# Report on the impact of the institutional setting and policies on the well-being and health of youth in insecure labour market positions in EU-28 and Ukraine

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i. to advance the knowledge base that underpins the formulation and implementation of relevant policies in Europe with the aim of enhancing the employment of young people and improving the social situation of young people who face labour market insecurities, and

ii. to engage with relevant communities, stakeholders and practitioners in the research with a view to supporting relevant policies in Europe. Contributions to a dialogue about these results can be made through the project website http://www.except-project.eu/, or by following us on twitter @except_eu.

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# Chapter 1

# Executive summary and key findings

Michael Gebel and Jonas Voßemer (Univeristy of Bamberg)

## Executive summary

We here shortly summarize the overall findings of the different chapters as well as highlight results that are common across all the studies conducted. A more detailed summary of the results is given below.

- The descriptive analyses show that well-being and health are lower among the unemployed compared to the employed. Similarly, those young people who have experienced long-term unemployment in the past and are currently unemployed report lower well-being and health.
- While subjective job insecurity is negatively associated with well-being and health, the descriptive analyses reveal smaller (well-being) or no differences (health) by type of contract (permanent vs. temporary employment).
- While in most countries the unemployed have lower well-being and health than the employed, the magnitude of the employed-unemployed gap differs considerably across countries. In very few countries the gap is reversed with unemployed youth reporting better well-being and health. Concerning the type of contract, in the majority of countries temporary workers report lower well-being and health than permanent workers, but the differences are not as pronounced as for the employed-unemployed gap. Also in some countries the differences are in favour of those in temporary employment. Overall, the cross-country differences do not seem to follow any specific pattern.
- The results concerning the financial crisis are mixed. The association between employment status and health reduces after the crisis in terms of health and happiness but not life satisfaction. For the differences between those with temporary and permanent contracts no specific pattern of change over time is revealed.
- The multi-level study concerning the effect of the country's economic situation on the relationship between unemployment (job insecurity) and health (wellbeing) revealed mixed evidence regarding how an economic downturn affects youth in vulnerable situations. First of all, there is virtually no effect of macro conditions on the relationship between job insecurity and health/ wellbeing. Second,

unemployment leads to more dissatisfaction and unhappiness in countries that are worse off financially (i.e., have lower GDP levels). Third, the negative effect of unemployment on health and happiness is mitigated in countries that have high levels of unemployment. Fourth, in countries which experience higher long-term unemployment growth and/or slower GDP growth the negative effect of unemployment on health is aggravated. Fifth, long-term unemployment growth exacerbates the negative effect of unemployment on happiness but mitigates that of having an insecure job. Finally, the relationship between employment status and health or wellbeing does not seem to be mediated by the crisis.

- The multi-level study concerning labour market policies finds that higher unemployment benefit generosity is associated with less negative effects of unemployment on well-being. At the same time is shows that higher spendings on active labor market policies and the deregulation of the use of temporary employment are associated with more negative consequences of unemployment in terms of well-being.
- Multi-level analyses looking at the moderating role of characteristics of education systems suggest that unemployment has less negative effects on well-being in systems that are less stratified, have higher enrolment in higher education, and provide more second chance opportunities concerning the access to higher education.
- Multi-level analyses on the moderating effect of societal inequality suggest that in more equal societies the negative effect of labor market insecurity on life satisfaction of youth is buffered, and that in societies where people perceive more inequality, youth tend to suffer more from bad labor market experiences in terms of perceived life satisfaction. However, the results showed a reverse association when looking at the indicator of poor health. The negative effect of labor market exclusion on health is stronger in (objectively) more equal societies compared to unequal societies
- Multi-level analyses on the moderating role of cultural and societal values suggest that disadvantaged labor market positions relate to poorer health in individualistic (vs. collectivistic) countries, while unemployed youth reports lower life satisfaction and higher (un)well-being than the employed with permanent contracts in societies that attach a great value to work. Unexpectedly, unemployment and job insecurity were found to relate to worse health in societies that attach a low (vs. high) value to work.
- A common finding of the multi-level studies is that unemployment as compared to insecure employment (defined by type of contract) has more negative consequences for the well-being and health of young people.
- Moreover, well-being is more strongly negatively affected as compared to self-rated health. This later finding may be due to the fact that, overall, youth has relatively good health and that labor market exclusion and job insecurity affect physical health only in the long-run.

# 1. Key findings

Non-employment and job insecurity are widespread among young people in Europe. This publication analyses how individual experiences of labour market exclusion and job insecurity affect young people's well-being and health in various national settings. Previous studies on the effects of unemployment on well-being and health (see Wanberg 2012 for a recent review) and complementary studies on the consequences of temporary employment (see De Cuyper et al. 2008, Virtanen et al. 2005 for reviews and meta-analyses) mainly focused on the adult population. However, similar studies with a focus on the young population are scarce (see Voßemer and Eunicke 2015 for a recent review that has been published as an EXCEPT working paper). This EXCEPT publication contributes to the existing literature by providing a profound study of the effects of labour market exclusion and job insecurity on the well-being and health of young Europeans. A comparative perspective is applied when investigating the effects of labour market exclusion and job insecurity on well-being and health based on microdata.

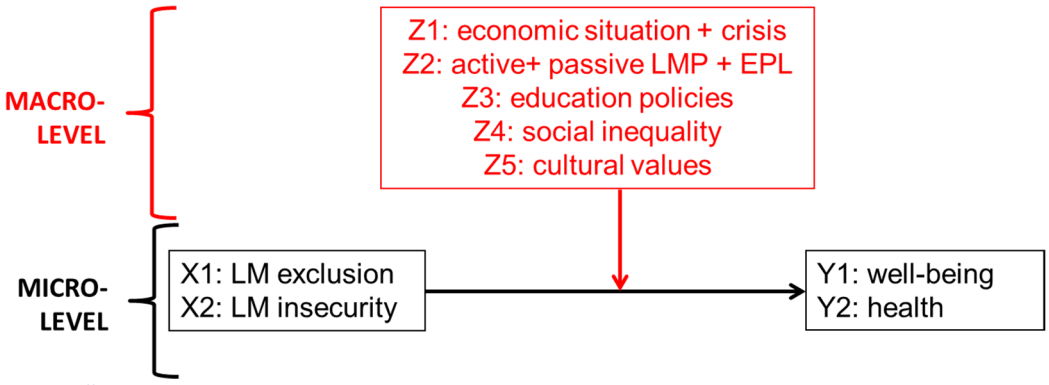
Specifically, the first objective is describing the association between individual labour market disadvantages and well-being and health for different groups of young people across EU-28 and Ukraine. Thereby, we address the first major research question: what is the association between labour market disadvantages and well-being and health for young people? Bringing together the research on unemployment and job insecurity, we compare those unemployed to workers with fixed-term or no contracts and workers with permanent contracts. Additionally, we compare young people, who subjectively assess their job as insecure, with those who assess their position as secure. From a methodological perspective, we perform descriptive analyses of the association between labour market exclusion and job insecurity and different objective and subjective measures of well-being and health in EU28 and Ukraine. The measures for well-being include global life satisfaction and happiness ratings, whereas the indicators for health include self-rated health as well as more specific measures based, for example, on reports of depressive symptoms. These measures were chosen to highlight both the well-being and health consequences of labor market exclusion and job insecurity. As young adults in general have good health, it is important to complement global measures of self-rated health with those on well-being to make sure that the psychological consequences of labour market disadvantages are appropriately reflected.

The situation is compared across countries in order to detect those countries where youth in insecure labour market positions suffers most and those countries where the effects are less harmful. Next to the cross-country comparison, an overtime comparison is performed in order to describe the situation before and after the recent economic crisis. We not only analyse the association between labour market exclusion and job insecurity on the one hand and subjective well-being and health on the other

hand, but also examine how the effects vary across subgroups of young people. In this respect, we perform subgroup-specific analyses.

The second objective is to explain cross-country variation in the effects of labor market exclusion and job insecurity based on differences in structural (i.e., economic situation, financial crisis), institutional (i.e., welfare state and labor policies), as well as societal and cultural (i.e., social inequality, cultural values) country-level factors. Thereby, we address the second major research question: which institutional and policy settings determine the cross-country variation? Next to the cross-country comparison, an overtime comparison is performed in order to describe the impact of the crisis. Specifically, the different chapters investigate which factors buffer or exacerbate the negative consequences of unemployment and insecure jobs for well-being and health. In this respect, we examine the moderating role of the economic situation of a country, the recent financial crisis, welfare state and labor market institutions, such as passive and active labor market policies (PLMP, ALMP), as well as employment protection legislation (EPL), education policies, social inequality, and cultural values. From a methodological perspective, we adopt a multilevel design with individuals nested in countries and time. We measure the institutional and policy setting in a quantitative approach by using macro-indicators of structural, institutional, societal, and cultural country-level factors. Specifically, we investigate cross-level interactions, i.e. how macro-indicators Z moderate the individual-level effect of labour market exclusion and job insecurity on well-being and health (see Figure 1). Given this focus, the different chapters mainly focus on theoretical derivations concerning the respective cross-level interactions. Explanations for the micro-level associations between disadvantaged labor market positions and health and well-being can be found in the synthesis of Nordenmark and Strandh (1999) and are discussed in more detail in the literature review by Voßemer and Eunicke (2015). The basic argument is that unemployment and job insecurity result in the loss of economic and psychosocial resources which, then, translates into lower well-being and health.

*Figure 1: Multilevel design to investigate the moderating role of policies and institutions*




*Source: Own illustration.*

The remainder of this publication is structured as followed. In Chapter 2 “Describing the well-being and health of youth in insecure labour market positions in Europe” Katerina

Gousia, Olena Nizalova, Marialena Kostouli, Kadri Täht, and Despoina Xanthopoulou perform detailed descriptive analyses of the association between labour market exclusion and job insecurity and different objective and subjective measures of well-being and health in EU28 and Ukraine. Using five rounds of the ESS from 2006 to 2014 for EU28 and additional data for Ukraine they find that health, happiness and life satisfaction are lower among the unemployed compared to the employed. A similar picture emerges with respect to past experiences of long-term unemployment and insecure employment as measured by subjective indicators. Health and well-being are worse among those having experienced long-term unemployment and being currently unemployed and among those who believe that they may become unemployed in the near future. The unemployed-employed gap is particularly striking for happiness and life satisfaction. Holding a job with a temporary compared to a permanent contract is also associated with worse well-being but not health. Moreover, the differences concerning well-being are also smaller than for the other employment indicators. The gap between employed and unemployed is larger for men compared to women especially with regard to happiness and life satisfaction.

There is also cross-country variation in the effect of unemployment and temporary employment on well-being and health. The largest unemployed-employed gap in terms of happiness is observed in the Netherlands, Denmark, Belgium and Austria. The largest unemployed-employed gap in life satisfaction is seen in Spain, Denmark, and Croatia. The unemployed-employed gap by country is smaller in terms of health and Cyprus, Finland, and Lithuania are the countries with the largest gap. In very few cases the gap is reversed with the unemployed reporting better well-being and health. In terms of temporary compared to permanent jobs, the largest difference between temporary and permanent workers is found in Cyprus, Ireland, Hungary, and Lithuania for health, as well as the Netherlands, Finland, Italy, and Denmark for happiness and Belgium, Finland, and Sweden for life satisfaction. In some countries the gap runs in the opposite direction, with temporary workers reporting better well-being and health. There is a mixed picture regarding the relationship between employment and well-being and health before and after the financial crisis. Overall, the difference in health and happiness between the unemployed and employed drops after the crisis while there are no big changes in life satisfaction ratios. In terms of temporary employment, in some countries the difference reduces and in others increases after the financial crisis.

In Chapter 3 “The effects of unemployment and insecure jobs on well-being and health for European youth: The moderating role of the countries’ economic situation and the global financial crisis”. Olena Nizalova, Nataliia Shapoval, Despoina Xanthopoulou, Marialena Kostouli, Katerina Gousia, Christina Athanasiades, and Anastasia Flouli examine the moderating role of country-level factors such as unemployment rates and GDP as well as the severity with which countries have been affected by the financial crisis on the relationship between disadvantaged labor market positions and young people’s health and well-being. Using data from the European Social Survey (ESS) and applying three-level models the authors find mixed evidence regarding how an

economic downturn moderates the negative effects of unemployment and insecure jobs.

The results of the analyses concerning life satisfaction (well-being) and health are summarized in Tables 1a and Tables 1b. Additional results regarding happiness can be found in the chapter.

*Table 1a Results on the moderating effects of economic situation and the financial crisis with respect to the effects of labour market exclusion on well-being and health*

| Indicators for economic situation and financial crisis | Moderating effects on… | |
|---|---|---|
| | … the negative effect of labour market exclusion on well-being | … the negative effect of labour market exclusion on health |
| Aggregate unemployment | | |
| Increase in unemployment rate (level) | 0 | + |
| Increase in unemployment rate (year to year growth) | 0 | 0 |
| Increase in unemployment rate (5 year growth) | 0 | – |
| GDP | | |
| Increase in GDP per capita (level) | + | 0 |
| Increase in GDP per capita (year to year growth) | 0 | 0 |
| Increase in GDP per capita (5 year growth) | 0 | + |
| Financial crisis | | |
| Country severely affected by crisis | 0 | 0 |

*Source: Own illustration*

*Remarks: A positive sign "+", highlighted in green, means that the negative effect of labour market exclusion on well-being/health is statistically significantly mitigated. A negative sign "–", highlighted in red, means that the negative effect of labour market exclusion/job insecurity on well-being/health is statistically significantly intensified. A neutral sign "0", highlighted in grey, means that there is no evidence that the negative effect of labour market exclusion on well-being/health is moderated by the policy measure/institutional reform. Any ambiguous findings are not highlighted and the ambiguous findings are summarized.*

*Table 1b Results on the moderating effects of economic situation and the financial crisis with respect to the effects of job insecurity on well-being and health*

| Indicators for economic situation and financial crisis | Moderating effects on… | |
|---|---|---|
| | … the negative effect of job insecurity on well-being | … the negative effect of job insecurity on health |
| Aggregate unemployment | | |
| Increase in unemployment rate (level) | 0 | 0 |
| Increase in unemployment rate (year to year growth) | 0 | 0 |
| Increase in unemployment rate (5 year growth) | 0 | 0 |
| GDP | | |
| Increase in GDP per capita (level) | 0 | 0 |
| Increase in GDP per capita (year to year growth) | 0 | 0 |
| Increase in GDP per capita (5 year growth) | 0 | 0 |
| Financial crisis | | |
| Country severely affected by crisis | 0 | 0 |

*Source: Own illustration. See Table 1a for remarks.*

In Chapter 4 “The effects of unemployment and insecure jobs on well-being and health for European youth: the moderating role of labor market policies” Jonas Voßemer, Michael Gebel, Kadri Täht, Marge Unt, Björn Högberg and Mattias Strandh investigate the moderating role of labour market policies in detail. The results concerning life satisfaction (well-being) and health are summarized in Tables 2a and 2b. Using micro data from the first six rounds of the ESS (2002-2012) and time-varying macro indicators they find that higher levels of unemployment benefit generosity mitigate the negative effect of early-career unemployment on well-being. In contrast, higher expenditures on active labour market policies seem to intensify the negative effects. This result may indicate that training programs or job creation programs do not resemble regular employment close enough in order to provide comparable economic and psychosocial rewards. It may also be explained by participants perceiving ALMP as paternalistic and not as investments in their skills and employability. For employment protection legislation, the results are ambiguous. However, there is some evidence that the deregulation of restrictions on the use of temporary employment may result in more negative well-being consequences of youth’ labor market exclusion. For the effects of insecure jobs, they do not find any important moderating effects of passive and active labor market policies as well as employment protection legislation. One potential explanation for this result may be that the insecurities associated with having no contract at all or only a fixed-term contract are less malleable by labor market policies, because they “only” represent the threat of unemployment. The results clearly differ between well-being and health. Specifically, for health the authors do not find similar moderating effects of unemployment benefit generosity and active labor market policies as well as employment protection legislation. Robustness checks show all these findings are robust to time-constant unobserved heterogeneity between countries.

In Chapter 5 “The effects of unemployment and insecure jobs on well-being and health for European youth: the moderating role of education policies” Björn Högberg, Mattias Strandh, Jonas Voßemer and Michael Gebel investigate the moderating role of education policies. The results concerning life satisfaction (well-being) and health are summarized in Tables 2a and 2b. Additional results for depressiveness can be found in the chapter. Based on ESS data from 26 countries in four rounds (2006, 2008, 2010, and 2012) and applying linear random intercept multi-level models the authors find that less stratified education systems mitigate the negative effects of unemployment on life satisfaction but there is no moderating effect with respect to health. Higher enrolment rates in tertiary education reduce both the negative effects of unemployment on life satisfaction and on health. Providing more second chance opportunities in the education system mitigates the negative effects of unemployment on life satisfaction but there is no moderating effect with respect to health. For the well-being and health effects of insecure jobs, the authors do not find any moderating effects of education policies. Thus, the support is much stronger for the moderating impact of educational policies on the effects of unemployment than on the effects of insecure employment. One potential explanation for this finding is that the theoretical line of reasoning behind

the moderating policy effects are arguably more relevant in the case of unemployment than regarding insecure employment. Unemployed individuals are by definition further away from a normal labour market status, and thus in greater need of opportunities to strengthen their human capital. That is, their capabilities are more constrained in the first place, and they need greater institutional support to achieve comparable capabilities as individuals with employment or in education.

*Table 2a Results on the moderating effects of labour market and educational policies with respect to the effects of labour market exclusion on well-being and health*

| Indicators for labour market and education policies | Moderating effects on… | |
|---|---|---|
| | … the negative effect of labour market exclusion on well-being | … the negative effect of labour market exclusion on health |
| Labour market policies | | |
| Increase in generosity of unemployment benefits | + | 0 |
| Increase in expenditure on active labor market policies | – | 0 |
| Deregulation of protection for regular contracts | +/0 | 0 |
| Deregulation concerning the use of temporary contracts | – | 0 |
| Education policies | | |
| Decrease stratification of the education system | + | 0 |
| Increase enrolment rates in higher education | + | + |
| Increase second chance opportunities | + | 0 |

*Source: Own illustration. See Table 1a for remarks.*

*Table 2b Results on the moderating policy and institution effects with respect to the effects of job insecurity on well-being and health*

| Indicators for labour market and education policies | Moderating effects on… | |
|---|---|---|
| | … the negative effect of job insecurity on well-being | … the negative effect of job insecurity on health |
| Labour market policies | | |
| Increase in generosity of unemployment benefits | 0 | 0 |
| Increase in expenditure on active labor market policies | 0 | 0 |
| Deregulation of protection for regular contracts | 0 | 0 |
| Deregulation concerning the use of temporary contracts | 0 | 0 |
| Education policies | | |
| Decrease stratification of the education system | 0 | 0 |
| Increase enrolment rates in higher education | 0 | 0 |
| Increase second chance opportunities | 0 | 0 |

*Source: Own illustration. See Table 1a for remarks.*

In Chapter 6 “The effects of unemployment and insecure jobs on well-being and health for European youth: the moderating role of social inequality” Kadri Täht, Despoina Xanthopoulou, Marialena Kostouli, Lia Figgou, Marge Unt, and Martina Sourvinou investigate the moderating role of social inequality. The results concerning life satisfaction (well-being) and health are summarized in Tables 3a and 3b. Additional analyses regarding psychological unwell-being are discussed in the chapter. Based on EU-SILC data from 29 European countries and applying two-level random intercept

models the authors find that the negative effect of unemployment on life satisfaction is intensified the more unequal a society is perceived with respect to the income distribution. No evidence on the moderating effect is found when objective measures of income inequality are used. Reserved findings are reported with respect to the health effect of unemployment. The negative effect of LM exclusion on health is stronger in objectively more equal societies rather than in unequal societies. Here no evidence on the moderating effect is found when subjective measures of income inequality are used. Regarding the consequences of job insecurity, the authors find that life satisfaction of temporary workers as compared to permanent contract holders is not affected by the objective income distribution as measured by the Gini coefficients. There is evidence that in more equal societies (as depicted by the 'objective' measure of income share at the lowest 10%), and in societies where people perceive more inequality (as depicted by the 'subjective' inequality measure), youth tend to suffer more from job insecurity in terms of perceived life satisfaction. Reserved findings are reported with respect to the health effect of job insecurity. The negative effect of job insecurity for health is stronger in objectively more equal societies rather than in unequal societies. No evidence on the moderating effect is found when subjective measures of income inequality are used.

*Table 3a Results on the moderating effects of social inequality and cultural values with respect to the effects of labour market exclusion on well-being and health*

| Indicators of social inequality and cultural values | Moderating effects on… | |
|---|---|---|
| | … the negative effect of labour market exclusion on well-being | … the negative effect of labour market exclusion on health |
| Social inequality | | |
| Decrease income inequality (Gini) | 0 | – |
| Increase the income share of the poorest 10% | 0 | – |
| Decrease the perceived inequality | + | 0 |
| Cultural values | | |
| High individualism/low collectivism | 0 | – |
| Increasing the value attached to work | – | + |

*Source: Own illustration. See Table 1a for remarks.*

*Table 3b Results on the moderating effects of social inequality and cultural values with respect to the effects of job insecurity on well-being and health*

| Policy measure / institutional reform | Moderating effects on… | |
|---|---|---|
| | … the negative effect of job insecurity on well-being | … the negative effect of job insecurity on health |
| Social Inequality | | |
| Decrease income inequality (Gini) | 0 | – |
| Increase the income share of the poorest 10% | + | – |
| Decrease the perceived inequality | + | 0 |
| Cultural values | | |
| High individualism/low collectivism | 0 | – |
| Increasing the value attached to work | 0 | + |

*Source: Own illustration. See Table 1a for remarks.*

In Chapter 7 “The effects of unemployment and insecure jobs on well-being and health for European youth: the moderating role of cultural values” Despoina Xanthopoulou, Kadri Täht, Marialena Kostouli, Lia Figgou, Martina Sourvinou, and Marge Unt investigate the moderating role of cultural values. The results concerning life satisfaction (well-being) and health are summarized in Tables 3a and 3b. Additional analyses regarding psychological unwell-being are discussed in the chapter. Based on EU-SILC data from 29 European countries and applying two-level random intercept models the authors find that the higher the level of individualism in a society the more negative is the effect of unemployment on health. However, the level of individualism does not moderate the relationship between unemployment and well-being. Another finding is that the negative effect of unemployment on life satisfaction is stronger in societies that attach a greater value to work. However, contrary to expectations, the negative effects of unemployment on health are mitigated in societies that attach a greater value to work. Neither the degree of individualism nor the value of work moderates the effects of job insecurity on well-being. Regarding health, the negative effects of job insecurity on health are more pronounced in individualistic countries. Contrary to expectations, it is found that the negative effects of job insecurity on health are mitigated in societies that attach a great value to work.

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# Chapter 2

# Describing the well-being and health of youth in insecure labour market positions in Europe

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**Marialena Kostouli and Despoina Xanthopoulou (Aristotle University of Thessaloniki)**

**Kadri That (Tallinn University)**

## 1. Introduction

The relationship between labour market status and health is of great importance for the design of new and the improvement of existing policies, which could minimize the detrimental consequences of early life labour market exclusion and insecurities. This becomes even more crucial in the current context of global financial recession that has resulted in increased rates of unemployment and precarious working conditions, especially among young people (Chung et al. 2012, Scarpetta et al. 2010). Ample evidence from the literature suggests that labour market exclusion and insecurity can have an impact on health and wellbeing both in the short-run and the long-run through scarring effects (Böckerman and Ilmakunnas 2009, Browning et al. 2006, Clark et al.2001, Karanikolos et al. 2013, Salm 2009, Strandh et al. 2014).

The mechanism behind the employment and health relationship is not unequivocal. One channel through which unemployment can have an impact on health is based on the economic stress hypothesis (Catalano and Dooley 1983, Catalano 1991). Being

[1]This chapter uses the following integrated data files: ESS Round 3: Edition 3.5, ESS Round 4: Edition 4.3, ESS Round 5: Edition 3.2, ESS Round 6: Edition 2.1, ESS Round 7: Edition 1.
The data are provided by the NSD - Norwegian Centre for Research Data, Norway - Data Archive and distributor of ESS data for ESS Eric.
This chapter is also based on data from Eurostat: European Union Statistics on Income and Living Conditions (EU-SILC), 2006, 2008, 2010 and 2012. The responsibility for all conclusions drawn from the data lies entirely with the authors.
This chapter also uses data from the EQLS 2007 and 2011. European Foundation for the Improvement of Living and Working Conditions. (2015). European Quality of Life Time Series, 2007 and 2011: Open Access. [data collection]. UK Data Service. SN: 7724, http://dx.doi.org/10.5255/UKDA-SN-7724-1

linked to greater uncertainty of present and future income, unemployment leads to higher stress levels and potentially worse health. In addition, uncertainty over income may have 'feedback' effects in that it may increase the likelihood of adverse life events, such as bankruptcy which may add to the stress associated with the labour market exclusion. In addition to the stress related to economic uncertainty, unemployment can negatively affect one's self-esteem and personal satisfaction (Sheeran et al. 1995). On the other hand, not working may free up resources (in terms of time; Hobfoll, 1989) which could be invested into improving health through increased time spent in exercising, cooking homemade food and using preventative medical services. So, theoretically the total effect may be either negative or positive, and in empirical studies may vary depending on the sample and period under consideration.

However, the above mentioned individual effects may also interact with different country-level institutional and economic factors (i.e. moderators). For example, from the happiness literature we know that personal happiness relates negatively to others' situation (Clark et al. 2008) which means that in times of increased unemployment, such as the current recession, one's own unemployment may have a less severe effect on wellbeing. Moreover, the effect of unemployment on health and wellbeing could be stronger in countries with worse economic conditions and/or weaker social support, since overall resources that could be used to alleviate any adverse effects are now reduced. Therefore, we expect that the variation in the employment-health or wellbeing nexus may depend on national economic conditions.

The aim of this analysis is to provide an overview of the relationship between labour market exclusion/insecurity and different measures of health and wellbeing through descriptive quantitative evidence from cross-country data. Although the analysis is not sufficient to establish causal relationships and identify the mechanisms behind any variation in the observed associations, it is useful in establishing preliminary evidence on the questions of interest. In addition to analysing overall associations between different forms of labour market exclusion and job insecurity on one hand, and different measures of wellbeing and health on the other, we explore potential mechanisms of variation by looking at how this nexus varies across characteristics such as gender, country, over time and before and after the financial crisis. This analysis allows us to investigate whether certain groups of youth are more adversely affected by job insecurity and labour market exclusion and potentially identify more disadvantaged groups.

The following section presents the bulk of the descriptive analysis. After a detailed overview of the data and sample, we present summary and descriptive evidence of the key variables of interest- overall and by group. We move on to explore the health/well-being-employment nexus and how this varies across different sub-groups. The last section summarises and discusses the main findings of the descriptive analysis and finally, in the appendix we present summary statistics from alternative cross-country datasets to test the robustness of our main results.

# 2. Descriptive analysis

## 2.1 Data and definitions

### 2.1.1 ESS dataset

There are a few European-wide available datasets containing information on well-being, health and labour market outcomes. The most comprehensive include the European Social Survey (ESS), the European Union Statistics on Income and Living Conditions (EU-SILC) datasets and the European Quality of Life Survey (EQLS). The current analysis uses data from the ESS. Compared to the other available datasets, the ESS collects extensive information related to health, wellbeing and labour market outcomes spanning a long period of time allowing the study of the health/employment relationship over longer time horizons including before and after the financial crisis. The EQLS has information spanning only two years, while the EU-SILC does not record information on wellbeing between 2006 and 2012. In the appendix we present descriptive evidence from these two datasets by way of comparison. The ESS is conducted every two years and we are using five rounds from 2006 to 2014.[2]

We used data on the EU28 countries plus Ukraine. The overall sample size (without any further age restriction) is 196,059 observations.

### 2.1.2 EXCEPT sample

For the purposes of this analysis we focus only on the young population using the EXCEPT definition of youth. The sample was restricted to people aged between 15 and 29, whose last educational qualification was up to 5 years previously and who were not in any form of education at the time the study took place. We refer to this as the EXCEPT sample. The resulting sample size is 12,547 observations, i.e. approximately 6% of the original dataset. Due to data limitations of the ESS this sample does not record information on Malta, and some countries have data only for certain years. Therefore, certain countries only appear in a few years while in our sample after 2006 there is no data on Luxembourg which only appears in the first two waves of the survey.

Table 1 shows the composition of the restricted sample by year, country and country-year. Given the missing information for certain countries for some years, the country-wave sample sizes can be quite small ranging from 42 to 385 observations.

Given the small sample sizes by country-year in the descriptive analysis we are pooling data from each country across years and also across all countries. When pooling data, we used the ESS weights to account for differences in individual probabilities of being selected due to sampling design and the different population sizes.

[2] We have conducted a descriptive analysis similar to the one presented in this chapter using data from the EQLS and EUSILC dataset. Although these results are not presented in this report they are available upon request.

*Table 1 Sample size by country and year EXCEPT sample*

| Country | 2006 | 2008 | 2010 | 2012 | 2014 | Total |
|---|---|---|---|---|---|---|
| Austria | 385 | 0 | 0 | 0 | 208 | 593 |
| Belgium | 107 | 90 | 105 | 106 | 103 | 511 |
| Bulgaria | 97 | 142 | 108 | 109 | 0 | 456 |
| Cyprus | 70 | 123 | 95 | 76 | 0 | 364 |
| Czech Republic | 0 | 184 | 205 | 100 | 120 | 609 |
| Germany | 156 | 131 | 160 | 133 | 128 | 708 |
| Denmark | 53 | 67 | 51 | 49 | 65 | 285 |
| Estonia | 100 | 128 | 120 | 164 | 140 | 652 |
| Spain | 155 | 232 | 102 | 92 | 0 | 581 |
| Finland | 82 | 90 | 73 | 78 | 65 | 388 |
| France | 103 | 110 | 100 | 79 | 79 | 471 |
| United Kingdom | 164 | 176 | 163 | 135 | 0 | 638 |
| Greece | 0 | 382 | 337 | 0 | 0 | 719 |
| Croatia | 0 | 196 | 143 | 0 | 0 | 339 |
| Hungary | 97 | 101 | 94 | 135 | 0 | 427 |
| Ireland | 149 | 89 | 166 | 138 | 123 | 665 |
| Italy | 0 | 0 | 0 | 65 | 0 | 65 |
| Lithuania | 0 | 0 | 42 | 104 | 0 | 146 |
| Latvia | 0 | 264 | 0 | 0 | 0 | 264 |
| Netherlands | 102 | 90 | 67 | 84 | 92 | 435 |
| Poland | 125 | 92 | 119 | 129 | 88 | 553 |
| Portugal | 160 | 146 | 133 | 134 | 0 | 573 |
| Romania | 0 | 303 | 0 | 0 | 0 | 303 |
| Sweden | 91 | 87 | 57 | 89 | 83 | 407 |
| Slovenia | 78 | 80 | 57 | 54 | 65 | 334 |
| Slovakia | 182 | 107 | 104 | 115 | 0 | 508 |
| Ukraine | 150 | 146 | 118 | 139 | 0 | 553 |
| Total | 2,606 | 3,556 | 2,719 | 2,307 | 1,359 | 12,547 |

*Source: ESS data, 2006-2014.*

## 2.1.3 Key outcomes

The ESS provides a range of measures for the outcomes of interest. Following the literature (Beckerman and Illmakunnas 2009, Bockerman and Illmakunnas 2006, Clark et al. 2001), we use self-reported measures of health status, happiness and life satisfaction as key outcomes. Table 2 shows the exact wording of the questions asked and the measurement scale used.

*Table 2 Health and wellbeing measures*

| Variable | Scale | Question |
|---|---|---|
| Physical health | 1-Very good, 2-Good, 3- Fair, 4-Bad, 5-Very Bad | How is your health in general? Would you say it is…? |
| Happiness | 11-point scale ranging from 0-Extremely unhappy to 10-Extremely happy | Taking all things together, how happy would you say you are? |
| Life satisfaction | 11-point scale ranging from 0-Extremely dissatisfied to 10-Extremely satisfied | All things considered, how satisfied are you with your life as a whole nowadays? |

In terms of labour market position we primarily focus on current employment status (employment vs. unemployment).[3] We also consider long-term unemployment, job insecurity and temporary employment. Unemployment status is assigned depending on whether one's current main activity is being unemployed and actively looking for a job. To construct a measure of long-term unemployment we consider those currently unemployed who have also experienced an unemployment spell lasting over 12 months, either recently or in the past. A measure of labour market insecurity is based on whether an individual thinks (s)he could become unemployed in the next 12 months. The ESS also provides information on the type of participants' job contract distinguishing between unlimited duration, limited duration or no contract at all. The third option allows us to identify people with informal jobs. We use the distinction between limited and unlimited contract duration to distinguish between temporary and permanent workers.

Table 3presents summary statistics for key variables of the restricted sample (EXCEPT sample). Given the small sample sizes by country and year we first pool all the data together using the ESS weights to account for existing differences in individual probabilities of being selected due to sampling design and different population sizes. We see that on average the sample age is 26, people have completed secondary education while men and women are equally represented. In terms of health and wellbeing outcomes, on average the ESS sample reports between very good to good levels and around 7 on the 11-point scale of the happiness and life satisfaction scores, which suggest relatively high levels for these variables. In terms of employment status approximately 14% of the sample are unemployed. The same table also provides summary statistics of the sample split by employment/unemployment status. On average the employed are slightly older than the unemployed (26 as opposed to 25 years old). The employed sample has on average higher education than the unemployed while more women are found among the unemployed. In terms of health and wellbeing outcomes the average differences between the two groups are quite small in terms of health status, but larger in terms of happiness and life satisfaction with the unemployed reporting on average lower happiness and life satisfaction scores than

[3] Part time employment was not considered due to very small sample sizes for these variables.

the employed group. In the analysis that follows we explore these relationships in more detail.

*Table 3 Summary statistics – key variables*

| | Total | | Employed | | Unemployed | |
|---|---|---|---|---|---|---|
| | Mean | Std. Dev. | Mean | Std. Dev. | Mean | Std. Dev. |
| **Age** | 26.12 | 2.58 | 26.25 | 2.51 | 25.35 | 2.85 |
| **Education** | 3.16 | 1.16 | 3.23 | 1.16 | 2.77 | 1.11 |
| **Male** | 0.50 | 0.50 | 0.49 | 0.50 | 0.56 | 0.50 |
| **Health** | 1.93 | 0.79 | 1.92 | 0.78 | 1.97 | 0.84 |
| **Happiness** | 7.22 | 1.99 | 7.33 | 1.92 | 6.56 | 2.23 |
| **Life satisfaction** | 6.66 | 2.36 | 6.84 | 2.27 | 5.63 | 2.61 |
| **Unemployed** | 0.14 | 0.35 | | | | |

*Source: ESS data, years 2006-2014, EXCEPT sample.*

*Notes: Education categories include (1) isced 0 -1: pre-primary education/ primary education or first stage of basic education; (2) isced 2: lower secondary education or second stage of basic education; (3) isced 3: upper secondary education; (4) isced 4: post-secondary non-tertiary education; (5) isced 5-6: first stage of tertiary education/ second stage of tertiary education. Difference in means between employed and unemployed for all variables is statistically significant (two-sample t test).*

Table 4 presents a more detailed distribution of the outcome variables. The majority of people report having a very good or good health status. A substantial proportion also report fair health but only a very small proportion report bad or very bad health status. With regards to the happiness indicator the majority of the responses lies above 7 while the proportion of people reporting very low levels of happiness is substantially smaller. With regards to the life satisfaction indicator responses are more dispersed. Most respondents report scores above 5 but also lower scores are reported more frequently compared to the happiness indicator. Table 4 also presents the outcome variables as binary indicators, summary indicators constructed from the multi-category variables. We see again that the vast majority of the EXCEPT sample reports high levels of good health (79.12%), happiness (80.46%) and life satisfaction (71.66%).

*Table 4 Variable distribution*

| Health | | Happiness | | Life satisfaction | |
|---|---|---|---|---|---|
| Score | (%) | Score | (%) | Score | (%) |
| Very Bad | 0.4 | Extremely Unhappy | 0.56 | Extremely Dissatisfied | 2.25 |
| Bad | 2.5 | 1 | 0.69 | 1 | 1.61 |
| Fair | 18.0 | 2 | 1.51 | 2 | 2.63 |
| Good | 47.8 | 3 | 2.89 | 3 | 4.93 |
| Very Good | 31.3 | 4 | 3.30 | 4 | 5.04 |
| | | 5 | 10.60 | 5 | 11.88 |
| | | 6 | 8.82 | 6 | 9.96 |
| | | 7 | 19.18 | 7 | 18.19 |
| | | 8 | 26.87 | 8 | 22.77 |
| | | 9 | 14.70 | 9 | 11.38 |
| | | Extremely Happy | 10.89 | Extremely Happy | 9.37 |
| **Binary indicators** | | | | | |
| Bad Health (Very Bad/Bad/Fair) | 20.88 | Unhappy (0-5) | 19.54 | Dissatisfied with life (0-5) | 28.34 |
| Good Health (Good/Very Good) | 79.12 | Happy (6-10) | 80.46 | Satisfied with life (6-10) | 71.66 |

*Source: ESS data, years 2006-2014, EXCEPT sample.*

## 2.2 Health and wellbeing descriptives

### 2.2.1 Health and wellbeing across subgroups

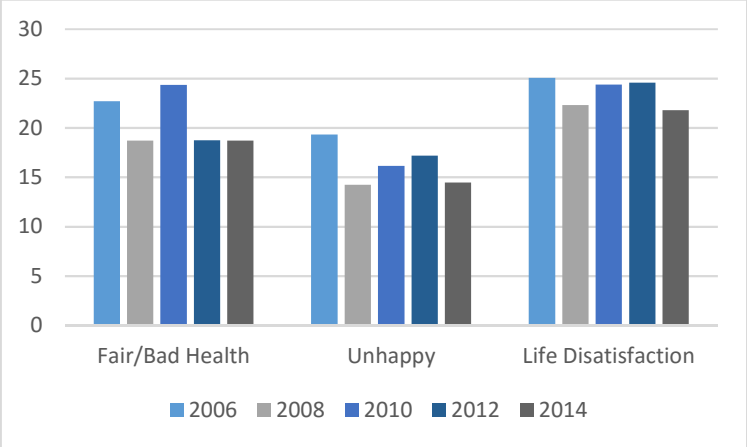
We next move on to investigate how health and wellbeing varies across different subgroups, including time, gender and country, using binary indicators.

**Health and wellbeing over time**

Figure 1 presents the distribution of the proportions of young people reporting bad health, unhappiness and life dissatisfaction over time. To avoid inconsistency in comparisons due to a different mix of countries in each year, we restrict the analysis to a group of countries that appear in the maximum possible number of years. Figure 1 presents the distribution of the binary indicators over time for all countries for which we have data in all years between 2006 and 2014 (Belgium, Czech Republic, Germany, Denmark, Estonia, Finland, France, Ireland, Netherlands, Poland, Sweden, Slovenia). Compared to 2006 we observe some degree of improvement of health and wellbeing in 2008 with all three indicators dropping. In 2010 there is a reversal of this trend with adverse health and wellbeing increasing above (in the case of health) or close to pre-2008 levels (in the case of happiness and life satisfaction). This deterioration in outcomes is more evident in the case of the unhappiness and life dissatisfaction indicators which remain above the 2008 levels also in 2012, before improving somewhat again in 2014. The health indicator on the other hand is already showing an

improvement in 2012 dropping back to the 2008 level and remaining at this level also in 2014. A multi-sample test of mean vectors for all three indicators for all years shows that differences in happiness and life satisfaction are statistically significant between years but not so for the health indicator.

*Figure 1 Aggregated variables - Distribution over time*

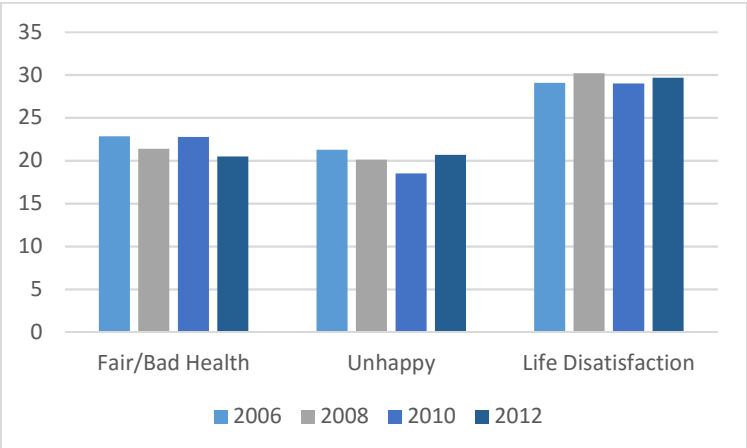



*Source: Own calculations based on ESS. Pooled weighted data: years 2006-2014. EXCEPT sample. Countries include Belgium, Czech Republic, Germany, Denmark, Estonia, Finland, France, Ireland, Netherlands, Poland, Sweden, Slovenia*

*Note: Statistically significant differences across years for each indicator (multi-sample test of mean vectors)*

We also consider a wider set of countries, now including additionally Bulgaria, Cyprus, Spain, the United Kingdom, Hungary, Portugal, Slovakia and Ukraine; but in this case the data ranges only until 2012. With the addition of these countries we observe in Figure 2 some subtle differences in distribution suggesting that health and wellbeing trends may differ according to the mix of countries and time period.

*Figure 2 Aggregated variables - Distribution over time with more countries included*




*Source: Own calculations based on ESS. Pooled weighted data: years 2006-2014. EXCEPT sample Countries include Belgium, Czech Republic, Germany, Denmark, Estonia, Finland, France, Ireland, Netherlands, Poland, Sweden, Slovenia, Bulgaria, Cyprus, Spain, United Kingdom, Hungary, Portugal, Slovakia, Ukraine*

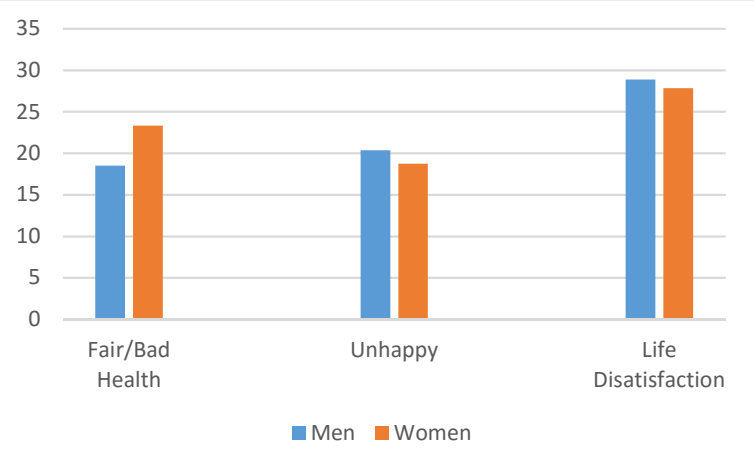
*Statistically significant differences across years for each indicator (multi-sample test of mean vectors)*

We observe that the proportion of people reporting bad health and unhappiness drops in 2008 (as seen in the previous set of countries) while the proportion of people reporting dissatisfaction with life increases in 2008. Health deteriorates again in 2010 and improves in 2012 as is the case with the previous group of countries. The proportion of people reporting unhappiness reduces further in 2010 and increases in 2012. The proportion reporting life dissatisfaction drops in 2010 and increases again in 2012, although the variation is not very large from year to year. For all three indicators we find that the differences across years are statistically significant as suggested by a multi-sample test of mean vectors.

**Health and wellbeing by gender**

Figure 3 shows how health and wellbeing differ by gender. The proportion of young people reporting fair to very bad health status is higher among women compared to men by almost 5 percentage points and this difference is found to be statistically significant. The differences between men and women are smaller and move in the opposite direction in terms of happiness and life satisfaction, yet they are not statistically significant.

*Figure 3 Health, Happiness and Life Satisfaction across genders*



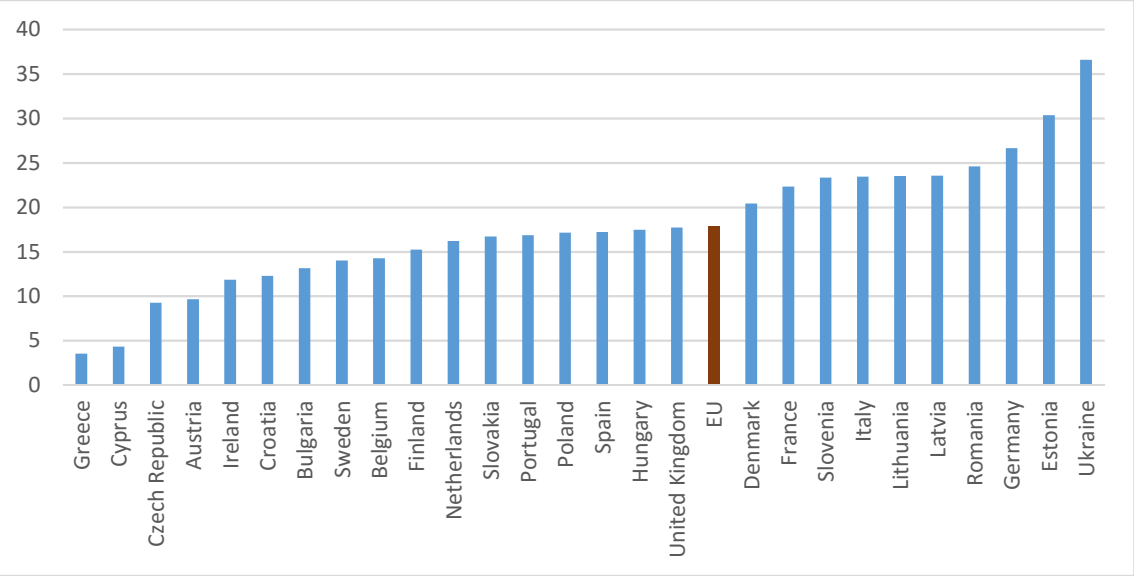

*Source: Own calculations based on ESS. Pooled weighted data: years 2006-2014, all countries. EXCEPT sample.*

**Health and wellbeing by country**

Figures 4-9 present the distribution of health and wellbeing by country, with data pooled together across all years and by year. We see that the EU average for bad health and unhappiness lies above 15%, and above 20% for life dissatisfaction. There is a large overlap of countries appearing above and below the EU average in terms of happiness and life satisfaction, with Hungary, Ukraine and Bulgaria reporting the highest (and substantially larger) proportions of unhappiness and life dissatisfaction. Other countries reporting above the EU average both in terms of unhappiness and life dissatisfaction include Romania, Ireland, Estonia, Lithuania, Slovakia, Greece, Latvia and Portugal. At the other end of the spectrum are countries such as Finland, Netherlands, Denmark and Sweden which report the lowest levels of unhappiness and

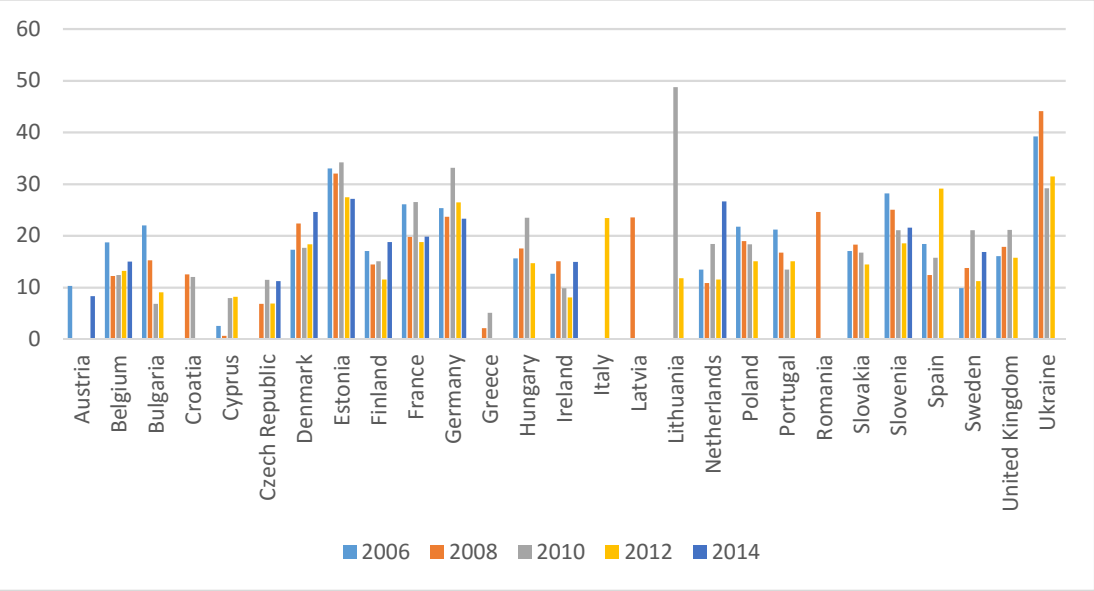
life dissatisfaction, followed by Austria, Belgium, Spain and Cyprus. Subjective bad health is distributed slightly differently across countries, with countries such as Denmark, France and Italy reporting worse health yet higher levels of happiness and life satisfaction.  or countries such as Greece and Bulgaria report better health but a relatively high level of unhappiness and dissatisfaction with life. There is no clear trend emerging from the analysis by year as the variation in health, happiness and life satisfaction exists in both directions for the majority of countries.

*Figure 4 Proportion of bad health across countries*



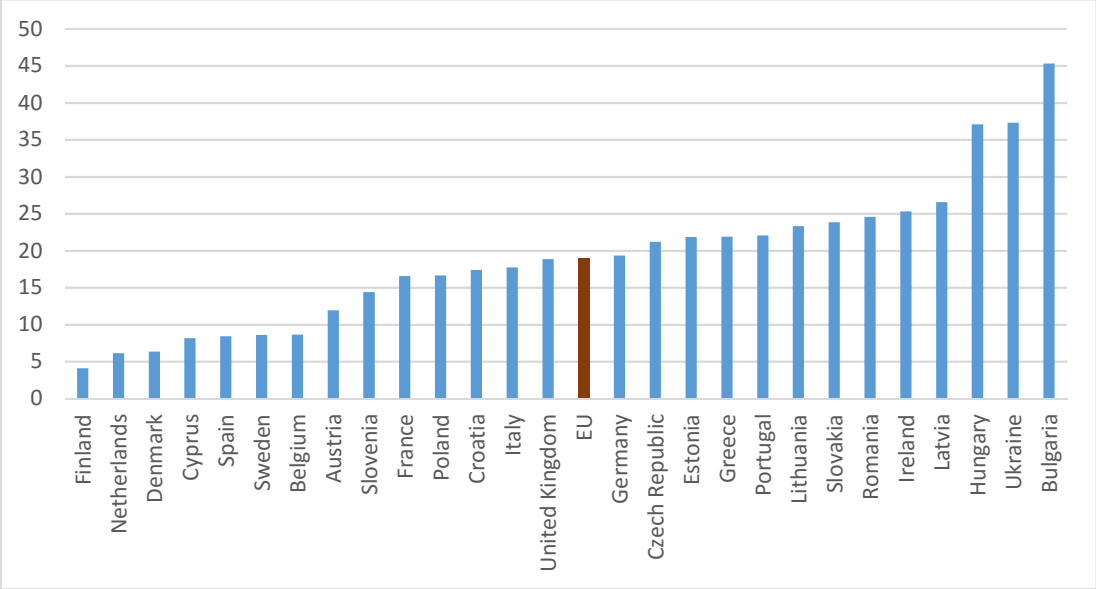

*Source: Own calculations based on ESS. Pooled weighted data: years 2006-2014. EXCEPT sample.*

*Figure 5 Proportion of bad health by country and year*



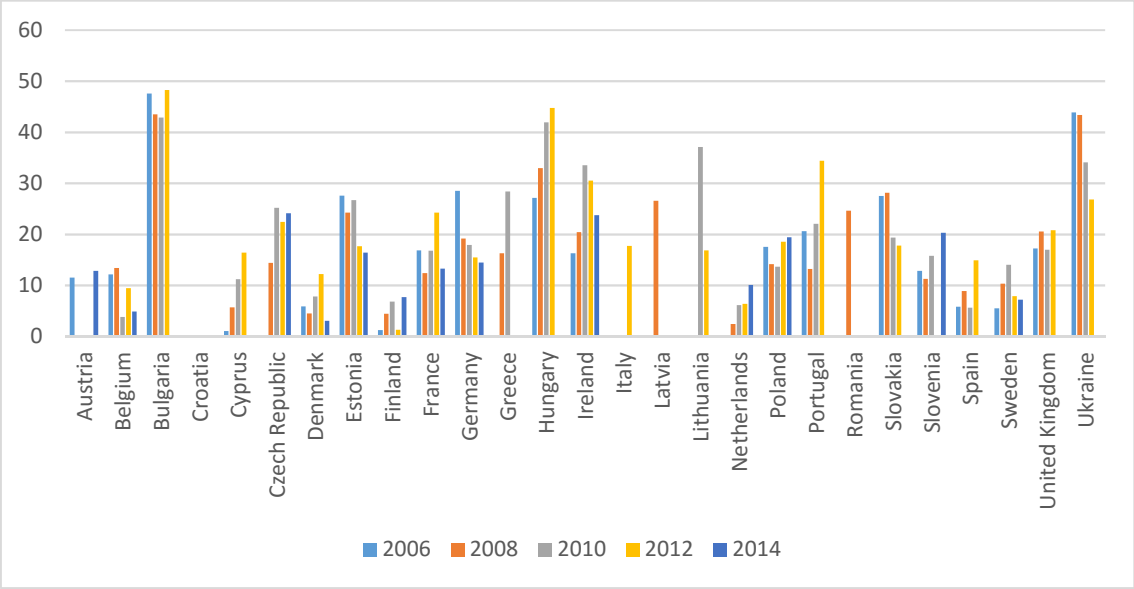

*Source: Own calculations based on ESS. Years 2006-2014. EXCEPT sample.*

*Figure 6 Proportion of unhappiness across countries*



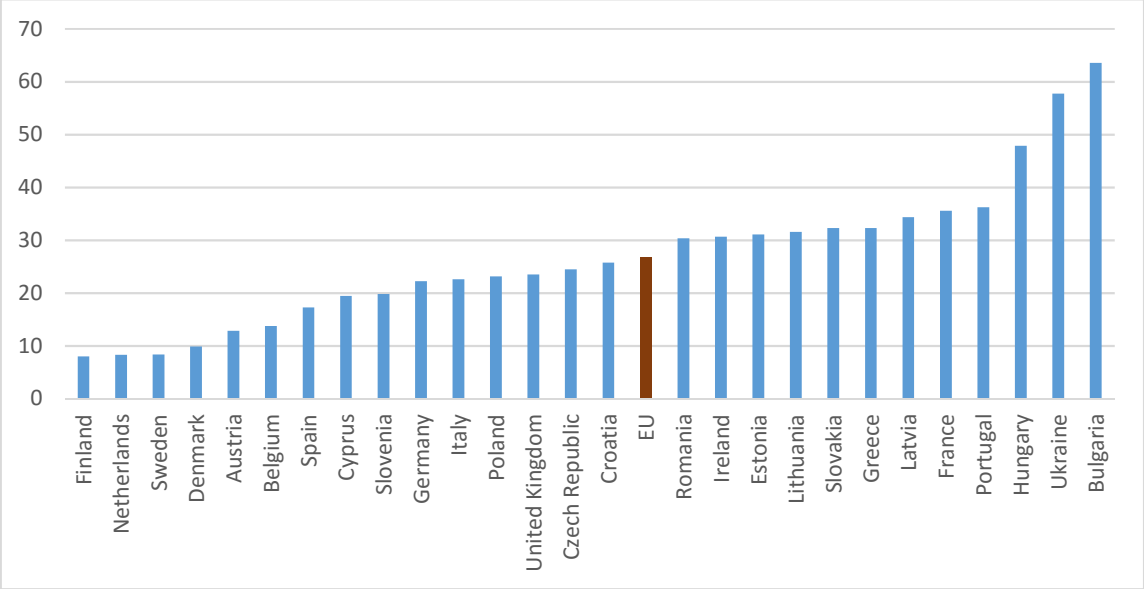

*Source: Own calculations based on ESS. Pooled weighted data: years 2006-2014. EXCEPT sample.*

*Figure 7 Proportion of unhappiness by country and year*



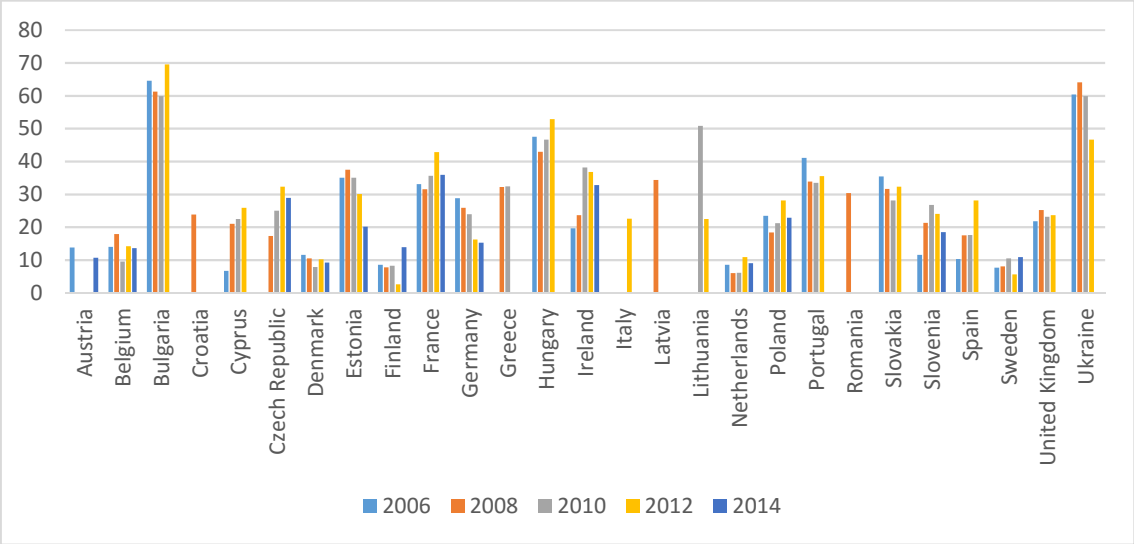

*Source: Own calculations based on ESS. Years 2006-2014. EXCEPT sample.*

*Figure 8 Proportion of life dissatisfaction across countries*




*Source: Own calculations based on ESS. Pooled weighted data: years 2006-2014. EXCEPT sample.*

*Figure 9 Proportion of life dissatisfaction by country and year*




*Source: Own calculations based on ESS. Years 2006-2014. EXCEPT sample.*

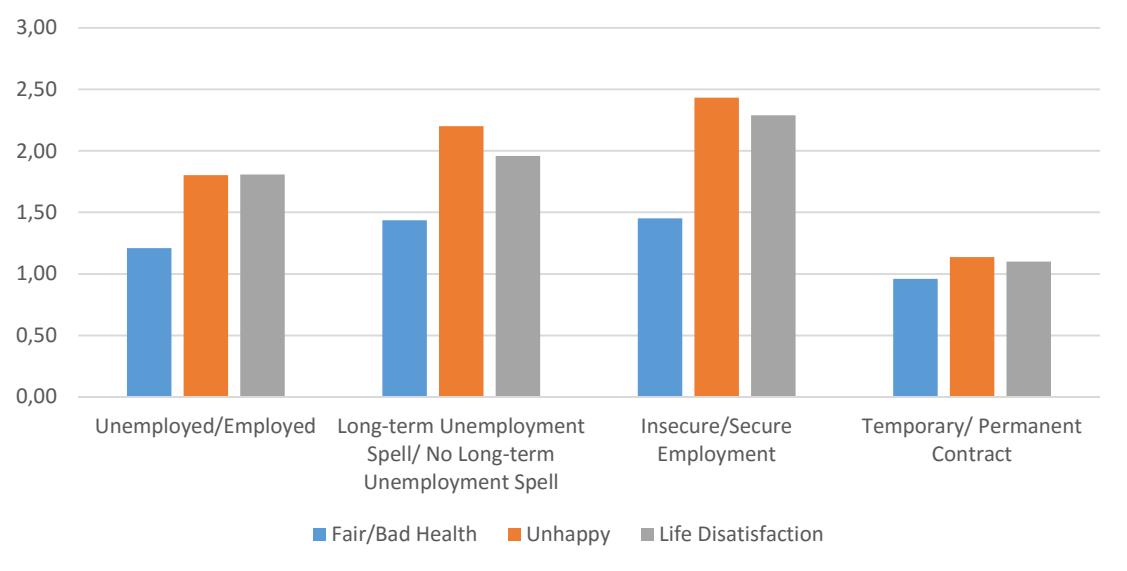
## 2.3 Health, Wellbeing and Labour-market outcomes

One of the key aims of this analysis is not only to understand the levels of health and wellbeing in Europe, but also to explore how these are related to labour market exclusion and job insecurity. In this section we explore the health/employment nexus and how this varies by year, gender, and country.

### 2.3.1 Health and wellbeing by employment status

Figure 10 presents the three outcome indicators in binary form as ratios between different employment characteristics: unemployed over employed, having experienced a long-term unemployment spell over those not in long-term unemployment, insecure over secure employment and temporary over permanent contract. A ratio of the proportion of people reporting bad health, unhappiness and life dissatisfaction above 1 suggests that people in worse employment conditions are worse off in terms of health and wellbeing compared to people in more favourable employment conditions. As we can see from the graph, this is confirmed for all three health and wellbeing indicators across the different employment groups. Ratios are in all cases above 1 and sometimes lie above 2 (e.g. life satisfaction) suggesting big discrepancies in wellbeing. These differences are also statistically significant. The only exception to this is the difference in terms of health between temporary and permanent workers. This ratio lies slightly below 1 but the difference is not statistically significant.

*Figure 10 Outcome measures by employment status (ratios)*




*Source: Own calculations based on ESS. Pooled weighted data: years 2006-2014, all countries. EXCEPT sample.*

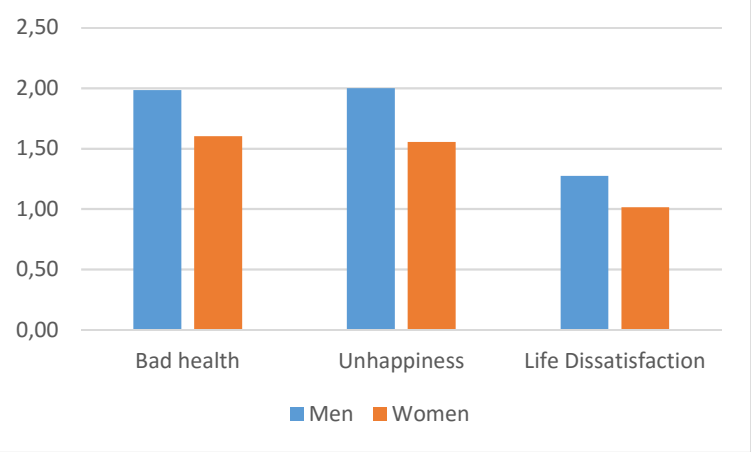
*Note: Difference in means between employment groups for all three indicators is statistically significant (two-sample t test). The difference is not statistically significant between temporary and permanent contract groups in the case of health.*

## 2.3.2 The health-employment relationship by gender

### Employed vs. unemployed

Next, we explore whether and how the relationship between health and labour market conditions varies by gender. Figure 11 presents the binary health and wellbeing indicators as ratios of men over women by employment status. We see that the unemployed report a worse health and wellbeing status across both genders. The difference is more pronounced among men with respect to health and unhappiness with ratios approaching 2 and smaller for women. These differences are statistically significant for both genders.

*Figure 11 Unemployed over employed ratios of health and wellbeing by gender*



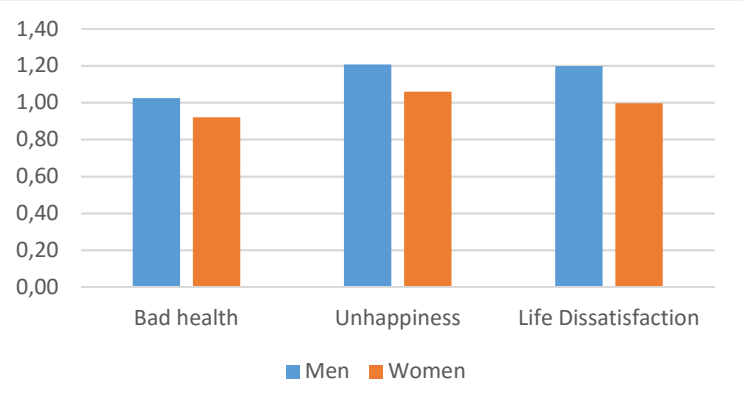

*Source: Own calculations based on ESS. Pooled weighted data: years 2006-2014, all countries. EXCEPT sample.*

*Note: Difference in means between employed and unemployed for men and women is statistically significant for all three indicators (two-sample t test)*

### Permanent vs. temporary employment

We also considered gender differences in health and wellbeing by type of contract. Figure 12 presents the binary health and wellbeing indicators as ratios of temporary over permanent workers by gender.

*Figure 12 Temporary over permanent contract ratios of health and wellbeing outcomes by gender*




*Source: Own calculations based on ESS. Pooled weighted data: years 2006-2014, all countries. EXCEPT sample.*

*Note: Difference in means between temporary and permanent workers is statistically significant for men and for women with the exception of health.*

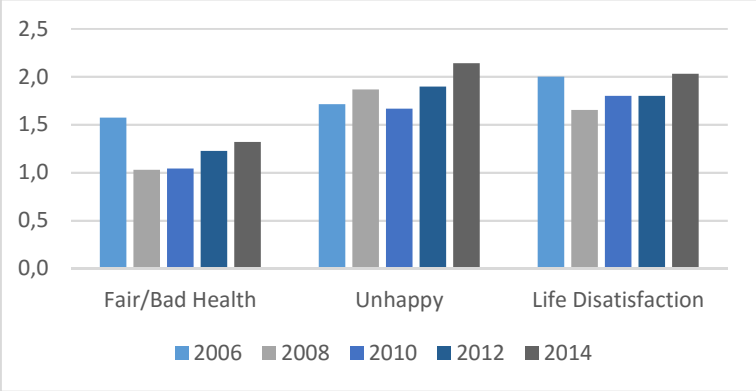
We see that temporary workers are worse off compared to permanent workers among men and this difference is bigger for unhappiness and life dissatisfaction. Women in temporary contracts report better health compared to women in permanent jobs but worse happiness and life satisfaction. The differences between permanent and temporary workers are statistically significant at the 10%, 5% and 1% level for health, happiness and life satisfaction indicators among men respectively. The difference for women is not statistically significant for women for health while it is at the 5% level in the case of happiness and life satisfaction.

### 2.3.3 The health-employment relationship by year

Figure 13 presents the relationship between health, happiness and life satisfaction and employment status by year. The bars show the ratio of the proportion of people reporting bad health, unhappiness or life dissatisfaction among the unemployed to that among the employed. A ratio above 1 for example, suggests that among the unemployed there is a higher proportion of people in bad health and vice versa.

We see that overall the ratio is always above 1 across all years, suggesting that health and wellbeing is worse among the unemployed. The difference in health between the unemployed and employed is largest in 2006, dropping substantially in 2008, but then increasing somewhat each year up to 2014. The difference in unhappiness is more volatile with no specific pattern but is largest in 2014. The difference in life dissatisfaction also drops in 2008, but then reverts to the 2006 level by 2014. This suggests that at times of economic crisis the difference in the indicators of health and wellbeing between employed and unemployed shrinks.

*Figure 13 Bad Health, Unhappy and Life dissatisfaction unemployed/employed ratio by year*




*Source: Own calculations based on ESS. Pooled weighted data: years 2006-2014, all countries. EXCEPT sample.*

## 2.3.4 The health-employment relationship by country

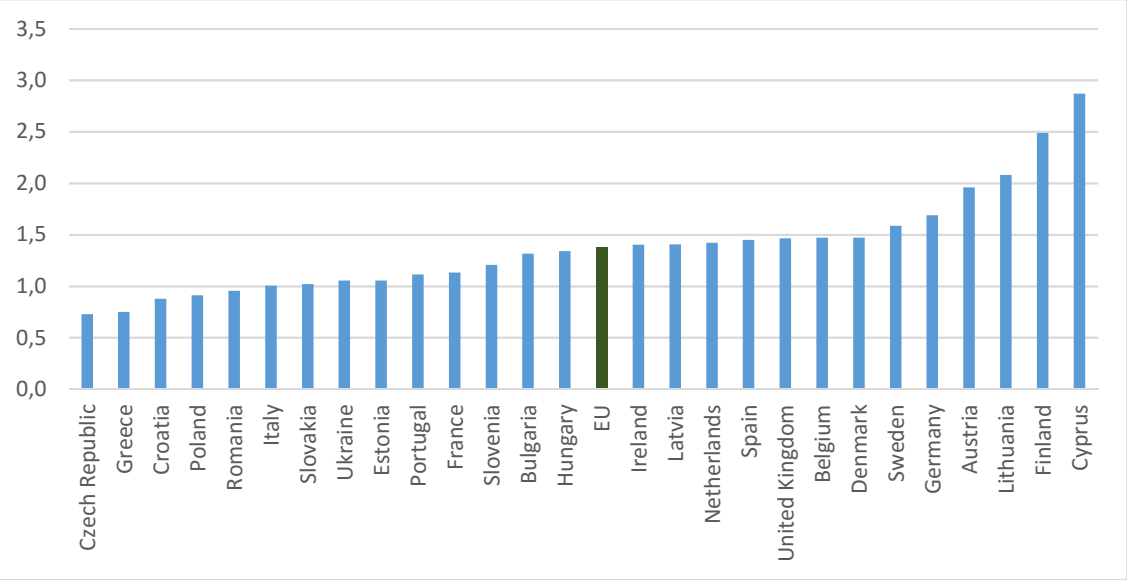
We next explore the relationship between health/ wellbeing and employment status by country. We focus on two different labour market outcomes: employment status (employed vs. unemployed) and type of contract (permanent vs. temporary contract).

**Employed vs. unemployed**

Figure 14 shows the ratio of the proportion reporting bad health among the unemployed, to that among the employed, by country. A ratio above 1 indicates worse health status among the unemployed compared to the employed and vice versa.

Looking at the EU average, we see that it lies above 1, suggesting that in most countries health status is worse among the unemployed. The gap between employed and unemployed is largest for Cyprus, Finland and Lithuania and smaller for countries like Italy, Slovakia and Ukraine. There are a few countries such as the Czech Republic, Greece, Croatia and Poland where this gap is reversed; i.e. we observe that on average the unemployed report a better health status than the employed. However, for these countries these differences were not found to be statistically significant.

*Figure 14 Bad health: unemployed/employed ratio by country*



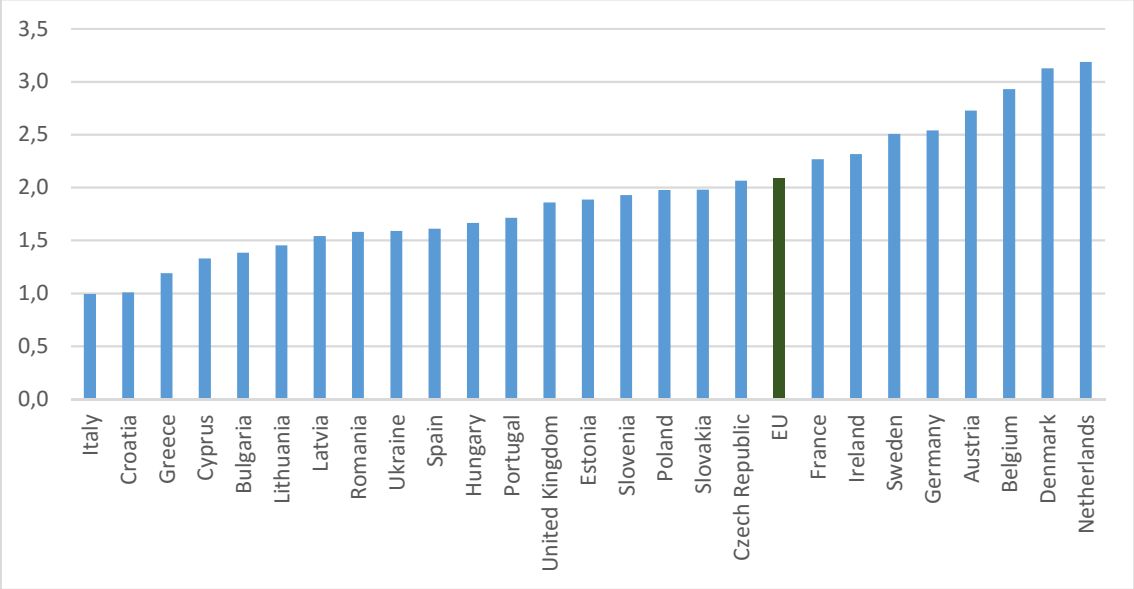

*Source: Own calculations based on ESS. Pooled weighted data: years 2006-2014. EXCEPT sample.*

*Note: The ratio is not statistically different from one for the following countries: Czech Republic, Greece, Hungary, Ireland, Italy, Croatia, Poland, Portugal, Romania, Spain, Slovakia and Latvia*

The difference between the unemployed and the employed is largest when we look at the happiness indicator. Figure 15 presents the ratio analysis by country in terms of happiness. We see that the EU average is above 2.09, suggesting that in most countries the unemployed report lower happiness levels than the employed and that this difference is large. The largest gap in happiness levels between the two groups is observed in the Netherlands, Denmark, Belgium and Austria while the gap is small in countries like Croatia, Greece, Italy and Cyprus but not statistically significant for these countries.

Figure 16 presents the same analysis for the life satisfaction variable. As with the previous indicators we see that across most countries the unemployed report on average higher dissatisfaction with life compared to the employed. This gap in life satisfaction levels between the two groups seems to be large as the EU average ratio is 2.11. Countries with the largest ratios include Spain, Denmark and Croatia which have a substantially higher gap compared to others. Countries with the smallest differences in life satisfaction scores include Romania, Ireland, France and Portugal but these differences are not statistically significant for Portugal and Romania

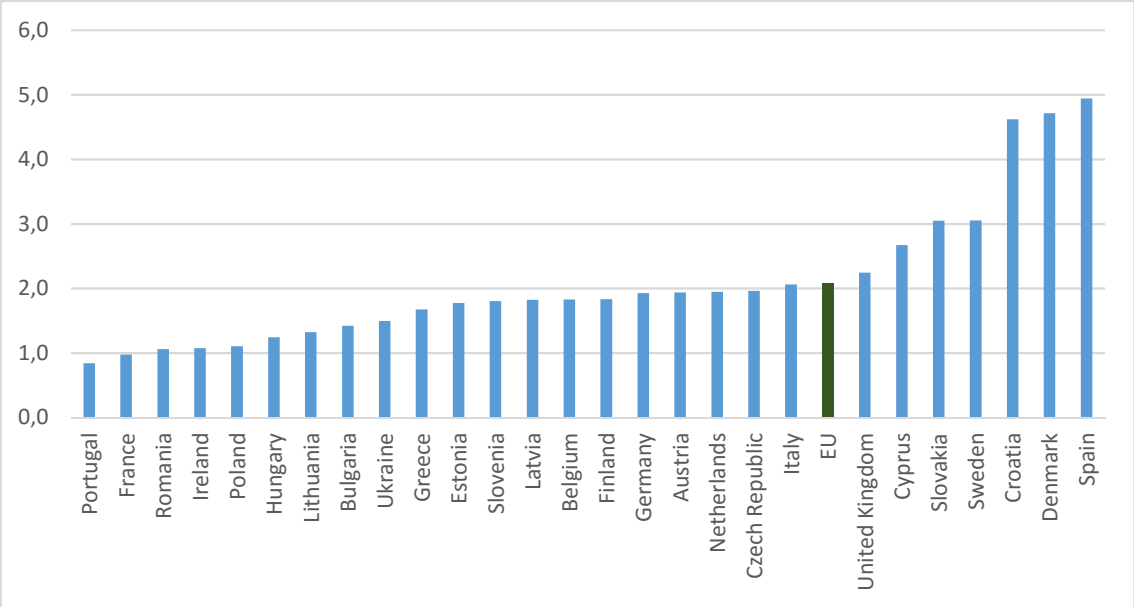
*Figure 15 Unhappy: unemployed/employed ratio by country*




*Source: Own calculations based on ESS. Pooled weighted data: years 2006-2014. EXCEPT sample.*

*Note: The ratio is not statistically significant from one for the following countries: Croatia, Cyprus, Greece, Italy and Romania*

*Figure 16 Life dissatisfaction: unemployed/employed ratio by country*




*Source: Own calculations based on ESS. Pooled weighted data: years 2006-2014. EXCEPT sample.*

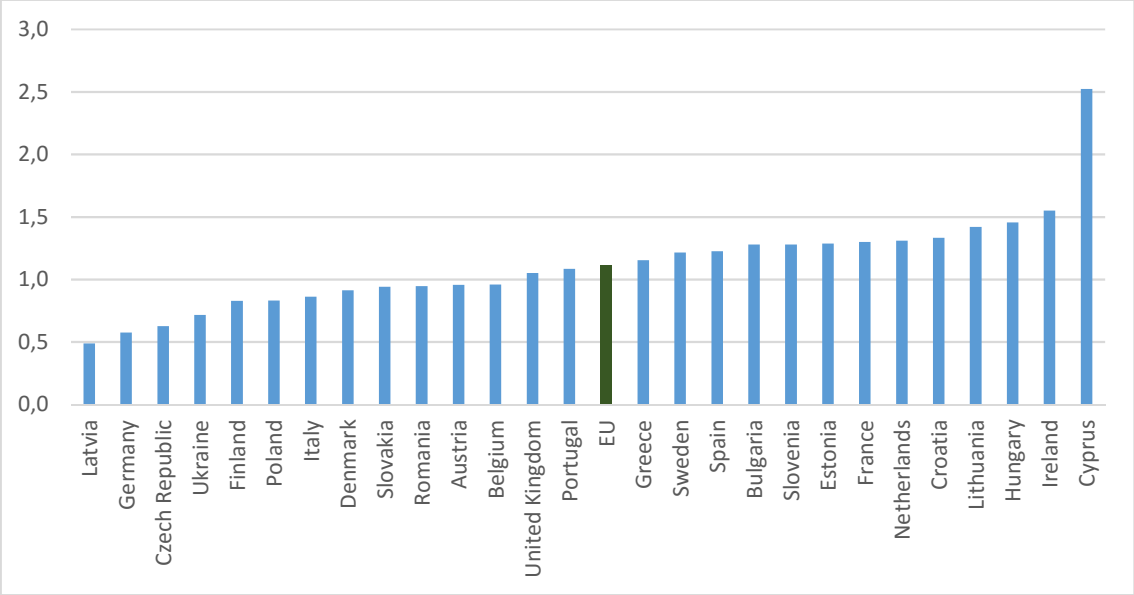
*Note: The ratio is not statistically significant from one for the following countries: Italy, Lithuania, Portugal and Romania*

**Permanent vs. temporary employment**

We next explore the distribution of health and wellbeing by country depending on the type of contract. We analyse differences in health, happiness and life satisfaction between those working under a temporary contract and those under a permanent contract. As with the previous analysis, a ratio above 1 suggests that health and wellbeing are worse among the workers with temporary contracts compared to those with permanent ones.

Figure 17 presents the graph of ratios by country for physical health status. The EU average is 1.12, suggesting that health is worse among temporary compared to permanent workers. The extent of the health gap between temporary and permanent workers varies, while for quite a few countries this gap is reversed, suggesting that health status is better among temporary workers compared to permanent workers. The largest difference is observed in countries like Cyprus, Ireland, Hungary and Lithuania while in countries such as Latvia, Germany, Ukraine, Finland and Belgium the ratio falls below 1. However, for a big group of countries both that with larger differences and that of smaller differences the differences are not statistically significant. Neither is the EU average suggesting that the differences in terms of health between temporary and permanent workers may not be that strong.

*Figure 17 Bad health: temporary/permanent ratio by country*




*Source: Own calculations based on ESS. Pooled weighted data: years 2006-2014. EXCEPT sample.*

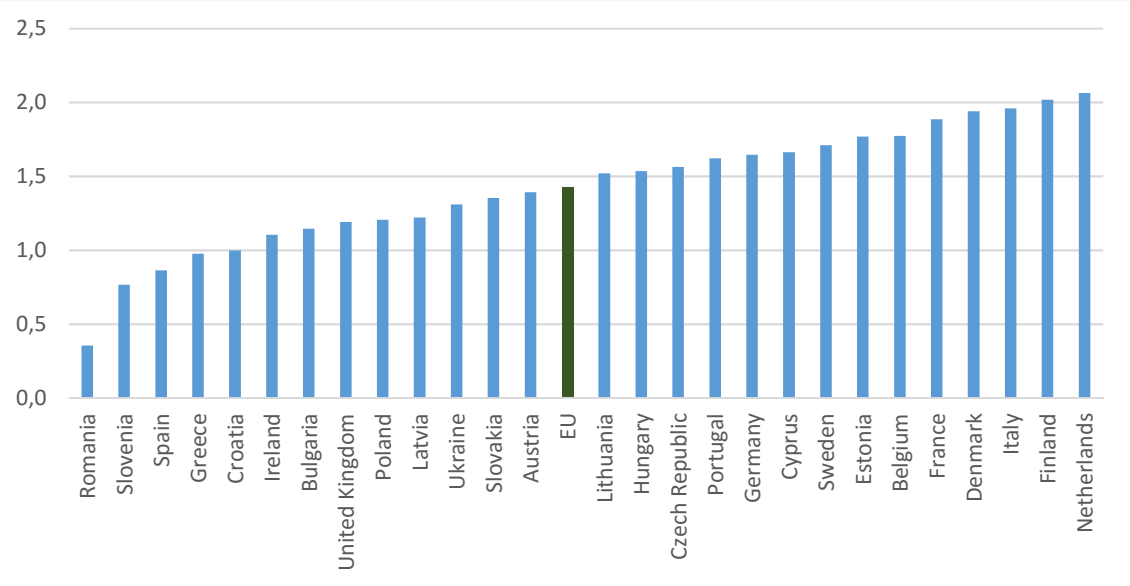
*Note: The ratio is not statistically significant from one for the following countries: Belgium, Bulgaria, Cyprus, Denmark, Estonia, Spain, Finland, France, Greece, Hungary, Italy, Lithuania, Latvia, the Netherlands, Poland, Portugal, Romania, Sweden, Slovenia and Ukraine,*

Figure 18 presents the ratio of unhappiness between temporary and permanent workers. The EU average ratio is 1.43, higher than that for health status and is statistically significant. Romania, Slovenia and Spain have a ratio below one, Greece

marginally below 1 and Croatia 1. In those countries therefore temporary workers report higher happiness levels than permanent workers. However, with the exception of Romania these differences are not statistically significant. In the remaining countries, where the opposite holds, we observe a variation in the extent of the happiness gap. The Netherlands, Finland and Italy have the largest difference in happiness whilst Ireland, Bulgaria and the UK have the smallest but not statistically significant difference between temporary and permanent workers.

Figure 19 shows the ratios of life dissatisfaction between temporary and permanent workers by country. The EU average ratio is 1.36 and statistically significant, suggesting that in most countries life dissatisfaction is higher among temporary workers although there is a variation in the magnitude of this difference. In some countries this difference is reversed with temporary workers reporting lower levels of dissatisfaction compared to permanent workers. The countries where the ratio lies below 1 are Romania, Greece, Ukraine and Ireland but this difference is not statistically significant for these countries. In terms of the remaining countries, Belgium, Finland and Sweden show the largest gap in life dissatisfaction between temporary and permanent workers.

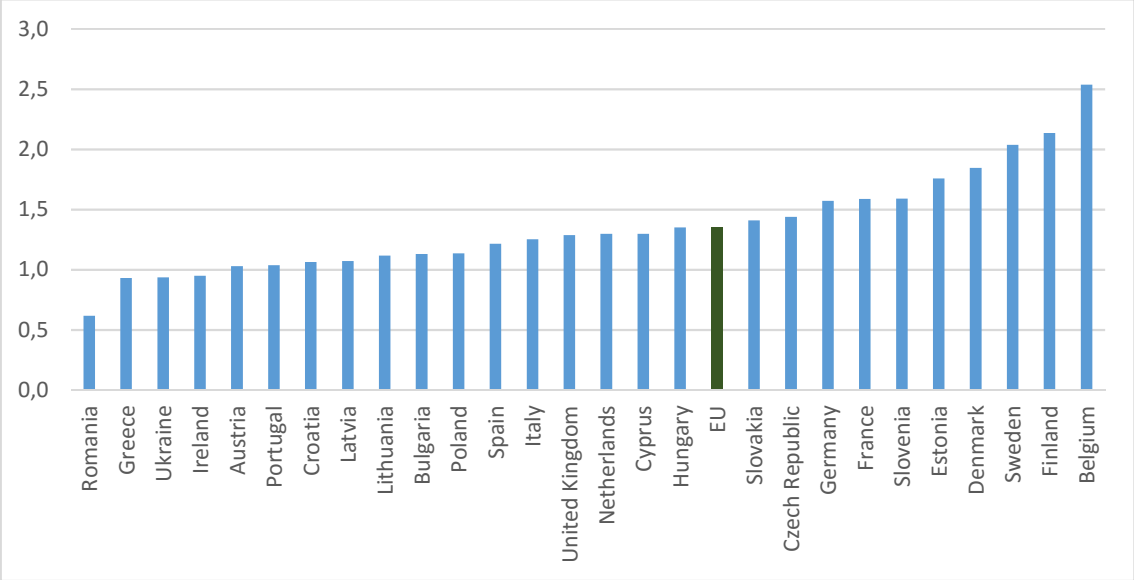
*Figure 18 Unhappy: temporary/permanent ratio by country*




*Source: Own calculations based on ESS. Pooled weighted data: years 2006-2014. EXCEPT sample.*

*Note: The ratio is not statistically significant from one for the following countries: Bulgaria, Cyprus, Spain, UK, Greece, Croatia, Ireland, Italy, Lithuania, Latvia, Poland, Slovenia and Slovakia.*

*Figure 19 Life dissatisfaction: temporary/permanent ratio by country*




*Source: Own calculations based on ESS. Pooled weighted data: years 2006-2014. EXCEPT sample.*

*Note: The ratio is not statistically significant from one for the following countries: Austria, Cyprus, Spain, UK, Greece, Croatia, Ireland, Italy, Latvia, the Netherlands, Poland, Portugal, Romania and Ukraine.*

## 2.3.5 Financial crisis

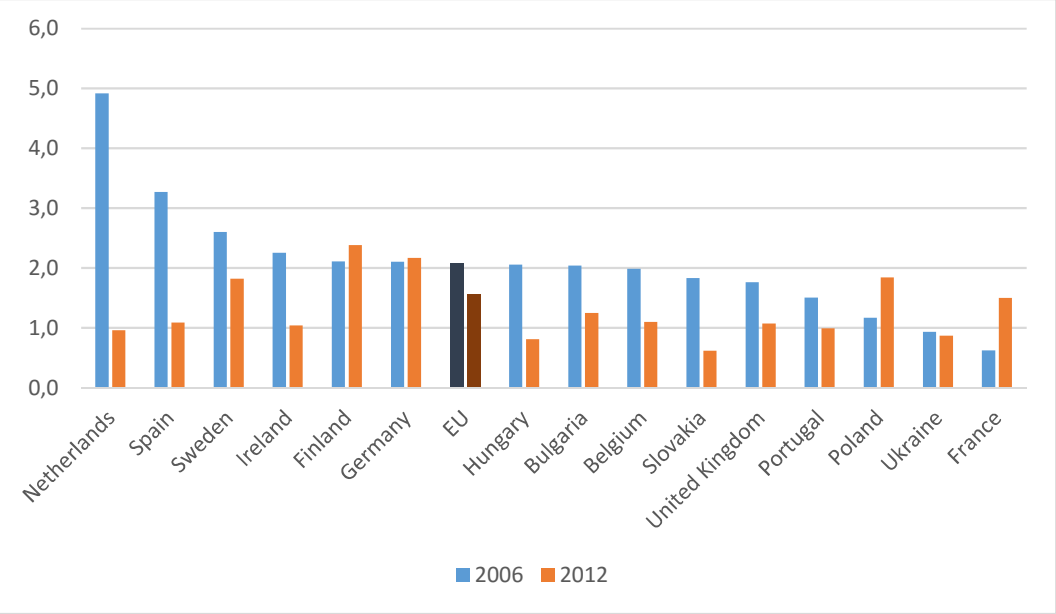
The outbreak of the financial crisis which began in 2008 in the US, had led to a global recession that has had a significant impact, particularly in Europe, with dropping economic activity and rising unemployment (Scarpetta et al. 2010). The global economic crisis has been a major event that is expected to also have an impact on health and wellbeing. The coverage in the ESS data of the years both before and after the financial crisis allows us to exploring the effect of the financial crisis on the health-employment nexus. Although the descriptive analysis does not allow us making any causal arguments about this relationship, we can still explore differences before and after the financial crisis. In the following analysis we focus on 2006 as the year before the financial crisis and 2012 as the year immediately after. We investigate the relationship between the employment status and different health and wellbeing measures by country. The analysis is restricted by the number of countries for which we have information for both years. This leaves us with a subsample of countries including Belgium, Bulgaria, Germany, Finland, France, Ireland, the Netherlands, Spain, Sweden, Slovakia, Portugal, Poland, Ukraine and the UK. We also look at the average EU taking the average of these countries.

## Employed vs unemployed – Analysis before and after the financial crisis

### Health

A subset of countries provides enough information to allow analysis of health and wellbeing before and after the crisis[4]. By examining the years 2006 and 2012, we can see changes which occurred. As before, Figure 20 shows the ratio of bad health between unemployed and employed using 2006 levels to rank the order of countries. The EU average drops from 2.08 in 2006 to 1.56 in 2012, suggesting a smaller gap between the health of employed and unemployed after the financial crisis. Unemployed individuals still considered their health to be bad more often than those that were employed, but the gap has become smaller. The pattern can be seen in most of the countries evaluated with the notable exception of Poland and France, where the ratio changed from 1.17 to 1.84 and 0.62 to 1.5 respectively.

*Figure 20 Bad Health: unemployed/employed ratio by country before and after the crisis*



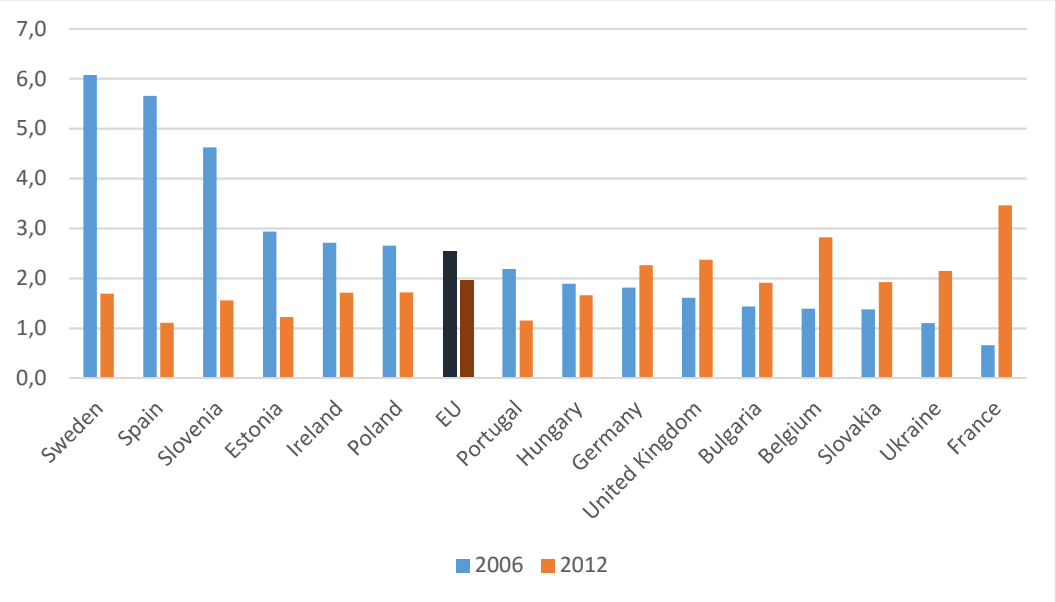

*Source: Own calculations based on ESS. Years 2006 and 2012. EXCEPT sample.*

### Happiness

Figure 21 shows a similar change in happiness levels for a smaller sample of countries. Sweden, Spain and Slovenia show a large reduction in the gap between happiness of unemployed over employed and this pattern is repeated for some countries but not all. The EU average ratio dropped from 2.52 to 1.96. France and Belgium, are the most noticeable exceptions where the gap increased, from 0.66 to 3.46, and from 1.39 to 2.82, respectively.

[4]It is not possible to carry out statistically significant tests for this smaller sample. Unfortunately, by limiting the sample per country, per year and using a combination of two binary variables, the sample size does not provide enough power for reliable tests of differences in means by country.

*Figure 21 Unhappy: unemployed/employed ratio by country before and after the crisis*

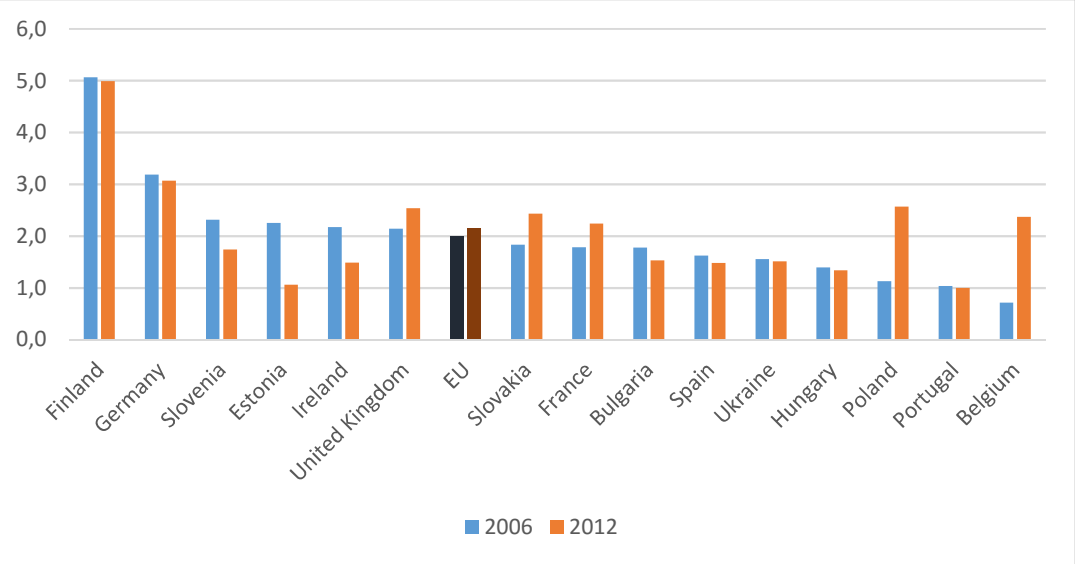



*Source: Own calculations based on ESS. Years 2006 and 2012. EXCEPT sample.*

### Life satisfaction

The analysis of life dissatisfaction shows a more ambiguous pattern. Overall, the change in the gap between the groups of unemployed and employed individuals was mixed, ranging from almost no changes to large reductions/increases. Figure 22 shows that the EU's average ratio was 2.00 in 2006 and 2.15 in 2012. This average was greatly influenced by Finland which had a ratio of 5.07 and kept almost the same in 2012.

*Figure 22 Life dissatisfaction: unemployed/employed ratio by country before and after the crisis*



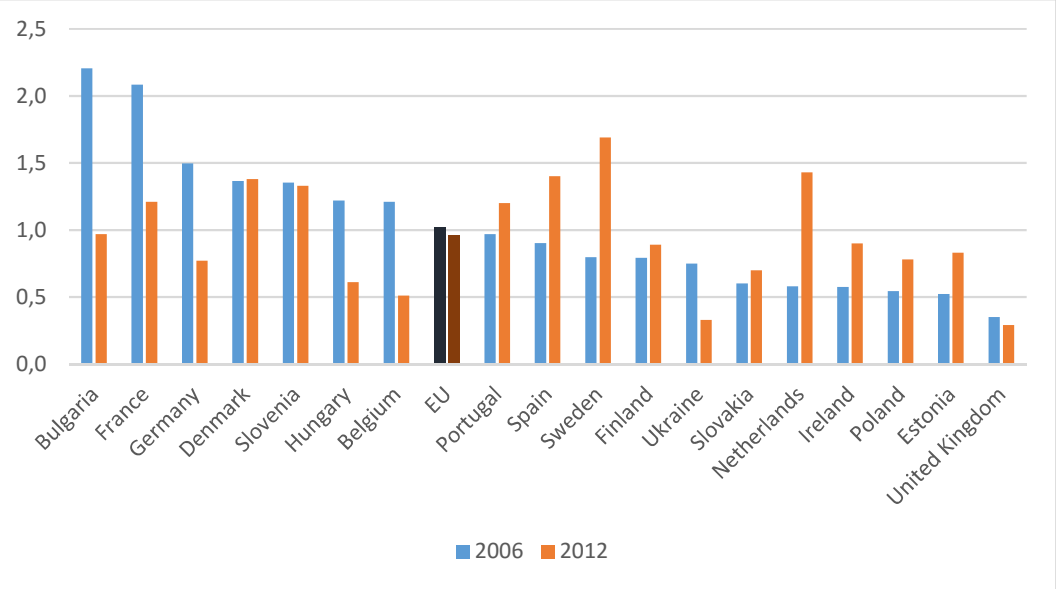

*Source: Own calculations based on ESS. Years 2006 and 2012. EXCEPT sample.*

## Permanent vs temporary contract – Analysis before and after the financial crisis

### Health

The analysis shows a less distinct trend in the changes in health and wellbeing of individuals with permanent versus temporary contracts before and after the crisis (Figure 23). While some countries like Bulgaria, France and Belgium almost halved their ratios between 2006 and 2012, others such as Sweden and Netherlands went in the opposite direction Here, the ratio of the proportion of bad health between workers with different types of contracts increased after the crisis. The EU average ratio declined from 1.02 in 2006 to 0.96 in 2012.

*Figure 23 Bad health: temporary/permanent ratio by country before and after the crisis*

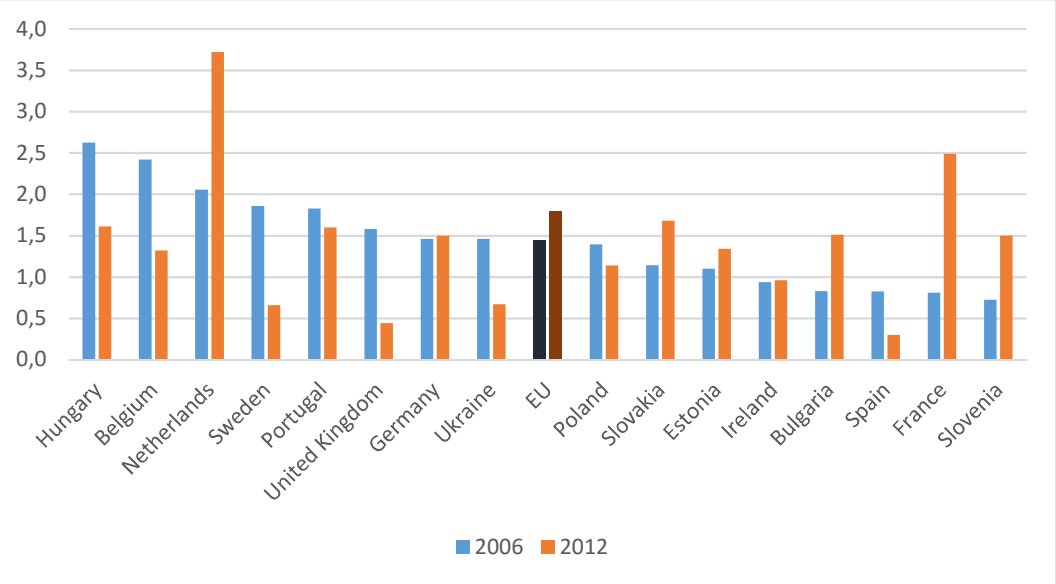



*Source: Own calculations based on ESS. Years 2006 and 2012. EXCEPT sample.*

### Happiness

Figure 24 shows a change which is somewhat different to the one found when evaluating differences between employed and unemployed. The EU's average ratio in 2006 is 1.44 and in 2012 it increases to 1.79. Hungary, Belgium, Sweden and the United Kingdom have the largest fall in their ratios after the crisis, whilst France experiences the opposite - an increase in ratio from 0.81 to 2.49 - showing that workers with temporary contracts report higher levels of happiness before the crisis in comparison to workers in permanent jobs; while after the crisis the situation reverses. The same pattern is observed in the Netherlands, with an increase in ratio from 2.06 to 3.72.

*Figure 24 Unhappy: temporary/permanent ratio by country before and after the crisis*

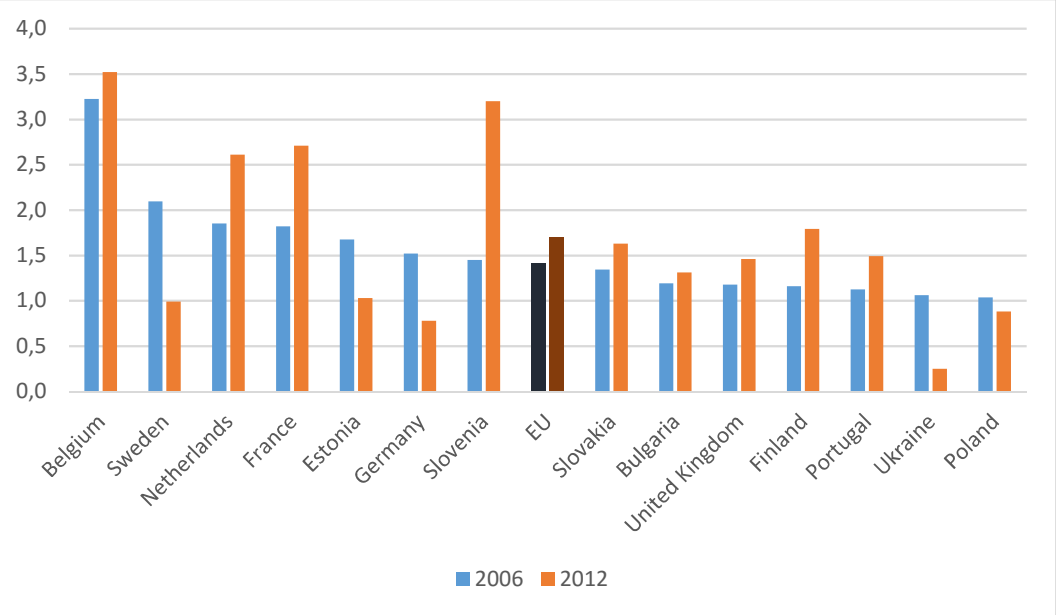



*Source: Own calculations based on ESS. Years 2006 and 2012. EXCEPT sample.*

### Life satisfaction

The crisis seems to have increased the gap between workers' life dissatisfaction (Figure 25). Those with temporary contracts continue to be less satisfied with life than workers with permanent jobs and the difference has become larger for the EU overall. The average ratio has increased from 1.40 to 1.70. The largest rise in differences is observed in Slovenia, where the ratio has more than doubled – from 1.45 to 3.2. In contrast, the gap in Sweden has shrunk (from 2.09 to 1.99).

*Figure 25 Life Dissatisfaction: temporary/permanent ratio by country before and after the crisis*




*Source: Own calculations based on ESS. Years 2006 and 2012. EXCEPT sample.*

# 3.Discussion and Conclusions

The analysis aimed to provide a descriptive overview of the health, wellbeing and labour market status, together with associations between the various health and labour market outcomes, for European youth. We have also investigated whether and how these relationships vary across different subgroups in our sample. For the purpose of this analysis we have used a cross-national dataset containing rich information on the variables of interest and covering a sufficiently large time period to allow longer-term analysis.

Overall we find that there are high levels of health and wellbeing on average among the European youth, of which approximately 14% are unemployed. When looking at gender differences, physical health is worse among women, while men report lower levels of happiness and life satisfaction compared to women. In terms of country differences, although there was no clear pattern emerging, countries such as Hungary, Ukraine and Bulgaria report the worst levels of happiness and life satisfaction followed by Romania, Ireland, Estonia, Lithuania, Slovakia, Greece, Latvia and Portugal. At the other end of the spectrum, Finland, the Netherlands, Denmark and Sweden report the highest levels of happiness and life satisfaction.

In terms of key relationships of interest, we find that health, happiness and life satisfaction are lower among the unemployed compared to the employed. A similar picture emerges with respect to long-term unemployment and insecure employment. Health and wellbeing are worse among those having experienced a long-term unemployment spell and among those in a precarious employment position. The unemployed-employed gap is particularly striking for happiness and life satisfaction. Working under a temporary job contract is also associated with worse health and wellbeing outcomes compared to having a permanent contract, although the gap is smaller compared to the other employment indicators.

Whilst the differences in health and wellbeing between employed and unemployed are qualitatively similar between men and women, (i.e., the unemployed among both women and men are worse off compared to their employed counterparts), they are different in magnitude. The gap between employed and unemployed is larger for men compared to women especially with regard to happiness and life satisfaction.

We also find variations in terms of differences between countries in the employment and health or wellbeing nexus. The key finding of worse health and wellbeing outcomes for unemployed compared to employed is observed in the majority of countries considered. However, there is some variation in how large this gap is. The largest difference between the employed and the unemployed is observed for the happiness and life satisfaction indicators for most countries. The largest gap in terms of happiness is observed in the Netherlands, Denmark, Belgium and Austria. The largest gap in life satisfaction is seen in Spain, Denmark and Croatia. The gap by country is smaller in terms of health status and among these Cyprus, Finland and Lithuania are the countries with the largest gap. In terms of temporary compared to permanent jobs,

there is a gap in health and wellbeing by country. Those in temporary employment report worse outcomes for the majority of the countries, although this difference is on average smaller compared to employment status and not statistically significant for the majority of the countries in the case of health. The largest difference between temporary and permanent workers in terms of happiness is found in Italy, Finland and the Netherlands and in terms of life satisfaction in Belgium, Finland and Sweden. Overall, there is no clear pattern in the data in terms of country differences. There is some variation in the magnitude of the health and well-being gap between different labour market outcomes across different countries, but no specific pattern.

Similarly, there is a mixed picture regarding the relationship between employment and health outcomes before and after the financial crisis. Overall the difference in health and happiness between unemployed and employed drops after the crisis while there is no big change in life satisfaction ratios. In terms of temporary employment, in some countries the difference reduces and in others increases after the financial crisis.

The descriptive evidence has provided an overview of the associations between labour market and health outcomes. Overall, we have found a negative association between adverse labour market conditions and health and wellbeing with some variation between men and women and across countries. In the following chapters, we will take a closer look at the cross-country variations observed in the raw data in the effects of unemployment and insecure jobs on health/wellbeing and explore different explanations for these findings. To this end, we investigate in more detail and by means of multi-level analysis potential moderating factors that may explain cross-country variations in the employment and health/wellbeing nexus.

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# 4. Appendix

In the main analysis we use data from one dataset -the ESS- for the sake of brevity and consistency. We have restricted the analysis to people aged between 15-29, not currently in education and having obtained their last educational qualification at least 5 years ago (EXCEPT sample). In this Appendix, we provide an overview of the two other cross-country datasets, the European Union Statistics on Income and Living Conditions (EU-SILC) and the European Quality of Life Survey (EQLS), which we also originally considered for the analysis. The EU-SILC and EQLS datasets contain a similar set of questions on subjective health status, happiness and life satisfaction. Happiness and life satisfaction in EQLS are however measured on a 10-point scale rather than the 11-point scale that is used in ESS.

As with the ESS EXCEPT data, for each of the above-mentioned datasets we present the EXCEPT sample composition and how it is broken down by different categories, as well as summary statistics for some key variables

## 4.1 EU-SILC EXCEPT sample

We looked at the data from 2006, 2008, 2010 and 2012 and the EU28 countries (excluding Ukraine). Unlike the ESS, the EU-SILC dataset has information on Malta and Luxembourg. The following table presents the sample breakdown by country and year. We see that as with the ESS dataset, some countries appear only in certain years and not all. Unfortunately, the EU-SILC data only contains health indicators to consider for our analysis.

*Table A1: Sample size by country and year EXCEPT sample (EU-SILC)*

| Country | 2006 | 2008 | 2010 | 2012 | Total |
|---|---|---|---|---|---|
| **Austria** | 671 | 655 | 668 | 587 | 2,581 |
| **Belgium** | 762 | 676 | 586 | 531 | 2,555 |
| **Bulgaria** | | 554 | 774 | 611 | 1,939 |
| **Cyprus** | 499 | 491 | 554 | 852 | 2,396 |
| **Czech Republic** | 781 | 1,049 | 805 | 710 | 3,345 |
| **Germany** | 1,053 | 908 | 933 | 926 | 3,820 |
| **Denmark** | 600 | 556 | 929 | 460 | 2,545 |
| **Estonia** | 971 | 764 | 751 | 730 | 3,216 |
| **Greece** | 593 | 707 | 651 | 478 | 2,429 |
| **Spain** | 132 | 146 | 1,155 | 976 | 2,409 |
| **Finland** | 1,283 | 1,167 | 1,147 | 1,097 | 4,694 |
| **France** | 1,007 | 1,142 | 1,155 | 1,438 | 4,742 |
| **Croatia** | | | 428 | 720 | 1,148 |
| **Hungary** | 801 | 927 | 975 | 1,075 | 3,778 |
| **Ireland** | 690 | 577 | 366 | 405 | 2,038 |
| **Italy** | 1,968 | 197 | 1,636 | 1,623 | 5,424 |
| **Lithuania** | 427 | 432 | 546 | 484 | 1,889 |
| **Luxembourg** | 497 | 413 | 495 | 573 | 1,978 |
| **Latvia** | 526 | 686 | 781 | 653 | 2,646 |

| | | | | | |
|---|---|---|---|---|---|
| **Malta** | | 517 | 540 | 568 | 1,625 |
| **Netherlands** | 837 | 936 | 967 | 1,093 | 3,833 |
| **Poland** | 2,305 | 1,963 | 1,787 | 1,862 | 7,917 |
| **Portugal** | 507 | 533 | 512 | 643 | 2,195 |
| **Romania** | | 663 | 575 | 535 | 1,773 |
| **Sweden** | 931 | 1,214 | 1,161 | 964 | 4,270 |
| **Slovenia** | 1,197 | 1,031 | 941 | 866 | 4,035 |
| **Slovakia** | 926 | 1,007 | 1,019 | 951 | 3,903 |
| **UK** | 1.141 | 851 | 718 | 1,017 | 3,727 |
| **Total** | 21,105 | 20,762 | 23,555 | 23,428 | 88,850 |

*Source: Own calculations based on EU-SILC. Weighted data. EXCEPT sample.*

We next look at the summary statistics for the key variables of the analysis by year. We see that the average age of this sample is smaller than in the ESS (approximately 23 as opposed to 26). Therefore, we could expect to see some differences in the main variables attributed perhaps to the different age distribution. EU-SILC only records information on health status and does not have data on happiness and life satisfaction for these years. Overall we see that in this sample people on average have a better health status, but this could be because on average they are younger in age. However, we see that there is a difference between employed and unemployed with unemployed reporting worse health.

*Table A2: Sample size by country and year EXCEPT sample (EU-SILC)*

| | **2006** | | | **2008** | | |
|---|---|---|---|---|---|---|
| **All** | **Mean** | **Std. dev** | **N** | **Mean** | **Std. dev** | **N** |
| **Age** | 23.16 | 3.17 | 22,293 | 23.15 | 3.19 | 23,849 |
| **Health** | 1.67 | 0.7 | 19,175 | 1.65 | 0.68 | 20,312 |
| **Unemployed** | 0.16 | 0.37 | 18,764 | 0.15 | 0.35 | 20,045 |
| **Employed** | | | | | | |
| **Age** | 23.73 | 3.01 | 15,699 | 23.76 | 3,01 | 17,117 |
| **Health** | 1.63 | 0.65 | 13,49 | 1.61 | 0.63 | 14,549 |
| **Unemployed** | | | | | | |
| **Age** | 22.15 | 2.92 | 3,065 | 21.93 | 2.94 | 2,928 |
| **Health** | 1.7 | 0.72 | 2,779 | 1.67 | 0.67 | 2,599 |
| | **2010** | | | **2012** | | |
| **All** | **Mean** | **Std. dev** | **N** | **Mean** | **Std. dev** | **N** |
| **Age** | 23.22 | 3.22 | 23,555 | 23.4 | 3.17 | 23,428 |
| **Health** | 1.63 | 0.67 | 19,351 | 1.62 | 0.68 | 19,275 |
| **Unemployed** | 0.23 | 0.42 | 19,289 | 0.24 | 0.43 | 19,617 |
| **Employed** | | | | | | |
| **Age** | 24.1 | 2.94 | 14,848 | 24.21 | 2.91 | 14,828 |
| **Health** | 1.59 | 0.62 | 12,353 | 1.58 | 0.62 | 12,28 |
| **Unemployed** | | | | | | |
| **Age** | 22.24 | 2.91 | 4,441 | 22.52 | 2.91 | 4,789 |
| **Health** | 1.66 | 0.68 | 3,726 | 1.65 | 0.69 | 3,995 |

*Source: Own calculations based on EU-SILC. Weighted data. EXCEPT sample.*

## 4.2 EQLS EXCEPT sample

The EQLS has data only for 2007 and 2011, but with all three indicators of interest. The following three tables present the sample breakdown by year and country.

*Table A3: Sample size by country and year EXCEPT sample (EQLS)*

| Country | 2007 | 2011 | Total |
|---|---|---|---|
| **Austria** | 143 | 100 | 243 |
| **Belgium** | 61 | 64 | 125 |
| **Bulgaria** | 72 | 50 | 122 |
| **Cyprus** | 75 | 59 | 134 |
| **Czech Republic** | 100 | 91 | 191 |
| **Germany** | 136 | 205 | 341 |
| **Denmark** | 36 | 32 | 68 |
| **Estonia** | 90 | 125 | 215 |
| **Austria** | 56 | 55 | 111 |
| **Finland** | 39 | 41 | 80 |
| **France** | 116 | 148 | 264 |
| **GB** | 108 | 173 | 281 |
| **Greece** | 90 | 72 | 162 |
| **Croatia** | 57 | 60 | 117 |
| **Hungary** | 76 | 68 | 144 |
| **Ireland** | 113 | 79 | 192 |
| **Italy** | 112 | 92 | 204 |
| **Lithuania** | 80 | 39 | 119 |
| **Latvia** | 86 | 71 | 157 |
| **Netherlands** | 33 | 49 | 82 |
| **Poland** | 103 | 165 | 268 |
| **Portugal** | 89 | 70 | 159 |
| **Romania** | 67 | 77 | 144 |
| **Slovakia** | 65 | 62 | 127 |
| **Slovenia** | 76 | 75 | 151 |
| **Sweden** | 37 | 50 | 87 |
| **Total** | 2,116 | 2,172 | 4,288 |

*Source: Own calculations based on EQLS. Weighted data. EXCEPT sample.*

Due to the small sample sizes by country-wave, we provide the summary statistics of the key variables for the pooled sample. The following tables present the descriptives for the EXCEPT sample overall and the split between employed and unemployed. We see that the age distribution is closer to the one from the ESS dataset with the average age being around 26. In this sample average health and wellbeing are higher than in the ESS, although this could be also due to the different scaling used for these variables in the EQLS. In addition, the percentage of unemployed is higher in the EQLS. When looking at mean differences between employed and unemployed we see that as in the ESS the average age and the average health and wellbeing indicators are higher than the mean values in the unemployed sample.

*Table A4: Summary statistics of key variables EXCEPT sample (EQLS)*

| | Total | | Employed | | Unemployed | |
|---|---|---|---|---|---|---|
| | N = 2172 | | N = 1771 | | N = 401 | |
| | Mean | Std. Dev. | Mean | Std. Dev. | Mean | Std. Dev. |
| Age | 26.281 | 2.112598 | 26.40489 | 2.035779 | 25.78786 | 2.332374 |
| Health | 1.787016 | 0.7930303 | 1.771419 | 0.7820749 | 1.849163 | 0.8333622 |
| Happiness | 7.619894 | 1.765842 | 7.783719 | 1.673151 | 6.964033 | 1.966116 |
| Life satisfaction | 7.137041 | 2.121727 | 7.432741 | 1.926214 | 5.941306 | 2.43548 |
| Unemployed | 0.2007762 | 0.4006732 | | | | |

Overall, we observe that our outcome variables as measured in ESS are an accurate representation of health and wellbeing in Europe and are not influenced by the ESS sample in some way compared to other samples. Despite there being some differences in the mean values, these differences are rather small and could be potentially explained by differences in time points, mix of countries, sample sizes, scaling of variables and age distributions. For example, the EU-SILC population is slightly younger, while in the EQLS population the proportion of unemployed is slightly larger. In addition, the EQLS records happiness and life satisfaction in a different scale, while all three datasets include data from different years. However, the patterns emerging from the EU-SILC and EQLS data resemble the patterns observed in the ESS data: the largest proportion of young Europeans report high levels of health and wellbeing and the employed are on average better off compared to the unemployed in terms of health and wellbeing. Therefore, we expect that our use of the ESS data does not misrepresent the associations between labour market and health outcomes.

# Chapter 3

# The effects of unemployment and insecure jobs on well-being and health for European youth: the moderating role of the country's economic situation and the global financial crisis

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## 1. Introduction

The global financial crisis originating in the US in 2008 is considered to be the most significant in terms of societal impact after the 'Great Depression' in 1929 (Rollero and Tartaglia, 2009) and is often referred to as the 'Great Recession'. In this context, Europeans, and particularly young Europeans, have been facing a threatening work situation since unemployment rates and the incidence of precarious work have increased substantially (Chung, Bekker and Houwing, 2012). There is systematic empirical evidence showing that unemployment and job insecurity have detrimental effects for individuals' well-being and health (see Voßemer and Eunicke 2015 for a review focusing on youth; for reviews on the general population see, Cheng and Chan, 2008; De Witte, 2005; Sverke, Hellgren, and Näswall, 2002; for a meta-analysis, McKee-Ryan, Song, Wanberg, and Kinicki, 2005). Although it is arguable that the

[5] This chapter uses the following integrated data files: ESS Round 1: Edition 6.4, ESS Round 2: Edition 3.4, ESS Round 3: Edition 3.5, ESS Round 4: Edition 4.3, ESS Round 5: Edition 3.2, ESS Round 6: Edition 2.2., ESS Round 7: Edition 1. The data are provided by the NSD - Norwegian Centre for Research Data, Norway - Data Archive and distributor of ESS data for ESS Eric.

strength of these individual-level effects may vary across poorer and richer countries or across countries that have been severely affected and countries that have not been affected much by the financial crisis, few studies have looked into potential cross-country differences and the role of macro-level moderators in understanding the relationship between employment and well-being (e.g., Eichhorn 2009; Wulfgramm, 2014). Importantly, most of these studies have focused on the role of labor market policies but did not account for the role of the financial crisis for young Europeans. Therefore, in this chapter we investigate the moderating role of two macro-level factors, the economic situation of a country and the degree to which a country has been affected by the global financial crisis, in order to answer the following research questions:

> Does the effect of unemployment and insecure jobs on the well-being (i.e., overall life (dis)satisfaction and (un)happiness) and health of young Europeans varies depending on the economic situation of their country?
>
> Does the effect of unemployment and insecure jobs on the well-being and health of young Europeans varies depending on whether or not a country has been severely affected by the global financial crisis?

We address these questions by using micro data for the period from 2002 to 2014 of the European Social Survey (ESS). Macro data on countries' economic situation (i.e., unemployment rate and GDP levels/growth) and the impact of the global financial crisis have been assembled from various sources. Methodologically, we apply multilevel analyses with three levels: individuals (i.e., level 1) nested in years (i.e., level 2) nested in countries (i.e., level. We use several different measures of macro variables: contemporaneous country level unemployment rate and GDP per capita as measures of current economic situation, year on year and 5-year growth rates of the same variables which reflect the dynamics of the country's economic situation, and we use dummy variable which indicate the countries severely hit by the crisis to compare the dynamics of the individual unemployment (insecure job) effect on health and wellbeing in these countries to the rest before and after the crisis.

# 2. Theory and hypotheses

Conservation of Resources (COR) theory (Hobfoll, 1989) offers an overarching framework to understand the moderating role of macro-level factors such as the economic situation and the impact of the financial crisis on the relationship between unemployment and job insecurity on young Europeans' well-being and health. COR theory posits that individuals strive to preserve and protect their resources and to acquire additional resources in order to adapt successfully to their environment. These resources are important not only for their instrumental value, but also for their value in helping individuals to cope with stress, prevent health impairments, and feel better.

A central assumption of COR theory (Hobfoll, 1989; 2002) is that the availability of resources buffers the negative consequences of threatening or demanding conditions that individuals face. Considering that resources can be found at different levels of analysis (e.g., the individual-level or the societal-level), the economic situation of the country can be operationalized as a resource at the country-level of analysis. In countries that flourish financially (i.e., are characterized by low unemployment rates and high levels of/ grown in GDP), individuals are expected to have access to an adequate pool of resources. In contrast, in countries that decline financially (i.e., the unemployment rate increases and the GDP is low or decreases), there are more people who would require support from a limited pool of resources. A larger pool of unemployed corresponds to a larger unemployment risk and lower probability of finding a job, which raises demands for social protection (Stovicek and Turrini, 2012).

Furthermore, according to COR theory (Hobfoll, 1989; 2002), individuals experience stress and impairments in well-being when their resources are lost or threatened, because they are not in a position to invest resources to deal with the threatening environmental conditions. In this context, the global economic crisis can be operationalized as a proxy of resource loss at the macro (country)-level of analysis. Countries that have been affected severely by the crisis have not only lost financial resources (e.g., decreases in income) but also social resources (e.g., decreases in social benefits, conditions or job opportunities). Thus, the pool of available resources to act upon the negative effect of unemployment on well-being is scarce, as compared to countries, where the effect of the crisis has not been severe. For instance, in Greece, the impact of the financial crisis enhanced the need for social protection, finding the Greek state unable to meet this challenge since cuts in social spending and reforms in social programs have been introduced in the meantime (Matsaganis, 2012). In line with the main tenets of COR theory, it is proposed that people, who have to deal with unemployment or job insecurity in countries that are affected heavily by the crisis, are more likely to experience impaired health and well-being as compared to those working in permanent job positions, because there are fewer resources (e.g., opportunities, implemented policies, formal supportive structures, etc.) to deal with these threatening conditions successfully. On the basis of the above theoretical argumentation, we formulate the following hypotheses:

**Hypothesis 1:** The relationship between unemployment/ job insecurity and health/well-being is more negative in countries that are economically worse off in comparison to others.

**Hypothesis 2:** The relationship between unemployment/ job insecurity and health/well-being is more negative in countries that are economically on the downturn paths (decreasing GDP, increasing unemployment) than in those which are on the path of recovery (increasing GDP/ decreasing unemployment).

**Hypothesis 3:** The relationship between unemployment/ job insecurity and health/well-being is more negative in countries that have been affected severely (vs. mildly) by the global financial crisis, starting from year 2008.

# 3. Data and methods

## 3.1 Micro data

The study employed the data from the European Social Survey (ESS). The ESS is carried out every 2 years examining a range of issues, such as employment, income, education, housing, family, health, work-life balance, life satisfaction and other attitudes and behaviour patterns. The study hypotheses were tested with the data from all available waves (i.e., 2002-2014). The ESS provides information for 36 European countries, excluding various counties in different years, with 29 countries used in present analysis. For the purpose of the current analysis, we restricted the sample to youth aged 15 to 29 years. Table 1 provides descriptive statistics for the macro-level variables for each of the country in the analysis sample.

## 3.2 Micro-level variables

Employment Status was measured by means of self-reports. We used a categorical variable distinguishing between those employed (0) and those unemployed (1).

Job Insecurity was measured with one item asking participants about their job contract type, more specifically people were asked whether their job was permanent or temporary. Temporary contract workers were considered as having an insecure job.

Subjective General Health was measured with one item asking participants to rate their general health by using a 5-point scale ranging from (1) = very good to (5) = very bad. Thus, high scores are indicative of poor health.

Unhappiness was measured by reversing participants' responses on a one-item happiness scale (i.e., 'how happy they would say they are, taking all things together?'). Participants rated this item on a 10-point scale ranging from (1) = very unhappy to (10) = very happy. After reversing responses, high scores indicate low levels of happiness.

Dissatisfaction with Life was measured by reversing participants' responses to a one-item, overall life satisfaction scale (i.e., 'how satisfied are currently with their life, in general?'). Participants rated this item on a 10-point scale ranging from (1) = very dissatisfied to (10) = very satisfied. After reversing responses, high scores are indicative of low levels of satisfaction.

Control Variables. In all analyses we controlled for participants' age (in years) and age squared, whether the person is female, with secondary or tertiary education, and usual marital status indicators. Furthermore, in all three-levels analyses (where yearly

*Table 1. Mean values of the macroeconomic variables for 2002, 2008, 2014*

| | 2002 | 2008 | 2014 | 2002 | 2008 | 2014 | 2002 | 2008 | 2014 | 2002 | 2008 | 2014 | 2002 | 2008 | 2014 | 2002 | 2008 | 2014 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | GDP pc PPP | | | GDP yoy growth rate | | GDP 5-year growth rate | | | Unempl Rate | | | Unempl Rate yoy growth rate | | | Unemployment Rate 5-year growth rate | | | Crisis in 2008 |
| AUT | 39446 | . | 43872 | 0.01 | . | 0 | 0.13 | . | 0.04 | 4 | . | 5 | 0.11 | . | 0.02 | -0.05 | . | 0.04 | 0 |
| BEL | 37564 | 41260 | 40778 | 0.01 | 0 | 0.01 | 0.11 | 0.09 | 0.02 | 7.5 | 7 | 8.5 | 0.21 | -0.07 | 0.01 | -0.17 | -0.15 | 0.08 | 0 |
| CZE | 22126 | 29128 | 28675 | 0.02 | 0.02 | 0.02 | 0.12 | 0.27 | 0.04 | 7.3 | 4.4 | 6.2 | -0.1 | -0.17 | -0.11 | 0.52 | -0.44 | -0.07 | 1 |
| DEU | 37480 | 41229 | 43552 | 0 | 0.01 | 0.03 | 0.08 | 0.11 | 0.12 | 8.6 | 7.5 | 5 | 0.1 | -0.13 | -0.06 | -0.12 | -0.19 | -0.35 | 0 |
| DNK | 41947 | 45017 | 43157 | 0 | -0.01 | 0.01 | 0.09 | 0.07 | 0.02 | 4.6 | 3.4 | 6.6 | 0.1 | -0.11 | -0.06 | -0.15 | -0.37 | 0.1 | 0 |
| ESP | 31848 | 34657 | . | 0.01 | 0 | . | 0.17 | 0.07 | . | 11.6 | 11.5 | . | 0.08 | 0.37 | . | -0.45 | 0 | . | 1 |
| FIN | 35834 | 42122 | 38577 | 0.01 | 0 | -0.01 | 0.2 | 0.16 | 0 | 9 | 6.3 | 8.6 | -0.01 | -0.07 | 0.05 | -0.29 | -0.3 | 0.05 | 0 |
| FRA | 35332 | 37502 | 37053 | 0 | 0 | -0.01 | 0.11 | 0.06 | 0.02 | 8.7 | 7.4 | 9.9 | 0.01 | -0.07 | -0.05 | -0.31 | -0.14 | 0.09 | 0 |
| GBR | 34370 | 37751 | . | 0.02 | -0.01 | . | 0.14 | 0.07 | . | 5.2 | 5.4 | . | 0.08 | 0 | . | -0.28 | 0.1 | . | 0 |
| GRC | 27137 | 32473 | . | 0.04 | -0.01 | . | 0.18 | 0.13 | . | 10.3 | 7.7 | . | 0.01 | -0.07 | . | 0.07 | -0.21 | . | 1 |
| HUN | 19376 | 23440 | . | 0.05 | 0.01 | . | 0.23 | 0.16 | . | 5.8 | 7.8 | . | 0.02 | 0.05 | . | -0.33 | 0.32 | . | 1 |
| IRL | 43224 | 47908 | 48384 | 0.04 | -0.04 | 0.05 | 0.39 | 0.08 | 0.08 | 4.2 | 6 | 11.6 | 0.14 | 0.3 | -0.11 | -0.59 | 0.33 | -0.03 | 1 |
| ITA | 36712 | . | . | 0 | . | . | 0.09 | . | . | 9.2 | . | . | -0.04 | . | . | -0.23 | . | . | 1 |
| LUX | 83565 | . | . | 0.03 | . | . | 0.25 | . | . | 2.6 | . | . | 0.44 | . | . | 0.04 | . | . | 0 |
| NLD | 42356 | 47463 | 45662 | -0.01 | 0.01 | 0.01 | 0.13 | 0.12 | 0 | 2.6 | 2.8 | 6.9 | 0.24 | -0.13 | 0.03 | -0.53 | -0.22 | 1.03 | 0 |
| NOR | 60152 | 65216 | 64161 | 0.01 | -0.01 | 0.01 | 0.09 | 0.08 | 0.01 | 3.9 | 2.6 | 3.4 | 0.15 | 0.04 | -0.03 | 0 | -0.41 | 0.06 | 0 |
| POL | 15041 | 20117 | 23954 | 0.01 | 0.04 | 0.03 | 0.19 | 0.29 | 0.16 | 19.9 | 7.1 | 9.2 | 0.09 | -0.26 | -0.12 | 0.78 | -0.64 | 0.12 | 1 |
| PRT | 26526 | 27747 | . | 0 | 0 | . | 0.13 | 0.06 | . | 5 | 7.6 | . | 0.25 | -0.05 | . | -0.21 | 0.21 | . | 1 |
| SVN | 23978 | 30823 | 28156 | 0.04 | 0.03 | 0.03 | 0.21 | 0.25 | 0 | 6.3 | 4.4 | 9.5 | 0.11 | -0.08 | -0.07 | -0.05 | -0.34 | 0.61 | 1 |
| SWE | 37941 | 43421 | 43976 | 0.02 | -0.01 | 0.01 | 0.17 | 0.12 | 0.08 | 5.3 | 6.3 | 8 | 0.04 | 0.02 | -0.01 | -0.48 | 0.07 | -0.05 | 0 |
| EST | . | 25300 | 26594 | . | -0.05 | 0.03 | . | 0.34 | 0.23 | . | 5.5 | 7.7 | . | 0.17 | -0.1 | . | -0.49 | -0.44 | 0 |
| ISL | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 |
| SVK | . | 24729 | . | . | 0.06 | . | . | 0.42 | . | . | 9.6 | . | . | -0.13 | . | . | -0.45 | . | 1 |
| TUR | . | 16459 | . | . | -0.01 | . | . | 0.25 | . | . | 11 | . | . | 0.07 | . | . | 0.05 | . | 1 |
| BGR | . | 15719 | . | . | 0.06 | . | . | 0.45 | . | . | 5.6 | . | . | -0.19 | . | . | -0.59 | . | 1 |
| CYP | . | 35781 | . | . | 0.01 | . | . | 0.13 | . | . | 3.6 | . | . | -0.08 | . | . | -0.12 | . | 1 |
| HRV | . | 21873 | . | . | 0.02 | . | . | 0.22 | . | . | 8.4 | . | . | -0.13 | . | . | -0.4 | . | 1 |
| LVA | . | 21021 | . | . | -0.03 | . | . | 0.49 | . | . | 7.4 | . | . | 0.23 | . | . | -0.3 | . | 1 |
| LTU | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | 1 |
| **Total** | **25872** | **25726** | **30670** | **0.02** | **0.01** | **0.03** | **0.18** | **0.27** | **0.12** | **9.13** | **6.95** | **8.6** | **0.12** | **-0.04** | **-0.08** | **0.01** | **-0.27** | **0.06** | **0.846** |

measurements have also been taken into account), we also controlled for the linear effects of time.

## 3.3 Macro-level moderators

Economic Situation. The economic situation at the country-level was measured by means of two indicators: the country's Unemployment Rate (UR) and the country's Gross Domestic Product (at purchasing power parity) per capita [GDP(PPP), in thousands]. Data regarding the countries' UR for years 1998-2014 is an ILO estimate measured as a share of total labor force (World Bank, 2016). In our analyses, we had also used the following formulas to calculate the change in the unemployment rate over time: (i) year to year ΔUR= 100* (URt– URt-1) / URt-1; and (ii) long-term change in country's unemployment rate = 100* (URt– URt-5) / URt-5. The GDP per capita concerns the purchasing power parity value (PPP) of all final goods and services produced within a country in a given year, divided by the average population of the same year. GDP is measured in thousands of 2011 international dollars (World Bank, 2016). Similarly, to the UR, we constructed the change in GDP by using the following formulas: (i) year to year ΔGDP = 100* (GDPt– GDPt-1)/GDPt-1; and (ii) long-term ΔGDP = 100* (GDPt– GDPt-5) / GDPt-5.

Impact of the Global Financial Crisis. We created a dummy variable distinguishing between the EU countries that have not been affected severely by the global financial crisis (0) and those affected severely (1). Dornean and Sandu (2012) showed that the EU countries that had been affected most by the crisis were those (particularly east European) countries not in the Eurozone. On the basis of this analysis, we have characterized as being severely affected by the crisis Eastern European countries that are not in the Eurozone (i.e. all countries except Poland that was found to be the least affected by the crisis) and those EU countries that are in the Eurozone but have signed a Memorandum of Agreement during the crisis (i.e., Cyprus, Greece, Ireland, Portugal). All other EU countries included in our sample have been characterized as not being severely affected by the crisis.

Analytical Strategy

To test Hypothesis 1 and Hypothesis 2 (when UR/ GDP and year on year growth rate data has been used for the macro-level moderators), we used the whole sample (i.e., 2002-2014), and applied multilevel analyses with three levels: individuals (i.e., level 1) nested in years (i.e., level 2), nested in countries (i.e., level 3).

The three-level model applied can be written as follows:

$$Y_{itj} = \beta_{0t} + \beta_1(\text{unemp insec})_{itj} + \beta_{1UR}(\text{unemp insec})_{itj} * UR_{tj} + \beta_{UR}UR_{itj} + \\ + X_{itj}\beta_X + C_j\beta_C + T_t\beta_T + c_j + u_{tj} + \epsilon_{ijt} \quad (1)$$

where $Y_{itj}$ is the dependent variable (well-being or health) of person i in year t in country j: $(\text{unemp insec})_{itj}$ indicate correspondingly whether the person is unemployed or with an insecure job; $UR_{tj}$ is a country of residence unemployment rate; $X_{itj}$ is a vector of individual level controls; $C_j$ is a verctor of country and $T_t$ survey year dummies respectively.

To test Hypothesis 3, we use the same model, but our variable of interest – an indicator for being affected by the crisis – has been not only interacted with the indicators for being unemployed or having an insecure job, but also with the whole set of time dummies. So that the model we estimate is the following:

$$Y_{itj} = \beta_{0t} + \beta_1(\text{unemp insec})_{itj} + \beta_{1T}(\text{unemp insec})_{itj} * T_t + \beta_{1Crisis}(\text{unemp insec})_{itj} * Crisis_j + \beta_{TCrisis}T_t * Crisis_j + \beta_{Crisis}Crisis_j + \beta_{1TCrisis}(\text{unemp insec})_{itj} * T_t * Crisis_j + X_{itj}\beta_X + C_j\beta_C + T_t\beta_T + c_j + u_{tj} + \epsilon_{ijt} \quad (2)$$

In this model we are interested in the differences in the effect of unemployment (insecurity) on health and wellbeing measures between countries defined as those affected by the crisis to the rest of the countries across years, with particular interest how this dynamics changes in year 2008 and afterwards. This would be difficult to present in tables. Therefore, we opt for a graphical presentation of the marginal effects.

# 4. Results

## 4.1 Hypotheses Testing

All hypotheses have been tested simultaneously for each of the three dependent variables separately. The full output of the multilevel analyses is presented in Tables A1.1 to A1.3 (see Appendix A.1). According to Hypothesis 1, the relationship between unemployment/ job insecurity and health/well-being was expected to be more negative in countries that are economically worse off in comparison to others. As concerns main effects, being unemployed or holding an insecure job position is related to worse health (Table A1.1; all models), higher dissatisfaction with life (Table A1.2; all models) and higher levels of unhappiness (Table A1.3; all models). Although the effect of the insecure job is much smaller in magnitude than that of being unemployed. We find mixed results concerning Hypothesis 1. First of all, we find no moderating effects on the relationship between holding an insecure job and either of the outcomes. Second, the relationship between being unemployed and poor health, level of life dissatisfaction and unhappiness if affected differently, depending on which measure is used to describe economic situation – country level unemployment rate or GDP per capita. As Model 2 in Table A1.1 shows, higher unemployment rate in the country reduces the negative effect of individual unemployment status on health, while GDP per capita has

no effect on this relationship. At the same time, the relationship between being unemployed and life dissatisfaction is not affected by the unemployment rate, while higher GDP per capita makes this effect smaller. Finally, what concerns the level of unhappiness, being unemployed is less detrimental in countries with higher unemployment rate (Model 2, Table A1.3) and countries with higher GDP per capita (Model 5, Table A1.3). So, if one thinks of an economic downturn, when the GDP per capita is falling and the unemployment rate is rising, our results seem to indicate that if measured in monetary terms, an economic downturn is exacerbating the negative effect of unemployment on wellbeing, while having no effect on health. At the same time, higher unemployment rate moderates the negative effect of individual unemployment on health and happiness, but not life satisfaction. So, this finding requires further investigation.

According to Hypothesis 2, the relationship between unemployment/ job insecurity and health/well-being was expected to be more negative in countries that are economically on the downturn paths compared to those which are on the path of recovery. Short-term change in economic situation measured by year on year growth in unemployment does not alter the effect of job insecurity on either of the outcomes. The situation is different when considering long-term change in economic situation as measured by a 5-year growth rate in two considered macro variables. As Models 4 and 7 in Table A1.1 show, continued long-term economic downturn (higher UR and lower GDP growth) exacerbates the negative effect of unemployment on health, irrespective of what macro measure is used. We find no effect from this Models on life satisfaction, while long-term unemployment growth does exacerbate the negative effect of being unemployed on the level of happiness among youth. Interestingly, those who are in insecure jobs have a moderating effect for happiness from living in a country with higher long-term growth in unemployment rates.

Finally, according to Hypothesis 3 it was expected that the relationship between unemployment/ job insecurity and health/well-being will be more negative in countries that have been affected severely (vs. mildly) by the global financial crisis, in year 2008 and after. The evidence though is presented by Figures A1-A3. The results do not provide strong evidence in support of Hypothesis 3. With respect to health and unemployment, the gap in health status between unemployed and employed in secured jobs is worse for countries that have been hit more severely by the crisis but this difference does not change after 2008. The difference between the two groups of countries is big already before the crisis and it narrows immediately after 2008, diverging again between 2012 and 2014. With respect to health and job insecurity the trend is reversed with countries hit by the crisis having a smaller gap in bad health between people in insecure jobs and people in secure jobs compared to countries hit less severely by the crisis with the exception of 2002 and 2014. The difference between the two groups of countries narrows again immediately after 2008 and widens between 2010 and 2012. A less clear pattern emerges in relation to unhappiness. The

gap in unhappiness between unemployed and employed in a secure job is higher among countries affected by the crisis before 2008 but is smaller after 2008. When looking at the effect of job insecurity vs. working at a secure job on unhappiness, this gap is smaller in countries hit by the crisis in early 00's, higher just before and after 2008 and goes back being smaller between 2012 and 2014. Similar patterns emerge with respect to life dissatisfaction. Before 2008 the gap in dissatisfaction between unemployed and employed at secure jobs is larger among countries hit by the crisis, it narrows after 2008 but still remains larger compared to the groups of countries affected mildly by the crisis. The relationship between job insecurity/security and life dissatisfaction is less clear. The difference in life dissatisfaction between insecure and secure employment is smaller in countries affected by the crisis until 2004, becomes larger between 2006 and 2010 and then falls again behind the gap in effects observed in countries mildly affected by the crisis. Overall these results suggest that the relationship between employment status and health or wellbeing is not mediated by the crisis indicator, but is likely different between countries for other reasons pre-existing the crisis shock. These findings point towards the rejection of Hypothesis 3.

# 5. Conclusion

With this chapter, the aim was to understand under which specific conditions unemployment and job insecurity are particularly damaging for the health and well-being of young Europeans. To this end, we have used the ESS dataset in order to investigate whether specific, macro-level factors and particularly, the country's economic situation (i.e., country's unemployment rate and GDP levels, as well as their changes over time) and the degree to which a country has been affected severely (or mildly) by the financial crisis, moderate the effect of unemployment and job insecurity on three indicators: overall life (dis)satisfaction, (un)happiness, and poor health. Based on the main tenets of Hobfoll's (1989) COR theory, we hypothesized that unemployment and job insecurity would be particularly damaging for youth health and well-being in countries that lack financial resources (i.e., are worse off economically and their economies have declined over the years) and in countries that have been affected severely by the crisis (and as such, lack financial and social resources).

In line with previous studies (for reviews, Cheng and Chan, 2008; De Witte, 2005; Sverke et al., 2002; for a meta-analysis, McKee-Ryan et al., 2005), our results showed that being unemployed or holding an insecure job position leads to impairments to health and well-being. However, results lead to mixed conclusions regarding the moderating role of country-level, economic indicators in this relationship. Despite the fact that we did find statistically significant interaction effects, in most cases these effects were in the opposite, to the expected, direction. Namely, we found 1) that unemployment leads to more dissatisfaction and unhappiness in countries that are worse off financially (i.e., have lower GDP levels); 2) unemployed report less bad health and unhappiness in countries that have high levels of unemployment; 3) in

countries which experience higher unemployment rate growth and/or slower GDP growth unemployed people are less healthy ; 4) long-term unemployment growth exacerbates the negative effect of unemployment on happiness but mitigates that of having an insecure job; and 5) unemployed in a country which was severely affected by the financial crisis associate with lower dissatisfaction and lower unhappiness. The only finding that was in line with our expectations was the finding showing that in countries' with growing economies, unemployment is related to lower dissatisfaction with life.

Results regarding the moderating role of the economic situation of the country were not as expected, since we found that individuals in unfavourable labor market positions do not experience greater impairments to their health and well-being when living in countries that are worse off financially. In contrast, they feel better. To explain this finding it is important to consider the role of relative comparisons. In a widely cited paper from the happiness literature, Clark et al. (2008) found that happiness is negatively related to others' income and to own past income. This is in line with the main tenet of equity theory (Adams, 1965), which states that motivation and well-being are determined by comparing one's own situation with the situation of a referent other. In the context we are investigating, it is conceivable that in times where everyone in a country is in a bad economic condition, the negative effect of unemployment and job insecurity on well-being may be mitigated by the relative comparisons. When everyone has a job, not having one may be taken as being a loser or lazy (Furnham, 1982). Under such conditions, those unemployed or working in insecure jobs are more likely to be affected negatively. When many people are affected by unemployment or a (growing) bad economic situation, not having a job may be easier blamed on external circumstances rather than personal failure thus, protecting and even enhancing well-being.

Despite the fact that in the countries that have been hit hard by the economic recession both financial and social resources are scarce (Matsaganis, 2012), our findings suggest that people who are in an unfavourable job situation (i.e., either unemployed or hold an insecure job position), do not experience impairments in their well-being. This unexpected finding could be explained by attribution theory that illustrates how individuals gather information from the environment in order to explain specific events (Fiske and Taylor, 1991). Accordingly, people who are in an unfavourable employment condition (i.e., are unemployed or hold an insecure job position) in countries that are severely affected by the crisis, are more likely to assign the cause of their condition to the environment of recession that is outside of their control (i.e., external attribution) and less likely to assign the cause to internal aspects like their personal characteristics (e.g., lack of skills) or motives (e.g., lazy to look for a job). This explanation is in line with Da Costa and Dias (2014) who suggested that ever since the financial crisis has started, there is more and more a tendency to attribute individuals' economic failure to external societal forces, rather than their own characteristics (i.e. failure). Attributing one's unfavourable job situation to the environment protects one's self-worth and self-

efficacy that, consequently, function as protective factors for health and well-being (Schwarzer, Bäßler, Kwiatek, Schröder, and Zhang, 1997).

To conclude, this report provided interesting findings on the macro-conditions under which unemployment and insecure labor market positions are particularly detrimental for the well-being of Europeans. Our results showed that the economic situation of a country and the degree to which a country has been affected by the financial crisis determine the strength and the direction of the relationship between unemployment/job insecurity and health/well-being. These results provide insights not only for theory development but also for developing policies that aim in protecting the well-being of young Europeans.

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# 6. Appendix

## Tables with full results on ESS data, 29 countries

*Table A1.1 The effect of micro- and macro-indicators on youth subjective (bad) health*

| | Model 1 | Model 2 Macro Var.: Unempl Rate | Model 3 Macro Var.: Unempl Rate yoy growth rate | Model 4 Macro Var: Unemp. Rate 5-year growth rate | Model 5 Macro Var. - GDP pc PPP | Model 6 Macro Var: GDP yoy growth rate | Model 7 Macro Var: GDP 5-year growth rate |
|---|---|---|---|---|---|---|---|
| | Coef Sig | Coef Sig | Coef Sig | Coef Sig | Coef Sig | Coef Sig | Coef Sig |
| Unempl | 0.118** | 0.128** | 0.124** | 0.109** | 0.122** | 0.123** | 0.143** |
| | (0.013) | (0.013) | (0.013) | (0.013) | (0.013) | (0.014) | (0.017) |
| Insequre job | 0.030** | 0.030** | 0.028** | 0.034** | 0.029** | 0.032* | 0.026+ |
| | (0.010) | (0.010) | (0.010) | (0.011) | (0.010) | (0.013) | (0.014) |
| Macro Var.* | | 0.000 | -0.068 | -0.019 | 0.006** | 0.335 | 0.137+ |
| | | (0.003) | (0.072) | (0.013) | (0.001) | (0.428) | (0.078) |
| Unemployed | | -0.008* | -0.124 | 0.049* | -0.003 | -0.279 | -0.227* |
| | | (0.003) | (0.086) | (0.020) | (0.002) | (0.456) | (0.100) |
| Insecure job | | -0.001 | 0.069 | -0.02 | -0.001 | -0.088 | 0.039 |
| | | (0.003) | (0.070) | (0.019) | (0.001) | (0.404) | (0.089) |
| Year 2004 | -0.024 | -0.026 | -0.027 | -0.018 | -0.02 | -0.028 | -0.02 |
| | (0.026) | (0.026) | (0.026) | (0.017) | (0.027) | (0.027) | (0.017) |
| Year2006 | 0.004 | 0.003 | -0.007 | 0.005 | 0.013 | -0.002 | 0.003 |
| | (0.027) | (0.027) | (0.029) | (0.017) | (0.029) | (0.028) | (0.017) |
| Year 2008 | -0.054* | -0.055* | -0.061* | -0.054** | -0.038 | -0.049+ | -0.052** |
| | (0.026) | (0.026) | (0.027) | (0.017) | (0.032) | (0.027) | (0.017) |
| Year 2010 | -0.047+ | -0.047+ | -0.04 | -0.037* | -0.036 | -0.045+ | -0.028 |
| | (0.026) | (0.026) | (0.027) | (0.018) | (0.030) | (0.027) | (0.020) |
| Year 2012 | -0.092** | -0.092** | -0.093** | -0.077** | -0.080* | -0.087** | -0.067** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | (0.027) | (0.027) | (0.027) | (0.020) | (0.032) | (0.028) | (0.023) |
| Year 2014 | -0.053+ | -0.053+ | -0.060+ | -0.050* | -0.056+ | -0.051+ | -0.043* |
| | (0.030) | (0.030) | (0.031) | (0.020) | (0.030) | (0.030) | (0.020) |
| Age | 0.017 | 0.018 | 0.017 | 0.016 | 0.017 | 0.017 | 0.015 |
| | (0.020) | (0.020) | (0.020) | (0.020) | (0.020) | (0.020) | (0.020) |
| Age*age | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Female | 0.090** | 0.090** | 0.090** | 0.089** | 0.091** | 0.090** | 0.089** |
| | (0.009) | (0.009) | (0.009) | (0.009) | (0.009) | (0.009) | (0.009) |
| Secondary educ | -0.059* | -0.059* | -0.059* | -0.065* | -0.061* | -0.059* | -0.066* |
| | (0.026) | (0.026) | (0.026) | (0.026) | (0.026) | (0.026) | (0.026) |
| Tertiary educ | -0.199** | -0.199** | -0.199** | -0.204** | -0.200** | -0.199** | -0.204** |
| | (0.027) | (0.027) | (0.027) | (0.027) | (0.027) | (0.027) | (0.027) |
| Married/Living with partner | 0.023* | 0.023* | 0.023* | 0.027* | 0.023* | 0.023* | 0.027* |
| | (0.011) | (0.011) | (0.011) | (0.011) | (0.011) | (0.011) | (0.011) |
| Separated/Divorced | 0.056+ | 0.055+ | 0.055+ | 0.058+ | 0.055+ | 0.056+ | 0.057+ |
| | (0.033) | (0.033) | (0.033) | (0.033) | (0.033) | (0.033) | (0.033) |
| Constant | 1.547** | 1.538** | 1.554** | 1.565** | 1.547** | 1.542** | 1.553** |
| | (0.238) | (0.239) | (0.239) | (0.239) | (0.239) | (0.239) | (0.239) |
| N (Individuals) | 24,657 | 24,657 | 24,657 | 24,657 | 24,657 | 24,657 | 24,657 |
| N (Years) | 147 | 147 | 147 | 147 | 147 | 147 | 147 |
| N (Countries) | 29 | 29 | 29 | 29 | 29 | 29 | 29 |

*Source: ESS 2002-2014, World Bank Development Indicators, own calculations, multi-level mixed effects regression model*

*Note: * p < .05, ** p < .01, + p < .10*

*Table A1.2 The effect of micro- and macro-indicators on youth (dis)satisfaction with life*

| | | Model 1 | Model 2 Macro Var.: Unempl Rate | Model 3 Macro Var.: Unempl Rate yoy growth rate | Model 4 Macro Var: Unemp. Rate 5-year growth rate | Model 5 Macro Var. - GDP pc PPP | Model 6 Macro Var: GDP yoy growth rate | Model 7 Macro Var: GDP 5-year growth rate |
|---|---|---|---|---|---|---|---|---|
| | | Coef Sig | Coef Sig | Coef Sig | Coef Sig | Coef Sig | Coef Sig | Coef Sig |
| Unempl | | 0.960** | 0.951** | 0.966** | 0.958** | 0.967** | 0.928** | 1.009** |
| | | (0.035) | (0.036) | (0.037) | (0.037) | (0.035) | (0.040) | (0.046) |
| Insequre job | | 0.204** | 0.203** | 0.205** | 0.211** | 0.203** | 0.198** | 0.181** |
| | | (0.028) | (0.028) | (0.029) | (0.029) | (0.028) | (0.035) | (0.039) |
| Macro Var.* | | | 0.054** | 0.189 | 0.298** | 0.013** | -5.076** | -1.612** |
| | | | (0.009) | (0.227) | (0.037) | (0.003) | (1.271) | (0.218) |
| | Unemployed | | 0.000 | -0.13 | 0.078 | -0.036** | 1.939 | -0.221 |
| | | | (0.009) | (0.239) | (0.055) | (0.006) | (1.257) | (0.276) |
| | Insecure job | | 0.002 | -0.03 | -0.073 | -0.004 | 0.414 | 0.166 |
| | | | (0.007) | (0.194) | (0.051) | (0.002) | (1.112) | (0.246) |
| Year 2004 | | -0.062 | -0.053 | -0.054 | -0.122** | 0.03 | 0.011 | -0.102* |
| | | (0.083) | (0.073) | (0.084) | (0.046) | (0.080) | (0.080) | (0.046) |
| Year2006 | | -0.125 | -0.119 | -0.095 | -0.209** | 0.046 | -0.033 | -0.175** |
| | | (0.086) | (0.075) | (0.094) | (0.048) | (0.086) | (0.083) | (0.047) |
| Year 2008 | | -0.034 | -0.002 | -0.015 | -0.062 | 0.250** | -0.115 | -0.090+ |
| | | (0.083) | (0.073) | (0.087) | (0.046) | (0.092) | (0.080) | (0.046) |
| Year 2010 | | -0.093 | -0.095 | -0.103 | -0.239** | 0.122 | -0.135+ | -0.323** |
| | | (0.084) | (0.074) | (0.086) | (0.049) | (0.088) | (0.079) | (0.055) |
| Year 2012 | | -0.107 | -0.128+ | -0.1 | -0.370** | 0.148 | -0.217* | -0.460** |
| | | (0.085) | (0.074) | (0.085) | (0.054) | (0.092) | (0.085) | (0.064) |
| Year 2014 | | -0.182+ | -0.229** | -0.163+ | -0.269** | -0.215* | -0.206* | -0.379** |
| | | (0.096) | (0.084) | (0.099) | (0.054) | (0.091) | (0.089) | (0.059) |
| Age | | 0.253** | 0.247** | 0.253** | 0.245** | 0.249** | 0.253** | 0.250** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | (0.055) | (0.055) | (0.055) | (0.055) | (0.055) | (0.055) | (0.055) |
| Age*age | -0.004** | -0.004** | -0.004** | -0.004** | -0.004** | -0.004** | -0.004** |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Female | -0.043+ | -0.043+ | -0.043+ | -0.043+ | -0.041 | -0.044+ | -0.044+ |
| | (0.025) | (0.025) | (0.025) | (0.025) | (0.025) | (0.025) | (0.025) |
| Secondary educ | -0.256** | -0.261** | -0.256** | -0.257** | -0.265** | -0.255** | -0.259** |
| | (0.072) | (0.072) | (0.072) | (0.072) | (0.072) | (0.072) | (0.072) |
| Tertiary educ | -0.635** | -0.637** | -0.636** | -0.624** | -0.640** | -0.635** | -0.634** |
| | (0.075) | (0.075) | (0.075) | (0.075) | (0.075) | (0.075) | (0.075) |
| Married/Living with partner | -0.322** | -0.322** | -0.322** | -0.319** | -0.322** | -0.318** | -0.316** |
| | (0.030) | (0.030) | (0.030) | (0.030) | (0.030) | (0.030) | (0.030) |
| Separated/Divorced | 0.379** | 0.380** | 0.379** | 0.376** | 0.375** | 0.380** | 0.379** |
| | (0.092) | (0.092) | (0.092) | (0.092) | (0.092) | (0.092) | (0.092) |
| Constant | 0.71 | 0.769 | 0.686 | 0.852 | 0.633 | 0.81 | 1.089 |
| | (0.661) | (0.658) | (0.661) | (0.661) | (0.656) | (0.662) | (0.666) |
| N (Individuals) | 24,657 | 24,657 | 24,657 | 24,657 | 24,657 | 24,657 | 24,657 |
| N (Years) | 147 | 147 | 147 | 147 | 147 | 147 | 147 |
| N (Countries) | 29 | 29 | 29 | 29 | 29 | 29 | 29 |

*Source: ESS 2002-2014, World Bank Development Indicators, own calculations, multi-level mixed effects regression model*

*Note: * p < .05, ** p < .01, + p < .10*

*Table A1.3. The effect of micro- and macro-indicators on youth (un)happiness*

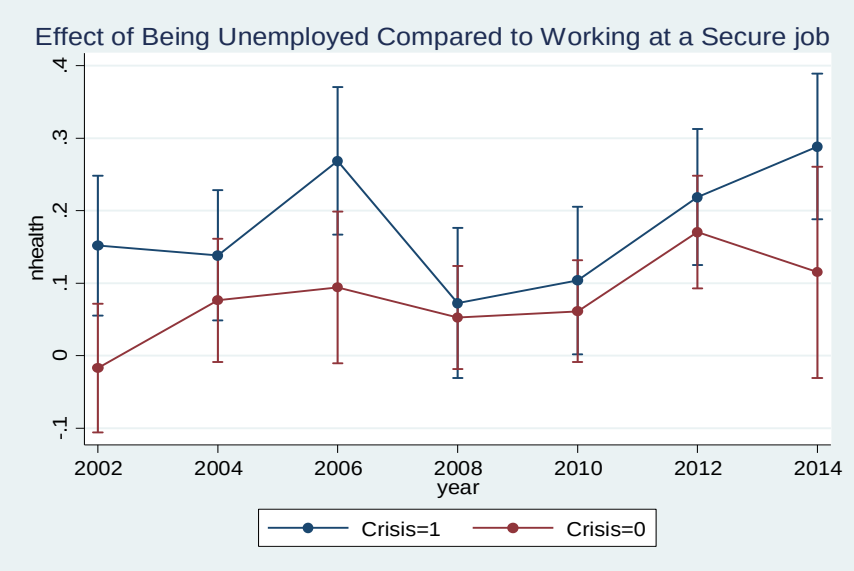
| | | Model 1 | Model 2 Macro Var.: Unempl Rate | Model 3 Macro Var.: Unempl Rate yoy growth rate | Model 4 Macro Var: Unemp. Rate 5-year growth rate | Model 5 Macro Var. - GDP pc PPP | Model 6 Macro Var: GDP yoy growth rate | Model 7 Macro Var: GDP 5-year growth rate |
|---|---|---|---|---|---|---|---|---|
| | | Coef Sig | Coef Sig | Coef Sig | Coef Sig | Coef Sig | Coef Sig | Coef Sig |
| Unempl | | 0.713** | 0.722** | 0.698** | 0.698** | 0.718** | 0.708** | 0.752** |
| | | (0.031) | (0.032) | (0.032) | (0.032) | (0.031) | (0.035) | (0.040) |
| Insequre job | | 0.112** | 0.114** | 0.116** | 0.124** | 0.109** | 0.108** | 0.078* |
| | | (0.025) | (0.025) | (0.026) | (0.026) | (0.025) | (0.031) | (0.035) |
| Macro Var.* | | | 0.048** | 0.003 | 0.218** | 0.011** | -3.451** | -1.211** |
| | | | (0.008) | (0.200) | (0.032) | (0.003) | (1.142) | (0.192) |
| | Unemployed | | -0.014+ | 0.309 | 0.127** | -0.025** | 0.169 | -0.183 |
| | | | (0.008) | (0.211) | (0.048) | (0.005) | (1.113) | (0.244) |
| | Insecure job | | -0.008 | -0.145 | -0.099* | -0.001 | 0.27 | 0.284 |
| | | | (0.006) | (0.172) | (0.045) | (0.002) | (0.985) | (0.218) |
| Year 2004 | | -0.04 | -0.036 | -0.041 | -0.086* | 0.021 | 0.012 | -0.071+ |
| | | (0.074) | (0.067) | (0.074) | (0.041) | (0.073) | (0.072) | (0.041) |
| Year2006 | | -0.009 | -0.008 | -0.011 | -0.071+ | 0.1 | 0.056 | -0.046 |
| | | (0.076) | (0.069) | (0.084) | (0.042) | (0.077) | (0.075) | (0.042) |
| Year 2008 | | 0.011 | 0.034 | 0.011 | -0.01 | 0.195* | -0.048 | -0.029 |
| | | (0.074) | (0.067) | (0.077) | (0.040) | (0.080) | (0.073) | (0.041) |
| Year 2010 | | 0.062 | 0.057 | 0.057 | -0.048 | 0.199** | 0.031 | -0.105* |
| | | (0.075) | (0.068) | (0.076) | (0.044) | (0.077) | (0.072) | (0.049) |
| Year 2012 | | 0.028 | 0.011 | 0.025 | -0.161** | 0.193* | -0.053 | -0.221** |
| | | (0.075) | (0.069) | (0.076) | (0.048) | (0.080) | (0.076) | (0.057) |
| Year 2014 | | -0.013 | -0.053 | -0.014 | -0.072 | -0.04 | -0.03 | -0.152** |
| | | (0.085) | (0.077) | (0.088) | (0.048) | (0.082) | (0.081) | (0.052) |
| Age | | 0.190** | 0.190** | 0.190** | 0.186** | 0.189** | 0.190** | 0.189** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | (0.048) | (0.048) | (0.048) | (0.048) | (0.048) | (0.048) | (0.048) |
| Age*age | -0.003** | -0.003** | -0.003** | -0.003** | -0.003** | -0.003** | -0.003** |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Female | -0.073** | -0.072** | -0.073** | -0.074** | -0.071** | -0.073** | -0.075** |
| | (0.022) | (0.022) | (0.022) | (0.023) | (0.022) | (0.022) | (0.023) |
| Secondary educ | -0.214** | -0.219** | -0.214** | -0.219** | -0.221** | -0.214** | -0.220** |
| | (0.064) | (0.064) | (0.064) | (0.064) | (0.064) | (0.064) | (0.064) |
| Tertiary educ | -0.530** | -0.534** | -0.531** | -0.530** | -0.535** | -0.531** | -0.537** |
| | (0.066) | (0.066) | (0.066) | (0.066) | (0.066) | (0.066) | (0.066) |
| Married/Living with partner | -0.439** | -0.438** | -0.438** | -0.434** | -0.439** | -0.436** | -0.432** |
| | (0.027) | (0.027) | (0.027) | (0.027) | (0.027) | (0.027) | (0.027) |
| Separated/Divorced | 0.383** | 0.382** | 0.385** | 0.387** | 0.380** | 0.385** | 0.389** |
| | (0.081) | (0.081) | (0.081) | (0.081) | (0.081) | (0.081) | (0.081) |
| Constant | 1.130+ | 1.132+ | 1.130+ | 1.224* | 1.074+ | 1.204* | 1.405* |
| | (0.582) | (0.580) | (0.582) | (0.582) | (0.579) | (0.583) | (0.585) |
| N (Individuals) | 24,657 | 24,657 | 24,657 | 24,657 | 24,657 | 24,657 | 24,657 |
| N (Years) | 147 | 147 | 147 | 147 | 147 | 147 | 147 |
| N (Countries) | 29 | 29 | 29 | 29 | 29 | 29 | 29 |

*Source: ESS 2002-2014, World Bank Development Indicators, own calculations, multi-level mixed effects regression model*

*Note: * p < .05, ** p < .01, + p < .10*

*Figure A1. The effect of employment status on health by crisis indicator (predicted probabilities)*



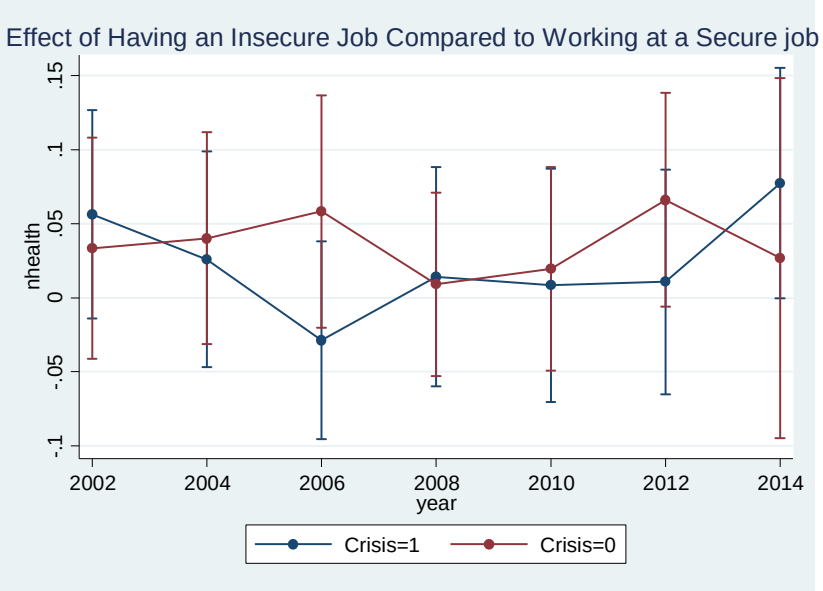
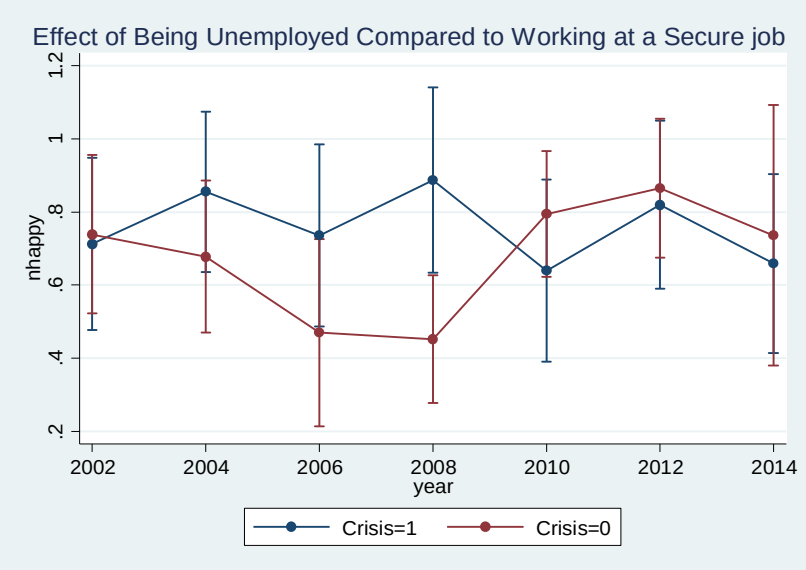



*Figure A2. The effect of employment status on unhappiness by crisis indicator (predicted probabilities)*



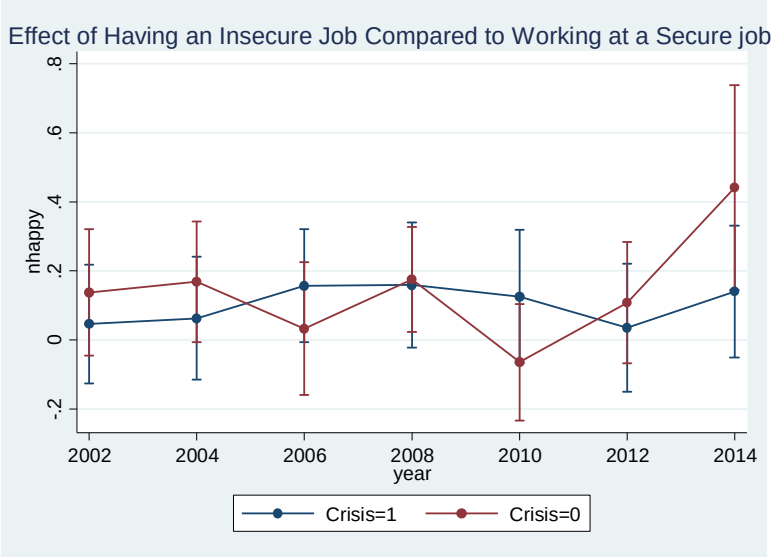
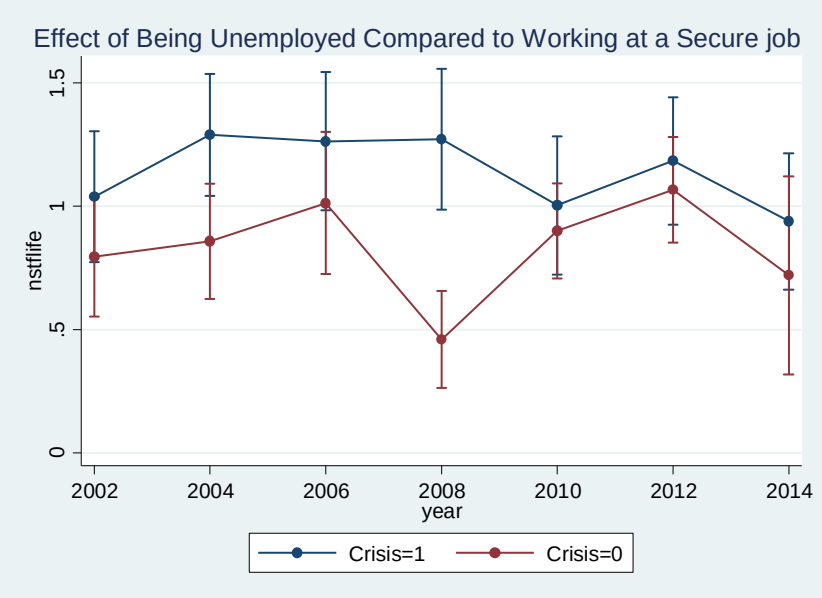
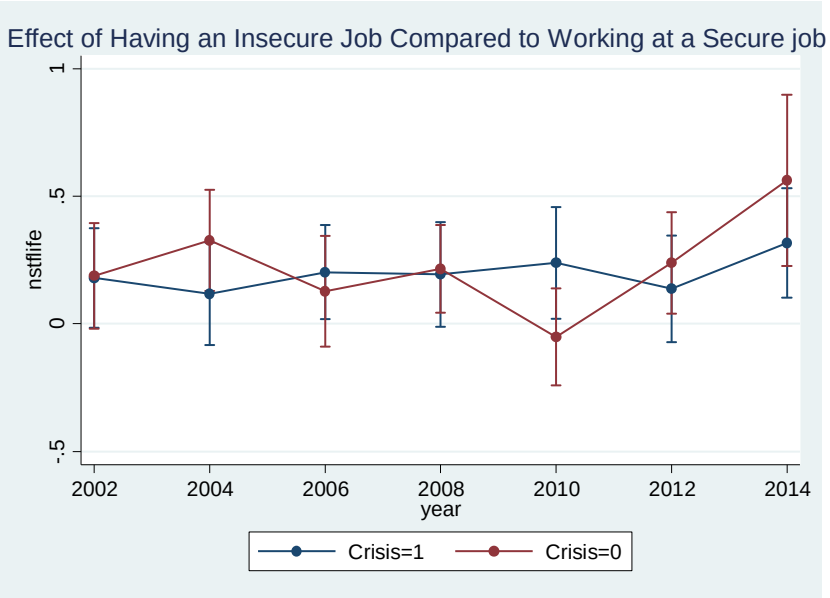



*Figure A3. The effect of employment status on life dissatisfaction by crisis indicator (predicted probabilities)*



# Chapter 4

# The effects of unemployment and insecure jobs on well-being and health for European youth: the moderating role of labor market policies

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## 1. Introduction

As detailed in chapter 2 of this report, the long-term trends of general flexibilization as well as the Great Recession have put European youth at increased risk of labor market exclusion and job insecurity (e.g., Chung et al. 2012). Because youth represents a particularly vulnerable group in the labor market, it is important to examine the well-being and health consequences of early career unemployment and insecure jobs. While many review studies now point to the negative effects of unemployment, temporary employment, and job insecurity on well-being and health (see Voßemer and Eunicke 2015 for a detailed review focusing on youth; see Wanberg et al. 2011 for a review and McKee-Ryan et al. 2005 and Paul and Moser 2009 for meta-analyses concerning unemployment; see DeCuyper et al. 2008 and Virtanen et al. 2005 for a review and a meta-analysis concerning temporary employment; see De Witte 2005 and Sverke et al. 2002 for a review and a meta-analysis concerning job insecurity), much less is known about cross-country differences in these effects and the respective macro-level moderating factors (see Bambra and Eikemo 2009, Boarini et al. 2013, Carr and Chung, 2014, Eichhorn 2009, Kim et al. 2012, Ochsen and Welsch 2009, Scherer 2009, Wulfgramm 2014). Moreover, most of the previous studies have focused

[6] This chapter uses the following integrated data files: ESS Round 1: Edition 6.4, ESS Round 2: Edition 3.4, ESS Round 3: Edition 3.5, ESS Round 4: Edition 4.3, ESS Round 5: Edition 3.2, ESS Round 6: Edition 2.2. The data are provided by the NSD – Norwegian Centre for Research Data, Norway – Data Archive and distributor of ESS data for ESS Eric.

on the general working age population or only investigated differences in the effects of unemployment or insecure jobs between different welfare state regimes. However, from a policy point of view if seems important to examine the effects of specific policies, too. Therefore, in this chapter we study the moderating role of two welfare state institutions, passive and active labor market policies (PLMP, ALMP), as well as employment protection legislation (EPL). The respective research questions are:

1. What are the effects of unemployment and insecure jobs on the well-being and health of young Europeans?
2. How do these effects vary according to countries' PLMP and ALMP as well as their EPL?

We address these questions by using micro data from six rounds of the European Social Survey (ESS 2002-2012). The ESS holds information about 17,485 young Europeans nested in 112 country-years and 26 countries. Time-varying macro data on PLMP, ALMP, and EPL have been assembled from varying sources. Methodologically, we apply three-level random intercept models as well as pooled linear regression models including country and year fixed-effects (see section 3 for details). The latter models allow taking account of time-constant unobserved heterogeneity between countries by only examining within-country changes in the respective macro-level moderators. The next section offers some detailed theoretical remarks.

# 2. Theory and hypotheses

Theoretically, we rely on a micro-macro model to derive hypotheses about the moderating effects of the three labor market policies. To explain why unemployment and insecure jobs should have negative effects on well-being and health (micro-level), we rely on a synthesis of previous theories (e.g., De Cuyper et al. 2008, Fryer 1986, Jahoda 1982, Warr 1987) by Nordenmark and Strandh (1999). This synthesis highlights two mechanisms through which unemployment and insecure jobs affect well-being and health: the loss of economic as well as psychosocial rewards of secure employment. To formulate expectations about the moderating effects of the three labor market policies (macro-level), we specified hypotheses about how they buffer or exacerbate the importance of the above highlighted micro-level mechanisms. Table 1 provides an overview about the derived hypotheses.

To give an example for passive labor market policies (PLMP), in line with previous studies (see O'Campo et al. 2015 for a review), we expect that higher unemployment benefit generosity should have a positive moderating effect on the effect of unemployment and insecure jobs on well-being and health (hypothesis 1). Put differently, in countries with more generous unemployment benefits, the negative

effects should be smaller, because unemployment benefits compensate for the (anticipated) loss of economic rewards as well as reduce stigma that is associated with labor market exclusion (e.g., Sjöberg 2010, Wulfgramm 2014).

Concerning active labor market policies (ALMP), we assume that training programs or job creation measures may offer similar rewards compared with those of secure employment and also counteract the loss of human capital that is associated with work interruptions (e.g., Wulfgramm 2014, Carr and Chung 2014). If ALMP are able to at least partly counter the loss of economic and psychosocial rewards and increase the employability of youth, a positive moderating effect is expected. However, if ALMP are not efficient and, for example, result in so-called lock-in effects or are perceived as paternalistic by participants, higher expenditures may not have any positive or even negative moderating effects. Overall, however, we assume that the positive effects prevail (hypothesis 2).

*Table 1 Hypotheses concerning the moderating effects of labor market policies*

| Hypothesis | Macro-level moderator | Expectations | |
|---|---|---|---|
| | | Moderating effect is … | Negative effects of unemployment and insecure jobs become … |
| 1. | Unemployment benefit generosity (PLMP) | Positive (+) | Smaller (-) |
| 2. | Expenditure on active labor market policies (ALMP) | Positive (+) | Smaller (-) |
| 3. | Employment protection legislation for regular contracts (EPLR) | Negative (-) | Larger (+) |
| 4. | High employment protection legislation for regular contracts (EPLR) and deregulation of temporary contracts | Negative (-) | Larger (+) |

*Source: Own illustration.*

A stricter protection of regular contracts (EPLR) is assumed to have a negative moderating effect meaning that the negative effects of unemployment and insecure jobs on well-being and health are expected to be larger in countries with a higher EPLR (hypothesis 3). Because higher EPLR reduces transitions in and out of (un)employment as well as conversions from fixed-term to regular contracts, it is likely that unemployment durations are prolonged and the risk of insecure jobs is increased in these countries. This is especially true for so-called labor market outsiders such as youth trying to gain a foothold in the labor market.

Lastly, we expect that the negative effects of stricter protection of regular contracts (EPLR) come particularly into effect if countries also deregulate the restrictions on the use of temporary contracts. This situation is sometimes described as a partial or targeted deregulation (Barbieri 2009) or as a flexibilization at the margins. While labor market insiders such as mid-career workers are well protected, a deregulation of temporary contracts may result in cycles of non-employment and temporary employment for labor market entrants. Given the high costs of hiring new workers on

regular contracts and the ease with which temporary contracts can be used, the well-being and health consequences of unemployment and insecure jobs may be exacerbated in these countries (hypothesis 4).

# 3. Data and methods

## 3.1 Micro data

We use micro data of the first six rounds of the European Social Survey (ESS 2002-2012). The data are based on random probability samples in each country and round. The respective population of interest is all persons aged 15 and over residing within private households (European Social Survey 2016: 7). We chose the ESS, because it is one of the few European surveys that offer detailed information on subjective well-being, self-rated health, and employment status while simultaneously including many countries repeatedly. This allows us to also track changes in labor market policies within countries over time.

For our analyses, we pooled the data from all six rounds and restricted the sample to employees and unemployed youth aged 15 to 29 years. Moreover, we only make use of the 112 country-years from the 26 countries for which we have complete micro and macro data. This leaves us with information about 17,485 young Europeans.

## 3.2 Micro-level variables

Table 2 provides details on the measurement of the micro- and macro-level variables. The key independent variable is employment status. We use self-reported employment status and distinguish between individuals who are employed and unemployed. Among the employed, we differentiate between youth in secure jobs, having a contract of unlimited duration, and workers in insecure jobs. The latter are comprised of those who report to no contract at all or only a hold a fixed-term contract.

The dependent variables well-being and health are self-reported. Subjective well-being is measured using the following question “All things considered, how satisfied are you with your life as a whole nowadays?” with answers on an 11-point scale ranging from 0 “extremely dissatisfied” to 10 “extremely satisfied”. Self-rated health is measured by the question “How is your health in general?” with answers ranging from 1 “very good” to 5 “very bad”. For the analyses, the responses are grouped into a binary variable where 1 represents “very good” and “good” health while 0 represents “fair”, “bad”, and “very bad” health.

The analyses also control for a number of variables that may confound the association of unemployment and insecure jobs with well-being and health. These variables are sex, migration background, age, education, and father’s and mother’s highest level of education (see Table 2 for details).

## 3.3 Macro-level variables

We complement the micro data with time-varying indicators about unemployment rates, unemployment benefit generosity, expenditures on ALMP as well as information on EPL. References to these data are given in the appendix A1. Table 3 provides descriptive statistics on the macro-level variables for each of the 26 countries.

Information about harmonized unemployment rates comes from the Key Indicators of the Labour Market (KILM) of the International Labor Office (ILO). Indicators of unemployment benefit generosity are taken from the Comparative Welfare Entitlement Data 2 (CWED 2) by Scruggs et al. (2014). These include indicators about net replacement rates and unemployment benefit duration in weeks. The latter are re-expressed in percent of 48 months meaning that countries that offer unlimited duration or a duration of 48 months or more have a value of 100. To measure benefit generosity, we construct an index that is the product of the average of the net replacement rates for two household types (i.e., single and family) and the benefit duration in percent of 48 months (see Wulfgramm 2014 for the same construction). This index takes values between 0 and 100.

To assess how much countries, invest in ALMP, we consider the expenditure on ALMP per unemployed as a percentage of GDP per capita. The latter includes, for example, expenditures on training, employment incentives, and job creation (Eurostat 2013: 13-23). The data are taken from OECD and Eurostat. The measure is standardized by the number of unemployed to make sure that it is not a mere reflection of countries' business cycle.

Information on EPL is taken from OECD (see Veen 2009 for details). For a few Central and Eastern European (CEE) countries, the OECD indicators have been complemented by information from Avdagic (2015) who scored CEE countries following the OECD approach. We focus on version 1 of the EPL indicators for regular and temporary employment. The indicators for regular and temporary employment vary between 0 (unregulated) and 6 (regulated) respectively.

## 3.4 Methods

To test our hypotheses, we estimate two kinds of models. The first are linear random-intercept models with three levels. The model can be written as follows

$$(1) \qquad y_{cti} = \beta_0 + \beta_t + \sum_{p=1}^{P} \beta_p X_{pcti} + \sum_{q=1}^{Q} \beta_q Z_{qct} + \sum_{p=1}^{P} \sum_{q=1}^{Q} \beta_{pq} X_{pcti} Z_{qct} + \nu_c + u_{ct} + e_{cti}$$

where $y_{cti}$ reflects an individual i's well-being or health in country-year t and country c. The fixed part of the model includes the following terms: a grand average $\beta_0$, year fixed effects $\beta_t$, in order to capture common unobserved time-varying variables, P individual-level variables $X_{pcti}$, such as employment status, and Q time-varying country-level variables $Z_{qct}$, including the labor market policies. In addition, it includes cross-level interactions $X_{pcti}Z_{qct}$ to assess how the effects of individual-level variables, like employment status, are moderated by the time-varying labor market policies indicators. The random part consist of the three error terms $\nu_c$ (country-level), $u_{ct}$ (country-year-level), and $e_{cti}$ (individual-level).

The second kinds are pooled linear regression models that include both country and year fixed effects. To take account of the nesting structure, standard errors have been clustered at the country-level. Including country dummies results in a model that only uses the within-country variation in labor market policies over time to estimate their moderating effects. We, thereby, reduce omitted variable bias at the country-level by controlling for all stable differences between countries. Moreover, within country comparisons reduce concerns about the cross-national comparability of our subjective measures of well-being and health (e.g., Boarini et al. 2013).

To increase the interpretability of our results the macro-level variables have been centered and standardized to unit variance. Similarly, the continuous micro-level variables age and years of education have been centered. For the latter two variables we also include squared terms into the models to allow for non-linear effects on well-being and health.

*Table 2: Measurement of the micro- and macro-level variables*

| Variable | Measurement |
|---|---|
| Micro-level variables | |
| Dependent variables | |
| Well-being | Life satisfaction scale, Range: 0=extremely dissatisfied - 10=extremely satisfied |
| Health | Self-rated health, 1=Very good, good; 0=bad, fair, very bad |
| Independent variables | |
| Employment status | 3 categories: 1=secure job (permanent contract), 2=insecure job (fixed-term, no contract), 3=unemployed |
| Sex | 1=female, 0=male |
| Migration background [a] | 1=migration background, 0=no migration background; based on respondent's and parents' place of birth |
| Age | In years |
| Education | Completed full-time education in years |
| Past unemployment | 3 categories: 1=Never unemployed (> 3 months), 2=Unemployed (> 3 to < 12 months), 3=Unemployed (≥ 12 months) |
| Father's education | 3 categories according to ISCED: 1=ISCED 0-1, 2=ISCED 2, 3=ISCED 3, 4=ISCED 4-6 |
| Mother's education | 3 categories according to ISCED: 1=ISCED 0-1, 2=ISCED 2, 3=ISCED 3, 4=ISCED 4-6 |
| Macro-level variables [b] | |
| Unemployment rate | Unemployment rate in percent |
| Benefit generosity | Index=average net replacement rate × benefit duration in percent of 48 months, Range: 0=no benefits - 100=full replacement for 48 months or longer |
| Active labor market policies (ALMP) | Expenditure per unemployed as percent of GDP per capita |
| Employment protection legislation (EPL) | OECD EPL indicators for regular and temporary employment (versions1), Range: 0=unregulated - 6=highly regulated |

*Notes: A person is considered to have a migration background if born abroad or if born in country and both parents were born abroad [b] References to the macro data are given in the appendix A1.*

*Sources: Own illustration.*

*Table 3 Descriptive statistics on the macro-level variables*

| Country | Code | N | Unemployment rate | | Unemployment benefit generosity | | ALMP expenditure | | EPL for regular employment | | EPL for temporary employment | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Mean | SD | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| Austria | AT | 3 | 5.3 | 0.5 | 12.1 | 0.1 | 17.1 | 2.7 | 2.5 | 0.2 | 1.3 | 0.0 |
| Belgium | BE | 6 | 7.8 | 0.6 | 67.5 | 2.5 | 15.0 | 2.3 | 1.9 | 0.1 | 2.4 | 0.0 |
| Bulgaria | BG | 3 | 8.3 | 2.4 | 14.4 | 2.9 | 6.6 | 4.0 | 1.8 | 0.0 | 0.9 | 0.0 |
| Czech Republic | CZ | 4 | 6.7 | 1.6 | 5.8 | 0.7 | 4.2 | 1.4 | 3.2 | 0.1 | 0.9 | 0.4 |
| Denmark | DK | 6 | 5.4 | 1.8 | 48.5 | 15.8 | 50.6 | 11.0 | 2.1 | 0.0 | 1.4 | 0.0 |
| Estonia | EE | 4 | 9.6 | 5.2 | 8.9 | 3.0 | 1.2 | 0.4 | 2.6 | 0.6 | 1.8 | 0.1 |
| Finland | FI | 6 | 8.5 | 1.6 | 29.5 | 1.0 | 17.6 | 3.5 | 2.2 | 0.0 | 1.6 | 0.0 |
| France | FR | 4 | 8.4 | 1.0 | 34.5 | 0.7 | 18.4 | 2.5 | 2.4 | 0.0 | 3.6 | 0.0 |
| Germany | DE | 6 | 8.3 | 2.0 | 16.4 | 0.0 | 16.0 | 4.7 | 2.7 | 0.0 | 1.2 | 0.4 |
| Greece | GR | 4 | 10.3 | 1.9 | 14.0 | 0.2 | 3.5 | 0.5 | 2.8 | 0.0 | 3.3 | 1.0 |
| Hungary | HU | 4 | 8.0 | 2.3 | 10.1 | 0.4 | 10.9 | 4.2 | 2.0 | 0.0 | 1.0 | 0.3 |
| Ireland | IE | 6 | 8.0 | 4.9 | 13.9 | 0.8 | 19.2 | 8.3 | 1.3 | 0.1 | 0.6 | 0.2 |
| Italy | IT | 2 | 9.9 | 1.1 | 8.5 | 2.2 | 12.5 | 7.1 | 2.8 | 0.0 | 2.2 | 0.3 |
| Latvia[a] | LV | 1 | 7.7 | | 12.8 | | 1.3 | | 2.3 | | 1.4 | |
| Lithuania[a] | LT | 1 | 17.8 | | 5.8 | | 2.6 | | 2.7 | | 1.6 | |
| Netherlands | NL | 6 | 3.9 | 1.1 | 37.0 | 2.6 | 40.0 | 17.8 | 2.9 | 0.0 | 0.9 | 0.0 |
| Norway | NO | 6 | 3.5 | 0.6 | 37.6 | 7.1 | 26.7 | 1.9 | 2.3 | 0.0 | 2.9 | 0.1 |
| Poland | PL | 5 | 13.9 | 5.7 | 7.5 | 0.6 | 7.6 | 5.5 | 2.2 | 0.0 | 1.6 | 0.4 |
| Portugal | PT | 6 | 8.7 | 3.9 | 41.8 | 3.4 | 11.7 | 5.3 | 4.3 | 0.4 | 2.3 | 0.4 |
| Romania[a] | RO | 1 | 5.8 | | 16.2 | | 2.1 | | 1.9 | | 2.5 | |
| Slovak Republic | SK | 4 | 14.0 | 3.7 | 7.2 | 0.2 | 2.3 | 1.1 | 2.2 | 0.0 | 1.1 | 0.6 |
| Slovenia | SI | 4 | 6.0 | 1.2 | 13.1 | 0.3 | 6.9 | 2.9 | 2.8 | 0.2 | 1.8 | 0.0 |
| Spain | ES | 6 | 14.5 | 6.4 | 38.2 | 0.9 | 10.4 | 3.9 | 2.3 | 0.1 | 3.1 | 0.2 |
| Sweden | SE | 4 | 7.5 | 1.0 | 19.3 | 1.7 | 21.6 | 3.4 | 2.6 | 0.0 | 1.0 | 0.3 |
| Switzerland | CH | 5 | 3.8 | 0.7 | 31.8 | 3.9 | 22.3 | 3.2 | 1.6 | 0.0 | 1.1 | 0.0 |
| United Kingdom | GB | 5 | 6.3 | 1.5 | 3.8 | 0.1 | 1.5 | 0.6 | 1.3 | 0.0 | 0.4 | 0.0 |

*Notes: Table 2 provides details about the measurement, [a] No within-country standard deviation reported, because only one round is available.*

*Source: Key Indicators of the Labour Market (KILM) of the International Labor Office (ILO), World Development Indicators (WDI) of World Bank, Comparative Welfare Entitlement Dataset 2 (CWED2) of Scruggs et al. (2014), OECD, Eurostat, EPL for regular and temporary employment of Avdagic (2015); Appendix A1 provides references. Own calculations.*

# 4. Results

In the following we discuss the main results of the three-level linear random intercept models. The results of the sensitivity analyses using the pooled linear regression models including country and year fixed effects are provided in Tables A2.2 and A2.4 in appendix A2. The results of these models do not differ substantially from those of the multi-level regression analyses reported below. The main results for well-being are presented graphically to facilitate their interpretation. For health, we discuss the key findings and whether or not they are in line with the results for well-being. The interested reader can find all the respective tables in appendix A2.

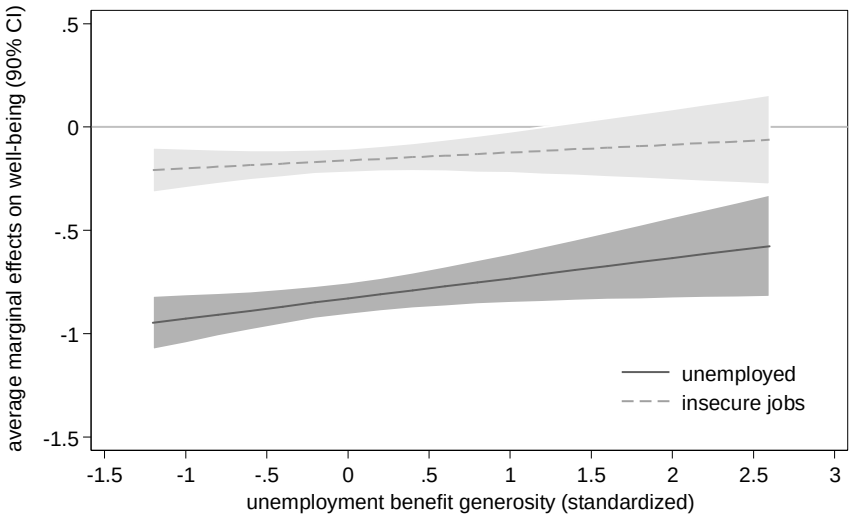
## 4.1 Well-being

Concerning well-being a model including employment status as well as the individual-level control variables reveals that unemployed youth has, on average, an about 0.81 scale points lower life satisfaction compared with those securely employed (model 1, Table A2.1 in appendix 2). For those in insecure jobs, the negative effect is 0.17 scale points. Although smaller, the difference between those with no contract at all or only fixed-term contracts and those with permanent contracts is still considered substantially relevant.

The main interest of this chapter is, however, to examine whether these negative effects are moderated by different labor market policies. The following figures are based on model 2 to 4 of Table A2.1 in appendix 2. Figure 1 shows the moderating effect of unemployment benefit generosity. In line with previous studies, we find a positive moderating effect concerning the effects of unemployment. In countries with higher unemployment benefit generosity, the negative effect of early-career unemployment on well-being is substantially smaller. Although we find a positive moderating effect for insecure jobs, too, the effect is substantially small and not statistically significant. Thus, hypothesis 1 can be partly confirmed.

Opposite to our expectations, Figure 2 reveals that higher expenditures on active labor market policies (ALMP) seem to increase the negative effect of early-career unemployment on well-being substantially. In contrast, the negative effect of holding an insecure job is not moderated by how much countries invest into ALMP. Hypothesis 2 has, therefore, to be rejected.

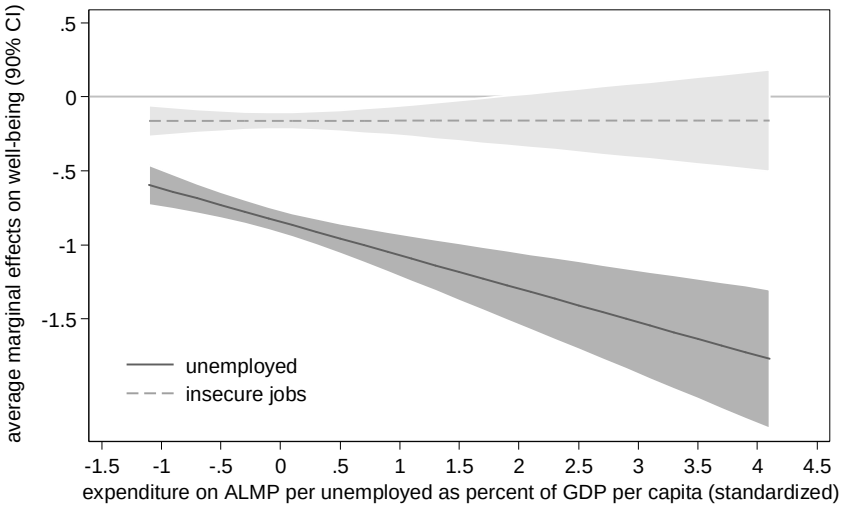
*Figure 1 Average marginal effects of unemployment and insecure jobs on well-being dependent on unemployment benefit generosity*




*Notes: The standardized unemployment benefit generosity indicator ranges from -1.2 (GB 2004) to 2.6 (BE 2010) in the data. Graph is based on model 2 in Table A2.1 in appendix A2.*

*Sources: European Social Survey, round 1 to 6 (2002-2012), 26 countries, 112 country-rounds; Table 2 and Table 3 provide details about the macro data. Own calculations.*

*Figure 2 Average marginal effects of unemployment and insecure jobs on well-being dependent on ALMP expenditure*

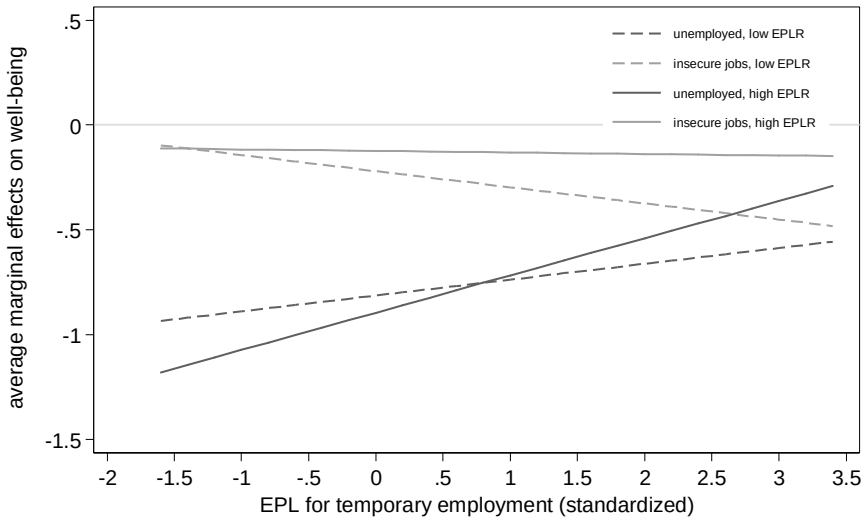



*Notes: The standardized ALMP indicator ranges from -1.1 (GB 2002) to 4.1 (NL 2002) in the data. Graph is based on model 2 in Table A2.1 in appendix A2.*

*Sources: European Social Survey, round 1 to 6 (2002-2012), 26 countries, 112 country-rounds; Table 2 and Table 3 provide details about the macro data. Own calculations.*

The results concerning the moderating role of EPL for regular contracts (EPLR) depend on which indicator is used. If we use the continuous EPLR indicator (model 2, Table A2.1 in appendix 2) we find a positive moderating effect of EPLR, meaning that a stricter protection of labor market insiders is associated with a smaller negative effect of unemployment on youth' well-being. However, if we only distinguish between countries with low and high EPLR (model 3, Table A2.1 in appendix 2), we find a negative, although not statistically significant, moderating effect of high EPLR.[7] For insecure jobs EPLR does not have any statistically significant moderating effect in both specifications. Overall, hypothesis 3 has to be rejected.

*Figure 3 Average marginal effects of unemployment and insecure jobs on well-being dependent on employment protection legislation for regular and temporary contracts*




*Notes: The standardized EPL for temporary employment indicator ranges from -1.5 (IE 2002) to 3.4 (GR 2002) in the data. Graph is based on model 4 in Table A2.1 in appendix 2.*

*Sources: European Social Survey, round 1 to 6 (2002-2012), 26 countries, 112 country-rounds; Table 2 and Table 3 provide details about the macro data. Own calculations.*

Figure 3 shows the results concerning employment protection legislation for temporary contracts (EPLT) (model 4, Table A2.1 in appendix 2). According to hypothesis 4, we expected that a deregulation of restrictions on the use of temporary contracts (i.e., a movement into the negative direction) is associated with more negative effects of unemployment and insecure jobs, but only in countries that have a strict employment protection of labor market insiders (high EPLR). For insecure jobs, we again find no substantially relevant moderating effects. However, for the negative effects of unemployment, we find that deregulation increases the negative consequences of

[7] This variable was created by grouping countries by their median sample EPLR. Countries with a median EPLR below/above the overall median are defined, respectively, as low/high EPLR countries.

unemployment in terms of well-being. At odds with hypothesis 4, this effect is, however, does not differ between countries with low and high EPLR.

### 4.2 Health

Model 1 of Table A2.3 in appendix 2 reports the effects of early-career unemployment and insecure jobs on self-rated health holding constant the individual-level control variables. For unemployment we find a negative effect of about 3.6 percentage points. However, youth who has no contract at all or only a fixed-term contract compared with those holding permanent contracts does not have a lower probability to be in very good or good health. Nevertheless, it is still possible that the effect of insecure jobs is negative in some countries. Therefore, in the next models we investigate how the effect varies according to the labor market policies of interest.

Model 2 (Table A2.3 in appendix 2) reports the coefficients of the respective cross-level interactions. Interestingly none of these cross-level interactions is statistically significant and substantially the interaction coefficients are small, too. This suggests that neither unemployment benefit generosity nor investments in active labor market policies (ALMP) moderate the effects of unemployment and insecure jobs on health. Therefore, hypotheses 1 and 2 have to be rejected.

Similarly, the analyses concerning the moderating effects of employment protection legislation for regular (EPLR) and temporary contracts (EPLT) as well as their interaction do not reveal any substantially relevant findings (model 2 to 4, Table A2.3 in appendix 2). Therefore, hypotheses 3 and 4 have to be rejected.

## 5. Conclusion

In this chapter we addressed the question to what extent three different labor market policies moderate the negative effects of early-career unemployment and insecure jobs on well-being and health. Based on a synthesis of previous theories, we derived four hypotheses about the moderating role of passive labor market policies – focusing on unemployment benefit generosity –, active labor market policies, and employment protection legislation for regular and temporary contracts.

To test these hypotheses, we used micro data from the first six rounds of the European Social Survey (2002-2012) and complemented these with time-varying macro indicators for the respective labor market policies. Methodologically, we applied three-level linear random intercept models as well as pooled linear regression models including country and year fixed effects. As the results do not differ substantially between the latter two, our findings can be considered robust to time-constant unobserved heterogeneity between countries. This also reduces concerns about the cross-national comparability of our subjective well-being and health measures.

In line with previous studies, we find that unemployment and insecure jobs have negative effects on the well-being of young Europeans. While unemployment also negatively affects self-rated health, youth in insecure jobs do not differ substantially in their self-rated health from their securely employed co-workers. This finding is supportive of previous studies, suggesting that unemployment compared with insecure jobs still represents a greater threat to individuals' well-being and health (e.g., Gebel and Voßemer 2014).

Concerning the moderating role of labor market policies, the results provide empirical evidence for the importance of welfare states' institutional arrangements in shaping the negative experience of unemployment. In contrast, for the negative effects of insecure jobs, we do not find any important moderating effects of passive and active labor market policies as well as employment protection legislation. One potential explanation for this result may be that the insecurities associated with having no contract at all or only a fixed-term contract are less malleable by labor market policies, because they "only" represent the threat of unemployment. A specifically interesting finding is the negative moderating effect of higher expenditures on active labor market policies concerning early-career unemployment. This result may indicate that training programs or job creation programs do not resemble regular employment close enough, to provide comparable economic and psychosocial rewards. It may also be explained by participants perceiving ALMP as paternalistic and not as investments in their skills and employability. More evidence needs, however, to be accumulated, in order to provide a more detailed assessment of the moderating role of ALMP. For employment protection legislation, the results are ambiguous. However, the findings are supportive of concerns that the deregulation of restrictions on the use of temporary employment may result in more negative well-being consequences of youth' labor market exclusion.

Lastly, the results differ somewhat between well-being and health. Specifically, for health we do not find similar moderating effects of unemployment benefit generosity and active labor market policies as well as employment protection legislation. One explanation may be that self-rated health concerns both psychological and physical health, while life satisfaction mostly reflects mental well-being. If unemployment and insecure jobs do not have any short-term negative effects on youth' physical health, no or only small negative effects concerning self-rated health may be expected.

To sum up, this chapter demonstrates that countries' institutional arrangement in terms of labor market policies is important in shaping the well-being consequences of youth unemployment. Specifically, a well-developed unemployment benefit system seems to be able to buffer some of the negative effects that unemployment brings along.

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# Appendix

## Appendix A1: References for macro data

The following macro-level variables have been used: unemployment rate, unemployment benefit generosity, ALMP expenditure, EPL for regular and temporary employment.

Unemployment rate

The data have been assembled from the Key Indicators of Labor Market (KILM) of International Labor Office (ILO). I used "Table 9a. Total unemployment" from the 9th edition of the KILM interactive software.

Source: http://kilm.ilo.org/2015/install/

Unemployment benefit generosity

The data have been assembled from the Comparative Welfare Entitlement Dataset 2 (CWED2) by Scruggs et al. (2014). The CWED2 includes information about the replacement rates and benefit duration that has been used to construct the unemployment benefit generosity index. It also contains the information on coverage referred to in footnote 8.

Source: http://cwed2.org/

ALMP expenditure

The data have been assembled from OECD and Eurostat. In few years missing OECD data have been complemented by Eurostat data. Expenditure in national currencies was divided by the number of unemployed taken from "Table 9a. Total unemployment" of KILM (see above) and, then, expressed as a percentage of GDP per capita. The latter has been assembled from the Word Development Indicators (WDI) of World Bank (WB). The series used is named "GDP per capita (current LCU)." Expenditure on ALMP includes categories 2 to 7.

Sources:

http://stats.oecd.org/Index.aspx?DatasetCode=LMPEXP#,
http://ec.europa.eu/eurostat/en/web/labour-market/labour-market-policy/database,
http://kilm.ilo.org/2015/install/,
http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators

EPL for regular and temporary employment.

The data have been assembled from OECD and Avdagic (2015). The OECD data refer to versions 1 of the EPL for regular and temporary employment indicators. In few years missing OECD data have been complemented by information from Avdagic (2015) who scored CEE countries following the OECD approach. The data from Avdagic have been received upon request.

Sources: http://www.oecd.org/employment/emp/EPL-timeseries.xlsx, Avdagic (2015)

## Appendix A2: Tables with full results

Tables A2.1 to A2.4 provide the full results. The tables do not include the coefficients of the individual-level control variables and year fixed effects (Table A2.1 and A2.3) as well as the

coefficients of the country fixed effects (Table A2.2 and A2.4) as these are not of interest concerning our hypotheses.

*Table A2.1 Linear random intercept models (Dependent variable: well-being, scale points)*

| | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| | b | b | b | b |
| *Individual-level variables* | | | | |
| Employment status (Ref.: Secure job) | | | | |
| Insecure job | -0.17 *** | -0.16 *** | -0.21 *** | -0.22 *** |
| Unemployed | -0.81 *** | -0.84 *** | -0.80 *** | -0.82 *** |
| Control variables | ✔ | ✔ | ✔ | ✔ |
| Round fixed effects | ✔ | ✔ | ✔ | ✔ |
| *Country-level variables* | | | | |
| Unemployment rate | | -0.21 *** | -0.19 *** | -0.18 *** |
| Benefit generosity | | 0.15 + | 0.17 * | 0.14 + |
| ALMP expenditure | | 0.02 | 0.04 | 0.04 |
| EPL regular | | -0.18 * | | |
| EPL temporary | | 0.09 | 0.06 | 0.20 + |
| High EPL regular | | | -0.02 | -0.05 |
| High EPL regular*EPL temporary | | | | -0.20 |
| *Cross-level interactions* | | | | |
| Insecure job*unemployment rate | | 0.01 | 0.01 | -0.00 |
| Unemployed*unemployment rate | | -0.03 | -0.04 | -0.05 |
| Insecure job*benefit generosity | | 0.04 | 0.04 | 0.06 |
| Unemployed*benefit generosity | | 0.10 + | 0.08 | 0.10 + |
| Insecure job*ALMP expenditure | | 0.00 | 0.00 | -0.00 |
| Unemployed*ALMP expenditure | | -0.23 *** | -0.24 *** | -0.24 *** |
| Insecure job*EPL regular | | 0.03 | | |
| Unemployed*EPL regular | | 0.10 * | | |
| Insecure job*EPL temporary | | -0.02 | -0.03 | -0.08 |
| Unemployed*EPL temporary | | 0.08 + | 0.15 ** | 0.08 |
| Insecure job*High EPL regular | | | 0.09 | 0.10 |
| Unemployed*High EPL regular | | | -0.10 | -0.08 |
| Insecure job*High EPL regular*EPL temporary | | | | 0.07 |
| Unemployed*High EPL regular*EPL temporary | | | | 0.10 |
| Constant | 8.17 *** | 8.13 *** | 8.11 *** | 8.18 *** |
| *Variance components* | | | | |
| Variance (country) | 0.37 *** | 0.25 *** | 0.25 *** | 0.25 *** |
| Variance (country-round) | 0.04 *** | 0.02 *** | 0.02 *** | 0.02 *** |
| Variance (individual) | 3.51 *** | 3.50 *** | 3.50 *** | 3.50 *** |
| N (individuals) | 17485 | 17485 | 17485 | 17485 |
| N (country-rounds) | 112 | 112 | 112 | 112 |
| N (countries) | 26 | 26 | 26 | 26 |

*Notes: *** p < 0.001, ** p < 0.01. * p < 0.05. + p < 0.10; See Table 2 for a list of the individual-level control variables.*

*Sources: European Social Survey, round 1 to 6 (2002-2012); Table 2 and Table 3 provide details about the macro data. Own calculations.*

*Table A2.2 Pooled linear regression models (Dependent variable: well-being, scale points)*

| | Model 5 | Model 6 | Model 7 | Model 8 |
|---|---|---|---|---|
| | b | b | b | b |
| *Individual-level variables* | | | | |
| Employment status (Ref.: Secure job) | | | | |
| Insecure job | -0.17 *** | -0.17 *** | -0.22 *** | -0.23 *** |
| Unemployed | -0.83 *** | -0.85 *** | -0.82 *** | -0.84 *** |
| Control variables | ✔ | ✔ | ✔ | ✔ |
| Round fixed effects | ✔ | ✔ | ✔ | ✔ |
| Country fixed effects | ✔ | ✔ | ✔ | ✔ |
| *Country-level variables* | | | | |
| Unemployment rate | | -0.23 *** | -0.20 *** | -0.19 *** |
| Benefit generosity | | 0.08 | 0.13 + | 0.10 |
| ALMP expenditure | | -0.06 | -0.03 | -0.03 |
| EPL regular | | -0.27 ** | | |
| EPL temporary | | 0.10 + | 0.10 + | 0.26 * |
| High EPL regular | | | – | – |
| High EPL regular*EPL temporary | | | | -0.23 + |
| *Cross-level interactions* | | | | |
| Insecure job*unemployment rate | | 0.00 | -0.01 | -0.01 |
| Unemployed*unemployment rate | | -0.03 | -0.05 | -0.06 |
| Insecure job*benefit generosity | | 0.05 | 0.05 | 0.07 |
| Unemployed*benefit generosity | | 0.11 + | 0.10 + | 0.11 + |
| Insecure job*ALMP expenditure | | 0.00 | -0.00 | -0.00 |
| Unemployed*ALMP expenditure | | -0.24 *** | -0.26 *** | -0.26 *** |
| Insecure job*EPL regular | | 0.03 | | |
| Unemployed*EPL regular | | 0.10 * | | |
| Insecure job*EPL temporary | | -0.03 | -0.03 | -0.08 |
| Unemployed*EPL temporary | | 0.09 + | 0.16 ** | 0.09 |
| Insecure job*High EPL regular | | | 0.10 | 0.11 |
| Unemployed*High EPL regular | | | -0.07 | -0.06 |
| Insecure job*High EPL regular*EPL temporary | | | | 0.06 |
| Unemployed*High EPL regular*EPL temporary | | | | 0.08 |
| Constant | 8.62 *** | 8.65 *** | 8.55 *** | 8.53 *** |
| N (individuals) | 17113 | 17113 | 17113 | 17113 |
| N (country-rounds) | 109 | 109 | 109 | 109 |
| N (countries) | 23 | 23 | 23 | 23 |

*Notes: *** p < 0.001, ** p < 0.01. * p < 0.05. + p < 0.10; Standard errors clustered by countries; See Table 2 for a list of the individual-level control variables.*

*Sources: European Social Survey, round 1 to 6 (2002-2012); Table 2 and Table 3 provide details about the macro data. Own calculations.*

*Table A2.3 Linear random intercept models (Dependent variable: health, percentage points)*

| | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| | b | b | b | b |
| *Individual-level variables* | | | | |
| Employment status (Ref.: Secure job) | | | | |
| Insecure job | 0.000 | 0.001 | 0.005 | 0.010 |
| Unemployed | -0.036 *** | -0.042 *** | -0.039 | -0.043 |
| Control variables | ✔ | ✔ | ✔ | ✔ |
| Round fixed effects | ✔ | ✔ | ✔ | ✔ |
| *Country-level variables* | | | | |
| Unemployment rate | | 0.003 | 0.005 | 0.004 |
| Benefit generosity | | 0.012 | 0.012 | 0.012 |
| ALMP expenditure | | 0.003 | 0.004 | 0.004 |
| EPL regular | | -0.020 * | | |
| EPL temporary | | -0.001 | -0.002 | -0.004 |
| High EPL regular | | | -0.025 | -0.025 |
| High EPL regular*EPL temporary | | | | 0.002 |
| *Cross-level interactions* | | | | |
| Insecure job*unemployment rate | | 0.002 | 0.002 | 0.006 |
| Unemployed*unemployment rate | | 0.005 | 0.004 | 0.003 |
| Insecure job*benefit generosity | | 0.008 | 0.007 | 0.002 |
| Unemployed*benefit generosity | | -0.010 | -0.011 | -0.008 |
| Insecure job*ALMP expenditure | | 0.003 | 0.003 | 0.003 |
| Unemployed*ALMP expenditure | | -0.011 | -0.012 | -0.012 |
| Insecure job*EPL regular | | -0.002 | | |
| Unemployed*EPL regular | | 0.003 | | |
| Insecure job*EPL temporary | | -0.001 | 0.000 | 0.022 + |
| Unemployed*EPL temporary | | 0.006 | 0.009 | -0.002 |
| Insecure job*High EPL regular | | | -0.008 | -0.010 |
| Unemployed*High EPL regular | | | -0.007 | -0.004 |
| Insecure job*High EPL regular*EPL temporary | | | | -0.033 * |
| Unemployed*High EPL regular*EPL temporary | | | | 0.014 |
| Constant | 0.892 *** | 0.891 *** | 0.903 *** | 0.903 *** |
| *Variance components* | | | | |
| Variance (country) | 0.002 *** | 0.002 *** | 0.002 *** | 0.002 *** |
| Variance (country-round) | 0.000 *** | 0.000 *** | 0.000 *** | 0.000 *** |
| Variance (individual) | 0.116 *** | 0.115 *** | 0.115 *** | 0.115 *** |
| N (individuals) | 17485 | 17485 | 17485 | 17485 |
| N (country-rounds) | 112 | 112 | 112 | 112 |
| N (countries) | 26 | 26 | 26 | 26 |

*Notes: *** p < 0.001, ** p < 0.01. * p < 0.05. + p < 0.10; See Table 2 for a list of the individual-level control variables.*

*Sources: European Social Survey, round 1 to 6 (2002-2012); Table 2 and Table 3 provide details about the macro data. Own calculations.*

*Table A2.4 Pooled linear regression models (Dependent variable: health, percentage points)*

| | Model 5 | Model 6 | Model 7 | Model 8 |
|---|---|---|---|---|
| | b | b | b | b |
| *Individual-level variables* | | | | |
| Employment status (Ref.: Secure job) | | | | |
| Insecure job | 0.000 | 0.001 | 0.006 | 0.012 |
| Unemployed | -0.036 *** | -0.041 *** | -0.036 ** | -0.039 ** |
| Control variables | ✔ | ✔ | ✔ | ✔ |
| Round fixed effects | ✔ | ✔ | ✔ | ✔ |
| Country fixed effects | ✔ | ✔ | ✔ | ✔ |
| *Country-level variables* | | | | |
| Unemployment rate | | 0.006 | 0.009 | 0.008 |
| Benefit generosity | | 0.026 + | 0.030 * | 0.028 + |
| ALMP expenditure | | 0.004 | 0.005 | 0.005 |
| EPL regular | | -0.017 | | |
| EPL temporary | | 0.006 | 0.005 | 0.021 |
| High EPL regular | | | – | – |
| High EPL regular*EPL temporary | | | | -0.023 |
| *Cross-level interactions* | | | | |
| Insecure job*unemployment rate | | 0.000 | -0.001 | 0.004 |
| Unemployed*unemployment rate | | 0.003 | 0.002 | 0.002 |
| Insecure job*benefit generosity | | 0.008 | 0.006 | 0.002 |
| Unemployed*benefit generosity | | -0.009 | -0.011 | -0.009 |
| Insecure job*ALMP expenditure | | 0.002 | 0.002 | 0.002 |
| Unemployed*ALMP expenditure | | -0.013 | -0.014 | -0.014 |
| Insecure job*EPL regular | | -0.002 | | |
| Unemployed*EPL regular | | 0.003 | | |
| Insecure job*EPL temporary | | -0.000 | 0.001 | 0.025 * |
| Unemployed*EPL temporary | | 0.006 | 0.009 | 0.002 |
| Insecure job*High EPL regular | | | -0.011 | -0.013 |
| Unemployed*High EPL regular | | | -0.010 | -0.009 |
| Insecure job*High EPL regular*EPL temporary | | | | -0.036 * |
| Unemployed*High EPL regular*EPL temporary | | | | 0.009 |
| Constant | 0.931 *** | 0.956 *** | 0.959 *** | 0.957 *** |
| N (individuals) | 17113 | 17113 | 17113 | 17113 |
| N (country-rounds) | 109 | 109 | 109 | 109 |
| N (countries) | 23 | 23 | 23 | 23 |

*Notes: *** p < 0.001, ** p < 0.01. * p < 0.05. + p < 0.10; Standard errors clustered by countries; See Table 2 for a list of the individual-level control variables.*

*Sources: European Social Survey, round 1 to 6 (2002-2012); Table 2 and Table 3 provide details about the macro data. Own calculations.*

# Chapter 5

# The effects of unemployment and insecure jobs on well-being and health for European youth: the moderating role of education policies

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## 1. Introduction

For youth and young adults, one of the central tasks in life is to establish oneself in the labour market. This transition into employment is closely related to education, as education increasingly has become the principal sorting mechanism in the labour market. The transition, moreover, is not seldom problematic and shaky, with youth all over Europe being over-represented among those with weak labour market attachment. Youth are at higher risk of both unemployment and insecure employment, which makes the process of entering adulthood and becoming an autonomous individual prolonged and more difficult (Eichhorst et al., 2013).

Poor mental health, depressiveness and reduced wellbeing in general among youth and young adults is increasingly being recognized as a top public health priority in western societies (Patel et al. 2007), and mental health disorders are the leading cause of disability worldwide (Erskine et al. 2015). Research shows a strong association between employment status and health and/or wellbeing, with unemployed and insecurely employed individuals experiencing reduced health and wellbeing (see McKee-Ryan et al. 2005 and Paul and Moser 2009 for evidence regarding unemployment; DeCuyper et al. 2008 and Virtanen et al. 2005 evidence regarding temporary employment, and Voßemer and Eunicke 2015 for a review with a focus on youth). This association between employment status and health or wellbeing probably

[8] This chapter uses the following integrated data files: ESS Round 3: Edition 3.5, ESS Round 4: Edition 4.3, ESS Round 5: Edition 3.2, ESS Round 6: Edition 2.2. The data are provided by the NSD – Norwegian Centre for Research Data, Norway – Data Archive and distributor of ESS data for ESS Eric.

goes in both directions, that is, being unemployed or insecurely employed is a cause of reduced health or wellbeing, but the latter can also increase the risk of becoming unemployed or insecurely employed.

The aim of the present study is to investigate if and if so how education systems and educational institutions moderate the association between employment status and health and wellbeing among youth. This is done by investigating cross-level interaction effects between individual-level employment status and country level institutions on health and wellbeing. In order to approach this aim, the individual-level associations between education and health and wellbeing must first be established. This is because the principal way through which education systems might moderate the above described association is by affecting the educational opportunities of unemployed individuals or individuals with insecure employment. The following discussion will thus be structured as follows. First, evidence on the individual-level association between education and health and wellbeing is reviewed. Second, the proposed mechanisms through which education can be expected to affect health and wellbeing are discussed, with a specific focus on the situation of the unemployed and insecurely employed. Third, these individual-level mechanisms are related to the institutional features of educational systems.

# 2. Previous research

## 2.1 Associations between education and health or wellbeing

There exist ample evidence on the negative, and at least partially causal, individual level association between education and depressiveness (e.g. Chevalier & Feinstein 2006), happiness and/or life satisfaction (Blanchflower & Oswald 2004;). and health (e.g. Cutler & Lleras-Muney 2006). However, the present study is focused on *contextual* effects of educational policies. The crucial contextual mechanism in this regard relate to the capability approach (Sen 2006), and from research showing how social policies can provide health and wellbeing benefits also to those that do not currently utilize them (Sjöberg 2010). Educational opportunities can be seen as a *potential* that need not be realized in order to increase wellbeing, in that it provides security for individuals, and knowledge that they can get a second chance if necessary (due to e.g. unemployment). Since individuals' current state of wellbeing is most likely affected by their assessments of future prospects, knowledge that further education, or education within a different field, is a realistic opportunity if needed, can provide comfort also to those not currently enrolled in education. This view of education is in line with Amartya Sen's capability approach, with its emphasis of capabilities as *potentialities*, that is, the choice set individuals are facing, not merely the actual decisions they make (Sen, 2006). On a general level, we might thus say that educational opportunities confer capabilities, in the sense that they increase individuals'

opportunities and life chances, their control over their own lives, and enables them to achieve fundamental goals in life, one of which is typically wellbeing.

As capabilities in this sense, as an enlarged choice set, is not an individual characteristic, nor an institutional trait, it is difficult to measure directly. Empirical tests of the capability approach in wellbeing research are therefore rare, but one of the very few studies available on the subject do support the notion that capabilities, in the sense as they are understood here, have positive, causal effects on wellbeing (Muffels & Haedy 2013). The evidence of a positive relationship between factors such as empowerment, agency and self-efficacy on the one hand, and wellbeing on the other (Yount et al. 2014), also support the validity of the capability approach with regard to wellbeing.

## 2.2 Hypotheses

This section will establish the link between the micro (or individual) and macro (or country or institutional) level, which is essential for deriving the specific hypotheses regarding cross-level interactions to be tested. We will here argue that the *inclusiveness* of educational systems is the key institutional dimension for understanding how educational institutions affect health and wellbeing among unemployed or insecurely employed youth. We will use inclusiveness as an umbrella term to capture many aspects of education systems, all of which have to do with how education systems increase opportunities to enter education for socially marginalized groups, that is, how they increase the capabilities of, in particular, unemployed and insecurely employed.

The crucial dimension of inclusiveness relate to barriers in the education system. Barriers here refer to how easy or difficult it is to enter into educational institutions, that is, to the formal rules and institutions that regulate access to and enrolment in education. Inclusive regulations, or low barriers, can be expected to benefit unemployed and insecurely employed youth for two reasons. First, one of the reasons that someone is unemployed or insecurely employed in the first place is typically that he or she has lower human capital, that is, lower education, wrong education, worse grades or other indications of poor academic performance. Youth with a history of poor academic performance (in lower educational tracks) almost invariably find it more difficult to enter into higher educational tracks. This is because higher tracks typically are characterized by some sort of selection mechanism (i.e. barrier), either because spots at this stage are limited or because low achievement students are not wanted. However, the character and the strictness of these barriers can vary. Second, since low human capital is typically at the root of their labour market problems, unemployed and insecurely employed youth usually have a greater need to access education and thereby strengthen their human capital. From the perspective of capabilities, the experience or anticipation of higher barriers would thus hurt their health and wellbeing

relatively more than is the case for those who are already in the education system, or those with less need to enter into it.

Highly stratified educational systems raise barriers to further education, and can therefore be regarded as being less inclusive. This is because the lower educational tracks are typically dead end tracks that restrict the students' opportunity to continue to higher education levels (van Elk et al. 2011). With regard to unemployed or insecurely employed youth, stratification can be expected to be detrimental, since it reduces the opportunities of these groups to strengthen their human capital and thereby, improve their labour market status. Differently put, stratification reduce capabilities, in particular for groups in greatest need of increased capabilities, such as unemployed or insecurely employed.

*Hypothesis 1: The effect of employment status on wellbeing is moderated by the degree of stratification of education systems, so that the negative effect of unemployment or insecure employment is weaker in less stratified education systems.*

Another relevant aspect of barriers in education the number of spots available in the education system, or the enrolment rate in educational institutions (which can be regarded as a proxy for the former). If demand for higher education is high, higher enrolment rates will attenuate competition over a limited number of spots in the education system. This in turn will make differences in educational performance less decisive in determining access to higher education, as those with lower educational performance, among whom unemployed and insecurely employed youth are overrepresented, will less likely be crowded out. That is, when places at higher education institutions are more abundant, unemployed and insecurely employed youth with will likely feel that they have a more realistic opportunity to enrol if needed or desired.

*Hypothesis 2: The effect of employment status on wellbeing is moderated by the enrolment rate in higher education, so that the negative effect of unemployment or insecure employment is weaker when enrolment is higher.*

Access regulations in higher education, such as regulations regarding enrolment of individuals with poor or inadequate secondary education qualifications, are also relevant from an inclusiveness perspective. Closing access to higher education to students without sufficient secondary qualifications is functionally equivalent to introducing a selection of stratification mechanism at age 18 or 19. Since unemployed or insecurely employed youth are disproportionally represented among students with insufficient qualifications, the second chance provided by inclusive access routes

disproportionally increase their educational opportunities (Eurydice 2012). A similar situation exists with regard to age: unemployed or insecurely employed youth typically start working after secondary school, and are thus more likely to enter higher education at older ages (SOU 2003). Older students are likely to be more dependent on education systems which facilitate access on the basis of e.g. work experience or informal learning rather than regular, formal qualifications.

*Hypothesis 3: The effect of employment status on wellbeing is moderated by access regulations, so that the negative effect of unemployment or insecure employment is weaker when opportunities for second chance education are more generous.*

# 3. Data and methods

## 3.1 Data and Participants

Individual-level data used for the empirical part of this study comes from the European Social Survey (ESS). ESS has a number of advantages given the aims of this study. It covers many European countries, with sufficient country-specific sample sizes so as to enable robust statistical analysis also of small subgroups. ESS is moreover pre-harmonized across participating countries, making it well suited for the kind of cross-country comparisons made here. In this study, data from 26 countries in four ESS rounds (2006, 2008, 2010 and 2012) are pooled. Pooling is done in order to achieve a sufficient sample size to enable subgroup analysis by employment status, age and country, a not uncommon practice in this type of research (e.g. Hujits et al. 2010). Only countries with sufficient macro data and with data from at least one ESS round are included in the study.

## 3.2 Measures

### 3.2.1 Dependent variables

To strengthen the validity of the conclusions, several indicators are used to measure health and wellbeing.

*Life satisfaction:* Life satisfaction gives a global measure of wellbeing, and the validity of life satisfaction as an indicator of wellbeing is supported by its ability to reliably predict suicide, and to reflect differences in objective living conditions and significant life events (Diener et al. 2013). It is measured by the question “All things considered, how satisfied are you with your life as a whole nowadays?”, with answers ranging from 0 to 10, and higher scores indicating higher life satisfaction.

*Self-rated general health (SRH):* SRH gives a global measure of the health status of individuals. It is measured by the question "How is your health in general?", with answers ranging from 1 ("Very good") to 5 ("Very bad"). Lower scores thus mean better health. SRH is analysed as continuous variables, but as sensitivity check it has also been operationalized as a binary variable, with no substantial differences in results.

*Depressiveness:* Depressiveness is here measured by a shortened version of the Centre of Epidemiological Studies-Depression (CES-D) scale, a well-established screening tool for depressive disorders. The tool consists of 8 items asking about frequency of depressive symptoms, with four possible answers, ranging from (0) "None or almost none of the time" to (3) "All or almost all of the time". The scale thus ranges from 0 to 24, with higher scores indicating more depressive complaints. Data on depressiveness are only available in rounds 2006 and 2012, why the models with depressiveness as outcome are based on a smaller sample.

### 3.2.2 Independent variables at the individual level

The hypotheses refer to unemployment and job insecurity, respectively.

*Unemployment:* Unemployment is measured by the question "[W]hich of these descriptions best describes your situation (in the last seven days)?", with the answers "Unemployed, looking for job" and "Unemployed, not looking for job" indicating unemployed status, and in "Education" and "Paid work" used as reference category.

*Job insecurity:* Job insecurity is measured by the question "Do/did you have a work contract of ...", with alternatives "Limited" and "No contract" indicating insecure employment, and "Unlimited" as reference category.

As control variables on the individual level we use age (measured in years), gender (with being male as reference category), unemployment experience (with no unemployment experience as reference category), and a dummy variable indicating if the respondent is in education.

### 3.2.3 Independent variables at the country level

Three institutional indicators, each corresponding to one of the hypotheses, are analysed.

*Education system stratification:* The most common indicator of education system stratification used in the literature is the age of tracking, that is, the age at which students are selected into different stratified tracks with different curricula in secondary education (OECD, 2013).

*Enrolment rate*: Enrolment in higher education is operationalized as the share, ranging from 0 to 1, of the population aged 20 to 29 years that are enrolled in tertiary education. Data are from Eurostat, and refer to mean values over the years 2006 – 2011.

*Second chance opportunities:* Second chance education, as measured by Eurydice (2014: 22) is defined as access routes that open access to individuals without the form of secondary education credentials that typically give direct access to higher education. These types of entry routes can be guaranteed in all higher education institutions or programs (defined here as generous second chance opportunities), for some institutions or programs (intermediate second chance opportunities), or not at all (no second chance opportunities). Second chance education is operationalized as dummy variables for each category, with no second chance opportunities as reference category. Eurydice data refer to the years 2012/13.

As country level control we use GDP per capita, from Eurostat. Values for country-level variables are presented in the Appendix.

### 3.3 Strategy of Analysis

As all dependent variables are continuous, (multilevel) linear random intercept models are analysed. Multilevel models are required in order to account for the nested structure of the data, with individuals nested within countries (Rabe-Hesketh & Skrondal 2012). Multilevel models also enable analysis of cross-level interaction effects, that is, if and how the association between an individual-level independent variable and the dependent variable is conditional on the value of a country-level variable. Cross-level interaction are analysed in order to formally test the hypotheses regarding the moderating role of country-level educational institutions.

Multilevel models with two levels – individuals nested within countries – are analysed. Since the year to year variation in the country-level independent variables is so small, a three level structure, with individuals nested within country-years nested within countries, is not a feasible alternative. The interactions between the macro variables and unemployment and insecure employment, respectively, are added separately into the models, since models with insecure employment exclude respondents who never had a job, and thus a large share of the unemployed category.

## 4. Results

Table 1 shows associations between life satisfaction and unemployment, and how institutional variables moderate this association. As expected, unemployed and insecurely employed individuals have considerably lower levels of life satisfaction than individuals their respective reference groups (model 1). All three hypotheses are supported with unemployment as focal individual-level variable, with highly significant and positive interaction terms between being unemployed and the age of tracking, enrolment rate and generous second chance opportunities, respectively. This means

that unemployed individuals are relatively (compared to employed/students) better off in countries with high age of tracking, high enrolment rate and generous second chance opportunities. One average, one year postponed age of tracking is associated with a 0.074 scale point rise in life satisfaction, and a 1 % higher enrolment rate is associated with 0.029 higher life satisfaction. However, none of our macro variables seem to reduce the negative association between insecure employment and low wellbeing, with enrolment rate actually showing a negative interaction term. The three hypotheses thus receive mixed support with regard to life satisfaction.

*Table 1. Multilevel models with life satisfaction as outcome*

| | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| | b | b | b | b |
| Age | -0.022*** | | | |
| Female | 0.056* | | | |
| Education | 0.087* | | | |
| Unemployment experience | -0.491*** | | | |
| Unemployed | -0.828*** | -1.917*** | -1.438*** | -0.902*** |
| Insecure | -0.087** | -0.151 | 0.084 | -0.156*** |
| Tracking | | | | |
| *Unemployed | | 0.074*** | | |
| * Insecure | | -0.001 | | |
| Enrolment rate | | | | |
| *Unemployed | | | 2.913*** | |
| *Insecure | | | -1.232* | |
| SCO*: Generous | | | | |
| *Unemployed | | | | 0.310** |
| *Insecure | | | | -0.112 |
| SCO*: Intermediate | | | | |
| *Unemployed | | | | -0.037 |
| *Insecure | | | | 0.030 |
| Constant | 7.928*** | | | |
| N (with unemployed) | | 28384 | 29100 | 27041 |
| N (with insecure) | 19802 | 19325 | 19802 | 18058 |

*Source: Individual level data from ESS. GDP and enrolment data from Eurostat, data on second chance opportunities from Eurydice. Controlled for GDP per capita.*

****<0.001 **<0.01*<0.05. *SCO = Second chance opportunities*

*Since interactions with unemployment and insecure employment are analysed separately but presented in the same model, values of control variables, main effects of macro-variables and the constant differ within models and are not included in the table.*

Turning to SRH as dependent variable in Table 2, we see that unemployment but not insecure employment is associated with worse health. However, the hypotheses receive only weak support, as none of the indicators of educational system inclusiveness show significant interaction effects with being insecurely employed, and

only enrolment show a significant interaction with being unemployed. Hypothesis 1 and 3 is therefore rejected, and hypothesis 1 partly supported, with SRH as outcome.

*Table 2. Multilevel models with self-rated health as outcome*

| | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| | b | b | b | b |
| Age | -0.000 | | | |
| Female | 0.091*** | | | |
| Education | -0.015 | | | |
| Unemployment experience | 0.128*** | | | |
| Unemployed | 0.096*** | 0.146 | 0.199** | 0.058** |
| Insecure | -0.002 | 0.014 | -0.013 | -0.002 |
| Tracking | | | | |
| *Unemployed | | -0.005 | | |
| * Insecure | | -0.001 | | |
| Enrolment rate | | | | |
| *Unemployed | | | -0.640* | |
| *Insecure | | | 0.098 | |
| SCO*: Generous | | | | |
| *Unemployed | | | | -0.000 |
| *Insecure | | | | 0.032 |
| SCO*: Intermediate | | | | |
| *Unemployed | | | | 0.014 |
| *Insecure | | | | -0.009 |
| Constant | 1.653*** | | | |
| N (with unemployed) | 29198 | 28384 | 29100 | 27041 |
| N (with insecure) | 19844 | 19363 | 19844 | 18101 |

*Source: Individual level data from ESS. GDP and enrolment data from Eurostat, data on second chance opportunities from Eurydice. Controlled for GDP per capita*

****<0.001 **<0.01*<0.05 *SCO = Second chance opportunities*

*Since interactions with unemployment and insecure employment are analysed separately but presented in the same model, values of control variables, main effects of macro-variables and the constant differ within models and are not included in the table.*

Table 3 show results with depressiveness as outcome. In line with predictions, unemployment and (less so) insecure employment is associated with higher depressiveness scores. However, we again see that educational institutions hardly moderate this association, as none of the interaction terms are significant on the 5 % level, although the interaction term between being unemployed and enrolment rate is significant on the 10 % level. Hypothesis 1 and 3 is therefore rejected, and hypothesis 1 receives weak support, with depressiveness as outcome.

*Table 3. Multilevel models with depressiveness as outcome*

| | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| | b | b | b | b |
| Age | -0.012 | | | |
| Female | 0.586*** | | | |
| Education | 0.183 | | | |
| Unemployment experience | 0.683*** | | | |
| Unemployed | 0.997*** | 2.040** | 1.756*** | 1.007*** |
| Insecure | 0.288*** | 0.642 | 0.154 | 0.375** |
| Tracking | | | | |
| *Unemployed | | -0.074 | | |
| * Insecure | | -0.019 | | |
| Enrolment rate | | | | |
| *Unemployed | | | -3.928 (p=0.097) | |
| *Insecure | | | 1.095 | |
| SCO*: Generous | | | | |
| *Unemployed | | | | 0.010 |
| *Insecure | | | | 0.299 |
| SCO*: Intermediate | | | | |
| *Unemployed | | | | -0.081 |
| *Insecure | | | | -0.169 |
| Constant | 4.589*** | | | |
| N (with unemployed) | 14332 | 13997 | 14332 | 13325 |
| N (with insecure) | 9734 | 9533 | 9734 | 8865 |

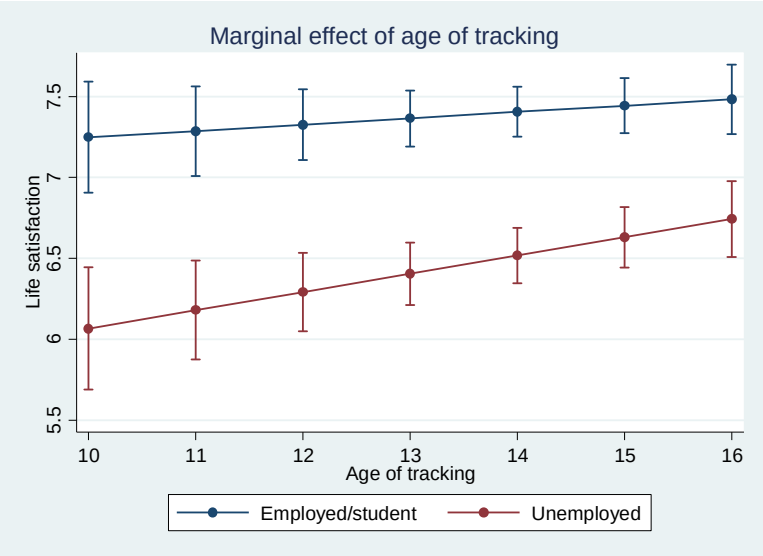
*Source: Individual level data from ESS. GDP and enrolment data from Eurostat, data on second chance opportunities from Eurydice. Controlled for GDP per capita*

****<0.001 **<0.01*<0.05 *SCO = Second chance opportunities*

*Since interactions with unemployment and insecure employment are analysed separately but presented in the same model, values of control variables, main effects of macro-variables and the constant differ within models and are not included in the table.*

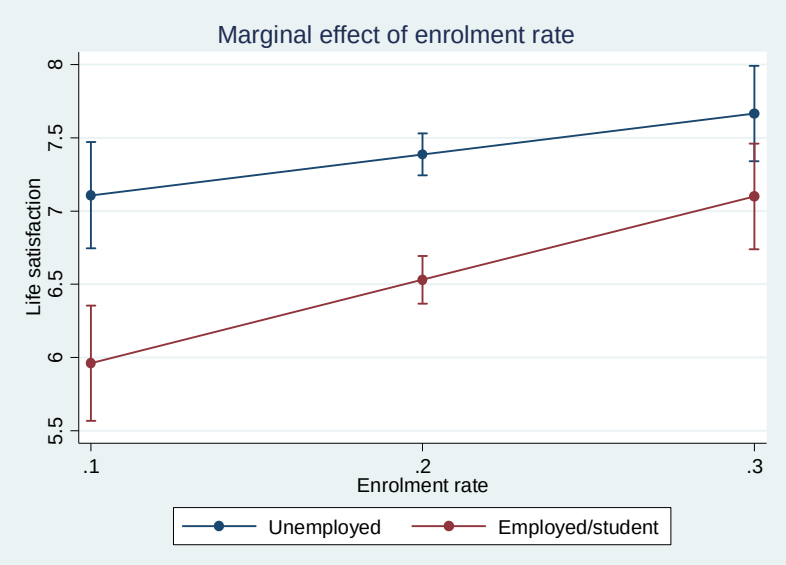
We illustrate and compare the size of some of the interaction effects by looking at the marginal effects of the macro variables on the wellbeing of unemployed and employed/students. The values on the vertical axis of the figures show levels of life satisfaction or SRH, and the slopes can therefore be interpreted as the change in wellbeing or health of unemployed and not unemployed individuals respectively, associated with moving from the lowest to the highest observed value of the respective macro variable. We can see that the effects (although they cannot straight forwardly be interpreted as causal) of the macro variables are fairly strong. For example, the predicted difference in life satisfaction between unemployed and employed/students when enrolment rate is at its highest observed value is only about half a scale point, as compared to more than one scale point when enrolment is at its lowest observed value. And the predicted difference in SRH is practically zero when enrolment is high.

*Figure 1. Marginal effect of age of tracking on life satisfaction*



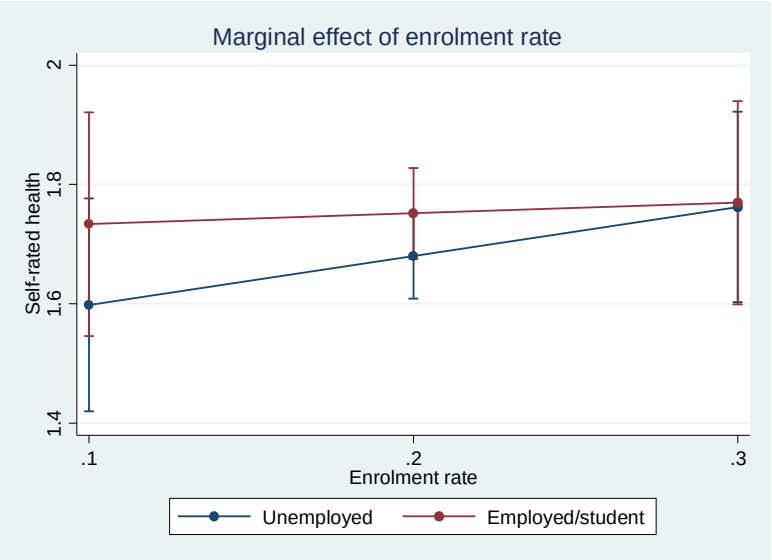

*Calculated from model 2 in Table 1*

*Figure 2. Marginal effect of enrolment rate on life satisfaction*




*Calculated from model 3 in Table 1*

*Figure 3. Marginal effect of enrolment rate on self-rated health*




*Calculated from model 2 in Table 2*

# 5. Conclusions

The aim of this study was to investigate if and if so how educational institutions moderate the association between employment status (unemployment or insecure employment) and health or wellbeing. This was done by analysing cross-level interaction effects between individual-level employment status and a range of country-level educational institutions (stratification, enrolment and second chance opportunities) within a multilevel framework.

Three hypotheses were tested. Hypothesis 1 (regarding the moderating impact of stratification), receives mixed or weak support, and is only supported with regard to the association between unemployment and life satisfaction. Hypothesis 2 receives stronger support, in that enrolment is a significant (on the 5 % level) moderator of the association between unemployment and life satisfaction and SRH, and borderline significant with regard to depressiveness. However, enrolment was not a significant moderator of the association between insecure employment and any of the wellbeing indicators. The support for hypothesis 3 is similar to that with hypothesis 1, and only supported with regard to the association between unemployment and life satisfaction.

Overall, the support is much stronger for the moderating impact of educational policies on the effects of unemployment than on the effects of insecure employment. While the hypotheses were formulated so as to include both the unemployed and the insecurely employed youth, the theoretical line of reasoning behind the hypotheses are arguably more relevant in the case of unemployment than regarding insecure employment. Unemployed individuals are by definition further away from a normal labour market status, and thus in greater need of opportunities to strengthen their human capital. That

is, their capabilities are more constrained in the first place, and they need greater institutional support to achieve comparable capabilities as individuals with employment or in education. Also, the main effect of unemployment on reduced wellbeing is much stronger than the concomitant effect of insecure employment. There is consequently less "effect" of insecure employment for the educational institutions to moderate, and less reason to expect strong interaction effects.

It should be highlighted that the micro data from the European Social Survey (ESS) used in this study, while of very high quality, cannot capture all of the potential health benefits of educational policies. This is because part of the effect of the educational policies analysed can be expected to operate by enabling *transitions* from unemployment or insecure employment to standard employment or to studies. However, since ESS data is cross-sectional, and measure both employment status and wellbeing at one and the same time, these effects cannot be fully captured with this type of data. Cross-sectional data can capture effects of *expectations* of such transitions (through the capability mechanism), but not the transitions themselves, that is, not the realized capabilities. Another potential drawback of this study is that, with cross-sectional data, it is difficult to take compositional and selection effects into account. Since the size of both the unemployed and the insecurely employed youth population varies across countries, there is reason to expect that the composition of this population varies across countries as well.

To sum up, this study has shown that unemployed and, to a lesser extent, insecurely employed youth experience lower wellbeing and worse health across Europe. This is in line with previous findings (e.g. Voßemer and Eunicke 2015). However, according to the results presented here, educational policies can only dampen the negative effects of unemployment to some extent, and not at all dampen the negative effects of insecure employment. Future research should investigate this issue further using individual-level longitudinal data, if possible in a cross country comparative framework.

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# 6. Appendix

*Table 7. Sample structure*

| Country | Country abbreviation | Share unemployed | Share with insecure employment |
|---|---|---|---|
| Belgium | BE | .082 | .502 |
| Bulgaria | BG | .182 | .470 |
| Czech Republic | CZ | .073 | .352 |
| Denmark | DK | .060 | .446 |
| Germany | DE | .061 | .519 |
| Estonia | EE | .058 | .361 |
| Ireland | IE | .177 | .629 |
| Greece | GR | .173 | .622 |
| Spain | ES | .119 | .623 |
| France | FR | .111 | .500 |
| Italy | IT | .213 | .695 |
| Cyprus | CY | .099 | .677 |
| Lithuania | LT | .066 | .293 |
| Hungary | HU | .101 | .356 |
| Netherlands | NL | .045 | .502 |
| Austria | AT | .045 | .474 |
| Poland | PL | .077 | .644 |
| Portugal | PT | .128 | .545 |
| Slovenia | SI | .070 | .668 |
| Slovakia | SK | .097 | .386 |
| Finland | FI | .061 | .602 |
| Sweden | SE | .075 | .579 |
| Great Britanin | GB | .088 | .373 |
| Iceland | IS | .046 | .650 |
| Norway | NO | .032 | .416 |
| Switzerland | CH | .043 | .372 |
| Average | | .089 | .505 |

*Table 8. Country-level variables*

| Country | GDP (EU average = 100) | Age of tracking | Tertiary enrolment rate, % | Second chance opportunities |
|---|---|---|---|---|
| BE | 118 | 12 | 19.4 | Generous |
| BG | 43 | 13 | 18.4 | No |
| CZ | 81 | 11 | 18.2 | No |
| DK | 125 | 16 | 25.2 | No |
| DE | 118 | 10 | 18.8 | No |
| EE | 68 | 15 | 22.5 | Generous |
| IE | 134 | 15 | 14.7 | Intermediate |
| GR | 90 | 15 | 29.0 | No |
| ES | 99 | 16 | 19.0 | Intermediate |
| FR | 107 | 15 | 18.5 | Intermediate |
| IT | 101 | 14 | 19.4 | Intermediate |
| CY | 100 | . | 13.2 | No |
| LT | 66 | 16 | 28.6 | No |
| HU | 64 | 11 | 19.0 | No |
| NL | 136 | 12 | 20.6 | - |
| AT | 125 | 10 | 18.5 | No |
| PL | 58 | 15 | 23.8 | No |
| PT | 80 | 15 | 17.5 | Generous |
| SI | 85 | 14 | 27.9 | No |
| SK | 70 | 11 | 16.2 | No |
| FI | 117 | 16 | 30.7 | Generous |
| SE | 126 | 16 | 22.9 | Generous |
| GB | 113 | 16 | 14.0 | Intermediate |
| IS | 115 | 16 | 21.9 | Intermediate |
| NO | 183 | 16 | 22.9 | Generous |
| CH | 154 | 15 | 16.7 | - |

# Chapter 6

# The effects of unemployment and insecure jobs on well-being and health for European youth: the moderating role of social inequality

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## 1. Introduction

Previous research on the role of country-level moderators on the relationship between employment status and well-being has mainly focused on economic indicators referring to the wealth of the country (e.g., GDP level; Eichhorn, 2013; Paul & Moser, 2009). Less research can be found on the distribution of this wealth, i.e., the existing (social) inequality in the country, which may also shape the way vulnerable labor market (LM) positions (i.e., unemployment and job insecurity) affect well-being. Thus, this chapter focuses on the moderating role of the (social) inequality of the country on the effect of LM situation on individual well-being, in order to explain country-level variations in this this relationship. The central research question is: Does the effect of unemployment and job insecurity on well-being vary depending on the level of (social/income) inequality in the country?

Previous studies on country-level moderators concerned mostly the overall population (e.g., Eichhorn, 2013), staying limited in accounting for the specific characteristics of young Europeans. Therefore, the central focus of the current study is on young people – one of the most vulnerable groups in the labor market.

We address the research question by using data from the EU-SILC (EU Statistics in Income and Living Conditions) 2013 dataset, which offers, in contrast to other EU-SILC

[9] This chapter is based on data from Eurostat: European Union Statistics on Income and Living Conditions (EU-SILC), 2013. The responsibility for all conclusions drawn from the data lies entirely with the authors.

datasets, data on a wider variety of different well-being indicators. In the current analysis we look at three different well-being indicators: life-satisfaction, psychological (un)well-being, general health. Also for macro data, the study intends to measure and model the phenomenon of (social) inequality by using different, both 'objective' and 'subjective', indicators. The macro data has been collected from different resources, such as Eurostat, Eurobarometer, etc. We apply two-level analyses: youth (level 1) nested in countries (level 2). This approach allows testing the moderating role of (social inequality), by accounting for both between-country differences, and within-country variability in assessing youth well-being.

# 2. Theory and hypotheses

Conservation of Resources (COR) theory (Hobfoll, 1989) offers a framework for understanding how income inequality mitigates the unfavourable effects of threatening LM conditions (i.e., unemployment, precarious working conditions) on well-being. COR theory proposes that individuals strive to preserve and protect their resources and to acquire additional resources in order to adapt successfully to their environment. Accordingly, "resources are defined as those objects, personal characteristics, conditions, or energies that are valued by the individual or that serve as means for attainment of these objects, personal characteristics, conditions or energies" (Hobfoll, 1989; p. 516). Hobfoll recognizes four categories of resources: objects (e.g., shelter, food, transportation), conditions (e.g., marriage, employment), personal characteristics (e.g., self-esteem, optimism, sense of mastery), and energies (e.g., time, money, knowledge). All these resources are important not only for their instrumental value but also for their value in helping individuals to deal with threatening and stressful conditions in order to prevent health impairments, and to promote well-being.

According to COR theory (Hobfoll, 1989), individuals experience stress and impairments in well-being when their resources are lost or threatened, because they are not in a position to invest resources in order to deal with the demanding environmental conditions. Considering that resources can be found at different levels of analysis (e.g., the individual-level, the group /family-level or the societal/country-level), it could be argued that income equality is a societal resource, while income inequality is indicative of resource loss at the societal level. This is because income inequality enhances the feeling of inequity in a society (Paul & Moser, 2009) since, in unequal societies there are fewer opportunities and lower access to social policies. In this context, a young, unemployed person may have the feeling of helplessness because in an unequal society will have fewer chances to finding a job or will be more likely to find a temporary rather than a permanent job. Thus, it may be proposed that in European countries where income inequality is more prominent, the detrimental effect of unemployment or temporary employment on well-being will be stronger. In line with this theoretical reasoning, Paul and Moser (2009) in their meta-analysis showed that the negative effect of unemployment on mental health was stronger in countries with

unequal income distributions. The authors argued that unemployed people are more likely to drop out of social circles which explains why unemployment has more deleterious effects in less (vs. more) egalitarian societies. On the basis of this analysis, we hypothesize the following:

**Hypothesis 1**: Employment status interacts with (social/income) inequality in explaining well-being in a way that the well-being of those unemployed and temporary employed is particularly impaired in countries where income inequality is high (vs. low).

# 3. Data and methods

## 3.1 Micro data

EU-SILC data are available annually since 2003. In the current analysis, we have focused only on the data from the wave 2013 because of the add-hoc module on well-being on that year. The 2013 dataset provides, next to the usual health assessment indicator, also data on other well-being aspects. EU-SILC 2013 provides information for 29 European countries, which are all included in our analysis, except where no information on macro-level indicators was available. For the purposes of the current project, we have focused only on a restricted sample of young people aged between 16 and 29, whose last educational qualification was up to 5 years ago and who were not in any form of education at the time the study took place. This life-course definition of youth allows comparing young people from different European countries at the same life stage, which is the beginning of their career. Table A1.1 in the Appendix provides a short overview of the country-level sample sizes in EU-SILC. One may note that the total number of the youth sample reported in Table A1.1 does not correspond to the *N* reported in tables presenting the results of the analysis. This is for two main reasons: 1) the already mentioned reduced number of countries in the analysis due to missing information in relevant macro-level indicators; 2) not all respondents in EU-SILC have participated in the ad-hoc module 'creating' missings in the indicators drawn from the add-hoc module.

## 3.2 Micro-level variables

*Employment Status* was measured by means of self-reports on economic status. We used a categorical variable to distinguish between those employed with permanent contract, those employed with temporary or no contract (that indicates job insecurity), and those unemployed.

*Overall Life Satisfaction* was measured with one item asking participants how satisfied they currently are with their life in general. Participants rated this item on the basis of a 11-point scale ranging from (0) = not at all satisfied to (10) = completely satisfied. High scores are indicative of high levels of satisfaction.

*Psychological (Un)well-being* was measured by mean of three items (i.e., 'Being very nervous'; 'Feeling down in dumps'; 'Feeling downhearted and depressed') with the previous four weeks as a reference point. Items were rated with a 5-point scale ranging from (1) = none of the time to (5) = all of the time. Thus, high scores are indicative of poor well-being. The scale was reliable (Cronbach's alpha = 0,79).

*General Health* was measured with one item asking participants to rate their general health by using a 5-point scale ranging from (1) = very good to (5) = very bad. Thus, high scores are indicative of bad health.

*Control Variables*. In all analyses we controlled for participants' age (in years), gender, education (i.e., we considered the highest attained level of education that was measured in three categories: ISCED 1-2; ISCED 3-4; ISCED 5-6), immigration background and household characteristics (i.e., we have differentiated between one- and two-parent households).

## 3.3 Macro-level moderators

*Income Inequality* was measured by means of three different macro- indicators, two 'objective' and one 'subjective': 1) the Gini coefficient for the country in 2013 (Eurostat, 2016), which represents the income distribution of a nation's residents, with higher scores indicating higher income inequality; 2) The income share of the lowest 10% of the country for 2012 (World bank, 2016); and 3) Perceived income inequality that was operationalized as the share of people in a country who 'strongly agree' with the statement 'Differences in income in <country> are too large' (Eurobarometer, 2009). The descriptives of these macro-level variables can be found in Appendix Table A1.2.

## 3.4 Analytical Strategy

Random-intercept models with two-levels (i.e., individuals nested in countries) were used to account for both between-country and within-country variability while assessing youths' well-being and health.

# 4. Results

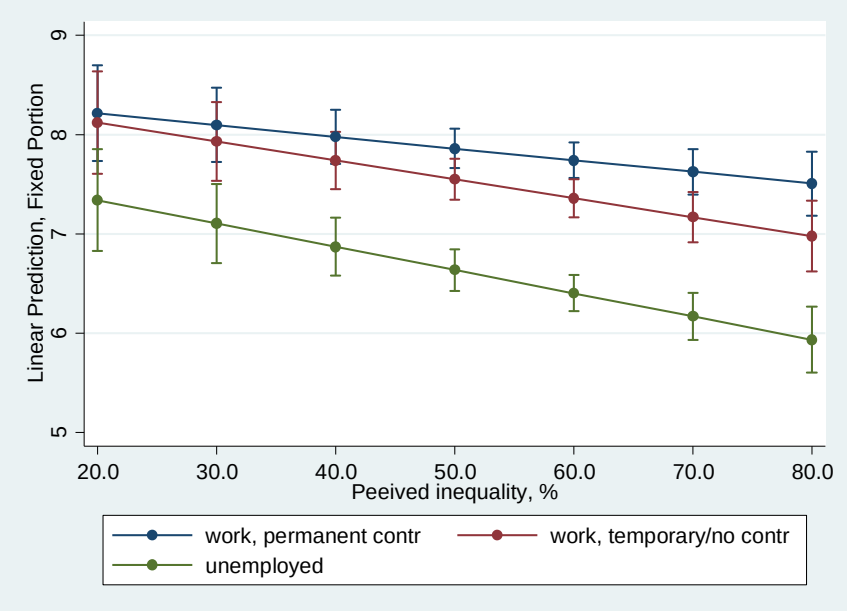
## 4.1. Life satisfaction

Employment status was expected to interact with income inequality in explaining well-being in a way that the well-being of those unemployed and those employed with temporary/no contract was expected to be particularly impaired than those employed with a permanent contract in more unequal societies. Our findings regarding life satisfaction indicate that as concerns main effects (Models 1-3 in Table A2.1 in Appendix), both unemployed and those employed with a temporary or no contract lower levels of life satisfaction compared to those employed with a permanent contract. Regarding income inequality as a macro-level indicator, the Gini coefficient (Model 1)

and perceived inequality (Model 3) related negatively to life satisfaction, meaning that in more unequal societies –both in 'objective' and 'subjective' terms– young people tend to be less satisfied with their lives than their peers in more equal societies. Similar conclusions can be drawn from the findings regarding the third indicator (i.e., income share of the lowest 10%) that was found to relate positively to life satisfaction (Model 2).

As concerns the interaction effects, the Gini coefficient did not moderate the relationship between employment status and life satisfaction significantly (Model 4; Table A2.1). However, for both the income share of the lowest 10% of the population and the perceived income inequality indicators, the interaction effect with employment status in explaining life satisfaction was statistically significant. The significant interaction effect between employment status and income share of the lowest 10% (Model 5; Table A2.1) suggests that the (negative) difference between those employed with a temporary contract and those employed with permanent contract becomes smaller the more equal the society (i.e., the income share of lowest 10% becomes higher). Also, in societies that are perceived as more unequal (Figure 1, based on Model 6, Table A2.1), the life satisfaction of temporary/no contract workers or unemployed compared to those employed with permanent contract becomes even lower (though the slope for temporary employed was marginally significant). These findings support Hypothesis 1 for life satisfaction, indicating that in more unequal societies the already negative effect of insecure LM position on life satisfaction is even more impaired (compared to more equal societies).

*Figure 1: Interaction effect of employment status and perceived income inequality on youths' life satisfaction, predictive margins*




*Source: EU-SILC 2013, own calculations*

## 4.2. Psychological (un)well-being

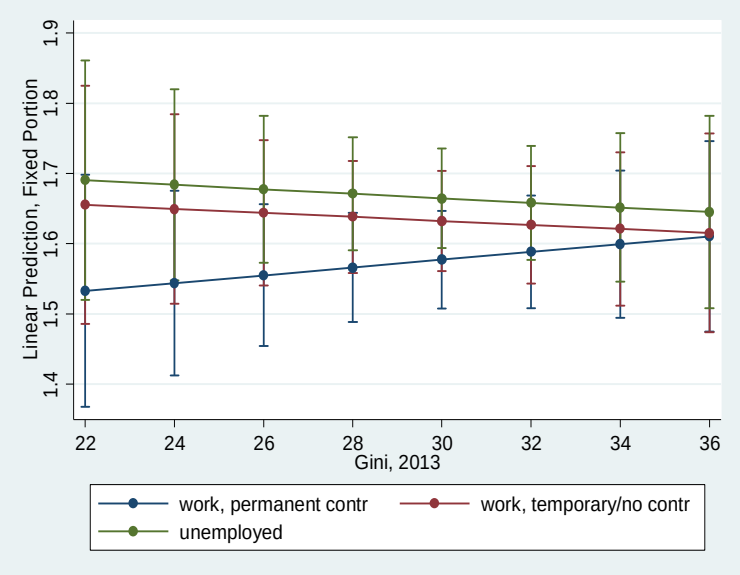
Regarding psychological (un)well-being (Table A2.2), as concerns the main effects, both unemployed and those employed with a temporary contract reported higher levels of poor well-being than those employed with a permanent contract. However, none of the three income inequality indicators related directly and significantly to well-being nor moderated the relationship between employment status and (un)well-being significantly. Thus, Hypothesis 1 gained no support from our data regarding the psychological (un)well-being indicator.

## 4.3. Perceived health

The results of the analysis regarding perceived (poor) health indicated that both unemployed and those employed with a temporary contract report higher levels of poor health than those employed with a permanent contract (Models 1-3, Table A2.3). None of the macro-level (income) inequality indicators was found to relate statistically significant with the outcome. However, there were some statistically significant interaction (moderating) effects between macro-level inequality measures and individual employment status of the youth. First, the significant interaction effect between the Gini coefficient and employment status (Figure 2, based on Model 4 in Table A2.3) suggests that the difference between unemployed or employed with temporary/no and employed with permanent contract in terms of perceived poor health becomes smaller in more unequal societies (i.e., the higher the Gini coefficient). As can

be better observed in Figure 2, in more unequal societies, the difference between different LM statuses on perceived poor health tends to become smaller and eventually disappears. Put differently, those unemployed and employed with temporary contracts report higher levels of poor health as compared to those employed with permanent contracts, when living in equal and not in unequal societies.

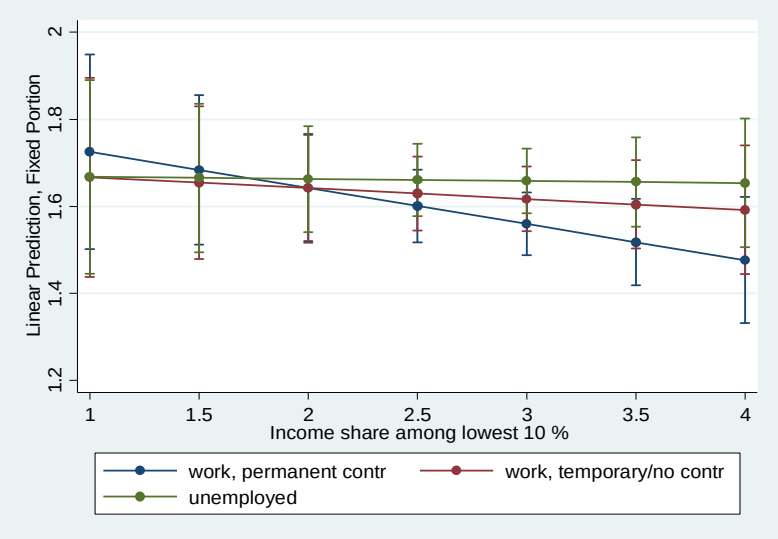
*Figure 2: Interaction effect of employment status and country's Gini coefficient on youth' perceived (poor) health, predictive margins*




*Source: EU-SILC 2013, own calculations*

Another statistically significant moderating effect can be observed for the macro-level 'objective' measure of income inequality – income share of the lowest 10% (Model 5, Table A2.3). Contrary to what hypothesized, our findings show that in unequal societies, unemployed youth or youth in temporary LM positions tend to report lower levels of poor health compared to those employed in permanent jobs. However, the interaction effect (see also in Figure 3) reveals that in more equal societal conditions those in less favourable LM positions tend to experience higher levels of impaired health. Regarding Hypothesis 1, our findings here remain somewhat contradictory, suggesting that unemployed youth or youth in insecure LM positions report poorer health in more equal than unequal social contexts.

*Figure 3: Interaction effect of employment status and income share of the country's lower 10% on youth' perceived (poor) health, predictive margins*




*Source: EU-SILC 2013, own calculations*

# 5. Conclusion

In this report we have used data from young individuals coming from 29 European countries in order to investigate whether country-level (social) inequality moderates the effect of employment status on three well-being indicators: overall life satisfaction, psychological (un)well-being, and poor health. We hypothesized that the damaging effects of insecure labor market positions on well-being will be stronger in more unequal societies. An important advantage of our analysis was that we have measured income inequality by means of both objective (i.e., Gini coefficient, and income share in the lowest 10%) and subjective (i.e., perceived income inequality in a country) indicators. Interestingly, our results varied depending on the income inequality indicator, as well as the well-being indicator.

As concerns overall life satisfaction, our findings tend to support our central hypothesis, since we found that in more equal societies (as depicted by the 'objective' measure of income share at the lowest 10%) the negative effect of LM insecurity on life satisfaction of youth is buffered, and that in societies where people perceive more inequality (as depicted by the 'subjective' inequality measure), youth tend to suffer more from bad LM experience in terms of perceived life satisfaction. These results are in line with our theoretical assumptions based on COR theory (Hobfoll, 1989). However, these results were not validated further when psychological (un)well-being was tested as the dependent variable, while results were reverse when (poor) health was tested as the dependent variable. Namely, our findings suggested that the negative effect of LM exclusion and inequality for health is stronger in (objectively) more equal societies rather than in unequal societies. To put it differently, income inequality seems to be

more detrimental for the health of those employed than of those unemployed and it is employed (and not unemployed) youth that tend to benefit more from income equality.

These unexpected findings are, however, in line with other studies that found similar effects. For example, Eichhorn (2013) found that income inequality (as measure by the Gini coefficient) moderated the relationship between unemployment and life satisfaction in a way that the negative effect of unemployment on life satisfaction was weaker in societies with greater income inequality. These effects could be attributed to the fact that greater inequality may alter the reference group framework, since the distance to those with whom individuals compare themselves may change (Graham, 2009). In other words, the direction of the moderating effect of income inequality on the relationship between unemployment and well-being depends on which group identity someone adopts and which intergroup comparisons become relevant. According to relative deprivation theory (Crosby, 1984), the bigger the discrepancy between the outcomes people obtain and the outcomes to which they feel entitled, the greater their feelings of relative deprivation, which in turn implies a greater damage on their wellbeing (Fryer, 1998). Nevertheless, entitlement to certain outcomes may be understood through recourse to social (group level) identity (Tajfel & Turner, 1986). According to social identity theory, every social group attempts to achieve and preserve a positive social identity through social comparison to an out-group. Intergroup comparisons and identity strategies depend on the perceived legitimacy of status quo, as well as, on the permeability of boundaries between social groups (e.g., possibility of individual social mobility). Hence, to be unemployed in a society with high income inequality may be considered to have detrimental effects on self-image and well-being, if the group of comparison is that of employed people with high income. However, to be unemployed in a highly structured hierarchical society (with boundaries between different groups perceived as non-permeable) with inequalities in income, it may entail social creativity strategies and, in particular, changes in the group of comparison. In this context, unemployed people may choose to compare themselves with other people similar to them, thus mitigating the negative effect of unemployment on their well-being. This latter situation is even more likely in countries where unemployment or insecure jobs tend to be the norm.

To conclude, the current analysis provided further findings on the macro-level conditions under which unemployment and insecure labor market positions are particularly detrimental for the well-being of young people in Europe. Despite the fact that this analysis is not exhaustive, our findings provide insights not only for theory development but also for potential public policies that aim at protecting the well-being of young Europeans.

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# 6. Appendix

## 6.1 Appendix A1

*Table A1.2 Sample size of youth in EU-SILC 2013 across countries*

| **Country** | 16-29 year old population | 16-29 year old, not in education < 5 years |
|---|---|---|
| AT | 1,794 | 512 |
| BE | 2,186 | 596 |
| BG | 1,596 | 446 |
| CY | 2,408 | 816 |
| CZ | 2,613 | 647 |
| DE | 2,752 | 848 |
| DK | 2,159 | 550 |
| EE | 2,799 | 755 |
| EL | 2,262 | 620 |
| ES | 4,483 | 860 |
| FI | 4,252 | 1,201 |
| FR | 3,769 | 1,098 |
| HR | 2,159 | 643 |
| HU | 4,199 | 999 |
| IE | 1,706 | 361 |
| IT | 5,605 | 1,546 |
| LT | 1,575 | 431 |
| LU | 1,667 | 425 |
| LV | 2,031 | 598 |
| MT | 2,096 | 541 |
| NL | 3,300 | 1,033 |
| PL | 6,073 | 1,716 |
| PT | 2,128 | 639 |
| RO | 2,403 | 499 |
| RS | 3,125 | 770 |
| SE | 2,482 | 911 |
| SI | 5,112 | 851 |
| SK | 3,244 | 933 |
| UK | 3,152 | 997 |
| Total | 83,725 | 22,842 |

*Table A1.2 Descriptive statistics of the macro-level indicators*

| Macro-level indicators | Min | Max | Mean |
|---|---|---|---|
| *Inequality measures* | | | |
| Gini | 24.2 | 35.4 | 29.8 |
| Income share of lowest 10% | 1.7 | 3.9 | 2.9 |
| Perceived inequality | 27.0 | 82.5 | 57.4 |

## 7.2 Appendix A2 Tables with full results on EU-SILC data

*Table A2.1 Results of multilevel analyses for life satisfaction.*

| | Model 1 | | Model 2 | | Model 3 | | Model 4 | | Model 5 | | Model 6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Coef | Sig | Coef | Sig | Coef | Sig | Coef | Sig | Coef | Sig | Coef | Sig |
| *Micro-level variables* | | | | | | | | | | | | |
| Age | -0.043 | *** | -0.042 | *** | -0.043 | *** | -0.043 | *** | -0.042 | *** | -0.043 | *** |
| Female | 0.093 | ** | 0.101 | ** | 0.092 | ** | 0.092 | * | 0.099 | ** | 0.090 | * |
| Migration background | -0.135 | + | -0.132 | | -0.139 | + | -0.134 | + | -0.133 | | -0.145 | + |
| Education (Ref: ISCED 1-2) | | | | | | | | | | | | |
| ISCED 3-4 | 0.315 | *** | 0.367 | *** | 0.320 | *** | 0.317 | *** | 0.369 | *** | 0.331 | *** |
| ISCED 5 | 0.611 | *** | 0.652 | *** | 0.614 | *** | 0.611 | *** | 0.654 | *** | 0.622 | *** |
| Living with partner | 0.487 | *** | 0.477 | *** | 0.487 | *** | 0.485 | *** | 0.476 | *** | 0.491 | *** |
| Household type (ref: no parents) | | | | | | | | | | | | |
| One parent | -0.129 | * | -0.130 | * | -0.127 | + | -0.129 | + | -0.128 | + | -0.130 | * |
| Two parents | 0.278 | *** | 0.262 | *** | 0.278 | *** | 0.277 | *** | 0.262 | *** | 0.274 | *** |
| Temporary/no contract | -0.366 | *** | -0.369 | *** | -0.366 | *** | -0.012 | | -1.007 | *** | 0.050 | |
| Unemployed | -1.340 | *** | -1.327 | *** | -1.340 | *** | -1.701 | *** | -1.392 | *** | -0.643 | ** |
| *Macro-level variables* | | | | | | | | | | | | |
| Gini | -0.072 | ** | | | | | -0.073 | ** | | | | |
| Income share of lowest 10% | | | 0.366 | * | | | | | 0.313 | * | -0.012 | + |
| Perceived inequality | | | | | -0.016 | ** | | | | | | |
| *Cross-level interactions* | | | | | | | | | | | | |
| Empl. status*Gini | | | | | | | | | | | | |
| Temporary/no contract | | | | | | | -0.012 | | | | | |
| Unemployed | | | | | | | 0.012 | | | | | |
| Empl. status*Income share 10% | | | | | | | | | | | | |
| Temporary/no contract | | | | | | | | | 0.214 | ** | | |
| Unemployed | | | | | | | | | 0.017 | | | |
| Empl. status*Perceived ineq | | | | | | | | | | | | |
| Temporary/no contract | | | | | | | | | | | -0.007 | + |
| Unemployed | | | | | | | | | | | -0.012 | ** |
| No of obs | 10,494 | | 10,145 | | 10,494 | | 10,494 | | 10,145 | | 10,494 | |
| No of groups | 28 | | 26 | | 28 | | 28 | | 26 | | 28 | |
| Log likelihood | -20922 | | -20213 | | -20923 | | -20921 | | -20209 | | -20917 | |

*Note: EU-SILC 2013; multi-level regression models, own calculations; *** p < .001, ** p < .01,* p < .05, + p < .10*

*Table A2.2 Results of multilevel analyses for psychological (un)well-being.*

| | Model 1 | | Model 2 | | Model 3 | | Model 4 | | Model 5 | | Model 6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Coef | Sig | Coef | Sig | Coef | Sig | Coef | Sig | Coef | Sig | Coef | Sig |
| *Micro-level variables* | | | | | | | | | | | | |
| Age | 0.023 | *** | 0.023 | *** | 0.023 | *** | 0.023 | *** | 0.023 | *** | 0.023 | *** |
| Female | 0.138 | *** | 0.138 | *** | 0.139 | *** | 0.138 | *** | 0.138 | *** | 0.139 | *** |
| Migration background | 0.047 | | 0.032 | | 0.047 | | 0.048 | | 0.031 | | 0.047 | |
| Education (Ref: ISCED 1-2) | | | | | | | | | | | | |
| ISCED 3-4 | -0.037 | | -0.054 | | -0.037 | | -0.036 | | -0.053 | | -0.036 | |
| ISCED 5 | -0.185 | *** | -0.198 | *** | -0.185 | *** | -0.185 | *** | -0.197 | *** | -0.183 | *** |
| Living with partner | -0.063 | ** | -0.062 | ** | -0.063 | ** | -0.064 | ** | -0.062 | ** | -0.063 | ** |
| One parent | -0.030 | | -0.031 | | -0.030 | | -0.030 | | -0.031 | | -0.030 | |
| Two parents | -0.114 | *** | -0.115 | *** | -0.114 | *** | -0.114 | *** | -0.115 | *** | -0.114 | *** |
| Temporary/no contract | 0.114 | *** | 0.114 | *** | 0.114 | *** | 0.253 | | 0.141 | | 0.045 | |
| Unemployed | 0.409 | *** | 0.409 | *** | 0.409 | *** | 0.193 | | 0.457 | *** | 0.455 | *** |
| *Macro-level variables* | | | | | | | | | | | | |
| Gini | 0.009 | | | | | | 0.008 | | | | | |
| Income share of lowest 10% | | | 0.019 | | | | | | 0.027 | | | |
| Perceived inequality | | | | | 0.002 | | | | | | 0.001 | |
| *Cross-level Interactions* | | | | | | | | | | | | |
| Empl. status*Gini | | | | | | | | | | | | |
| Temporary/no contract | | | | | | | -0.005 | | | | | |
| Unemployed | | | | | | | 0.007 | | | | | |
| Empl. status*Income share 10% | | | | | | | | | | | | |
| Temporary/no contract | | | | | | | | | -0.009 | | | |
| Unemployed | | | | | | | | | -0.017 | | | |
| Empl. status*Perceived inequality | | | | | | | | | | | | |
| Temporary/no contract | | | | | | | | | | | 0.001 | |
| Unemployed | | | | | | | | | | | -0.001 | |
| No of obs | 10,488 | | 10,139 | | 10,488 | | 10,488 | | 10,139 | | 10,488 | |
| No of groups | 28 | | 26 | | 28 | | 28 | | 26 | | 28 | |
| Log-likelihood | -12177 | | -11761 | | -12177 | | -12175 | | -11761 | | -12176 | |

*Note: EU-SILC 2013;multi-level regression models, own calculations; *** p < .001, ** p < .01,* p < .05, + p < .10*

*Table A2.3 Results of multilevel analyses for perceived (poor) health status.*

| | Model 1 | | Model 2 | | Model 3 | | Model 4 | | Model 5 | | Model 6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Coef | Sig | Coef | Sig | Coef | Sig | Coef | Sig | Coef | Sig | Coef | Sig |
| *Micro-level variables* | | | | | | | | | | | | |
| Age | 0.021 | *** | 0.021 | *** | 0.021 | *** | 0.021 | *** | 0.022 | *** | 0.021 | *** |
| Female | 0.076 | *** | 0.074 | *** | 0.076 | *** | 0.076 | *** | 0.073 | *** | 0.076 | *** |
| Migration background | 0.001 | | 0.025 | | 0.001 | | 0.001 | | 0.026 | | 0.001 | |
| Education (Ref: ISCED 1-2) | | | | | | | | | | | | |
| ISCED 3-4 | -0.055 | * | -0.062 | ** | -0.055 | * | -0.055 | * | -0.065 | ** | -0.054 | * |
| ISCED 5 | -0.209 | *** | -0.211 | *** | -0.209 | *** | -0.210 | *** | -0.215 | *** | -0.209 | *** |
| Living with partner | -0.049 | ** | -0.049 | ** | -0.049 | *** | -0.049 | ** | -0.047 | ** | -0.049 | ** |
| Household type (ref: no parents) | | | | | | | | | | | | |
| One parent | -0.033 | | -0.035 | + | -0.032 | | -0.033 | | -0.036 | + | -0.032 | |
| Two parents | -0.082 | *** | -0.092 | *** | -0.081 | *** | -0.082 | *** | -0.092 | *** | -0.081 | *** |
| Temporary/no contract | 0.060 | *** | 0.056 | *** | 0.060 | *** | 0.308 | * | -0.117 | | 0.106 | + |
| Unemployed | 0.086 | *** | 0.086 | *** | 0.086 | *** | 0.351 | ** | -0.136 | * | 0.104 | + |
| *Macro-level variables* | | | | | | | | | | | | |
| Gini | 0.001 | | | | | | 0.006 | | | | | |
| Income share of lowest 10% | | | -0.042 | | | | | | -0.083 | | | |
| Perceived inequality | | | | | -0.002 | | | | | | -0.002 | |
| *Cross-level interactions* | | | | | | | | | | | | |
| Empl. status*Gini | | | | | | | | | | | | |
| Temporary/no contract | | | | | | | -0.008 | * | | | | |
| Unemployed | | | | | | | -0.009 | * | | | | |
| Empl. status*Income share 10% | | | | | | | | | | | | |
| Temporary/no contract | | | | | | | | | 0.058 | * | | |
| Unemployed | | | | | | | | | 0.078 | *** | | |
| Empl. status*Perceived ineq | | | | | | | | | | | | |
| Temporary/no contract | | | | | | | | | | | -0.001 | |
| Unemployed | | | | | | | | | | | 0.000 | |
| No of obs | 14,101 | | 13,268 | | 14,108 | | 14,108 | | 13,268 | | 14,108 | |
| No of groups | 28 | | 26 | | 28 | | 28 | | 26 | | 28 | |
| Log-likelihood | -13368 | | -12570 | | -13368 | | -13365 | | -12563 | | -13368 | |

*Note: EU-SILC 2013; multi-level regression models, own calculations;*** p < .001, ** p < .01,* p < .05, + p < .10*

# Chapter 7

# The effects of unemployment and insecure jobs on well-being and health for European youth: the moderating role of cultural values

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## 1. Introduction

There is vast empirical evidence showing that unemployment (for meta-analyses see, McKee-Ryan, Song, Wanberg, & Kinicki, 2005; Paul & Moser, 2009) and job insecurity (for a review, Virtanen, Kivimäki, Joensuu, Virtanen, Elovainio, & Vahtera, 2005) impair individuals' health and well-being. These facts become particularly worrying, when considering that in the aftermath of the global financial crisis in 2008, most European countries experienced sharp increases in their unemployment rates with young people being mostly affected by the exclusion from the labor market (Chung, Bekker, & Houwing, 2012). Even if in certain countries, like Malta and Germany, youth unemployment rates have recovered over the past years (for a review see, Voßemer & Eunicke, 2015), unemployment among young Europeans is still alarmingly high in many countries (Eichhorst & Neder, 2014; Kraatz, 2015). Thus, it is relevant to investigate whether and how the employment status of young people in Europe relates to their well-being, and whether there are certain factors at the country-level of analysis that can moderate this effect.

[10] This chapter is based on data from Eurostat: European Union Statistics on Income and Living Conditions (EU-SILC), 2013. The responsibility for all conclusions drawn from the data lies entirely with the authors.

Previous studies that investigated the role of country-level moderators on the relationship between employment status and well-being, have mainly restricted to economic indicators (e.g., GDP levels; Eichhorn, 2013; Paul & Moser, 2009). However, scholars have argued that other macro-factors, such as cultural differences (cf. Paul & Moser, 2009) or societal characteristics (e.g., the value attached to work in a society; Diener & Biswas-Diener, 2008) may also determine the degree to which unemployment or job insecurity impair individuals' health and well-being. Furthermore, previous studies on country-level moderators concerned the overall population thus, failing to account for the specific characteristics of young Europeans. Therefore, in this chapter, we focus on youth and investigate the moderating role of two country-level factors, the cultural characteristic of individualism (vs. collectivism; Hofstede, 1980) and the value of work attached in a society (Eichhorn, 2013), in order to answer the following research questions:

- Does the effect of unemployment and job insecurity on well-being (i.e., life satisfaction, psychological well-being) and health of young Europeans vary depending on whether a country is individualistic or collectivistic?
- Does the effect of unemployment and job insecurity on the well-being and health of young Europeans vary depending on the degree to which work is valued in a society?

We address these questions by using data from the 2013 wave of the EU-SILC (EU Statistics in Income and Living Conditions) dataset. Macro data on cultural characteristics have been assembled from various sources. We apply multilevel analyses with two-levels: young individuals (i.e., level 1) nested in countries (i.e., level 2). This allows testing the moderating role of cultural factors, by accounting for both between-country differences, and within-country variability while assessing youths' well-being.

# 2. Theory and hypotheses

## 2.1 Individualism vs. Collectivism

According to Hofstede (1980; 2001), countries with an individualistic culture are characterized by a loosely-knit social framework, where individuals are expected to take care of themselves (and their close family) and do not depend heavily on their broader social circle. In contrast, countries with a collectivistic culture are characterized by a tightly-knit social framework, where individuals are strongly related with their immediate and broader social circle and are expected to help and ask help from the members of their in-group in exchange of loyalty.

Previous studies provide some preliminary evidence showing that the detrimental effects of unemployment and job insecurity on health and well-being are stronger in countries with an individualistic vs. a collectivistic culture (Martella & Maass, 2000;

Mikucka, 2014). These results imply that in collectivist cultures, individuals consider their family and friends as an integrated part of their self and as such, they are more likely to turn to them for help in threatening times (Hui & Triandis, 1986; Hofstede, 1980) like when they face unemployment or job insecurity. In contrast, in individualistic cultures, people are guided by beliefs related to independence and of having control over one's life. In such contexts, in times of need (e.g., when one is unemployed), individuals are more likely to be guided by their own attitudes and control beliefs and less likely to turn to others for help or to receive help from others (Triandis, 1995). In collectivistic cultures, unemployed individuals or individuals facing job insecurity are more likely to ask and receive help from their broader social circle (in the form of finding a job or a secure job, or having the necessary resources to survive). The high levels of received social support that characterizes collectivistic cultures (Goodwin & Hernandez Plaza, 2000), satisfy individuals' psychological need for belonging (Ryan & Deci, 2000) that may act as a buffer of the negative effects of unemployment on health and well-being (Gore, 1978). In contrast, in individualistic countries, unemployed individuals are less likely to ask for support from their close, social circle, while support is less likely to be available from others. As a result, individuals feel unable to deal with their situation effectively and decrements in well-being are more likely to occur.

**Hypothesis 1:** Employment status interacts with individualism in explaining well-being in a way that the well-being of those unemployed and temporary employed is particularly impaired in individualistic (vs. collectivistic) countries.

## 2.2. The Value of Work

Schwartz (1999) explained that cultural norms regarding the value of work can be distinguished into entitlement and obligation norms. Entitlement norms concern the views that the person, as an equal and autonomous social actor, is entitled to have a good job. Obligation norms state that the person, as an integral part of a larger collective, is required to behave according to the expectations attached to his or her role. In other words, people are expected to work. Eichhorn (2013) demonstrated that the experience of unemployment was more detrimental for life satisfaction in societies where work was highly valued as compared to societies where work was not particularly valued. This finding indicates that in societies, where work is highly valued, unemployed individuals or those who hold temporary job positions may be subject to informal social sanctions, because they deviate from the social norm (Stutzer & Lalive, 2004). These social sanctions or obligation norms may put an additional burden on unemployed individuals, thus, boosting the negative effect of unemployment on well-being.

Furthermore, some authors (for an overview see, Miller, Woehr, & Hudspeth, 2001) have equated the value attached to work in a society to the Protestant work ethic (Furnham, 1982a, b). According to the Protestant work ethic, individuals are considered responsible for finding a (good) job, meaning that those who fail towards that end are considered lazy, or incapable or unwilling. In all cases, in societies with a strong work ethic, unemployed or temporary employed are less likely to be supported or have access to social support because of the tendency to attribute one's employment situation internally (i.e., unemployment is a personal failure) and not externally (i.e., unemployment is due to environmental conditions). In that sense, the well-being of those unemployed or temporary employed is more likely to be impaired in societies, where work is highly valued.

**Hypothesis 2:** Employment status interacts with the value attached to work in a society in explaining well-being in a way that the well-being of those unemployed and temporary employed is particularly impaired in societies, where work is highly (vs. barely) valued.

# 3. Data and methods

## 3.1 Micro data

EU-SILC data are available annually since 2003. In the current analysis, we have focused only on data from the 2013 wave because information on well-being has been collected only on that survey year. EU-SILC 2013 provides information for 29 European countries. For the purposes of the current project, we have focused only on a restricted sample of young people aged between 16 and 29, whose last educational qualification was up to 5 years ago and who were not in any form of education at the time the study took place. This life-course definition of youth allows comparing young people from different European countries at the same life stage, which is the beginning of their career. Table A1.1 in the Appendix provides a short overview of the country-level sample sizes in EU-SILC. Please note that the total sample size reported on Table A1.1 is different from the number of observations used in the multi-level analyses (see Tables A2.1-A2.3 in the Appendix 2) because: 1) some countries dropped off the analysis due to missing values in the studied macro-variable; 2) well-being was not reported from all respondents, causing (unsystematic) missing values in our dependent variables.

## 3.2 Micro-level variables

*Employment Status* was measured by means of self-reports. We used a categorical variable to distinguish between those employed with permanent contract, those employed with temporary or no contract (that indicates job insecurity), and those unemployed.

*Overall Life Satisfaction* was measured with one item asking participants how satisfied they currently are with their life in general. Participants rated this item on the basis of a 11-point scale ranging from (0) = not at all satisfied to (10) = completely satisfied. High scores are indicative of high levels of satisfaction.

*Psychological (Un)well-being* was measured by means of three items (i.e., 'Being very nervous'; 'Feeling down in dumps'; 'Feeling downhearted and depressed') with the previous four weeks as a reference point. Items were rated with a 5-point scale ranging from (1) = none of the time to (5) = all of the time. Thus, high scores are indicative of poor well-being. The scale was reliable (Cronbach's alpha = 0,79).

*General Health* was measured with one item asking participants to rate their general health by using a 5-point scale ranging from (1) = very good to (5) = very bad. Thus, high scores are indicative of bad health.

*Control Variables*. In all analyses were controlled for participants' age (in years), gender, education (i.e., we considered the highest attained level of education that was measured in three categories: ISCED 1-2; ISCED 3-4; ISCED 5-6), immigration background and the following household characteristics: 1) type of household, where we differentiated between one- and two-parent households, and 2) household's risk of being in poverty.

## 3.3 Macro-level moderators

*Individualism/Collectivism* was measured with the country level collectivism/individualism scores provided by Hofstede (2001) and Hofstede, Hofstede, and Minkov (2010). High scores are indicative of high individualism, while low scores are indicative of high collectivism.

*Value of Work* was measured by means of five items that reflect the importance attached to work in a society. These items are the following: 'To fully develop your talents, you need to have a job', 'It is humiliating to receive money without to work for it', 'People who don't work turn lazy', 'Work is a duty towards society', and 'Work should always come first, even if it means less spare time'. These items were rated with a five-point scale ranging from (1) = disagree strongly to (5) = agree strongly. The scale was reliable (Cronbach's alpha = 0,71) (EVS, 2016).

Descriptive statistics (i.e., means and standard deviations) of the macro-level moderators are presented on Table A1.2 in the Appendix.

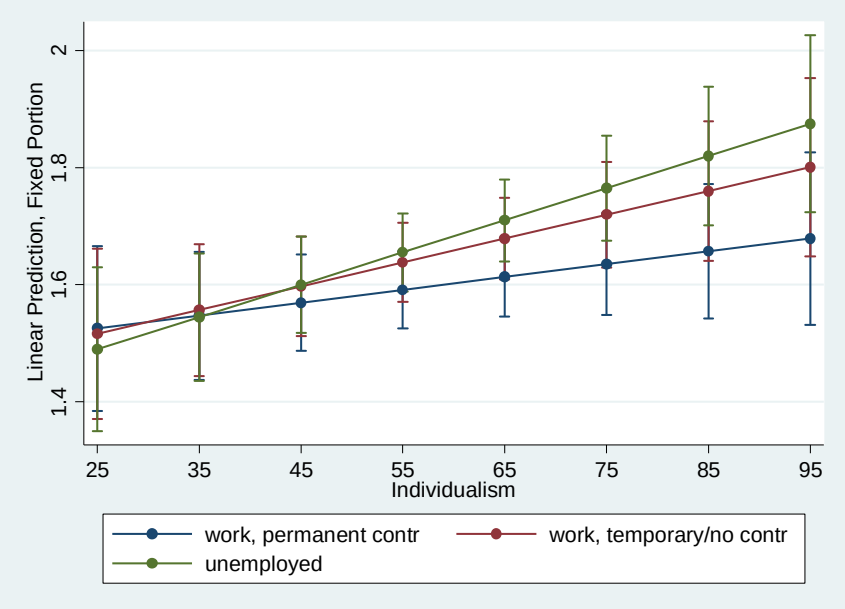
### 3.4 Analytical Strategy

Random-intercept models with two-levels (i.e., individuals nested in countries) were used to account for both between-country and within-country variability while assessing youths' well-being and health.

## 4. Results

The results of the multilevel analyses are presented for each of the three outcomes separately in the Appendix (see, Tables A2.1-A2.3). According to Hypothesis 1, individualism was expected to moderate the relationship between employment status and well-being/health. As concerns life satisfaction (see Table A2. 1), individualism neither had a significant main effect (Model 1), nor moderated the relationship between employment status and life satisfaction (Model 2). These results reject Hypothesis 1 for life satisfaction. Tables A2.2 present the results regarding psychological (un)well-being. Hypothesis 1 was again rejected, since individualism was not found to moderate the employment status-well-being relationship significantly. Finally, Table A2.3 presents the results regarding poor health as a dependent variable. In terms of main effects, in individualistic countries, people reported worse health than in collectivistic countries (Model 1). Furthermore, results supported Hypothesis 1 since employment status interacted significantly with individualism in explaining poor health. Figure 1 shows, as expected, that in individualist countries compared to collectivist ones, young people in a more marginalized labor market position (both unemployed and working with temporary contract) experience higher levels of poor health than those employed with a permanent contract.

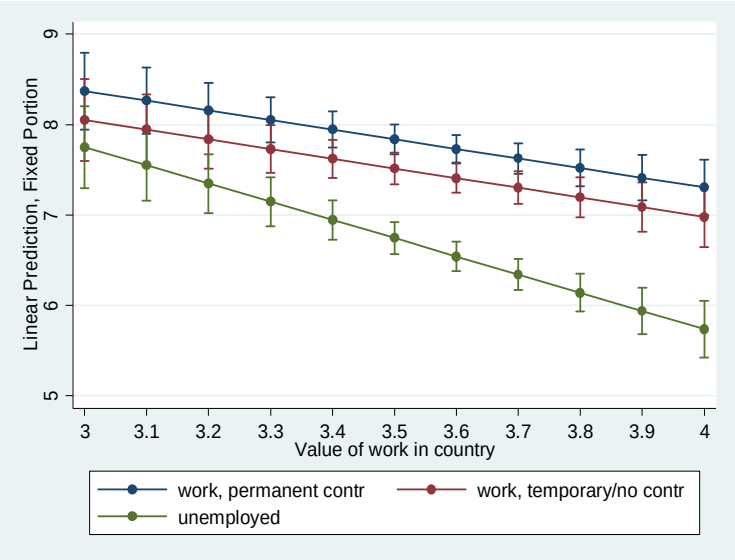
*Figure 1: Interaction effects of employment status and country's individualism level on perceived (poor) health status, predictive margins*




*Source: EU-SILC 2013, own calculations*

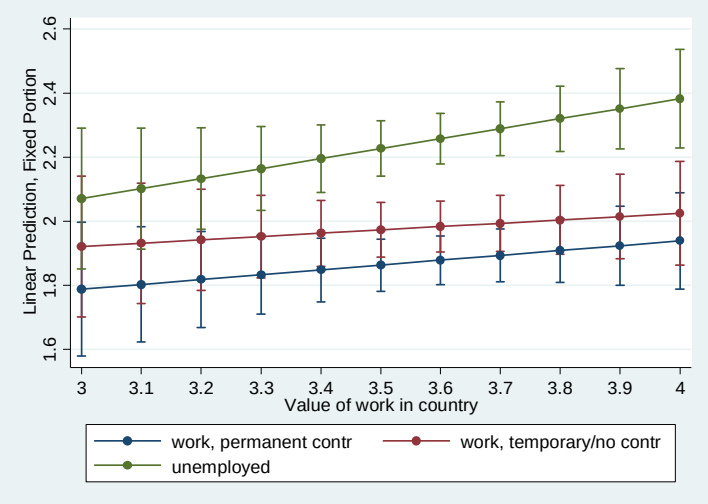
According to Hypothesis 2, the value that is attached to work in a society was expected to interact with employment status to explain well-being/health. As concerns life satisfaction (see Table A2. 1), results revealed a negative direct effect (Model 3), suggesting that in societies, where work is highly valued, young people are less satisfied with their lives. Also, the interaction effect between employment status and the value of work on job satisfaction was significant (Table A2.1; Model 4) showing that the already low life satisfaction of unemployed youth compared to those employed with permanent contracts becomes even lower in societies where a great value is attached to work (see Figure 2). These results support Hypothesis 2 for life satisfaction. Also, in line with Hypothesis 2, results showed (Table A2.2; Model 4) that in societies where more relevance is assigned to work, the unemployed youth (compared to employed youth with permanent contract) tend to experience significantly more psychological unwell-being compared to societies, where work values are less prevalent (see Figure 3).

*Figure 2: Interaction effects of employment status and country's value of work on life satisfaction, predictive margins*




*Source: EU-SILC 2013, own calculations*

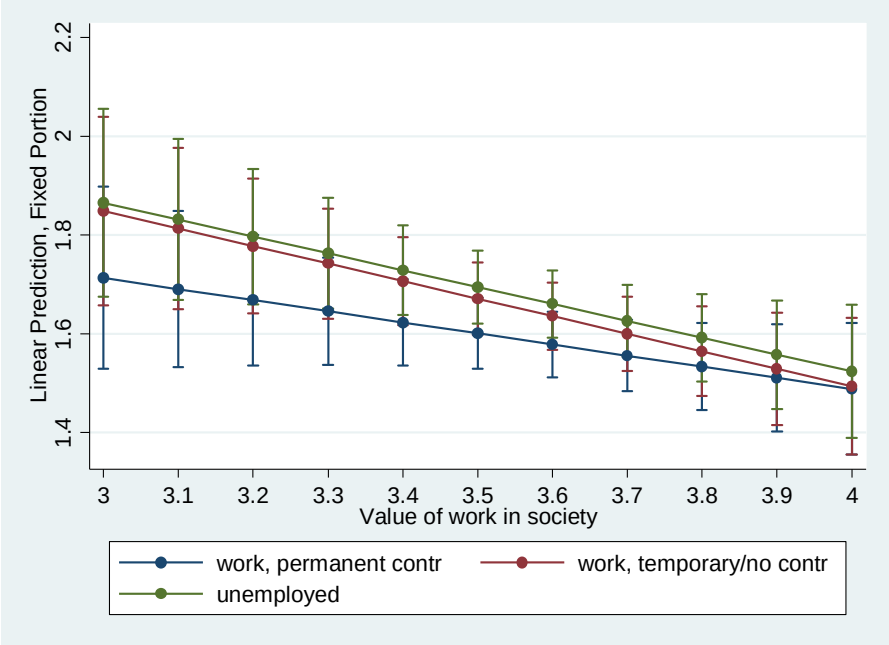
*Figure 3: Interaction effects of employment status and country's value of work on psychological (un)well-being, predictive margins*




*Source: EU-SILC 2013, own calculations*

As concerns Hypothesis 3 for poor health, results (Table A2. 3; Model 3) showed that in societies, where work is highly valued, young people report better health than in societies, where work is not so much valued. However, the significant interaction effect found (Model 4) showed that young people unemployed and employed with a temporary or no contract reported worse health than those employed with a permanent contract in societies that attach a low value to work, while the differences across the different labor statuses become smaller in societies where work is highly valued (see also Figure 4). The direction of this interaction effect is not in line with Hypothesis 2.

*Figure 4: Interaction effects of employment status and value of work on perceived (poor) health status, predictive margins*




*Source: EU-SILC 2013, own calculations*

# 5. Conclusion

In this report we have used data from young individuals coming from 29 European countries in order to investigate whether specific, cultural factors (i.e., individualism/collectivism and value attached to work) moderate the effect of employment status on three well-being indicators: overall life satisfaction, psychological (un)well-being, and poor health. Results supported the well-established finding that unemployment and job insecurity (i.e., temporary employed) are detrimental for health and well-being (for a meta-analysis, McKee-Ryan et al., 2005). However, the main contribution of this report is that it sheds light on the cultural, macro-indicators under which unemployment and job insecurity are particularly detrimental for young Europeans.

We hypothesized that the damaging effects of insecure labor market positions on well-being was expected to be stronger in individualistic and weaker in collectivistic cultures. According to Hofstede (1980; 2001), in countries with individualistic cultures there is emphasis on the independence of young people, who are expected to depend heavily on their own capital and not on their social capital. In contrast, in countries with a collectivistic culture that are characterized by strong social ties, young people depend on the support they receive from their in-group. As such, young people, who are unemployed, are expected to be better off in collectivistic rather than in individualistic cultures, because they have access to more resources (i.e., support) in their social

environment, and these resources have been proposed to help them deal more effectively with the threatening environmental conditions (Hobfoll, 1989). Our results provided very limited support for this hypothesis, since the moderating effect of individualism on the link between employment status and well-being has been supported only with regard to poor health. As expected, our results showed that, as compared to being employment with a permanent contract, being unemployed or working with a temporary or no contract relates to poorer health in individualistic rather than in collectivistic countries.

Also, we have investigated the moderating role of the value that a society attaches to work on the relationship between employment status and well-being. Based on the findings of Eichhorn (2013) showing that the experience of unemployment was more detrimental for individual well-being in societies where work was highly valued as compared to societies where work is not valued, and in agreement with the argument that unemployed people are seen as deviating from the social norm in societies where work is highly valued (Stutzer & Lalive, 2004), we hypothesized that the effect of labor market exclusion will be particularly damaging for well-being in societies that attach a high value at work. Part of our results supported this hypothesis by showing that the unemployed are less satisfied and report higher levels of impaired well-being than the employed in societies that attach a great value to work. However, contrary to what we expected, our results showed that when it comes to health outcomes, in societies where more importance is given to work, the (negative) differences between unemployed and employed with a temporary/ no contract compared to those with permanent contract are smaller than in societies where less value is given to work. This finding could be explained by the results of Lewchuk (2016) showing that unemployment and precarious employment enhances social isolation by limiting the chances in establishing healthy households and being an active member in the community. In this context, even if work is not highly valued in a society, the health of unemployed or temporary employed is likely to be impaired because of their difficulty to satisfy their basic needs (Ryan & Deci, 2000).

To conclude, this report provided interesting findings on the macro-conditions under which unemployment and insecure labor market positions are particularly detrimental for the well-being of young people in Europe. Despite the fact that this analysis is not exhaustive, since there are many other relevant, macro-level factors that could moderate the link between employment status and well-being, our findings are important, because they provide insights not only for theory development but also for developing policies that aim in protecting the well-being of young Europeans.

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# 7. Appendix

## Appendix A1

*Table A1.2 Sample size of youth in EU-SILC 2013 across countries*

| **Country** | 16-29 year old population | 16-29 year old, not in education < 5 years |
|---|---|---|
| AT | 1,794 | 512 |
| BE | 2,186 | 596 |
| BG | 1,596 | 446 |
| CY | 2,408 | 816 |
| CZ | 2,613 | 647 |
| DE | 2,752 | 848 |
| DK | 2,159 | 550 |
| EE | 2,799 | 755 |
| EL | 2,262 | 620 |
| ES | 4,483 | 860 |
| FI | 4,252 | 1,201 |
| FR | 3,769 | 1,098 |
| HR | 2,159 | 643 |
| HU | 4,199 | 999 |
| IE | 1,706 | 361 |
| IT | 5,605 | 1,546 |
| LT | 1,575 | 431 |
| LU | 1,667 | 425 |
| LV | 2,031 | 598 |
| MT | 2,096 | 541 |
| NL | 3,300 | 1,033 |
| PL | 6,073 | 1,716 |
| PT | 2,128 | 639 |
| RO | 2,403 | 499 |
| RS | 3,125 | 770 |
| SE | 2,482 | 911 |
| SI | 5,112 | 851 |
| SK | 3,244 | 933 |
| UK | 3,152 | 997 |
| Total | 83,725 | 22,842 |

*Table A1.2 Descriptive statistics of the macro-level indicators*

| Macro-level indicators | Min | Max | Mean |
|---|---|---|---|
| *Cultural values* | | | |
| Individualism | 27.0 | 89.0 | 58.6 |
| Value of work | 3.2 | 4.1 | 3.6 |

## Appendix A2 Tables with full results on EU-SILC data

*Table A2. 1 Results of multilevel analyses for life satisfaction.*

| | Individualism | | | | Value of work | | | |
|---|---|---|---|---|---|---|---|---|
| | Model 1 | | Model 2 | | Model 3 | | Model 4 | |
| | Coef | Sig | Coef | Sig | Coef | Sig | Coef | Sig |
| *Micro-level variables* | | | | | | | | |
| Age | -0.046 | ** | -0.046 | ** | -0.048 | ** | -0.049 | ** |
| Female | 0.105 | ** | 0.105 | ** | 0.095 | ** | 0.095 | ** |
| Migration background | -0.139 | + | -0.138 | + | -0.097 | | -0.106 | |
| Education (Ref: ISCED 1-2) | | | | | | | | |
| ISCED 3-4 | 0.259 | ** | 0.259 | ** | 0.260 | ** | 0.274 | ** |
| ISCED 5 | 0.534 | ** | 0.534 | ** | 0.535 | ** | 0.554 | ** |
| Living with partner | 0.468 | ** | 0.468 | ** | 0.455 | ** | 0.464 | ** |
| Household type (ref: no parents) | | | | | | | | |
| One parent in household | -0.152 | * | -0.153 | * | -0.169 | * | -0.173 | ** |
| Two parents in household | 0.226 | ** | 0.226 | ** | 0.215 | ** | 0.210 | ** |
| Household in poverty risk | -0.397 | ** | -0.397 | ** | -0.388 | ** | -0.396 | ** |
| Employment status (Ref: permanent contract) | | | | | | | | |
| Temporary/no contract | -0.358 | ** | -0.330 | | -0.338 | ** | -0.293 | |
| Unemployed | -1.256 | ** | -1.297 | ** | -1.250 | ** | 2.225 | ** |
| *Macro-level variables* | | | | | | | | |
| Individualism | 0.003 | | 0.003 | | | | | |
| Value of work | | | | | -1.331 | ** | -1.063 | ** |
| *Cross-level interactions* | | | | | | | | |
| Empl. status*Individualism | | | | | | | | |
| Temporary/no contract | | | 0.000 | | | | | |
| Unemployed | | | 0.001 | | | | | |
| Empl. status*Value of work | | | | | | | | |
| Temporary/no contract | | | | | | | -0.009 | |
| Unemployed | | | | | | | -0.949 | ** |
| No of obs | 9860 | | 9860 | | 10493 | | 10493 | |
| No of groups | 27 | | 27 | | 28 | | 28 | |
| Log likelihood | -19528 | | -19528 | | -2089 | | -20876 | |

*Note: EU-SILC 2013; multi-level regression models, own calculations; * p < .05, ** p < .01, + p < .10*

*Table A2. 2 Results of multilevel analyses for psychological (un)well-being.*

| | Individualism | | Value of work | |
|---|---|---|---|---|
| | Model 1 | Model 2 | Model 3 | Model 4 |
| | Coef Sig | Coef Sig | Coef Sig | Coef Sig |
| *Micro-level variables* | | | | |
| Age | 0.021** | 0.021** | 0.024** | 0.024** |
| Female | 0.148** | 0.148** | 0.138** | 0.138** |
| Migration background | 0.067+ | 0.067+ | 0.039 | 0.041 |
| Education (Ref: ISCED 1-2) | | | | |
| ISCED 3-4 | -0.033** | -0.033 | -0.025 | -0.028 |
| ISCED 5 | -0.168** | -0.168** | -0.169** | -0.173** |
| Living with partner | -0.065** | -0.065** | -0.057* | -0.058* |
| Household type (ref: no parents) | | | | |
| One parent in household | -0.031 | -0.030 | -0.022 | -0.021 |
| Two parents in household | -0.109** | -0.110** | -0.101** | -0.100** |
| Household in poverty risk | 0.071** | 0.072** | 0.082** | 0.083** |
| Employment status (Ref: permanent contract) | | | | |
| Temporary/no contract | 0.116** | 0.062 | 0.108** | 0.273 |
| Unemployed | 0.386** | 0.427** | 0.390** | -0.200 |
| *Macro-level variables* | | | | |
| Individualism | 0.001 | 0.002 | | |
| Value of work | | | 0.186 | 0.151 |
| *Cross-level interactions* | | | | |
| Empl. status*Individualism | | | | |
| Temporary/no contract | | 0.001 | | |
| Unemployed | | -0.001 | | |
| Empl. status*Value of work | | | | |
| Temporary/no contract | | | | -0.047 |
| Unemployed | | | | 0.161* |
| No of obs | 9,854 | 9,854 | 10,487 | 10,487 |
| No of groups | 27 | 27 | 28 | 28 |
| Log-likelihood | -11273 | -11272 | -12169 | -12166 |

*Note: EU-SILC 2013; multi-level regression models, own calculations; * p < .05, ** p < .01, + p < .10*

*Table A2. 3 Results of multilevel analyses for perceived (poor) health status.*

| | Individualism | | | | Value of work | | | |
|---|---|---|---|---|---|---|---|---|
| | Model 1 | | Model 2 | | Model 3 | | Model 4 | |
| | Coef | Sig | Coef | Sig | Coef | Sig | Coef | Sig |
| *Micro-level variables* | | | | | | | | |
| Age | 0.024 | ** | 0.023 | ** | 0.022 | ** | 0.022 | ** |
| Female | 0.080 | ** | 0.081 | ** | 0.076 | ** | 0.076 | ** |
| Migration background | -0.006 | | -0.005 | | -0.003 | | -0.003 | |
| Education (Ref: ISCED 1-2) | | | | | | | | |
| ISCED 3-4 | -0.055 | * | -0.053 | * | -0.049 | * | -0.047 | * |
| ISCED 5 | -0.213 | ** | -0.210 | ** | -0.201 | ** | -0.199 | ** |
| Living with partner | -0.049 | ** | -0.048 | ** | -0.046 | * | -0.045 | * |
| Household type (ref: no parents) | | | | | | | | |
| One parent in household | -0.032 | | -0.034 | | -0.027 | | -0.028 | |
| Two parents in household | -0.077 | ** | -0.078 | ** | -0.073 | ** | -0.074 | ** |
| Household in poverty risk | 0.039 | * | 0.038 | * | 0.042 | ** | 0.042 | ** |
| Employment status (Ref: permanent contract) | | | | | | | | |
| Temporary/no contract | 0.062 | ** | -0.056 | | 0.057 | ** | 0.527 | * |
| Unemployed | 0.081 | ** | -0.118 | * | 0.077 | ** | 0.504 | * |
| *Macro-level variables* | | | | | | | | |
| Individualism | 0.004 | * | 0.002 | | | | | |
| Value of work | | | | | -0.286 | * | -0.225 | |
| *Cross-level interactions* | | | | | | | | |
| Empl status*Individualism | | | | | | | | |
| Temporary/no contract | | | 0.002 | * | | | | |
| Unemployed | | | 0.003 | ** | | | | |
| Empl status*Value of work | | | | | | | | |
| Temporary/no contract | | | | | | | -0.130 | * |
| Unemployed | | | | | | | -0.117 | * |
| No of obs | 13,415 | | 13,415 | | 14,107 | | 14,107 | |
| No of groups | 27 | | 27 | | 28 | | 28 | |
| Log-likelihood | -12788 | | -12780 | | -13362 | | -13359 | |

*Note: EU-SILC 2013; multi-level regression models, own calculations;* p < .05, ** p < .01, + p < .10*