Research Article

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The Determinants of Well-Being During a Time of Economic Growth: The Case of Selected European Union Member States

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Abstract

The primary aim of this study is to analyse any changes in the role of well-being determinants which may have occurred over a period of economic growth in the European Union. To this end, this study revolves around testing the hypothesis that non-income determinants of well-being, such as attendance to religious events and involvement in sports, amass greater importance during a period of economic growth, potentially at the expense of income. This hypothesis is tested using the latest two European Quality of Life Surveys, published by Eurofound for 2011 and 2016. Using microdata only from the ten European countries whose real GDP per capita increased by at least ten per cent between the two waves of the survey, a well-being function is specified for each year, based on well-known findings from the well-being literature. Given the ordered nature of the dependent variable, an ordered logit model is employed and interpreted in terms of average marginal effects. Among other results, findings point towards a decline in the importance of income and greater roles for housing quality and frequent participation in sports and in religious activities during this period of economic growth. These findings should inform and guide policy makers in putting in place policies to facilitate well-being improvements in the European Union and beyond.

Keywords: *subjective well-being, life satisfaction, economic growth*

1. Introduction

The negative repercussions of the financial and the subsequent sovereign debt crises which hit European countries more than a decade ago are well documented. Following a period of recovery, the economic situation in a number of European Union (EU) member states had improved significantly by 2016, with Eurostat statistics showing that twenty-four Member States registered a growth rate in real GDP per capita over the respective 2011 levels (Eurostat, 2020). However, in a seeming contradiction of the European Union's objective of promoting the well-being of its citizens, mean subjective well-being improved in merely thirteen such member states over this period (Eurofound, 2011, 2016). Irrespective of the reasons for, this indicates that economic growth is not necessarily reflected in individual well-being improvements. As highlighted in a European Commission-delegated report prepared by Stiglitz, Sen and Fitoussi (2009), the use of GDP as an indicator of social development is somewhat limited by its failure to incorporate environmental and social measures.

This limitation of GDP can partly explain why large institutions have increasingly been placing their focus firmly on individual well-being. Through the research project entitled "*Well-being 2030*", the European Policy Centre and the European Commission looked to develop policies which directly

address the priorities of European citizens and consequently improve well-being in the European Union (Dhéret and Zuleeg, with Chiorean-Sime and Molino, 2011). This ties with resolution *A/RES/65/309* titled "*Happiness: towards a holistic approach to development*" adopted by the UN General Assembly in 2011 which emphasises the need for economic growth to result in happiness and elevated levels of well-being (United Nations General Assembly, 2011). In light of this attention given to well-being, well-being studies in economics have increased significantly.

This study uses the two most recent *European Quality of Life survey* (EQLS) datasets, comprising data largely from 2011 and 2016, in an attempt to trace any changes in the importance of well-being determinants which may have occurred during a period of economic growth in the EU. This objective builds on Diener and Seligman's (2004) argument that the importance of non-material dimensions in explaining well-being levels increases with economic development. To this end, the data is applied to respondents in the ten EU countries which between the years 2011 and 2016 experienced an increase in real GDP per capita exceeding ten percent. These countries are (by order of growth rates): *Hungary, Slovakia, Bulgaria, Poland, Estonia, Latvia, Romania, Lithuania, Malta* and *Ireland*.

This paper proceeds with a review of the relevant literature on well-being determinants. Section 3 then provides a description of the data and methodology of this study, before results are presented and analysed in section 4. The final section discusses the results in terms of the set hypothesis and draws some conclusions and policy implications of the main findings.

2. Review of the Literature on Well-Being Determinants

The literature on well-being determinants provides some fairly unequivocal findings. While it is well-known that personal income is a key influence on well-being, two main schools of thought exist and diverge with regards to the form of its importance. The *absolute income theory*, largely advocated by Veenhoven (1991) holds that higher income fulfils more needs which in turn have positive effects on happiness. In contrast, Easterlin (1995, 2001) believes in the *relative income theory*, where subjective well-being is determined relative to the financial position of others. Later studies, both theoretical and empirical, lend some credence to both theories (Frey and Stutzer, 1999; Ferrer-i-Carbonell, 2005).

Individual health status is widely accepted as an important determinant of well-being (Deaton, 2008; Pedersen and Schmidt, 2011), potentially even more crucial than income (Graham et al., 2011). Others conclude that the relationship between subjective well-being and health hinges on the severity of a condition, with Easterlin (2003) highlighting the role of adaptation in cases where a disability has a low degree of severity.

Using an ordered logit model, Bartolini et al. (2013) and Sarracino (2013), among others, find social relationships to contribute positively to well-being. Furthermore, Becchetti et al. (2008) argue that growth-stimulating policies may not be appreciated by citizens if the resulting economic growth limits their opportunities for social contact. More recently, researchers have also started to include measures of trust in institutions in well-being analyses, finding positive and statistically significant relationships (Macchia and Plagnol, 2019).

Individual well-being has also been found to depend on religious devotion (Helliwell, 2002), volunteering (Bruni and Stanca, 2008) and participation in sports (Downward and Rasciute, 2011; Ruseski et al. 2014). Others argue that these associations may be largely dependent on the frequency of participation (Wheatley and Bickerton, 2017) and the type of motivation in engaging in such activities (Bartolini et al., 2013).

Neighbourhood problems have been found to be detrimental to well-being in some studies (Welsch, 2002, 2007; Van Praag et al., 2005; Ozdamar, 2016) but not in others (Michalos and Zumbo, 2000; Appleton and Song, 2008), perhaps due to adaptation (Cohen, 2008). The extent of the impact of environmental problems on subjective well-being may be dependent on individual personality, with environmentally conscious individuals more likely to bear the negative effects of environmental problems (Ferrer-i-Carbonell and Gowdy, 2007). The relationship between subjective well-being and indicators of housing quality has also attracted considerable interest, with studies looking at this

relationship generally finding a positive association between the two (Peck and Stewart, 1985; Oswald et al., 2003). Sorensen (2014) finds evidence of higher life satisfaction among individuals living in rural areas, relative to those living in urban areas in the European Union.

While employed individuals tend to exhibit higher well-being levels than those unemployed (Clark and Oswald, 1994), no such consensus exists with regards to the level of education. The well-being effect of higher education has been found to be significantly positive (Blanchflower and Oswald, 2000), significantly negative (Clark, 2003; Ferrer-i-Carbonell and Gowdy, 2007) and insignificant (Frijters and Ferrer-i-Carbonell, 2001). Some studies have found subjective well-being to follow a U-shape with regards to age, with middle-aged individuals reporting lower satisfaction levels than younger or older cohorts (Di Tella et al., 2001; Frijters and Ferrer-i-Carbonell, 2001). No definite conclusion can be traced from the literature regarding well-being differences by gender (Graham and Pettinato, 2001). Similarly, both positive (Oskrochi et al., 2018) and negative (Stutzer and Frey,2005; Stanca, 2009) well-being effects associated with the presence of children have been found. Contrary to this ambiguity in the literature, single or divorced individuals tend to report lower well-being levels compared to individuals who are married or living in a partnership (Clark, 2003; Ferrer-i-Carbonell and Gowdy, 2007).

3. Data and Methodology

3.1 Data Source and Selection of Member States

The ultimate aim of this study is to test the following hypothesis:

The importance of non-income well-being determinants has heightened during a period of growth in real GDP per capita, potentially at the expense of income.

This hypothesis is tested using micro-datasets made available by Eurofound which pertain to the third- and fourth waves of the EQLS carried out in 2011 and 2016, respectively. The data collection process of the third wave of the EQLS took place from the end of September 2011 to early February 2012, with most responses gathered in 2011 (Eurofound, 2012). Similarly, data collection as part of the fourth wave of the survey ran from September 2016 to March 2017, with most respondents interviewed in the last quarter of 2016 (Eurofound, 2017). Thus, the third wave of the survey mostly captures the situation in 2011 while the fourth wave captures the situation in 2016. This survey is a multi-stage, stratified, random probability survey targeting residents aged 18 and over in all EU member states and a number of candidate countries. Both editions of the survey are based on random probability sampling based on country registers, ensuring that all units of the survey population have some known probability of being included in the sample. In both data collection exercises, more than 1,000 observations were collected from each country. As a means of assuring data quality, Eurofound subjects its surveys to quality frameworks such as the European Statistical System developed by Eurostat (Eurofound, 2012, 2017)[1].

The nature of the data available rules out the testing of any direct causal effect of economic growth on changes in the importance of well-being determinants. In the absence of such means, the economic growth context is captured by considering only those member states whose 2016 real GDP per capita level was at least ten percent higher than the respective 2011 level. As such, the countries considered are (by order of growth rates): Hungary, Slovakia, Bulgaria, Poland, Estonia, Latvia, Romania, Lithuania, Malta and Ireland. This admittedly subjective selection of countries is based on the expectation that, a priori, any changes in the importance of well-being determinants associated with economic growth are likely to be more pronounced in the countries which have experienced the strongest economic growth in the European Union.

[1] *Further information on the reliability and validity of the EQLS can be found in the Annexes of the European Quality of Life Survey 2016: Quality of Life, quality of public services, and quality of society and Third European Quality of Life Survey – Quality of Life in Europe: Impacts of the crisis.*

3.2 *Methodology*

In the process of testing this study's hypothesis, an identical well-being function is specified for each of the two years of analysis. Each well-being function expresses subjective well-being as a function of a number of determinants which are commonly found to be significant predictors of well-being in the literature. More formally, subjective well-being of an individual i at cross-sectional time t, denoted by SWB_{it} is modelled as follows:

$$SWB_{it} = f(Income_{it}, Health_{it}, Social_{it}, Housing_{it}, Environment_{it}, Trust_{it}, Socio_{it})$$
$$t \in \{2011,2016\}$$

In both years of analysis, **subjective well-being** is proxied by the respondent's level of life satisfaction. **Income** is measured by the respondent's household equivalised net monthly income while the **health** component captures any "chronic physical or mental health problem, illness or disability". The frequency of volunteering and the regularity with which one participates in religious and sporting activities are taken as measures of an individual's **social** involvement. Any problems with accommodation and neighbourhood environment are captured by the variables **housing** and **environment**, respectively. The model also incorporates the respondent's **trust** in national government. Employment status, the highest level of education attained, age, area of residence, gender, presence of a partner in household and the presence of a child in life are all included as **socio-demographic** variables.

3.3 *Data Description*

After omitting respondents who did not provide a measure of their income and/or did not respond to other questions deemed necessary for the purpose of this study, a total of 8,869 complete observations remain available for the year 2011 while 7,747 are available for 2016. Throughout this study, life satisfaction, denoted by *LIFESATISF* is used as an indicative measure of subjective well-being. Figure 1 shows the distribution of life satisfaction scores for 2011 and 2016 in the ten countries considered in this study.

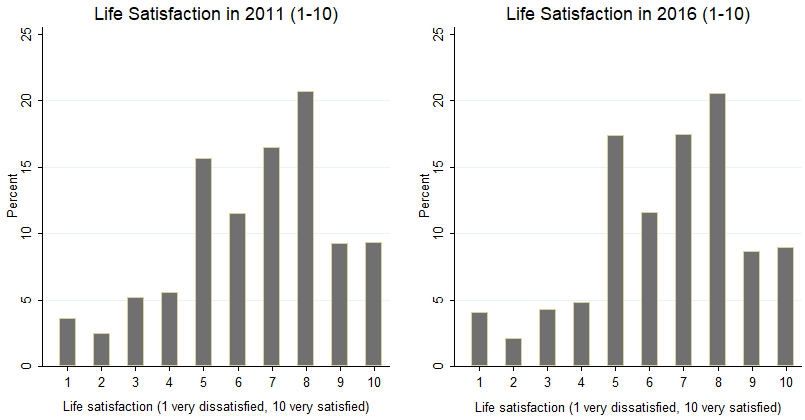

Figure 1: Histograms by Year of Analysis
Source: Eurofound, Own Calculations

The level of life satisfaction is captured through the question "*all things considered, how satisfied would you say you are with your life these days?*" On a scale of 1 (very dissatisfied) to 10 (very satisfied), the mean life satisfaction in 2011 stood at 6.53 while the corresponding value in 2016 was 6.52. In both editions of the survey, half of the respondents reported a life satisfaction level ranging between four

and seven. Around 40% of respondents reported a life satisfaction of eight or higher, with another 10% having a life satisfaction of three or less. Undertaking two-sample t-tests, it is confirmed that no significant subjective well-being improvements are recorded between the two years. This points towards an overall stability in life satisfaction despite the economic growth context in which this analysis is conducted.

Table 1 provides a set of summarised descriptive statistics. Some modifications to the microdata were necessary prior to use in this study. Firstly, since differences between adjacent life satisfaction scores may not be significant, responses (on a 10-point scale) are re-grouped into three levels of life satisfaction: *low* (1-3), *medium* (4-7) and *high* (8-10). Both editions of the survey enquire about the respondent's household net monthly income and an equivalised measure is then computed. To address the issue of income level comparability raised by the cross-country nature of this study, a respondent's household equivalised net monthly income is considered relative to the median income in their own country as calculated from the microdata itself.

In the EQLS, respondents are asked to classify the frequency with which they attend religious activities and do sports into one of the following: "*every day/almost every day*", "*at least once a week*", "*one to three times a month*", "*less often*" and "*never*". To avoid having categories with very few respondents, these are re-grouped into three categories: ***never, occasional, frequent***. In this vein, a frequency of "*one to three times a month*" and "*less often*" is classified as ***occasional*** while attendance "*every day/almost every day*" and "*at least once a week*" is classified as ***frequent*** participation. Respondents are also asked about the regularity with which they volunteer and are given four possibilities: "*every week*", "*every month*", "*occasionally*" and "*not at all*". For this study's purpose, volunteering "*occasionally*" or "*every month*" are grouped as ***occasional*** volunteering while volunteering "*every week*" is taken to represent ***frequent*** volunteering.

Table 1: Variable Summarised Statistics

Variable	Description	Year	N	Mean	S.D.	Min.	Max.
LIFESATISF	Life Satisfaction	2011	8869	2.28	0.65	1	3
	1 – Low; 2 – Medium; 3 – High	2016	7747	2.28	0.64	1	3
LINCOME	Log of Equivalised Household Income relative to the	2011	8869	4.57	0.80	-4.84	9.08
	country's median	2016	7747	4.60	0.82	-3.19	8.18
RELIGIOUS	Frequency of attendance to religious activities	2011	8869	1.97	0.72	1	3
	1 – Never; 2 – Occasional; 3 - Frequent	2016	7747	1.91	0.73	1	3
SPORT	Frequency of participation in sports	2011	8869	1.72	0.85	1	3
	1 – Never; 2 – Occasional; 3 - Frequent	2016	7747	1.77	0.86	1	3
VOLUNTARY	Frequency of volunteering	2011	8869	1.28	0.55	1	3
	1 – Never; 2 – Occasional; 3 - Frequent	2016	7747	1.26	0.54	1	3
HOUSING	Problems with accommodation	2011	8869	0.61	0.49	0	1
	0 – At least one problem; 1 – No problems	2016	7747	0.68	0.46	0	1
ENVIRONMENT	Problems with neighbourhood environment	2011	8869	0.42	0.49	0	1
	0 – At least one problem; 1 – No problems	2016	7747	0.50	0.50	0	1
TRUSTGOV	Level of trust in Government	2011	8869	3.48	2.49	1	10
	1 - 10	2016	7747	4.54	2.60	1	10
ILLNESS	Chronic physical or mental health problem	2011	8869	0.35	0.48	0	1
	0 – No; 1 - Yes	2016	7747	0.34	0.47	0	1
UNEMPLOY	Respondent is unemployed	2011	8869	0.08	0.28	0	1
	0 – No; 1 – Yes	2016	7747	0.05	0.22	0	1
TERTIARY	Respondent has a tertiary level of education	2011	8869	0.22	0.41	0	1
	0 – No; 1 – Yes	2016	7747	0.24	0.43	0	1
AGE	Respondent's Age	2011	8869	51.58	17.86	18	94
		2016	7747	54.09	17.61	18	95
RESIDENCE	Area of Residence	2011	8869	0.47	0.50	0	1
	0 – Urban; 1 - Rural	2016	7747	0.49	0.50	0	1

Variable	Description	Year	N	Mean	S.D.	Min.	Max.
GENDER	Respondent's Gender	2011	8869	0.40	0.49	0	1
	0 – Female; 1 - Male	2016	7747	0.39	0.49	0	1
PARTNER	Respondent lives with a partner in household	2011	8869	0.57	0.50	0	1
	0 – No; 1 – Yes	2016	7747	0.55	0.50	0	1
CHILDREN	Respondent has children	2011	8869	0.37	0.48	0	1
	0 – No; 1 - Yes	2016	7747	0.69	0.46	0	1

Source: Eurofound, Own Calculations

As measures of environmental quality in the neighbourhood, the EQLS asks respondents whether they are subject to any problems regarding *noise*, *air quality*, *litter or rubbish* and *heavy traffic* in their neighbourhood. This study constructs the dummy variable *ENVIRONMENT* which takes a value of 1 if a respondent is not subject to any of these problems and a value of 0 otherwise. Similarly, respondents are asked whether their accommodation suffers from *space shortage*, *rot in windows, doors or floors*, *damp or leaks in walls or roof*, *lack of indoor flushing toilet* and *lack of bath or shower*. The dummy variable *HOUSING* takes a value of 1 only if a respondent does not highlight any of these accommodation problems.

TERTIARY and *UNEMPLOY* comprise a dummy variable, capturing the role of tertiary education and being unemployed, respectively, to an individual's life satisfaction. Furthermore, following the work of Shucksmith et al., (2009), the "*open countryside*" and "*a village or small town*" are classified as rural areas whereas "*a medium to large town*" and "*a city or city suburb*" are taken to represent urban areas in the variable *RESIDENCE*.

3.4 Descriptive Statistics

Figure 2 shows the frequency distribution of participation in religious and sporting activities and volunteering. As is clear, the distribution of frequencies has remained broadly stable between 2011 and 2016. While more than a quarter of respondents stayed away from religious services in either year, a relative majority did attend religious activities on an occasional basis. Survey results show that in both waves, more than half the respondents never engaged in any sporting activity. Volunteering is even less frequent, with less than a quarter of respondents participating in some form in either year.

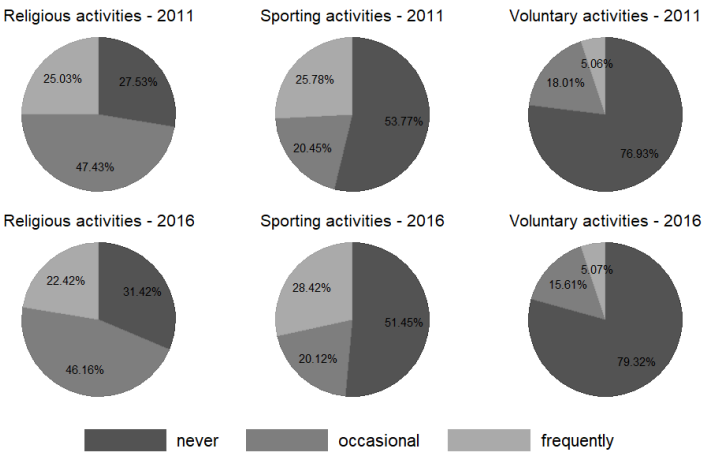

Figure 2: Frequency of participation in...
Source: Eurofound, Own Calculations

Among the other descriptive statistics, the number of respondents with no accommodation problems reached 61% in 2011 and 68% in 2016, while those not subject to any neighbourhood problems amounted to 42% in 2011 and 50% in 2016. The average level of trust in government, measured on a 1-10 scale, increased between the two years although it remained relatively low. In both waves of the survey, around one-third of respondents suffered from a "chronic physical or mental health problem, illness or disability". Less than 10% of respondents were unemployed at the time of the survey and less than a quarter were in possession of tertiary education in either year. In both years, almost half of the respondents lived in rural areas while 55%-57% lived with a partner in the household. Other variables, namely *AGE, GENDER* and *CHILDREN* are included in the model as additional control variables.

4. Analysis

4.1 Correlation Analysis

Before proceeding to the estimations necessary to test this study's hypothesis, pairwise correlations are first examined (at the 95% confidence interval) and the expected correlations are noted. Possession of tertiary education is associated with higher income levels and high accommodation quality. The incidence of a chronic illness increases with age, while undertaking sports and voluntary activity become less frequent as one ages. On the other hand, frequency of participation in religious activities increases with age. The extent to which one volunteers and gets involved in sports is also lower among those suffering from a long-term illness. Those living in rural areas are less likely to suffer any problems related to the neighbourhood environment.

Consistent with *a priori* expectations, some relationships involving the primary variable of interest, *LIFESATISF* turn out to be statistically significant. In particular, it is noted that life satisfaction increases with income and more regular involvement in sports, religious activities, and volunteering. The presence of a partner in household, possession of tertiary education, higher trust in government and not having any accommodation or neighbourhood environment problems are also conducive to higher life satisfaction levels. On the other hand, lower life satisfaction levels are observed among the unemployed and those suffering from a chronic illness.

4.2 Regression Analysis

A well-being model is estimated for the years 2011 and 2016, respectively. Due to the ordinal nature of the dependent variable *LIFESATISF*, and following a large number of existing well-being studies, an *ordered logit* model is employed and interpreted in terms of average marginal effects. The dependent variable is life satisfaction measured on a 3-point scale. Given the cross-sectional nature of the data, heteroscedasticity-robust standard errors are obtained for each regression. Country dummies are also included in each regression. Furthermore, an appropriate weighting is used to account for different population sizes among the countries considered in this study and ensure proportionality in the representation of member states.

Table 2: Regression Results – Dependent Variable: Life Satisfaction[2]

	Ordered Logit		**Marginal Effects** (predict outcome 3)	
	2011	2016	2011	2016
LINCOME	0.278***	0.156***	0.058***	0.031***
	(0.000)	(0.006)	(0.000)	(0.006)

[2] *1 – Low; 2 – Medium; 3 – High.*

	Ordered Logit		Marginal Effects (predict outcome 3)	
	2011	2016	2011	2016
RELIGIOUS: occasional	0.102	0.094	0.021	0.018
	(0.212)	(0.439)	(0.211)	(0.437)
RELIGIOUS: frequent	0.276***	0.449***	0.058***	0.090***
	(0.009)	(0.005)	(0.009)	(0.005)
SPORT: occasional	0.019	0.171	0.004	0.034
	(0.819)	(0.168)	(0.820)	(0.172)
SPORT: frequent	0.244***	0.458***	0.051***	0.094***
	(0.008)	(0.002)	(0.009)	(0.002)
VOLUNTARY: occasional	0.218***	0.133	0.046***	0.027
	(0.009)	(0.347)	(0.009)	(0.350)
VOLUNTARY: frequent	0.053	-0.011	0.011	-0.002
	(0.743)	(0.961)	(0.744)	(0.961)
HOUSING	0.447***	0.569***	0.093***	0.113***
	(0.000)	(0.000)	(0.000)	(0.000)
ENVIRONMENT	0.246***	0.046	0.051***	0.009
	(0.000)	(0.652)	(0.000)	(0.652)
TRUSTGOV	0.128***	0.122***	0.027***	0.024***
	(0.000)	(0.000)	(0.000)	(0.000)
ILLNESS	-0.492***	-0.470***	-0.102***	-0.093***
	(0.000)	(0.000)	(0.000)	(0.000)
UNEMPLOY	-0.561***	-0.553**	-0.117***	-0.110**
	(0.000)	(0.032)	(0.000)	(0.030)
TERTIARY	0.204**	0.319**	0.043**	0.065**
	(0.012)	(0.011)	(0.013)	(0.012)
AGE	-0.080***	-0.086***	-0.017***	-0.017***
	(0.000)	(0.000)	(0.000)	(0.000)
AGE2	0.001***	0.001***	0.0001***	0.0001***
	(0.000)	(0.000)	(0.000)	(0.000)
RESIDENCE	0.037	-0.101	0.008	-0.020
	(0.584)	(0.324)	(0.584)	(0.323)
GENDER	0.010	-0.152	0.002	-0.030
	(0.876)	(0.127)	(0.876)	(0.127)
PARTNER	0.368***	0.568***	0.076***	0.113***
	(0.000)	(0.000)	(0.000)	(0.000)
CHILDREN	0.023	-0.155	0.005	-0.031
	(0.730)	(0.139)	(0.730)	(0.137)
N	8869	7747		
Log-likelihood	-4387.3694	-3331.8898		
Pseudo R-squared	0.1007	0.1205		
Prob>chi2	0.0000	0.0000		

p-values in parentheses *p<0.10 **p<0.05 ***p<0.01

Consistent with *a priori* expectations, results unequivocally show that the household equivalised level of income available to the respondent plays a significant role in determining an individual's life satisfaction. However, results also indicate that during the five-year period of economic growth in the ten EU member states considered, the income level lost some of its importance to life satisfaction. In fact, while in 2011 a 1% increase in income (relative to the country's median) was associated with a 5.8% higher probability of reporting a high level of life satisfaction, this marginal effect declined to 3.1% in 2016.

In line with previous literature findings, this study finds significantly positive relationships between well-being and frequent involvement in religious services and sports in both years analysed. Of particular relevance to this study is the observation that these associations strengthened between 2011 and 2016. The marginal effects associated with frequent attendance to religious activities increased from 5.8% in 2011 to 9.0% in 2016. The changes in marginal effects associated with sports between the two years were more pronounced. In fact, relative to another respondent who did not take part in any sporting activity, respondents who in 2016 participated frequently in sports had a 9.4% higher probability of reporting a high level of life satisfaction. The corresponding difference in probability between these two groups of individuals was estimated at 5.1% five years earlier. Only occasional volunteering was significantly associated with life satisfaction in 2011, which relationship was not detected in 2016.

Average marginal effects show that, up from 2011, respondents with no accommodation problems in 2016 were 11.3% more likely to report a high life satisfaction level, relative to others who had some problems with their own housing. On the contrary, the importance of neighbourhood environment quality is found to have declined significantly between the two waves of the survey while the positive relationship between trust in government and life satisfaction remained broadly stable between the two years.

As expected, the probability of reporting a high level of life satisfaction is lower among those suffering from a chronic illness and the unemployed in both years. On the other hand, possession of a tertiary level of education and the presence of a partner in the household are consistently found to be beneficial to well-being, which effects increased further between 2011 and 2016. Besides the inclusion of age, this study incorporates the variable *AGE2* to test the possible quadratic relationship between life satisfaction and age usually found in the literature. Subjective well-being is found to be linearly negatively related with age while the positive coefficient on the variable *AGE2* indicates a minimum life satisfaction observed mid-life. Living in rural areas and having kids do not add any predictive value while no gender-based differences in life satisfaction are observed.

5. Discussion and Conclusion

In an attempt to trace any changes in the importance of the respective well-being determinants over a period of economic growth in the European Union, this study made use of microdata from the two most recent *European Quality of Life surveys* which collect data for 2011 and 2016. Based on well-known literature findings, a well-being function was specified for the two years, using data from the ten member states whose change in real GDP per capita over this period exceeded ten per cent. An ordered logit model was employed to test the hypothesis that, during this period of economic growth, the non-income well-being determinants took on greater role in explaining well-being, potentially at the expense of income.

In support of this hypothesis, although an individual's income level is found to be a significant predictor of well-being in both years of analysis, this study provides evidence that its importance to life satisfaction diminished over this period characterised by economic growth. Lending further support to this hypothesis, housing quality and frequent participation in activities which do not render any material benefits, namely religious and sporting activities, carried substantially greater well-being effects in 2016, compared to 2011. Possession of a tertiary level of education and living with a partner in the household also carried greater well-being benefits in 2016, relative to 2011. On the other hand, contrary to the set hypothesis, no well-being benefits associated with volunteering and neighbourhood environment quality were observed in 2016.

It is important to note that while this study takes place in a context of economic growth, it cannot be assumed that the above-mentioned changes in the importance of the respective well-being determinants have been caused directly by economic growth. In the absence of further research into this potential causality, this study's findings can only be interpreted as changes which have accompanied a period of economic growth in the selected EU member states.

In the process of testing its hypothesis, this study's design also served to shed some light on the main well-being determinants in the European Union. Consistent with the well-being literature, this study unequivocally finds important roles for income, health, participation in religious and sporting activities, quality of housing and trust in national government. Having tertiary education and living with a partner in the household were also found to have significantly positive well-being implications in both years of analysis, while as expected, being unemployed is associated with lower life satisfaction levels.

Although every effort was made to construct the best possible study, some caveats need to be acknowledged. Firstly, data obtained from subjective reporting was used. The reliability of such data is susceptible to respondents' honesty (Kenny, 2005) and other factors such as moods (Yardley, Rice, 1991). Secondly, since the set of respondents varies between the two editions of the survey, only a cross-sectional study could be undertaken. In turn, the cross-sectional nature of the data increases the likelihood that the study omits variables which may be important predictors of well-being. Lastly, in the absence of measures for individual wealth, this study had to resort to income levels. It is plausible, and indeed likely, that wealth is a more reliable indicator of respondents' financial situation than income levels.

Despite these caveats, this study's main findings carry important implications for policy makers whose aim should be to maximise individual well-being. Efforts to aid individuals in their pursuit of further education, improve their employment prospects and consequently move them up a country's income ladder can contribute to higher life satisfaction. Investment in education, including lifelong learning initiatives, and the creation of adequate employment opportunities which in turn reward education attainment through a decent level of income can go a long way in doing just that. The value of such policies is appreciated to the extent that specific targets for education, employment and poverty reduction were set by the European Union as part of its *Europe 2020* strategy. However, as is manifested in this study, individual well-being is not reliant solely on income but is also largely influenced by other activities which do not necessarily render additional income. Crucially, this study's findings indicate that during a period of economic growth, individuals may attach greater value to time found to get involved in activities such as religious events and sports. On the basis of these findings, policy makers should not focus solely on expanding a country's GDP but should also look at creating adequate conditions for individuals to get involved in such activities, which may not render any additional income but are beneficial to individual well-being. To this end, initiatives such as the promotion of physical activity (European Union Council, 2013) and the *work-life balance* initiative, providing for flexibility in employment conditions of young dependent children's parents (European Commission, 2019), are already in place within the European Union fora. The respective member states should now look at complementing policies aimed at maximising national income with the implementation of other policies designed to maximise individual well-being.

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