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Employment insecurity and life satisfaction: The moderating influence of labour market policies across Europe

Ewan Carr (University College London, UK) ewan.carr@ucl.ac.uk

Heejung Chung (University of Kent, UK) h.chung@kent.ac.uk

Abstract

This paper tests whether the link between employment insecurity and life satisfaction is moderated by the generosity of labour market policies across Europe. Employment insecurity provokes anxieties about (a) the difficulties of finding a new job and (b) alternative sources of non-work income. These components can be related to active and passive labour market policies, respectively. Generous policy support is thus expected to buffer the negative consequences of employment insecurity by lowering the perceived difficulty of finding a similar job or providing income maintenance during unemployment. Based on data for 22 countries from the 2010 European Social Survey, initial support for this hypothesis is found. Perceived employment insecurity is negatively associated with life satisfaction but the strength of the relationship is inversely related to the generosity of labour market policies. Employment insecurity, in other words, is more harmful in countries where labour market policies are less generous.

Key words: life satisfaction, employment insecurity, labour market policies, moderated impact, multilevel structural equation modelling

(A) Introduction

Due to increased labour market instability in recent decades, a large number of studies have examined both the determinants and consequences of employment insecurity (see Chung and Mau, 2014 for an overview). Individual characteristics such as age (older workers), occupation (manual labour), education (primary or below) and contract type (temporary) have all been linked to higher levels of perceived insecurity (Näswall and de Witte, 2003). Organisational determinants of employment insecurity include the extent of communication between managers and employees (Kinnunen et al., 2000), workplace training (Kohlrausch and Rasner, 2014) and major organisational changes, such as shifts in management style or moves between public and private sectors (Ferrie et al., 1998). At the national level both economic conditions (Erlinghagen, 2008; Chung and van Oorschot, 2011; Mau et al., 2012) and institutional arrangements (Lollivier and Rioux, 2006; Clark and Postel-Vinay, 2009) can motivate individual assessments of employment insecurity. Equally well documented are the consequences of insecure work for employee's health and well-being. Employment insecurity has been linked to various health issues (Meltzer et al., 2009; Ferrie et al., 2005; Dekker and Schaufeli, 1995) strain in relationships within the household (Chung, 2011; Kinnunen and Mauno, 1998) and problems in the workplace (Ashford et al., 1989). There is also evidence that overall life satisfaction, meaning how satisfied one is with their life in general can be negatively influenced by one's feeling of insecurity (Green, 2011; Silla et al., 2009).

A corresponding literature has considered the potential moderators of the outcomes of employment insecurity (i.e. individual or contextual factors that influence the link between insecurity and well-being and life satisfaction). At the individual level, factors such as social support (Lim, 1996), job control (Bussing, 1999), and employability (Silla et al., 2008; Green, 2011) have all been shown to buffer the negative experience of insecure work. All studies point to the fact that when individuals have more resources to deal with the negative consequences of employment insecurity, the impact employment insecurity has on their well-being and life satisfaction is not as severe.

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Similarly, we start from the assumption that national level policies aimed at reducing the negative consequences of unemployment also can provide individuals with more resources to deal with employment insecurity. More specifically, through increasing individuals' employability (active labour market policies) or protecting their income during unemployment (passive labour market policies) generous labour market policies can reduce the negative outcomes associated with feelings of employment insecurity. Although few studies consider contextual moderators, they focus on macro-economic conditions – such as GDP per capita and unemployment rates (Carr et al., 2011) and on objective unemployment measures (Eichhorn, 2012). No study to date has considered the potential moderating role of labour market policies on the consequences of subjective employment insecurity.

This study combines data from the 2010 European Social Survey (ESS, 2010) with contextual information from the OECD and Eurostat to test whether the relationship between employment insecurity and life satisfaction is moderated (specifically, buffered) by national labour market policy generosity. Based on the theoretical model described below, it is hypothesised that generous policy provisions will act as a buffer, such that the drop in life satisfaction resulting from insecure work will be less in countries with more generous labour market policies.

The paper is in four parts. First, the theoretical and analytical model is given, setting out how employment insecurity is thought to relate to labour market policy and life satisfaction. Second, an overview of the data and methods is given, as well as the measurement of the core concepts. The findings are presented third, before concluding with a discussion.

(A) Subjective well-being, employment insecurity and labour market policies

(B) Definitions

Employment insecurity is a multidimensional concept that goes beyond the fear of imminent job loss (Anderson and Pontusson, 2007; also see Chung and Mau, 2014). Past studies have distinguished between 'objective' and 'subjective' dimensions. Objective insecurity refers to positions that are inherently of limited duration, such as temporary or fixed-term employment (Pearce, 1998), whereas subjective insecurity captures the individual's own expectations about becoming unemployed, the loss of job features (such as content, autonomy or hours) and the consequences these changes may have. A further distinction is between 'affective' and 'cognitive' forms of insecurity. Cognitive job insecurity is the individual's estimate of the probability they will lose their job in the near future, whereas affective job insecurity refers to worries or anxiety about becoming unemployed (Ashford, 1989). In this paper, our interest goes beyond the insecurity of losing a job, but the uncertainties surrounding job loss and the consequences of it. Thus we make use of the concept employment insecurity – which entails the loss of one's current job and the potential of being unemployed for a certain period of time.

Subjective well-being refers to "the degree to which individuals evaluate positively the quality of their life in total" (Pacek and Radcliff, 2008: 268). Life satisfaction is a measure of subjective well-being which indicates an individual's satisfaction of life as a whole. If happiness entails a more emotional affective response of subjective well-being, life satisfaction can be understood as a more cognitive judgement of one's situation (Pacek and Radcliff, 2008). Life satisfaction is also a more global judgement on one's life compared to other cognitive subjective well-being indicators, such as job satisfaction or relationship satisfaction (Diener, 2000). Life satisfaction can be influenced by a variety of factors (Frey and Stutzer, 2002; Helliwell, 2003), including employment insecurity and the welfare state.

(B) Explaining well-being, and the role of employment insecurity

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Welfare state institutions have been linked to individuals' life satisfaction due to the resources one can gain from them (Böhnke, 2008), especially by reducing market dependence of workers (i.e. de-commodification; Pacek and Radcliff, 2008; Radcliff, 2001). Thus benefits and social services provided through welfare state institutions can alter one's life chances, for example increased support one has to address risks such as unemployment, which influences life satisfaction (Di Tella et al., 2003; Pacek and Radcliff, 2008).

Employment insecurity has also been linked to different dimensions of subjective well-being. According to the psychological contract theory, the perceived risk of involuntary job loss and its potential consequence cause high levels of stress, leading to strain and feelings of powerlessness over the situation (Green, 2011; Cuyper and de Witte, 2006). This strain and stress thus negatively impact a range of health outcomes (e.g. Sverke et al., 2002; de Witte, 2007) including depression (Meltzer et al., 2009), self-rated health (Ferrie et al., 2005) and psychological distress and burnout (Dekker and Schaufeli, 1995). Feeling insecure has also been linked to negative outcomes for an individual's work and family life. Job insecurity has been shown to increase work-family conflict (Chung, 2011; Kinnunen and Mauno, 1998), and marital problems (Mauno and Kinnunen, 1999). In addition, it has been linked to lower job satisfaction (Ashford, et al., 1989), increased turnover intention (Hellgren et al., 1999) and general lower well-being at work (de Witte, 2005). These negative consequences can lead to decrease in life satisfaction (Näswall and de Witte, 2003; Silla, et al., 2009) as detrimental as actually being unemployed (Green, 2011; Sverke and Hellgren, 2002), typically one of the most important determinants of individual's life satisfaction (Clark and Oswald, 1994).

Greenhalgh and Rosenblatt (1984) have developed a theory of 'job dependency', to understand the different impact job insecurity experiences can have on individuals' well-being. Job dependency can be understood as a function of occupational mobility and economic insecurity. The former can be understood as the ability to find a similar job elsewhere, and is comparable to the labour market insecurity concept (see

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Anderson, 2007). Economic insecurity is the lack of access to alternative income sources other than that of one's current job and is similar to the concept of income insecurity (see Wilthagen and Tros, 2004). Thus, for those who are more dependent on their current job due to lack of labour market or income security, the threat of employment loss will be greater and its impact on their life satisfaction stronger.

FIGURE 1 HERE

Figure 1 posits that labour market insecurity and income insecurity will depend on (a) individual circumstances, (b) labour market conditions (c) institutional factors. At the individual level, labour market insecurity has been linked to human capital (Berntson et al., 2006), age (Ahmed et al., 2012) and social networks (Marmaros and Sacerdote, 2002), while alternative incomes may be derived from savings or assets (such as home ownership) or from family and friends (e.g. income pooling within families; Esping-Andersen, 1999). Local or national labour market conditions (e.g. unemployment rates) have also been shown to affect labour market insecurity (Anderson and Pontusson, 2007). Uncertain economic conditions and high unemployment will increase the perceived difficulties of finding another job and, subsequently, strengthen the link between feelings of employment insecurity and life satisfaction.

(B) Moderating role of labour market policies

The focus of this paper is on institutional factors – namely the role of labour market policies – that may influence individual's life satisfaction by changing their job dependency status. Labour market policies are defined by the European Union as "public interventions in the labour market aimed at reaching its efficient functioning and correcting disequilibria and which […] selectively favour particular groups in the labour market" (European Commission, 2006). They seek to balance 3 distinct objectives: (a) the reduction of unemployment and inactivity; (b) the reduction of public expenditure or the costs of 'welfare dependency'; and (c) the reduction of income poverty (Robinson, 2000: 14). The literature typically differentiates between active and passive measures. Active interventions are aimed at "the improvement of

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the beneficiaries' prospect of finding gainful employment" (OECD, 2007: 14), thus increasing one's employability. This includes training, job rotation schemes, employment incentives, supported employment and rehabilitation, job search, direct job creation and start-up incentives. Passive policies support workers who have already lost their job, usually in the form of unemployment compensation (unemployment benefits, redundancy and bankruptcy compensation) or programmes for early retirement.

Active and passive policies can be linked theoretically to the twin components of job dependency, labour market insecurity and income insecurity, respectively. Active interventions (e.g. training, job search activities, subsidised employment or job creation programmes) are expected to lower the barriers to re-employment and thereby reduce the perceived difficulties of finding another job. To the extent that workers perceive activation measures to be available and effective, the prospect of job loss will have a weaker stress/anxiety reaction, and so its impact on life satisfaction will be reduced. Passive labour market policies (i.e. unemployment benefits) provide the promise of income maintenance during unemployment thus the weakening of the link between income and employment (Esping-Andersen, 1990). Current employees will worry less about the prospect of job loss if they are confident that their income (and relatedly, standard of living) will be adequately protected or replaced. Thus generous benefits (i.e. the longer the duration or the greater the proportion of in-work income that is replaced) are expected to reduce the negative consequence of employment insecurity on life satisfaction.

We can also anticipate that the buffering role labour market policies, in reducing the negative consequence of employment insecurity, will be especially important for those in more disadvantaged positions in the labour market. Labour market policies are likely to be less important for highly mobile workers (in the case of active policies) or workers with easy access to alternative sources of income (in the case of passive policies). The extent to which policies protect life satisfaction would largely depend on the labour market position of the workers – insiders versus outsider. Using the insider

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outsider definition of previous studies (Rueda, 2005; Schwander and Häusermann, 2013; Greenhalgh and Rosenblatt, 1984) we expect that individuals with different labour contracts (i.e. temporary or part-time workers), education and occupation levels, line of business, age and gender may benefit differently from the buffering role of labour market policies. In other words, those more vulnerable in the labour market may benefit more from the generosity of labour market policies, and so, their relative reduction in life satisfaction due to employment insecurity will be less. On the other hand, vulnerable workers in countries with weaker labour market support are likely to suffer a larger reduction in their life satisfaction, due to feelings of insecurity.

(B) Existing evidence

Previous studies have shown empirical evidence that link welfare state generosity to higher levels of life satisfaction for individuals (Böhnke, 2008; Di Tella, et al., 2003; Pacek and Radcliff, 2008; Radcliff, 2001). In addition, a number of empirical studies link generous labour market policies to lower levels of perceived job insecurity (Anderson and Pontusson, 2007; Clark and Postel-Vinay, 2009). Although, recent studies have found that policies do not influence perceptions of security once labour market and macro-economic conditions are also taken into account (Chung and van Oorschot, 2011; van Oorschot and Chung, 2014; Erlinghagen, 2008). Even if welfare state institutions are not able to reduce the levels of perceived insecurity of it population, if they can reduce the negative consequence insecurity has on people's life satisfaction we can say that policies are effective in achieving their aims. To our knowledge, no study to date has examined this moderating role of labour market policies on the relationship between employment insecurity and life satisfaction.

On the other hand, several studies empirically examine the moderated relationship between job insecurity and life satisfaction. Green (2011) using the term 'misery multiplier', shows how increased employability – labour market security – can decrease the effect job insecurity has on life satisfaction. Using Australian longitudinal data he finds that employability matters in reducing the detrimental effect of job insecurity. Silla et al. (2009) find a similar result using Belgian data, where perceived

employability reduced the negative consequence of job insecurity on life satisfaction. Both studies provide evidence to show that increasing levels of employability – which is the aim of active labour market policies – could potentially decrease the negative consequence of job insecurity on life satisfaction. Other studies examine how this relationship is moderated by the degrees of income loss. These studies suggest that the negative influence of unemployment on life satisfaction is stronger when income loss due to unemployment is greater (Winkelmann and Winkelmann, 1998). If the role of passive labour market policies is to reduce the loss in income due to unemployment, they could therefore offset some of the negative impact of feelings of insecurity on life satisfaction. Lastly, there is evidence to show that the moderating impact of employability and income loss varies between different groups in the labour market (Frey and Stutzer, 2002; Green, 2011). For example, Green finds that the mitigating effects of employability is greater for lower educated workers (Green, 2011: 274).

(A) Data and Methods

(B) Data and measurements

This study combines data from the 5th round of the European Social Survey (ESS, 2010) with contextual information from Eurostat and the OECD. Of 50,781 individuals included in the 2010 survey, the analysis focuses solely on respondents who are currently employed (i.e. who respond to items on job security; 38% of the sample) and who live in a country for which consistent contextual information is available (22 out of 26 countries). The final models include 14,525 workers from 22 countries. Cases with missing values have been deleted listwise[(1)], with the exception of household income (missing = 1925), which has been imputed using full information maximum likelihood (FIML). Subjective well-being, the main dependent variable, is measured using an 11-category ordinal measure of reported life satisfaction, treated here as continuous. Respondents were asked, "all things considered, how satisfied are you with your life as a whole nowadays?" (from 0 'extremely dissatisfied' to 10 'extremely satisfied'). The

main explanatory variable is 'employment insecurity', a binary measure which combines cognitive job insecurity and labour market insecurity. As Chung and van Oorschot (2011) note, cognitive measures of job insecurity are problematic in that they include individuals who might lose their current job, but will easily find another one. Employment insecurity has thus been operationalised as workers who (a) do not feel that their job is secure, and (b) think it would be difficult to find a similar job, were they to become unemployed. The 2010 ESS asked respondents whether the statement "My job is secure" is very true, quite true, a little true or not at all true. The survey also asks "how difficult or easy would it be for you to get a similar or better job with another employer, if you had to leave your current job?" (from 0 'extremely difficult' to 10 'extremely easy'). These two measures have been dichotomised and combined. 'High' employment insecurity refers to individuals who feel the statement "My job is secure" is 'not at all true' (15.56%) and who rate the difficulty of finding a similar job as 2 or lower (i.e. very difficult[2]; 28.94%)[3]. 'Low' insecurity refers to everyone else. A total of 1,492 respondents report 'high' insecurity (8.08%). Individual controls for employment insecurity include age, gender, education, belonging to an ethnic minority group, trade union membership, sector of employment, contract type, and occupational class. Controls for life satisfaction include household income, whether there are children in the household, cohabitation status, subjective religiosity[4], general health, help from colleagues, working hours, a scale measuring work-family conflict in addition to age, gender, education, and belonging to an ethnic minority group.

Four measures of passive LMP are considered: (1) Public expenditure on passive LMPs (percent of GDP), (2) short and (3) long-term replacement rates of unemployment benefits (OECD 2011) and (4) the typical duration of unemployment benefits (European Commission 2012)[5]. The generosity and duration of benefits are important insofar as they capture individual perceptions of the level of support available. The proposed theoretical model is entirely perceived: individuals are protected by LMP because thoughts about future spells of unemployment are not so immediately

associated with anxiety, since they can be confident that sufficient support will be available. Replacement rates are likely to be influential, therefore, because they are more visible and provide a better measure of 'perceived unemployment support', compared to data on expenditure. (5) Active support is measured as public expenditure on active LMPs (percent of GDP). Since LMP spending tends to increase in-line with unemployment, all expenditure data have been standardised by the national unemployment rate (i.e. total expenditure as a percentage of GDP × 100 divided by the standardised unemployment rate). The total level of LMP expenditure (i.e. active and passive) is also included (6). Finally, the models control for national GDP per capita (in purchasing power parities) and unemployment rate (percent) for 2010. A summary table of the contextual measures is provided in the appendix.

These seven measures of LMP are linked to overall welfare generosity (e.g. Scruggs, 2006). One possibility, therefore, is that the moderating influence of LMP is simply a reflection of broader welfare regime differences (e.g. Esping-Andersen, 1990). Workers in countries with generous LMP might be protected from job insecurity not because of any specific labour market intervention, but due to other forms of institutional support (linked to welfare regime type), that just happen to be highly correlated with labour market policies. In other words, the link between employment insecurity and life satisfaction might depend less on the generosity or duration of unemployment benefits, or on the visibility and effectiveness of activation support, but rather on the overall sense of security (or insecurity) elicited by the overall welfare package. It is difficult to disentangle this relationship methodologically, however, we will keep this in mind when we interpret our results.

(B) The analytical model

Figure 2 illustrates the analytical model. The starting point is the well-established negative association between employment insecurity and life satisfaction (e.g. Sverke et al., 2002). This paper's contribution is to test whether this relationship varies cross-nationally, and moreover, whether this variation can be explained by labour market policy (LMP) generosity. This test is represented by the bold arrow between LMP and s

(the latter represents the country-level slope of the relationship between employment insecurity and life satisfaction; see below for details). The model controls for a direct association between LMP generosity and subjective well-being (e.g. Pacek and Radcliff, 2008) and a direct association between labour market conditions and employment insecurity (e.g. Erlinghagen, 2008). Given the evidence showing that macro-economic conditions can directly influence individual well-being (Clark et al., 2010) a path between labour market conditions and life satisfaction is also included. The model controls for a number of individual determinants of employment insecurity (Chung and van Oorschot, 2011; de Witte, 2005) and life satisfaction (e.g. Coombs, 1991; Helliwell, 2003). We expect that employment insecurity of individuals can be explained by a number of human capital characteristics and job characteristics. We expect those with lower education or belonging to ethnic minority groups to be more insecure. Also, those with permanent contracts, in public sectors, in high occupational groups, and those who are members of the trade union to be more secure than others. Life satisfaction is expected to be influenced by household characteristics, such as living with partner and/or child, household income, and where one lives. Individuals' satisfaction is also motivated by work-related characteristics including working hours, feelings of work-family conflict, the support one gets from work and other individual characteristics such religiosity[4] and subjective health. We also control for age and gender.

FIGURE 2 HERE

(B) Methods

This study implements a two-level path analysis model with random intercepts and random slopes. The random intercept model is required to represent the hierarchical structure of the data (i.e. individuals nested within countries; see Snijders and Bosker, 2011). Path analysis is required insofar as it allows for mediating pathways involving multiple dependent variables. This contrasts with a standard random intercept model, which estimates the association between a single dependent variable and a set of explanatory variables (precluding any relationships among the explanatory variables

themselves). While the simplicity of the random intercept model is attractive, it is problematic in that it assumes the explanatory variables to be unrelated. Given the theoretical model proposed above, such assumptions cannot be made .

The two-level path model is implemented in a multilevel structural equation modelling (MSEM) framework, following the recommendations Preacher et al. (2010). While the substantive focus is upon cross-level moderation effects (i.e. employment insecurity × LMP), the analytical model (Figure 2) introduces several cross-level mediation effects (i.e. a 2-1-1 pathway), that require attention. Employment insecurity, we propose, mediates the impact of LMP generosity and economic conditions on life satisfaction. For single-level models, techniques for studying mediation are well established (Baron and Kenny, 1986; MacKinnon et al., 2002), but these methods are inappropriate in a multilevel context (Preacher et al., 2011). While several approaches have been proposed for testing multilevel mediation (e.g. Raudenbush and Sampson 1999; Krull and MacKinnon 2001; Kenny et al., 2003; Bauer et al., 2006; Pituch et al., 2006; MacKinnon 2008; Zhang et al., 2009), two major limitations persist. First, multilevel models cannot accommodate upper-level mediators or outcome variables. Second, mediation models involving linkages between pairs of level-1 variables (i.e. a 2-1-1 pathway) typically conflate the 'within' and 'between' components of these effects. That is, the regressions of X on Y within and between clusters are implicitly constrained to be equal (Preacher et al., 2011: 162). This is particularly relevant for the present analysis, where contextual variables (i.e. LMP and economic conditions) are simultaneously associated with both employment insecurity and life satisfaction.

Preacher et al. (2010) have shown that these limitations can be overcome using a multilevel structural equation modelling (MSEM) framework, where the 'within' and 'between' parts of all variables are separated. This approach has been shown to reduce bias in contextual effects, when compared standard multilevel techniques (Lüdtke et al. 2008; Zhang et al., 2009; Preacher et al., 2011). The models below adapt the Mplus code that accompanies Preacher et al. (2010)[6]. Mplus code for the models in this paper is available from the authors on request.

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Of particular note is the estimation of cross-level interaction effects. Whereas standard multilevel approaches use interaction terms (i.e. the product of individual- and cluster-level variables), this paper tests cross-level interaction using a random slope. A random slope for the regression of employment insecurity on life satisfaction (denoted s in Figure 2) allows this relationship to vary by country. The country-specific slopes (s) are then regressed on the contextual measure of LMP (denoted W). We can then examine how the association between employment insecurity and life satisfaction varies at different levels of W.

All models have been estimated in Mplus 7.1 using the Bayes estimator with default starting values and non-informative priors[7]. Chain convergence was assessed using the Potential Scale Reduction (Gelman and Rubin, 1992) as well as visual inspection of the posterior parameter distributions, trace plots and autocorrelation plots. Bayesian estimation is preferred for two reasons. Firstly, it is shown to give more accurate estimates for multilevel models involving categorical mediators (as is the case here, with the binary measure of employment insecurity; Asparouhov and Muthén, 2010). Secondly, past research suggests that Bayesian estimation can avoid the bias associated with small level-2 sample sizes (Raudenbush and Bryk, 2002).

(A) Findings

This section presents the results from the base model – that is, the relationship between employment insecurity and life satisfaction, controlling for background variables. It also presents the moderating influence of LMPs in this relationship, and describes how this influence varies between different groups in the labour market. The average score for life satisfaction (for 19,124 employees in 22 countries) is 6.62. At the national level aggregate life satisfaction is negatively correlated with aggregate employment insecurity (-0.65).

(B) Base model

TABLE 1 HERE

TABLE 2 HERE

Tables 1 and 2 present the individual and national-level coefficients for the 'base model', respectively. This is a model that includes all paths discussed above except for the moderating influence of LMP. The model includes 14,525 individuals from 22 countries. At the individual-level, employment insecurity is shown to be negatively associated with years of education, permanent job contract and higher occupation levels. A positive association (i.e. greater insecurity) is observed for older workers and female employees. Life satisfaction is negatively associated with age, identification with an ethnic minority group, work-based support, subjective bad health and work-family conflict. Conversely, it is positively associated with women, higher education levels, living with children or partner, longer working hours, higher household income, being religious, living in a rural area and higher occupation levels. 'High' employment insecurity is associated with a 0.204 reduction in life satisfaction, controlling for other variables in the model. Most of these findings are consistent with previous studies. Some results that are against our assumptions – such as the positive effect of longer working hours – may be due to the fact that we are controlling for other factors, such as work-family conflict in this case. At the country-level, economic conditions are shown to have little effect. A positive association is observed between GDP per capita and employment insecurity, but the influence of GDP per capita and unemployment rate is non-significant in explaining life satisfaction.

(B) Moderation effects

The six indicators of LMP generosity are tested in turn, in separate models. This avoids issues of multicolinearity that would arise were we to include multiple LMP indicators in a single model. We estimate the strength of the relationship between employment insecurity and life satisfaction at various levels of the contextual moderator. This tests whether the impact of employment insecurity is lower in countries with more

generous levels of labour market policy provision. The full set of coefficients are available on request. This discussion focuses on the moderating influence of LMP, that is, the association between each contextual moderator (LMP_j) and the slope of the regression between employment insecurity and life satisfaction (s). With the exception of this regression, the six models are identical to the base model (the other coefficients do not change substantially).

TABLE 3 HERE

Table 3 presents the unstandardised coefficients for each of the moderation effects. Each row of the table represents a separate model. Significant moderation effects are observed for total LMP expenditure, active LMP expenditure, passive LMP expenditure and the long-term replacement rate (based on the 95% credible intervals[8]). The interpretation of the coefficients themselves isn't straightforward: they represent the change in the slope of the regression between employment insecurity and life satisfaction for a unit change in the contextual moderator.

These moderation effects are illustrated in Figure 3. This plots the change in life satisfaction associated with 'high' employment insecurity (y-axis) against the contextual measure of LMP (x-axis). This shows how the impact of employment insecurity on life satisfaction varies at different levels of LMP generosity. The country labels indicate the position of each country on the x-axis. Importantly, all four plots show a positive gradient, indicating that employment insecurity is more harmful (i.e. associated with a larger reduction in life satisfaction) in countries where LMP expenditure is lower or the long-term replacement rates of unemployment benefits are less generous. In Mediterranean countries, namely Spain, Portugal and Greece, where there isn't much support for the unemployed neither through benefits nor activation measures, insecure employment has a much stronger negative impact on life satisfaction. On the other hand, in other countries such as Denmark, Austria and Belgium, where the government puts great efforts in supporting the unemployed, employment insecurity does not reduce one's life satisfaction when other individual

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level characteristics are taken into account. This is most likely due to the employability enhancing role of active labour market policies, as well as income maintenance roles of passive labour market policies. This confirms our hypothesis and mirrors some of the individual level studies on moderated impacts of job insecurity – where increased employability and reduced income loss helped moderate the negative impact of insecurity on life satisfaction.

FIGURE 3 HERE

(B) Moderated moderation

The above findings indicate that employment insecurity is negatively associated with life satisfaction but, as hypothesised, the strength of this relationship depends on the generosity of LMPs. However, this average effect is likely to mask considerable heterogeneity and LMPs are likely to be more important (as a buffer of employment insecurity) for some workers than others. To test this, a set of three-way interaction terms have been introduced. These further interact the 'insecurity × LMP' interaction with a set of individual characteristics known to predict employment insecurity (occupational class, age, gender, involuntary part-time, public sector, industry, contract type and union membership). Each three-way interaction term is tested separately. The significance of each interaction term is assessed using the 95% Bayesian credible intervals[8].

Overall, we find that the moderating influence of LMP itself depends on individual circumstances, but the type of intervention is key. The interaction between employment insecurity and LMP expenditure (active, passive and total) is moderated by (a) occupation (white vs. blue collar), (b) sector (manufacturing vs. services), (c) and contract type (permanent vs. temporary). The interaction between insecurity and long-term replacement rates, by contrast, depends on under employment (involuntary part-time vs. full-time) and age (young vs. old). Broadly speaking, generous policy support is found to be more important for the more vulnerable or 'outsiders' of the labour market, as hypothesised. In countries with high LMP expenditure, workers are

generally less likely to have great reductions in life satisfaction due to perceived employment insecurity, but this is particularly the case for blue collar, temporary workers in manufacturing sectors. By contrast, long-term replacement rates are found to be less important for part-time workers or younger workers. The buffering effect of long-term replacement in reducing the negative consequence of employment insecurity on life satisfaction is stronger for full-time workers and those over 30 years of age. This is perhaps because part-time and younger workers are not able to benefit from the long-term replacement rates due to their lack of contribution records.

(A) Conclusions

Perceived insecurity has harmful consequences for well-being even if employees never actually lose their job. This is particularly important during periods of economic recession, such as the years since the 2008 financial crisis. Amidst increasing unemployment and declining economic growth, many millions of people across Europe will worry about job loss and what this might entail. As research shows, although the link between employment insecurity and life satisfaction is remarkably robust, the strength of this association depends on various individual, organisational and national circumstances. Insecurity may reduce one's life satisfaction, but policy interventions can make a difference.

This study examined the role of labour market policies, and the extent to which they buffer the association between perceived employment insecurity and life satisfaction. This article has hypothesised that insecurity influences well-being via concerns about future employment options and replacement income during unemployment, and that these concerns could be offset by active and passive labour market policies, respectively. Based on data for 22 countries from the 2010 European Social Survey, this hypothesis was mostly upheld. Employment insecurity was negatively associated with life satisfaction, but the negative association was weaker in countries with generous labour market policy measures. Thus, in countries where governments

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provide generous support for their unemployed in terms of active and passive measures, the negative influence of employment insecurity on life satisfaction was weaker compared to other countries where such support is not available.

This study makes a number of contributions. It is one of the first to bring together employment insecurity, labour market policies and life satisfaction in a single empirical model. While several studies address the link between labour market policy and perceived insecurity, the consequences for well-being are typically assumed (but not empirically tested). Secondly, it provides evidence to show the effectiveness of welfare state institutions, namely labour market policies, in addressing the consequences of employment insecurity. Previous studies found that, when taking labour market and macro-economic conditions into account, labour market policies are not effective in reducing employment insecurity levels (Chung and van Oorschot, 2011; van Oorschot & Chung, 2014; Erlinghagen, 2008). This study provides evidence to show that even if labour market policies may not influence perceived insecurities directly, it can reduce the negative <u>consequences</u> of insecurity for well-being. Furthermore, the analysis suggests that this moderating effect depends on individual attributes such as occupational class, industry of employment, age and contract type. Overall, policy interventions are more important (as a buffer of insecurity) for individuals who were more vulnerable to employment insecurity. Given that the main aim of social policies is to reduce the negative consequences of social risks, especially for those most vulnerable in society, this study provides empirical evidence to show the effectiveness of these policies in achieving this exact goal.

These findings would recommend an increase in the generosity labour market policies. As shown above, this should have a buffering effect, reducing the harmful consequences of perceived insecurity. This is a particularly attractive policy option for two reasons. Firstly, given how the buffering effect of labour market policies is strongest for more vulnerable workers, increasing labour market policy generosity represents an effective way of targeting support. Secondly, generous policies are beneficial for non-recipients. In the same way that employment insecurity is harmful

for workers who never lose their job, labour market policies can benefit individuals who never actually receive support. While recommending an increase in passive support, however, it is worth noting studies which suggest generous benefits can prevent re-employment and lengthen spells of unemployment (Katz and Meyer, 1990; Adamchik, 1999; Jenkins and Garcia-Serrano, 2004). There is a trade-off, therefore, between generosity and re-employment: benefit levels should be increased so as to buffer anxieties about job loss, but not to the extent that they trap recipients and foster long-term unemployment.

This study suffers several limitations. There are issues of combining cross-cultural assessments of life satisfaction that haven't been adequately addressed (e.g. Oishi et al., 1999). Also, the analysis includes mediating pathways but relies exclusively on cross-sectional data (e.g. from labour market policy to life satisfaction, via employment insecurity). Past studies have shown that cross-sectional approaches to mediation can generate substantially biased estimates (e.g. Maxwell and Cole, 2007) and recommended using longitudinal data that can distinguish the temporal ordering of the mediating pathway. Unfortunately, there are no longitudinal, cross-European surveys that include information on perceived employment insecurity. A third potential issue is the small number of countries included in the study (22). Past studies have suggested a minimum of 10 (Snijders and Bosker, 1999), 30 (Kreft, 1996) or 50 (Hox and Bechger, 1998) level-2 clusters or countries in our case. However, this problem is most acute when the number of individuals per cluster is small (Austin, 2010; Bell et al., 2010), which isn't the case here. Bayesian estimation, as noted above, also helps avoid the biases associated with small numbers of clusters. Given these limitations, and the scarcity of similar studies, these findings should be interpreted as preliminary. Future research should consider different years, other measures of well-being besides life satisfaction, and more disaggregated measures of labour market policy besides the expenditure data used in this paper.

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List of figures

FIGURE 1


```
                          ┌──────────────────┐
                          │  Labour market   │
                          │   conditions     │
                          └────────┬─────────┘
                                   ↓
                    ┌──────────────────────────────┐
                    │   Ability to find another job │
                    └──────────────────────────────┘

┌──────────┐   ┌─────────────────────────┐  ┌──────────────────────────────────┐
│Employment│   │ │ Human capital         │  │ │ Training and education          │
│insecurity│   │I│ Age                   │  │I│ Job creation programmes         │
│          │   │n│ Social networks       │  │n│ Help with job search            │
│          │   │d│- - - - - - - - - - - -│  │s│- - - - - - - - - - - - - - - - -│
│          │   │v│ Savings/assets        │  │t│ Unemployment benefits           │
│          │   │ │ Social support        │  │ │ Early retirement programmes     │
└──────────┘   └─────────────────────────┘  └──────────────────────────────────┘

                    ┌──────────────────────────────┐
                    │ Access to alternative sources │
                    │  of income during unemployment│
                    └──────────────────────────────┘

                                          Stress,
                                          anxiety
                                             ↓
                                           Life
                                        satisfaction
```

Labour market conditions → Ability to find another job

Employment insecurity

Individual: Human capital, Age, Social networks — Savings/assets, Social support

Institutional: Training and education, Job creation programmes, Help with job search — Unemployment benefits, Early retirement programmes

Access to alternative sources of income during unemployment
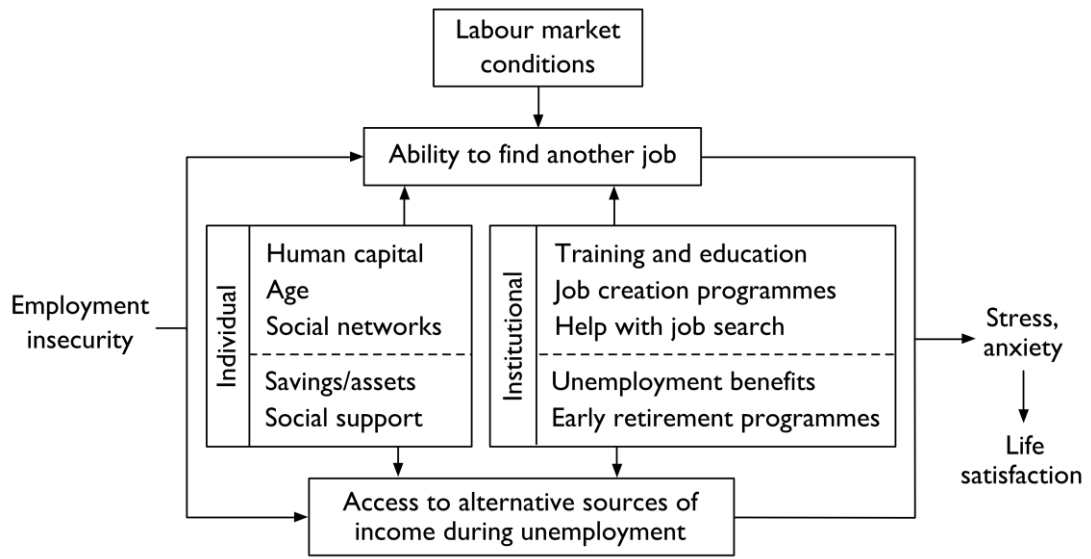
Stress, anxiety → Life satisfaction
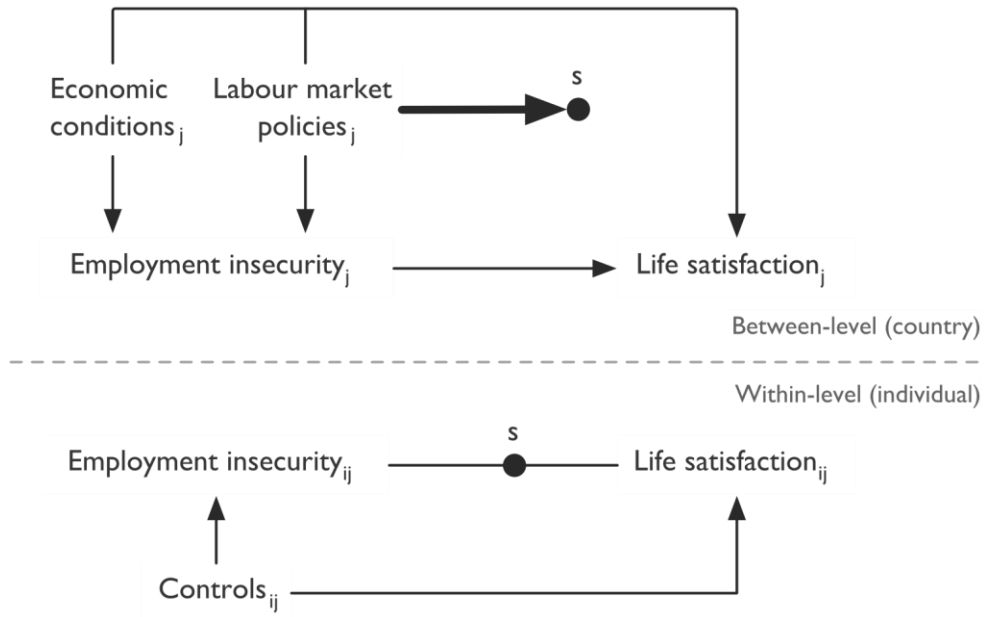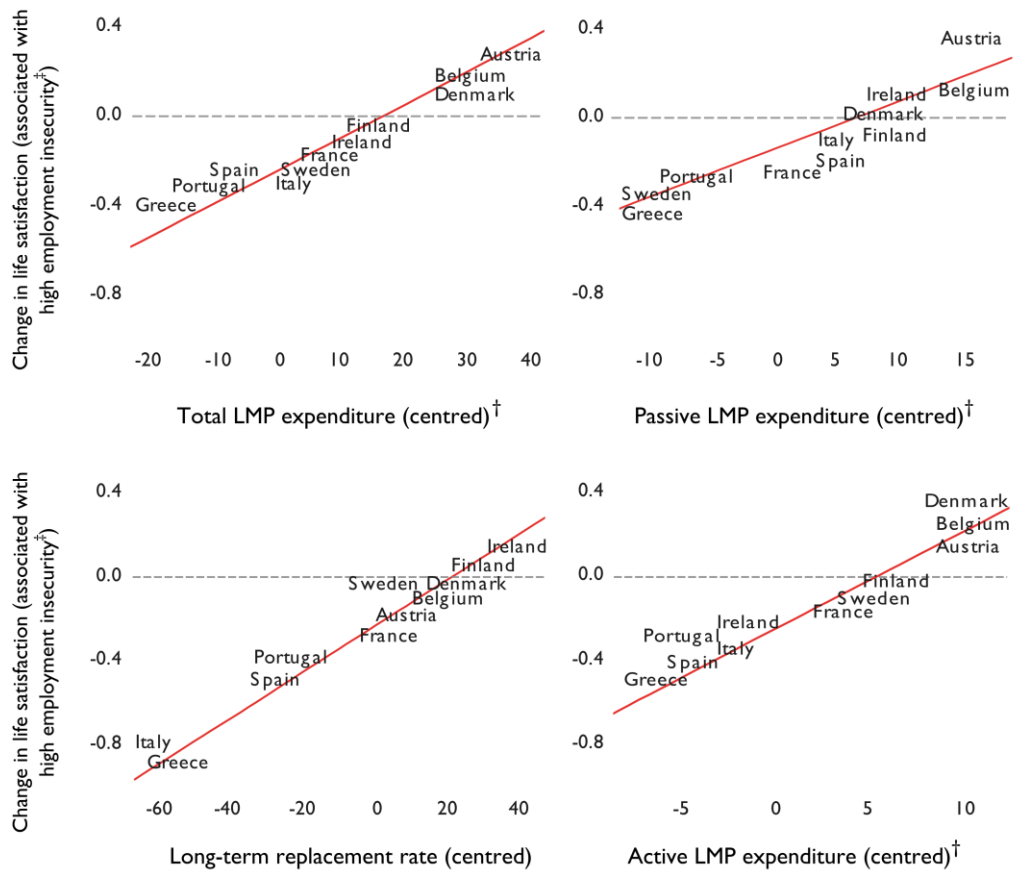
FIGURE 2

FIGURE 3

† Percent of GDP / unemployment rate
‡ This represents the change in life satisfaction associated with 'high' employment
   insecurity, controlling for other variables in the model.

Table 1. Unstandardised individual-level coefficients for the base model

Dependant variable	Explanatory variable	β
Employment insecurity	Age	0.001*
	Gender (female)	0.096**
	Total years of education	-0.022***
	Belongs to ethnic minority	0.086
	Trade union member	0.039
	Public sector employee	-0.032
	Permanent employment contract	-0.328***
	Occupation (ISEI)	-0.007***
Life satisfaction	Age	-0.001*
	Gender (female)	0.075**
	Total years of education	0.011*
	Belongs to ethnic minority	-0.175**
	Occupation (ISEI)	0.005***
	Can get support from colleagues when needed	-0.322**
	Employment insecurity	-0.204***
	Children living at home	0.105**
	Lives with partner/spouse	0.565***
	Total hours normally worked per week	0.004**
	Household income (after tax/social transfers)	0.152***
	Religiosity (scale)	0.143***
	Subjective general health	
	Very good (ref.)	
	Good	-0.478***

	Fair	-1.027***
	Bad	-2.046***
	Lives in a rural area (country village or farm)	0.096**
	Work-family conflict (scale)	-0.493***
Residual variance	Life satisfaction	2.981***
N_i	14,525	
N_j	22	

Bayesian p-values[9]: *** p < 0.001, ** p < 0.01 * p < 0.05

MCMC iterations = 50,000; burn-in = 5000; thinning = 5

Table 2. Unstandardised country-level coefficients for the base model

Dependant variable	Explanatory variable	β
Employment insecurity	Intercept	-0.845***
	National unemployment rate	0.011
	GDP	0.007*
Life satisfaction	National unemployment rate	-0.030
	GDP	-0.003
	Employment insecurity	-1.257***
Residual variance	Employment insecurity	0.158***
	Life satisfaction	0.270***
Intercept	Life satisfaction	5.581***
N_i	14,525	
N_j	22	

Bayesian p-values[9]: *** $p < 0.001$, ** $p < 0.01$ * $p < 0.05$

MCMC iterations = 50,000; burn-in = 5000; thinning = 5

Table 3. Moderation effects (association between the slope and LMP)

Moderator	β
Total LMP expenditure	0.011*
Active LMP expenditure	0.037*
Passive LMP expenditure	0.018*
Short-term replacement rate	0.007
Long-term replacement rate	0.009*
Typical duration of UB	0.011

Bayesian p-values[9]: * p < 0.01

Note: these coefficients refer to separate models. Each row of the table represents a single model where the respective LMP indicator is entered independently.

Appendix

Table A1. Summary of contextual variables

	1	2	3	4	5	6	7	8
	Passive LMP expenditure[a]	Short-term RR[b]	Long-term RR[b]	Typical RR[b]	Active LMP expenditure[a]	Total LMP expenditure[a]	GDP[c]	Unemployment rate[d]
Bulgaria	4.42	78.00	38.50	..	0.92	4.10	172.20	10.20
Cyprus	9.52	..	..	5.03	4.10	19.00	132.20	6.20
Denmark	21.07	85.00	71.50	23.55	18.76	50.70	128.30	7.50
Finland	21.13	62.50	76.00	16.13	10.25	26.70	113.90	8.40
France	14.77	68.00	57.00	6.77	8.43	45.10	119.90	9.80
Germany	..	66.50	62.00	5.90	..	..	110.30	7.10
Greece	5.56	55.00	2.00	8.06	1.71	12.40	133.50	12.60
Iceland	..	77.50	68.00	35.35	..	..	81.20	7.60
Ireland	22.12	64.50	85.50	7.55	5.45	25.70	116.40	13.70
Italy	17.33	71.50	0.00	6.77	4.18	21.40	124.90	8.40
Latvia	3.71	79.00	40.50	..	2.74	8.50	148.60	18.70
Lithuania	2.71	62.50	61.50	5.90	1.28	4.70	144.50	17.80
Luxembourg	16.93	85.00	75.00	11.77	8.83	62.40	139.90	4.60
Netherlands	38.73	78.00	76.50	2.94	17.33	45.40	122.90	4.50
Norway	13.54	70.50	76.00	11.74	14.57	26.90	148.70	3.50
Poland	3.57	56.50	45.00	5.90	6.28	20.10	130.30	9.60
Portugal	11.59	76.00	46.50	11.61	4.83	28.70	127.30	12.00
Slovenia	9.86	78.00	64.00	2.94	4.64	15.90	126.00	7.30
Spain	15.46	77.50	39.00	4.90	3.35	47.60	136.00	20.10
Sweden	6.37	70.00	73.50	9.68	9.67	26.90	105.60	8.40
Switzerland	..	84.00	80.50	12.90	..	..	124.80	..
United Kingdom	4.19	36.50	66.00	5.87	0.53	..	90.20	7.80

1, 5, 6 Eurostat (lmp_expsumm), Directorate General for Employment, Social Affairs and Inclusion

2, 3 OECD, Directorate for Employment, Labour and Social Affairs

http://www.oecd.org/els/benefitsandwagesstatistics.htm (accessed 22/09/2013)

4 European Commission, Mutual Information System on Social Protection (MISSOC)

7 Eurostat, Unemployment rate by sex and age (une_rt_a), European Commission, Luxembourg

8 Eurostat, GDP and main components (nama_gdp_p), European Commission, Luxembourg

[a] Percentage of GDP × 100 divided by the standardised unemployment rate

[b] Proportion of net income in work that is maintained when becoming unemployed

[c] Purchasing power parities per person

[d] Percent

RR replacement rate

.. Data unavailable

Endnotes

(1) This includes missing values on long-term limiting illness (90), total years of education (107), support from co-workers (109), contract type (239), ethnicity (318) and working hours (552).

(2) The substantive findings are unchanged whether a cut-point of 1, 2, 3 or 4 is used.

(3) This coding, emphasising 'not at all true', is preferred over other dichotomies for two reasons. First, the question wording, with three positive statements ('very', 'quite' and 'a little') preceded by a single negative statement ('not at all'), suggests a 3/1 split. Second, this approach has been adopted by other studies using the 2010 ESS (e.g. Erlinghagen, 2008). In practice, the substantive conclusions do not change whether one opts for a 3/1 or 2/2 split (i.e. 'very' or 'quite' vs. 'a little' or 'not at all').

(4) A scale created by combining three items measuring religiosity: (1) Regardless of whether you belong to a particular religion, how religious would you say you are? (2) 'Apart from special occasions such as weddings and funerals, about how often do you attend religious services nowadays?' (3) 'Apart from when you are at religious services, how often, if at all, do you pray?' (Cronbach's Alpha coefficient = 0.85).

(5) Replacement rates are measured for both the initial period (0 to 12 months) as well as longer spells of unemployment (12 to 16 months). The 'typical' duration of benefits is the period that a worker aged 35-40 who has been working for at least 12 months would receive support.

(6) http://quantpsy.org/pubs/syntax_appendix_081311.pdf (accessed 11/03/14).

(7) For fixed parameters these are $N(0,\infty)$; for variance parameters an inverse gamma distribution $IG(1,0)$ is used (see Asparouhov and Muthén, 2010).

(8) Overall fit statistics are unavailable for these models because there is not a single covariance matrix (the variance of y varies as a function of x). Instead, we examine the 95% credible intervals, which are equivalent to a X2 difference test with one degree of freedom between a model without the parameter and a model with the parameter.

(9) For a positive estimate the Bayesian p-value is the proportion of the posterior distribution that is below zero. For a negative estimate the p-value is the proportion of the posterior distribution that is above zero (see Asparouhov and Muthén, 2010). These can be interpreted in the same way as frequentist p-values.