

PERSONAL VALUES AS MITIGATING FACTORS IN THE LINK BETWEEN INCOME AND LIFE SATISFACTION: EVIDENCE FROM THE EUROPEAN SOCIAL SURVEY

Yannis Georgellis, Nicholas Tsitsianis and Ya Ping Yin

Accepted: 6 October 2008 / Published online: 6 November 2008

Soc Indic Res (2009) 91:329–344
DOI 10.1007/s11205-008-9344-2

ABSTRACT

Using data from the first two rounds of the European Social Survey, we examine the link between income, reference income and life satisfaction across Western Europe. We find that whilst there is a strong positive relationship between income and life satisfaction, reference or comparison income exerts a strong negative influence. Interestingly, our results confirm the importance of personal values and beliefs not only as predictors of subjective well-being, but also as mitigating factors in the relationship between income, reference income and life satisfaction. While our findings provide additional empirical support for the relative utility hypothesis, they are also consistent with Rojas' (J Econ Psychol 28:1–14, 2007) Conceptual-Referent-Theory (CRT), which is based on the premise that the salience of income and comparison income depends on one's intrinsic values and personal beliefs.

Keywords: Comparison income, Happiness, Life satisfaction, European Social Survey

INTRODUCTION

Over the past few decades, social scientists have made significant strides in the quest for understanding people's subjective assessment of happiness or life satisfaction and its underlying factors. One of the main findings emerging from this growing body of empirical research is the existence of a weak correlation between income and happiness, a finding which is somewhat at odds with the neoclassical utility theory (see for example, Easterlin 1974, 1995, 2001; Heady 1991)¹. The absence of a strong correlation is often attributed to moderating factors such as personal and demographic characteristics as well as social and economic institutions explaining a large part of the variation in happiness (Frey and Stutzer 2000; Clark and Lelkes 2005). Personal values and beliefs, in particular, have been suggested as among the strongest moderating factors weakening the correlation between income and happiness (Rojas 2005, 2007; Kasser and Ryan 1996).

According to Rojas's (2007) Conceptual-Referent-Theory (CRT), individuals have different things in mind, and different conceptions for happiness, when answering a typical subjective wellbeing question. That is, people's judgements about their happiness are based on different conceptual referents about what a happy life is, moulded by their upbringing, culture, tradition, religion, and environment, as well as education systems. Based on simple questions about what happiness is, Rojas establishes a typology defining the following eight conceptual referents for happiness:

¹ More specifically, Easterlin (1974) finds that income growth in the US does not lead to higher levels of happiness, a finding further supported by subsequent studies based on time series data. In contrast, evidence based on cross-sectional data tends to support the existence of a positive, albeit generally weak, relationship between income and happiness.

“Personal Values as Mitigating Factors in the Link Between Income and Life Satisfaction: Evidence from the European Social Survey”

by

Yannis Georgellis, Nicholas Tsitsianis and Ya Ping Yin
SOCIAL INDICATORS RESEARCH (2009) VOL. 91 PAGES 329-344

Stoicism, Virtue, Enjoyment, Carpe Diem, Satisfaction, Utopian, Tranquillity, and Fulfilment². The importance of income as a determinant of happiness is therefore contingent upon which of these eight conceptual referents the individual uses.

A weak correlation between income and happiness could also be attributed to reference income being an important determinant of subjective well-being. When judging their own state of happiness people are likely to make reference to other people's states of happiness or material wellbeing, as such comparison or reference income could be just as, or even more, important than income per se. Clark and Oswald (1996), for example, find that utility depends on income relative to some reference or comparison income, which is based on the predicted income of 'people like you'. Easterlin (1995), Ferrer-i-Carbonell (2005), and McBride (2001), among others, are examples of empirical studies supporting the notion that the income of a reference group is as important as own income for individuals' happiness³.

In this paper, we provide additional empirical evidence of the link between income and life satisfaction using a large survey of households across Europe—the European Social Survey (ESS). We hypothesise that reference income is as important as absolute income in explaining the variation in life satisfaction across Europe. Furthermore, we argue that the influence of reference income on life satisfaction is moderated by personal values and beliefs that vary substantially across Western European countries. In our empirical analysis, we capture values and beliefs by a number of questions in the European Social Survey regarding individuals' attitudes towards religion, traditions, and helping others, as well as questions on the importance of material well being, being creative, and being able and being admired by others⁴.

Our results confirm that personal values and beliefs are indeed very significant influences on people's assessment of their subjective well-being. More specifically, we find that the belief in the importance of generating new ideas and being creative, valuing respect from others, and following traditions all exert a significant positive effect on life satisfaction. Similarly, religion emerges as a positive influence on individuals' subjective wellbeing, in that church goers and those who pray at least once a week report higher levels of satisfaction with life. In contrast, a tendency to pursue material wellbeing in itself adversely affects life satisfaction, a finding which is consistent with previous findings in sociological research (see, e.g. Ahuvia and Wong 1995). Our results also provide some evidence that the strength of the link between income, reference income and life satisfaction is mitigated by values and beliefs, and especially religion, which are jointly significant in explaining satisfaction with life.

² According to Rojas, each of these conceptual referents is described by the simple phrase of what happiness is as follows: Stoicism, “Happiness is accepting things as they are”; Virtue, “Happiness is a sense of acting properly in our relations with others and with ourselves”; Enjoyment, “Happiness is to enjoy what one has attained in life”; Carpe diem, “Happiness is to seize every moment in life”; Satisfaction, “Happiness is being satisfied with what I have and what I am”; Utopian, “Happiness is an unreachable ideal we can only try to approach”; Tranquillity, “Happiness is in living a tranquil life, not looking beyond what is attainable”; and Fulfilment, “Happiness is in fully exercising our capabilities”.

³ For a comprehensive literature review of the income-happiness debate see Clark et al. (2008a).

⁴ It is possible that values and beliefs are endogenous in life satisfaction regressions and therefore the results, based on cross sectional data, need to be interpreted with some caution. However, we take comfort from the fact that some of our key findings are robust to a number of alternative specifications.

by

Yannis Georgellis, Nicholas Tsitsianis and Ya Ping Yin
SOCIAL INDICATORS RESEARCH (2009) VOL. 91 PAGES 329-344

1. DATA AND METHODOLOGY

Our empirical analysis is based on data from the first two rounds (2002 and 2004) of the European Social Survey (ESS), a rich source of information on a wide range of social, economic and demographic characteristics. This general survey covers a representative sample of approximately 2000 individuals per round per country⁵. By excluding countries with missing information on the main variables of interest, we restrict our analysis to the following fourteen European countries: Austria, Belgium, Switzerland, Germany, Ireland, Netherlands, Luxemburg, Denmark, Sweden, Finland, Norway, Spain, Greece, and Portugal. Excluding observations with missing or inconsistent values and focusing on individuals between 18 and 75 years of age results in an effective sample of 43,091 observations, more or less equally split between 2002 and 2004.

The two main variables in our analysis are income and life satisfaction. The ESS contains information on self-reported satisfaction with life as a categorical variable on a scale of 0–10. The exact question on life satisfaction is formulated as follows: “All things considered, how satisfied are you with your life as a whole nowadays? Please answer using this card, where 0 means extremely dissatisfied and 10 means extremely satisfied.” Figure 1 shows the distribution of life satisfaction across European areas. Across the whole of Europe, more than 55% of respondents report high levels of life satisfaction (between 8 and 10 on the life satisfaction scale) with only a small proportion reporting satisfaction scores below the midpoint of five. However, some differences are evident across European areas. For example, a larger proportion of individuals rate themselves as very satisfied, with scores eight or higher, in Scandinavia and in Western Europe than in Southern Europe, where the distribution of life satisfaction scores is more dispersed. It is also notable that the share of individuals who sort themselves into the highest satisfaction category exhibits a gap of 10% points between Northern and Southern Europe, suggestive of a North–South divide in satisfaction with life.

Income in the ESS data is reported in banded categories. However, throughout our empirical analysis we treat income as a continuous variable by taking the midpoint of each banded category. To measure reference income, we follow Ferrer-i-Carbonell (2005) and define the reference group as containing all individuals with a similar education level, in the same age bracket, and living in the same country. Education is divided into five different categories according to the highest educational attainment: up to primary school, lower secondary, upper secondary, post secondary but not tertiary, and tertiary and beyond. The age brackets are: younger than 25, 25–34, 35–44, 45–65, and 66 or older⁶.

The ESS contains information on personal values and beliefs, including whether it is important for respondents to: think of new ideas and be creative; to be rich and own expensive things; to show abilities and be admired; to seek respect from others; to help people; and to follow traditions and customs. These categorical variables are self-reported on a scale of 1–6, with 1 indicating the least tendency in such values and 6 the greatest. Information on whether individuals are regular prayers and church goers is also available. Such values and beliefs are likely to reflect how much emphasis individuals place on intrinsic rather than extrinsic values, a distinction which, according to Kasser and Ryan (1996), needs to be highlighted when examining the determinants of happiness. As Kasser and Ryan argue, persons who focus strongly on extrinsic goals tend to be relatively less happy, perhaps due to their higher aspiration levels⁷. In this sense, income as well

⁵ For a description and a discussion of the sampling design and implementation of the ESS survey see Lynn et al. (2004).

⁶ We also used McBride’s (2001) definition that includes all individuals who are in the age range of 5 years younger to 5 years older than the respondent. As the results were largely unchanged, we only report the empirical findings based on Ferrer-i-Carbonell’s proxy for reference income.

⁷ This point is also made by Stutzer (2004).

“Personal Values as Mitigating Factors in the Link Between Income and Life Satisfaction: Evidence from the European Social Survey”

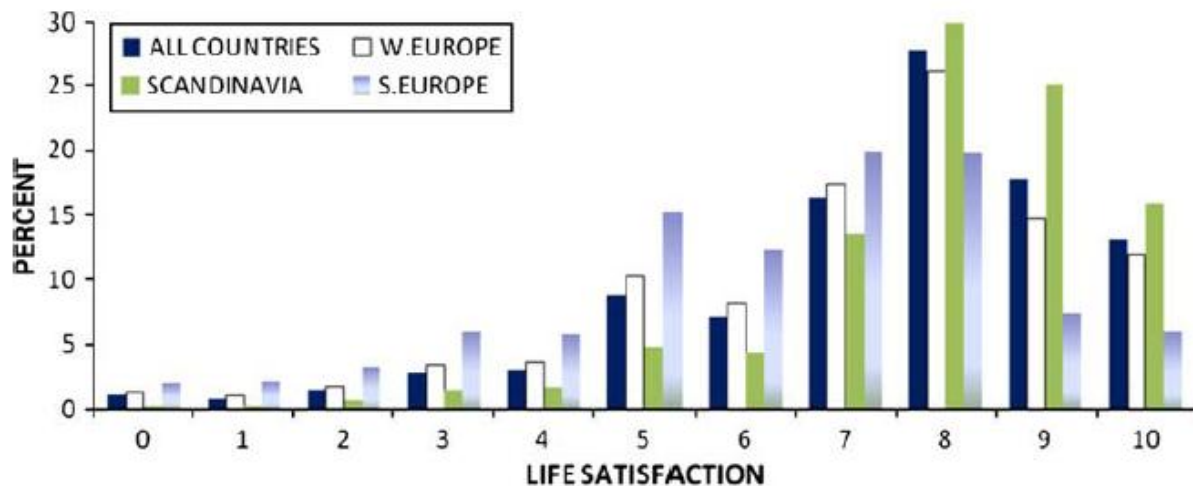
by

Yannis Georgellis, Nicholas Tsitsianis and Ya Ping Yin

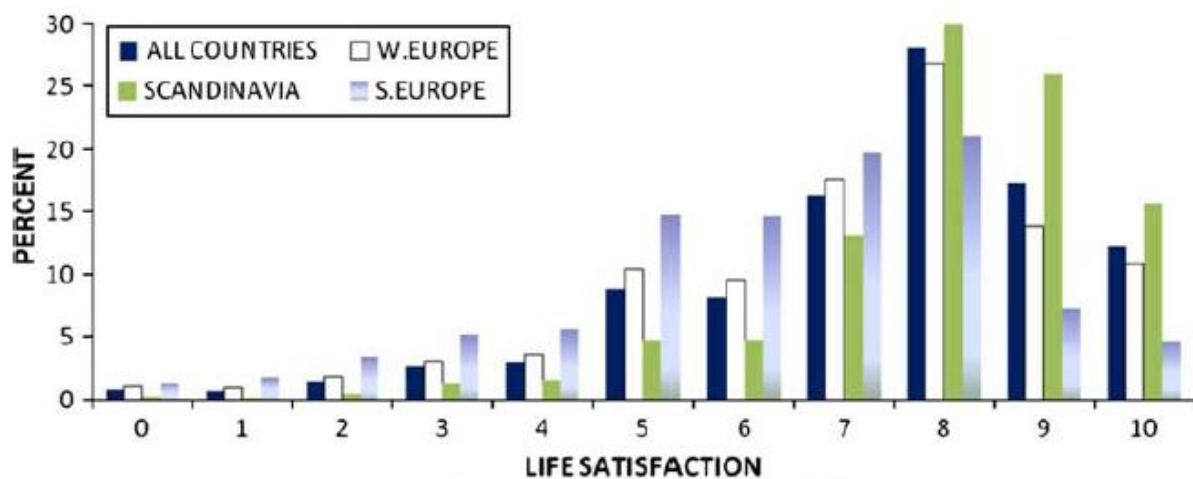
SOCIAL INDICATORS RESEARCH (2009) VOL. 91 PAGES 329-344

as reference income is likely to play a pivotal role for a materialistic individual's happiness whilst this might not be the case for more altruistic or religious individuals.

FIGURE 1. THE DISTRIBUTION OF LIFE SATISFACTION ACROSS EUROPE



(a) European Social Survey 2002



(b) European Social Survey 2004

Table 1 shows a positive and significant correlation between income and life satisfaction in all countries under consideration. However, there is a substantial variation in the strength of this correlation, with the link between absolute income and life satisfaction in 2002 being the strongest in Spain and Germany, but substantially weaker in Belgium and Norway. This variation in the size of the correlation coefficients is less prominent in 2004. Reference income is negatively correlated with life satisfaction consistently throughout Europe, even in those countries with a weaker link between absolute income and life satisfaction.

“Personal Values as Mitigating Factors in the Link Between Income and Life Satisfaction: Evidence from the European Social Survey”

by
Yannis Georgellis, Nicholas Tsitsianis and Ya Ping Yin
SOCIAL INDICATORS RESEARCH (2009) VOL. 91 PAGES 329-344

Table 1 Correlation coefficients between income and life satisfaction

Countries	2002		2004	
	Income	Reference income	Income	Reference income
Austria	0.101***	-0.044**	0.144***	-0.075**
Belgium	0.094***	-0.047**	0.130***	-0.030*
Denmark	0.128***	-0.062**	0.102***	-0.052*
Finland	0.113***	-0.082***	0.157***	-0.036*
Germany	0.199***	-0.076***	0.225***	-0.053***
Greece	0.158***	-0.081***	0.151***	-0.108***
Ireland	0.111***	-0.062***	0.104***	-0.068***
Luxembourg	0.139***	-0.061**	0.165***	-0.127***
Netherlands	0.138***	-0.043**	0.140***	-0.079***
Norway	0.086***	-0.080***	0.158***	-0.022**
Portugal	0.121***	-0.049*	0.170***	-0.095**
Spain	0.239***	-0.133**	0.089***	-0.104**
Sweden	0.114***	-0.069***	0.155***	-0.084**
Switzerland	0.109***	-0.028*	0.118***	-0.090**
All	0.261***	-0.124***	0.274***	-0.138***

* Significant at the 10% level; ** significant at the 5% level; *** significant at the 1% level

As the bivariate correlation coefficients in Table 2 suggest, individuals who believe that being creative and thinking of new ideas is important tend to report higher life satisfaction scores across Europe. In contrast, being materialistic has a negative effect on life satisfaction in most countries, except in Southern Europe. The differential effect of materialistic beliefs between Northern and Southern Europe may simply reflect differences in per capita income and diminishing marginal utility of income. A similar pattern emerges when focusing on the importance of showing abilities and being admired by others. Believing that it is important to get respect from others has a positive effect on life satisfaction whilst the correlation coefficients do not exhibit any clear pattern when it comes to the importance of helping others and following traditions. There is a positive correlation between religion, as captured by being a churchgoer and a regular prayer, and life satisfaction. This correlation is stronger in Southern Europe than in Scandinavia or Western Europe. The definitions and sample means of all variables used in our empirical analysis are shown in Appendix Table A1.

Due to the ordinal nature of the life satisfaction variable, we estimate ordered probit models. The underlying assumption is that individuals' subjective evaluation of life satisfaction is determined by a transformation of their personal characteristics and values into a cardinal latent index, which is used as a proxy for the unobserved level of utility:

$$S_i^* = \beta' z_i + e_i, \quad (1)$$

“Personal Values as Mitigating Factors in the Link Between Income and Life Satisfaction: Evidence from the European Social Survey”

by

Yannis Georgellis, Nicholas Tsitsianis and Ya Ping Yin
SOCIAL INDICATORS RESEARCH (2009) VOL. 91 PAGES 329-344

where Z_i is a vector of explanatory variables, b is a vector of parameters to be estimated and e_i is a random error term, normally distributed. The cardinal index of utility is then mapped into the observed subjective ordinal measures of life satisfaction S_i :

$$S_i = \begin{cases} 0 & \text{if } -\infty \leq S_i^* \leq \mu_1 \\ 1 & \text{if } \mu_1 < S_i^* \leq \mu_2 \\ 2 & \text{if } \mu_2 < S_i^* \leq \mu_3 \\ \vdots & \\ 10 & \text{if } \mu_{10} < S_i^* \leq \infty \end{cases}, \quad (1a)$$

where μ_i represents the thresholds to be estimated (along with the parameter vector β). The probabilities of S_i taking different scale values are determined as: $\text{Prob}(S_i = 0|z_i) = \Phi(\mu_1 - \beta'z_i)$, $\text{Prob}(S_i = 1|z_i) = \Phi(\mu_2 - \beta'z_i) - \Phi(\mu_1 - \beta'z_i)$, ..., $\text{Prob}(S_i = J|z_i) = 1 - \Phi(\mu_{J-1} - \beta'z_i)$, where $\Phi(\cdot)$ is the cumulative density function. It is worth noting that the parameters β do not measure marginal effects on life satisfaction. A positive value for β indicates that the entire distribution of S_i^* is shifted to the right as the value of the associated variable increases. Because reference income is aggregated at a higher level than the dependent variable, standard errors are clustered in all our regression analyses

Table 2 Correlation coefficients between personal values and life satisfaction

Life satisfaction	All countries		Western Europe		Scandinavia		Southern Europe	
	2002	2004	2002	2004	2002	2004	2002	2004
Creative	0.182	0.190	0.170	0.081	0.121	0.129	0.247	0.292
Materialistic	-0.159	-0.167	-0.131	-0.142	-0.143	-0.127	0.241	0.169
Ability and admired	-0.154	-0.136	-0.141	-0.153	-0.146	-0.125	0.114	0.168
Respect from others	0.150	0.176	0.162	0.173	0.170	0.076	0.211	0.242
Help people	-0.151	-0.148	0.154	0.164	-0.117	-0.113	0.107	-0.126
Traditions	-0.113	-0.111	0.186	0.137	0.130	0.155	0.097	-0.108
Churchgoer	0.095	0.071	0.095	0.113	0.067	0.073	0.148	0.154
Prayer	0.079	0.086	0.062	0.090	0.040	0.050	0.124	0.137

All correlation coefficients are significant at the 1% level

by

Yannis Georgellis, Nicholas Tsitsianis and Ya Ping Yin
SOCIAL INDICATORS RESEARCH (2009) VOL. 91 PAGES 329-344

2. RESULTS

Column (1) of Table 3 reports the results of life satisfaction regressions controlling for income and other standard demographic and labour market characteristics. The estimated coefficients are generally in line with those in previous empirical studies report lower satisfaction scores than women, while there is a U-shaped relationship between life satisfaction and age, reflecting life-cycle aspects of individuals' social, family and economic circumstances. Such a U-shaped relationship is also reported by Blanchflower and Oswald (2004) for Britain and the USA. Being married is associated with higher life satisfaction.

The opposite is true for separation or divorce, with the negative effect of separation being statistically significant and stronger compared to the effect of divorce⁸. Whilst there is no consistent evidence on the effect of children on life satisfaction in the literature, our results reveal a negative effect. In contrast, Frijters et al. (2004) find that children had a positive effect on the life satisfaction of East Germans. Focusing on satisfaction with health, a domain of life satisfaction, Frijters et al. (2005) show that children have a negative effect on satisfaction with health for West Germans (males and females) but not for East Germans. However, they find that having a baby in the last 12 months had a positive effect on health satisfaction for West Germans⁹. Not surprisingly, good health has a significant positive effect on life satisfaction (see e.g. Diener et al. 1999; Ferrer-i-Carbonell and Frijters 2004; Gerlach and Stephan 1996).

While post-secondary education tends to exert a positive effect on life satisfaction, there is some weak evidence that tertiary education exerts a negative effect. This result is similar to the findings in earlier studies (see Fernandez and Kulik 1981). A possible explanation could be that education raises aspirations that are not easily fulfilled. While previous studies tend to provide evidence of a link between education and happiness (positive effect), evidence also suggests that education influences wealth, income, and health. Therefore, it is possible that the effect of education on happiness is mostly through its effect on income and health (Hartog and Oosterbeek 1998).

Compared to being out of work, working either as a salaried employee or self-employed has a positive influence on life satisfaction. The negative well-being effect of joblessness, and in particular unemployment, is well established in the literature. The lack of structure of the working day, lack of interaction with co-workers and lower self-esteem are often mentioned as some of the main reasons why the jobless are more likely to experience lower subjective well-being. Interestingly, our results confirm the negative well-being effect of past unemployment, with no evidence suggesting that the negative well-being effect is stronger for more recently experienced unemployment (in the last 3 months) as opposed to unemployment in the more distant past (in the last 5 years). This result lends further credence to Clark et al. (2001) “scarring hypothesis”, in that the adverse psychological impact of past unemployment experience remains salient even after returning to full-time employment¹⁰.

⁸ It is worth noting, however, that the effect of marital status may reflect only a transitory state of wellbeing. As Lucas et al. (2003) argue, although on average people tend to react positively to a life event such as marriage and negatively to divorce, events such as marriage or divorce do not have the same implications for all individuals.

⁹ Clark et al. (2008b) provide evidence that confirms the positive (negative) effect of marriage (divorce) on life satisfaction. Such an effect tends to be strongest during the time of the event and it is mostly transitory, in that individuals return quickly to pre-event satisfaction levels. Clark et al. (2008b) also confirm the transitory nature of the potentially positive effect of the birth of a child.

¹⁰ Lucas et al. (2004) and Clark et al. (2008b) provide further empirical support for the view that adaptation to unemployment is slow and incomplete.

“Personal Values as Mitigating Factors in the Link Between Income and Life Satisfaction: Evidence from the European Social Survey”

by

Yannis Georgellis, Nicholas Tsitsianis and Ya Ping Yin
SOCIAL INDICATORS RESEARCH (2009) VOL. 91 PAGES 329-344

Table 3 Life satisfaction regressions

	(1)		(2)		(3)		(4)	
	Coeff.	t-ratio	Coeff.	t-ratio	Coeff.	t-ratio	Coeff.	t-ratio
Male	-0.114	10.97	-0.114	10.99	-0.066	5.90	-0.066	5.87
Age	-0.022	12.08	-0.020	9.87	-0.024	10.84	-0.024	11.09
Age ²	0.029	15.52	0.026	12.13	0.028	12.24	0.029	12.56
Married	0.253	15.77	0.252	15.75	0.243	14.35	0.241	14.21
Separated	-0.258	6.11	-0.256	6.06	-0.249	5.54	-0.248	5.51
Divorced	-0.037	1.59	-0.034	1.49	-0.035	1.45	-0.034	1.41
Widowed	-0.036	1.42	-0.035	1.39	-0.042	1.56	-0.039	1.47
Children	-0.039	3.20	-0.039	3.16	-0.046	3.53	-0.045	3.44
Good health	0.370	57.53	0.370	57.45	0.365	53.69	0.364	53.39
Labour force status								
Employee	0.061	3.00	0.060	2.93	0.056	2.59	0.052	2.38
Self-employed	0.051	2.11	0.049	2.05	0.034	1.34	0.032	1.25
Unemployment								
In the last 3 months	-0.170	11.32	-0.170	11.30	-0.171	10.83	-0.170	10.81
In the last 5 years	-0.204	9.96	-0.205	9.96	-0.229	10.65	-0.227	10.58
Education								
Low secondary	0.040	2.27	0.040	2.28	0.032	1.69	0.025	1.30
High secondary	0.021	1.26	0.021	1.24	0.020	1.10	0.014	0.75
Post secondary	0.057	2.32	0.058	2.34	0.057	2.18	0.051	1.95
Tertiary	-0.025	1.34	-0.025	1.35	-0.024	1.19	-0.029	1.44
Income	0.097	14.73	0.018	14.96	0.020	15.67	-0.020	15.88
Reference income			-0.015	2.57	-0.011	1.72	-0.032	2.08
Personal values								
Creative					0.066	13.73	0.114	9.00
Materialistic					-0.032	6.74	-0.050	2.04
Ability and admired					-0.021	4.57	-0.060	2.05
Respect from others					0.062	10.71	0.064	4.04
Help people					-0.026	5.76	-0.059	4.97
Traditions					0.035	7.90	0.029	2.26
Churchgoer					0.094	6.18	0.037	2.01
Prayer					0.027	1.95	0.101	2.81
Interaction terms: (personal values) × (reference income)								
Creative							-0.081	4.18
Materialistic							0.056	2.92
Ability and admired							0.035	1.92
Respect from others							-0.031	1.93
Help people							0.057	3.10
Traditions							-0.093	1.87
Churchgoer							-0.020	1.77
Prayer							-0.012	2.24
Year dummy 2004	-0.023	2.30	-0.015	2.39	-0.014	2.25	-0.014	2.22
Country dummies	Yes		Yes		Yes		Yes	

“Personal Values as Mitigating Factors in the Link Between Income and Life Satisfaction: Evidence from the European Social Survey”

by
Yannis Georgellis, Nicholas Tsitsianis and Ya Ping Yin
SOCIAL INDICATORS RESEARCH (2009) VOL. 91 PAGES 329-344

Table 3 continued

	(1)		(2)		(3)		(4)	
	Coeff.	t-ratio	Coeff.	t-ratio	Coeff.	t-ratio	Coeff.	t-ratio
Number of observations	43,091		43,091		43,091		43,091	

Notes: Reference categories: never married; out of work; primary education; income less than 70 Euros

As the estimated income coefficient in column (1) shows, higher income is associated with greater life satisfaction, a finding that is broadly consistent with the findings of previous cross-sectional studies. However, the strength of the relationship between income and life satisfaction is mitigated by comparison income effects, as suggested by the negative and statistically significant coefficient of reference income in column (2). In column (3), we add controls for personal values and beliefs, which are jointly significant determinants of life satisfaction. Being materialistic exerts a negative effect on life satisfaction.

Materialistic individuals, valuing extrinsic more than intrinsic rewards, are generally less satisfied with their lives than those who believe that it is important to obtain respect from others or to be creative. Those who value traditions highly and those who are religious also tend to report higher life satisfaction scores. As Clark and Lelkes (2005) argue, religion can offer insurance against life’s misfortunes such as unemployment, death in the family and marriage breakdown. We find that religious activities such as frequent attendance at religious services and frequent prayer are positively associated with life satisfaction. Our results are consistent with Ellison (1991) and Clark and Lelkes (2005). On the other hand, as Gruber (2005) states, religious attendance often results in positive economic and social outcomes after controlling for personal, household, and labour market characteristics.

Further, religion promotes a non-materialistic approach towards life and avoidance of comparison. Churches could also provide ‘social capital’ (a potential buffering effect) vis. the set of norms, networks trusts, institutions, and organizations that shape the interactions of individuals within society (see, for example, Diener et al. 1999). In an earlier study, Cohen and Willis (1985) conclude that social support has a positive effect on life satisfaction and mitigates the impact of adverse life and economic events or changing circumstances. In column (4), we add interaction terms between personal values and reference income. Whilst personal values on their own reflect the direct effects on life satisfaction, these interaction terms further capture the indirect effects through their impact on social comparisons.

The negative and significant interaction terms for churchgoers and regular prayers imply a greater negative impact of reference income on life satisfaction for these groups, suggestive of a possible aversion to increased income inequality. The same effect also emerges for those who value creativity, traditions, and respect from others. The opposite is true for those who prioritise the acquisition of wealth (materialists)¹¹. In Table 4 we estimate life satisfaction regressions separately for different groups of individuals split up according to their personal values and beliefs. As the estimated coefficients suggest, income (relative income) attracts a positive (negative) and

¹¹ We also estimated separate regressions for men and women. The results show that the positive effect of income and the negative effect of relative income on life satisfaction tend to be stronger for men. These results are available upon request.

“Personal Values as Mitigating Factors in the Link Between Income and Life Satisfaction: Evidence from the European Social Survey”

by

Yannis Georgellis, Nicholas Tsitsianis and Ya Ping Yin
SOCIAL INDICATORS RESEARCH (2009) VOL. 91 PAGES 329-344

significant coefficient for all sub-groups. The effect of income on life satisfaction seems to be stronger for materialistic individuals and those who do not say that helping others is important.

Table 4 Life satisfaction regressions by personal values

	Income		Reference Income		Observations
	Coeff.	t-ratio	Coeff.	t-ratio	
Creative					
Yes ^a	0.097	12.92	-0.041	2.65	38,268
No ^b	0.091	6.65	-0.037	4.84	9,573
Materialistic					
Yes ^a	0.104	2.34	-0.028	2.10	14,428
No ^b	0.097	2.46	-0.033	2.23	33,531
Ability and admired					
Yes ^a	0.095	2.51	-0.043	1.93	27,247
No ^b	0.089	3.66	-0.047	1.97	20,603
Respect from others					
Yes ^a	0.118	3.35	-0.032	2.81	28,328
No ^b	0.108	3.91	-0.029	2.33	19,417
Help people					
Yes ^a	0.117	3.22	-0.049	2.72	42,435
No ^b	0.121	5.97	-0.035	2.50	5,359
Traditions					
Yes ^a	0.106	2.11	-0.059	1.99	35,523
No ^b	0.102	2.68	-0.058	2.03	12,454
Churchgoer					
Yes	0.073	5.25	-0.057	3.41	37,153
No	0.069	5.10	-0.023	2.79	14,529
Prayer					
Yes	0.081	14.63	-0.043	3.55	31,684
No	0.073	6.37	-0.024	3.53	19,998

Notes: Other controls as in Table 3

^a Yes includes responses ‘somewhat like me’ (4), ‘like me’ (5) and ‘very much like me’ (6)

^b No includes responses ‘not like me at all’ (1), ‘not like me’ (2) and ‘a little like me’ (3)

While the results show no strong patterns or variation in the effect of the income and relative income coefficients across various sub-groups, there seems to be a quantitatively significant impact of reference income on life satisfaction for churchgoers compared to those who do not attend church Services. The same sharp distinction is found in the case of prayers versus non-prayers.

In Table 5, we repeat the analysis separately for Western Europe, Scandinavia and Southern Europe. Even when the sample is broken down into different geographical areas the negative influence of reference income on life satisfaction is still evident. However, there are regional variations in the negative social comparison effect, with the effect of reference income on life satisfaction being stronger in Southern Europe than in Scandinavia or Western Europe. Including personal values and beliefs as additional controls tends to mitigate the strength of the relative income effect in all areas. The results also reveal some differences in the effects of personal values on life satisfaction across regions of Europe. In Western and Southern Europe, religion as captured by the variables ‘Churchgoer’ and ‘Prayer’, exert a positive effect on life satisfaction, whereas this is not the case in Scandinavian countries. Similarly, being creative exerts a positive effect in both Western and Southern European countries but not in Scandinavia¹². Although materialism is associated with lower life satisfaction scores in Western Europe and Scandinavia, it is associated with higher life satisfaction in Southern Europe.

¹² The lack of a significant effect in Scandinavia could be partially attributed to the greater degree of homogeneity in personal values and beliefs in this population. Moreover, simple t-tests for the equality of means and variances show that many of these values and beliefs do not differ across Scandinavian countries in a statistically significant way.

“Personal Values as Mitigating Factors in the Link Between Income and Life Satisfaction: Evidence from the European Social Survey”

by

Yannis Georgellis, Nicholas Tsitsianis and Ya Ping Yin
 SOCIAL INDICATORS RESEARCH (2009) VOL. 91 PAGES 329-344

Table 5 Life satisfaction regressions in European regions

	Western Europe—Austria, Belgium, Switzerland, Germany, Ireland, Luxembourg, Netherlands		Scandinavia—Denmark, Norway, Sweden, Finland		Southern Europe—Spain, Greece, Portugal	
	Coeff.	t-ratio	Coeff.	t-ratio	Coeff.	t-ratio
Income	0.098	11.18	0.105	7.30	0.112	7.00
Reference income	-0.031	2.18	-0.041	2.48	-0.047	1.98
Personal values						
Creative	0.092	4.36	-0.003	1.09	0.142	4.20
Materialistic	-0.004	1.98	-0.062	1.93	0.037	1.89
Ability and admired	0.014	1.95	0.005	2.17	0.018	1.95
Respect from others	0.046	1.11	0.011	2.31	0.138	3.21
Help people	-0.091	4.60	-0.013	1.93	-0.008	1.75
Traditions	0.063	3.09	0.054	2.00	-0.040	1.06
Churchgoer	0.215	3.28	0.152	1.40	0.106	2.11
Prayer	0.020	1.53	0.039	0.45	0.262	2.55
Interaction terms: (personal values) x (reference income)						
Creative	0.005	2.47	0.006	1.46	-0.014	1.87
Materialistic	-0.005	1.34	0.002	0.57	-0.014	1.95
Ability and admired	-0.003	1.79	-0.006	1.39	-0.009	1.97
Respect from others	0.001	1.14	0.007	1.62	-0.015	1.71
Help people	0.010	3.58	-0.001	0.20	0.004	1.61
Traditions	-0.004	1.71	-0.001	0.41	0.014	1.99
Churchgoer	0.014	1.87	-0.002	0.14	-0.017	2.60
Prayer	0.006	1.66	-0.012	1.03	-0.040	2.34
Number of observations	21,814		13,669		7,608	

Note: Other controls as in Table 3

by

Yannis Georgellis, Nicholas Tsitsianis and Ya Ping Yin
SOCIAL INDICATORS RESEARCH (2009) VOL. 91 PAGES 329-344

3. CONCLUSIONS

Recent research into happiness and life satisfaction issues has paid an increasing amount of attention to heterogeneity in individual experiences and diversity in the underlying factors. Such research has been motivated by earlier empirical findings of a lack of a strong correlation between happiness (or life satisfaction) and income. In this paper we offer additional empirical evidence on how the subjective assessment of life satisfaction by individuals across fourteen European countries is related to income, measured in both absolute and relative terms and controlling for personal, demographic and labour market factors, as well as how these income effects are mitigated or strengthened by personal values and beliefs.

Our empirical analysis, based on cross-sectional data, reveals a number of interesting patterns. First, consistent with the findings of previous cross-sectional studies, we find that income does buy happiness, in that a positive and statistically significant relationship between income and self-reported life satisfaction scores is found. Second, relative or comparison income does matter. It is clear that when assessing their own life satisfaction, respondents across Europe also make comparisons with the income levels of other people, and any disparity between their own income and the reference income affects their life satisfaction. Third, personal values and beliefs are highly significant in people’s assessment of life satisfaction.

These findings are supportive of the view that it is important to distinguish between extrinsic and intrinsic orientation when exploring the determinants of happiness and subjective well-being. An extrinsic orientation tends to adversely affect life satisfaction even though one’s life domains are the same as others; however, intrinsic values enhance one’s life satisfaction. Finally, intrinsic personal values and beliefs generally moderate, whereas extrinsic values generally exacerbate, the negative social comparison effects.

Nevertheless, regional variations in such effects do exist. Our findings are broadly consistent with Rojas’ conceptual-referent-theory (Rojas 2005, 2007) and empirical evidence for other countries (e.g. Mexico as reported in Rojas 2007; and US and Germany as reported in Schmuck et al. 2000). The essence of CRT is that each person has a conceptual referent for a happy life, i.e. the conception or notion of happiness, and that a person’s judgement of his/her happiness is contingent on her conceptual referent for happiness. Differences in conceptual referents lead to extrinsic or intrinsic orientations in people’s assessment of life satisfaction—income plays a far more important role in life satisfaction for the extrinsically orientated than for those who are intrinsically orientated.

“Personal Values as Mitigating Factors in the Link Between Income and Life Satisfaction: Evidence from the European Social Survey”

by

Yannis Georgellis, Nicholas Tsitsianis and Ya Ping Yin
SOCIAL INDICATORS RESEARCH (2009) VOL. 91 PAGES 329-344

Appendix

Table A1 Variable definitions and sample means

Variable	Definition	Mean	
		2002	2004
Life satisfaction	All things considered, how satisfied are you with your life as a whole nowadays? Please answer using this card, where 0 means completely unsatisfied and 10 means completely satisfied	7.153	7.037
Male	Dummy variable: 1 = male; 0 = female	0.485	0.472
Age	Age in years	47.142	47.598
Married	Dummy variable: 1 = married; 0 = otherwise	0.561	0.552
Separated	Dummy variable: 1 = separated; 0 = otherwise	0.013	0.015
Divorced	Dummy variable: 1 = divorced; 0 = otherwise	0.072	0.076
Widowed	Dummy variable: 1 = widowed; 0 = otherwise	0.091	0.092
Never married	Dummy variable: 1 = never married; 0 = otherwise	0.260	0.262
Children	Dummy variable: 1 = children in household; 0 = otherwise	0.406	0.395
Health status	Subjective general health (physical and mental), ordinal variable: 1 = very bad; 2 = bad; 3 = fair; 4 = good; 5 = very good	3.822	3.827
Labour force status			
Employee	Dummy variable: 1 = in paid employment; 0 = otherwise	0.786	0.764
Self-employed	Dummy variable: 1 = in self employment; 0 = otherwise	0.130	0.114
Out-of-labour force	Dummy variable: 1 = out-of-labour force; 0 = otherwise	0.083	0.122
Unemployment			
In the last 3 months	Dummy variable: 1 = whether the respondent has any periods of unemployment over the last 3 months; 0 = otherwise	0.245	0.249
In the last 5 years	Dummy variable: 1 = whether the respondent has any periods of unemployment over the last 5 years; 0 = otherwise	0.111	0.124
Education			
Up to primary	Dummy variable: 1 = up to primary; 0 = otherwise	0.082	0.091
Completed primary	Dummy variable: 1 = primary; 0 = otherwise	0.102	0.091
Low secondary	Dummy variable: 1 = low secondary; 0 = otherwise	0.199	0.198
Upper secondary	Dummy variable: 1 = high secondary; 0 = otherwise	0.362	0.364
Post secondary	Dummy variable: 1 = post secondary; 0 = otherwise	0.067	0.052
Tertiary	Dummy variable: 1 = tertiary; 0 = otherwise	0.188	0.204

“Personal Values as Mitigating Factors in the Link Between Income and Life Satisfaction: Evidence from the European Social Survey”

by

Yannis Georgellis, Nicholas Tsitsianis and Ya Ping Yin
SOCIAL INDICATORS RESEARCH (2009) VOL. 91 PAGES 329-344

Table A1 continued

Variable	Definition	Mean	
		2002	2004
Income (weekly household net income, all sources)			
<40 Euros	Dummy variable: 1 = less than 40 Euros; 0 = otherwise	0.024	0.011
Euros 40–70	Dummy variable: 1 = between 40 and 70 Euros; 0 = otherwise	0.063	0.048
Euros 70–120	Dummy variable: 1 = between 70 and 120 Euros; 0 = otherwise	0.087	0.074
Euros 120–230	Dummy variable: 1 = between 120 and 230 Euros; 0 = otherwise	0.131	0.135
Euros 230–350	Dummy variable: 1 = between 230 and 350 Euros; 0 = otherwise	0.131	0.145
Euros 350–460	Dummy variable: 1 = between 350 and 460 Euros; 0 = otherwise	0.117	0.115
Euros 460–580	Dummy variable: 1 = between 460 and 580 Euros; 0 = otherwise	0.110	0.099
Euros 580–690	Dummy variable: 1 = between 580 and 690 Euros; 0 = otherwise	0.096	0.102
Euros 690–1,150	Dummy variable: 1 = between 690 and 1,150 Euros; 0 = otherwise	0.149	0.164
Euros 1,150–1,730	Dummy variable: 1 = between 1,150 and 1,730 Euros; 0 = otherwise	0.061	0.069
Euros 1,730–2,310	Dummy variable: 1 = between 1,730 and 2,310 Euros; 0 = otherwise	0.017	0.019
>2,310 Euros	Dummy variable: 1 = more than 2,310 Euros; 0 = otherwise	0.009	0.013
Reference income	All individuals with a similar education level (as defined above by the educational dummies), inside the same age bracket (18–24, 25–34, 35–44, 45–65, and 65–75 years old), by year and by country	362 (Euros per week)	395 (Euros per week)
Personal values			
<i>Creative</i> : Important to think new ideas and being creative	Ordinal variable, 1 = not like at all, 2 = not like me, 3 = a little like me, 4 = somewhat like me, 5 = like me, 6 = very much like me	4.458	4.458
<i>Materialistic</i> : Important to be rich and have expensive things	Ordinal variable, 1 = not like at all, 2 = not like me, 3 = a little like me, 4 = somewhat like me, 5 = like me, 6 = very much like me	2.857	2.835
<i>Ability and admired</i> : Important to show abilities and being admired	Ordinal variable, 1 = not like at all, 2 = not like me, 3 = a little like me, 4 = somewhat like me, 5 = like me, 6 = very much like me	3.679	3.699
<i>Respect from others</i> : Important to get respect from others	Ordinal variable, 1 = not like at all, 2 = not like me, 3 = a little like me, 4 = somewhat like me, 5 = like me, 6 = very much like me	3.744	3.799

“Personal Values as Mitigating Factors in the Link Between Income and Life Satisfaction: Evidence from the European Social Survey”

by

Yannis Georgellis, Nicholas Tsitsianis and Ya Ping Yin
SOCIAL INDICATORS RESEARCH (2009) VOL. 91 PAGES 329-344

Table A1 continued

Variable	Definition	Mean	
		2002	2004
<i>Help people:</i> Important to help people and care for others	Ordinal variable, 1 = not like at all, 2 = not like me, 3 = a little like me, 4 = somewhat like me, 5 = like me, 6 = very much like me	4.694	4.710
<i>Traditions:</i> Important to follow traditions and customs	Ordinal variable, 1 = not like at all, 2 = not like me, 3 = a little like me, 4 = somewhat like me, 5 = like me, 6 = very much like me	4.286	4.294
<i>Churchgoer</i>	Dummy variable: 1 = attends religious service at least once a month, 0 otherwise	0.285	0.277
<i>Prayer</i>	Dummy variable: 1 = prays at least once a week, 0 otherwise	0.392	0.381

References

Abravita, A., & Wong, N. (1995). Materialism: Origins and implications for personal well-being. In F. Hansen (Ed.), *European advances in consumer research* (Vol. 2, pp. 172–178). Provo, UT: Association for Consumer Research.

Blanchflower, D., & Oswald, A. (2004). Wellbeing over time in Britain and the USA. *Journal of Public Economics*, 88, 1359–1386.

Clark, A., Diener, E., Georgellis, Y., & Lucas, R. (2008b). Lags and leads in life satisfaction: A test of the baseline hypothesis. *Economic Journal*, 118(June), P222–P243.

Clark, A., Pijters, P., & Shields, M. (2008a). Relative income, happiness and utility: An explanation of the Easterlin paradox and other puzzles. *Journal of Economic Literature*, 46, 95–144.

Clark, A., Georgellis, Y., & Sanfey, P. (2001). Scaring: The psychological impact of past unemployment. *Economica*, 68(270), 221–242.

Clark, A., & Lelkes, O. (2005). *Deliver us from evil: Religion as insurance*. Papers on Economics of Religion, PER 06/03, European Network of Economics of Religion.

Clark, A., & Oswald, A. (1996). Satisfaction and comparison income. *Journal of Public Economics*, 61, 359–381.

Cohen, S., & Willis, T. A. (1985). Stress, social support and the buffering hypothesis. *Psychological Bulletin*, 98, 310–357.

Diener, E., Suh, E., Lucas, R., & Smith, H. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125, 276–302.

Easterlin, R. (1974). Does economic growth improve the human lot? Some empirical evidence. In P. A. David & M. W. Reder (Eds.), *Nations and households in economic growth* (pp. 89–125). London: Academic Press.

Easterlin, R. (1995). Will raising the income of all increase the happiness of all? *Journal of Economic Behavior and Organization*, 27(1), 35–47.

Easterlin, R. (2001). Income and happiness: Toward a unified theory. *Economic Journal*, 111, 464–484.

Ellison, C. G. (1991). Religious involvement and subjective well-being. *Journal of Health and Social Behavior*, 32, 80–99.

Fernandez, R., & Kurlik, J. (1981). A multilevel model of life satisfaction: Effects of individual characteristics and neighborhood composition. *American Sociological Review*, 46, 840–850.

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

Ferrer-i-Carbonell, A., & Pijters, P. (2004). How important is methodology for the estimates of the determinants of happiness? *Economic Journal*, 114, 641–659.

Frey, B., & Stutzer, A. (2000). Happiness, economy and institutions. *Economic Journal*, 110, 918–938.

Pijters, P., Haisken-DeNew, J. P., & Shields, M. A. (2004). Money does matter! Evidence from increasing real income and life satisfaction in East Germany following reunification. *American Economic Review*, 94(3), 730–740.

“Personal Values as Mitigating Factors in the Link Between Income and Life Satisfaction: Evidence from the European Social Survey”

by

Yannis Georgellis, Nicholas Tsitsianis and Ya Ping Yin

SOCIAL INDICATORS RESEARCH (2009) VOL. 91 PAGES 329-344

- Frijters, P., Haisken-DeNew, J. P., & Shields, M. A. (2005). The causal effect of income on health: Evidence from German reunification. *Journal of Health Economics*, 24, 997-1017.
- Geisach, K., & Stephan, G. (1996). A paper on unhappiness and unemployment in Germany. *Economics Letters*, 52, 325-330.
- Gruber, J. (2005). Religious market structure, religion participation: Is religion good for you? *Advances in Economic Analysis and Policy*, 5(1), 145-4.
- Hanog, J., & Oosterbeek, H. (1998). Health, wealth and happiness: Why pursue a higher education? *Economics of Education Review*, 17(3), 245-256.
- Heady, B. (1991). An economic model of subjective well-being: Integrating economic and psychological theories. *Social Indicators Research*, 28, 97-116.
- Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Differential correlates of intrinsic and extrinsic goals. *Personality and Social Psychology Bulletin*, 22, 280-287.
- Lucas, R., Clark, A., Georgellis, Y., & Diener, E. (2003). Re-examining adaptation and the set point model of happiness: Reactions to changes in marital status. *Journal of Personality and Social Psychology*, 84, 527-539.
- Lucas, R., Clark, A., Georgellis, Y., & Diener, E. (2004). Unemployment alters the set point of life satisfaction. *Psychological Science*, 15(1), 8-13.
- Lynn, P., Hader, S., Gabler, S., & Laaksonen, S. (2004). Methods for achieving equivalence of samples in cross-national surveys: The European Social Survey experience. ISER Working Paper 2004-09. Colchester, University of Essex.
- McBride, M. (2001). Relative-income effects on subjective well-being in the cross-section. *Journal of Economic Behavior and Organization*, 45, 251-278.
- Moulton, B. (1990). An illustration of a pitfall in estimating the effects of aggregate variables on micro units. *Review of Economics and Statistics*, 72, 334-338.
- Rojas, M. (2005). A conceptual-referent-theory of happiness. Heterogeneity and its consequences. *Social Indicators Research*, 74(2), 261-294.
- Rojas, M. (2007). Heterogeneity in the relationship between income and happiness: A conceptual-referent-theory explanation. *Journal of Economic Psychology*, 28, 1-14.
- Schmuck, P., Kasser, T., & Ryan, R. (2000). Intrinsic and extrinsic goals: Their structure and relationship to well-being in German and U.S. college students. *Social Indicators Research*, 50(2), 225-241.
- Snitzer, A. (2004). The role of income aspirations in individual happiness. *Journal of Economic Behavior and Organization*, 54, 89-109.