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The Impact of Democracy on Well-being

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ABSTRACT

Can governance impact directly on well-being? In this paper we examine subjective well-being using data for a cross section of countries from the World Values data set. We find that regional democratic satisfaction impacts on both individual happiness and life satisfaction. However, the impact is less evident for women, rich people and for those in rich countries. The fact that the governance variable analysis is based on regional differences in democratic satisfaction reminds us that governance and indeed happiness often differs within countries as well as between them. The use of regional satisfaction in this manner helps overcome endogeneity problems which would be present if we were to use individual democratic satisfaction. Other significant determinants of happiness include settlement size, marital status, income, unemployment and being part of a linguistic minority/majority grouping.

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The Impact of Democracy on Well-being

1. Introduction

There is now a substantial literature on “happiness”. Reviews can be found in Frey and Stutzer (2002a and b), Kahneman, Diener and Schwarz (1999), Layard (2006) and Dolan, Peasgood and White (2008). Much of the literature has focused on both countries (e.g. Deaton, 2008) and individuals within cross section analyses, aimed at exploring the socio-economic determinants of “happiness”. It is an important area of research in which a substantial number of economists and others are now working. The research has focused on linking wellbeing to socio-economic variables such as income, age, gender, marital status and level of education. There has also been increased research into the impact of factors external to the individual. Included in this have been aspects of governance.

Governance will be the specific focus of this paper, concentrating on the impact of democracy on well-being. There have been some studies which have analysed this, although there is some disagreement on the nature, if any, of the relationship. Theoretically it seems plausible that there should be such a relationship. Dorn et al. (2007) argue that democracy facilitates outcomes closer to citizen preferences. They also argue that the act of participating in the democratic process may in itself increase well-being. However, empirical problems may arise in detecting such a relationship because of the impacts governance may have on other variables, such as prosperity, and also because of the potential impact of variables such as culture on both democracy and well-being. There are also potential endogeneity problems when we use individual perceptions of democracy to explain individual wellbeing. In our analysis we focus on the impact of satisfaction with democracy on individual

wellbeing. Endogeneity problems are overcome by using the average democratic satisfaction of others in the individual's region as an explanatory variable, rather than individual satisfaction. This focus on regional impacts is almost unique in the literature. Pittau et al (2010) are one of the few papers that analyse life satisfaction at the regional level, in their case within the EU. They find wide variability within countries, particularly for Belgium, Germany, Spain, Italy and Portugal.

The main findings are that regional democratic satisfaction impacts on happiness. This is the case even when account is taken account of life satisfaction. Such views we argue reflect the actual state of democracy in the region. This impact is however less significant for women and rich people. It is also not in evidence for richer countries as a whole. The fact that the analysis is based on regional differences in democratic satisfaction reminds us that governance and indeed happiness often differs within countries as well as between them. We also find that many of the factors which have been found to impact on wellbeing in other studies mainly based in developed countries, also apply more generally and in particular to less developed countries.

The paper will proceed as follows. In the next section we will review the literature, first focusing on the specific impact of governance and then the more general determinants of well-being. The theoretical analysis follows after which the data will be described and the empirical results reported. Finally we will conclude the paper.

2. Literature Review

2.1 The Impact of Governance on Wellbeing

Many of the factors we discuss below, e.g. income and unemployment, are ones on which governance can have an impact. But is there, as we suggested in the

introduction, a more direct impact on happiness? The evidence, particularly recent evidence, would suggest yes, but not unambiguously so. Dorn et al. (2007) in empirical work based on 28 countries find a significant effect for democracy once they have allowed for socio-economic, demographic and cultural variables. Owen, Videras and Willemsen (2008) find a contemporaneous positive correlation between democracy and individual well-being after controlling for individual and country characteristics as well as for country dummy variables that are likely to capture the cumulative effects of democracy on the quality of institutions. Inglehart et al. (2008) also found evidence for the impact of freedom, and hence democracy, on well-being. In related work, Hudson (2006) concludes that institutional trust, and hence the quality of institutions, impact on satisfaction. Bohnke (2008) in an analysis of the EU countries concludes that variations in life satisfaction between countries can be explained to a large extent by taking into consideration the economic performance, the social security level, and the political culture in a country. Alvarez-Diaz et al (2010) conclude that life satisfaction responds to state differences in governance and state policies in the USA. This emphasises not just that governance matters but, particularly in a federal system, it can matter in different ways in the same country.

However, Helliwell and Huang (2008) using World Values Survey data, aggregated to the level of the country find only a qualified link between life satisfaction and governance. The ability of government to deliver services efficiently is of critical importance for low income, poor governance countries. But when we move to countries characterized by higher levels of trust, efficiency and incomes, more importance is attached to democratic institutions. Similarly, Veenhoven (2000) concluded that economic, but not political freedom contributes to happiness particularly in poor countries, whilst political freedom contributes to happiness in

richer countries. Inglehart and Klingerman (2000) find well-being to be clearly linked to governance, however, they point out that many post-communist societies which have experienced an increase in democracy, have also seen a reduction in well-being. Further qualifications are found in Schyns' (1998) analysis based on a sample of about 40 nations drawn from the World Values Survey, A positive and significant correlation between culture, based in part on the Freedom House Democracy Index, and self-reported happiness becomes insignificant once the different national income levels are controlled for.

2.2 Other Influences on Well-being

Income is the basic starting point for much of this research (for example, Easterlin, 2001, Deaton, 2008 and Caporale et al., 2009). At the aggregate level, amongst countries with per capita income above a certain level there seems little correlation with higher income and average well-being per se (Frey and Stutzer, 2002b)¹. There does appear to be such a link for countries with income below 1995 US\$10,000 per capita. However, as Frey and Stutzer also point out it is not clear whether this is due to rising income or other facets of a country, such as the rule of law and stable government which tend to increase with income up to a certain level. Di Tella, MacCulloch and Oswald (2001 and 2003) note that GDP per capita in the respondent's country has a positive impact on life satisfaction. Fahey and Smyth (2004) also examine the impact of GDP per capita on life satisfaction, finding a nonlinear relationship peaking at approximately \$24,000² for a range of 33 European

¹ Using data from the World Values Survey

² At 1997 prices

countries. When we turn to relative incomes within a country there is some evidence that this does impact on happiness (Cullis et al., forthcoming).

Other variables which the literature suggests are important include unemployment status (Di Tella, MacCulloch and Oswald, 2001 and Clark and Oswald, 1994) and marital status (Diener et al., 2000 and Frey and Stutzer, 2002b). Age too has been found to have an impact upon happiness. In particular a U-shaped relationship has been found for many countries and Clark et al. (1996) report it at a minimum for people in their late 30s and early 40s with respect to job satisfaction. Other possible explanatory variables include education (Hayo and Seifert, 2003, Cullis et al., forthcoming) and gender. The evidence on gender differences is somewhat inconclusive and although Di Tella, MacCulloch and Oswald (2001) conclude, that females are more satisfied with their life than males, Frey and Stutzer (2000) using Swiss data find no significant differences.

There are also a growing number of papers which focus on factors other than socio-economics ones. These include the impact of geographical location on well-being. Royuela and Surinach (2005) argue for a complex relationship between several quality of life indicators and location, with large cities enjoying some agglomeration economies with respect to education and health provision and also the wealth of the inhabitants, but in several respects smaller towns appear to have advantages over larger cities. Henderson (1985) has argued that people who live in larger cities enjoy benefits such as a greater range of shops, restaurants and cultural activities and possibly better health and education facilities, but may suffer from increased pollution, congestion and in some cases crime. There has also been some work which examines the impact of religion and language, often linked to culture. Religious beliefs provide value systems and often help to define what a full life constitutes

(Dorn et al, 2008), hence they may impact on aspirations. They also show that Christians are happier than others. Ferriss (2002) also finds that religious denomination impacts differentially on happiness.

Most studies of well-being have focused on developed countries. But there is a growing number of exceptions. Selim (2008) looks at life satisfaction and happiness for Turkey, finding generally similar results as for developed countries but there are some differences. For example, the upper education level is insignificant in the life satisfaction model. Namazie and Sanfey (2001) examine happiness in Kyrgyzstan, a country undergoing transition, and conclude that many of the results that characterize the work in developed countries are still valid, e.g. the impact of unemployment, relative income and marital status. However gender and, once more, education are both insignificant.

3. Empirical and Theoretical Issues

3.1 The Impact of Democracy on Happiness

The traditional approach of the economist to the individual's problem is to assume utility maximization subject to constraints. The constraints generally include income and sometimes time. Income is largely endogenous to the individual's maximization problem being dependent upon the number of hours people choose to work. Skills and education become relevant in determining the average hourly pay. Skills, education and age can also impact on the maximization problem in potentially impacting on the household production function. Within this context gender may be relevant if there is a gender pay gap. Gender may also impact on the time constraint, as may age. Of course happiness is also the consequence of social relations and socio-economic

variables such as marital status, gender and age can also impact on these in quite different ways to productivity in the labor market or household production.

One important factor impacting on both the labor market and the household production function are public goods, and more generally services facilitated by regional and national government, such as education, health, law and order and transport infrastructure. This is supported by Wagner, Schneider and Halla (2009) who conclude that higher-quality institutions increase satisfaction with democracy. For this reason good governance can also impact on happiness in a meaningful manner. Bohnke (2008) uses perceptions of governance in analysing well-being. This is a perception based measure and hence subjective rather than objective, but the assumption is that such perceptions are based on reality. Better rule of law, lower corruption, less regulation of political participation are all associated with higher degrees of satisfaction with democracy. It has also been suggested that participation in the democratic process yields utility to the citizen (Dorn et al., 2007). For example, Fiorina (1976) argues that the utility from voting depends upon the act of expressing a preference similar to applauding a fine symphony performance (Aldrich, 1997). However democracy is not without its flaws. Fosu, Bates, and Hoeffler (2006) are sceptical of the value of democracy within the context of Africa arguing that politically accountable governments are associated with a greater risk of political disorder, which may also impact adversely on well-being.

3.2 Dealing with Endogeneity

There are obvious problems of endogeneity in using individual perceptions of democracy to explain well-being. Satisfied or happy people may be more likely to voice approval of institutions and governance, i.e. causality could plausibly run from

well-being to satisfaction with governance as well as vice versa (Frey and Stutzer, 2002b and Graham and Pettinato, 2002). The argument is that happy or satisfied people are more likely to be benign in their judgments of both people and institutions. However, there are also problems at the aggregate level, for example, a with a potentially simultaneous relationship between well-being and democracy and democratic institutions (Frey and Stutzer, 2002b).

We will go some way to meeting these issues by (i) focusing on individuals rather than countries and (ii) in explaining individual well-being using regional measures of the state of democracy rather than individual measures. This regional variable will for the i 'th individual, represent the average response of others in the region on democratic satisfaction. This is based on 388 regions. Its use allows us to capture the impact of governance on individual attitudes to democracy provided governance differs between regions of the country. If it does not, if governance and attitudes to democracy are the same within each country, then the country fixed effects will pick that up and this variable will neither vary greatly across regions within a country, nor be significant. But much that impacts on individuals, particularly in federal systems, is done at the regional level and differs between regions. This includes the police, possibly the courts, local offices of national bodies and regional governance. Even in non-federal systems much is decentralised to both the region and the municipality (Work, 2002). In addition in the absence of decentralization spatially distributed heterogeneity of citizen preferences can in itself lead to different levels of democratic satisfaction.

This deals with part of the endogeneity problem, but not fully with the issue raised by Frey and Stutzer (2002b) that a satisfied population may foster democracy and democratic institutions. Our approach to this rests on the assumptions that at the

regional level (i) life satisfaction impacts on both democracy and happiness and (ii) life satisfaction also impacts on democracy and democratic satisfaction. Hence in the regressions, democratic satisfaction may be picking up the impact of life satisfaction on happiness. We thus include a second regional variable, regional life satisfaction. Any impact of regional democratic satisfaction will then be in addition to that of regional life satisfaction. This is thus a strong test for the impact of democracy on happiness.

The literature tends to support the validity of these assumptions. Most research has recognized that life satisfaction and happiness are different but then proceeded to analyze both as being representative of subjective well-being. An exception is Tsou and Liu (2001) who argue that with respect to Taiwan the effects of individual characteristics on happiness and satisfaction with different aspects of life are fundamentally different. Selim (2008) and Gitmex and Morcol (1994) also argue that although there is some correlation between the two they are nonetheless distinct concepts. Selim also argues that satisfaction is a cognitive evaluation that, apart from comparisons with others, is dependent upon an evaluation with respect to an individual's desires, expectations and hopes. In contrast happiness is defined as 'an emotional state' produced by positive and negative events and experiences in the life of an individual. Tsou and Liu, building on the work of Vermunt et al (1989), also define happiness as an emotional state which is subject to sudden mood changes whilst life satisfaction is a cognitive state which refers to an assessment of life as whole. Pittau et al (2010) argue that life satisfaction and happiness: are broadly consistent measures of subjective well-being, but are different. But that happiness is a more volatile concept of current emotional state, while life satisfaction is closer to the concept of an overall and more stable concept. Given this we would expect happiness

to be impacted on by the more stable individual life satisfaction and thus positively linked to regional satisfaction. We might also reasonably expect the more stable life satisfaction to facilitate democracy more than happiness per se. This is consistent with Inglehart's (1999) argument that that high satisfaction with life in a population increases the legitimacy of the political regime in power and may thus foster democracy.

Using regional averages also helps with a second problem with using individual responses. These may give substantially different measures with respect to democracy for individuals in the same region. But, if it is the impact of democracy on well-being we are seeking to analyse rather than individual perceptions, the averaged view of all other individuals in the region is preferable. This is also why we choose not to endogenize individual democratic satisfaction within an instrumental variable framework. In any case the instruments would be the regional based measures and hence in practice the two approaches are largely similar.

Hence, the equation we will estimate will include the standard socio-economic and cultural variables the literature suggest are important, plus the regional variables and country fixed effects. We will (i) be estimating regressions for both happiness and life satisfaction with just regional democratic satisfaction and not regional life satisfaction and (ii) for happiness based on all the explanatory variables including regional life satisfaction. Finally we will do separate regressions for different socio-economic groupings and countries in seeking to inform us on whether the impact of democratic satisfaction is homogenous across these groups.

4. The Data and Empirical Formulation

The World Values Survey data has become increasingly well-known in recent years, and, in addition to the research already referred to, have been utilised in hundreds of publications. Recent examples, many linked with research into well-being, include Guiso et al (2008), Bonini (2008), Bruni and Stanca (2008), Snoep (2008), Tesch-Romer et al (2008) and Sanfey and Teksoz (2007). It is a worldwide investigation of socio-cultural and political change conducted by a network of social scientists at leading universities all around the world. Interviews are carried out with nationally representative samples of the publics of more than 80 countries covering 85% of the World's population. Five waves of surveys have been carried out in 1981, 1990-1991, 1995-1996 and 1999-2001 and 2005. Each sample contains at least 1,000 respondents. In more recent years greater emphasis has been given to obtaining better coverage of non-Western societies and analysing the development of a democratic political culture in the emerging democracies. The results in this paper are based on the fourth wave³.

The dependent variables relate to standard questions on happiness and life satisfaction. Because of the discrete nature of the data, we use ordered probit regressions to estimate the equations. Happiness is measured on a four point one. The governance variable relates to satisfaction with the way democracy is developing in the respondent's country. It will thus reflect (i) the extent to which the country and region is democratic, (ii) any movement in that situation and (iii) the extent to which the democratic system is delivering satisfactory outcomes. Figure 1 shows a clear relationship between average regional happiness and satisfaction with democracy. Regions where people tend to be satisfied with democracy are also regions where

³ Certain key variables are not included in the fifth wave. These include democratic satisfaction.

people are happy. But is this picking up anything more than variations between countries? Is there also a relationship within countries? Figure 2 suggests that there is. It plots the deviations of regional well-being and democratic satisfaction from the country averages. The figure shows that regions where people are more satisfied with democracy than the average for the country also tend to be happier regions than the average. Of course this could be picking up spatial factors, such as population density. But the regression analysis which follows will allow for such possibilities.

Insert Figure 1 about here

Insert Figure 2 about here.

Included in this regression analysis, apart from the regional variables relating to democratic and life satisfaction, we will include control variables as suggested by the literature. These will include gender, age, education, relative income, savings, marital status, health, whether unemployed, whether the individual has children, locality, religion, and religious and linguistic minority variables. With respect to savings, which has not been previously used in this type of analysis, the expectation is that people who have had to borrow money in the previous year are more likely to be struggling and hence less likely to be happy or satisfied. It thus helps augment the data on income. All variables are defined in a data appendix where there is also a list of countries.

5. The Empirical Results

Insert Table 1 about here

Table 1 shows the correlation matrix between the variables. Partly because of the large sample sizes most correlations are significant, even though in many cases the correlations are quite small. Focusing on the impact of regional democratic satisfaction, we note the positive correlation with happiness and life satisfaction, i.e. people in regions with high levels of democratic satisfaction tend to be happier and more satisfied.

Table 2 shows the regression results. The first two columns show the results for life satisfaction and happiness without including the regional well-being variable. In both regressions, regional democratic satisfaction is significant at the 1% level. Surprisingly perhaps the impact is greater in the happiness equation. The remaining columns show the regressions with happiness as the dependent variable and including regional life satisfaction. Regional democratic satisfaction is positively significant at the 1% level in the regression for the full sample of countries. In other regressions however, it is less significant for women and rich people. It is also not in evidence at all for richer countries as a whole. The significance of democratic satisfaction despite the inclusion of regional life satisfaction is a strong result. This both addresses the problem that the impact of democratic satisfaction may be picking up the possibility that satisfied regions tend to be more democratic ones, due to a greater ease of governance. It also largely addresses the problem that regional democratic satisfaction may be proxying other regional variables which impact on happiness. This significance is robust to specification and remains if we correct the standard errors allowing for intra-country correlation of the error term. In these regressions, regional

life satisfaction has a non linear impact on happiness, there were no such nonlinearities present for regional democratic satisfaction.

Insert Table 2 about here

With respect to the control variables, the impact of the socio-economic variables is largely as in other studies and thus we will focus on the differences. Being married increases happiness for everyone, but being a widower has no significant impact on men, richer people and richer countries. Having children reduces happiness, possibly because of the impact on the time and income constraints. The linguistic minority variables are generally not significant, but become so if we omit regional life satisfaction. The religious minority variable is only weakly significant although Protestants, and to an extent Catholics, tend to be happier than other people⁴.

6. Conclusions and Policy Implications

We have found that regional democratic satisfaction impacts on happiness. This is the case when account is taken account of regional life satisfaction. Under the assumption that democratic satisfaction is based on the actual state of democracy, as suggested in the literature, this further leads us to conclude that democracy itself impacts on well-being. The fact that the analysis is based on regional differences in democratic satisfaction emphasises that governance often differs within countries as well as between them. This impact is however less significant for women and rich people. It is also not in evidence for richer countries as a whole. This latter result contradicts the

findings of Veenhoven (2000) who concluded that economic, but not political freedom contributes to happiness particularly in poor countries, whilst political freedom contributes to happiness in richer countries. To an extent too it is also at variance with the conclusions of Helliwell and Huang (2008), The reduced impact on rich people may be because government provides publicly provided goods and richer people are more able to compensate for poor public provision in areas such as health, education and even security than poorer people. The results also confirms Pittau et al's (2010) conclusion that well-being varies within countries as well as between them. We already knew this to be the case for differences based on socio-economic, demographic, cultural and spatial variables. We now know it is true for different regions within countries.

⁴ We include country fixed effects, hence the impact of religion is related to the individual rather than on the culture of the country.

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Data Appendix: Variable Definitions

Attitudinal Variables

Happiness	A dependent variable; coded 1 if the individual responded that taking all things together they were not at all happy to 4 very happy
Life satisfaction	A second dependent variable; scaled from dissatisfied (1) to satisfied (10)
Democratic satisfaction	Coded 1 if the respondent is very dissatisfied with the way democracy is developing in their country to 4 (very satisfied).

Socio economic variables

Male	Binary variable, coded 1 if the respondent is a man
Age	Age of the respondent in years
Married	Binary variable, coded 1 if the respondent is married.
Widow	Binary variable, coded 1 if the respondent is widowed.
Children	Binary variable, coded 1 if the respondent has children.
Education	Coded from 1 (no formal education) to 9 (university level education with degree)
Income	Coded from 1 to 10 reflecting increasing levels of household income - the exact classification varies from country to country. In effect this is a relative income measure.
Savings	Coded 1 if the respondent's family saved money in the previous year to 4 if they spent savings and borrowed money.
Poor health	The self-perceived state of the individual's health. A Binary variable, coded 1 if in poor or very poor health.
Unemployed	Binary variable, coded 1 if the respondent is unemployed.
Location	Coded 1 to 8 (large city) reflecting the size of the settlement in which the individual lives.
Religious Group	Binary variables, coded 1 if the individual identified themselves as members of a religious group (Catholic, Protestant, Orthodox, Jew, Muslim, respectively).
Linguistic	The proportion of the country's population having as their first language
Minority	the same as the respondent, where first language is defined as the one normally spoken at home.
Religious Minority	The proportion of the country's population having the same religion as the respondent.
GDPPC	The level of GDP per capita in the individual's country in the year 2000 in US\$ purchasing power parity (Source: World Bank data set).

Countries included: Albania, Argentina, Bangladesh, Bosnia, Canada, Chile, Egypt, India, Indonesia, Iran, Japan, Jordan, Kyrgyz, Macedonia, Mexico, Moldova, Montenegro, Morocco, Peru, Philippines, Puerto Rico, Serbia, South Africa, Spain, Tanzania, Uganda, USA, Vietnam,

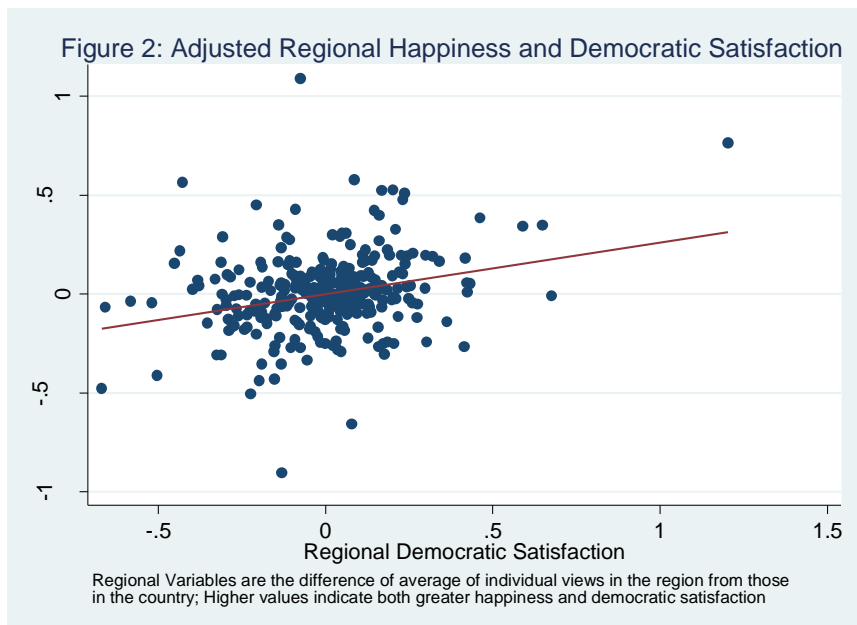
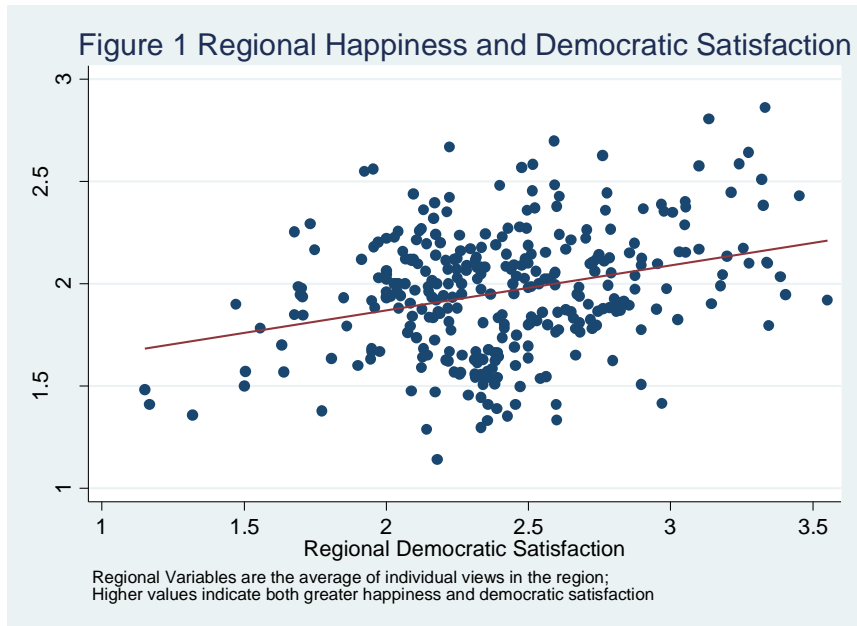


Table 1: Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. Happy	1																				
2. Life satisfaction	0.40	1.00																			
3. Regional dem sat	0.14	0.07	1.00																		
4. Regional life sat	0.25	0.38	0.18	1.00																	
5. Area	0.07	0.12	0.02*	0.25	1.00																
6. Children	0.02*	-0.01*	-0.04	-0.02*	-0.06	1.00															
7. Age	0.04	0.08	0.05	0.13	0.07	-0.05	1.00														
8. Male	-0.06	-0.04	0.03	-0.06	-0.04	-0.07	0.06	1.00													
9. Log education	0.06	0.11	-0.02*	0.06	0.11	-0.11	0.39	0.03	1.00												
10. Poor health	-0.19	-0.15	-0.10	-0.10	-0.04	0.06	-0.03	-0.02*	-0.07	1.00											
11. Income scale	0.15	0.20	0.05	0.07	0.15	-0.03	0.11	0.03*	0.25	-0.09	1.00										
12. Savings	-0.13	-0.16	-0.06	-0.09	-0.03	0.05	-0.07	-0.02*	-0.08	0.08	-0.23	1.00									
13. Married	0.05	0.00*	0.01*	-0.12	-0.08	0.58	-0.07	0.01*	-0.05	0.03*	0.07	0.03	1.00								
14. Widow	-0.05	-0.03	-0.05	-0.01*	0.00*	0.09	-0.02*	-0.11	-0.07	0.09	-0.08	0.03*	-0.23	1.00							
15. Unemployed	-0.08	-0.11	-0.06	-0.09	-0.03*	-0.14	-0.09	0.00*	-0.09	0.02*	-0.13	0.06	-0.14	-0.03	1.00						
16. Minority	-0.03	0.01*	0.21	0.02*	-0.02*	-0.02*	0.05	-0.02*	0.04	0.00*	0.05	0.04	0.08	-0.03	-0.07	1.00					
17. Religious min	-0.10	-0.07	0.14	-0.14	-0.10	-0.06	-0.01*	0.04	0.09	0.02*	0.01*	0.05	0.01*	-0.05	-0.04	0.37	1.00				
18. Muslim	-0.10	-0.10	0.21	-0.24	-0.16	-0.08	-0.05	0.05	-0.02*	-0.04	0.03	0.03	0.00*	-0.05	0.02*	0.07	0.38	1.00			
19. Catholic	0.09	0.13	-0.01*	0.32	0.15	0.00*	0.08	-0.04	0.05	-0.04	-0.05	-0.03	-0.05	0.00*	-0.03	0.03	-0.09	-0.34	1.00		
20. Protestant	0.11	0.09	0.06	0.16	0.06	0.04	0.02*	-0.03	-0.07	-0.03*	0.05	-0.06	-0.02*	0.03	-0.01*	-0.20	-0.26	-0.20	-0.15	1.00	
21. Orthodox	-0.16	-0.16	-0.43	-0.36	-0.11	0.04	-0.05	-0.02*	-0.02*	0.15	0.01*	0.08	0.07	0.05	0.03	0.08	0.06	-0.25	-0.19	-0.11	1.00

Note: * denotes *insignificance* at the 1% level

Table 2: The Determinants of Happiness

Variable	Life satisfaction	Happiness:	Happiness: Men	Women people	Poor people	Rich countries	Poor countries	Rich	
<i>Regional Variables</i>									
Democratic Satisfaction	0.1779** (3.45)	0.3471** (6.12)	0.2708** (4.68)	0.361** (4.64)	0.1692 (1.93)	0.3809** (5.31)	0.1073 (1.06)	0.2884** (4.50)	-0.2589 (1.42)
Life satisfaction			-0.544** (4.61)	-0.5559** (3.42)	-0.5343** (3.09)	-0.6748** (4.78)	-0.3792 (1.70)	-0.7791** (5.57)	-0.6641 (0.50)
Life satisfaction squared			0.05505** (5.67)	0.05439** (4.05)	0.05612** (3.97)	0.06623** (5.67)	0.0395* (2.20)	0.07397** (6.21)	0.04465 (0.50)
<i>Individual Variables</i>									
Male	-0.07208** (5.11)	-0.13** (8.35)	-0.1297** (8.33)			-0.1148** (5.77)	-0.1535** (6.05)	-0.1385** (7.22)	-0.1953** (5.08)
Age	-0.01327* (2.46)	-0.02085** (3.44)	-0.01905** (3.15)	-0.01198 (1.55)	-0.02875** (2.89)	-0.0175* (2.22)	-0.01579 (1.62)	-0.00789 (1.01)	-0.03854** (2.79)
Age squared	0.01927* (2.24)	0.02987** (3.06)	0.02756** (2.82)	0.01937 (1.58)	0.03966* (2.41)	0.02326 (1.79)	0.02601 (1.72)	0.005681 (0.42)	0.05916** (2.89)
Married	0.1131** (5.71)	0.2115** (9.69)	0.2126** (9.73)	0.2245** (7.15)	0.1943** (6.31)	0.1986** (7.28)	0.2411** (6.43)	0.1793** (6.51)	0.367** (7.51)
Widow	0.03871 (0.96)	-0.08814* (2.00)	-0.08885* (2.02)	0.02812 (0.33)	-0.1378** (2.60)	-0.09764 (1.92)	-0.04959 (0.55)	-0.1379* (2.27)	0.03995 (0.41)
Children	-0.06583** (3.22)	-0.07847** (3.49)	-0.0775** (3.44)	-0.09155** (2.88)	-0.06948* (2.15)	-0.06779* (2.41)	-0.0811* (2.12)	-0.0798** (2.82)	-0.06201 (1.24)
Log of education	0.08937** (3.56)	0.1058** (3.85)	0.1055** (3.84)	0.1479** (3.91)	0.04785 (1.18)	0.1072** (3.18)	0.07044 (1.44)	0.0685* (2.08)	0.123 (1.80)
Income scale	0.07363** (20.77)	0.05113** (13.11)	0.04992** (12.77)	0.0437** (7.96)	0.05683** (10.11)	0.0612** (7.37)	0.04214** (3.84)	0.0633** (12.24)	0.01074 (1.33)
Savings	-0.1149** (14.10)	-0.09088** (10.15)	-0.08824** (9.85)	-0.0881** (7.11)	-0.08974** (6.88)	-0.08236** (7.19)	-0.09133** (6.24)	-0.07658** (6.92)	-0.1254** (6.13)
Poor health	-0.4748** (14.23)	-0.7366** (20.60)	-0.7369** (20.60)	-0.7784** (15.19)	-0.6957** (13.84)	-0.7229** (17.32)	-0.7548** (10.67)	-0.7318** (15.97)	-0.8596** (8.98)
Unemployed	-0.1716** (7.71)	-0.1432** (5.90)	-0.147** (6.05)	-0.1815** (5.32)	-0.1188** (3.39)	-0.141** (4.98)	-0.1045* (2.13)	-0.1537** (5.34)	-0.2298** (2.82)

Location	0.002429 (0.77)	-0.00418 (1.20)	-0.00488 (1.38)	-0.00465 (0.95)	-0.00245 (0.48)	-0.00925* (2.08)	0.000532 (0.09)	0.001313 (0.29)	-0.01855* (2.20)
Catholic	0.03306 (1.35)	0.07689** (2.83)	0.07054** (2.59)	0.1027** (2.68)	0.03261 (0.84)	0.08109* (2.34)	0.04856 (1.08)	0.01218 (0.35)	0.1035 (1.93)
Protestant	0.1168** (3.64)	0.1725** (4.78)	0.1545** (4.27)	0.1812** (3.47)	0.1315** (2.61)	0.1221** (2.57)	0.1736** (3.07)	0.188** (3.84)	0.07637 (1.18)
Orthodox	-0.06485 (1.70)	-0.02738 (0.66)	-0.03196 (0.77)	0.07252 (1.23)	-0.1281* (2.15)	-0.05489 (1.05)	0.01872 (0.27)	-0.02891 (0.47)	0.2441 (0.94)
Mulsim	0.08108** (2.57)	0.001977 (0.06)	-0.01941 (0.56)	-0.01982 (0.42)	-0.02097 (0.40)	-0.04135 (0.95)	0.0285 (0.48)	-0.06877 (1.52)	-0.03711 (0.13)
Jew	-0.1639 (1.46)	-0.2885* (2.34)	-0.2873* (2.33)	-0.2492 (1.43)	-0.3396 (1.93)	-0.2884 (1.69)	-0.2576 (1.43)	-0.198 (0.84)	-0.4011* (2.28)
Linguistic minority	1.028** (4.59)	0.5581* (2.26)	0.4505 (1.82)	0.2425 (0.73)	0.7382* (1.98)	0.02815 (0.09)	0.4969 (1.06)	0.3104 (1.07)	2.337** (2.97)
Linguistic mino- rity squared	-1.089** (4.26)	-0.7055* (2.50)	-0.5617* (1.98)	-0.3333 (0.87)	-0.89* (2.10)	-0.0976 (0.28)	-0.6073 (1.16)	-0.3879 (1.14)	-2.612** (2.97)
Religious minority	-0.06659* (2.16)	-0.04316 (1.27)	-0.06289 (1.84)	-0.1054* (2.23)	-0.02328 (0.46)	-0.06435 (1.48)	-0.07772 (1.37)	-0.09141* (2.03)	-0.1597* (2.16)
Observations	21940	22038	22038	11387	10651	13453	8585	14328	3969
Log Likelihood	-46307	-21361	-21319	-11231	-10018	-13530	-7687	-14495	-3282
LL ratio test	4353	3733	3817	1910	1972	2288	1275	2351	440.5

Note: The regression coefficients were estimated using the method of ordered probit, (.) denotes t statistics and */** significance at the 5% and 1% levels respectively. All columns, apart from the first, have happiness as the dependent variable. Country fixed effects included in all regressions.