Life Satisfaction in Croatia

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Abstract

In this paper we identify the factors that have influenced average life satisfaction for Croatians based on data collected in reports from 1999 and 2006. Our analysis of the data from the European Values Survey (EVS) reveals that in 1999 life satisfaction was higher for people who were married, those who were employed, and those who had an income between 5,001 and 8,000 Croatian kuna (HRK) per month. Life satisfaction was U-shaped in age, minimizing around the age of 50. There appeared to be little correlation between life satisfaction and education level. Based on our analysis of the 2006 data from the United Nations Development Program (UNDP), we find that in 2006 life satisfaction was higher for people who were married, those who were employed, those who were out of the labor force, those with a university degree, and those with higher incomes. The impact of age in 2006 was U-shaped as it was in the 1999 data, minimizing around the age of 58.

The data from both years strongly supports the view that life satisfaction rises with GDP per capita in the county in which a respondent resides.

Keywords: life satisfaction, counties, GDP per capita, Croatia

JEL classification: C35, D10, I31, P20

1 Introduction[1]

In recent years economists' interest in the factors that influence life satisfaction or happiness has grown substantially[2] (see Frey and Stutzer, 2002a). This area of interest has been built upon a tradition in psychology of investigating individuals' responses to self-assessed well-being questions. Economists usually assume that people's choices reveal their preferences. The quality-of-life approach, on the other hand, relies on directly asking people (via surveys) about their subjective well-being, instead of indirectly estimating utility.

The quality-of-life approach has not received noteworthy attention in scientific and political debate in Croatia. As noted by Bejaković and Kaliterna Lipovčan (2007), although quality of life is not an explicit criterion for accession to the European Union (EU), research in this area can contribute to understanding the differences in the various realms of people's lives and to identifying appropriate measures that are needed in order to achieve social cohesion at the European level. In addition, subjective measures of well-being can provide a useful complement to conventional economic data, especially for economies in transition, given that the official economic data in these countries, particularly in the 1990s, was generally unreliable due to the large informal sector and irregular statistical coverage of the newly emerging private sector. For these reasons we believe it is important to assess well-being in Croatia from this more subjective point of view. Therefore,

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1   The author thanks the UNDP Croatia for allowing her to use the original data.

2   The terms well-being, life satisfaction, and happiness are often used interchangeably, as empirically they seem to measure a very similar phenomenon (Hayo, 2004).

by using surveys from two different years that cover altogether more than 8,000 individuals, we analyze how socio-demographic and economic factors contribute to overall life satisfaction in Croatia. Respondents were asked to answer questions about the level of their life satisfaction by choosing one of the responses on a scale from 1 (dissatisfied) to 10 (satisfied). We then applied an ordered logit model and analyzed a number of questions. First, we examined the link between life satisfaction and various (standard) socio-economic variables such as age, gender, education, marital status, and labor force status. Furthermore, we investigated whether people in Croatia with a high income are more satisfied with life than those with a low income. Another related question we addressed is whether life satisfaction is influenced by the mean level of income in one's county; in other words, are people affected more by absolute levels of income or income relative to those living around them?

The paper is organized as follows. Section 2 provides a literature review. Section 3 presents the data and contains our own empirical investigation of the socio-demographic and socio-economic determinants of life satisfaction in Croatia. Section 4 presents our conclusions.

2 Literature Review

Analysis of the factors affecting life satisfaction is central to psychology, but in recent years there has been a surge of interest of economists in this area. For a useful review of the relevance of happiness/life satisfaction research for economists, see two summary articles, namely, Di Tella and MacCulloch (2006) and Frey and Stutzer (2002a). Economists have been particularly interested in establishing the relationship between income and life satisfaction. Easterlin (1974) argues in his seminal paper that in the period 1946-1991 even though the real GDP per capita increased in the United States, the average happiness of the American population actually dropped. This finding triggered a lot of further research, resulting in a vague consensus based on both cross-sectional and longitudinal data that income

does matter but not very much (see, for example, Easterlin, 1995; Oswald, 1997; Frey and Stutzer, 2002a). This has led to a reorientation of interest towards the role of relative rather than absolute income in determining life satisfaction (see, for example, Clark and Oswald, 1994). In addition to income (relative and absolute), other variables typically included in models of life satisfaction are age (and age squared as it is presumed to exert a U-shaped impact on satisfaction), gender, marital status, education level, and employment status. Typical findings are that happiness is higher for women, married people, more educated people, those with higher income, the young, the old, and the self-employed (Blanchflower, 2007).

The literature on the determinants of life satisfaction is vast, and we make no attempt to review all of it. Instead, we briefly summarize only those papers that deal with Croatia, other individual countries, and/or transition countries. It should be stressed that the literature on the determinants of life satisfaction in transition countries and especially Croatia is rather scarce. This paper, therefore, represents a contribution to this body of literature.

Hayo and Seifert (2002) analyze subjective economic well-being in Eastern Europe from 1991 to 1995. They find that when subjective economic well-being is regressed against a common set of socio-demographic variables, the findings are similar to those in happiness regressions. Furthermore, they find that age, education, relative income, and unemployment exert a significant influence on economic well-being, whereas gender and marital status do not seem to be important.

Sanfey and Teksoz (2007) analyze life satisfaction in transition countries using evidence from the World Values Survey (waves 2 to 4). They demonstrate that individuals in transition economies on average record lower values of self-reported life satisfaction compared with those in non-transition countries. The socio-economic groups that exhibit relatively higher levels of happiness include students, people with higher levels of education, and those with higher incomes. Happiness declines with age until the early fifties. Self-employed people in transition countries

show a level of satisfaction as high as or higher than full-time employees, in contrast to evidence from non-transition countries.

Malešević Perović (2008) analyzes the impact of both micro and macro determinants on subjective economic well-being in a set of eight transition countries (including Croatia) in the period 1991-1998. She finds that the most (economically) satisfied groups of individuals are males, single people, those who are out of the labor force, those who are most educated, and those with the highest incomes. As for the macroeconomic variables, she finds that inflation, unemployment, and GDP (level and growth) influence well-being significantly. Some results on micro variables are not in line with other research (usually females and people who are married, for example, are found to be the most satisfied); but, as the author suggests, this is probably due to the fact that the dependent variable is not happiness or life satisfaction but satisfaction with one's economic situation.

A number of papers analyze happiness/life satisfaction in a single country. Namazie and Sanfey (2001) analyze self-reported measures of life satisfaction in Kyrgyzstan in 1993. They find that unhappiness is widespread among older people (happiness is lowest at the age of 63), people who are unemployed, and people who are divorced. The hypothesis that higher satisfaction is associated with greater economic well-being is also strongly supported by the data. Interestingly, happiness and gender, as well as happiness and the level of education, seem to be uncorrelated. The latter finding is surprising, as it is not usual in similar research. The authors speculate this might be because skills and education acquired under the old regime are of little use in the new circumstances.

Several papers examine happiness in Russia. For example, Veenhoven (2001) and Graham and Fitzpatrick (2002) find high levels of unhappiness among Russians. Graham and Fitzpatrick find that in Russia in the 1995-2000 period static variables such as gender, stable marital status, and education levels are more likely to have effects on happiness levels, while changes in socio-economic or marital status (particularly divorce) are more likely to affect happiness levels.

Lelkes (2006) uses Hungarian survey data from two periods, 1991-1992 and 1997-1998, to analyze the impact of religion and economic transition on happiness. She finds that unemployment, disability pensioner status, and divorce influence life satisfaction negatively, while high income, higher levels of education and marriage have a positive impact on satisfaction. She also finds that religious people have a consistently higher level of satisfaction. Moreover, money is a less important source of happiness for the religious.

There are not many papers that analyze happiness or life satisfaction in Croatia only. Kaliterna Lipovčan and Prizmić-Larsen (2006) investigate various dimensions of subjective well-being in Croatia and compare them with different European countries. They find that Croatia's subjective well-being rates according to their status in 2003 fit below the EU-15 or at the top of the list of 13 acceding and candidate countries. The results also suggest that the standard of living is the least satisfying domain and relationships with family and friends the most satisfying. When rating national domains, Croatian citizens are found to be most satisfied with national security and the state of the environment, and the least satisfied with social conditions in the country.

Kaliterna Lipovčan, Brkljačić, and Šakić (2007) investigate the differences in subjective well-being (measured by happiness, life satisfaction, and satisfaction with different life domains) among people with different household incomes. They find that the various above-mentioned measures of subjective well-being significantly differ between groups of people with different levels of monthly income. Respondents with higher income were found to be happier and more satisfied with their life, their material status, health, achievements, future security, economic situation, the state of the environment, and the social conditions in Croatia. Interestingly, no significant differences were found between the two groups with the lowest levels of income (less than EUR 130 per person per month), nor between the two groups with the highest incomes (more that EUR 401 per person per month).

The Gallup Balkan Monitor survey continually monitors the state of public opinion in Balkan countries (Serbia, Montenegro, Macedonia, Albania, Croatia, Bosnia and Herzegovina, and Kosovo). With its partner, the European Fund for the Balkans, they recently conducted a survey (2008) to measure public opinion on subjects such as living standards, happiness with and attitudes towards the EU, employment opportunities, feelings about living abroad, and the performance of the governments in these countries. Although according to the data Croatia is the region's wealthiest country and the one closest to achieving EU accession, many of the indicators describing people's well-being and future outlook were found to be some of the region's gloomiest. On the one hand, 72 percent of the respondents were found to be satisfied with their lives. On the other hand, 57 percent said they were dissatisfied with their standard of living. Eighty-four percent of people thought the country was going in a bad direction. Confidence in the national government was the lowest in the region. Finally, 43 percent of people were against accession to the EU.

3 Empirical Analysis of Life Satisfaction in Croatia

According to the summary table of the average life satisfaction in 148 nations in the period 2000-2009 in Veenhoven's World Database of Happiness, Croatia ranks somewhere between 67th and 70th place, with the average answer 6.0 on a 1 to 10 scale. This ranks Croatia right in the middle of the list of 148 countries. The countries at the top of the rankings (Costa Rica, Denmark, Iceland, Switzerland, and Canada) have, on average, satisfaction scores higher than 7.9, while the countries at the bottom of the rankings (Benin, Burundi, Zimbabwe, Togo, and Tanzania) have rated their satisfaction, on average, lower than 3.1. Countries in the middle range that have the same average satisfaction level as Croatia are Hong Kong, South Africa, and Uzbekistan. As for transition countries, in the 1990s they consistently appeared at or near the bottom of the list of the, then presented, 68 countries. Frey and Stutzer (2002b) note that Central European transition countries scored higher than former Soviet Union countries but still below the richest Organisation

for Economic Co-operation and Development (OECD) countries. In the period 2000-2009, these countries were, much like Croatia, in the middle of the table. Czechs, Slovenians, and Poles were slightly more satisfied with life than Croatians; and Romanians, Bulgarians, Slovaks, and Hungarians were less satisfied. In the next section we turn to an econometric examination of life satisfaction and its determinants in Croatia.

3.1 Data and Econometric Analysis

There are various sources of cross-country data on subjective well-being indices, such as the World Values Survey (WVS), the European Values Survey (EVS), the New Democracies Barometer, the World Database on Happiness, the European Quality of Life (EQLS) survey, and many others. Croatia was included in some of them (the WVS in 1996, the EVS in 1999,[3] and the EQLS in 2007). However, to date, there has not been a single source that tracks quality of life/life satisfaction/happiness in Croatia over several years, which would allow comparisons over time.[4] In addition to the above-mentioned sources on social variables for Croatia, the United Nations Development Program (UNDP) in Croatia, in anticipation of the 2007 EQLS, conducted a survey in May 2006 using the same questionnaire which the European Foundation for the Improvement of Living and Working Conditions administered in 28 European countries (excluding Croatia) in 2003.

Since the WVS 1996 and the EQLS 2007 data on Croatia lacks some crucial socio-demographic and county-level variables, in our empirical analysis we use the data from two surveys: the EVS 1999 and the UNDP 2006 data. The survey from 1999 covered 1,003 individuals in Croatia. However, due to missing data on certain key variables, which led to a loss of 122 observations, the size of the final dataset used in our analysis is 881 individuals, consisting of 363 males and 518 females. The

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3   The EVS was conducted in Croatia also in 2007, but this data is not available to the public yet.

4   It could be argued that the WVS and the EVS could be considered the same source; but, as we explain in the text below, the data from the WVS 1996 lacks some key control variables and, therefore, could not be used in our analysis.

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survey from 2006 covered 8,534 individuals. However, due to missing data, the size of our dataset for this year is 7,471 individuals, consisting of 3,011 males and 4,460 females.

In both surveys the respondents were interviewed and asked the following question (among other questions): "All things considered, how satisfied are you with your life as a whole these days?" - with possible answers on a 1 (dissatisfied) to 10 (satisfied) scale. Figure 1 presents the percentage of people that belongs to each of the ten groups/answers for each year.

Figure 1: *Life Satisfaction in Croatia in 1999 and 2006*
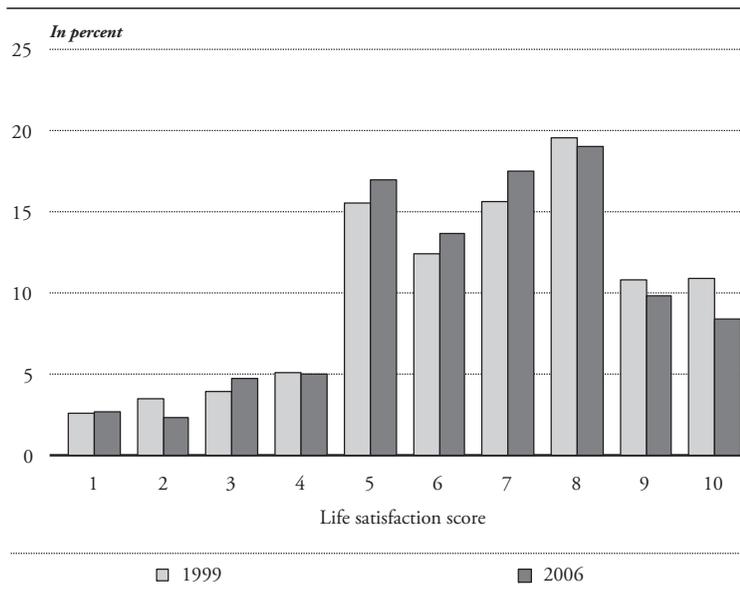
Source: The EVS 1999 and the UNDP 2006 data.

Figure 1 suggests that, in both years, life satisfaction scores were skewed to the right (i.e., towards the higher satisfaction levels). This is confirmed by figures in Table 1, where we segregate the data according to particular groups of individuals.

Table 1: *Reported Llife Satisfaction in Croatia in 1999* and 2006***

			Marital Status					
	All		**Married**		**Single**		**Unemployed**	
Reported Life Satisfaction	**1999**	**2006**	**1999**	**2006**	**1999**	**2006**	**1999**	**2006**
1	2.61	2.64	1.81	2.23	1.30	1.69	3.37	4.78
2	3.52	2.29	3.27	2.02	3.46	2.25	3.37	4.6
3	3.97	4.71	3.63	4.02	4.33	3.07	6.74	6.53
4	5.11	5.01	3.99	4.21	6.49	4.44	6.74	6.26
5	15.55	16.93	15.61	17.37	15.58	12.2	20.22	21.8
6	12.37	13.63	12.52	13.94	9.52	11.08	8.99	14.35
7	15.66	17.51	16.52	18.05	14.29	19.59	19.10	15.73
8	19.52	19.05	19.24	19.46	24.68	23.72	16.85	12.79
9	10.78	9.84	11.43	9.71	10.39	13.08	10.11	6.35
10	10.90	8.41	11.98	8.98	9.96	8.89	4.49	6.81

	Income Status							
	Income < HRK 2,001		**Income HRK 2,001-5,000**		**Income HRK 5,001-8,000**		**Income > HRK 8,001**	
Reported Life Satisfaction	**1999**	**2006**	**1999**	**2006**	**1999**	**2006**	**1999**	**2006**
1	8.82	6.30	1.83	2.65	1.20	1.12	0.89	0.22
2	2.94	6.12	4.19	1.74	1.99	0.53	5.36	1.02
3	4.41	9.27	4.45	5.06	3.19	2.18	3.57	1.96
4	7.35	8.32	5.76	5.33	2.79	4.04	5.36	1.67
5	17.65	22.64	14.66	19.2	15.54	14.58	16.07	9.00
6	13.24	13.73	12.30	14.93	13.55	14.26	8.93	10.23
7	15.44	13.61	18.32	16.99	12.35	20.01	14.29	19.81
8	14.71	10.46	19.11	17.19	23.11	22.41	18.75	28.37
9	8.09	4.99	7.85	7.82	12.75	11.55	19.64	17.13
10	7.35	4.58	11.52	9.09	13.55	9.31	7.14	10.60

Note: *Based on 881 observations. **Based on 7471 observations. All numbers are expressed as percentages.
Source: The EVS 1999 and the UNDP 2006 data.

The results in Table 1 contain a number of interesting points, and several patterns appear. Overall, approximately 70 percent of the sample reported a higher satisfaction score (6 and above) in both years. This is broadly in line with happiness scores in Western European countries. As shown by the Eurobarometer data, about 80 percent of people in the selected advanced economies described themselves as "very happy" or "pretty happy" (see, for example, Di Tella, MacCulloch and Oswald, 2003). The Gallup Poll on the Western Balkans also finds that 72 percent of Croatians are satisfied with their lives. If we undertake the same cross-tabulations as in Table 1 for a set of transition countries (Albania, Bulgaria, Belarus, Bosnia and Herzegovina, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, Russia, Serbia and Montenegro, Slovakia, Slovenia, Ukraine, and Macedonia), it appears that Croatians report higher life satisfaction compared to respondents in other transition countries. More precisely, the results (not reported) indicate that, in the whole sample (which includes 5 waves of surveys), only 47 percent of the respondents belong to the higher satisfaction group (6 and above). It should be stressed, though, that cross-country comparisons on subjective data should be made cautiously and conclusions drawn tentatively.

The results in Table 1, furthermore, suggest that people who are unemployed in Croatia seem to be overall less content than the average individual in the sample. Those who are married and single people both seem to be associated with higher well-being scores (although the result for single people is more pronounced in the 2006 sample). As for the income, expectedly, those with higher incomes seem to be more satisfied than those with lower incomes.

Cross-tabulations, however, cannot give conditional comparisons between various groups; hence, we turn to multivariate estimation of the relationship between life satisfaction and socio-demographic variables in the next section. The data sources as well as the summary statistics are given in Appendices 1 to 3.

The model we use has the standard form: $LS_i = \alpha + X_i \beta + \varepsilon_i$, where LS is the reported life satisfaction of individual i, X is a vector of socio-demographic

and economic characteristics hypothesized to affect life satisfaction, and ε_i is the error term. Given that the dependent variable can have more than one value, and given that the answers are ordinal rather than cardinal, these kinds of models are usually estimated through ordered probit or logit models. Since the main use of happiness functions in economic analyses is not to compare levels of happiness in absolute levels, but rather to investigate the determinants of happiness, Frey and Stutzer (2002a) conclude that the subjective data can be treated ordinally in econometric analysis. Therefore, it is not necessary in these cases to assume that reported subjective well-being is neither cardinally measurable nor interpersonally comparable. Furthermore, they argue that ordinal and cardinal treatments of life satisfaction generate quantitatively very similar results in microeconometric happiness functions.

3.2 The 1999 Results

In what follows we present and discuss the results from the 1999 and 2006 surveys separately for several reasons. First, given that the two surveys are from different sources (the EVS and the UNDP, respectively), that the number of the respondents in each survey is different, and that the definitions of the variables are not exactly the same (we just grouped them in a similar fashion – see Appendices 1 and 2), they could not be analyzed jointly. Second, as it will become apparent in this analysis, the results between the two surveys differ and, therefore, require separate discussions. Finally, it would be inconvenient in terms of presentation. The 1999 results for different specifications are presented in Table 2. These specifications are labeled as Models (1), (2), (3), and (4), and the rationale for each model is given below.

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Table 2: *Marginal Effects in an Ordered Logit for the EVS 1999[5]*

	Model			
	(1)	**(2)**	**(3)**	**(4)**
Male dummy	-0.022** (0.044)	-0.020 (0.104)	-0.016 (0.131)	-0.016 (0.163)
Age	-0.008** (0.018)	-0.007** (0.018)	-0.005* (0.074)	-0.005* (0.055)
Age squared	0.00008** (0.036)	0.00006* (0.055)	0.00005 (0.148)	0.00005 (0.138)
Marital status				
Married	0.040** (0.023)	0.042** (0.017)	0.039** (0.018)	0.039** (0.017)
Divorced/Separated	-0.028 (0.248)	-0.029 (0.131)	-0.024 (0.287)	-0.024 (0.156)
Widowed	-0.016 (0.543)	-0.015 (0.668)	-0.019 (0.414)	-0.019 (0.549)
Education				
Secondary/Vocational	0.009 (0.569)	0.003 (0.767)	-0.011 (0.491)	-0.011 (0.286)
University	0.035 (0.207)	0.025 (0.422)	-0.005 (0.786)	-0.005 (0.791)
Employment				
Employed	0.037* (0.056)	0.034 (0.107)	0.032* (0.077)	0.032 (0.111)
Out of the labor force	0.025 (0.238)	0.023 (0.259)	0.023 (0.248)	0.023 (0.226)
Income				
HRK 2,001-5,000	0.016 (0.379)	0.016 (0.488)	0.022 (0.200)	0.022 (0.307)
HRK 5,001-8,000	0.048** (0.040)	0.049* (0.127)	0.066*** (0.007)	0.066** (0.013)
> HRK 8,001	0.024 (0.352)	0.019 (0.518)	0.035 (0.198)	0.035 (0.262)
GDP per capita		3.90e-06*** (0.002)		0.0001*** (0.000)
County of Zagreb			-0.031 (0.107)	0.125*** (0.000)
Krapina-Zagorje			-0.030 (0.171)	0.131*** (0.000)
Sisak-Moslavina			-0.018 (0.361)	0.164*** (0.000)

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5   Marginal effects for the ordered logit can be computed for only one outcome (out of 10 possible outcomes in this case) at a time. In this case we use the outcome 10, i.e., the answer satisfied, as it is common practice to choose one of the extreme outcomes.

	Model			
	(1)	**(2)**	**(3)**	**(4)**
Karlovac			0.024 (0.568)	0.265*** (0.000)
Varaždin			0.027 (0.529)	0.237*** (0.000)
Koprivnica-Križevci			-0.068*** (0.000)	0.007 (0.449)
Bjelovar-Bilogora			-0.033 (0.135)	0.126*** (0.000)
Primorje-Gorski kotar			-0.013 (0.535)	0.126*** (0.000)
Lika-Senj			-0.075*** (0.000)	Dropped
Virovitica-Podravina			-0.044** (0.030)	0.093*** (0.000)
Požega-Slavonia			-0.079*** (0.000)	-0.021*** (0.000)
Slavonski Brod-Posavina			-0.053*** (0.000)	0.075*** (0.000)
Zadar			-0.002 (0.910)	0.191*** (0.000)
Osijek-Baranja			-0.044*** (0.006)	0.082*** (0.000)
Šibenik-Knin			-0.066*** (0.000)	0.027*** (0.000)
Vukovar-Sirmium			-0.012 (0.574)	0.198*** (0.000)
Split-Dalmatia			0.015 (0.493)	0.212*** (0.000)
Istria			0.024 (0.442)	0.172*** (0.000)
Dubrovnik-Neretva			-0.013 (0.613)	0.160*** (0.000)
Međimurje			-0.077*** (0.000)	-0.026*** (0.001)
Number of observations	881	881	881	881
Pseudo R^2	0.0124	0.0141	0.0303	0.0303
Log likelihood	-1855.0236	-1851.767	-1821.4618	-1821.4618

Note: p-values are in parentheses, while ***, **, and * denote significance at 1, 5 and 10 percent, respectively. The dependent variable is reported life satisfaction. Omitted dummy variables are single, primary, unemployed, less than HRK 2,001, and the City of Zagreb.
Source: Author's calculations.

The results in Model (1) indicate that males in Croatia were significantly less satisfied with life than females. Sanfey and Teksoz (2007) also find that males are less happy than females in the non-transition countries, but that this correlation is much weaker in the transition sample. Many studies, furthermore, show that there are no gender differences in life satisfaction (see, for example, Fahey and Smith, 2004; Kapteyn, Smith and van Soest, 2009). Indeed, this result holds only in Model (1). In other specifications we found no significant gender differences.

Age had a non-linear effect on life satisfaction. Its effect is U-shaped (since the sign on age variable is negative and the one on age squared is positive). This finding is also commonly established in the literature (see, for example, Blanchflower, 2007; Sanfey and Teksoz, 2007; and Blanchflower and Oswald, 2007). More precisely, the young and the old are usually found to be more satisfied with life, while those middle-aged dissatisfied. To be even more precise, our investigation indicates that Croatians were the least satisfied with their life from age 49 to 52. This is at a slightly higher age than the turning point for most OECD countries and the United States, which is typically in the early fourties. Blanchflower (2007), for example, finds that for females in Europe the minimum amount of happiness occurs at an age of 42.6, and for males at 44.1 years. Other papers that investigate transition countries find that this turning point occurs at the age of 49 in Russia (Graham and Fitzpatrick, 2002), at the age of 63 in Kyrgyzstan (Namazie and Sanfey, 2001), from 40 to 49 in Hungary (Lelkes, 2006), and in the early fifties in a specific set of transition countries (Sanfey and Teksoz, 2007).

As for the marital status, married people were significantly more satisfied with their life than single people. The results for the divorced/separated and widowed categories are not statistically significant, suggesting that there was no difference between these groups and the reference group, single people. The literature conventionally finds married people to be the most satisfied group, so this result also confirms previous findings (see Blanchflower, 2007; Sanfey and Teksoz, 2007).

As far as education is concerned, the results indicate that life satisfaction does not increase with the level of education. This finding is unexpected. Namazie and Sanfey (2001) also find that education does not have a significant impact on happiness. Their sample, however, is the early-transition one. They explain this lack of significance with the fact that the collapse of output during the early stages of transition may have left many highly educated people frustrated since their skills (acquired under the old system) no longer matched the requirements of the new labor market. Moreover, they argue that in the early years of the radically changing economy in which survival was at stake, returns to education were likely to be small and formal education was of a limited use in terms of making a basic living. Our sample, however, is from 1999; and Croatia was in the late-transition phase by that time. Therefore, it is not likely that the same reasoning could be applied in this case. So, what could be the reason?

As argued by Layard (2005), we would expect to find education on the list of factors that are central to happiness. However, a wide range of published research has come to broadly the same conclusions, namely, that education appears to have only a small direct impact on happiness. Furthermore, Layard argues that this might be due to the fact that education influences happiness indirectly, for example, through its impact on people's ability to earn. This is also supported by Kahneman, Diener and Schwarz (1999) who note that, since education is closely linked to income and occupational status, it can be the cause of both. The results vary in different studies and for different parts of the world and show that, after controlling for income and employment status, education can have a positive, negative, or neutral influence on happiness. Moreover, Oishi, Diener and Lucas (2007: 350) find that "the highest levels of income, education and political participation were reported not by the most satisfied individuals (10 on the 10-point scale), but by moderately satisfied individuals (8 or 9 on the 10-point scale)." The lack of significance of education variables in our sample might, thus, be explained by applying the reasoning presented above. It seems that education in Croatia does not have an effect on life satisfaction independently of income and job status, since

we have already controlled for these variables. Indeed, if we exclude income and employment variables from our regression, the results (not reported) indicate that having a university degree significantly influences life satisfaction. Moreover, if we compute the marginal effect using the outcome 8 (on a 1 to 10 scale, instead of 10 as in Table 2), this variable becomes even more significant.

The results, furthermore, suggest that people who were employed were, expectedly, more satisfied with their lives than people who were unemployed. Those individuals who were out of the labor force were less satisfied than those who were employed and more satisfied than those who were unemployed. The latter result, however, is not statistically significant. The finding that those who were employed were the most satisfied group is in line with the results for both western and transition economies (see, for example, Clark and Oswald, 1994; Winkelmann and Winkelmann, 1998; Namazie and Sanfey, 2001).

Finally, as far as income is concerned the results indicate that those with a higher income were more satisfied with their lives than those with a lower income. The only statistically significant result, however, is for those with an income between HRK 5,001 and 8,000. This is a bit surprising given that studies usually find all income levels to be significant (see, for example, Malešević Perović, 2008; Sanfey and Teksoz, 2007). The average wage in 1999 in Croatia was HRK 3,055. Those people who earned between HRK 5,001 and 8,000 a month can, therefore, be considered well above the average. For that reason the finding that this group was significantly more satisfied with life than the reference group comes as no surprise. Living with a monthly income above HRK 8,001 might be considered a high standard of living for Croatian standards in 1999. It might be the case then that the life satisfaction of this top income group was not as much influenced by their better relative position as it was for those who fell right below them, since they earned well above the average wage and well above what is necessary for everyday life. Their life satisfaction, therefore, seemed to depend more on other factors rather than income. Indeed, Layard (2005) notes that our individual financial position is of significance especially when we are on the margins of poverty, but beyond that it is

a poor second to the quality of close and family relationships as significant sources of long-term happiness. Easterlin (2001), furthermore, notes that income growth does not cause well-being to rise for persons with either higher or lower incomes because it generates equivalent growth in material aspirations.

Interestingly, Kaliterna Lipovčan, Brkljačić and Šakić (2007) find, similar to our findings, that there is no difference in subjective well-being between the two groups with the lowest incomes (≤HRK 2,565 per household[6]), as well as between the two groups with the highest incomes (≥HRK 7,915 per household[7]). They, furthermore, argue that the lowest income group can objectively be considered poor, since they are below the poverty line in Croatia (approximately HRK 3,625 per household in 2004). Therefore, incomes below the poverty line do not affect subjective well-being in a significant manner. Subjective well-being starts increasing with an income above the poverty threshold. Finally, after a certain level of income is reached, subjective well-being no longer increases in proportion to the rise in income. Their study shows that what could be considered a sufficient monthly income in Croatia in 2005 amounted to HRK 7,915 a month per household. A similar conclusion (HRK 8,000) is implied by our results in Table 2.

As for the exact interpretation of the marginal effects in Table 2, they should be read as follows: the marginal effect on, for example, married people, of 0.040 means that the probability that a married person reports himself/herself to be "satisfied" (i.e., he/she circles number 10 on a 1 to 10 scale) is 4 percentage points higher than that for a single person.

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6   We assume here that a household consists of two adults and two children. The needs of a household grow with each additional member but not in a proportional way. The *equivalence scales* are used to assign a value to each household type in the population in proportion to its needs. A wide range of equivalence scales exists, and one of the commonly used scales is the OECD equivalence scale, which assigns a value of 1 to the first household member, 0.7 to each additional adult, and 0.5 to each child (for more information, see http://www.oecd.org/dataoecd/61/52/35411111.pdf). A household consisting of two adults and two children can, therefore, be considered to have 2.7 members according to this scale. The original number of EUR 130 per household member in Kaliterna Lipovčan, Brkljačić and Šakić's (2007) article was first converted into HRK (using the exchange rate of HRK 7.31 per EUR 1 as in the original paper) and then multiplied by 2.7. We use the same conversion for all other numbers from Kaliterna Lipovčan, Brkljačić and Šakić's (2007) paper in order to ease the comparison with our results.

7   See footnote 4.

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In addition to the income group that an individual falls within, which allows an assessment of the impact of one's relative income position on satisfaction, it has become a common practice to also account for the impact of the general level of income of the population on life satisfaction. This is usually done by including GDP per capita as an additional variable. However, when only one country is analyzed it makes no sense to include a country's GDP per capita, since there would be no variation in this variable in the sample (especially in this case in which we have only one year at hand). What does vary, however, is GDP per capita in a particular county. Counties are primary territorial subdivisions of Croatia. There is a total of 21 counties, including the City of Zagreb, which has a status equal to that of a county. Standards of living from county to county vary considerably, as shown in Figure 2, for both years under investigation.

Figure 2: *GDP per capita in Croatian Counties in 1999 and 2006*
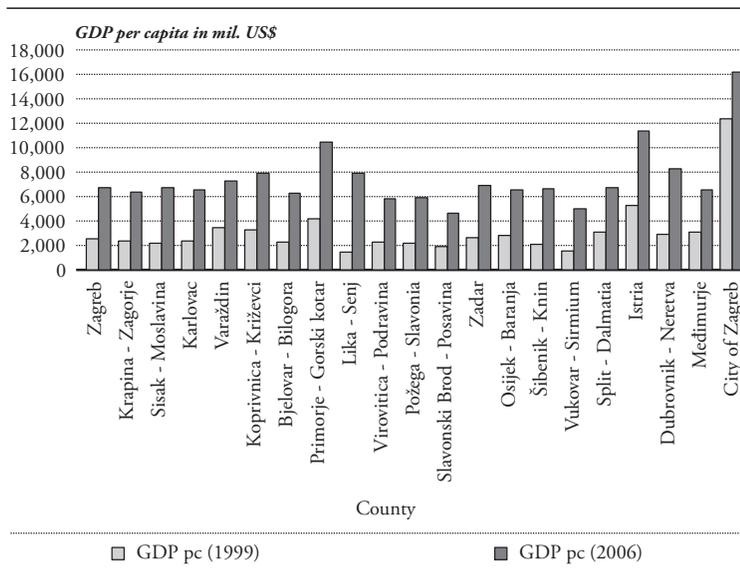
Source: Filipić (2000) and Central Bureau of Statistics of Republic of Croatia (2009).

The unbalanced regional development is one of the characteristic features of Croatia. As indicated by Figure 2, GDP per capita in the richest county, the City of Zagreb, amounted to US$ 12,384 (about HRK 88,200) in 1999, which was more than eight times higher than GDP per capita in the poorest county of Lika-Senj, where it was US$ 1,453 (about HRK 10,350). In 2006, GDP per capita was US$ 16,214 (about HRK 94,690) in Zagreb, which was 3.5 times higher than GDP per capita in the county of Vukovar-Sirmium. For this reason we additionally include GDP per capita in the county that a respondent belonged to in order to account for regional disparities in income. This is given in Model (2) (Table 2) where GDP per capita is found to be statistically significant and of the expected (positive) sign. This finding indicates that the probability that an individual would report to be "satisfied" (that is, choose 10 on the scale) was higher in counties with a higher GDP per capita. This result gives support to the hypothesis that greater economic well-being is associated with higher levels of life satisfaction. It should be noted that, because the regional GDP per capita has less variation than the individual-level data (as it varies only by counties not by individuals), the standard errors should be adjusted, as they would otherwise be biased. This bias in the standard errors can result in spurious findings of statistical significance and a resulting increase of test statistics on the county-level variable. For this reason, in those cases when the regional GDP per capita is included in the regression, we use the clustering option, which assumes independence across clusters (counties in this case), but not across observations within clusters and computes standard errors that are robust to this type of dependence.

We additionally include county dummies. This is because not only does GDP per capita vary across counties, but so do life satisfaction scores, as presented in Figure 3.

In Figure 3 life satisfaction scores are grouped in three groups[8]: answers 1 to 3 form the group with the lowest satisfaction, the middle satisfaction group contains answers 4 to 7, and scores 8 to 10 are clustered together as they represent the highest

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8   We had to group the data for presentational purposes, but we do note that the grouping is somewhat arbitrary.

satisfaction group. Taken at face value this graphical representation suggests the following:

- The county of Varaždin had the largest percentage of satisfied people, and this score dominated in this county.

- High satisfaction scores also dominate in the counties of Krapina-Zagorje, Karlovac, Split-Dalmatia, Istria, and Dubrovnik-Neretva.

- In the county of Požega-Slavonia nobody chose one of the three highest life satisfaction scores, and the large majority of people (over 90 percent) in this county fell within the middle satisfaction group.

- The county of Međimurje had the largest percentage of dissatisfied people among all Croatian counties.

- The county of Istria had the lowest percentage of dissatisfied people.

Figure 3: *Life Satisfaction in Croatian Counties[9] in 1999*
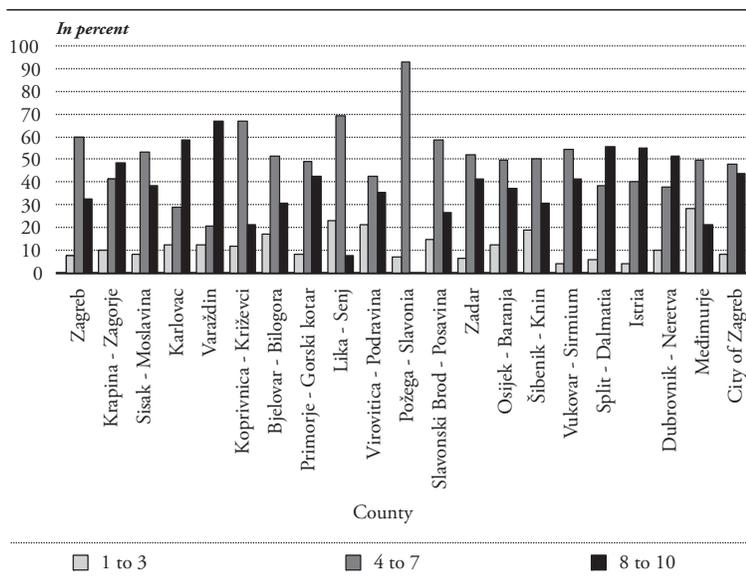
Source: The EVS 1999 data.

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9   The average number of respondents per county is given in Appendix 4.

As indicated above, Models (3) and (4) (Table 2) add to the previous specification by including county dummies. These dummies control for what is specific in a certain county. We report the result for two cases: with and without the inclusion of the regional GDP per capita because it may be argued that this variable also controls for county fixed effects and the literature is inconclusive as to whether both types of variables should be included at the same time. The results on socio-demographic variables are mostly unaffected by the inclusion of these dummies. As for the counties, the probability of an individual reporting to be "satisfied" (choosing 10 on the scale) was significantly lower for people living in Koprivnica-Križevci, Lika-Senj, Virovitica-Podravina, Požega-Slavonia, Slavonski Brod-Posavina, Osijek-Baranja, Šibenik-Knin, and Međimurje than for people living in the City of Zagreb (reference category). When the regional GDP per capita is included, on the other hand, it seems that only those individuals living in the counties of Požega-Slavonia and Međimurje were less satisfied than those living in the City of Zagreb, while people in the rest of the counties were more satisfied. The City of Zagreb had, as shown in Figure 2, by far the highest GDP per capita in all of Croatia. The most surprising result is the one regarding the counties of Vukovar-Sirmium and Brod-Posavina, since their respective GDP per capita was 8 and 6.4 times lower than that in the City of Zagreb in 1999. Life satisfaction, therefore, although affected by economic well-being seems to depend also on other, idiosyncratic characteristics of certain regions. It should be stressed that these results should be interpreted only tentatively, since the sample of the respondents is too small to be divided into 21 counties.

Finally, as a robustness check, we test whether the conclusions remain unchanged when we analyze a specific individual in order to give the marginal effects more realistic meaning, instead of restricting our analysis to a vague concept – an average respondent. Namely, in non-linear models (such as the one in Table 2) the effect on the dependent variable of a change in an independent variable depends on the values of all variables in the model and is no longer equal to one of the parameters of the model. In our models in Table 2, the marginal effects were computed (by

default) at the mean of the independent variables. Since most of the independent variables are dummy variables, their average values do not have interpretative meaning. Therefore, we calculated the marginal effects for a specific type of respondent, namely, a 30-year old,[10] married female with a university degree,[11] who was employed, belonged to the income group earning between HRK 5,001 and 8,000, and was from the county of Karlovac (the corresponding county GDP per capita is also included). We chose this description since the results in Table 2 indicated that this is the description of a person who should be the most satisfied with life. The results (not reported) remained unaffected in terms of signs and significances in this case.

We also tried to include the logarithm of GDP per capita instead of its level. Namely, as argued by Frey and Stutzer (2002a), the relationship between individual income and happiness is non-linear; that is, there is diminishing marginal utility with absolute income. More precisely, increments to income per capita provide increments to happiness at low levels of development, but after a certain threshold the average income level in a country has little effect on average subjective well-being. This variable is found to exert a significant and positive impact on life satisfaction, while the other results remain unaffected by this change. Finally, we tried to regroup the education, employment, and income dummies into more categories. However, this turned out not to have an influence on our main conclusions.

3.3 The 2006 Results

As indicated above, in anticipation of the 2007 EQLS, the United Nations Development Program (UNDP) in Croatia conducted a similar survey in 2006 using the same questionnaire as in the 2003 EQLS. Since the data on Croatia from the 2007 EQLS is not available to the public yet, we believe that using the UNDP

10 The impact of age is found to be U-shaped with minimum satisfaction occurring at the age of 50, so presumably at the age of 30 they should be satisfied.

11 Our results in Table 4 were not significant for this variable, but it is a common finding in the literature that those with the highest level of education are the most satisfied with life. This is the reason that we give this characteristic to this "most satisfied" female.

data from 2006 can be more useful in this case, since it also contains the data divided by counties, which is not the case with the 2007 EQLS. Below, we report the results for Models (1) to (4) (as in Table 2) using this new data.

Table 3: *Marginal Effects for an Ordered Logit for the 2006 UNDP*

	Model			
	(1)	**(2)**	**(3)**	**(4)**
Male dummy	-0.003 (0.209)	-0.003 (0.554)	-0.002 (0.299)	-0.002 (0.580)
Age	-0.005*** (0.000)	-0.005*** (0.000)	-0.005*** (0.000)	-0.005*** (0.000)
Age squared	0.00004*** (0.000)	0.00004*** (0.000)	0.00004*** (0.000)	0.00004*** (0.000)
Marital Status				
Married	0.020*** (0.000)	0.021*** (0.000)	0.021*** (0.000)	0.021*** (0.000)
Divorced/Separated	-0.015** (0.013)	-0.016** (0.024)	-0.015*** (0.010)	-0.015** (0.023)
Widowed	-0.0004 (0.947)	-0.0006 (0.991)	-0.0002 (0.967)	-0.002 (0.967)
Education				
Secondary/Vocational	0.027*** (0.000)	0.026*** (0.000)	0.023*** (0.000)	0.023*** (0.000)
University	0.059*** (0.000)	0.057*** (0.000)	0.051*** (0.000)	0.051*** (0.000)
Employment				
Employed	0.033*** (0.000)	0.033*** (0.000)	0.032*** (0.000)	0.032*** (0.000)
Out of labor force	0.038*** (0.000)	0.037*** (0.000)	0.036*** (0.000)	0.036*** (0.000)
Income				
HRK 2001-5000	0.038*** (0.000)	0.038*** (0.000)	0.036*** (0.000)	0.036*** (0.000)
HRK 5001-8000	0.063*** (0.000)	0.062*** (0.000)	0.061*** (0.000)	0.061*** (0.000)
> HRK 8001	0.104*** (0.000)	0.100*** (0.000)	0.101*** (0.000)	0.101*** (0.000)
GDP per capita		1.76e-06** (0.043)		1.03e-06*** (0.000)
County of Zagreb			-0.017*** (0.007)	-0.009*** (0.000)
Krapina-Zagorje			-0.027*** (0.000)	-0.020*** (0.000)

■ ■

	Model			
	(1)	**(2)**	**(3)**	**(4)**
Sisak-Moslavina			-0.0002 (0.974)	0.010*** (0.000)
Karlovac			-0.020*** (0.002)	-0.013*** (0.000)
Varaždin			-0.017** (0.013)	-0.009*** (0.000)
Koprivnica-Križevci			-0.016** (0.017)	-0.009*** (0.000)
Bjelovar-Bilogora			-0.035*** (0.000)	-0.029*** (0.000)
Primorje-Gorski kotar			-0.0002 (0.978)	0.005*** (0.000)
Lika-Senj			-0.003 (0.636)	0.004*** (0.000)
Virovitica-Podravina			0.009 (0.331)	0.022*** (0.000)
Požega-Slavonia			-0.015** (0.024)	-0.006*** (0.000)
Slavonski Brod-Posavina			-0.011 (0.147)	-0.014*** (0.000)
Zadar			-0.022*** (0.001)	-0.014*** (0.000)
Osijek-Baranja			-0.021*** (0.001)	0.019*** (0.000)
Šibenik-Knin			0.007 (0.407)	0.010*** (0.000)
Vukovar-Sirmium			-0.002 (0.808)	0.041*** (0.000)
Split-Dalmatia			0.027** (0.020)	0.006*** (0.000)
Istria			0.001 (0.869)	0.004*** (0.000)
Dubrovnik-Neretva			-0.003 (0.665)	-0.016*** (0.002)
Međimurje			-0.023*** (0.000)	-0.023*** (0.000)
Number of observations	7471	7471	7471	7471
Pseudo R²	0.0383	0.0386	0.0439	0.0439
Log likelihood	-15129.406	-15124.97	-15041.316	-15041.316

Note: p-values are in parentheses, while ***, **, and * denote significance at 1, 5 and 10 percent, respectively. The dependent variable is reported life satisfaction. Omitted dummy variables are single, primary, unemployed, less than HRK 2,001, and the City of Zagreb.
Source: Author's calculations.

Unlike the 1999 results, the 2006 marginal effects are mostly significant and, in brief, indicate the following. First, there were no gender differences. The impact of age was, as before, U-shaped, with the minimum occurring at the age of 58 years this time. As for marital status, those who were married seem to have been more satisfied with life than the reference category, single people, while those people who were divorced and/or separated were less satisfied. The results were not significant for the widowed. As far as education is concerned, the higher the education level, the more satisfied an individual was with his/her life. People with a university degree were the most satisfied, followed by those with a vocational or secondary education. Both groups were significantly more satisfied than those with only an elementary education. Employed people were, expectedly, more satisfied than those who were unemployed. Those people who were out of the labor force were more satisfied than those who were employed and, consequently, than those who were unemployed. This is a surprising finding, given that most studies find that people who are employed are the "happiest" group among the three groups. Interestingly, however, Namazie and Sanfey (2001) similarly find that those who are out of the labor force are more satisfied with life than those who are employed and unemployed in Kyrgyzstan. Finally, as for the income, those with higher incomes were more satisfied with their lives than those with lower incomes. Since the results of other similar research were already analyzed at length, we do not mention them here. We will note that the 2006 results seem to be more in line with previous research and that the 1999 results seem to be specific. It remains to be seen whether the EVS 2007 data confirms the 1999 results, given that they are from the same source.

Finally, we look into county disparities for the 2006 sample. Figure 4 presents life satisfaction scores grouped in the same three groups as in Figure 3.

This graphical representation suggests the following:

- The county of Split-Dalmatia had the largest percentage of satisfied people, while the county of Bjelovar-Bilogora had the smallest percentage of satisfied people.

- High satisfaction scores also dominated in the counties of Šibenik-Knin and Istria.

- The county of Karlovac had the largest percentage of dissatisfied people among all Croatian counties.

- The county of Istria had the lowest percentage of dissatisfied people.

Figure 4: *Life Satisfaction in Croatian Counties in 2006*
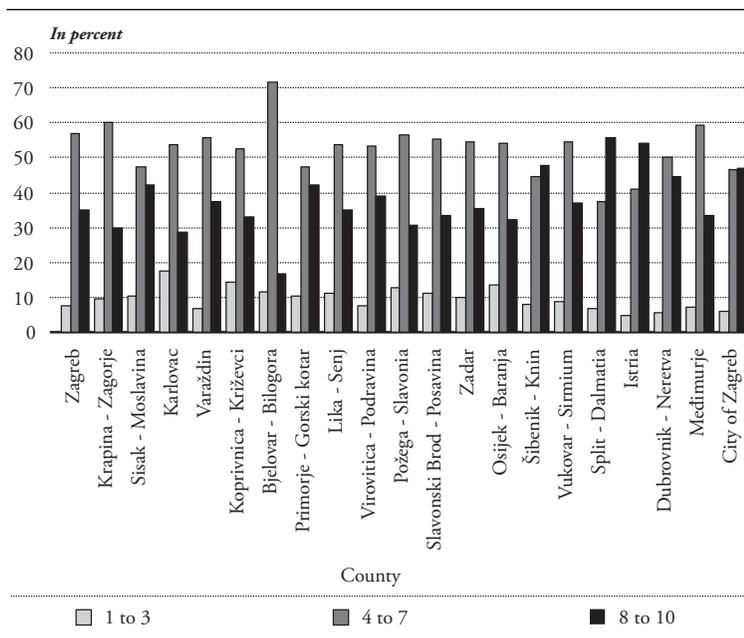
Source: The UNDP 2006 data.

The results from Table 3 show that the probability of an individual reporting to be "satisfied" (choosing 10 on the scale) was significantly lower for people living

in Zagreb, Krapina-Zagorje, Karlovac, Varaždin, Koprivnica-Križevci, Bjelovar-Bilogora, Požega-Slavonia, Slavonski Brod-Posavina, Zadar, and Međimurje than for people living in the City of Zagreb (reference category). This probability, on the other hand, was significantly higher for people living in the county of Split-Dalmatia. The regional GDP per capita was consistently significant and of the expected positive sign. As before, regional differences in life satisfaction do not seem to be explained only by differences in the regional GDP per capita.

4 Conclusion

This paper analyzes socio-demographic and economic determinants of life satisfaction in Croatia. We use the 1999 European Values Survey and the 2006 UNDP data on more than 8,000 individuals who were interviewed and asked to answer questions about their life satisfaction. This kind of subjective approach to assessing well-being has not, to date, received considerable attention in scientific and political discussions in Croatia, and we believe that it can provide a useful complement to conventional economic data.

We find that the results from 1999 and 2006 differ in certain aspects. From the 1999 data we found, in line with expectations, that satisfaction was higher among those people who were employed and those who were married. Furthermore, satisfaction is found to be U-shaped in age, minimizing around the age of 50. The conclusions about age, employment, and marital status were similar to those found in the majority of other studies on both developed and transition economies. On the other hand, we found no support for the common finding that education influences satisfaction significantly. We argue that this is because education in Croatia did not have an effect on life satisfaction independently of income and employment status. Our results support this view. We also obtained an unusual result with respect to the influence of income on life satisfaction. Namely, the most satisfied group of people in Croatia appears to have been those individuals who had an income between HRK 5,001 and 8,000. Surprisingly, we found that life satisfaction of

those with incomes above HRK 8,001 was not significantly different from life satisfaction of those who were living on bare subsistence. Kaliterna Lipovčan, Brkljačić and Šakić (2007) also come to a similar conclusion for 2005; namely, that there was no difference in subjective well-being between the two groups with the lowest income (≤HRK 2,565 per household), as well as between the two groups with the highest income (≥HRK 7,915 per household). This indicates that income status is important when we are on the margins of poverty, but beyond that it is not that important. As for the 2006 results, they seemed to be more in line with expectations. We found that life satisfaction scores were higher for those who were married, those who were employed, those who were out of the labor force, those who had a university degree, and those who had higher incomes. The impact of age was, as before, U-shaped with the minimum occurring at the age of 58. We did recognize that the 1999 and 2006 samples could not be compared directly. They have different sources, different variable definitions, and a different number of respondents. Hence, the conclusions should be drawn cautiously. However, given that the data from the same source over several years is not yet available for Croatia, this is the best we could do for the time being. Whether the determinants of life satisfaction truly changed during the time that elapsed between the two years or whether these differences were due to the fact that we used different sources remains to be seen. The 2007 EVS will soon be available to the public, and it would be of major interest to compare the 1999 and 2007 EVS data.

Finally, we found that economic well-being, measured by GDP per capita in respondent's county, had a significant effect on life satisfaction in both years. Moreover, life satisfaction varied between Croatian counties. The results show that, although it was affected by living standard, some other, idiosyncratic characteristics of certain regions also played an important role. We leave the issue of what those characteristics might be to future research.

Appendix 1

Table A1: *Data, Sources, and Description of Variables for the EVS 1999*

Variable	Source	Description	Code
Life satisfaction	European Values Survey; Wave 4	All things considered, how satisfied are you with your life as a whole these days? 1 - dissatisfied, 2, 3, 4, 5, 6, 7, 8, 9, 10 - satisfied.	V68
County GDP per capita	The data is taken from Filipić (2000)	GDP per capita in million US$.	
Gender	European Values Survey; Wave 4	Dummy variable that takes the value of 1 for males and 0 for females.	V291
Age	European Values Survey; Wave 4	Age of the respondent at the time of survey.	AGE199
Marital status	European Values Survey; Wave 4	Marital status of the respondent: 1 - married (or 2 -living together as married), 3 and 4 - divorced/separated, 5 - widowed, 6 - single.	V296
Education status	European Values Survey; Wave 4	What is the highest educational level that you have attained? Less than secondary school (1 - Inadequately completed elementary education; 2 - Completed (compulsory) elementary education; 3 - Incomplete secondary school: technical/vocational type/(Compulsory) elementary education and basic vocational. and 5 - Incomplete secondary: university-preparatory type/Secondary, intermediate general qualification); finished secondary school but less than university (4 - Complete secondary school: technical/vocational type/Secondary, intermediate vocational qualification, 6 - Complete secondary: university-preparatory type/Full secondary, maturity level certificate, 7 - Some university without degree/Higher education: lower-level tertiary certificate); and completed university (8 - University with degree/Higher education: upper-level tertiary certificate).	V304
Employment status	European Values Survey; Wave 4	Are you employed now or not? Employed (1 - full time, 2 - part time, 3 - self employed); out of the labor force (OLF) (4 - retired, 5 - housewife, 6 - student, 8 - other); unemployed (7 - unemployed).	V306
Income	European Values Survey; Wave 4	Income: less than HRK 2,001 (includes categories: HRK 500 or less per month, 2,000-2,500); HRK 2,001-5,000 (2,001-3,500; 3,501-5,000); HRK 5,001-8,000 (5,001-6,500; 6,501-8,000); and more than HRK 8,001 (8,001-9,500; 9,501-11,000; 11,001-12,500; more than 12,500).	V320_C

Appendix 2

Table A2: *Data, Sources, and Description of Variables for the UNDP 2006*

Variable	Source	Description	Code
Life satisfaction	UNDP Croatia 2006	All things considered, how satisfied are you with your life? Please tell me on a scale of 1 to 10, where 1 means very dissatisfied and 10 means very satisfied.	V148
County GDP per capita	Central Bureau of Statistics	GDP per capita in million US$.	
Gender	UNDP Croatia 2006	Dummy variable that takes the value of 1 for males and 0 for females.	V5
Age	UNDP Croatia 2006	Age of the respondent at the time of survey.	V3
Marital status	UNDP Croatia 2006	Marital status of the respondent: 1 - married (or living with partner), 2 - divorced/separated, 3 - widowed, 4 - single.	V149
Education status	UNDP Croatia 2006	What is the highest level of education you completed? Less than secondary school (1 - none education completed, 2 - primary education (first 3 grades), 3 - primary education (4th -7th grade), 4 - completed primary school); finished secondary school but less than university (5 - lower secondary education (vocational), 6 - upper secondary education (vocational), 7 - gymnasium); and completed university (8 and 9 - bachelor's degree, 10 - masters degree, and 11 - PhD).	V193
Employment status	UNDP Croatia 2006	Which of these best describes your situation? Employed (1 - at work as employee or employer/ self-employed, 2 - employed, on child-care leave or other leave, 3 - at work as relative assisting on family farm or business);unemployed (4 - unemployed less than 12 months, 5 - unemployed 12 months or more, 6 - unable to work due to long-term illness or disability); out of the labor force (OLF) (7 - retired, 8 - full time homemaker/ responsible for ordinary shopping and looking after the home, 9 - in education (at school, university, etc.) / student, 10 - other).	V7
Income	UNDP Croatia 2006	Income: less than HRK 2,001 (includes categories: HRK 500 or less per month; 501-1,000; 1,001-1,500; 1,501-2,000); HRK 2,001-5,000 (2,001-3,000; 3,001-4,000; 4,001-5,000); HRK 5,001-8,000 (5,001-6,000; 6,001-7,000; 7,001-8,000); and more than HRK 8,001 (8,001-10,000; 10,001-12,000; 12,001-14,000; 14,001-16,000; 16,001-18,000; 18,001-20,000; 20,001-25,000; 25,001-30,000; more than 30,001).	V244

Appendix 3

Table A3: *Summary Statistics for the EVS 1999*

Variable	Obs.	Mean	Std. Dev.	Min	Max
Life satisfaction	881	6.65	2.27	1	10
Gender	881	1.59	0.49	1	2
Age	881	40.06	13.98	18	77
Education status	881	5.43	1.91	1	8
Marital status	881	2.67	2.24	1	6
Employment status	881	3.20	2.32	1	8
Scale of income	881	4.36	1.88	1	10
County	881	12.58	6.56	1	21
GDP per capita in counties	881	4,459.45	3,729.77	1,453	12,384

Source: Author's calculations.

Table A4: *Summary statistics for the UNDP 2006*

Variable	Obs.	Mean	Std. Dev.	Min	Max
Life satisfaction	7,471	6.55	2.16	1	10
Gender	7,471	1.60	0.49	1	2
Age	7,471	45.99	17.51	15	98
Education status	7,471	5.47	1.78	1	11
Marital status	7,471	1.92	1.26	1	4
Employment status	7,471	4.44	3.06	1	10
Scale of income	7,471	7.22	3.36	1	19
County	7,471	10.84	6.00	1	21
GDP per capita in counties	7,471	7,301.49	2,266.87	4,652	16,214

Source: Author's calculations.

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Appendix 4

Table A5: *Number of Respondents by County for the EVS 1999 and the UNDP 2006*

County	1999		2006	
	Frequency	**Percent**	**Frequency**	**Percent**
1	40	4.54	389	5.21
2	29	3.29	390	5.22
3	62	7.04	381	5.10
4	24	2.72	273	3.65
5	24	2.72	328	4.39
6	33	3.75	359	4.81
7	29	3.29	407	5.45
8	49	5.56	319	4.27
9	13	1.48	392	5.25
10	28	3.18	404	5.41
11	14	1.59	370	4.95
12	41	4.65	364	4.87
13	46	5.22	329	4.40
14	48	5.45	374	5.01
15	26	2.95	374	5.01
16	46	5.22	353	4.72
17	86	9.76	346	4.63
18	47	5.33	290	3.88
19	29	3.29	372	4.98
20	14	1.59	381	5.10
21	153	17.37	153	17.37
Total	881	100	7,471	100

Source: Author's calculations.

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