The Structure of Subjective Well-Being and Its Relation to Objective Well-Being Indicators: Evidence from EU-SILC for Serbia

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Abstract

In this article, we examine the structure of the subjective well-being and its relation to objective well-being indicators using the data from the European Union's Survey on Income and Living Conditions (EU-SILC) from Serbia. This is one of the first papers to analyze a new module on subjective well-being from EU-SILC micro-dataset (with over 20,000 respondents). We investigate the factor structure of the items and the differences in the association of subjective well-being dimensions with objective indicators of well-being within the Organisation for Economic Co-operation and Development Better Life Initiative framework. Three factors emerge from the principal components analysis: general life satisfaction, affective well-being, and satisfaction with the local environment. The analysis further reveals that life satisfaction is more related to the material living conditions, such as income, unemployment, and housing conditions, while affective well-being is more related to non-material indicators of well-being such as perceived health, personal security, and social connections. On the other hand, positive and negative affect within the affective well-being are not clearly separable, nor is the eudaimonic indicator from either life satisfaction or affective well-being.

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Keywords

Subjective well-being, Serbia, EU-SILC, OECD Better Life Initiative

Introduction

Despite the large number of research during last few decades, there is still no consensus about which dimensions exactly constitute subjective well-being (SWB) as well as what are the relations between them. Although it is relatively well established that life satisfaction and affective well-being are separate, investigation of their differences is still ongoing (Busseri & Sadava, 2011; Stiglitz, Sen, & Fitoussi, 2009), while some researchers still treat them as synonyms (e.g. Bruni, 2010). Furthermore, the independence of positive and negative affect is still a matter of the debate (e.g., Arthaud-Day, Rode, Mooney, & Near, 2005; Russell & Carroll, 1999), as is the distinction of eudaimonic sense of purpose and meaning from other SWB dimensions (e.g., Kashdan, Biswas-Diener, & King, 2008; Sheldon, 2013).

On the other hand, after extensive research, SWB indicators have been recognized as important and complementary to objective well-being indicators (e.g., Diener & Suh, 1997). This caused an increasing number of recommendations to include SWB indicators in the reports and studies on living standards and the quality of life, most notably from Stiglitz et al. (2009). In 2013, Eurostat included a new module on SWB in the European Union's Survey of Income and Living Conditions (EU-SILC). The module, ex ante, aimed to measure all four above-mentioned dimensions of SWB (Eurostat, 2015): life satisfaction, positive and negative affect, and eudaimonic well-being (the meaning of life).

In this article, we aim to give further evidence to the debate on the dimensionality of the SWB by analyzing new SWB measures from the EU-SILC for Serbia. We investigate the proposed notion of four independent dimensions: life satisfaction, positive and negative affect, and eudaimonic well-being (Eurostat, 2015) by analyzing the factor structure of the EU-SILC module on SWB and examining the association of the SWB dimensions with other, so-called objective well-being indicators from the OECD Better Life Initiative framework (OECD, 2011a). While the factor analysis indicates whether the dimensions are statistically independent, their distinct association with other, objective well-being indicators provides external validity of their independence.

We believe that our analysis is important for the current debate on dimensionality for several reasons. First, EU-SILC new SWB module's factor structure, nor its association with objective well-being indicators has not been analyzed so far. Our paper contributes to the debate on dimensionality by providing evidence from a survey, which to the best of our knowledge, has not been used for these purposes before. Simultaneously, we provide the first evidence on the psychometric properties of the scale. Second, as EU-SILC is the main source of statistical data on income and living conditions at the European level, it contains detailed and reliable information on income, labor market status, and other quality-of-life indicators, which is why it is especially suitable for investigating the relationship between different dimensions of SWB and the objective indicators of well-being. Thirdly, the analysis of the data for Serbia, as a middle-income country, contributes to the debate on dimensionality of SWB, as the majority of the similar research has been done on high-income countries (e.g., Gallagher, Lopez, & Preacher, 2009; Lucas, Diener, & Suh, 1996; Schimmack, Schupp, & Wagner, 2008). Previous research suggests that for middle-income countries, the effects of income on SWB items are more pronounced, since resources to satisfy one's basic needs are harder to reach. Having this in mind, the distinctiveness of SWB dimensions could be lower, since the material living conditions would dominate their content, thus clouding the effects of other, non-material conditions. Finally, we aim to explore the characteristics and structure of SWB in Serbia on a set of a nationally representative data. Previous explorations of this kind for Serbia are almost non-existing, especially in regard to size and representativeness of the sample, such is the one from EU-SILC.

The structure of the article is as follows: after introduction, in the second part of the article, we present the debate on SWB dimensions and their relations to other well-being indicators. In the third section, we present the data and the methodology of the analysis, while in the fourth section, we present the results of the factor analysis and the analysis of the associations of SWB indicators with objective well-being indicators. The fifth section concludes, while the sixth section presents some limitations of the analysis as well as recommendations and directions for future research.

SWB, concepts, structure, and relation to other well-being indicators

SWB is a subject of investigation of many disciplines, including psychology, but also economics and sociology. While psychologists are more concerned with defining the concept of SWB and its components, sociologists and especially economists give less attention to the nature of this concept and focus on its. Most often, SWB is defined in terms of high positive affect, low negative affect, and high life satisfaction (Diener, 2009; Diener, Oishi, & Lucas, 2002), although sometimes concept of eudaimonia is also considered as distinct domain of SWB (e.g., OECD, 2013). Life satisfaction may be defined as cognitive evaluation of one's life (Diener et al., 2002; Veenhoven, 2008). It is a comprehensive, cognitive assessment of quality of life, attitude about life, and the circumstances surrounding the person. Pavot, Diener, Colvin, and Sandvik (1991) state that life satisfaction evaluation is a process in which one first forms a picture of a certain quality of life he wants for himself, and then compares his current life with that picture. On the other hand, affective well-being includes evaluation of emotions based on the experience of the ongoing events as pleasant (positive affect) or unpleasant (negative affect) (Diener, Napa Scollon, & Lucas, 2009). Eudaimonic well-being includes virtuous living and fulfilling one's greatest potential, rather than the experience of pleasure per se (Ryff & Singer, 2008).

Although the difference between the measures of life satisfaction and affective well-being is well established (e.g., Lucas et al., 1996), some researchers still treat them as synonyms (e.g., Bruni, 2010; Easterlin, 2005; Frey & Stutzer, 2006). Life satisfaction and affective well-being diverge because the first is a global summary of one's life as a whole and the latter consists of ongoing reactions to events. Although the difference in their determinants is still a matter of a debate (Stiglitz et al., 2009), previous research suggested that they are influenced by distinct factors or differently by the same factors (Diener, 2009; Schimmack, 2006). Factors such as income, education, or marital status predict life satisfaction, while time use predicts affective balance more strongly (Kahneman & Krueger, 2006). Finally, factor analysis explorations from previous research suggest life satisfaction distinctiveness from positive and negative affect (Diener et al., 2009).

Similarly, independence of positive and negative affect is still a contentious issue and the conclusions from empirical work are mixed—some researchers found that these dimensions are independent (Arthaud-Day et al., 2005, Crawford & Henry, 2004), and some found that they represent one dimension of SWB (Russell & Carroll, 1999). This relation also depends on many factors, such as time frame and the intensity of the emotions sampled, the type of response scale used, and so forth (see Diener, 2009). Individual-level data analyses suggest that the correlation between positive and negative affect is stronger than that of life satisfaction and affective well-being, indicating that their overlap is higher (see OECD, 2013).

A number of researchers argue that eudaimonic sense of purpose and meaning is a separate dimension of SWB (Keyes, Shmotkin, & Ryff, 2002; Vanhoutte, 2014), although, they are often highly correlated (even above 0.8) (in Kashdan et al., 2008). According to some authors, these dimensions tend to overlap significantly because achieving eudaimonic happiness provides the source of SWB (Sheldon, 2013).

SWB and the objective indicators of well-being

In order to claim the independence of SWB dimensions, it is necessary not only to show that they are statistically independent but also to find their distinct association with other well-being indicators. Although a number of researches investigate associations of SWB with objective well-being indicators, they rarely investigate the distinct associations between different dimensions of SWB.

In this article, we link individual-level SWB measures to other, objective wellbeing dimensions from the OECD Better Life Initiative (OECD, 2011a). For 9 of the 11 proposed dimensions, the individual-level indicators are available in EU-SILC (unlike indicators for environment quality and civic engagement). We present these indicators and their definitions in section "OECD well-being indicators available from EU-SILC." We now briefly present research findings that indicate the expected direction of association of the eight objective well-being dimensions with SWB.

- 1. Income—Many studies have confirmed positive correlation between income and wealth, and SWB (Jakobsson Bergstad et al., 2012; Krstić & Sanfrey, 2007; Sanfey & Teksoz, 2005). It is also well established that the correlation is not linear, but that the growth of income, after a level which ensures fulfillment of the basic needs, does not necessarily lead to an increase in SWB (Diener & Biswas-Diener, 2002).¹ The effect seems to be somewhat stronger in middle- or low-income countries (Diener & Oishi, 2000), as lower living standard makes fulfillment of basic needs more difficult and income more important for SWB. Within high-income countries, it is shown that income is strongly associated with life satisfaction, and much less with affective well-being (Kahneman & Deaton, 2010); however, no similar research can be found for middle- or low-income countries.
- Jobs (Unemployment)—Studies consistently show a large strong negative effect of individual unemployment on SWB (e.g., Di Tella, Macculloch, & Oswald, 2003; Helliwell, 2003; Pinquart & Silbereisen, 2010), even when controlling for income, suggesting that it cannot be reduced to the loss of income from work (Dolan, Peasgood, & White, 2008; Sanfey & Teksoz, 2005).
- 3. *Housing conditions*—Housing quality is positively related to SWB (Brereton, Clinch, & Ferreira, 2008; Oswald, Wahl, Mollenkopf, & Schilling, 2003), and so is the number of rooms (Lora, 2016). Additionally, living in a rented apartment leads to lower levels of SWB, compared to living in own apartment (Boarini, Comola, Smith, Manchin, & de Keuenaer, 2012).
- 4. Health—A number of studies underlines health as one of the most important determinants of SWB (Oguz, Merad, & Snape, 2013) and people themselves very often recognize health as the most important thing for well-being (ONS, 2011). Previous research additionally suggests that health is more related to affective balance than to life satisfaction (Kahneman & Deaton, 2010).
- 5. Work and life balance—Work-family balance strongly predicts SWB (Greenhaus, Collins, & Shaw, 2003) as well as effectiveness at work (see Gröpel & Kuhl, 2009). We define work and life (in)balance in accordance with OECD definition of the indicator—working more than 50 hours a week (OECD, 2011b). Research show that the relationship between hours worked and life satisfaction has an inverted U-shaped curve: SWB rises with the hours worked, but starts to drop when it becomes excessive (in Dolan et al., 2008).
- 6. *Education*—People with a higher education level have, on average, a higher level of SWB (Eurostat, 2015). However, when controlling for employment,

earnings, health, and so forth, these effects become insignificant or even negative (Gong, Casselsl, & Keegan, 2011). Therefore, the link between education. In general, the effects of education on SWB are higher for the low-income countries (Dolan et al., 2008) and strongly related to life satisfaction than to affective well-being (Kahneman & Deaton, 2010).

- 7. *Personal security*—If people live somewhere where they do not feel safe, the level of their life satisfaction is lower even when controlling for income level (see Dolan et al., 2008). The feeling of personal security has a greater impact on the affective well-being of people, even when compared to economic factors such as income or unemployment (Boarini et al., 2012).
- 8. Social connections—Social support is positively related to SWB (Raboteg-Saric & Sakic, 2014; Siedlecki, Salthouse, Oishi, & Jeswani, 2013). Contact with others is often cited as more important for SWB than income or unemployment (e.g., Oguz et al., 2013) and more related to affect balance comparing to life satisfaction (Kahneman & Deaton, 2010). Positive effects of the contact on SWB may have important implications on policies which encourage labor force and educational mobility (Dolan et al., 2008).

Demographic controls. In most studies, women report more negative emotions than men independently of age, but the results for positive affect and general life satisfaction are mixed (Lucas & Gohm, 2000; Pinquart & Sörensen, 2001; Tesch-Römer, Motel-Klingebiel, & Tomasik, 2008). Being married and having children usually increases the SWB, although this relationship may function in the opposite direction (Shields & Wooden, 2003; Stutzer & Frey, 2004). However, it is consistently found that due to the large responsibility in child care, single parents show lower levels of SWB (e.g., Boarini et al., 2012). SWB declines with age, but after it reaches a minimum (varies by study), it grows with age (Blanchflower & Oswald, 2008). Finally, the evidence of effects of settlement on SWB are mixed, with some studies finding higher and some lower SWB in urban than in rural areas when holding socioeconomic factors constant (Sørensen, 2014; Millward & Spinney, 2013).

Methods

Data

In this article, we use the micro-database of the EU-SILC from 2013. EU-SILC is a basic instrument for the comparative assessment of poverty and living conditions in the European Union and in Serbia. EU-SILC is conducted annually, during May and June of each year, with interviewing lasting in total six weeks (SORS, 2015). The data include weights, calculated by Statistical Office of the Republic of Serbia (SORS; 2015), which are used to correct estimates for the

probability that a household is selected in a sample from the population of households in Serbia (SORS, 2015).

The survey, conducted by the SORS, provides nationally and regionally representative data on income, poverty, and living conditions for Serbia on 20,069 individuals. The sample for the survey is stratified in two stages: with enumeration areas as primary and households as secondary sampling units. The sample fully represents population in all private households in Serbia. Respondents are interviewed face to face, following a fully structured questionnaire.²

The sample used in the analysis includes nationally representative sample of respondents aged 16 and over who answered the questions on SWB.³ Detailed descriptive statistics on the respondents included in the analysis can be found in Appendix Table 5.

SWB module in EU-SILC

There are nine items measuring life satisfaction in EU-SILC, one of which relates to general life satisfaction, while the remaining eight items measure satisfaction with the different domains of life: financial situation, accommodation, current job, commuting time, leisure time, social connections, recreation centers and green areas, and the level of development of the area in which one lives. General life satisfaction is measured via the question: "How would you assess your current way of living?" and aims to cover a wide field of overall satisfaction (Eurostat, 2015). Respondents answer this question on an 11-point scale, where 0 represents the answer "Not satisfied at all" and 10 "Fully satisfied." Items aiming to evaluate eight domains of life use the same question and scale for answering.

Data about the affective well-being in SILC include five items, of which three relate to negative (nervous, sad, and depressed) and two on positive affect (happy and calm). Respondents assess how often during the past four weeks they felt these emotions, using a scale from 1 ("I felt that way all the time") to 5 ("I have not felt that way at all"). In order to use them as other SWB indicators, for positive affect items, we reversed the scale, so that the higher value of the item (e.g., "Felling happy all the time") represents a higher level of SWB.

Eudaimonic well-being is represented through the meaning of life indicator, a construct that represents the conative (motivational) aspect of SWB, so-called motivation for life. The meaning of this construct is broad, as it relates to the value and purpose of life, life goals, and to some extent, spirituality (Eurostat, 2015). This construct was introduced with the intention to include important factors of the subjective quality of life, which are not measured by the life satisfaction and affective well-being indicators, especially in the area of good mental health. Meaning of life is measured via the question: "All in all, to which degree do you think that the things you do in your life are worth the effort?". Respondents gave answers on an 11-point scale, where 0 indicated that

"Things are not worth the effort at all," and 10 that "Things are fully worth the effort."

Since the psychometric properties of the module were not previously examined, we will analyze its reliability and validity. While reliability is analyzed via Cronbach's alphas of the SWB dimensions extracted from the factor analysis, external (construct) validity of the module will be demonstrated by analyzing associations with objective well-being indicators and demographic characteristics identified in previous research as determinants of SWB.

OECD well-being indicators available from EU-SILC

Table 1 shows eight dimensions from the OECD Better Life Initiative (OECD, 2011a), along with individual-level indicators available from EU-SILC, grouped in two sub-factors. The indicators were defined in line with the indicators proposed in the OECD Compendium of well-being indicators (OECD, 2011b).

We now present the definitions of the objective well-being indicators from EU-SILC.

1. *Household disposable income per adult equivalent* includes the total income of the household (income from work, pensions, benefits, dividends, etc.) divided by the OECD adult equivalent scale. It is based on the Eurostat methodology and used to calculate the relative risk of poverty—the main measure of poverty in Serbia as well as in the EU countries.

OECD well-being dimensions	Indicators available from the EU-SILC
Material living conditions	
Income and wealth	Household disposable income per adult equivalent
Jobs and wages	Labor market status: employed vs. unemployed
Housing	Apartment/house owner Number of rooms per household member
Quality of life	
Health status	Self-perceived health status
Work–life balance	Intensive work: over 50 hours per week
Education	Highest level of education
Social connections	Having somebody to talk to about personal problems Having somebody to ask for support
Personal security	Personal safety self-assessment

 Table 1. Objective OECD well-being dimensions and well-being indicators in EU-SILC.

Note. EU: European Union's Survey on Income and Living Conditions.

- 2. Unemployment (vs. employment)—Labor market categories are defined in accordance with the International Labor Organization definition, according to which all people are classified to employed, unemployed, or inactive. The unemployed are defined as persons who in the observation have not performed any paid work but are actively seeking work. Unlike the unemployed, inactive people are not looking for work, and include a heterogeneous group of pensioners, students, housewives, and other inactive people (Arandarenko, Žarković Rakić & Vladisavljević, 2013). Due to heterogeneity of the group, the effects of inactivity on SWB are not easy to predict, so we include this group in the analysis only to separate them from the unemployed, but we do not discuss the effects of inactivity in detail.
- 3. *Housing conditions* consist of two indicators: being an *owner* of the apartment (self-declared) and the *number of rooms* divided by the number of household members. Being an owner of the apartment and having a higher number of rooms per household members are considered favorable living conditions.
- 4. *Health* is measured via the question: "What is your state of health?", with respondents answering on a five-point scale from (1: "Very good" and 5: "Very bad") and the remaining points indicating answers in between these two extremes. In our analysis, we recode this variable, so that the higher values indicate better health, which is associated with higher quality of life.
- 5. *Work-life balance* is measured via the question: "How many hours during a week do you usually work at your main job?" and then recoded as dummy variable (1: "More than 50 hours" and 0: "Less than 50 hours") representing excessive work.
- 6. The question on *highest education level attained* contains 10 answers which are recoded into three categories: primary (includes unfinished or finished elementary school), secondary (completion of one to four years high-school education), and tertiary education (completion of two to four years tertiary education including master and PhD degrees) due to the small samples in some categories. In the analysis, we used primary education as the baseline category for the comparison of the SWB outcomes at secondary and tertiary levels of education.
- 7. Social connections are measured via questions: "Do you have anybody you can talk to about your personal problems?" and "Do you have relatives, friends or neighbours you can ask for help if needed (moral support, financial, material or some other help)?". For both questions, "Yes"/"No" answers are used to respond.
- 8. *Personal security* is measured via the question: "Do you feel safe in the area where you live?", with respondents answering on four-point scale (1: "Very safe" and 4: "Not at all safe") and the remaining points indicating answers in between these two extremes. In our analysis, we recode this variable, so that the higher values indicate higher security, which is associated with higher quality of life.

Results

Factor analysis

We applied principal components analysis and explorative factor analysis (using principal axis factoring) on SWB items. Kaiser's eigenvalue-greater-than-one rule and parallel analysis criterion indicate the *presence* of three factors (Appendix Table 4). Cumulatively, these factors explain 54.9% of the 15 indicators variance. After keeping three factors, a promax⁴ rotation was applied to obtain more interpretable factor loadings (Table 2). When we include all 15

	ltem	FactorI	Factor2	Factor3
Satisfaction indicators	Your current way of life	0.759		
"How do you assess:	Financial situation of your household	0.791		
	Your accommodation	0.638		
	Your current job	0.662		
	Commuting time ^a	0.502		
	Leisure time ^b	0.336		0.265
	Social connections	0.235		0.222
	Recreation centers and green areas in the place where you live			0.717
	Level of development of the area in which you live			0.698
Eudaimonic well-being indicator	All in all, to which degree do you think that the things you do in your life are worth the effort?	0.381		
Affective well-being	Very nervous		0.672	
<i>indicators</i> "In the past four	So much down that nothing could put you in a good mood		0.718	
weeks, how	Calm and collected		0.580	
much time were	In low spirits and depressed		0.631	
you	Нарру		0.467	
Cronbach's alpha for ite	ems loading higher than 0.2	0.830	0.786	0.674

Table	2.	Factor	structure	of	the	items	from	SWB	module	in	EU-SILC. ^a
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Note. EU: European Union's Survey on Income and Living Conditions; EU: European Union's Survey on Income and Living Conditions.

^aLoadings lower than 0.2 are suppressed.⁸

^b"Time spent on the way to work/school and back"

^c"Time you have at your disposal to do the things you like."

SWB indicators, the sample drops down to 4,808 respondents due to the fact that job satisfaction can be assessed only for those who are employed and commuting time only for employed and students.⁵

The first factor represents a broad life satisfaction factor. Items with primary loading on this factor are general life satisfaction (0.759), satisfaction with financial situation (0.791), accommodation (0.638), job (0.662), and commuting time (0.502). This result indicates that general life satisfaction in Serbia is strongly related to material living conditions. In addition, primary, but relatively low loadings on this factor are found for the eudaimonic indicator (0.381) and leisure time (0.336) and social connections (0.235) satisfaction. Although some items have relatively low loadings, Cronbach's alpha for the first factor is high (0.830), further supporting the argument that the items measure a single factor.

The second factor comprises all five items measuring affective well-being. Items representing negative affect: being down, nervous and depressed, have higher loadings on this factor (0.718, 0.672, and 0.638, respectively, Table 2) than positive emotions: being calm and collected and happy (0.580 and 0.467), indicating that for the overall affective well-being, absence of negative affect is more important than presence of positive. On the other hand, Cronbach's alpha for the second factor is high (0.786), suggesting a high degree of homogeneity within the subset of the items. Therefore, contrary to the above described theoretical and empirical arguments suggesting a need to separate positive and negative affect, factor structure in our research indicates that five affective well-being items from EU-SILC represent one SWB dimension. Additionally, in the robustness check analysis⁶, we find secondary loading on this factor (in larger sample) for eudaimonic well-being indicator. This result shows that the eudaimonic well-being, measured as meaning of life in EU-SILC, is also a part of the affective well-being, besides loading also on the first, life satisfaction factor.

Finally, the third factor refers to the satisfaction with the local environment. Primary loadings on this factor are for two indicators related to the satisfaction with recreation centers and green areas (0.717) and level of development of the area (number of shops, cinemas, theaters, public transportation, etc. 0.698). As these items are not typically used in SWB research, this factor is not commonly mentioned. However, our results show that satisfaction with the local environment represents a relevant and independent part of the SWB, which has not been researched before in the context of SWB dimensionality. Evaluation of this factor does not depend on personal material living conditions or emotions that person was feeling, but rather on perception of quality of life drawn from the level of development of local community. Additionally, secondary loading on this factor is found for leisure time (0.265) and social connections satisfaction (0.222). Secondary loadings on these items are due to the fact that time spent in leisure and in social connections depends on being able to have recreational parks, green areas, cinemas, theaters, and so forth. Relatively low loadings indicate that leisure

time and social connections are only marginally connected to this factor. Furthermore, Cronbach's alpha for the third factor when all four items loading higher than 0.2 are included is relatively low (0.669) and increases (to 0.799) when only two items with the highest loadings are included in the analysis.

SWB and the objective indicators of well-being

In Table 3, we present the results of the regression analyses in which we examine the associations of four SWB dimensions, which we focused on in this research: life satisfaction, negative affect, positive affect, and eudaimonic well-being, with objective well-being variables, from the *OECD Better Life Initiative* (OECD, 2011a). Since the dependent variables are measured on a different scale (life satisfaction and eudaimonic well-being on an 11-point and negative and positive affect on a 5-point scale), we present the results as standardized beta coefficients to enable their comparability. Descriptive statistics of variables included in the regression model are presented in Appendix Table 5. Full specifications of the regression models with estimated coefficients and standard errors are available in Appendix Table 6.^{7,8}

Our results indicate that, although SWB dimensions share the majority of the predictors, there is a clear difference in the pattern of the strength of their associations with life satisfaction and affective well-being, giving additional, external validity of their independence. On the other hand, the results indicate that the associations of predictors with positive and negative affect dimensions are highly similar, which is in accordance with the factor analysis results showing that positive and negative affects belong to the same factor.

Compared to affective well-being, life satisfaction is more strongly related to the material living indicators. The change in the log equivalized household income of 1 standard deviation is associated with an increase of 0.258 standard deviations in life satisfaction (p < 0.01), while the coefficient is at least twice as low for affective well-being dimensions (0.087 for negative and 0.104 for positive affect; p < 0.01 for both factors). This result is in line with previous research (e.g., Kahneman & Deaton, 2010), which indicates that income is more strongly connected with the life satisfaction than affective well-being. Furthermore, the association of unemployment is stronger with the life satisfaction ($\beta = -0.124$, p < 0.01), than with the negative ($\beta = -0.084$, p < 0.01) or positive affect ($\beta = -0.079$, p < 0.01). Similarly, favorable housing conditions are associated more strongly with life satisfaction (owner of a living space: $\beta = 0.055$, p < 0.01; rooms per household member: $\beta = 0.064$, p < 0.01) than with either negative (owner: $\beta = 0.031$, p < 0.05; rooms: $\beta = 0.01$, p < 0.05).

On the other hand, compared to life satisfaction, affective well-being is more strongly related to nonmaterial quality-of-life indicators. The most important predictor of both negative and positive affect is perceived health status. Both

Wall-heing	Well-heing	Indicator(c) available	Overa satisfa	II life ction	Nega affe	ttive ect	Posin affe	ct	Eudain well-b	ionic eing
subfactors	dimension	from the EU-SILC ^a	Beta	٩	Beta	٩	Beta	٩	Beta	٩
Material living conditions	Income and wealth	Equivalized household disposable income	0.258	<0.001	0.087	<0.001	0.104	<0.001	0.131	<0.001
	Jobs and wages	Unemployed	-0.124	<0.001	-0.084	<0.001	-0.079	<0.001	-0.071	<0.001
	Housing	Owner	0.055	<0.001	0.031	0.002	0.018	0.103	0.001	0.957
		Number of rooms per household member	0.064	<0.001	0.01	0.356	0.044	<0.001	0.053	<0.001
Quality of life indicators	Education	Secondary education	0.001	0.962	0.018	0.094	0.013	0.243	0.032	0.007
		Tertiary education	0.061	<0.001	0.019	0.076	0.044	<0.001	0.064	<0.001
	Health	Self-perceived health status	0.254	<0.001	0.377	<0.001	0.299	<0.001	0.186	<0.001
	Work-life balance	Working more than 50 hours	-0.027	0.002	-0.043	<0.001	-0.015	0.089	-0.013	0.203
	Social connections	Talk about personal issues	0.05	<0.001	0.091	<0.001	0.082	<0.001	0.092	<0.001
		Ask for help	0.099	<0.001	0.104	<0.001	0.075	<0.001	0.045	<0.001
	Personal security	Safe neighborhood	0.02	0.065	0.093	<0.001	0.107	<0.001	0.076	<0.001
Adjusted R squ	lare		0.294		0.226		0.184		0.151	

Table 3. Association between SWB dimensions and objective well-being indicators.

row of the last four columns (overall life satisfaction, negative affect, positive affect, Eudemonic well-being). Independent variables are the objective well-being indicators, presented in the first three columns, grouped by the subfactors they belong to according to OECD classification. Demographic controls are omitted Note. Values in the table are standardized beta coefficients from the four OLS regression analysis. Dependent variables in four regressions are variables in the first ^aThe definitions of the predictor variables are given in "OECD well-being indicators available from EU-SILC" section. from the table. EU: European Union's Survey on Income and Living Conditions.

indicators increase by 0.377 and 0.323, respectively, when perceived health status increases by 1 standard deviation, which is a higher association than with the general life satisfaction, which increases by 0.254. Furthermore, both affective well-being indicators are strongly predicted by the safety of the neighborhood (negative affect: $\beta = 0.093$; p < 0.01; positive affect: $\beta = 0.107$; p < 0.01), while the effect on life satisfaction is only marginally significant ($\beta = 0.037$; p < 0.1). These results are also in line with previous research (e.g., Kahneman & Deaton, 2010), which suggests that health and personal security are more strongly connected with affective well-being than with life satisfaction. Finally, having a person to talk about personal problems is more strongly related to the affective well-being components (negative affect: $\beta = 0.091$; p < 0.01; positive affect: $\beta = 0.082$; p < 0.01) than to general life satisfaction ($\beta = 0.05$; p < 0.01).

Other objective well-being indicators are equally important for life satisfaction and affective well-being. Having a person to ask for help is associated with higher scores on both life satisfaction and affective well-being components. As this question refers to both "moral" and "financial and material" help, this result could also be the consequence of different interpretation of the question. In accordance with the above distinction, life satisfaction could be more affected by financial, while affective well-being with moral support. Working longer than 50 hours per week is associated with lower life satisfaction and negative affect, while the effect on positive affect is marginally significant. Finally, higher education is, ceteris paribus, associated with higher levels of both life satisfaction and both affective well-being dimensions. However, unlike some previous research (Kahneman & Deaton, 2010), our results do not indicate that education is more strongly associated with life satisfaction than with affective well-being.

On the other hand, eudaimonic well-being is associated with the combination of material living conditions (such as income and unemployment) and other, nonmaterial-related indicators (such as health, safety, and having a person to talk about personal issues). Income effects are lower than for the life satisfaction, but higher than for the affective well-being; while the effects of safety and having a person to talk about personal issues are higher than for the life satisfaction and lower than for the affective well-being. Therefore, eudaimonic well-being's associations with objective indicators do not distinguish it clearly from either life satisfaction or affective well-being. This is in accordance with the factor analysis results, where this item failed to load on a separate factor, but rather has loadings on both life satisfaction and affective well-being factors.

Psychometric properties of the SWB module

In this part of the text, we summarize its psychometric properties, as this is the first time that EU-SILC SWB module is implemented, there were no previous evidence of its psychometric properties.

We find that reliability of the module is satisfying, as the Cronbach's alphas for all three extracted factors are high (above 0.7). On the other hand, external (construct) validity is confirmed as SWB items' associations with objective wellbeing indicators and demographic characteristics are consistent with the findings from previous studies (e.g., Boarini et al., 2012; Sanfey & Teksoz, 2005). Additional argument for high construct validity of the scale is that life satisfaction and affective well-being are loading on different factors, which is frequently found in many research works (e.g., Arthaud-Day et al., 2005; Linley, Maltby, Wood, Osborne, & Hurling, 2009). As for the stability of the instrument, next round of EU-SILC which will include the SWB module (planned for 2018) should open an opportunity for examination of that kind as well as the crossnational investigations of the factor structure that could use the data for other EU countries.

Summary of the results and conclusions

In this study, we examined the factor structure of SWB indicators and their association with the objective well-being indicators in Serbia by analyzing, for the first time (to the best of our knowledge), new module from the EU-SILC for 2013. The module aimed to measure four distinct dimensions of SWB: life satisfaction, positive and negative affective well-being, and eudaimonic well-being (meaning of life). Our research provides new evidence on the dimensionality of the SWB and unlike the previous research focuses on the middle-income country. The dimensionality of SWB could be different in middle-income countries due to the fact that lower living standards make income more salient factor of SWB.

The results of the factor analysis show that items load on three independent dimensions of SWB. The first factor is the general life satisfaction, which, in addition to the general evaluation of life, includes satisfaction with various domains of life, mainly material living conditions (financial status, housing, and job). The second factor is the factor of affective well-being, with primary loadings on all five items originally aiming to measure this construct, including both negative and positive affects. Finally, the third factor is related to specific concept of the satisfaction with the local environment, which is not usually frequently measured in SWB research. Our results indicate that this is an independent and relevant SWB dimension and the decision to include these items in EU-SILC was valid.

We further show that indicators of life satisfaction and affective well-being are associated with different objective well-being measures from the *OECD Better Life Initiative* (OECD, 2011a). While life satisfaction is more strongly related to material living conditions: income, unemployment, and housing conditions, affective well-being is more strongly related to non-material quality of life factors: perceived health status, personal security, and social connections. Therefore, our results confirm that the dimensions of life satisfaction and affective well-being are clearly separable, since they load on different factors and show a distinct pattern of associations with the objective well-being indicators. Different patterns of the relation between the life satisfaction and affective well-being are consistent with previous research (e. g., Kahneman & Deaton, 2010; Kahneman & Krueger, 2006) therefore indicating similarity of the relations between these SWB dimensions in Serbia, as a middle-income country, with the ones observed in other studies, mainly focusing on high-income countries.

On the other hand, the results indicate that positive and negative affect are not clearly separable, since they form a single factor and share most of the same predictors. Similarly, the results indicate that although, ex ante, it was planned to represent an independent dimension of SWB, the eudaimonic dimension (operationalized as meaning of life indictor) is indistinct from the life satisfaction and affective well-being, as it does not load on the separate factor (loads on both life satisfaction and affective well-being factors) and it does not have distinct set of objective predictors from these two dimensions, but rather a combination of predictors from both material and non-material quality of indicators.

As the theoretical debate on dimensionality of SWB is still ongoing, our results could be an argument indicating greater uniformity of the SWB, indicating that four relevant dimensions (life satisfaction, positive affect, negative affect, and eudaimonic well-being) can be reduced to two: life satisfaction and affective well-being while adding another factor—satisfaction with the environment—which was previously not a part of the debate. Lower number of dimensions can also be a special feature of middle-income countries, but also could be related to the fact that positive affect and eudaimonic well-being are currently represented by low number of items in the EU-SILC module (two and one, respectively).

Limitations, recommendations, and directions for future research

As mentioned, positive affect and eudaimonic well-being are currently in the EU-SILC SWB module represented by low numbers of items: only two and one, respectively. As the module, ex ante, aims to measure four dimensions of SWB: life satisfaction, positive affect, negative affect, and eudaimonic wellbeing, it would be very useful to incorporate more items so to reach at least three items per dimension. Although the instrument is reliable and valid, low number of the items for positive affect and eudaimonic well-being decreases the usefulness of the scale for both policy and research purposes and could have impacted some of our results.

Our results further strengthen the argument that while analyzing SWB, it is necessary to define precisely the dimension of the SWB that is used (as well as the measures being used), as using life satisfaction and affective well-being can yield different policy implications due to their different content and relation to objective indicators.

Our findings are also important for the policy makers (in Serbia, but also in general). They suggest that in order to increase the overall well-being, the policies should not be focused only on improving material conditions (lowering poverty, increasing employment, providing better housing conditions, providing for better health care, etc.) but also on improving non-material conditions, such as better work–life balance, higher feeling of personal security, possibilities to connect and spend quality time with friends or family. Additionally, our research identified that development of local community, such as good recreation and cultural centers, green areas, public transportation, number of shops, and so forth, represents independent and relevant dimension of SWB. Therefore, in order to improve all aspects of SWB, policies targeting development of local community are also necessary.

Explorations of factor structure of the SWB module for other countries and next round EU-SILC SWB module could add further arguments on the debate on dimensionality and the quality of the module from EU-SILC.

Appendix

	F	Principal com	ponents analy	sis	F	Parallel analys	is
Component	Eigenvalue	Difference	Proportion	Cumulative	PCA eigenvalue	PA eigenvalue	Difference
Compl	5.130	3.313	0.342	0.342	5.130	1.095	4.035
Comp2	1.817	0.536	0.121	0.463	1.817	1.075	0.741
Comp3	1.281	0.319	0.085	0.549	1.281	1.060	0.221
Comp4	0.962	0.129	0.064	0.613	0.962	1.046	-0.084
Comp5	0.833	0.065	0.056	0.668	0.833	1.034	-0.20 I
Comp6	0.768	0.018	0.051	0.719	0.768	1.021	-0.253
Comp7	0.750	0.076	0.050	0.769	0.750	1.009	-0.259
Comp8	0.675	0.115	0.045	0.814	0.675	0.999	-0.324
Comp9	0.560	0.083	0.037	0.852	0.560	0.989	-0.429
Comp10	0.477	0.024	0.032	0.884	0.477	0.977	-0.500
Compli	0.453	0.061	0.030	0.914	0.453	0.965	-0.512
Comp12	0.392	0.045	0.026	0.940	0.392	0.954	-0.563
Comp13	0.347	0.027	0.023	0.963	0.347	0.941	-0.594
Comp14	0.320	0.086	0.021	0.984	0.320	0.925	-0.605
Comp15	0.234		0.016	1.000	0.234	0.909	-0.675

Table 4. Principal component analysis—Kaiser's eigenvalue-greater-than-one rule, and Parallel Analysis Criterion (all 15 subjective well-being items included, n = 4,808).

•			•	,	
Variable	Obs	Mean	SD	Min	Max
Life satisfaction ^a	14768	5.007	2.390	0	10
Negative affect ^a	14686	4.134	0.856	I.	5
Positive affect ^a	14804	3.369	0.879	I	5
Meaning of life ^a	14278	7.056	2.348	0	10
In (Equivalized hh disposable income)	16572	9.997	0.703	7.601	12.836
Unemployed ^b	16572	0.117	0.322	0	I
Inactive ^b	16572	0.108	0.310	0	I
Owner of the residential area ^b	16572	0.828	0.378	0	I
Number of rooms per household member	16568	0.953	0.550	0.115	8
Self-perceived health status ^a	16548	3.507	1.135	I	5
Secondary education ^b	16570	0.502	0.500	0	I
Tertiary education ^b	16570	0.158	0.365	0	I
Working longer than 50 hours per week ^b	16572	0.085	0.280	0	I
Talk about personal issues ^b	16572	0.867	0.339	0	I
Ask for help ^b	16572	0.791	0.407	0	I
Safe neighborhood ^a	15043	3.346	0.658	I.	4
Female ^b	16572	0.519	0.500	0	I
Age	16572	48.369	18.544	16	95
Has children ^b	16572	0.311	0.463	0	I
Married ^b	16570	0.604	0.489	0	Ι
Single parent ^b	16572	0.013	0.113	0	Ι
Region Vojvodina ^b	16572	0.267	0.442	0	Ι
Region Zapadna Srbija ^b	16572	0.303	0.460	0	I
Region Istočna Srbija ^b	16572	0.234	0.424	0	Ι
Urban settlement ^b	16572	0.570	0.495	0	I

Table 5. Descriptive statistics on the variables included in the regression analysis.

^aMeasured on a Likert-type scale. Although ordinal by nature, these variables can be analyzed with interval/ ratio descriptive statistics as the results from the measurement literature (Brown, 2011; Norman, 2010) suggest that the difference between the interval measures and Likert-type scale type measures do not differ in results or conclusions.

^bcategorical dichotomous variables, containing only two categories 0 and 1.Mean of this variable equals the share of the category 1 in the sample (e.g., for unemployed mean of 0.117, suggests that 11.7% of the sample is unemployed).

	Life sati	isfaction	Negativ	e affect	Positiv	e affect	Meanin	g of life
Variables	b	Р	b	Р	b	Р	b	Р
In (Equivalized household disposable income)	0.867	<0.001	0.105	<0.001	0.128	<0.001	0.434	<0.001
Employed (omitted)								
Unemployed	-0.924	<0.001	-0.223	<0.001	-0.214	<0.00 l	-0.522	<0.001
Inactive	-0.346	<0.001	-0.127	<0.001	-0.054	0.035	-0.460	<0.001
Owner of the residential area	0.330	<0.00 l	0.066	0.002	0.039	0.103	0.004	0.957
Number of rooms per household member	0.265	<0.001	0.015	0.356	0.067	<0.001	0.215	<0.001
Self-perceived health status	0.623	<0.001	0.288	<0.001	0.234	<0.00 l	0.394	<0.001
Primary education (omitted)								
Secondary education	0.002	0.962	0.03 I	0.094	0.023	0.243	0.151	0.007
Tertiary education	0.386	<0.001	0.044	0.076	0.103	<0.001	0.396	<0.001
Working longer than 50 hours per week	-0.233	0.002	-0.132	<0.001	-0.047	0.089	-0.108	0.203
Talk about personal issues	0.521	<0.001	0.342	<0.001	0.317	<0.001	0.967	<0.001
Ask for help	0.686	<0.001	0.258	<0.001	0.191	<0.001	0.311	<0.001
Safe neighborhood	0.217	<0.001	0.120	<0.001	0.142	<0.001	0.271	<0.001
Female	0.212	<0.001	0.039	0.002	0.088	<0.001	0.352	<0.001
Age	-0.093	<0.001	-0.018	<0.001	-0.023	<0.001	-0.042	<0.001
Age squared	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Has children	0.218	<0.001	0.058	0.006	0.065	0.004	0.297	<0.001
Married	0.306	<0.001	0.028	0.147	0.097	<0.00 l	0.341	<0.001
Single parent	-0.330	0.039	-0.234	<0.001	-0.167	0.017	0.203	0.282
Region Belgrade (omitted)								
Region Vojvodina	-0.066	0.363	-0.095	<0.001	-0.036	0.191	0.023	0.763
Region Zapadna Srbija	-0.237	0.001	0.026	0.321	-0.072	0.007	-0.571	<0.001
Region Istočna Srbija	0.009	0.898	0.028	0.269	-0.054	0.054	-0.097	0.209
Urban settlement	0.094	0.067	-0.019	0.293	0.030	0.124	0.166	0.004
Constant	-6.26 I	<0.001	1.344	<0.001	0.627	< 0.00 I	-0.418	0.415
Observations	14,638		14,530		14,659		14,175	
R-square	0.295		0.227		0.185		0.153	
Adjusted R-square	0.294		0.226		0.184		0.151	

 Table 6. Regression analysis—coefficients and p values.

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Notes

- 1. Therefore, due to expected non-linear relation, researchers often use natural logarithm of income rather than income in levels.
- 2. More detailed information on the methodology and the questionnaire can be found in SORS publication (SORS, 2015), which also presents detailed characteristics of the sample by gender, age, education status and number of other variables (SORS, 2015).
- 3. The sample size for each analysis is presented in parts 4.1 and 4.2, next to the analysis.
- 4. Promax rotation with the power of 2. Varimax rotation was also applied, yielding similar loadings. Results are available upon request.
- 5. When we exclude job and commuting time satisfaction items and keep the remaining thirteen SWB indicators in the analysis, the sample increases to 12,262 respondents. We use this sample to perform robustness check of our analysis. Although the sample is 2.5 times larger, the number of the factors (Appendix Table 6) and their structure (Appendix Table 7) remain the same (results available upon request from the authors). Therefore, the results are robust even to large changes in the sample size.
- 6. See footnote 5 for the details on robustness check.
- 7. We exclude the demographic controls from the Table 3 as they are of secondary interest, but we present them in Appendix Table 6. The demographic controls show expected sign of the coefficients: association between SWB and age is U shaped (both level and quadratic terms are statistically significant), being married and having children increases, while being a single parent decreases SWB. The effects of regional controls are sporadic and mainly point that SWB is higher in Belgrade compared to other regions. Unlike in previous research, SWB is higher in urban areas than in rural, which can be explained by the fact that at-risk-of-poverty rate is twice as high in rural areas than in urban

areas in Serbia (34.6% vs. 17.8%, SORS, 2015). Additionally, inactivity (compared to employment) is associated with lower levels of all SWB dimensions. Finally, women show higher levels of SWB than men, which is in line with some of the previous research.

8. The choice of the level of 0.2 is arbitrary and based on the lowest primary loading of the items.

References

- Arandarenko, M., Vladisavljević, M., & Žarković Rakić, J. (2012). From inactivity to work: Unleashing the untapped potential of the labour force in Serbia. In Cerović B., Jakšić M., Mladenović Z. & Prašćević A. (Eds.), *From global crisis to economic growth. Which way to take?* (Vol 1, pp. 273–299). Belgrade: Faculty of Economics, University of Belgrade.
- Arthaud-Day, M. L., Rode, J. C., Mooney, C. H., & Near, J. P. (2005). The subjective well-being construct: A test of its convergent, discriminant, and factorial validity. *Social Indicators Research*, 74, 445–476.
- Blanchflower, D. G., & Oswald, A. J. (2008). Is well-being U-shaped over the life cycle? Social Science & Medicine, 66, 1733–1749.
- Boarini, R., Comola, M., Smith, C., Manchin, R., & de Keuenaer, F. (2012). What makes for a better life?: The determinants of subjective well-being in OECD countries – Evidence from the Gallup World Poll (OECD Statistics Working Papers, 2012/03). Paris, France: OECD Publishing.
- Brereton, F., Clinch, J. P., & Ferreira, S. (2008). Happiness, geography and the environment. *Ecological Economics*, 65, 386–396.
- Brown, J. D. (2011). Likert items and scales of measurement. *Shiken: JALT Testing & Evaluation SIG Newsletter*, 15, 10–14.
- Bruni, L. (2010). The happiness of sociality. Economics and eudaimonia: A necessary encounter. *Rationality and Society*, 22, 383–406.
- Busseri, M. A., & Sadava, S. W. (2011). A review of the tripartite structure of subjective well-being: Implications for conceptualization, operationalization, analysis, and synthesis. *Personality and Social Psychology Review*, 15, 290–314.
- Crawford, J. R., & Henry, J. D. (2004). The Positive and Negative Affect Schedule (PANAS): Construct validity, measurement properties and normative data in a large non-clinical sample. *British Journal of Clinical Psychology*, 43, 245–265.
- Di Tella, R. D., Macculloch, R. J., & Oswald, A. J. (2003). The Macroeconomics of Happiness. *Review of Economics and Statistics*, 85, 809–827.
- Diener, E., & Biswas-Diener, R. (2002). Will money increase subjective well-being? Social indicators research, 57(2), 119–169.
- Diener, E., & Oishi, S. (2000). Money and happiness: Income and subjective well-being across nations. In Diener E. & Suh E. (Eds.), *Subjective well-being across cultures* (pp. 185–218). Cambridge, MA: MIT Press.
- Diener, E., & Suh, E. (1997). Measuring quality of life: Economic, social and subjective indicators. Social Indicators Research, 40, 189–216.
- Diener, E. (2009). Assessing SWB: Progress and opportunities. In Diener E. (Ed.), Assessing well-being: The collected works of Ed Diener (pp. 25–66). New York, NY: Springer.

- Diener, E., Napa Scollon, C., & Lucas, R. E. (2009). The evolving concept of subjective well-being: The multifaceted nature of happiness. In Diener E. (Ed.), Assessing wellbeing: The collected works of Ed Diener (pp. 67–100). New York, NY: Springer.
- Diener, E., Oishi, S., & Lucas, R. (2002). SWB: The Science of Happiness and Life Satisfaction. In Snyder C. & Lopez S. (Eds.), *Handbook of Positive Psychology* (pp. 63–73). Oxford, England: Oxford University Press.
- Dolan, P., Peasgood, T., & White, M. (2008). Do we really know what makes us happy? A review of the economic literature on the factors associated with subjective wellbeing. *Journal of Economic Psychology*, 29, 94–122.
- Easterlin, R. A. (2005). Building a better theory of well-being in economics and happiness
 Framing the analyses. In Bruni L. & Porta P. L. (Eds.), *Economics and happiness: Framing the analysis* (pp. 29–64). Oxford: England Oxford University Press.
- Eurostat (2015). *Quality of life in Europe. Facts and views*. European Union: Eurostat Statistical Books.
- Frey, B. S., & Stutzer, A. (2006). *Should we maximize national happiness?* (Working Paper no. 306.). Zurich, Switzerland: Institute for Empirical Research in Economics.
- Gallagher, M. W., Lopez, S. J., & Preacher, K. J. (2009). The hierarchical structure of well-being. *Journal of Personality*, 77, 1025–1050.
- Gong, C., Casselsl, R., & Keegan, M. (2011). Understanding life satisfaction and the education puzzle in Australia: A profile from HILDA Wave 9 (Working Paper 11/ 12). Canberra, Australia: NATSEM.
- Greenhaus, J. H., Collins, K. M., & Shaw, J. D. (2003). The relation between workfamily balance and quality of life. *Journal of Vocational Behavior*, 63, 510–531.
- Gröpel, P., & Kuhl, J. (2009). Work-life balance and subjective well-being: The mediating role of need fulfilment. *British Journal of Psychology*, 100, 365–375.
- Helliwell, J. F. (2003). How's life? Combining individual and national variables to explain subjective well-being. *Economic Modelling*, 20, 331–360.
- Helliwell, J. F. (2008). *Life satisfaction and quality of development* (Working Paper w14507). Cambridge, MA: The National Bureau of Economic Research. National Bureau of Economic Research.
- Jakobsson Bergstad, C., Gamble, A., Hagman, O., Polk, M., Gärling, T., Ettema, D., & Olsson, L. E. (2012). Influences of Affect Associated with Routine Out-of-Home Activities on Subjective Well-Being. *Applied Research in Quality of Life*, 7, 49–62.
- Kahneman, D., & Deaton, A. (2010). High income improves evaluation of life but not emotional well-being. *Proceedings of the National Academy of Sciences of the United States of America (PNAS)*, 107, 16489–93.
- Kahneman, D., & Krueger, A. B. (2006). Developments in the measurement of subjective well-being. *Journal of Economic Perspectives*, 20, 3–24.
- Kashdan, T. B., Biswas-Diener, R., & King, L. A. (2008). Reconsidering happiness: The costs of distinguishing between hedonics and eudaimonia. *The Journal of Positive Psychology*, 3, 219–233.
- Keyes, C. L., Shmotkin, D., & Ryff, C. D. (2002). Optimizing well-being: The empirical encounter of two traditions. *Journal of Personality and Social Psychology*, 82, 1007–1022.
- Krstić, G., & Sanfey, P. (2007). Mobility, poverty and well-being among the informally employed in Bosnia and Herzegovina. *Economic Systems*, 31, 311–335.

- Linley, P. A., Maltby, J., Wood, A. M., Osborne, G., & Hurling, R. (2009). Measuring happiness: The higher order factor structure of subjective and psychological well-being measures. *Personality and Individual Differences*, 47, 878–884.
- Lora, E. (2016). Using life satisfaction data to identify urban problems, prioritize local public expenditures and monitor the quality of urban life. In Rojas M. (Ed.), *Handbook of happiness research in Latin America* (pp. 273–294). New York: Springer.
- Lucas, R. E., & Gohm, C. L. (2000). Age and sex differences in subjective wellbeing across cultures. In Diener E. & Suh E. (Eds.), *Culture and SWB* (pp. 291–317). Cambridge, MA: MIT Press.
- Lucas, R. E., Diener, E., & Suh, E. (1996). Discriminant validity of well-being measures. Journal of Personality and Social Psychology, 71, 616–628.
- Millward, H., & Spinney, J. (2013). Urban–rural variation in satisfaction with life: Demographic, health, and geographic predictors in Halifax, Canada. *Applied Research in Quality of Life*, 8, 279–297.
- Norman, G. (2010). Likert scales, levels of measurement and the "laws" of statistics. *Advances in health sciences education*, *15*, 625–632.
- Organisation for Economic Co-operation and Development (2011a). *How's life 2015: Measuring well-being*. Paris: Author.
- Organisation for Economic Co-operation and Development (2011b). Compendium of OECD well-being indicators. Paris: Author.
- Organisation for Economic Co-operation and Development (2013). *OECD Guidelines on measuring SWB*. Paris: Author.
- Oguz, S., Merad, S., & Snape, D. (2013). Measuring national well-being What matters most to Personal Well-being? Newport, England: Office for National Statistics.
- Oswald, F., Wahl, H., Mollenkopf, H., & Schilling, O. (2003). Housing and life satisfaction of older adults in two rural regions in Germany. *Research on Aging*, 25, 122–143.
- Pavot, W., Diener, E., Colvin, C. R., & Sandvik, E. (1991). Further validation of the satisfaction with life scale: Evidence for the cross-method convergence of well-being measures. *Journal of Personality Assessment*, 57, 149–161.
- Pinquart, M., & Silbereisen, R. K. (2010). Patterns of fulfilment in the domains of work, intimate relationship, and leisure. *Applied Research in Quality of Life*, 5, 147–164.
- Pinquart, M., & Sorensen, S. (2001). Gender differences in self-concept and psychological well-being in old age: A meta-analysis. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 56, 195–213.
- Raboteg-Saric, Z., & Sakic, M. (2014). Relations of parenting styles and friendship quality to self-esteem, life satisfaction and happiness in adolescents. *Applied Research in Quality of Life*, 9, 749–765.
- Russell, J. A., & Carroll, J. M. (1999). On the bipolarity of positive and negative affect. *Psychological Bulletin*, 125, 3–30.
- Ryff, C. D., & Singer, B. H. (2008). Know thyself and become what you are: A Eudaimonic approach to psychological well-being. *Journal of Happiness Studies*, 9, 13–39.
- Sanfey, P., & Teksoz, U. (2005). Does transition make you happy? (Working Paper 91). London, England: EBRD.
- Schimmack, U. (2006). The structure of SWB: Personality, affect, life satisfaction, and domain satisfaction. In Eid M. & Larsen R. (Eds.), *The science of SWB: A tribute to Ed Diener* (pp. 97–123). New York, NY: Guilford.

- Schimmack, U., Schupp, J., & Wagner, G. G. (2008). The influence of environment and personality on the affective and cognitive component of subjective well-being. *Social Indicators Research*, 89, 41–60.
- Sheldon, K. M. (2013). Individual daimon, universal needs, and subjective well-being: Happiness as the natural consequence of a life well lived. In Waterman A. S. (Ed.), *The best within us: Positive psychology perspectives on Eudaimonia* (pp. 207–226). Washington, DC: American Psychological Association.
- Shields, M. & Wooden, M. (2003, February). Marriage, children and subjective well-being. Paper presented at the 8th Australian Institute of Family Studies Conference, Step Forward for Families: Research, Practice and Policy, Melbourne Exhibition Centre, South Wharf, Victoria, Australia.
- Shields, M. A., & Price, S. W. (2005). Exploring the economic and social determinants of psychological well-being and perceived social support in England. A Journal of the Royal Statistical Society: Series A (Statistics in Society), 168, 513–537.
- Siedlecki, K. L., Salthouse, T. A., Oishi, S., & Jeswani, S. (2013). The relationship between social support and subjective well-being across age. *Social Indicators Research*, 117, 561–576.
- Sørensen, J. F. L. (2014). Rural-urban differences in life satisfaction: Evidence from the European Union. *Regional Studies*, 48, 1451–1466.
- Statistical Office of the Republic of Serbia (2015). Income and Living conditions in the Republic of Serbia – 2013 (Final Report). Belgrade, Serbia: Statistical Office of the Republic of Serbia.
- Stiglitz, J. E., Sen, A., & Fitoussi, J. (2009). Report by the Commission on the Measurement of Economic Performance and Social Progress. Paris, France: The Commission on the Measurement of Economic Performance and Social Progress.
- Stutzer, A., & Frey, B. (2004). Reported subjective well-being: A challenge for economic theory and economic policy. *Schmoller Jahrbuch*, 124, 191–231.
- Tesch-Römer, C., Motel-Klingebiel, A., & Tomasik, M. J. (2008). Gender differences in subjective well-being: Comparing societies with respect to gender equality. *Social Indicators Research*, 85, 329–349.
- Vanhoutte, B. (2014). The multidimensional structure of subjective well-being in later life. *Population Ageing Journal of Population Ageing*, 7, 1–20.
- Veenhoven, R. (2008). Sociological theories of SWB. In Eid M. & Larsen R. (Eds.), *The science of SWB: A tribute to Ed Diener* (pp. 44–61). New York, NY: Guilford.

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