



# Happiness and the role of social protection: how types of social spending affected individuals' life satisfaction in OECD countries, 1980–2012

Oda Nordheim and Pål E. Martinussen

Department of Sociology and Political Science, Norwegian University of Science and Technology (NTNU), Trondheim, Norway

## ABSTRACT

The growing literature on individual determinants of subjective well-being has given little attention to political factors. This paper considers the welfare state, and how social expenditure affects individuals' self-reported life satisfaction. The statistical analysis uses indicators of subjective well-being, reflecting individuals from OECD-countries between 1980 and 2012, with data gathered from the Eurobarometer and the World Values Survey - which are analysed in comparison. The results suggest that social spending should be studied in terms of underlying branches when addressing its implications. The results find social spending to be uncorrelated with levels of subjective well-being when considered in terms of total levels. When considered as types of spending however, a majority of the elements are found to have significant impacts. The findings show mixed results among the two data sets; however, important similarities are found in the way social spending related to health care and poverty are having positive impacts, and spending associated with unemployment and labour market programmes have negative impacts. As the correlations of the underlying elements affect life satisfaction in different directions, total social spending appears to be uncorrelated with subjective well-being, although the true impact depends on which social policies are being promoted through such spending.

## ARTICLE HISTORY

Received 3 August 2018  
Accepted 27 March 2019

## KEYWORDS

Social spending; Subjective well-being; Comparative study; Multi-level method; OECD countries

## Background

Social science research has during the last decades become increasingly concerned with investigating the determinants of happiness and individuals' life satisfaction. There has consequently been a large expansion in the literature that considers individual determinants of subjective well-being, but little attention has been paid to the role of political and macro-economic factors. From a public policy perspective, it is crucial to investigate system variables in order to inform policies aiming to build societies in which people enjoy better lives. Social spending is a central element within welfare policy, and is essentially introduced in order to promote well-being within the population. From a scientific perspective, few efforts have been made to investigate how effective such policies are. This

**CONTACT** Pål E. Martinussen  [paal.martinussen@svt.ntnu.no](mailto:paal.martinussen@svt.ntnu.no)

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paper, therefore, presents analyses of how individuals' levels of subjective well-being, captured by self-reported life satisfaction, are affected by changes in social spending levels. The study considers advanced industrial democracies, with both aggregate and underlying categories of social spending being analysed.

Traditionally, the main focus when measuring welfare and progress has been on national wealth and economic growth, while a lack of indicators on happiness has prevented this aspect from influencing public policy. However, recent decades have introduced happiness indicators on life satisfaction which are increasingly accepted and used, both as measures of welfare, and as compliments to the traditionally used indicators of progress. These indicators are therefore obtaining increasing importance in policymaking (Frey & Stutzer, 2011). Veenhoven (2004) argues that, as an indicator of welfare, happiness is more inclusive merit, representing a more 'optimal combination', which in turn is more appropriate as an end value and should obtain a more central place in policy making. Increased levels of happiness can have many beneficial impacts on society: Lyubomirsky, King, and Diener (2005) found happy people to be more hardworking, healthy and happily married, as well as being more generous, civic-minded and tolerant citizens.

Research considering life satisfaction tends to use terms such as happiness, subjective well-being, and life satisfaction interchangeably. It is therefore necessary to specify that in this paper, these terms are defined as the extent to which individuals enjoy their lives, i.e. how satisfied they are with their lives. It is also necessary to clarify that this measure captures a different aspect of subjective well-being than that related to emotional well-being, referring to experiences of joy, anger, stress, sadness and affection (Kahneman & Deaton, 2010). This analysis considers subjective well-being as individuals' evaluation of their life, captured through survey data by asking respondents: 'All things considered, how satisfied are you with the life you lead as a whole these days?'. Life satisfaction will be analysed in relation to welfare spending, where the levels of spending are treated as a function of both regime type variations as well as types of capitalism, as regime type policies tend to vary between countries depending on the prevalent type of capitalism.

This paper provides several statistical analyses of individuals representing the member countries of the Organisation for Economic Co-operation and Development (OECD), capturing the impact of social spending levels on individuals' life satisfaction. The analysis is performed on two data sets: the Eurobarometer and the World Values Survey (WVS), which capture diverse political cultures. The results show that when social spending is studied by observing aggregate levels, it appears to have no relationship with subjective well-being. This is contrasting the existing literature using panel data, which found a positive association with such spending (Radcliff, 2013). The paper fills a clear gap in the literature by considering social spending in terms of the underlying types of spending, where the real impact on life satisfaction becomes more evident. The results show that the different elements of social spending are affecting subjective well-being in opposing directions: some have positive and others have negative associations with life satisfaction. Based on these findings, the paper illustrates how it is crucial to study social spending as separated into its underlying spending categories. This is found to produce more accurate information reflecting the true impacts of social protection, which also provides more valuable information for social policymaking. The findings from this paper are of great importance for policymakers aiming to maximise well-being, while also contributing to a better

understanding of the empirical consequences of the policies representing the left and right of the political spectrum.

The paper proceeds by introducing the background and theories related to the study of subjective well-being and the welfare state, and then continues by presenting the most relevant literature reflecting the relationship between these two. The section thereafter outlines the methods and data, before presenting the results and interpretation of these in the subsequent section. Following the analysis comes a discussion related to the validity and reliability of the statistical models, as well as reflections on policy implications and suggestions to further research. There is also a short discussion of some drawbacks of using happiness indicators to inform policy making, prior to summarising the most essential findings in the conclusion.

### ***Introducing subjective well-being to public policy***

In order to promote the greatest good, for the greatest number of people, to focus solely on national wealth is insufficient, since it excludes important factors such as well-being and general life satisfaction. Gross domestic product (GDP) is not well designed to evaluate welfare as it is mainly a measure of the market and monetary wealth. This means that many of the factors which contribute to boost levels of GDP are in fact associated with lower levels of well-being, such as expenditures relating to crime, pollution and poor health (Gadrey & Jany-Catrice, 2006). Similarly, the non-material factors which are seen to boost welfare are excluded from this measure, with social relations, self-determination and autonomy providing some examples (Frey & Stutzer, 2009). At the individual level, welfare is often captured in terms of consumption, however without consideration to the type of consumption or experiences derived from this (Frey & Stutzer, 2010). There are numerous advantages from increasing the use of happiness indicators as an additional proxy for social welfare when both informing and evaluating public policy. Measures of life satisfaction contribute with an evaluation based on individuals' judgements as well as being more democratic in the way that they attribute equal weight to each person. By contrast, GDP reflects the social welfare of individuals with higher purchasing power to a broader extent than individuals of lower income classes (Frey & Stutzer, 2009). Happiness research is therefore becoming increasingly important in the promotion of welfare, with many institutions including the OECD starting to consider happiness indicators in evaluating national performance and progress (De Graaf & Batker, 2011; Frey & Gallus, 2012).

If happiness indicators are to be used within public policy, it is essential to understand what determines individuals' levels of well-being. There are three core theories, presented by Veenhoven (2009), related to the nature and causes of well-being. The first theory is the *set point theory*, which argues that individuals are mentally programmed, through genetic inheritance, personality traits, or culture, for a certain degree of well-being, with well-being argued to be largely unaffected by external factors. The second theory, the *cognitive theory*, supposes that individual well-being is a function of human thinking and comparison between one's life situation and what is perceived as the ideal situation. Perceptions regarding ideal living situations are assumed to vary across cultures, where the comparison can be based on either evaluation related to how we are doing now compared to before; or how we are doing compared to the others in society. This approach holds that well-being is

largely unaffected by objective conditions; it is rather the standards by which these are evaluated that are of great importance. Finally, the *affect theory* holds that well-being is rather a function of individuals' experiences of life. According to this theory it is the frequency, extent, and durability of these experiences, and whether positive or negative, which constitutes levels of well-being. A sufficient level of well-being is therefore upheld by satisfying the most essential needs that are intrinsic to us as human beings, involving material, social and physical needs. Hence, it is assumed that improved living conditions and the provision of social assistance will result in increased levels of well-being. It is also important to specify that such needs should not be confused with wants: needs are inborn features as opposed to wants, which are likely to result from cultural differences (Veenhoven, 2009).

### ***Social policy and well-being***

Social spending, reflecting social policy, is essentially introduced as social insurance against the insecurity and inequality of the free market, with the intention of producing increased social welfare within society. Such insurance provides social assistance and financial contributions to individuals or households experiencing difficulties, where such arrangements are related to a range of social protection programmes associated with poverty, unemployment and labour market, pensions and old age support, family and child care, health and long term care, housing, as well as support, facilitation and income maintenance for sick or disabled individuals (OECD, 2007). Social spending aims to decommodify individuals, with the term decommodification referring to 'the degree to which individuals, or families, can uphold a socially accepted standard of living, independently of market participation' (Esping-Andersen, 1990, p. 37). Esping-Andersen argues that social spending is a necessary government responsibility as the unregulated market works only to benefit those who are able to perform in it, and that well-being is reduced when individuals are treated as commodities. Through social policy, resources are transferred from individuals with better life situations to those experiencing larger difficulties, not only from rich to poor, but also from young to old, from employed to unemployed, from healthy to sick, from small families to large families, etc.; essentially aiming to make life easier for those who struggle.

There are many ways in which social policy may affect an individual's level of life satisfaction. Flavin, Pacek, and Radcliff (2014), map out a set of studies, which show that government intervention into the economy is linked to lower levels of poverty, inequality and unemployment, as well as a set of studies which show that such reductions in turn have a positive association with subjective well-being. Here reduction in poverty is believed to be of particularly large importance, with the possibility of reducing feelings of low self-esteem, lower efficiency, depression and psychological stress, while also having the potential of contributing to reduce crime levels, domestic violence, alcoholism, drug abuse and divorce rates – factors which are all expected to have negative impacts on both individuals' life satisfaction and society in general.

Looking at the theories considering how individuals' well-being may be affected, we can expect little impact on life satisfaction from social spending if the set point theory is the one that is best able at explaining how individuals' well-being is affected, as this theory see well-being as a genetic or cultural feature, not affected by the outside world. As

social policy is aiming to satisfy individuals' most essential needs, creating conditions under which individuals should be better able to live good lives, life satisfaction is more likely to be affected if either the cognitive theory or the affect theory is the most appropriate in this respect. The cognitive theory expects well-being to be positively affected if the introduction of social policy is successful at improving an individual's standard of living compared to how it was before, while the affect theory predicts that social policy can be successful at preventing reductions of life satisfaction as an individual's life situation becomes more challenging.

### **Literature review**

The literature on how public policies, and the general role of government, is affecting life satisfaction is relatively small. However, some relevant studies have been conducted within this field. Flavin, Pacek, and Radcliff (2011) used a cross-sectional analysis of 15 member countries of the OECD with data from 2009 to investigate how individual levels of life satisfaction is affected by the levels of political control of the market, where market control was captured by state interventions such as levels of social spending, government consumption, tax revenue, and social wage. They found evidence indicating that all four types of state intervention had positive impacts on well-being. Jakubow (2014) extends on the research conducted by Flavin et al. (2011) and finds that the positive effect of government intervention is exacerbated when the quality of the administrative institutions is high and when policy interventions are better adapted to insure against the newer forms of market risks. Flavin et al. (2014) further found social spending, as well as government consumption, decommodification<sup>1</sup> and labour market regulation to have a positive association with life satisfaction, with impact being independent of the individuals' income category. These analyses were conducted using World Values Survey data covering 21 OECD countries from 1981-2007.

Radcliff (2013) conducted a study using panel data on how social spending affects life satisfaction in OECD countries between 1980 and 2007. He linked social spending to ideology and the competing public policies of the left and right political parties in order to investigate which political leadership led to higher levels of life satisfaction. His findings showed that at the individual level, social spending as well as general government consumption had a significant and positive association with life satisfaction. Radcliff also presented findings reflecting a positive influence on life satisfaction of decommodification<sup>1</sup> as well as increased tax levels. In another study, Radcliff (2001) investigated how different regime types affect life satisfaction, at both individual and aggregate level, and showed that countries with more socialist and less liberal welfare state regimes tended to produce larger levels of satisfaction. He also illustrated how decommodification and leftist control of government produced larger levels of subjective well-being. Furthermore, Pacek and Radcliff (2008) also found strong positive impacts of decommodification on individuals' levels of life satisfaction, while Di Tella, MacCulloch, and Oswald (2003) documented a positive association between generous unemployment benefits and levels of well-being, with a similar impact on both employed and unemployed individuals. Jakubow (2016) found active labour market policy to have a positive association with life satisfaction of unemployed individuals, while no impact was found resulting from more generous unemployment spending. For employed individuals the opposite was found: higher unemployment

spending was associated with higher levels of life satisfaction while active labour market spending had no such impact.

Contrasting these findings, Veenhoven (2000) investigated 40 nations with estimates from 1990 and found no relationship between social spending (used as a proxy for the size of the welfare state) and levels of subjective well-being. He also found no relationship when comparing estimates from 1980 to 1990 by investigating the effect of change in spending levels as well as impact on equality of well-being. Ouweneel (2002) considered recipients of social services and found unemployed individuals to be equally happy in countries with generous unemployment spending as in those without such services, indicating no increase in subjective well-being from utilising these services. A different approach to looking at the effects of government spending on subjective well-being is presented by De Neve et al. (2015), which stress the importance of government spending in relation to macroeconomic cycles' in order to maintain levels of individual well-being. Their study showed how positive and negative growth affects individuals' subjective well-being at different rates: larger losses in well-being were experienced from the economic recession than gains were experienced from economic growth. They, therefore, suggest that government spending should be used to buffer cycles in order to minimise losses in well-being, since social spending produces stability and protect individuals from the recession.

With the exception of Flavin et al. (2014), all the most relevant studies presented above, conducted by Radcliff (2013), Flavin et al. (2011) and Veenhoven (2000), which directly investigated the relationship between social spending and life satisfaction, are suffering from omitted variable bias, in that they excluded significant confounding variables from their models. Radcliff (2013) did not include any macroeconomic variables, which are crucial control variables in this context. Both Radcliff (2013) and Flavin et al. (2014) utilise data sets missing observations from 2008 and onwards; hence, the models are not capturing the financial crisis, which caused increased need for social services, while also increasing the need to cut spending in order to finance the national debt. The financial crisis can be expected to have had impacts on individual well-being in several OECD countries, both indirectly through reduced access to and poorer quality of welfare and health services, and more directly through increased financial strains, job loss, etc. In addition, the last decades have seen several OECD countries implement major changes in their welfare systems that often combined an increase in co-payments and a reduction of the benefit package (Freeman & Moran, 2000; Rothgang et al., 2005). Such market-inspired reforms have been introduced even in NHS-type countries (Magnussen et al., 2009). These welfare policy reforms may presumably lead to larger differences in life satisfaction.

The studies conducted by Flavin et al. (2011) and Veenhoven (2000) controlled for only a small number of macroeconomic variables,<sup>2</sup> with analyses based only on cross-sectional data sets representing very few observations, leaving no opportunity for inclusion of country- and time-fixed effects, which are essential in this respect. When investigating the relationship between social spending and life satisfaction it is of great importance to use panel data in order to control for the effects of time and changing spending levels, while also reducing the problem of omitted variable bias; thus producing more accurate estimates. In addition to this, all the studies mentioned above, capturing the effects of state intervention, only considered data on life satisfaction from the World Values Survey when performing their analysis. It is also important to test the models with

additional data sources; especially as other sources provide higher quality data. These additional sources are also representing different samples of countries, contributing to a better understanding of the external validity of the estimates.

In addition to presenting an extended and more appropriate model for the statistical analyses, with the inclusion of macroeconomic control variables, fixed effects and an extended time frame, this paper also performs the analyses using the Eurobarometer data to supplement the WVS. The Eurobarometer represents a higher quality data with a higher statistical power, due to the data collection being at a much more consistent basis, resulting in a significantly larger data base consequently producing more accurate estimates. This data base is however only represented by member countries of the European Union, so the results from the different data sets cannot be expected to show similar results. In the first set of analysis, the paper illustrates how individual-level impact from total social spending on life satisfaction disappears when including national level control variables. The second analysis, however, fills a substantial gap in the literature by investigating how the underlying branches of social spending affect subjective well-being independently. Previous studies analysing the impact of single branches of social spending, such as Di Tella et al. (2003) and Jakubow (2016), have done so by only including spending levels related to the branches in question. As generous spending within one branch is likely to be correlated with generous spending within other branches, this project argues that it is essential to include all branches in the analysis in order to obtain unbiased estimates. This indicates large methodological advantages from this way of analysing the relationship between social spending and life satisfaction. The results from our analyses show that a majority of the indicators representing social spending are significant when investigated in this manner. Through this, the paper illustrates how it is more appropriate to investigate social spending separated into spending types when analysing its implications, as the different elements are found to be correlated with subjective well-being in opposing directions, causing distortions of the aggregate estimates.

## Methods

The statistical analysis aims to establish to what extent social expenditure levels affect individuals' subjective well-being. The dependent variable is life satisfaction, based on survey data from the Eurobarometer and the World Values Survey. The independent variable of main interest is social expenditure, where data are obtained from the OECD statistical database. The first part of the analysis focuses on aggregate levels of social spending, while the second part considers the variable in terms of types of social spending, capturing the underlying policy areas. The statistical analysis includes additional variables which previous studies have found to influence individuals' life satisfaction. These include variables at the individual and aggregate levels in order to model life satisfaction as both a function of personal and national level factors. The aggregate level variables capture the state of the political economy, and are more appropriate as control variables, as they are likely to correlate with both social spending and levels of life satisfaction, contributing with increased satisfaction of the conditional independence assumption. The statistical models also include country- and time-fixed effects, which will control for country-specific time-invariant variables as well as time-specific variables which affect all individuals equally. The standard errors are clustered to country-years, which produces estimates

that are robust to between country-year heteroscedacity and within country-year correlation.<sup>3</sup> The different elements of the statistical model are explained in more detail below.

The two data sets are analysed in comparison: the Eurobarometer covers the members of the European Union while the World Values Survey include countries worldwide. These data sets are complimentary as they reflect different cultures of social spending: the countries associated with the European Union traditionally have had a larger focus on social policies compared to other countries. This paper focuses solely on the members of the OECD, within both data sets, for reasons of cross-national comparability, ensuring sufficient levels of democracy and economic development, while also ensuring availability of appropriate data.

### **Descriptive statistics: Eurobarometer**

The Eurobarometer is an opinion survey conducted by the European Commission, where the data were collected at least once per year from 1973 to 2012. Each round has been carried out based on a sample of approximately 1000 respondents from each country in the European Union, who were randomly selected among the population aged 15 years or older. The survey questions are based on a range of topics related to demographic characteristics and the lives they lead, where life satisfaction was covered at least once per year, except in 1974. In the surveys the respondents were asked to choose the alternative which best reflected their situation and were given the following options: ‘very satisfied’, ‘fairly satisfied’, ‘not very satisfied’, and not at all satisfied; where 1 represent ‘not at all satisfied’ and 4 ‘very satisfied’. Among the countries which were included in this dataset, only those representing the 15 longest-serving members<sup>4</sup> of the EU are included in the analysis, as the remaining countries have significantly fewer observations, which could introduce a bias in the estimates.<sup>5</sup> The time period of the analysis stretches from 1980 to 2012 and covers 15–30 country-years per country (Table 1).

### **Descriptive statistics: World Values survey**

The World Values Survey is a survey based on values and beliefs of individuals from nearly 100 countries worldwide. It has been carried out by a network of social scientists since 1981, where the data were collected in six waves, in which some countries are included more regularly than others. For each wave, a random sample consisting of approximately 1000 individuals from a selection of countries’ populations, aged 18 or older, were interviewed on their demographic characteristics, beliefs, values and motivations. In this survey, the respondents are asked to rank the degree to which they are satisfied with

**Table 1.** Descriptive statistics: Eurobarometer.

	Obs	Mean	Std Dev	Min	Max
Reported life satisfaction	763,911	3.06	0.76	1	4
Social spending (% of GDP)	384	23.36	4.5	10.2	31.7
GDP growth	384	1.98	2.84	−8.90	10.8
GDP per capita	384	28,249	8569	12,547	72,573
Unemployment rate	384	8.59	3.81	0.72	23.88
Inflation Rate	384	4.04	4.24	−4.5	24.5

**Table 2.** Descriptive statistics: World values survey.

	Obs	Mean	Std Dev	Min	Max
Reported life satisfaction	64,600	7.29	1.98	1	10
Social spending (% of GDP)	66	17.82	6.8	3.2	31.6
GDP growth	66	3.35	2.86	-6.6	9.3
GDP per capita (2005 US\$)	66	27,017	10,502	6595	50,07
Unemployment Rate	66	7.49	4.03	0.56	22.68
Inflation Rate	66	6.06	13.7	-0.7	80.4

their life on a scale from 1 to 10, where 1 reflects maximum dissatisfaction and 10 reflect maximum satisfaction with life. The sample to be analysed are those countries which are members of the OECD, representing 26 countries,<sup>6</sup> reflecting a more diverse sample than the Eurobarometer data, illustrated by the larger variance in the variables. In this data set, all countries are included since they already have observations from relatively few country-years. This data set covers observations between 1981 and 2012, and includes 1–6 country-years per country (Table 2).

### **Descriptive statistics: social expenditure**

Social spending is defined as total public and private social expenditures as a percentage of GDP. The data are taken from the OECD statistical database, covering 1980–2012, and includes expenditures intending to address one or more social purposes, where the spending programmes need to involve either inter-personal redistribution or compulsory participation (OECD, 2007). The countries of the OECD represent different types of welfare capitalism, reflecting different levels of social spending. However, the last decades have witnessed a steady increase in aggregate social spending within the OECD. We can see from Figure 1 that spending levels are higher among the EU15 than the rest of OECD, and that spending levels within the WVS better reflect the OECD levels of social spending. Additional figures considering countries individually are included in the Figures A1, A2, A3, and A4 in Appendix 1.

### **Individual-level determinants of life satisfaction**

*Age + age-square:* Studies on the relationship between age and happiness suggest that there is a U-shaped relationship in this respect, where individuals tend to be happier in both the early and late periods of their lives, while being the least happy around the age of 40–43 (Frey & Stutzer, 2002; Oswald, 1997). There are many possible explanations of this, but one commonly used interpretation is that the young are better able to enjoy life before experiencing the true responsibilities and struggles in life. Over time, however, individuals learn to adapt or they give up their aspirations, and therefore are better able to enjoy life again (Frey & Stutzer, 2002; Radcliff, 2013). These variables are specified as individuals' exact age and the squared value of this.

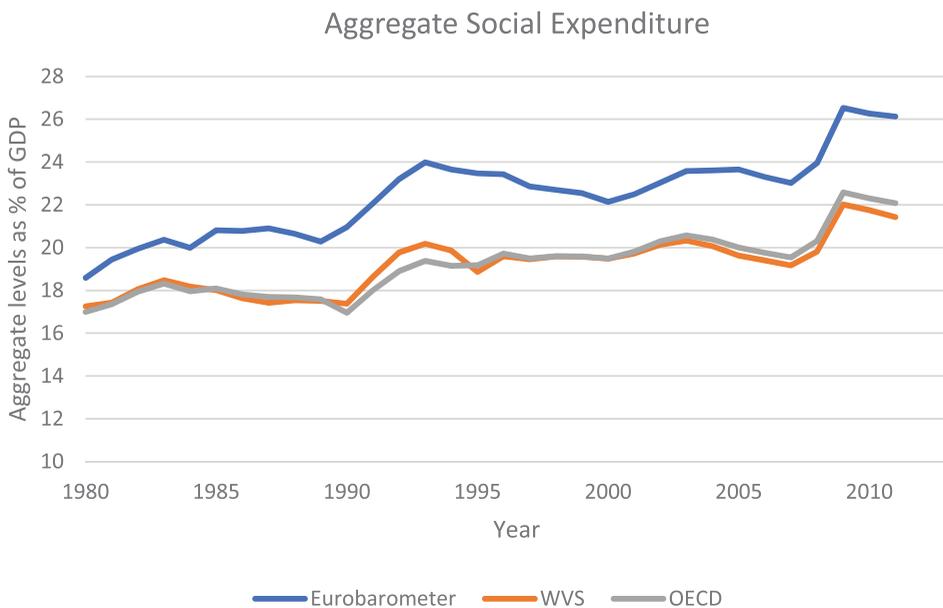
*Gender:* Research shows that women tend to be marginally happier than men (Frey & Stutzer, 2002). This can be explained by how men and women tend to have different intensity in their feelings, where women are more likely to report being very happy as well as very unhappy, while men have a larger tendency to report something in between (Wood, Rhodes, & Whelan, 1989). These differences can result from either biological differences or

socially assigned gender roles (Radcliff, 2013). Gender is included as a dummy variable, where 1 represents males and 0 females.

*Marital status:* Being married is observed to have a positive effect on individuals' life satisfaction in a large number of studies, both considering varying time periods and geographical locations (Diener et al., 2000; Frey & Stutzer, 2002). This is typically explained by the way marriage protects against loneliness and isolation, which are factors that negatively affect happiness. It can also be explained by the way marriage provides a source of self-esteem, as well as an escape from stressful aspects of life (Frey & Stutzer, 2002). Marital status is specified as a dummy variable, with the value of 1 assigned to married respondents and 0 to unmarried respondents.

*Education:* The level of happiness experienced from education is often dependent on how the individuals' achievements reflect the educational level obtained. Individuals with higher education, for instance, tend to be more unhappy under unemployment than less educated individuals. Education is also correlated with income, which is often found to be positively associated with well-being (Clark & Oswald, 1994; Frey & Stutzer, 2002). The variable capturing education asks 'At what age did you complete your education?', where alternative answers are '14 or younger', 15, 16, etc. up to '22 or older'. As a significant part of the sample is listed as 'still studying' (9.2% in the Eurobarometer data and 8.5% in the WVS data), these are placed into a category based on their age minus 5, which is assumed to be reflecting the age they started school. This is done in order to avoid a significant loss of data, where measurement error is unlikely to cause significant bias.

*Personal unemployment:* Studies of the impact from employment status show significantly lower life satisfaction among the unemployed than the employed individuals (Di Tella et al., 2003; Frey & Stutzer, 2002). The negative effect from unemployment may



**Figure 1.** Descriptive statistics: aggregate social expenditures: 1980–2012.

be caused by both psychological as well as social factors. Unemployment may cause depression, anxiety as well as loss of self-esteem. Many studies find unemployed individuals to be suffering from worse mental health than employed individuals. These individuals are also more likely to experience premature deaths, suicide and alcohol abuse (Argyle, 1999; Frey & Stutzer, 2002), in addition to reduced social status (Frey & Stutzer, 2002). This variable is included as a dummy variable, with the value of 1 representing unemployed respondents.<sup>7</sup>

### **National-level control variables**

*GDP per capita:* Studies show that individuals in richer countries tend to be happier than individuals in poorer countries, which may result from increased opportunities and options, as well as being associated with a range of other factors, such as stable democracy, better health, more equality, etc. The effect of income is however seen to have diminishing returns, as wealth has little additional impact when increased above a certain threshold (Frey & Stutzer, 2002). The data capturing GDP per capita are converted into log values in the presented models.<sup>8</sup>

*GDP growth rate:* Whereas economic growth is usually associated with improved living conditions, the literature reflects large disagreements considering the impact on life satisfaction (Frank, 2009). Easterlin, Mcvey, Switek, Sawangfa, and Zweig (2010) argues that in the long run, there is no association between GDP growth and life satisfaction, as material aspirations escalate with economic growth, where social comparison and hedonic adaptation eliminates the impact over time. Sacks, Stevenson, and Wolfers (2013) strongly reject these arguments through studies considering a range of data sources on levels of life satisfaction, presenting strong evidence that economic growth leads to larger levels of subjective well-being. Economic growth is also found to have diminishing returns to life satisfaction, indicating a larger impact in the less wealthy economies (Veenhoven, 2004). Further, De Neve et al. (2015) illustrate an asymmetric relationship between economic growth and subjective well-being, with larger losses in well-being experienced from economic downturns than gains from corresponding upturns. They therefore argue that positive and negative growth should be considered independently in relation to subjective well-being. This paper will however consider growth rates without separation, due to lack of negative observations in the WVS data set.

*Unemployment rate:* National unemployment rates are commonly found to be negatively associated with well-being (Di Tella, MacCulloch, & Oswald, 2001). High unemployment rates do not just affect the unemployed, but also causes distress among the wider population. This is often associated with fear of social unrest, insecurity in own employment position, or experiences of other individuals' struggles (Frey & Stutzer, 2002). The unemployment rate is measured as the percentage of the active labour market force without employment.

*Inflation rate:* Several studies have found increased inflation to have a negative impact on individuals' life satisfaction (Di Tella et al., 2001; Frey & Stutzer, 2002). Increases in the general price level causes uncertainty, distress, and fear at the individual level, with people becoming concerned about the possibilities of increased costs of living and potentially economic and political chaos. This is found even though income levels tend to rise with

inflation, making these outcomes less likely in reality (Frey & Stutzer, 2002). Inflation is included as a percentage change in consumer prices, which is the most commonly used measure of inflation.

*Other statistical controls:* Country-fixed effects pick up the effects from country-specific factors which do not vary over time, such as culture and climate. The cultural approach to studying life satisfaction suggests that the observed variance across countries result from each country's cultural norm, and is therefore unaffected by political factors (Ingleheart, 1990; Radcliff, 2001). It is therefore important to control for country-fixed effects in order to avoid having cultural aspects driving the results. The statistical model will also include time-fixed effects, which capture time specific determinants of life satisfaction that do not vary across countries. This can include events, shocks or developments which affect all individuals equally at that given time. Time-fixed effects also effectively control for biases resulting from varying question orders in the different survey years, where the subject's experience of the previously asked questions can bias subsequent responses (Veenhoven, 1996).

## Results

### *Social spending and levels of well-being*

The results considering total social expenditures are presented in table 3, where the two datasets are presented with standardised scores for comparison. Column 1 and 3 shows that when including only individual-level variables and fixed effects, and keeping the macroeconomic variables omitted, the effect of social spending is negative and significant for the Eurobarometer dataset, while positive and significant at the 0.1 level for the WVS data set. The varying impacts in the two data sets are likely to be caused by the indicators of social spending picking up effects from the omitted macroeconomic variables. When controlling for the most essential national level variables presented in column 2 and 4, aggregate levels of social spending have no correlation with individuals' subjective well-being, with large reductions in the estimated coefficients as well as insignificant results in both data sets. The marginal increases in the *R*-squared estimates further indicate that most of the variation from the macroeconomic variables were picked up by social spending in the first model, especially in the Eurobarometer data.

The individual-level variables all show significant relationships, consistent with the empirical evidence presented above: marriage and education have a positive relationship, while unemployment and male gender have negative relationships. The association between age and well-being also reflects existing research: people tend to be happier in their earlier and later periods of their lives, compared to their midlife period. The individual-level variables are also reflecting comparable levels of impact in the two data sets, indicating validity in the estimates. When looking at the macroeconomic variables, on the other hand, the two datasets present mixed results: the Eurobarometer data shows positive correlations related to both GDP growth and GDP per capita, although the latter is significant at only the 0.1-level. By contrast, these variables are not found to be significant in the WVS data, where inflation seems to have a larger influence as higher levels of inflation are seen to be negatively correlated with subjective well-being. This is likely a result from a larger variation in the inflation variable as well as a more diverse sample within the

**Table 3.** Social spending and life satisfaction, 1980–2012. Country- and time-fixed effects included in the model. Clustered standard errors in parentheses.

	Eurobarometer		World values survey	
	(1)	(2)	(1)	(2)
<i>Individual level:</i>				
Married	.223*** (.004)	.223*** (.005)	.312*** (.015)	.311*** (.015)
Gender	-.017*** (.003)	-.017*** (.003)	-.055*** (.011)	-.055*** (.011)
Age	-.034** (.000)	-.034*** (.001)	-.033*** (.002)	-.033*** (.000)
Age-squared	.0003*** (.000)	.0003*** (.000)	.0003*** (.000)	.0003*** (.000)
Unemployment	-.522*** (.010)	-.520*** (.011)	-.393*** (.037)	-.385*** (.038)
Education	.027*** (.001)	.027*** (.0001)	.018*** (.003)	.020*** (.002)
<i>Country-level:</i>				
Social spending	-.016*** (.003)	-.001 (.004)	.027* (.014)	.003 (.013)
GDP growth		.012*** (.005)		-.006 (.005)
GDP per capita (log)		.012 (.005)		-.152 (.282)
Unemployment rate		-.008*** (.003)		-.015** (.007)
Inflation		.005 (.004)		-.010*** (.001)
Constant	.842*** (.085)	-.769 (.753)	.323** (.157)	2.259 (2.840)
N <sub>Macro</sub>	384	384	66	66
N <sub>Micro</sub>	763,911	753,911	64,600	64,600
N <sub>Countries</sub>	15	15	26	26
R squared	.048	.049	.041	.046

Notes: \*\*\* $p < .01$ , \*\* $p < .05$ , \* $p < .1$ .

WVS data set. Both data sets show negative correlations on unemployment rates, indicating a generalisable impact within the OECD.

This illustrates how crucial it is to include macroeconomic control variables in addition to country- and time-fixed effects: the latter only control for variables which are either country-specific and time-invariant, or, time-specific with equal impact on all individuals at that specific time. The macroeconomic variables, on the other hand, are both country and time-specific, meaning that they are not controlled for by the inclusion of fixed effects. The macroeconomic variables included in this model introduce information about the conditions of the political economies in which the individuals belong, which are central determinants of well-being in addition to being associated with social spending. It is therefore possible that previously conducted research, which found total social spending to be positively influencing individual levels of life satisfaction, could be suffering from omitted variable bias, with social spending picking up the impacts from the omitted national-level variables. It is however impossible to determine whether that is the case without exact replication and extension of these specific models, as the presented model includes fewer individual control variables as well as a different time frame. The increased numbers of individual-level variables in previous were mainly included to explain more of the variance in the dependent variable; i.e. to increase the value of the R-squared. The individual-level variables are unlikely to be correlated with levels of social spending,

which means that the inclusion of these is unlikely to cause significant changes in the estimated correlation coefficient for social spending.

The presented results indicate that the conditions of the economies are better determinants of individual life satisfaction than levels of social provisions, leading us to reject the initial hypothesis. These results are consistent with Veenhoven (2000), who found no correlation between social spending and levels of subjective well-being, after controlling for national wealth as well as further controlling for multicollinearity between the variables capturing social spending and wealth. Veenhoven explains his findings by pointing to other institutions, such as the family, churches, charities and businesses, as providers of welfare services in the absence of state provision. Increased state provision could drive out these suppliers, leaving the overall quantity of social provisions the same. He also states that the welfare state may introduce elements of inefficiency and wastefulness that imposes a cost on the citizens and therefore contribute to reduced happiness. The subsequent section will however argue that this method of analysing social spending is inappropriate, suffering from type II error, as it is necessary to separate aggregate spending into underlying social policy categories in order to obtain a sufficient illustration of the underlying mechanisms.

### ***Type of social spending and level of well-being***

This section will focus on the underlying branches of social spending, moving beyond aggregate levels of spending. The spending categories are likely to be of different importance within societies and are also contributing with different degrees of decommodification; Esping-Andersen (1990) presents pensions, as well as benefits related to sickness and unemployment, to be the most important elements in this respect. By looking at aggregate levels of social spending, an economy with high unemployment, and consequently high levels of spending, will appear to have a generous welfare system, even if it had no focus on other aspects of social protection. In order to obtain an increased understanding of the real policy implications, it is arguably more appropriate to study the different spending types independently.

Social spending is a broad concept involving a range of different types of social policy. The OECD database separates total social spending into 9 underlying social policy areas (OECD, 2007):

- (1) Old-age: pensions, early retirement pensions, home-help and residential services for the elderly population
- (2) Survivors spending: pensions and funeral expenditures
- (3) Incapacity-related spending: disability benefits, care services, benefits related to occupational injury and accident legislation, as well as payments related to employee sickness
- (4) Health care spending: in- and out-patient care, prevention and medical goods
- (5) Family-related spending: childcare support, child allowances and credits, sole parent payments as well as income support during maternity and parental leave
- (6) Active labour market policies: employment services, labour market training, youth measures, subsidised employment and employment measures for disabled individuals

- (7) Unemployment spending: compensation related to unemployment, early retirement for labour market reasons and severance pay
- (8) Housing: housing allowances as well as rent subsidies
- (9) Other policy areas: cash benefits to low-income households as well as spending on other social programmes, such as food subsidies

The descriptive statistics presented in Table 4 give an indication of the importance of the different spending types, where the values are representing the OECD as a whole.<sup>9</sup> We can see from the mean estimates that old age, health care and incapacity related spending represent the largest spending areas among these countries. As we saw in the descriptive statistics presented above, the countries covered by the Eurobarometer have larger levels of aggregate social spending, which naturally also translates into the underlying branches. Separate tables for the two data sets are presented in Tables A1 and A2 in Appendix 2.

The results considering types of social spending are presented in Table 5,<sup>10</sup> where we can see that the impact on levels of subjective well-being is significant among a majority of the underlying branches of social spending. As the table shows, the effects of the different elements drive the levels of subjective well-being in different directions, which explain the findings of the previous model. When considering aggregate social expenditures, the impacts of the underlying elements balance each other out, therefore making total levels appear to be uncorrelated with life satisfaction. This model is, therefore, more appropriate when considering social spending as it is better able to illustrate the actual impacts from these policies. As we can see, the two data sets continue to show mixed results, while at the same time having some essential similarities: health care spending and spending related to poverty-reducing policies show positive and significant impacts among both sets of countries.

Considering other elements with positive associations, the Eurobarometer data shows that incapacity-related spending has a positive correlation, while this has no significant relationship within the WVS data set, in which spending related to old age, survivors, family and housing prove to be of greater importance. These findings are consistent with our expectations, that increased provisions which contribute to improved living conditions increases well-being. The strengths of the impacts are found to vary between the data sets, possibly due to measurement differences in life satisfaction and different dispersions. However, the variables which reflect equal impacts among the two data sets show the exact same order of strengths, where for instance spending related to poverty elimination is of the strongest positive influence within both data sets, reflecting the largest happiness gains from an increased focus on such programmes. The variables which are

**Table 4.** Descriptive statistics: OECD data on types of social spending, 1980–2012.

	Obs	Mean	Std Dev	Min	Max
Old age	780	6.83	2.48	1	14.5
Survivors	780	1.03	0.75	0	3.5
Incapacity related	780	2.73	1.47	.1	7
Health	780	5.37	1.37	0	8.7
Family	780	1.96	1.06	0	4.8
Active labour market programmes	780	0.59	0.46	0	2.8
Unemployment	780	1.12	0.95	0	5.3
Housing	780	0.32	0.34	0	1.8
Other social policy areas	780	0.48	0.53	0	3.6

**Table 5.** Social spending branches and life satisfaction, 1980–2012. Country- and time-fixed effects included in the model. Clustered standard errors in parentheses.

	Eurobarometer	WVS
<i>Individual level:</i>		
Married	.224*** (.005)	.306*** (.016)
Gender	-.016*** (.004)	-.055*** (.012)
Age	-.035*** (.000)	-.033*** (.002)
Age-squared	.0003*** (.000)	.0003*** (.000)
Unemployment	-.516*** (.012)	-.405*** (.036)
Education	.027*** (.000)	.020*** (.003)
<i>Country-level:</i>		
Old age	-.035*** (.009)	.038** (.016)
Survivors	-.059*** (.021)	.133** (.058)
Incapacity related	.041*** (.013)	.001 (.058)
Health	.028** (.013)	.161** (.074)
Family	.021 (.022)	.156*** (.060)
Active labour market programmes	-.044** (.022)	-.291** (.125)
Unemployment spending	-.033** (.015)	-.140** (.070)
Housing	.050 (.066)	.33*** (.070)
Other social policy areas	.174*** (.038)	.341*** (.115)
GDP growth	.010** (.004)	-.011 (.013)
GDP per capita (log)	-.038 (.114)	-.1090** (.471)
Unemployment rate	-.007** (.003)	-.018*** (.005)
Inflation	.003 (.004)	-.008*** (.001)
Constant	.865 (1.156)	10.18** (4.647)
N <sub>Macro</sub>	324	57
N <sub>Micro</sub>	659,977	56,400
N <sub>Countries</sub>	15	24
R squared	.052	.050

Notes: \*\*\* $p < .01$ , \*\* $p < .05$ , \* $p < .1$ .

typically reflecting the most decommodifying elements are in general found to be of less importance, except for the incapacity-related spending in the Eurobarometer data and pensions in the WVS data.

Further, unemployment spending is seen to have a significant negative correlation with life satisfaction in both data sets. This negative impact may be explained by how high levels of unemployment spending is associated with high unemployment rates, which in turn represent economic conditions which are negatively affecting individuals' life satisfaction. This collinearity should be picked up by controlling for the unemployment rate; however,

there may be other characteristics of the economy linked to high levels of unemployment spending which explains this negative correlation.<sup>11</sup> Increased need for such services is usually correlated with difficult economic conditions, which is associated with reduced happiness levels; this mechanism can therefore make elements of social spending appear to have negative impacts, even though this may not be the case. The Eurobarometer shows that both old-age and survivors spending have negative associations with individuals' life satisfaction. These negative associations can be explained by the way an ageing population causes large increases in the levels of social expenditures without actually contributing to extra improvements in the general welfare. This is also a plausible explanation related to unemployment spending and active labour market programmes (Veenhoven, 2000). Increased spending on these areas may for instance capture a dissatisfaction with increased tax levels, as this entails a negative income effect on the population. This may also explain why pension and survivor spending reflect negative correlations in the Eurobarometer data and not in the WVS data, as wealth and income seems to be of larger importance among the individuals within the European countries.

Furthermore, we observe that the individual level variables remain unchanged and consistent with the research presented above. Most of the national level variables are also unchanged, except for GDP per capita which have now lost its slight significance in the Eurobarometer data, while showing increased importance in the WVS data, where it now has a negative and significant impact on life satisfaction. We can see from the R-squared that the new model is able to explain more of the variance in our dependent variable: the Eurobarometer data shows an increase from 0.049 to 0.052 and the WVS data show an increase from 0.046 to 0.050. The model presented in [table 5](#) is further able to provide significantly more useful information of the impact of social spending than the previously presented models.

## Discussion

Our analysis indicates that social spending related to poverty and health care have a positive effect on subjective well-being within the OECD, suggesting that policymakers aiming to increase well-being should place a larger importance on these areas. The presented findings suggest that policymakers should investigate social spending in terms of the underlying branches, as the correlations of the elements run in different directions, which means that the impact of social spending becomes difficult to interpret when considering aggregate spending. While the overall impact from increased social spending is found to have no impact on life satisfaction, the true effect seems to depend on what branches of social spending represent these increases. The analysis found a majority of the types of social spending to have significant impacts on subjective well-being. This suggests that type of welfare capitalism matters: where spending levels reflect the social democratic welfare model or the conventional left, it significantly influence citizens' well-being.

A majority of the indicators considering spending types are found to have a positive association, but a substantial part is also reflecting negative impacts. The elements of social spending which Esping-Andersen (1990) presents as the most decommodifying factors seem to be of less importance than those which work to promote health and

reduce poverty within the population: the decommodifying variables show mixed results, except for unemployment benefits which show negative associations.

More detailed research should therefore be conducted on the exact mechanisms causing unemployment spending and active labour market services to have negative impacts. Further analysis should also aim to find the exact causes of the contrasting findings on pensions, survivors and incapacity-related spending, as well as the additional variations between the data sets. Due to these variations, it is considered more appropriate to investigate these factors at a national level, if the aim of the research is to inform local policies.

Further research should also control for how social spending is financed, since satisfaction could be very different within countries with high spending levels depending on whether taxes are high or low, or whether spending is financed through borrowing. Similarly, happiness levels are likely to vary in countries with low levels of social spending depending on whether tax levels are high or low, reflecting the quantity of support provided compared to the tax burden on the population. Further investigation could also consider how spending levels affect the national variance in life satisfaction over time, since social provision is improving conditions for those at the bottom at the expense of the broader population, who may be negatively affected by increased tax levels.

This paper has argued for an increased focus on happiness indicators within public policy. However, it is also important to address the potential problems with this approach. Frey and Gallus (2012) argue that if happiness indexes become the main goal of public policy, the indicators are likely to be distorted by political interests. They argue that a shifting focus from GDP to happiness indicators will give individuals incentives to provide more strategic responses to survey questions in order to reward or punish the ruling government, further preventing these estimates from reflecting the true levels of life satisfaction within the population. At the same time, they suggest that political leaders are incentivised to manipulate the indexes in order to promote their own political interests. Frey and Gallus, therefore, suggest that public policy should focus on a broad range of indicators capturing both material and social aspects, as well as having independent organisations and governments proposing different happiness estimates, where the collective information from these will present a better image of the true happiness levels.

Another potential weakness of our study is related to validity and reliability. Countries tend to classify social services in different ways. However, the OECD has created a database with very specific classifications; both related to what is considered as social spending as well as what specific spending belongs to each underlying category. This measure allows for good quality cross-country comparison, with high validity and reliability, which is also reflected by the values being consistent with alternative measures (OECD, 2007).

When considering life satisfaction, the validity of the indicator can be less clear. This measure is based on survey data, where the validity can be challenged by a range of issues related to respondents' understanding of the question, their ability to correctly classify satisfaction level and their willingness to be honest. These issues have however been investigated through comparison of self-reported satisfaction levels with more in-depth analysis considering the same subjects, where results are found to be very similar among the two analyses (Radcliff, 2013; Veenhoven, 1996). Indicators of subjective well-being are also found to be highly correlated with external evaluation from friends and family of respondents (Myers & Diener, 1995). Further, individuals with higher levels of self-reported life satisfaction are found to smile and laugh more during interactions than others, as well as being less likely to

become depressed, need psychological counselling or commit suicide (Frey & Stutzer, 2002). This indicator is therefore unlikely to produce significant measurement errors, while further biases introduced by differing question orderings are picked up by inclusion of the time-fixed effects. The indicator of life satisfaction is generally found to be reliable, as the responses are seen to be highly correlated among differently worded questions which capture the same concept. This also applies to language differences, allowing for cross-country comparison (Veenhoven, 1996).

The statistical models presented in the second analysis reflects internal validity as they include measures which are both considered to be valid and reliable as well as including the appropriate control variables. The data set representing the WVS can be considered to have a lower internal validity than the Eurobarometer data, since the numbers of observations are significantly lower. Considering whether the results can be generalised to a larger population, i.e. if they have external validity, the results show similar impacts from several of the spending types among the two data sets. This indicates external validity within the OECD, although no such validity can be justified for the spending types showing mixed results. As these findings are only representing the OECD countries, i.e. developed nations, we cannot claim global generalisation as the impacts may be very different within less developed nations, where separate analysis is necessary.

## Conclusions

Existing literature has presented evidence indicating that, within advanced industrialised economies, higher levels of aggregate social spending have a positive impact on individuals' levels of life satisfaction (Di Tella et al., 2003; Flavin et al., 2011; Pacek & Radcliff, 2008; Radcliff, 2013). The results presented in this paper, however, contradict these findings, illustrating how the perceived impact disappears when controlling for economic, social and cultural variables, as well as considering an extended time frame. Further analysis considering social spending grouped into different policy areas found a majority of these spending types to be significantly correlated with life satisfaction. This illustrates how it is inappropriate to study social spending in terms of total spending levels, as social spending appears to be uncorrelated with life satisfaction even though the underlying branches are proven to have significant and differing impacts. Previous research has indicated that increased welfare spending is beneficial for subjective well-being, regardless of what policy areas this spending is targeted at. This claim is not supported by the evidence in this paper, where spending related to health care provision and poverty reduction is found to have a positive impact, while unemployment spending and active labour market programmes are related to decreased life satisfaction.

From this analysis, it is however impossible to determine what type of capitalism is most appropriate when aiming to build public policy regimes which maximise individuals' well-being. Due to the mixed results from the analysis the overall image of the indicators is not directly reflecting a particular type of welfare capitalism, but rather indicating that specific aspects of the social democratic policy regime should be promoted. This further suggests that policymakers should perform national analyses in order to find optimal social protection policies for their citizens. In this respect, it is also crucial to evaluate the impact of these policies on a wider range of indicators in order to get an optimal understanding of the empirical consequences for society as a whole. By this, we can establish that social spending

is indeed an important tool for policymakers aiming to maximise well-being, and in-depth analyses at national levels are crucial for successful policy outcomes.

## Notes

1. This measure captures quantity and quality of social spending related to pensions, incapacity and unemployment, and is developed by Esping-Andersen (1990).
2. Flavin et al. (2011) controlled for GDP per capita and unemployment rate, while Veenhoven (2000) controlled for national wealth.
3. We also estimated the models with two-way clustered standard errors (country and year), but since this did not alter the results we choose to present the regression models using clustering by country-year.
4. Including: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and the United Kingdom.
5. Most of these countries are however included in the WVS data set.
6. Including Australia, Canada, Chile, Czech Republic, Estonia, Finland, France, Germany, Hungary, Israel, Italy, Japan, South-Korea, Mexico, Netherlands, New Zealand, Norway, Poland, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.
7. Two additional variables which are important predictors of life satisfaction are income and health at the individual level. These are not included in the analyses due to lack of availability in the utilized data sets.
8. Data on economic growth, GDP per capita, inflation and unemployment rate were taken from the OECD statistical database. Missing data are supplemented from the IMF and World Bank databank.
9. The Eurobarometer and WVS are collectively covering all the OECD countries except Iceland.
10. South Korea and Mexico are omitted from this analysis due to missing data.
11. Models with lagged unemployment rates were also tested, however indicating insignificant coefficients which did not prove to drive these results. These were therefore considered unnecessary to include in the paper.

## Disclosure statement

No potential conflict of interest was reported by the authors.

## Notes on contributors

*Oda Nordheim* is a PhD-candidate in political science at the Norwegian University of Science and Technology (NTNU). Her research interests are public policy, the welfare state, health policy, social welfare and social inequality. She is currently working on her PhD project: “Social Protection and its Impact on Health: How types of social spending affect self-rated health within OECD-countries”.

*Pål E. Martinussen* is professor in political science at the Norwegian University of Science and Technology (NTNU) with more than 15 years of experience from health services research. He has numerous publications in international journals on topics as comparative health policy, health reforms, NPM and the medical profession, and hospital management and organisation.

## References

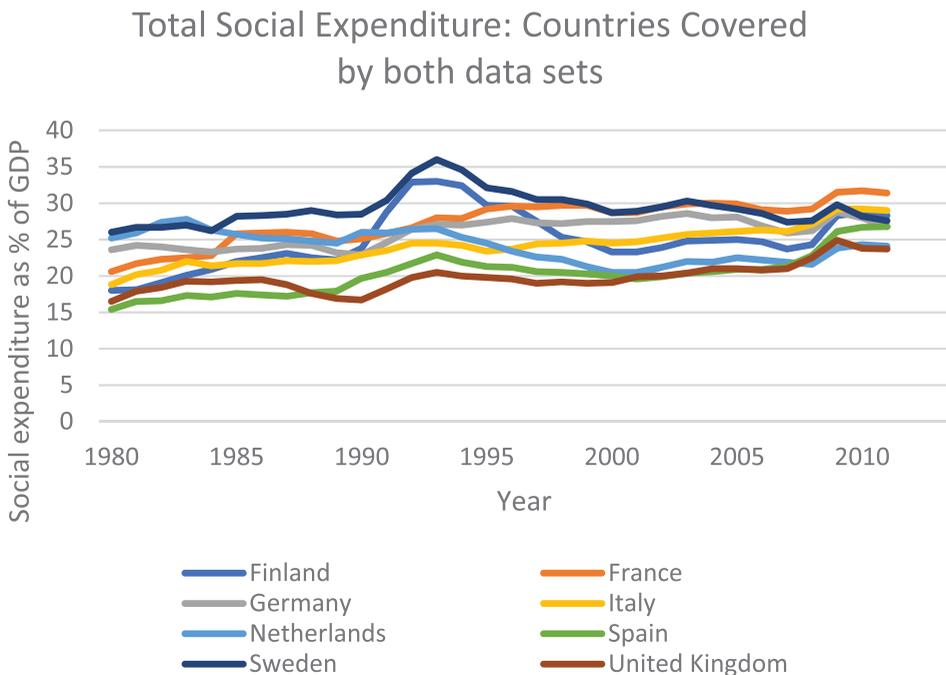
- Argyle, M. (1999). Causes and correlates of happiness. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 353–373). New York: Russell Sage Foundation.

- Clark, A. E., & Oswald, A. J. (1994). Unhappiness and unemployment. *Economic Journal*, 104(424), 648–659.
- De Graaf, J., & Batker, D. K. (2011). *What's the economy for, anyway?* New York: Bloomsbury Press.
- De Neve, J., Ward, G. W., De Keulenaer, F., Van Landeghem, B., Kavetsos, G., & Norton, M. I. (2015). *Individual experience during periods of positive and negative economic growth is asymmetric: Global evidence from subjective well-being data*. CEP Discussion Paper, 1305. pp. 1–36.
- Diener, E., Gohm, C. L., & Suh, E. M. (2000). Similarity of the relationship between marital status and subjective well-being across cultures. *Journal of Cross-Cultural Psychology*, 31(4), 419–436.
- Di Tella, R., MacCulloch, R. J., & Oswald, A. J. (2003). The macroeconomics of happiness. *The Review of Economics and Statistics*, 85(4), 809–827.
- Di Tella, R., MacCulloch, R. J., & Oswald, A. J. (2001). Preferences over inflation and unemployment: Evidence from surveys or happiness. *The American Economic Review*, 91(1), 335–341.
- Easterlin, R. A., Mcvey, L. A., Switek, M., Sawangfa, O., & Zweig, J. S. (2010). The happiness income paradox revisited. *Proceedings of the National Academy of Sciences*, 107(52), 22463–22468.
- Esping-Andersen, G. (1990). *The three worlds of welfare capitalism*. Cambridge: Polity Press.
- Flavin, P., Pacek, A. C., & Radcliff, B. (2011). State intervention and subjective well-being in advanced industrial democracies. *Politics & Policy*, 39(2), 251–269.
- Flavin, P., Pacek, A. C., & Radcliff, B. (2014). Assessing the impact of the size and scope of government on human well-being. *Social Forces*, 92(4), 1241–1258.
- Frank, R. H. (2009). The Easterlin Paradox revisited. In A. K. Dutt, & B. Radcliff (Eds.), *Happiness, economics and politics: Towards a multi-disciplinary approach* (pp. 151–157). Cheltenham: Edward Elgar Publishing Limited.
- Freeman, R., & Moran, M. (2000). Reforming health care in Europe. *West European Politics*, 23, 35–58.
- Frey, B. S., & Gallus, J. (2012). Happiness policy and economic development. *International Journal of Happiness and Development*, 1(1), 102–109.
- Frey, B. S., & Stutzer, A. (2002). *Happiness and economics: How the economy and institutions affect human well-being*. Princeton: Princeton University Press.
- Frey, B. S., & Stutzer, A. (2009). Should national happiness be maximized? In A. K. Dutt & B. Radcliff (Eds.), *Happiness, Economics and Politics: Towards a Multi-Disciplinary approach* (pp. 301–323). Cheltenham: Edward Elgar Publishing Limited.
- Frey, B. S., & Stutzer, A. (2010). Happiness and economic policy: Happiness: A new approach in economics. *CESifo DICE Report*, 4, 3–7.
- Frey, B. S., & Stutzer, A. (2011). The use of happiness research for public policy. *Social Choice and Welfare*, 38(4), 659–674.
- Gadrey, J., & Jany-Catrice, F. (2006). *The new indicators of well-being and development*. New York: Palgrave Macmillan.
- Inglehart, I. (1990). *Culture shift in advanced industrial society*. Princeton: Princeton University Press.
- Jakubow, A. (2014). State intervention and life satisfaction reconsidered: The role of governance quality and resource misallocation. *Politics & Policy*, 42(1), 3–36.
- Jakubow, A. (2016). Subjective well-being and the welfare state: Giving a fish or teaching to fish? *Social Indicators Research*, 128, 1147–1169.
- Kahneman, D., & Deaton, A. (2010). High income improves evaluation of life but not emotional well-being. *Psychological Studies and Cognitive Sciences*, 107(38), 16489–16493.
- Lyubomirsky, S., King, L., & Diener, E. (2005). The benefits of frequent positive affect: Does happiness lead to success? *Psychological Bulletin*, 131(6), 803–855.
- Magnussen, J., Vrangbæk, K., & Saltman, R. (eds). (2009). *Nordic healthcare systems. Recent reforms and current policy challenges*. Berkshire: Open University Press.
- Myers, D., & Diener, E. (1995). Who is happy?. *American Psychological Society*, 6(1), 10–19.
- OECD. (2007). *The social expenditure database: An interpretive guide*, Available at: [http://stats.oecd.org/OECDStatDownloadFiles/OECDSOCX2007InterpretativeGuide\\_En.pdf](http://stats.oecd.org/OECDStatDownloadFiles/OECDSOCX2007InterpretativeGuide_En.pdf)
- Oswald, A. J. (1997). Happiness and economic performance. *Economic Journal*, 107(445), 1815–1831.

- Ouweneel, P. (2002). Social security and well-being of the unemployed in 42 nations. *Journal of Happiness Studies*, 3, 167–192.
- Pacek, A. C., & Radcliff, B. (2008). Welfare policy and subjective well-being across nations: An individual level assessment. *Social Indicators Research*, 89, 179–191.
- Radcliff, B. (2001). Politics, markets, and life satisfaction: The political economy of human happiness. *American Political Science Review*, 95(4), 939–952.
- Radcliff, B. (2013). *The political economy of human happiness: How voters' choices determine the quality of life*. New York: Cambridge University Press.
- Rothgang, H., Cacace, M., Grimmeisen, S., & Wendt, C. (2005). The changing role of the state in health care systems. *European Review*, 13, 187–212.
- Sacks, D., Stevenson, B., & Wolfers, J. (2013). *Growth in subjective well-being and income over time* (pp. 1–37). Philadelphia: Mimeo.
- Veenhoven, R. (1996). Developments in satisfaction research. *Social Indicators Research*, 37(1), 1–46.
- Veenhoven, R. (2000). Wellbeing in the welfare state: Level not higher, distribution not more equitable. *Journal of Comparative Policy Analysis*, 2, 91–125.
- Veenhoven, R. (2004). Happiness as a public policy aim: The greatest happiness principle. In A. P. Linley & S. Joseph (Eds.), *Positive psychology in practice* (pp. 658–678). Hoboken: John Wiley & Sons Inc.
- Veenhoven, R. (2009). How do we assess how happy we are? Tenets, implications, and tenability of three theories. In A. K. Dutt & B. Radcliff (Eds.), *Happiness, economics and politics: Towards a multi-disciplinary approach* (pp. 45–69). Cheltenham: Edward Elgar Publishing Limited.
- Wood, W., Rhodes, N., & Whelan, M. (1989). Sex differences in the positive well-being: A consideration of emotional style and marital status. *Psychological Bulletin*, 106(2), 249–264.

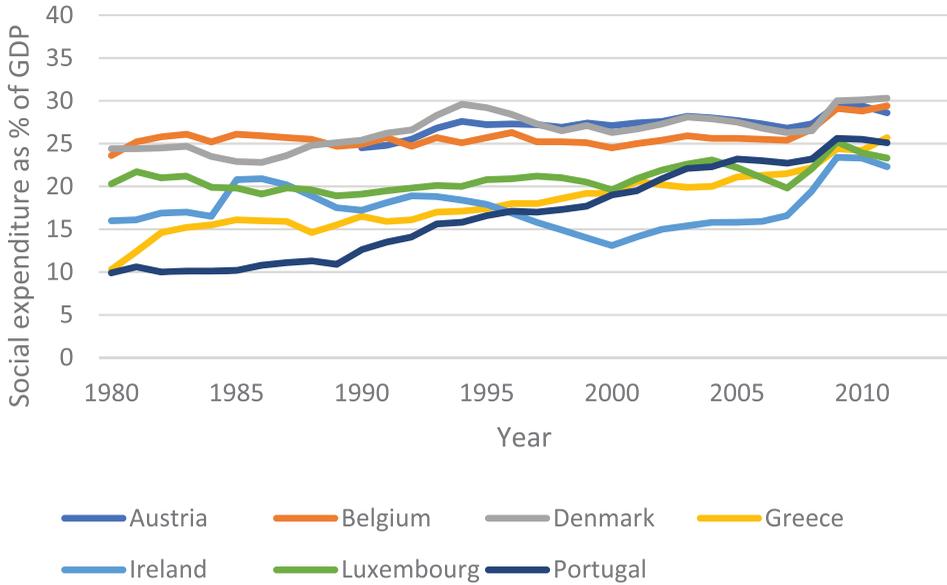
## Appendices

### Appendix 1. Social expenditure at national level



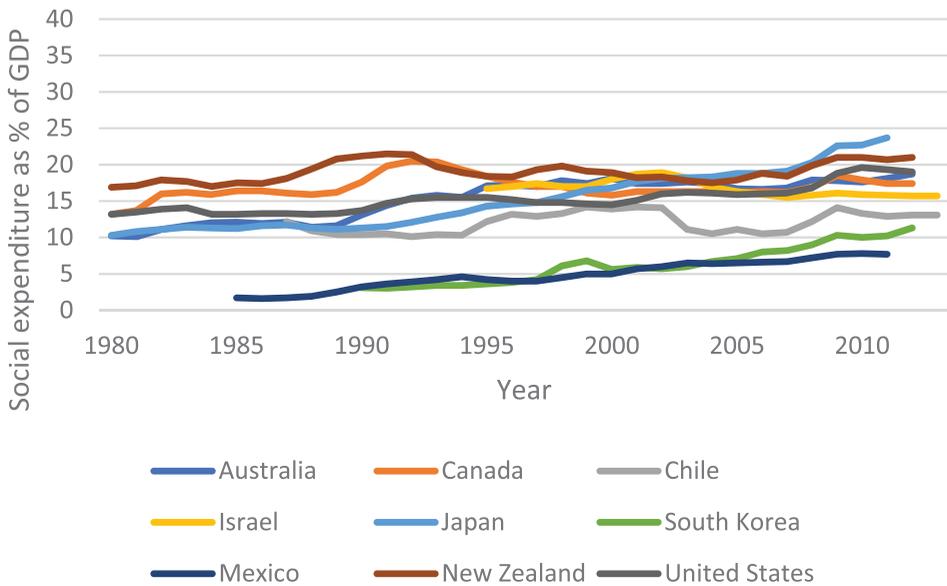
**Figure A1.** Total social expenditure in countries covered by both data sets.

### Total Social Expenditure: Countries Only Covered by the Eurobarometer data set



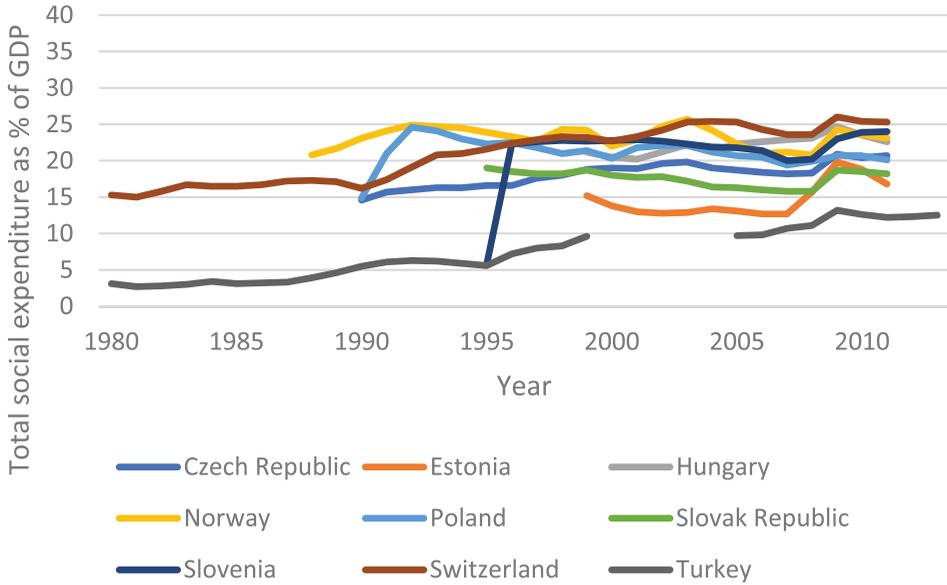
**Figure A2.** Total social expenditure in countries only covered by the Eurobarometer data.

### Total Social Expenditure: Non-European Countries Only Covered by the WVS data set



**Figure A3.** Total social expenditure in non-european countries covered only by the WVS data.

## Total Social Expenditure: European Countries Only Covered by the WVS data set



**Figure A4.** Total social expenditure in european countries covered only by the WVS data.

### **Appendix 2. Types of social expenditures – separated descriptive statistics**

**Table A1.** Eurobarometer: Descriptive statistics: types of social spending.

	Obs	Mean	Std Dev	Min	Max
Old age	324	7.84	2.61	2.6	14.5
Survivors	324	1.27	0.82	0	3.5
Incapacity related spending	324	2.98	1.33	0.8	7
Health	324	5.89	1.25	2.9	8.7
Family	324	2.18	1.03	0.2	4.3
Active labour market programmes	324	0.81	0.43	0.1	2.4
Unemployment spending	324	1.64	1.09	0.2	5.3
Housing	324	0.44	0.39	0	1.7
Other social policy areas	324	0.42	0.34	0	1.5

**Table A2.** World Values Survey: Descriptive statistics: types of social spending.

	Obs	Mean	Std Dev	Min	Max
Old age	57	6.90	2.42	1.6	12.6
Survivors	57	0.96	0.63	0.1	2.7
Incapacity related spending	57	2.20	1.47	0.1	5.8
Health	57	5.57	1.46	0	8.3
Family	57	1.63	1.08	0	3.8
Active labour market programmes	57	0.51	0.42	0	2.2
Unemployment spending	57	0.87	0.82	0	3.7
Housing	57	0.31	0.34	0	1.5
Other social policy areas	57	0.49	0.61	0	2.6