

DO SUBJECTIVE INDICATORS MEASURE WELFARE?

Evidence from 33 European societies

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ABSTRACT: Indicators of subjective well-being have gained only limited acceptance as tools for the social-scientific analysis of human welfare, mainly because they seem insensitive to variations in the socio-economic context. However, this apparent insensitivity has been established by research which has been limited in various ways. Using data on life satisfaction for 33 European societies which goes some way to transcending these limits, this paper identifies linkages between subjective well-being and socio-economic conditions which are both strong and suggestive of important insights about national and cross-national relativities in human welfare. Populations in the rich parts of Europe have high and relatively equal life satisfaction, while those in the poorer parts of Europe have low and unequal life satisfaction. Social inequalities within rich European societies seem to have little effect on life satisfaction but they have significant effects within poor European societies. Inequalities *between* European societies also have strong effects. These findings suggest that analysis of inequalities and relativities in welfare in purely national terms is insufficient. Greater weight needs to be given to *cross-national relativities*, since these are much more consistent with what otherwise seem to be puzzling variations in subjective well-being across and within countries.

Key words: subjective well-being; life satisfaction; welfare measurement; Europe

Introduction

Although measurement of life satisfaction, happiness and related dimensions of subjective well-being has a long tradition in psychology and in certain sub-fields of sociology (Diener *et al.* 1999; Ryan and Deci 2001; Frey and Stutzer 2002; Sirgy 2002), it has been slow to gain acceptance

in the broader social-scientific analysis of human welfare. Economics offers strong intellectual opposition to the very idea of incorporating subjectivity within its realm of inquiry, although lone voices within the discipline argue against this position (Oswald 1997; Frey and Stutzer 2002). Those social sciences which strive to go beyond narrow economic indicators of welfare have preferred to broaden the range of objective indicators (to include such things as health, education, and housing) rather than embrace subjective indicators. Thus, for example, among international agencies, the OECD approach to social indicators specifically rules out the inclusion of subjective data (OECD 1999), while the well-known UNDP 'human development index' simply ignores them (e.g., UNDP 1999). National practice tends to follow suit, as in the case with the Swedish 'level of living' approach, one of the longest established and most influential national systems of social reporting in this area, which similarly avoids subjective indicators (Vogel 2002).

Alternative 'quality of life' approaches specifically aim to integrate objective and subjective indicators and have accumulated a considerable body of research (Campbell *et al.* 1976; Allardt 1993; Diener *et al.* 1999; Hagerty *et al.* 2001; Veenhoven 2002; see also the bibliography and databases in the World Database of Happiness at <http://www.eur.nl/fsw/research/happiness>). These approaches have attracted support in academic research programmes and have also made an impact in some national reporting systems (see especially the German 'quality of life' approach – Zapf 1984; Noll 2002). However, they have failed to overcome the scepticism of the wider research community, where subjective indicators tend to be regarded either as liable to 'inauthentic self-reports' from respondents in survey interviews (Hagerty *et al.* 2001: 8) or as reflections of respondents' aspirations rather than their real circumstances in life (Vogel 2002).

Two empirical findings on subjective welfare have given grounds for this scepticism. One is that in countries with relevant time-series, average national levels of subjective well-being seem to have been largely invariant over time. For example, in the United States over the period 1946 to 1990 and in Japan over the period 1958 to 1992, the trend lines in life satisfaction levels remained entirely flat (Diener *et al.* 1999: 288; Frey and Stutzer 2002: 413). The second is that individual level variance in life satisfaction within countries seems to be at most only weakly connected with variance in objective conditions. Individual-level factors such as income and educational level seem to have either zero or only marginal impact on individual happiness or life satisfaction, and even though certain other factors (especially unemployment and marital status) do show consistent, statistically significant correlations (Oswald 1997; Diener *et al.* 1999), all such factors together normally typically succeed in explaining less than

5 percent of the individual-level variance (Inglehart and Klingemann 2000). This is consistent with the view in psychology that personality and genetic factors are more important than social circumstances as influences on individual subjective well-being – or, as Diener *et al.* (1999: 279) put it, ‘it is as hard to change one’s happiness as it is to change one’s height’.

These patterns, then, point to the insensitivity of indicators of subjective well-being to variations in objective social conditions, and so would seem to justify restrictive conclusions about their social-scientific interest. Those indicators may tap into personality and cultural differences and so may have a real and valid role in psychology or cultural studies. They might also have a value in specific domains of life, especially mental and physical health where subjective states have a direct and important bearing. But they would seem to have less interest for disciplines concerned with variations in broader aspects of human welfare across time, place, and socio-economic condition, that is, for economics, social policy, and much of political science and sociology.

However, certain aspects of the research findings in this field should give us pause before accepting this conclusion. One is that much of the existing research has been concentrated within a small number of highly developed societies (with research on the United States especially prominent). When the focus is extended to include poorer countries, a striking regularity emerges: national levels of subjective well-being are strongly and positively related to level of economic development – the populations of rich countries are happier and more satisfied with life than the populations of poor countries (Inglehart and Klingemann 2000; Ryan and Deci 2000). This regularity restores a certain credibility to measures of subjective well-being in that it establishes at least one strong axis of interconnection between life satisfaction and material conditions. While it has been well established by previous research, we would contend that its full significance for welfare measurement has not been drawn out, and this is a neglect we wish to address here.

A second feature of existing research is that cross-country comparisons have focused on *levels* of subjective well-being, as measured by national means on subjective well-being scales or percentages scoring above or below certain happiness or satisfaction thresholds. They have paid little attention to the *distribution* of subjective well-being, that is, to differences in the degree of inequality in subjective well-being across countries (for a rare exception, see Veenhoven 2000). This, as we shall argue, is an important oversight since cross-country differences in the variances of subjective well-being are as great and as revealing as differences in the means, and in particular point to important hypotheses about the nature and subjective impact of social inequalities. A third limiting feature is that detailed analysis of individual level correlates of subjective well-being has focused

on countries where the variance in subjective well-being is narrow and where the scope for influence from socio-economic conditions is thereby restricted. Less attention has been paid to situations where the variance in subjective well-being is much wider and there is an *a priori* case for expecting stronger linkages between such variance and the socio-economic context.

The purpose of the present paper is to develop analysis which goes beyond these limitations, that is, which includes poorer as well as richer countries, which examines the country-level differences in the distribution as well as the level of subjective well-being, and which focuses on individual-level correlates of subjective well-being in societies with high variance compared to those with low variance on relevant indicators. It contends, first, that an approach which addresses these aspects identifies stronger relationships between subjective well-being and objective conditions than has been previously recognized, both at the country level and the individual level, and second, that these linkages point to suggestive and potentially important insights about human welfare and how its should be conceptualized and measured in research on social inequality. Data limitations mean that these insights can be proposed only tentatively here (as is outlined further below). Nevertheless, enough is possible on the basis of the present data to establish the interest of our contention and to point to the need for further investigation along similar lines.

Data

The primary data source for the paper is the 1999–2000 European Values Study, a set of harmonized surveys carried out in 33 European societies based on samples of around 1,000 adults in each society (for details, see Halman 2001). These data are supplemented in the present paper by country-level indicators on economic conditions drawn from various sources (the World Bank, the United Nations and Eurostat's Eurobarometer surveys). These sources together give rise to a two-level data set used in the present analysis, one consisting of country-level data relating to the 33 societies included in the 1999–2000 EVS (these data are set out Table 1), and the other of individual-level data on the 39,799 individuals contained in the EVS samples within those countries.

In contrast to previous rounds of the EVS carried out in 1981 and 1990, the 1999–2000 round was extended to include much of central and eastern Europe as well as western Europe. It therefore provides coverage of societies at widely different levels of economic development: GDP per capita in 1997 in the poorest of these societies (the Ukraine) was just over \$2,000, which was only one-tenth of the level found in the more

TABLE 1. Life satisfaction and related indicators in 33 European societies

	(1) EVS sample size	(2) Life satisfaction		(3) GDP per capita PPS\$ 1997	(4) Gini Index	(5) Ann. av. GDP growth 1990–9	(6) % 'very difficult to get by' on income
		Mean	Std deviation				
Denmark (DK)	1023	8.24	1.82	23690	24.7	2.8	1.0
Malta (MT)	1002	8.21	1.62	13180			6.0
Rep Ireland (IE)	1012	8.20	1.83	20710	35.9	7.9	3.3
Iceland (IS)	968	8.05	1.59	22497			
Austria (AT)	1400	8.03	1.92	22070	23.1	2	2.4
Nth Ireland (NI)	1000	8.00	1.75	20730	36.1	2.2	3.9
Finland (FI)	1038	7.87	1.65	22150	25.6	2.5	3.7
Netherlands (NL)	1003	7.85	1.34	21110	32.6	2.7	2.8
Luxembourg (LU)	1211	7.81	1.87	30863			2.2
W Germany (WG)	1037	7.64	1.74	22030	30	1.5	1.9
Sweden (SE)	1014	7.64	1.86	19790	25	1.5	2.1
Belgium (BE)	1912	7.43	2.13	22750	25	1.7	4.2
Gt Britain (GB)	994	7.40	1.94	20730	36.1	2.2	5.4
Slovenia (SL)	1006	7.23	2.15	11800	26.8	2.4	5.0
E Germany (EG)	999	7.18	2.13	15000			2.9
Italy (IT)	2000	7.17	2.11	20290	27.3	1.2	3.1
Spain (ES)	1200	7.09	2.01	15930	32.5	2.2	3.5
Czech Rep (CZ)	1908	7.06	1.97	10510	25.4	0.9	10.0
Portugal (PT)	1000	7.04	1.96	14270	35.6	3.1	12.5
France (FR)	1615	7.01	1.99	22030	32.7	1.7	5.3
Croatia (HR)	1003	6.68	2.3	4895	26.8	-0.4	
Greece (GR)	1143	6.67	2.19	12769	32.7	1.9	10.2
Poland (PL)	1095	6.20	2.53	6520	32.9	4.7	21.0
Slovakia (SK)	1327	6.03	2.22	7910	26.8	1.9	17.0
Estonia (EE)	1005	5.93	2.18	5240	35.4	-1.3	21.0
Hungary (HU)	1000	5.80	2.42	7200	30.8	1	22.0
Bulgaria (BG)	1000	5.50	2.65	4010	28.3	-2.7	62.0
Latvia (LV)	1013	5.27	2.39	3940	32.4	-4.8	28.0
Romania (RO)	1146	5.23	2.77	4310	28.2	-1.2	36.0
Lithuania (LT)	1018	5.20	2.66	4220	32.4	-3.9	21.0
Belarus (BY)	1000	4.81	2.21	4850	21.7	-4.3	
Russia (RU)	2500	4.65	2.57	4370	48.7	-6.1	
Ukraine (UA)	1207	4.56	2.59	2190	32.5	-10.8	

Note: Countries ordered by mean life satisfaction score.

Sources: (1,2) 1999–2000 EVS data files; (3) UNDP 1999; (4,5) World Bank 2001; (6) Eurostat 2002: 159; Eurobarometer 65.1 data file.

developed countries of the EU. While none of the countries in this dataset would be counted among the poorest in the world, they nevertheless meet our present requirement that analysis of subjective well-being should extend beyond rich countries.

The measurement of global subjective well-being in the EVS utilized two indicators – questions which asked respondents how happy they are

and how satisfied they are with life as a whole. These questions are normally regarded as tapping two different dimensions of subjective well-being. Happiness has to do primarily with mood or affect (how one *feels*), while satisfaction has to do primarily with cognitive evaluations (what one *thinks* about the adequacy of one's situation) (Diener *et al.* 1999: 279; Ryan and Deci 2001). The present paper focuses on the life satisfaction indicator from this source. This is so partly because of limitations of space but also for data reasons. The EVS surveys utilize a more refined scaling of life satisfaction than of happiness, the former based on a ten-point scale, where the latter is based on a four-point scale. The ten-point satisfaction scale is more effective in capturing variance both within and between countries than the four-point happiness scale, and given the focus here on variance in subjective well-being, this is an important consideration.

The EVS data have certain drawbacks in the present context which result from the purpose for which they were gathered. The EVS is primarily concerned with attitudes and values and gathers only limited information on the objective situation of respondents (for example, in regard to health status, housing, working conditions, etc). It is therefore less than ideal as a source for analysing the relationship between objective conditions and objective well-being. Nevertheless, it does contain a certain number of key relevant variables, and these, taken together with the range of societies it covers (not to speak of the lack of better alternatives), justifies its use here. We will return to the limitations in the 'objective' variables below when examining individual-level correlates of life satisfaction in the EVS societies.

Country differences in levels of satisfaction

We look first at a number of striking regularities revealed by the country-level data in Table 1. One of these is that the wide differences in the mean level of life satisfaction across European societies are closely linked to their level of economic development as measured by GDP per capita, a pattern consistent with previous findings mentioned earlier. Broadly speaking, EU countries have higher satisfaction levels than do central and eastern European countries, while within the EU, northern countries (such as The Netherlands, Ireland and the Scandinavian countries) have higher satisfaction levels than southern countries (such as Greece, Spain, Portugal, Italy and France). A certain number of countries in central and eastern Europe (Slovenia, East Germany, the Czech Republic, and Croatia) overlap with the southern EU countries, but most fall well below that level, that is, having means on the life satisfaction scale below 6.5 and in three cases (Belarus, Russia and the Ukraine), below 5.

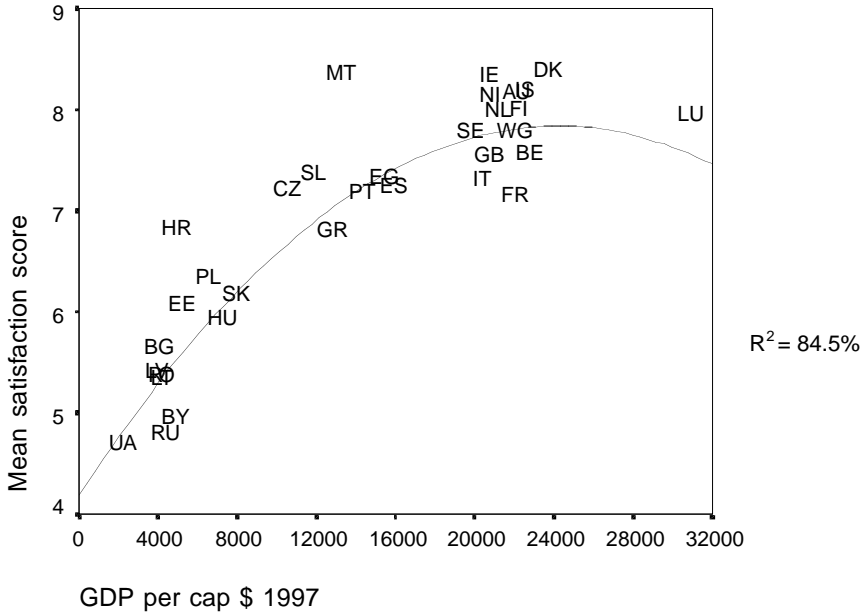


Figure 1. Mean life satisfaction and GDP per capita in 33 European societies
Source: Table 1

Figure 1 shows the close correlation between these country-level differences in mean life satisfaction and GDP per capita. A curvilinear regression of GDP per capita on country-level mean life satisfaction for the 33 European societies accounts for 84.5 per cent of the variance in the latter indicator. If one were to focus narrowly on the group of EU countries which cluster closely together in Figure 1, Ireland and Denmark would appear to be anomalously high on life satisfaction, Italy and France would appear to be anomalously low, and the overall link with GDP would seem to be weak. These within-EU patterns are in keeping with the apparent disjunction between economic conditions and level of life satisfaction which emerges from analyses focused on rich societies (Inglehart 1990). However, viewed within the larger picture presented by Figure 1, which includes countries with levels of economic development well below that of the EU countries, these anomalies seem less significant and seem hardly to be anomalies at all. In this perspective, the richer countries cluster closely together both on GDP and life satisfaction, while across all the 33 societies, it is the consistency and closeness of the association between GDP per capita and life satisfaction which stand out.

It would also appear from additional data in Table 1 that perceptions of economic hardship provide a link between GDP and life satisfaction. The data on perceived economic hardship used here are drawn from

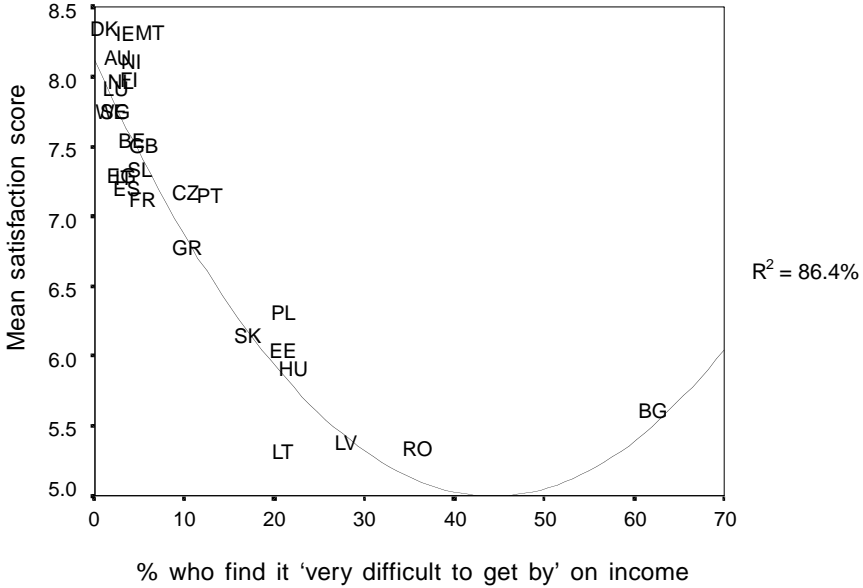


Figure 2. Perceived economic hardship and mean life satisfaction in 28 European societies

Eurobarometer surveys on the EU Members States and Candidate Countries, 28 of which are common to the EVS data-set (Eurostat 2002: 159; Eurobarometer 56.1 micro-date files). Taking as the key indicator the percentages across countries who report ‘great difficulty’ in getting by on their incomes, we get a close fit ($R^2 = 86.4\%$) between perceived economic hardship and mean life satisfaction (Figure 2). Separate analysis not shown here also indicates that perceived economic hardship is closely predicted by GDP per capita ($R^2 = 81.5\%$), so that at the country level there would appear to be close inter-connections between objectively poor economic conditions, the perception of economic hardship, and level of life satisfaction.

Given that almost half the societies we are looking at in the EVS data are former communist societies which have made a sudden, and in some cases traumatic, transition to capitalism since 1989, it is possible that it is the trend towards improvement or disimprovement in economic circumstances over recent years, rather than the current level of economic development, which influences life satisfaction. A crude test of this possibility can be applied by examining the impact of recent economic performance on country-level mean life satisfaction, using annual average GDP growth rate over the transition period (1990–1999) as a relevant indicator. This indicator on its own correlates less well with mean life satisfaction ($R^2 = 66\%$) than does GDP per capita ($R^2 = 86.4\%$) but if the two indicators are combined together in a regression model, they produce

TABLE 2. Regression of GDP per capita and annual average GDP growth 1990–9 on mean life satisfaction scores for 33 European societies

	<i>OLS regression coefficients</i> (dependent variable = mean life satisfaction)		
	<i>Unstandardized</i>	<i>Standardized</i>	<i>Significance</i>
Constant	5.34		
GDP per capita 1997	9.72e-5	0.660	0.000
Annual average GDP growth 1990–9	0.116	0.372	0.000
R ²	90%		

a 90 per cent fit to mean life satisfaction level (Table 2). The regression coefficients for both independent variables are quite strong, though GDP per capita (with a standardized coefficient of 0.66) has a stronger influence than the growth rate (coefficient of 0.372).

In sum, therefore, societal means of life satisfaction in Europe are strongly tied to societal economic performance levels, as indicated primarily by comparative levels of economic output per capita and secondarily by recent economic growth rates. It is possible that these economic effects on mean life satisfaction may hide further complexities, since the economic indicators are themselves correlated with other factors. It is notable, for example, that the EU countries with the lowest life satisfaction – Greece, Spain and Portugal – have the most recent historical experience of non-democratic government, while within central and eastern Europe, the countries which were under communist rule since 1918 generally have lower life satisfaction than those which were brought into the Soviet sphere after 1945. Thus the GDP effect on life satisfaction may be compounded with institutional and historical effects in the political sphere which are beyond the scope of the present paper to examine (for further comments along these lines, see Inglehart and Klingemann 2000). However, the point to note here is that, looking across this range of societies, at least some aspects of their objective situation – whether it be economic or political – have a strong bearing on aggregate life satisfaction. At this level, therefore, what one sees is not the kind of disjunction between subjective well-being and socio-economic context which has previously drawn attention as much as an exceptional closeness between the two.

Levels of variance in life-satisfaction

A third important pattern emerging from the data in Table 1 is the wide diversity in levels of variance in life satisfaction across countries. This

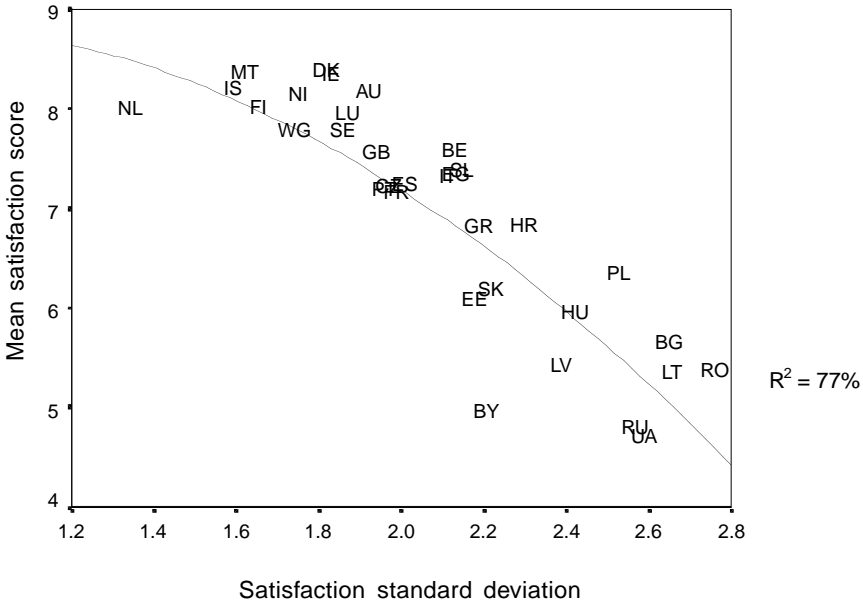


Figure 3. Mean life satisfaction and standard deviation in life satisfaction in 33 European societies
 Source: Table 1

pattern is indicated by the standard deviations in life satisfaction, which range from 1.34 in the case of the smallest (for The Netherlands) to almost double that, 2.59, for the largest (for the Ukraine). The intriguing aspect of this pattern is that, as the scatterplot in Figure 3 reveals, the *standard deviation in life satisfaction across the 33 societies varies closely and inversely with mean level of life-satisfaction* – the lower the mean, the larger the standard deviation ($R^2 = 77\%$).

Table 3 gives examples of full frequencies for the life satisfaction variable for three sample societies to show what these differences amount to in detail. Denmark, which has a high mean and low variance, has a modal score on the life-satisfaction scale of 10 (that is, the highest point on the scale), and almost 77 per cent score 8 or higher. In Greece, an intermediate country, the modal life satisfaction score is 8, 41 per cent score 8 or above but 27 per cent score 5 or below. In Belarus, a country with a low mean, the modal score is 5, only 14 per cent score 8 or above, while 30 per cent score 3 or below. Thus there is little overlap in satisfaction scores between the two countries at the extremes in this table (Denmark and Belarus): only a small minority at the top of the scale in Belarus match the satisfaction levels of the vast majority of Danes, while the vast majority of Belarusians are less satisfied than all but the most dissatisfied of Danes.

TABLE 3. Levels and variance in life satisfaction within countries: the examples of Denmark, Greece and Belarus

	<i>Denmark (%)</i>	<i>Greece (%)</i>	<i>Belarus (%)</i>
1 (dissatisfied)	1.0	2.9	7.0
2	0.3	2.3	8.6
3	1.8	4.5	14.7
4	1.2	7.8	14.0
5	3.7	9.4	22.3
6	5.9	12.3	9.2
7	14.5	19.2	10.5
8	22.3	20.9	8.4
9	18.1	14.2	3.4
10 (satisfied)	30.9	6.4	2.0
Totals	100	100	100
Mean	8.24	6.67	4.81
Std deviation	1.82	2.19	2.21

Source: EVS 1999–2000.

An immediate possibility that comes to mind when trying to account for the wider variance in life satisfaction among the poorer populations is that those societies might have wider internal inequalities in social conditions, for example, in incomes and living standards. Figure 4 tests for this possibility by examining the relationship between the level of income inequality as measured by the Gini Index and the standard deviation of life satisfaction across countries. The Gini Index, where a score of 100 indicates complete income inequality and 0 indicates complete income equality, is available for different years in the 1990s for 29 of the 33 societies in our data set (compiled from national sources by the World Bank 2001). The scatterplot for these 29 societies in Figure 4 produces a non-significant slope and shows that there is no significant relationship between income inequality and inequality in life satisfaction at country level. Further analysis not shown here, which examined the relationship between educational inequality, as measured in the EVS data by the standard deviation in the age completed education, and level of inequality in life satisfaction similarly showed an absence of any link between the two. Furthermore, neither income inequality nor educational inequality was significantly related to the mean level of life satisfaction across country.

These correlations at the societal level would point to the hypothesis that the effect of social inequality on life satisfaction could differ between rich and poor societies. In rich European societies (some of which are quite egalitarian), life satisfaction levels are so high on average and there are so few people with low life satisfaction that social inequality must have

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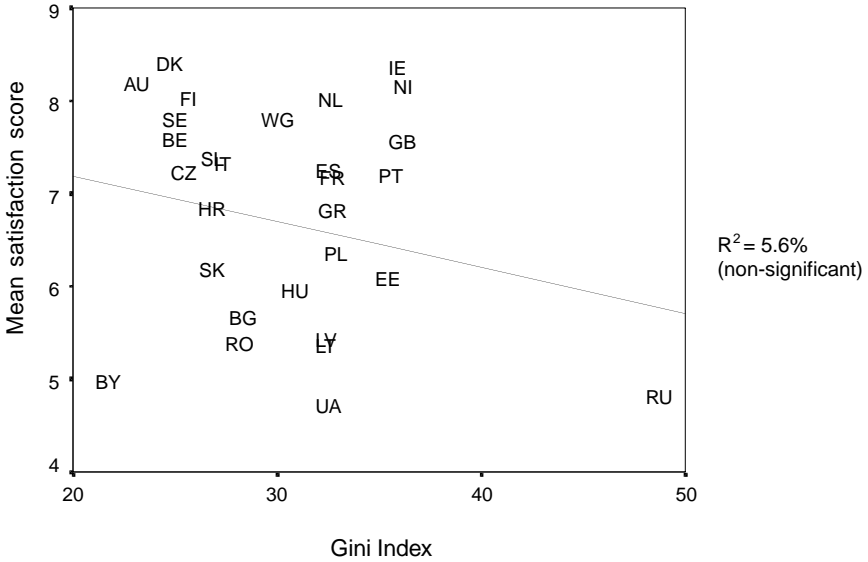


Figure 4. Income inequality (Gini Index) and variance in life satisfaction in 29 European Societies
 Source: Table 1

only limited negative impact on life satisfaction – there is too much disjunction between the two axes of inequality for it to be likely that they are linked to each other. In poor European societies (which in general are no more inegalitarian than their rich counterparts), the lower levels and wider within-country spread in life satisfaction are more in keeping with their patterns of social inequality and give rise to the possibility that social inequalities have a stronger impact in those societies. We now turn to individual-level data within the 33 societies to establish if these inferences are supported by differences within as well as between countries.

From aggregate to individual-level patterns

As we examine individual-level variance in subjective well-being, the background question is whether and by how much people’s personal situations affect their life satisfaction. The context for this question is the body of research which has found that linkages between people’s objective conditions and their life satisfaction are weak and which has given rise to doubts about the social-scientific interest of indicators of subjective well-being in consequence. The concern about that research which we have raised here is its focus on rich countries where variance in life satisfaction is narrow and where the scope for socio-economic effects on life

satisfaction is thereby limited. The possibility we now wish to explore is whether such socio-economic effects might be stronger in poorer societies where individual-level variance in life satisfaction is wider. If such a possibility is confirmed, the insensitivity of individual-level indicators of subjective well-being to personal objective circumstances in rich countries would have quite different implications than those that have hitherto been drawn. Rather than casting doubt on the interest or usefulness of subjective indicators, it could suggest a substantively important hypothesis that rich societies, irrespective of their degree of internal inequality, provide high and uniform support for well-being in a way that poorer societies do not.

In trying to explore these issues, we run up against the data constraints mentioned earlier, that is, the limited coverage in the EVS of relevant individual-level indicators. EVS data provide no coverage of many key objective dimensions of welfare (e.g., health status, housing, employment conditions, neighbourhood conditions and so on) nor do they include certain subjective variables, such as perception of economic hardship, which might mediate between socio-economic context and life satisfaction. Household income is included but is coded on a ten-point ordinal scale based on income categories which differ by society and are not recorded in the data. This closes off the possibility of adjusting household incomes for household size and of comparing absolute levels of household income across societies, both of which would be important requirements for a full investigation of our concerns here. Nevertheless, in spite of the crudeness of the income variable in the EVS data, we include it in our analysis since no better option is available. A certain number of other relevant variables are also available and are included here. They are: gender, marital status, age, employment status, educational attainment, and social class. As mentioned earlier, two of these variables have been consistently found to affect life satisfaction – marital status (the married having higher life satisfaction than other marital status categories) and employment status (the unemployed having lower life satisfaction than other categories). Of the remaining four, educational attainment is particularly important for present purposes as it may provide a more stable measure than occupational group or income in the context of rapid social change. Previous studies suggest that educational attainment is *not* strongly or consistently related to life satisfaction and so we will be particularly interested to establish here if that relationship comes to the surface and strengthens as we move beyond rich countries (i.e., those with low variance in life satisfaction) to the poorer countries where variance in life satisfaction is greater.

As a first step in the analysis we employ a multi-level approach that looks at country-level and individual-level variance in life satisfaction

TABLE 4. Multi-level models of the effects on life satisfaction

	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>
Intercept	6.808	6.171	5.314
<i>Individual factors</i>			
Male		-0.039	-0.040
Unemployed		-0.887*	-0.886*
Marital status:		-0.568*	-0.568*
Widowed		-0.552*	-0.551*
Divorced		-0.365*	-0.366*
Single		-0.010*	-0.010*
(Ref: married)		0.001*	0.001*
Age (centered on mean)		-0.055	-0.053
Age squared		0.010*	0.010*
Missing information on age		-0.203*	-0.205*
Age at leaving education		0.406*	0.405*
Missing information on education		0.357*	0.357*
Social class:		0.264*	0.263*
Employer		0.212*	0.211*
Professional		0.196*	0.195*
Intermediate non-manual		-0.014	-0.017
Lower non-manual		0.108*	0.107*
Skilled manual/supervisor		0.124*	0.123*
Agricultural		0.596*	0.597*
Missing information		-0.039	-0.040
(Ref.: semi/unskilled manual)		-0.887*	-0.886*
Income		-0.568*	-0.568*
Missing information on income		-0.552*	-0.551*
<i>Country-level factors:</i>			
GDP1			0.416
GDP2			1.367*
GDP3			1.423*
(Ref: lowest GDP)			
Gini coefficient (centered on mean)			-0.026*
Growth in GDP			0.120*
Country-level variance	1.270*	1.097*	0.132*
Individual-level variance	4.563*	4.269*	4.269*
% variance explained:			
Country level	-	13.6	89.6
Individual level	-	6.4	6.4
Log likelihood	170,653	169,818	169,748

simultaneously. Within this approach, we present three models based on a total of 39,547 individuals within 33 countries (Table 4). The base model in this table (see Model 1) indicates that a variance of 1.270 in life satisfaction arises at the country level and 4.563 at the individual level – that is, 22 per cent of the variance in life satisfaction is attributable to the country level, while the balance of 78 per cent is attributable to the individual level.

Model 2 explores the impact of a range of individual factors, including employment status, marital status, gender, age, age at leaving education, social class and income, on life satisfaction. As previous research would lead us to expect, the unemployment and marital status effects are stronger than any others indicated in the table. The unemployed on average score almost one point lower on the 10-point life satisfaction scale than those who are not unemployed. Marital status is the only other variable which comes close to an effect of this size: the widowed and divorced score over 0.5 of a point lower than the married, while the single score just under 0.4 of a point lower than the married. Contrary to some previous studies, social class and income are found to play a significant role in shaping life satisfaction levels. Employers and professional workers report the highest levels of life satisfaction while the lowest levels are found among semi/unskilled manual workers and those working in the agricultural sector. Even controlling for social class, those in the highest income group are found to score 1.2 points higher than those in the very lowest income group.

In contrast, other variables play a modest or no role in determining life satisfaction levels. Gender has little effect: males have somewhat lower life satisfaction scores than females, although the difference is not statistically significant. Older people have somewhat lower levels of life satisfaction, though the effect is relatively modest in size. Those with higher levels of education have higher levels of life satisfaction, although some of the effect of education is mediated through social class and income. Significantly lower levels of satisfaction are found among those who did not record their age at leaving education; this may reflect the under-reporting of lower levels of education.

Overall, however, the explanatory power of all these variables taken together is relatively limited. Just over six per cent of individual-level variation in life satisfaction is explained by gender, unemployment, marital status, age, education, social class and income. Interestingly, 13.6 per cent of the country-level variation is explained by these factors and is therefore due to the population composition within countries (for example, differences in the proportion of unemployed and/or highly educated individuals).

In the case of Model 3, the focus expands to include the impact of factors at a higher level (in this case, the country). For the purpose of this model, three variables were included: GDP per capita, recent growth in GDP and the extent of income equality (measured by the Gini coefficient). Trial-and-error indicated that per capita GDP fitted best into the model if treated as a four-way categorical variable rather than a continuous variable. In the model, the reference category (GDP1) is made up of the bottom quartile of countries in GDP per capita terms. As

expected from earlier analysis, level of GDP is found to be significantly associated with levels of life satisfaction; all else being equal, those in higher GDP countries tend to have higher satisfaction scores, although there is some plateauing in the effect for the highest GDP groups. Over and above the effect of level of GDP, satisfaction levels are found to respond positively to growth in GDP. Finally, controlling for GDP, those living in less equal societies tend to report lower average levels of satisfaction. The three country-level variables – per capita GDP, growth in GDP and level of income inequality – account for almost all (90 per cent) of the variance between countries in levels of life satisfaction.

The results on individual-level correlates of life satisfaction presented in Table 4 broadly conform to the findings of previous research outlined earlier. Marital status and unemployment have the strongest influence, many other individual-level factors have at best only modest impact, and the combined variance explained is modest, at 6.4 per cent. However, contrary to previous research, life satisfaction is found to be significantly related to social class and income level. The difference between the findings may be due to the inclusion of poorer countries in the pooled data set. This can be confirmed by examining whether the effect of individual factors varies across countries, in particular whether the impact increases as we move from countries with low levels of GDP and variance in life satisfaction to those with higher GDP levels and higher variance among individuals.

The results in Table 5 indicate that the effects of four variables – unemployment, marital status, age at leaving education and income – vary significantly across countries. Furthermore, the covariance terms indicate that the effects of income and education are not as strong in countries with higher average levels of life satisfaction. However, in the case of marital status, the opposite is the case; being single has a less negative effect in countries with

TABLE 5. Country-level variance in the explanatory variables

Country-level variance:	
Intercept	0.380*
Slope of unemployed	0.168*
Slope of widowed	0.086*
Slope of single	0.113*
Covariance intercept–single	-0.085*
Slope of age at leaving education	0.0004*
Covariance intercept–education	-0.006*
Slope of income	0.010*
Covariance intercept–income	-0.041*

Note: This model controls for gender, unemployment, marital status, age, age at leaving education, social class, income, GDP per capita, GDP growth and the Gini coefficient. The coefficients for these factors are similar to those reported in Table 4 above.

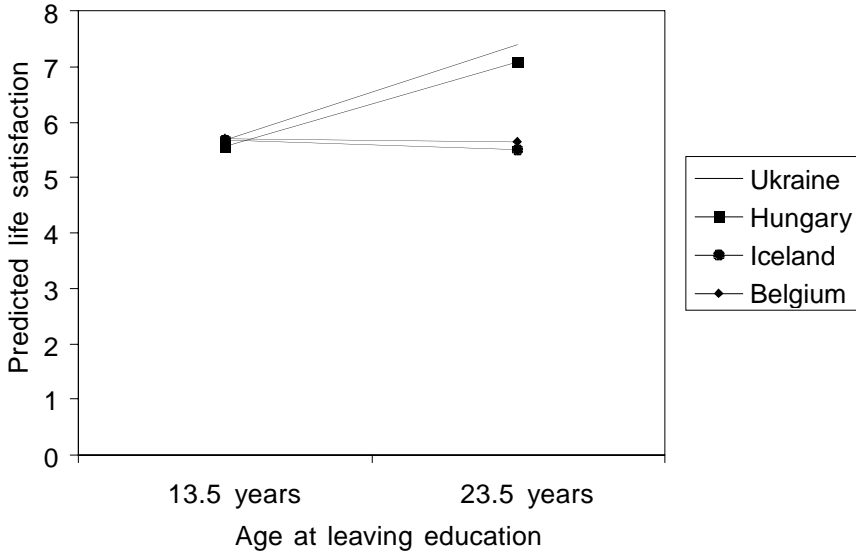


Figure 5. Predicted slope of age at leaving education for selected countries
Note: this controls for a number of factors, including GDP level of the country

higher average satisfaction levels. This pattern is explored further below. Interestingly, the effect of social class does not vary across countries in the same way as income and education. This may be related to the nature of the measure used which is categorical rather than linear in nature.

To illustrate further the different levels of impact of socio-economic conditions on life satisfaction, Figure 5 depicts the relationship between age at leaving education and life satisfaction, controlling for all other factors including GDP, for four cases which represent the different patterns found in the data set: the Ukraine and Hungary, where the education effect is very strong, and Iceland and Belgium where it is non-existent.

A similar pattern was found when the relationship between income and predicted life satisfaction was plotted for different countries within the dataset (Figure 6). Life satisfaction was found to be sharply differentiated by income in the Ukraine and Belarus, for example. In contrast, in Western European countries such as Sweden and Ireland, life satisfaction levels were only modestly influenced by income level.

Further analysis was conducted to explore whether the differing effects of unemployment, marital status, education and income were related to the GDP level of the country.¹ Table 6 presents the predicted coefficients for these variables by GDP level of the country. Education and income

1. These were calculated by including interaction terms between the relevant variables and GDP levels.

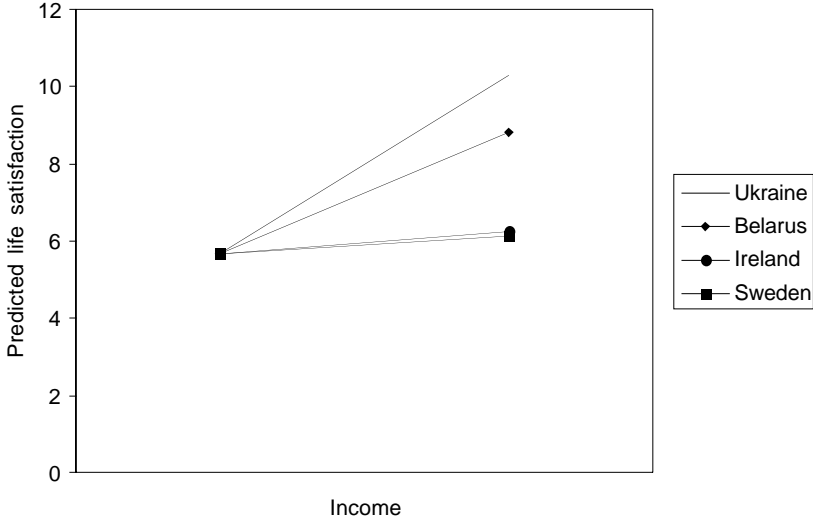


Figure 6. Predicted slope of income level for selected countries

TABLE 6. Effects of selected variables on life satisfaction by GDP level of country

	<i>GDP group 1 (lowest)</i>	<i>GDP group 2</i>	<i>GDP group 3</i>	<i>GDP group 4 (highest)</i>
Education	0.033	0.028	0.006	0
Income	0.188	0.145	0.089	0.090
Unemployed	-0.670	-0.780	-1.172	-1.062
Single	0.098	-0.305	-0.484	-0.649
Widowed	-0.436	-0.626	-0.425	-0.455

are found to have much weaker effects in the two highest GDP groups of countries than in the two lowest. In contrast, the negative effects of unemployment and being single are more evident in higher GDP countries. The effect of being widowed does not vary systematically by GDP level and is likely to be related to a broader set of cultural factors within societies. Even controlling for variation in the effects of these background factors across countries, the highest variance (5.63) among individuals within a society is found in the least wealthy countries with the lowest variance (4.49) found in the wealthiest countries (analysis not shown here).

Discussion

The empirical findings in the present paper can be summarized briefly. First, societal levels of life satisfaction vary across societies in Europe

almost in lock-step with economic conditions, as measured primarily by GDP per capita and secondarily by recent economic growth performance – the poorer and economically more sluggish the society the lower the level life satisfaction. Secondly, that relationship is subject to threshold effects: economic conditions strongly and positively affect life satisfaction up to a certain level of socio-economic development but the effect flattens off after that (the flattening off takes place approximately at the GDP per capita level represented by the poorer EU countries such as Greece and Portugal or the better off former communist countries such as the Czech Republic or Slovenia). Thirdly, inequalities in life satisfaction are narrow in rich societies and wide in poor ones – a finding which may be considered another aspect of the threshold effect just outlined. Finally, as yet a further manifestation of the threshold effect, the impact of key within-country socio-economic inequalities on life satisfaction (especially in regard to income and educational attainment) is slight in high satisfaction countries (partly because variance in life satisfaction in those countries is so narrow) but it increases as we move across countries with lower overall levels and wider variance in life satisfaction. This differential impact may arise because the poor in rich societies are somehow conscious that their living standards are reasonably high compared to the general run of people in poorer countries. A somewhat different possibility is that public goods in rich societies from which the less well-off may gain considerable benefit – the shops, the streets, transport services, schools, hospitals, even the air people breathe – may be of higher quality and have a more equalizing impact on household welfare than is captured in measures based on household-level resources. The converse might be true in poorer societies – even the rich in poor societies may suffer a loss in welfare on account of the low standard of public goods or poor quality of the public sphere in their societies.

Though these patterns relate only to Europe and are based on incomplete information on some key variables (especially household income), they nevertheless are strong and striking enough to warrant attention and to prompt a number of pointers for further research. First, they argue against the view that indicators of subjective well-being are unresponsive to variations in the socio-economic context and are of limited social-scientific interest in consequence. They suggest, rather, that at the societal level such indicators are highly sensitive to socio-economic conditions, at least up to certain thresholds, and at the individual level, such sensitivity becomes more evident in poorer societies where variance in life satisfaction is wide.

Secondly, the findings suggest a possible explanation for the paradox that mean levels of life satisfaction in societies seem to change little across time, even when large improvements in socio-economic conditions take

place. This explanation rests on the possibility that what matters for subjective well-being is a society's *relative* position in the international league table of economic performance rather than its absolute levels of output. By implication, economic growth may be important to life satisfaction mainly through its role in preserving or altering a society's relative international standing rather than through its absolute impact on living standards.

While we lack the time-series data needed to test this hypothesis, it warrants attention in future research as it raises questions about how social inequality (and related issues such as poverty and relative deprivation) should be conceptualized and measured. Existing sociological and social policy research focuses overwhelmingly on the nation-state as the relevant frame of reference for such analysis. In current EU social policy, for example, the poor and socially excluded are identified as those whose material living standards fall below poverty lines which are defined relative to the mean living standard in each society. The underlying assumption is that the status of being poor is fundamentally similar across European societies, in that everywhere it entails an inability on the part of a minority who are materially deprived to participate in the normal activities of the society they live in. The evidence examined here would suggest a different perspective. If disadvantage were to be measured on the basis of people's subjective well-being, then almost nobody would be disadvantaged in most rich societies (even in those rich societies with substantial poverty rates as conventionally measured), while few would be advantaged in poor societies (even those with low conventional poverty rates). The implication is that in so far as subjective well-being is linked to material conditions, cross-national relativities in material conditions are just as important as, and possibly even more important than, national relativities. In judging the adequacy of their personal situations, Europeans seem to have an uncanny grasp of where their societies stand in the international (or at least European) hierarchy of economic development and to take that standing into account in arriving at subjective evaluations of their personal circumstances. Thus a focus on *cross-national relativities* in incomes and related material conditions is necessary in the analysis of social inequalities in Europe.

Conclusion

However the present empirical findings may be explained and interpreted, we would conclude by identifying some of the challenges they pose for the analysis of social inequality and related issues, with reference especially to Europe. They suggest that subjective indicators of welfare

(especially those related to life satisfaction) may be more robust and more revealing for this purpose than has previously been recognized and may have insights to offer for social inequality research that objective indicators have failed to uncover. The most important such insight may be that relativities *between* countries matter for social inequality as subjectively perceived and experienced by individuals. They may matter more than the relativities *within* countries which have pre-occupied researchers to date and which have provided the dominant framework for social inequality research – though the significance of within-country inequalities seems to be higher in poorer than in richer countries. To extend and explore this possibility further, it would be well worth investigating whether the often-observed lack of correlation between objective measures of poverty and subjective poverty perceptions (see, e.g., Gallie and Paugam 2002: 10–11) arises because the wrong objective poverty measure is used – namely, one based on household incomes relative to national standards rather than on a combination of household incomes and access to public goods measured relative to a single international standard.

As far as life satisfaction is concerned, the apparently international basis on which survey respondents assess their life satisfaction may help explain not only the different average levels of subjective well-being across countries but also the differing degrees to which within-country inequalities in objective conditions filter through into corresponding inequalities in subjective well-being among individuals. The key possibility here is that low incomes and related disadvantage causes much less damage to subjective well-being in the rich parts of Europe than in the poor parts of Europe – perhaps because what we call ‘low’ incomes in rich parts of Europe are not really low by the standards of the poor parts of Europe. In any event, these facts alone would justify greater attention to pan-European patterns of inequality (or even to a cross-national approach which extends beyond Europe) in addition to (or perhaps instead of) the present focus on inequality as a property to be measured at the level of each national society.

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