ReflecT Research Paper

12/001

Ruud Muffels, Daniela Skugor and Ellen Dingemans

MONEY DOES NOT BUY MUCH HAPPINESS. BUT WHAT HAVE INCOME INEQUALITY, MODERNIZATION AND PERSONAL VALUES GOT TO DO WITH IT?

May 2012

Money Does Not Buy Much Happiness. But What Have Income Inequality, Modernization and Personal Values Got To Do With It?

© *Ruud Muffels, Daniela Skugor and Ellen Dingemans*[1]

Abstract

The Easterlin paradox, which posits that money does not buy happiness since wealthier nations are not better off in terms of subjective well-being than less wealthy nations, is challenged in a seminal study of Stevensson and Wolfers (2008). In the first part of the paper we replicate their findings using the European Values Study (EVS) covering 47 European countries. We also replicate Wilkinson and Pickett's (2010) findings that countries with higher income inequality levels are less happy nations. But 'if money does not buy happiness, what else does?' is a relevant question on which far less is known. In the second part of the paper we examine to what extent objective levels of modernization and stronger support to social and 'modernization' values matter for happiness. We estimate hierarchical linear (multi-level) models allowing us to disentangle the individual and country-level effects. We find clear evidence that at the individual level, people holding stronger social values (family and children, altruism and trust) and modernization values (post-materialistic, leisure, gender roles) are on average happier. At the country level, societies at higher levels of modernization and societies with wider support for social and 'modern' values turn out to be happier nations.

Keywords: happiness, subjective well-being, relative income, income inequality, European Values Study (EVS), modernization, social values, ordered probit, multi-level models

JEL codes: D31, D63, I31, Z13, A14

1. Introduction and research questions

From the rich literature on happiness and subjective well-being it is known that money does not buy much happiness and, insofar it does, only for the short-term; the gain in happiness decays very quickly over time (Diener, 1999; Headey et al., 2008). This is known as the Easterlin's paradox which posits that wealthier nations are not better off in terms of subjective well-being than less wealthy nations (Easterlin 2001, 2003). 'If money does not buy much happiness what does?' is then the first question to be answered. However, far less is known on these non-monetary sources of happiness. In this study we examine these other

---

[1] R.J.A. Muffels – D. Skugor – E.A.A. Dingemans
Dept. of Sociology/ ReflecT, Tilburg University. PO Box 90153, 5000 LE Tilburg, the Netherlands
E-mail: Ruud.J.Muffels@tilburguniversity.edu; D.Skugor@tilburguniversity.edu;
E.A.A.Dingemans@tilburguniversity.edu

sources of happiness using the European Values Study data for 2008, covering 47 countries. From a theoretical perspective we presume that countries in Europe differ substantially with respect to their stage in the modernization process and that this variation in levels of modernity, as expressed in the country's social and economic conditions and in the stronger support for social and 'modern' values, will impact on the levels of happiness or subjective well-being (SWB). We intend to compare the differences in SWB-levels across countries varying in their stage of the modernization process. Questions that will be addressed concern the relationship between inequality, non-monetary values and modernization on the one hand and subjective well-being on the other hand, and whether the country variation can be explained by differences in the modernization processes across countries (cf. Inglehart & Baker, 2000).

2. Theoretical framework

2.1 The impact of absolute and relative income on SWB

The Easterlin paradox (Easterlin, 1993) constitutes our starting point for the analysis, though supplemented with notions about the possible impact of modernization and personal values on explaining happiness levels across nations. Research on SWB from a modernization perspective is rather scarce in social sciences. Exception is formed by the sociologist Ruut Veenhoven (1996, 2008) who examined the relationship between post-materialistic values and happiness, and Wilkinson and Pickett (2010), who in their seminal book in 2009 'The Spirit Level' studied the relationship between income inequality and a variety of indicators, including life satisfaction, measuring social and economic progress. The Easterlin paradox is explained by the mechanism of habituation or adaptation in which people are presumed to be in a sort of 'hedonic treadmill': the income rises but the increase in happiness decays rapidly over time. The paradox is convincingly challenged in a seminal paper by Stevensson and Wolfers (SW, 2008) who used the World Values Survey, the Eurobarometer, the General Social Survey and the Gallup's World Poll Data to examine the relationship between SWB and absolute income. From their findings, they conclude that money matters for explaining the substantial differences in the levels of SWB across nations. These findings are based on correlations between SWB, GDP per capita, and absolute income, after controlling for some correlates such as gender, unemployment, and age using repeated cross-sectional data. The question is whether these findings will be challenged once a richer explanatory model is used and the data contain a different sample of countries. We will replicate the findings of SW with the EVS data for 2008. We enrich the explanatory model by taking account of the impact of particular values on happiness; especially those associated with social relationships and modernization alongside the effects of income. With respect to income we add to the findings of SW by including absolute as well as relative income and income inequality measures in the model to explain SWB across nations. The inclusion of relative income or comparison income can be defended with reference to the alleged impact of the

'Keeping up with the Joneses' factor as an important correlate of happiness. Among others this argument is put forward to explain the Easterlin paradox by the British economist Sir Layard (2005), implying that people are especially concerned with their relative position, that is, how they fare compared to their peers, instead of how they fare in absolute terms. According to Layard, absolute income only matters at very low levels of income.

Likewise, in positive psychology (Diener, 1984, 1999; Burroughs & Rindfleisch, 2002; Diener & Seligman, 2004; Lyubomirski et al., 2005; Peterson et al., 2007) it is found that people striving for material success are less happy than people who attach less value to material goals. This tempted Nobel laureate Daniel Kahneman, while examining the consequences of income rises for moment-to-moment happiness, to speak of income for happiness as 'a focusing illusion' (Kahneman, 2006). The gain in happiness will in the end be much lower than expected from the initial rise in income because people quickly after the event return to their daily routine and the contribution of the event to longer-term happiness turns out to be relatively small. Also Georgellis et al. (2009), using the European Social Survey, showed that people holding materialistic values are less happy. They further showed that personal values impact on SWB directly, but also indirectly, through its impact on the relationship between relative income and SWB.

Hypothesis 1 posits that the role of relative income and income equality is as important as absolute income for explaining the variation in happiness at individual and country level.

2.2 Social and modernization values: impact on SWB
But, if economic or success values do not matter much for well-being in the longer-term, it raises the question what other values or life goals do? Through analyzing German panel data, Headey et al. (2010) challenged 'set-point theory', which claims that SWB is rather stable in people's lives, by showing evidence on the longer-term impact of life goals (values) and social and economic choices on SWB. They studied relatively constrained and unconstrained choices related to work, leisure, social participation, exercising, marriage, divorce and children. They also showed that life goals or values either directly or indirectly, through their impact on these choices, affect subjective well-being.

Due to having cross-sectional instead of panel data we are unable to analyze the causal relationships between values, choices and happiness. One important reason for that is reverse causation, implying that values might impact on choices but that actual choices also impact on values. However, research concerning changes of values over time showed that value structures, at least at group-level, do not change much, possibly because they are rooted in personality traits, social milieu and people's biographies. Values appear rather stable and only change over rather long periods of time (Ester, Halman, & De Moor, 1994).

One strand in the modernization literature argues that modernization can go along with persistence of traditional values which are strongly rooted in society and which do not change easily because they are firmly embedded in the institutions (Inglehart & Baker, 2000). Considering that modernization is a very slow and gradually evolving process in society, modernization values might also be rather stable over time. Support can also be

found in Inglehart's (1981) view that values are stable because they are rooted in socialization patterns during childhood. If values are considered relatively stable, admittedly, a heroic presumption, the issue of reverse causality would not pose a particular problem. The focus is still on the main effects of social values and modernization values on SWB, although we will investigate whether these main effects are mediated by processes of modernization at individual- and country-level.

Modernization processes are irreversible, exerting a slow but lasting impact on society. Proponents of modernization theory believe that modernization brings about societal, political as well as cultural change in a coherent way (Inglehart, Básañez, Díez-Medrano, Halman, & Luijkx 2004). The claim is not uncontested as the proponents of the 'persistence of traditional values' thesis argue (Inglehart & Baker, 2000). In the modernization literature two dimensions of cultural change are distinguished (Inglehart & Baker, 2000, Inglehart & Welzel, 2005). First, industrialization caused a shift from traditional to secular-rational orientations, meaning that as societies move from preindustrial to industrial, the role of religion, religious beliefs and strong social norms becomes less central in life. Whereas in more traditional societies people conform to traditional religious and social norms, in secular-rational societies adherence to religious and social norms has declined and shifted to support for values associated with individual striving and enlightened self-interest (see e.g. Ester et al., 1994; Inglehart & Welzel, 2005). Second, cultural change is linked to post-industrialization. Whereas industrialization has been accompanied with secularization of traditional authority, post-industrialization brings about emancipation from authority, signaling a shift from survival values to self-expression values. Instead of focusing on economic or financial and physical security, a cultural shift then emerges toward self-expression and quality of life values (Inglehart & Baker, 2000). This shift is also delineated by Inglehart and others as a shift from materialism to post-materialism (Inglehart, 1997). Previous research indicates that societies emphasizing survival values generally have lower levels of subjective well-being than societies emphasizing self-expression and quality of life values (Inglehart et al., 2004). When there is room for self-expression and people are not restrained by existential insecurity or restrictive social norms, they experience stronger feelings of self-fulfillment and life satisfaction (Inglehart & Welzel, 2005).

Hypothesis 2 posits that support to modern values is conducive to happiness, but that the effects are likely to be stronger once we control for the level of objective modernization at individual- and country-level.

With respect to social values it is well-known from the literature that social relationships and broader access to social capital have a positive impact on subjective well-being (Hellwell, 2006; Powdhavee, 2008; Soons & Kalmijn, 2009). However, the relationship might be very different according to the level of modernization. In more traditional societies stronger social ties exist, which may partly compensate for the loss in happiness associated with the aforementioned restrictive social norms. Likewise, in secular-rational societies people hold more individualistic values and attach less importance to family and children also resulting in

more marital break-ups which may reduce their gains in well-being associated with the larger role of quality of life values (Ester et al., 1994). For the same reason we expect that in traditional societies, people are more willing to help each other (altruism; see also Dunn et al., 2008) or convey more trust in other people and in institutions (Inglehart, 1999). The positive relationship between social values and SWB is therefore mediated by the level of objective modernization.

Hypothesis 3 posits that support to social values is conducive to happiness, both at the individual- and country-level, but that the effects are weaker once we control for objective modernization at individual- and country-level.

3. The conceptual model

In Figure 1 we present the conceptual model graphically. The model distinguishes between subjective modernization, pertaining to the modernization and social values, and objective modernization at individual- and country-level.

Figure 1: Conceptual model on the relationship between modernization and subjective well-being
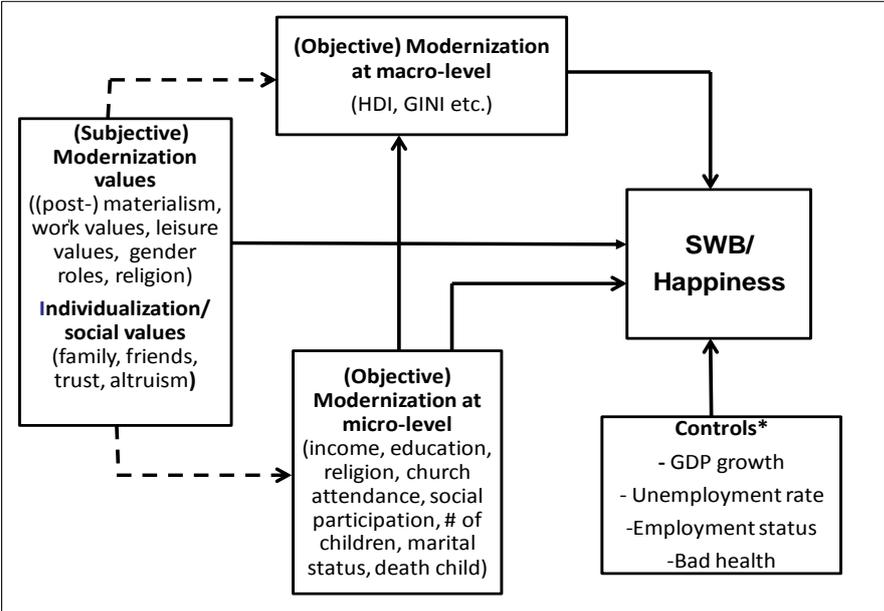
Subjective modernization pertains to whether people express more traditional or modern values with respect to (post-)materialism, work, leisure, gender roles and religion, and whether they have weaker or stronger social values as indicated in their levels of trust, altruism and their social ties with family and friends. Objective modernization at country-level pertains to the outcomes for society at large such as reflected in the human development index (HDI) score and the level of income inequality (GINI coefficient). HDI is

used because it concerns the development of society in three important domains of life namely health, education and income. The use of a measure of income inequality can be defended by the claim of Wilkinson and Pickett that more equal societies show better performance in nearly every domain of life. Objective modernization at individual level reflects the individual's living conditions as expressed in their absolute and relative income level, educational level, employment status, marital status, number of children, health status and the occurrence of the death of a child. The model further includes controls at individual level which are known as important correlates of happiness such as age, bad health, and gender.

Controls at country-level, i.e. unemployment rate and GDP growth rate, correct for variations across countries in the business cycle. The GDP growth rate is also added as country-level control due to the large variation in GDP growth rates at the time the EVS interviews were held: in most countries just before the wake of the credit crisis in 2007 and 2008 or during the crisis in 2009. Eight countries were interviewed in 2009 and all of them had a negative GDP growth rate whereas the remainder of 39 countries interviewed in 2008 had negative growth rates in 13 cases; hence one in three. We therefore expect a negative effect on GDP for these countries with negative growth.

In figure 1 two dashed lines are drawn to indicate the possible existence of mediating effects of objective modernization at macro- and micro-level on the relationship between values and SWB. The underlying idea is that values might have an indirect effect on SWB through their effect on people's choices and conditions (indicating modernization at individual level) or through their effect on the macro-level institutions (indicating modernization at country-level). Because cross-sectional data are not very well suited to unravel the complex interrelationships between values, choices, institutions and SWB, the main focus of the paper is on the main effects of values and objective modernization on SWB.

4. Data and measures

In the EVS, people are asked about a wide range of values, attitudes, opinions and preferences covering also the issues of interest in this paper such as happiness, life satisfaction or SWB, family life, work, leisure and religion. The EVS is therefore a valuable data source for information on modernization values at the micro- and macro-level. We will make use of the EVS 2008 wave, which contains 67,216 observations, covering 47 countries.

The dependent variable *subjective well-being* is measured in the EVS by asking respondents to indicate on a ten-point scale, ranging from 'dissatisfied' to 'satisfied', to what extent they are satisfied with life as a whole.

For measuring *objective modernization at the country-level*, we used the human development index, which is constructed by the World Bank and in which three dimensions

are represented: a long and healthy life as indicated by life expectancy at birth, access to knowledge as measured by the mean years of school attendance and the expected years of schooling, and a decent standard of living as represented by gross national income at constant prices (GDP). Another important indicator is the GINI coefficient which is calculated as the half of the mean differences in income between all individual pairs of income earners. It varies between 0 (all people have the same income) and 1 (one person earns all income). For this paper we use the GINI figures for after tax net personal income as provided by the World Bank database for various years. For some countries national data sources had to be used because of missing data. In the end we collected information on GINI for all 47 countries. The data on HDI and GINI are merged with the EVS data by country and interview year (not survey year).

Objective modernization at the micro-level is measured first of all by household income. Household income is not provided in the EVS in absolute amounts but in ten income brackets. To each person the income has been assigned that corresponds to the mid-point of each income class. We use various measures of income to replicate the findings of SW, one absolute measure, that is the household income in classes as provided in the EVS data, and two relative measures: (1) the household income relative to the average income in the country, and (2) low income status which comprises the people in the three lowest income categories. Other indicators are the achieved highest level of education, religious denomination, church attendance, social participation (indicated by the number of memberships of social organizations), number of children, and marital status. Lastly, we add the occurrence of the loss of a child which is presumed to reflect the availability of high quality health care services at individual level.

Subjective modernization is measured by religious values, gender-role values, work values, leisure values, and post-materialistic values. For religious values we constructed an index based on a selection of EVS questions on the importance of religion for one's life, whether one believes in God, whether one prays to God, and the respondent's spiritual beliefs including believe in a personal God. We further added a variable measuring the respondent's agreement with the statement that politicians who don't believe in God are not fit to do their job.

Gender-role values are measured by the respondent's opinion on the following three statements: (1) 'having a job is the best way for a woman to be an independent person', (2) 'both the husband and wife should contribute to household income', and (3) 'men should take as much responsibility as women for the home and children'. Although more gender role specific questions were included in the EVS, principal factor analysis showed that these three items together formed the most consistent scale.

Work values are measured with work orientations and work ethos. Intrinsic and extrinsic work orientations are included in the EVS by a battery of questions on how people judge the importance of a particular job aspect as derived from Kalleberg (1977). The score 1 is assigned when a job aspect was viewed as important and the score 0 when it was not mentioned. The work orientations index was created, representing the average score over

the intrinsic and extrinsic work orientations scales. Work ethos is measured by two questions: the extent by which people agree with the statements 'people who don't work turn lazy' and 'work should always come first, even if it means less spare time'. We left out the item 'work is a duty towards society' because the correlation of SWB with the three-item scale is lower than with the two-item scale. The average score over the two sub-indices of work orientations and work ethos comprises the so-called work values index.

Leisure values are measured using five questions. One question asks for the importance of leisure in general, and four additional questions ask for the importance of specific leisure activities, such as 'meeting nice people', 'relaxing', 'doing as I want' and 'learning something new' all measured on the same four point scale.

Lastly, for the *post-materialistic values* Inglehart's four point post-materialism scale has been used. Respondents are asked to list their first and second choice out of four topics related to the importance for the country of 'maintaining order in the nation', 'giving people more say in important government decisions', 'fighting rising prices', and 'protecting freedom of speech'. The topics of maintaining order and fighting prices are assumed to represent materialistic values, whereas giving people more say and protecting freedom of speech are considered to represent post-materialistic values. Hence, three groups are constructed: a group of 'pure materialists', a 'mixed group' having materialist and post-materialist values and a third group of 'pure post-materialists'.

To construct an overall index of *modernization values* from the underlying component indices we assume that modernization is reflected in attaching more importance to egalitarian gender roles, leisure activities, intrinsic work values and post-materialist value orientations but lower importance to religion and work values. In the end we did not include the extrinsic work values since the modernization scale with only intrinsic work values showed higher correlations with SWB than the scale with both of them included.

To construct a *social values index*, we first constructed an index for the *importance of family and friends* in life as measured by three questions in the EVS. One question refers to the importance of family in general, another to the extent by which people think children are important for a successful marriage, and a third to the extent by which people think of their friends as an important aspect in life. The second element of *altruism* is based on a question to what extent the respondent believe people try to be helpful or that they are mostly looking out for themselves. Finally, the third element, *trust* in other people, is measured by two questions, one on trust in other people (whether people would say that most people can be trusted or that you cannot be too careful in dealing with them) and trust in institutions (to what extent people have confidence in for example the police, parliament, the social security system, and the health care system). The three separate scales are then combined into one social values index.

Previous research on subjective well-being has shown that several factors are important correlates of SWB and therefore need to be controlled for. We control for gender, age, age

squared and age cubed to take account of the non-linearity in the relationship of age with SWB, employment status (employed versus disabled, unemployed or retired) and bad health. In addition we add two indicators to control for business cycle differences: GDP growth and unemployment rate.

The various indices and sub-indices for social values and modernization values are constructed after normalization[2] of the variables to account for the differences in measurement and scaling of the underlying components. For that reason we also normalized the dependent variable and calculated min-max scores. The normalizing or standardizing of the items within the constructed scales of indicators resulted in better comparability within and across the scales at country level. For creating the indices we calculated the row means of the sub-indices for each country and year. In the final step we used the various composite indices to test our empirical model.

5. Methods and empirical model

The EVS contains a question on life satisfaction already since its inception in 1981, and uses a scale ranging from 1-10 ('dissatisfied' to 'satisfied'). Single item measures are plainly not as reliable or valid as multi-item measures of SWB, but are widely used in international surveys and have been reviewed as acceptably valid (Diener, Suh, Lucas & Smith, 1999). In this paper, as in most recent papers on life satisfaction, despite being ordinal the scale is treated at interval level. Our own tests of linearity, using plotted kernel density estimates on the EVS data on SWB for the various years and countries, confirm the results of others (cf. Headey, Muffels & Wagner, 2010). It allows us to estimate multi-level or hierarchical linear models (HLM) on SWB taking account of the nested structure of individuals (level 1) within countries (level 2).

Due to the *nested* nature of the data, ordinary least squares (OLS) regression would produce biased parameter estimates associated with the existence of correlated errors at level 2. Therefore, multilevel models are estimated using maximum likelihood estimation to distinguish the individual and country-level variation. A nice feature of the EVS 2008 dataset is the relatively large number of countries (47 countries or level 2 units), each containing a relatively large number of respondents (or level 1 units). However, even with 47 countries, the number of level 2 units is rather low, which might result in lack of efficiency in the estimation of the random slope parameters. A power test (Snijders, 2006) however does indicate efficiency at level 2.

---

[2] Normalization means that we applied the min-max rule on every single item belonging to the various indices. The min-max rule implies a simple transformation of each component variable X in the 0-1 space by replacing it with a normalized score $\underline{X}_{ij}^{N} = (\underline{X}_{ij} - \min \underline{X}_{ij})/(\max \underline{X}_{ij} - \min \underline{X}_{ij})$ where i denotes the individual and j the country. Another way would have been to calculate the by country standardized values or z-scores of each variable in the index. We tested this method too and the results appear nearly identical but less straightforward to interpret.

The equations for the random intercept (equation 1) and random slope models (equation 2) are given below. In the random intercepts model we assume the level of intercept differs across countries and is explained by differences in the levels of objective modernization (M_j^o), as indicated by the human development (HDI) and income inequality (GINI) indices, and the controls for the business cycle (C_j) indicated by the gender specific unemployment rate and the GDP growth rate. The first part of equation 1 contains the effects at level 1 and the second part between brackets the effects at level 2. The V_{ij}^s and V_{ij}^m terms denote the effect of subjective modernization as indicated by the social values (family, friends, altruism and trust) and the modernization values (post-materialist, work and leisure). The M_{ij}^o term denotes the effect of objective modernization indicated by the income variables, education level, marital status and religion, and the C_{ij} term the level 1 controls such as age, age squared and gender. The τ_{ij} term resembles the residual variance at level 1. The first M_j^o term at level 2 denotes the effects of objective modernization indicated by the HDI and the GINI coefficient respectively. The second C_j term represents the level 2 controls for unemployment rate and GDP growth. Finally, the μ_{0j} term denotes the unexplained residual variance at level 2.

Random intercepts model:

$$SWB = \gamma_{00} + \beta_{1j} V_{ij}^s + \beta_{2j} V_{ij}^m + \beta_{3j} M_{ij}^o + \beta_{4j} C_{ij} + \tau_{ij} + (\gamma_{01} M_j^o + \gamma_{02} C_j + \mu_{0j}) \qquad (1)$$

$$With: \ \tau_{ij} \sim N(0, \sigma_\tau^2); \mu_{0j} \sim N(0, \sigma_{u_0}^2)$$

In the random slope model (equation 2) we assume the intercept to vary with the country's scores on objective modernization and the business cycle controls, whereas the slopes are assumed to vary with differences in the country's scores on the two subjective modernization variables (V_{ij}^s and V_{ij}^m). The random slope model differs from the random intercepts model in the cross-level interaction terms between the subjective modernization variables (the values) at level 1 and the objective modernization variables at level 2 ($V_{ij}^s M_j^o$ and $V_{ij}^m M_j^o$), and the level 2 residual variances with respect to the social and modernization values $\mu_{1j} V_{ij}^s$ and $\mu_{2j} V_{ij}^m$.

Random slope model:

$$SWB = \gamma_{00} + \beta_{1j} V_{ij}^s + \beta_{2j} V_{ij}^m + \beta_{3j} M_{ij}^o + \beta_{4j} C_{ij} + (\gamma_{01} M_j^o + \gamma_{02} C_j + u_{0j}) + (\gamma_{10} V_{ij}^s M_j^o + \gamma_{20} V_{ij}^m M_j^o$$
$$+ \mu_{1j} V_{ij}^s + \mu_{2j} V_{ij}^m) + \tau_{ij} \qquad (2)$$

$$With: \ \mu_{0j} \sim N(0, \sigma_{u_0}^2); \tau_{ij} \sim N(0, \sigma_\tau^2) \text{ and } \mu_{1j} \sim N(0, \sigma_{u_1}^2); \ \mu_{2j} \sim N(0, \sigma_{u_2}^2)$$

For estimation, we ran models with both the subjective and the objective modernization variables to examine the relative size of their effects on SWB, but we also ran models where we left out the latter to research the extent by which the effects of values are mediated by the effects of objective modernization at micro- or macro-level. The inclusion of the GINI

coefficient at macro-level in the multi-level model allowed us to test and progress on Wilkinson and Pickett's thesis about the relationship between inequality and SWB.

6. Descriptive results

Below we present some descriptive information on the main variables of interest. In Figure 2 we depict the relationship between SWB and the log of household income. We take the log of household income because of the log linear relationship of SWB with income as shown in several other studies (see for an overview Clark et al., 2008). We also depict the regression line showing a clear positive relationship of SWB with the log of household income.

Figure 2: The relationship between SWB and log household income, EVS 2008
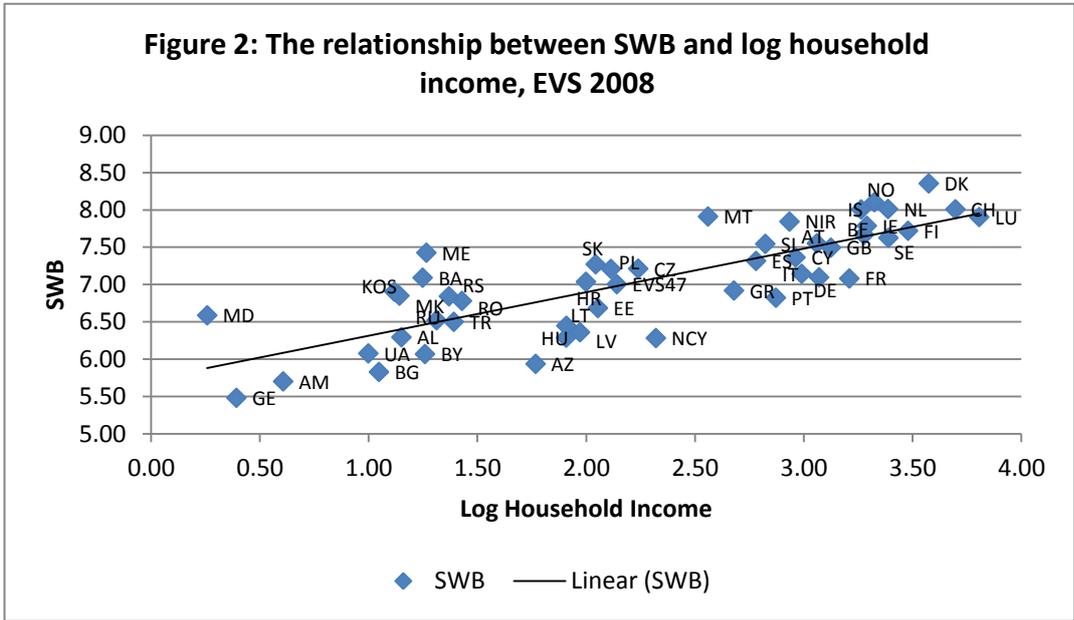
Overall, the cross-country variation in SWB is larger and the gradient with income rather steep. Denmark, Switzerland, Luxembourg, the Netherlands, Norway and Finland perform best in terms of SWB and income levels, and Georgia, Armenia, Moldova and Bulgaria the worst in this respect.

SWB and inequality

The evidence presented in Figure 2 indicates that absolute income does indeed buy some happiness. Even though the last word on the controversy about whether absolute or relative income matters for happiness is not said, the EVS 2008 data certainly allows us to provide some further evidence. If relative income matters we might assume that inequality also matters for happiness, as Wilkinson and Pickett (2010) showed. Therefore, we first present some descriptive evidence on the relationship between inequality and happiness. The findings in Figure 3 show a negative relationship between the GINI coefficient and SWB. The highest SWB with lowest inequality is attained in Denmark, Norway and Sweden. Notice the position of Slovakia with low average GDP per capita but high levels of SWB and low levels of

inequality. The lowest SWB with high inequality is attained in Georgia and the Russian Federation but also in Bulgaria, Latvia and Moldova. North-Eastern European countries are farthest away from the regression line, suggesting that their low levels of SWB are not only due to their high levels of inequality.

Figure 3: Subjective Well-Being and Income Inequality by Country, EVS 2008
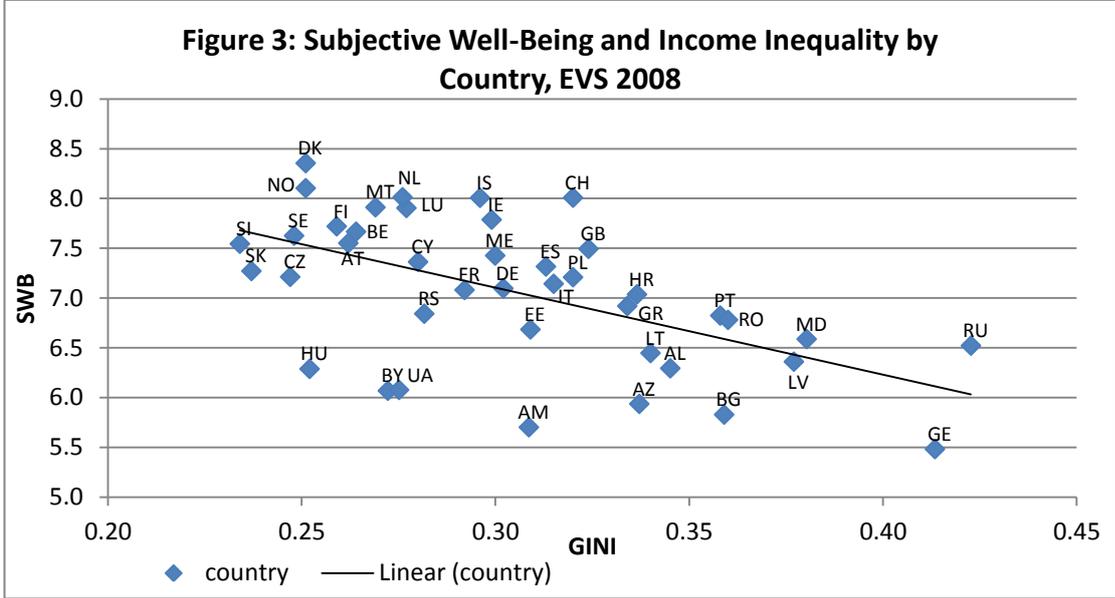
SWB, social values and modernization

The paper focuses in particular on the impact of various measures of income and social and modernization values on happiness. We first constructed composite indices for social and modernization values and associated these with SWB, as shown in Figure 4 and 5. Social values concern the importance attached to family and children and friends but also the opinion about the level of trust and altruism in society. Modernization values comprise intrinsic work values, leisure values, (post-)materialist values and egalitarian gender role values. We suspect that in more traditional societies there is more support for social values and less support for modern values in society. Viewing the evidence in Figure 4, our expectation is not confirmed. The Nordic countries together with Switzerland, the Netherlands and Ireland, clearly more modern societies, show the highest combined scores on SWB and the social values index, whereas Albania, Moldavia, Lithuania, Romania and Bulgaria, clearly more traditional societies, have the lowest scores. However, countries in the North-East and East-East region are farthest away from the linear regression line, indicating that they combine very low happiness levels to above average levels of social values suggesting also that their low level of SWB is not due to low levels of social support but supposedly due to low levels of economic welfare or objective modernization.

Figure 4: The relationship between SWB and Social Values (family, friends,trust, altruism), EVS 2008
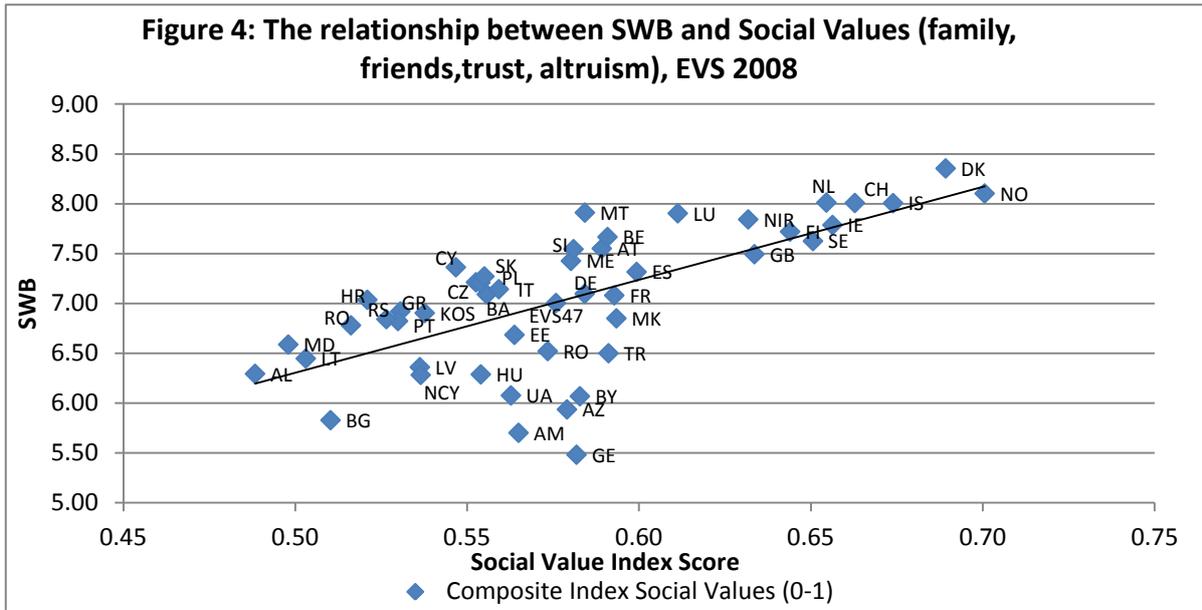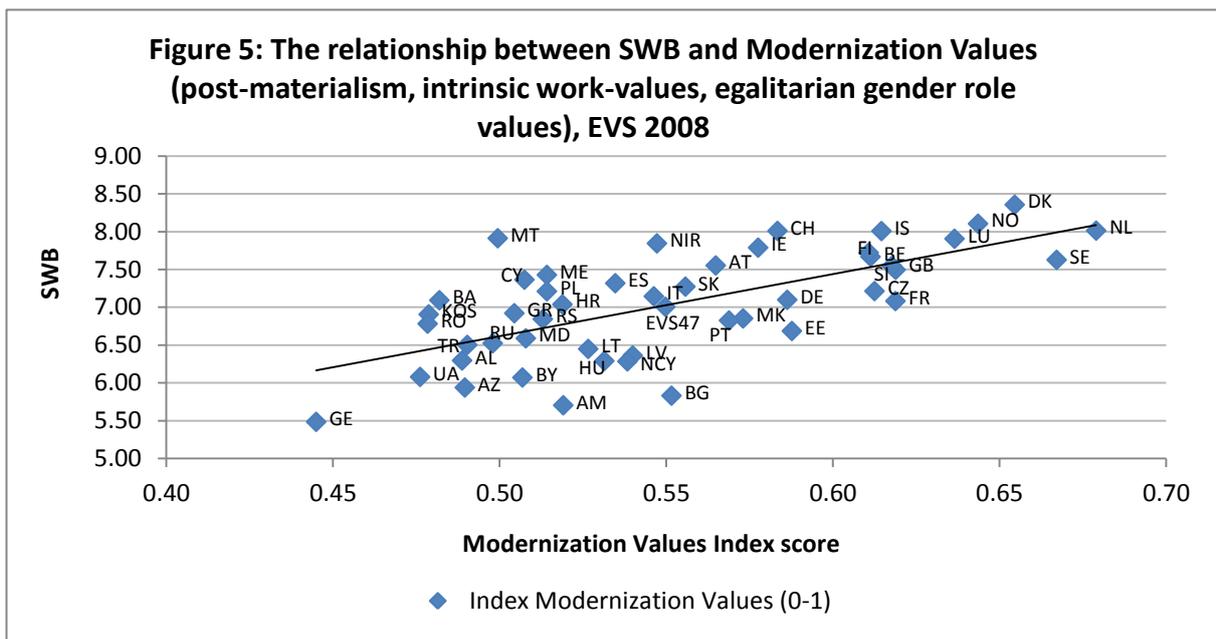
Figure 5 depicts the relationship between SWB and modernization values and shows a positive but flatter gradient than in Figure 4. The results illustrate again that the highest combination of support for modern values and a high SWB is found in the Nordic region, especially the Netherlands and the other Nordic countries such as Denmark, Finland and Sweden. The lowest levels of SWB and support for modernization are found in Georgia and the other countries in the North-Eastern part of Europe. The evidence provided in Figures 4 and 5 confirms that common support for social values and modernization values in society offer significant gains in happiness to people but they also suggest that that is not sufficient in itself to guarantee a high level of well-being possibly caused by the effects of ill-being factors mitigating the happiness gains.

Figure 5: The relationship between SWB and Modernization Values (post-materialism, intrinsic work-values, egalitarian gender role values), EVS 2008

7. Does money buy happiness? Estimating the impact of absolute and relative income

Our first hypothesis concerns the question how much happiness money can buy and whether absolute or relative income matters for people's well-being. The results on the relationship between SWB and income and income inequality presented in section 5 provided a first insight on this hypothesis. In this part we extend the analysis by estimating empirical models defining the relationship between SWB and various measures of income. We therefore use EVS 2008 data to replicate the results of SW on the WVS 2004 data and the results turn out to be very similar, even though the set of countries is dissimilar. SW applied ordered probit regression with country fixed effects. They estimated different models with the logarithm of GDP per capita and absolute household income and found effect sizes of 0.20 for household income and 0.30 for GDP per capita. We estimated similar ordered probit models on SWB with GDP per capita and absolute and relative household income, also controlling for country fixed effects. Models 1 to 4 presented in Table 1 are similar to those of SW. However, we estimated in addition three other models (Models 5 to 7)in which we included some more controls and various measures for relative or comparison income (Clark et al., 2008), the log of the household income as a proportion of average income, low income status and the GINI coefficient measuring income inequality at the country level. Absolute income differences across and within countries matter for SWB as the results of the models 1 to 4 clearly show.

Table 1: Ordered probit estimates of the effects of absolute and relative income, and income inequality on SWB, EVS 2008

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Log GDP/capita	**0.23**		**0.19**	0.13	**0.29**	**0.29**	**0.29**
	(0.09)		(0.09)	(0.09)	(0.05)	(0.05)	(0.05)
Log HH income		**0.23**	**0.23**	**0.11**	**0.06**		**0.22**
		(0.01)	(0.01)	(0.02)	(0.02)		(0.05)
Log relative HH Income				**0.12**	**0.11**	**0.17**	**0.09**
				(0.02)	**(0.02)**	(0.01)	(0.02)
GINI coefficient					**-0.01**	**-0.02**	**-0.02**
					(0.01)	(0.01)	(0.01)
Low income level							**-0.12** (0.01)
N	65944	55041	54266	54266	53635	53635	51745
Pseudo R^2	2.4%	3.0%	3.0%	3.0%	4.4%	4.4%	4.5%

Notes: Model 1: log GDP/capita + unemployment rate, age, sex, age quadric, age quadric*sex; Model 2: Model 1 but with log household income; Model 3: Model 1 + log income; Model 4: Model 3 + log relative income; Model 5: Model 4 + age, age squared, age cubed, sex, employment status, marital status, bad health and gender; Model 6=Model 5 minus log household income; Model 7: Model 5 + low income status. Models 1-7 include country fixed effects with robust estimation. Significant parameters at 5% level or higher are in bold.

The effect sizes for GDP per capita and household income are largely similar to the ones found by SW on the WVS data although the effect of GDP per capita is somewhat lower. The

reason might be that the EVS covers on average wealthier countries. Models 3 to 7 provide some very interesting results. Model 3 shows that the effects of cross-country differences in GDP per capita are partly taken over by household income, which effects are seemingly also quite strong. In Model 4 the positive effect of GDP per capita on SWB turns into an insignificant effect once relative household income at individual level is added. The effect of GDP per capita is taken over by absolute and relative household income showing that within country differences in absolute and relative income are conducive to happiness. In Models 5 and 7 the effect of GDP per capita and household income becomes stronger when the GINI inequality coefficient is added, which exerts a negative effect on happiness, showing that people in a more wealthy society are happier when the incomes are more equally distributed. If we leave out absolute household income in Model 6, the effect is taken over by the effect of relative income and GDP per capita, showing that relative income then picks up the effect of the within-country absolute income differences. The evidence from Models 5 and 6 suggests that the variation in relative income is as important to happiness as the variation in absolute income is, contradicting the results of SW, who found a small effect of relative income only. The evidence therefore confirms the findings of Easterlin (1973). The negative effects of the GINI coefficient in Models 5 to 7 highlight the relevance of relative income differences for happiness. Further inspection of the positive impact of relative income in Model 4 to 7 on happiness stems especially from the positive effect of a higher income compared to the average. People with incomes below the average in society incur a happiness loss confirming the results of other studies (Ferrer-i-Carbonell, 2005; Ball & Chernova, 2007). Lastly, in Model 7, we add a third relative income measure, i.e.low income status, which exerts a strong negative effect on SWB. This reaffirms the impact of income status differences on happiness (see Model 7). The findings supports the evidence of SW on the relevance of absolute income differences but also the evidence of Wilkinson and Pickett on the large role of income inequality and the within country income differences for SWB. They clearly support the relative income thesis as proposed by Easterlin (1993) and confirmed by Layard (2005).

Summarizing this, the evidence highlights the relevance of relative income for moment-to-moment happiness. Subjective well-being is strongly affected by people's relative income position and their income status in society, and possibly even more than by their absolute standard of living. It confirms the importance of the social dimension of SWB since it is not just the level of income that matters for SWB but how it relates to the incomes of their peers, the people with which one compares.

8. Results multi-level analysis

8.1 Do social values and modernization values matter?

In this last part of the analyses we examine the effect of social values and the role of subjective modernization (modernization values) on reported levels of SWB across Europe. We estimate multi-level models including controls for gender, age, health, employment status etc. We run separate models for each of our constructed sub-indices of social and modernization values. Table 2 shows the results.

Each component belonging to the social values and the modernization values index appears strongly significant. The sub-indices are ranked by their effect size showing that altruistic values have the strongest impact on happiness within the social values index and support for post-materialistic values has the strongest impact within the modernization values index. The stronger people feel committed to helping others and the more they hold non-materialist values, the more they gain in happiness, corroborating the findings from the rich happiness and SWB literature. The explanation might be found in the fact that materialistic or economic goals might be conceived as 'zero-sum' or competing goals meaning that 'my gains are your losses'. Social goals on the other hand are non-zero-sum goals, meaning that 'my gains will not limit your gains' (Headey, 2008). For the same reason people committed to extrinsic work values, such as to have success in one's job and to make a career, are less happy. This is not unexpected knowing that success and monetary gain goals reduce happiness. Second highest in rank are family values as part of social values, and leisure values as part of modernization values.

Table 2: Results of estimation of various random intercepts multi-level models on SWB, EVS 2008 (ranked by size of coefficients)

Variables	Coefficient	SE
Social values	***0.38***	***0.01***
Opinion altruism (0-1)	**0.13**	0.00
Index importance family and children	**0.12**	0.01
Index trust in people/institutions	**0.08**	0.00
Index importance friends	**0.05**	0.00
Modernization values	***0.10***	***0.01***
Pure Post-materialist (0-1)	**0.19**	0.03
Mixed Materialist/Post-materialist (0-1)	**0.09**	0.02
Index leisure values	**0.13**	0.01
Index of intrinsic work orientation	**0.08**	0.00
Index of extrinsic work orientations	**-0.05**	0.00
Work values (work ethos, work first)	**0.02**	0.00
Index religious values	**0.04**	0.00
Index traditional gender values	**-0.07**	0.01

Notes: Multi-level models (random intercepts models) are estimated on each variable or index including in each model controls for age, age squared, age cubed, gender, marital status, employment status, unemployment rate, bad health and GDP growth. Significant parameters at 5% level or higher are in bold.

People gain in happiness when they consider it important to have good relationships with their peers, especially their family and children, and to have enough leisure time for meeting people in their networks and doing enjoyable things in life. The effect of work values is positive but rather small. The negative effects of extrinsic work values are compensated by the positive effects of intrinsic work aspects. Workers gain happiness from the perceived added-value of work associated with performing useful activities for society, having an interesting and challenging job, learning new skills and meeting nice colleagues at work.

We tested whether the impact of values remains once we estimate a model leaving out the income variables (Model 8) and a model with the income variables included (Model 9). Results are given in Table 3. Inclusion of the individual income variables in the model does not affect the effect size of social values which remained exactly the same (0.38). The effect size of modern values is reduced from 0.06 in Model 8 to 0.02 in Model 9. The effect of modern values on SWB seems therefore suppressed by the level and distribution of a country's economic welfare. Notice the large explained country variance of 46% in the values model 8 and almost 70% in the income-values model 9, whereas both models explain just 13% of the variance at individual level.

Table 3: Estimation results of random intercepts multi-level models on SWB including social and modernization values and various income variables, EVS 2008

	Model 8		Model 9	
Variables	**Coefficient**	**SE**	**Coefficient**	**SE**
log GDP/capita			**0.36**	(0.12)
Log household income			**0.10**	(0.04)
Log relative HH income			**0.18**	(0.04)
GINI coefficient			**-0.02**	(-0.01)
Low income status			**-0.12**	(-0.03)
Index social values	**0.38**	(0.01)	**0.38**	(0.01)
Index modernization values	**0.06**	(0.01)	**0.02**	(0.01)
N	65.947		51,744	
Var(τ)	**0.274**	(0.05)	**0.158**	(0.03)
Var(μ_0)	**4.269**	(0.02)	**4.273**	(0.03)
R^2 (individual)	13.2%		13.1%	
R^2 (country)	45.8%		68.7%	

Notes: Controls are added for unemployment rate, age, age squared, age cubed, employment status, marital status, bad health and gender. Significant parameters at 5% level or higher are in bold.

8.2 Is the effect of values on SWB mediated by objective modernization?

We now turn to the question to what extent the relationship between subjective modernization or modernization values and SWB is mediated by objective modernization at micro and macro-level. For this end, we estimate multi-level models with inclusion of all the variables of the empirical model explained in section 4, but we now leave out respectively objective modernization at micro and macro–level. In this way even though the nature of the

data does not permit making causal inferences, we can obtain some more insight into the way subjective and objective modernization factors are associated. The results are shown in Table 4.

We estimated five models, three fixed-effects models in which only the intercept vary across countries (model 10-12), and two mixed-effects models (model 13-14), in which also the slope or gradient is assumed to vary across countries. In the mixed-effects models we assume that the intercept varies with the level of objective modernization in society as indicated by the human development (HDI) and inequality (GINI) indices. We further assume that the slopes vary with the level of support to social and modernization values, respectively. Model 10 represents the full model whereas in model 11 and model 12 the objective modernization variables at micro and macro-level are removed. Models 13 and 14 represent the random slope models.

Models 11 to 14 are similar to Model 10 except for the cross-level interaction terms between subjective and objective modernization (HDI, GINI) and the random effects for the social values (Model 13) and the modernization values (Model 14). Model 10 explains 15% of the variance at individual level and 71% of the country variance, whereas Models 13 and 14 explain 15% of the individual variance but less of the country variance (55%).

Model 10 confirms the earlier findings. Inclusion of the objective micro-level modernization variables such as religious denomination, church attendance, education level, marital status and the loss of a child shows that except for the number of children all these variables add significantly to the explanation of SWB. Most of the effects are not surprising and confirm earlier findings derived from the happiness literature such as the positive effect of a higher education level, the strong negative effect of divorce and widowhood or the loss of a child and even the positive effect of social participation on SWB. Notice the effect of religion: belonging to the Roman Catholic or Protestant religion is still conducive to a high level of SWB. That translates also in the strongly significant but smaller effect of church attendance on SWB. These results support the 'persistence of traditional values' thesis explained in the theoretical part.

Table 4 also confirms the strong impact of the objective modernization variables at macro-level on SWB. In particular, a high score on the human development index seems conducive to attaining a high level of SWB. Differences in the level of SWB across countries (intercept differences) are therefore to a significant extent explained by differences in the HDI. In addition, it is shown that the more unequal a society is, the lower SWB, which explains part of the SWB intercept differences across countries. Leaving out the objective modernization variables at micro -and macro-level in Model 11 and 12, respectively, it is shown that this hardly affects the size of the effects of the subjective modernization variables. The removal of the micro-level objective modernization variables in Model 11 has a downsizing effect on the impact of modernization values but leaves no imprint whatsoever on the effect of the social values. The removal of the macro-level objective modernization variables in Model 12 has no impact on the effects of social or modernization values, but it reduces the explained country-level variance.

Table 4: Results of estimation of random intercepts and random slope hierarchical linear or multi-level model on subjective well-being, EVS 2008

SWB	Model 10	Model 11	Model12	Model13	Model 14
Subjective Modernization					
Social Values	0.361***	0.388***	0.365***	0.454***	0.410***
Modernization Values	0.074***	0.046***	0.076***	0.129	-0.077
Objective Modernization (micro)					
Education (ref. low education)					
Medium level	0.138***		0.154***	0.141***	0.138***
High level	0.247***		0.256***	0.251***	0.245***
Marital status (*ref. married/cohab.*)					
Divorced/separated	-0.600***		-0.594***	-0.599**	-0.599**
Widowed	-0.557***		-0.529***	-0.553***	-0.553***
Single	-0.477***		-0.459***	-0.477***	-0.477***
Number of children	-0.001		-0.001	-0.002	-0.002
Death of a child event	-0.148***		-0.143***		-0.148***
Religion (ref. no denomination))					
Roman Catholic	0.136***		0.148***	0.138***	0.138***
Protestant	0.165***		0.178***	0.162***	0.162***
Other	-0.001		-0.001	-0.004	-0.004
Church Attendance	0.033***		0.025***	0.033***	0.033***
Social Participation (membership)	0.035***		0.031***	0.035***	0.036***
Objective Modernization (macro)					
HDI	0.519***	0.561***		0.643***	0.582***
GINI	-0.015**	-0.015**		-0.025**	-0.025**
Cross-level interactions					
Social Values*HDI				-0.006	-0.006
Modernization values*HDI				-0.008	0.008
Social Values*GINI				0	0
Modernization Values*GINI				0.002*	0.002*
Constant	4.208***	2.005*	7.301***	2.892*	2.892*
N	58473	64781	59912	58473	58473
Var(τ)	0.145***	0.155***	0.227***	0.225***	0.225***
Var(μ_0)	4.167***	4.280***	4.218***	4.162***	4.162***
Var(μ_1) ModVal					0.006*
Var(μ_2) SocialVal				0.004***	
R^2 (Individual)	15.3%	16.0%	14.2%	15.3%	15.3%
R^2 (Country)	71.4%	69.3%	55.0%	55.4%	55.4%

Notes: * $p<0.10$, ** $p<0.05$, *** $p<0.01$; Controls added are unemployment rate, age, age squared, age cubed, employment status, marital status, bad health, gender, and GDP annual growth rate.

The story is somewhat different for the mixed-effects Models 13 and 14. The random effects of the social values and modernization values indices exert a significant effect on the SWB

gradient[3]. Notice also the stronger effects of objective modernization indicated by HDI and GINI in both models. At the same time the modernization values become insignificant.

Viewing the cross-level interaction effects between the subjective and objective modernization variables, we see that only the interactions of modernization values with GINI are significant and not the other interactions. The effects are however very small. At high levels of inequality the effect of wider support to modern values on SWB is smaller. The effect of subjective and objective modernization on SWB is seemingly suppressed by the level of support to social values in society. Once we correct for slope differences in the support of countries to social values, the effects of social values and objective modernization on SWB become stronger. The same pattern is observed when we include low income status or income inequality as random effects. The level of inequality suppresses the impact of modernization values on happiness. More equal societies holding stronger social and modern values tend to gain more in terms of happiness confirming the results of other studies (Alesinaa et al., 2004).

9. Conclusions

The evidence tells a very clear story about the relationship between income inequality, social values and objective modernization and happiness. In the first part, we replicated the findings of SW (Stevensson & Wolfers, 2008) on the relationship of happiness with absolute and relative income as implied in the Easterlin paradox. We confirmed the SW results that absolute income differences explain a significant part of the differences in happiness across countries. However, we also showed that the within-country variation is as important as the between-country variation in happiness. Happiness is to a considerable extent explained by people's income status and relative income position in the country in which one lives. Money is important for happiness but relative income is as important as money is. We further showed that income inequality explains part of the cross-country differences in SWB. The more unequal the income distribution in society is, the less happy people are even after correcting for a number of correlates of happiness such as age, bad health, unemployment and being divorced or separated. These results confirm the findings of Wilkinson and Pickett (2010) who also viewed the relationship between income inequality and happiness. The findings illustrate once more the large importance of the relative income position for people's happiness, probably because it shapes the social relationships between people.

In the second part we used the information in the EVS data on a wide range of social and modernization values for 2008 to examine the relationship between social and modernization values and happiness within Europe. We created some composite indices and associated these with happiness outcomes across countries. The wider support in society for social values and modern values appear conducive to happiness although the gradient for

---

[3] A model with inclusion of both values indices had a worse fit compared to the models with a single index. Also a model in which we allow the two indices to co-vary performed worse showing very low covariances.

modern values is flatter. Strong effects are found for social values such as altruism and the importance of family and children. People who hold strong social values gain in happiness possibly because they also act social and engage more in social relationships. To be social seems to pay off in terms of happiness. With respect to support for modernization values we found strong evidence for the negative effects of materialistic values on happiness. Workers holding stronger extrinsic work values, e.g. related to pay and working conditions, turn out to be less happy than workers holding stronger intrinsic work values. Hence, workers gain in happiness when they find job aspects such as being interesting, useful for society, and being able to learn new skills, important.

Furthermore, we show that the more people hold post-materialistic and modern work and leisure values, the more they gain in happiness. Leisure values and more egalitarian gender role values pay off in terms of happiness. These pay-offs are robust for inclusion of income variables into the multi-level models we estimated. The inclusion of the absolute and relative income measures has no impact whatsoever on the effect sizes of social values but somewhat lowers the impact of the modernization values. This provides some reassurance for the contended bias caused by reverse causation.

In the last part we examined the relationship between subjective and objective modernization and happiness in more detail. We included objective modernization variables at micro-level (educational level, religion, church attendance, social participation, loss of a child) and macro-level (HDI, GINI) to find out to what extent they mediate the relationship between values and happiness. They exert practically no impact on the effect sizes of subjective modernization on happiness, again confirming that reverse causation bias is not of a particular problem.

For future research, it would be extremely valuable to have longitudinal value data available to investigate the issue of reverse causality in more depth. However, these data are currently unavailable, at least from a cross-country perspective. Such data would also allow examining value changes over time for various birth-cohorts, and whether such shifts contribute to explaining changes in well-being over time. Furthermore, we would have liked to have continuous information on absolute income instead of the income-class information as included in the EVS. This would provide us with a much better instrument to distinguish the effects of absolute and relative income on happiness.

The level of objective modernization at micro- and macro-level appears very important for explaining cross-country differences in SWB, but the effect is even larger once we control for the support in society for social and modernization values. The effects on SWB are suppressed in societies with low support to social values and high levels of income inequality. More equal societies with stronger support for social and 'modern' values and lower inequality turn out to be happier nations. Because inequality and support to social values are embedded in institutions these conclusions provide a rationale for public policy too.

References

Alesinaa, A., Di Tellab, R., & MacCulloch, R. (2004). Inequality and happiness: are Europeans and Americans different? *Journal of Public Economics*, *88*, 2009-2042.

Ball, R., & Chernova, K. (2007). Absolute income, Relative Income, and Happiness. *Social Indicators Research*, *88,* 497-529.

Burroughs, J.E., & Rindfleisch, A. (2002). Materialism and Well-Being: A Conflicting Values Perspective. *Journal of Consumer Research, 29,* 348-370.

Clark, A.E., Frijters, P., & Shields, M.A. (2008). Relative Income, Happiness, and Utility: An Explanation for the Easterlin Paradox and Other Puzzles. *Journal of Economic Literature*, *46*(1), 95-144.

Diener, E. (1984). Subjective Well-Being. *Psychological Bulletin, 95*(3), 542-575.

Diener, E., Suh, E.M., Lucas, R.E., & Smith, H.L. (1999). Subjective Well-Being: Three Decades of Progress. *Psychological Bulletin, 125*(2), 276-302.

Diener, E., & Seligman, M.E.P. (2004). Beyond Money: Toward an Economy of Well-Being. *Psychological Science in the Public Interest, 5*(1), 1-31.

Dunn, E.W., Aknin, L.B., & Norton, M.I. (2008). Spending money on others promotes happiness. *Science, 319*, 1687-1688.

Ester, P., Halman, L., & De Moor, R.A. (1994). *The individualizing society: Value change in Europe and North America*. Tilburg, the Netherlands: Tilburg University Press.

Easterlin, R.A. (2001). Income and Happiness: Towards a Unified Theory. *The Economic Journal, 111* (July), 465-484.

Easterlin, R.A. (2003). Explaining Happiness. *Proceedings of the National Academy of Science of the USA (PNAS),* 100(19), 11176-11183.

Ferrer-i-Carbonell, A. (2005). Income and well-being: an empirical analysis of the comparison income effect, *Journal of Public Economics*, *89*, 997-1019.

Georgellis, N., Tsitsianis, Y., & Ping Yin (2009). Personal Values as Mitigating Factors in the Link Between Income and Life Satisfaction: Evidence from the European Social Survey. *Social Indicators Research*, *91,* 329-344.

Headey, B., Muffels, R., & Wooden, M. (2008). Money Does not Buy Happiness: Or Does It? A Reassessment Based on the Combined Effects of Wealth, Income and Consumption. *Social Indicators Research, 87*(1), 62-85.

Headey, B. (2008). Life goals matter to happiness: a revision of set-point theory. *Social Indicators Research, 86,* 213-231.

Headey, B., Muffels, R., & Wagner, G. (2010). Long-running German panel survey shows that personal and economic choices, not just genes, matter for happiness. *Proceedings of the National Academy of Science of the USA (PNAS)*, pp. 1-5; Supporting Information (SOM, online), pp. 1-7.

Hellwell, J.F. (2006). Well-Being, Social Capital and Public Policy: What's New? *Economic Journal*, *116*(510), C34-C45.

Inglehart, R. (1981). Post-Materialism in an Environment of Insecurity. *The American Political Science Review, 75*(4), 880-900.

Inglehart, R. (1997). The Shift toward Postmaterialist Values, 1970-1994. In: R. Inglehart (Ed.), *Modernization and Postmodernization: Cultural, Economic and Political Change in 43 Societies* (pp. 131-159). Princeton, NJ: Princeton University Press.

Inglehart, R. (1999).Trust, Well-Being and Democracy. In: Warren, M.E. (Ed.), *Democracy and Trust*. Cambridge, UK: Cambridge University Press.

Inglehart, R., & Baker, W.E. (2000). Modernization, Cultural Change and the Persistence of Traditional Values. *American Sociological Review, 65*(1), pp. 19-51.

Inglehart, R., Básañez, M., Díez-Medrano, J., Halman, L., & Luijkx, R. (2004). *Human Beliefs and Values: A cross-cultural sourcebook based on the 1999-2002 values surveys.* Mexico City, Mexico: Siglo XXI.

Inglehart, R., & Welzel, C. (2005). *Modernization, Cultural Change and Democracy: The Human Development Sequence.* New York, NY: Cambridge University Press.

Kahneman, D., Krueger, A.B., Schkade, D., Schwarz, N., & Stone, A.A. (2006). Would you be happier if you were richer? A focusing illusion. *Science*, *312,* 1908.

Kalleberg, A.L. (1977). Work Values and Job Rewards: A Theory of Job Satisfaction. *American Sociological Review*, *42*(1), 124-143.

Layard, R. (2005). *Happiness, Lessons for a New Science.* New York, NY: Penguin Press, pp. 310.

Lykken, D., & Tellegen, A. (1996). Happiness Is a Stochastic Phenomenon. *Psychological Science*, *7*(3), 186-189.

Lyubomirski, S., Sheldon, K.M., Kennon, M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology, 9*(1), 111-131.

Muffels, R., & Headey, B. (2012). Capabilities and Choices: Do They Make Sen'se for Understanding Objective and Subjective Well-Being? Evidence From German and British Panel Data. *Social Indicators Research.* doi: 10.1007/s11205-011-9978-3

Muffels, R., & Kemperman, B. (2011). *Does a Better Job Match Make Women Happier? Work Orientations, Work-Care Choices and Subjective Well-Being in Germany* (*DIW SOEP Papers on Multidisciplinary Panel Data Research).* Retrieved from Deutsches Institut für Wirtschaftsforschung website: http://www.diw.de/sixcms/detail.php?id=diw_01.c.368779.de

Peterson, C., Ruch, W., Beerman, U., Park, N., & Seligman, M.E.P. (2007). Strengths of character, orientations to happiness and life satisfaction. *Journal of Positive Psychology,* 2, 149–156.

Soons, J.P.M., & Kalmijn, M. (2009). Is marriage more than cohabitation? Well-being differences in 30 European countries. *Journal of Marriage and Family, 71*(5), 1141-1157.

Stevensson, B., & Wolfers, J. (2008). *Economic Growth and Subjective Well-Being: Reassessing the Easterlin Paradox* (IZA Discussion Paper 3654 Institute for the Study of Labor). Retrieved from Institute for the Study of Labor website: http://ftp.iza.org/dp3654.pdf

Powdhavee, N. (2008). Putting a Price Tag on Friends, Relatives and Neighbours: Using Surveys of Life Satisfaction to Value Social Relationships. *Journal of Socio-Economics, 37*, 1459-1480.

Veenhoven, R. (1996). Development in Satisfaction-Research. *Social Indicators Research, 37*, 1-46.

Veenhoven, R. (2008). Sociological Theories of Subjective Well-Being. In: Eid, M., & Larsen, R.J. (Eds.), *The Science of Subjective Well-Being* (pp. 44-61). New York, NY: Guildford Press.

Wilkinson, R., & Pickett, K. (2010). *The Spirit Level. Why Equality is Better for Everyone*. London, UK: Penguin Press.

Annex 1. Descriptive information: means, standard deviations and minimum-maximum of all model variables (unweighted)

	Mean	SD	Range Min	Max
Subjective well-being	6.97	2.323	1	10
Social values:				
Importance family values				
Family	3.84	.433	1	4
Children	2.59	.631	1	3
Importance of friends	3.36	.663	1	4
Altruism	4.57	2.50	1	10
Trust				
In people in general	.30	.459	0	1
In institutions	2.37	.571	1	4
Modernization values:				
Importance of religion	2.69	1.042	1	4
Gender roles				
Job for women to be independent	1.92	.776	1	4
Husband and wife contribute to income	1.76	.715	1	4
Men also responsible for home and children	1.62	.660	1	4
Work values				
Intrinsic values	.57	.320	0	1
Work ethos	3.75	1.120	1	5
Work as a duty	2.30	1.066	1	5
Work first before spare time	3.36	1.184	1	5
Leisure				
Importance leisure	1.79	.724	1	4
Leisure time index	3.36	.483	1	4
(Post-)materialism				
Materialist	.30	.456	0	1
Mixed materialist / post-materialist	.56	.496	0	1
Post-materialist	.10	.305	0	1
Macro values:				
HDI	.79	.073	.622	.937
GINI	29.51	4.037	23.4	37.7
Control variables:				
Female	.55	.497	0	1
Age	46.53	17.787	15	108
Annual household income	16609	20737	900	135000
Education				
Low	.29	.456	0	1
Middle	.46	.499	0	1
High	.23	.423	0	1
Church attendance	3.32	2.022	1	7
Experience death of child	.05	.218	0	1