0 and 4, with a higher score indicating stricter employment protection. Source: OECD 1999.

Figure 1. Cross-national relationship between subjective well-being (WHO-5) and unemployment benefit generosity among employed and unemployed

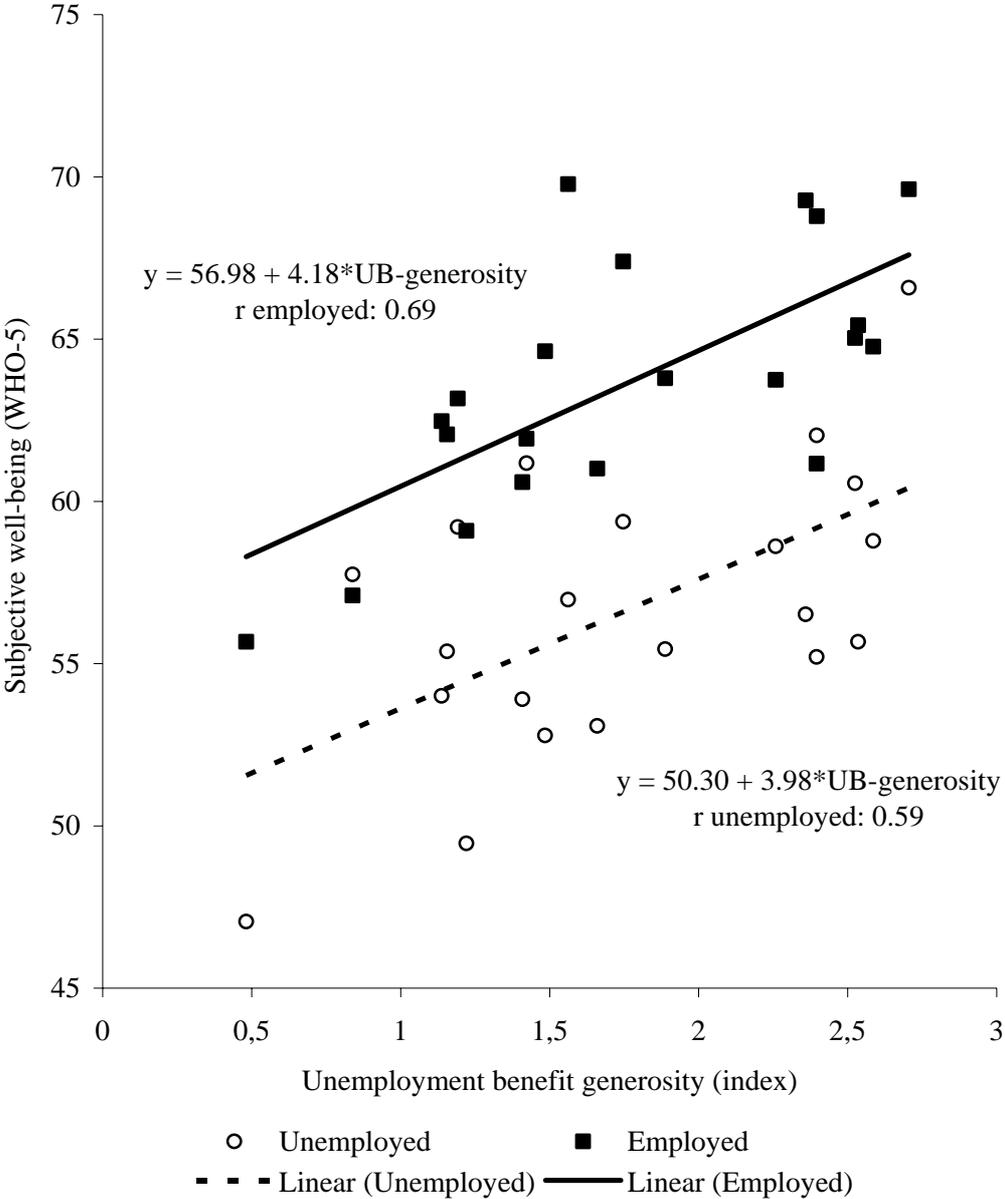


Table 1. The effect of macro-level variables on subjective well-being (WHO-5 scale and life satisfaction). Multilevel analyses, unstandardized regression coefficients (standard errors within parenthesis) [Change in deviance as compared to full micro-model within brackets]

	WHO-5 scale					Life satisfaction	
	Full micromodel and individual macrolevel variables (1)	'Best' model (2)	Test for family benefits ¹ (3)	House-wives (4)	Students ² (5)	Full micromodel and individual macrolevel variables (6)	'Best' model (7)
Unemployment benefit generosity	3.083** (.887) [10.5**]	3.416*** (.810)		2.365 (1.540)	-.357 (.704)	.723*** (.135) [12.6***]	.235* (.116)
GDP	.230** (.082) [6.3*]					.079**** (.013) [17.8***]	
Change in GDP	.970* (.423) [2.6]	1.294*** (.294)			.962** (.316)	.044 (.104) [.1]	.069* (.038)
Unemployment	-.234 (.141) [1.9]					-.084*** (.022) [6.5*]	
Change in unemployment	-4.237* (2.076) [3.0]					-.340 (.534) [.6]	
Inflation	-.285 (.268) [.9]					-.216** (.066) [6.6*]	
Change in Inflation	.956 (.675) [2.0]			-1.750* (.803)		.340** (.119) [5.4*]	
Governance	.441* (.225) [3.0]					.224*** (.031) [21.7***]	.182*** (.038)
Life expectancy	.671** (.195) [7.6*]		1.103*** (.302)			.191*** (.032) [12.1***]	
Employment protection	.572 (1.224) [.6]					-.186 (.201) [.9]	
Family benefits			-.011 (.052)				
Level-2 variance		3.810 (1.300)	7.575 (5.462)	6.901 (2.695)	.717 (1.560)		.149 (.049)
Level-1 variance		298.265 (15.004)	258.924 (16.249)	374.624 (15.308)	312.160 (24.50)		3.018 (.242)
Deviance		133570.4	7237.9	20993.7	12536.9		61826.4
n	15650	15650	842	2397	1481	15666	15666

¹ 18 countries included in analysis (excluding Greece, Portugal and Spain)

² Controlling for Greece and Switzerland as outliers

Significance levels: * p<0.05; ** p<0.01; *** p<0.001

Table 2. Cross-level interaction effects between unemployment insurance generosity and whether a) the respondent has experienced unemployment and b) if in financial difficulties think they would have trouble borrowing money. Dependent variable: WHO-5 index. Multilevel analyses, unstandardized regression coefficients (standard errors within parenthesis)

Unemployment benefit generosity	Risk		Vulnerability	
	Unemployment experience		Difficulty borrowing money	
Low	Yes	ref.	Yes	ref.
Low	No	1.910* (.958)	No	-.042 (.831)
High	Yes	3.230** (1.259)	Yes	3.874*** (1.114)
High	No	5.711*** (1.189)	No	3.523** (1.179)

Note: All models contain the full range of micro-level variables and all relevant (significant) macro-level variables

Significance levels: * p<0.05; ** p<0.01; *** p<0.001

Table A1. The effect of individual-level variables on subjective well-being (WHO-5 scale and life satisfaction). Multilevel analyses, unstandardized regression coefficients (standard errors within parenthesis)

		WHO-5 scale		Life satisfaction	
		Only micro-level variables	'Best model'	Only micro-level variables	'Best model'
	Intercept	52.229*** (1.504)	43.787*** (2.214)	5.939*** (.191)	3.921*** (.280)
	Age	0.055 (.038)	0.055 (.038)	-.008* (.005)	-.008* (.005)
Sex (Men=ref.)	Women	-1.147** (.421)	-1.158*** (.419)	.155*** (.031)	.155*** (.031)
EGP-class (Higher-grade professionals=ref.)	Lower-grade professionals	1.559*** (.401)	1.563*** (.399)	-.042 (.039)	-.043 (.039)
	Higher-grade non-manual workers	.729* (.414)	.749* (.420)	-.158* (.075)	-.158* (.075)
	Lower-grade non-manual workers	1.583* (.639)	1.589* (.638)	-.267* (.113)	-.267* (.113)
	Lower-grade technicians	1.170 (.808)	1.194 (.810)	-.107 (.085)	-.105 (.085)
	Skilled manual workers	1.989*** (.480)	2.011*** (.476)	-.144 (.108)	-.143 (.108)
	Unskilled manual workers	.388 (.593)	.405 (.594)	-.325*** (.089)	-.324*** (.088)
Living with partner (no=ref.)	Yes	1.948*** (.506)	1.938*** (.504)	.589*** (.043)	.589*** (.043)
Children at home (no=ref.)	Yes	-1.683*** (.363)	-1.625*** (.366)	-.136*** (.036)	-.135*** (.036)
Serious health problems (no=ref.)	Yes	-5.101*** (.429)	-5.122*** (.429)	-.460*** (.050)	-.459*** (.050)
How many times contact with doctor last 12 months		-1.861*** (.182)	-1.855*** (.188)	-.038* (.019)	-.039* (.019)
Regularly using medicine prescribed for oneself (yes=ref.)	No	1.093* (.438)	1.116* (.440)	.047 (.036)	.048 (.036)
Have used medicine prescribed for someone else (yeas=ref.)	No	2.605*** (.455)	2.605*** (.457)	.128*** (.032)	0.128*** (0.032)
Ever had a prescription from a doctor (yes=ref.)	No	1.125 (1.321)	1.113 (1.329)	-.132 (.098)	-.129*** (.032)
Labor market experience		-.007 (.033)	-.008 (.033)	-.002 (.004)	-.003 (.004)
Meet socially with friends (<once a week=ref.)	Once a week or more often	4.390*** (1.122)	4.347*** (1.115)	.560*** (.083)	.557*** (.084)
Social activities (less than most=ref.)	More than most	5.093*** (.350)	5.092*** (.346)	.351*** (.030)	.352*** (.030)
Difficulty in borrowing money (yes=ref.)	No	1.299*** (.235)	1.225*** (.249)	.206*** (.024)	.205*** (.024)
Unemployment experience (no=ref.)	Yes	-2.882*** (.412)	-2.706*** (.417)	-.350*** (.050)	-.349*** (.050)
Variance components	Level-1	298.269 (15.013)	298.265 (15.004)	3.018 (.242)	3.018 (.242)
	Level-2	9.288 (3.265)	3.810 (1.300)	.470 (.105)	.149 (.049)
Deviance		133589.0	133570.4	61850.0	61826.4
N		15650	15650	15666	15666

Significance levels: * p<0.05; ** p<0.01; *** p<0.001