

The Happiness Gap: The Impact of Governance on Wellbeing

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ABSTRACT

Can governance impact directly on well-being? In this paper we examine subjective well-being (SWB) as measured by both life satisfaction and happiness using the World Values data set. We then also analyse the differences between these two measures, what we term the happiness gap which is further linked to an 'aspirations gap'. Significant determinants of this include settlement size, marital status, income, unemployment and being part of a linguistic minority/majority grouping. Satisfaction with the state of democracy and the way the country is being run are also both significant. The use of the happiness gap as the dependent variable rather than happiness or satisfaction per se reduces potential problem of simultaneity. Finally, we disaggregate the functions looking at SWB for men and women separately, for the poor and rich and finally for poor and rich countries..

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1. Introduction¹

There is now a substantial literature on “happiness”. Reviews can be found in Frey and Stutzer (2002a and b), Kahneman, Diener and Schwarz (1999) and Layard (2006). 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 are now working. One problem with this type of research lies with the fact that happiness is not directly measurable as are GDP and consumer spending. The only practical way of doing this is to ask people. This is a subjective measure and it is questioned whether people tell the truth and whether such attitudes can be compared. Despite this, Frey and Stutzer (2002b) argue that “it is a sensible tradition in economics to rely on the judgment of the persons directly involved. People are reckoned to be the best judges of the overall quality of their lives, and it is a straightforward strategy to ask them about their well-being. There are two types of questions which have in general been the focus of attention. The first relates to ‘happiness’, the second ‘life satisfaction’.²

The traditional approach of an economist is to assume individuals maximize utility subject to income, time, institutional and personal constraints. This approach is based on the implicit assumption that well-being for richer people is a simple extrapolation of well-being for poorer people and that, e.g. well-being for men is determined by the

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² In what follows we will specifically refer to happiness and life satisfaction, when we wish to refer to a more generic concept, we will use the term well-being.

same factors as for women, differenced only by a shift factor. But, given the variables we have available is this the case? In this paper we will be examining well-being across a range of countries included in the 2000 wave of the World Values database. We are also interested in the extent to which well-being is dependent upon individual characteristics as opposed to the environment, particularly the political environment, in which individuals find themselves. Finally, we wish to explore the differences and similarities between happiness and life satisfaction. To the extent that this is done, and it is not done very often, it is usually by comparing the two sets of equations. We will go further and analyse the ‘happiness gap’, i.e. the difference between happiness and life satisfaction. Apart from being interesting in its own right, it helps to deal with potential problems of endogeneity relating to the impact of variables such as governance on well-being.

The paper will proceed as follows. In the next section we will review the literature, after which we will present a theoretical analysis. The data will then be described, following which the empirical results will be reported. Finally we will conclude the paper.

2. Literature Review

The majority of the literature, certainly within economics, has focused on the direct impact of socio-economic characteristics upon well-being or particular domains of well-being. Several definitions, and measures, of happiness have been used in the literature, one simply asks people how ‘happy’ they are. However, most of the papers referenced in this paper are based on ‘life satisfaction’. Several of the authors (for example Easterlin, 2001) specifically use the terms happiness, life satisfaction and subjective well-being interchangeably.

Income is the basic starting point for much of this research (for example, Easterlin, 2001 and Deaton, 2008). The theoretical expectation is that well-being is an increasing function of income, but with the marginal impact declining with income. This is very similar to the concept of a diminishing marginal utility of income. However, it is an expectation only partially fulfilled, at the individual level. 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)³. 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. When we turn to relative incomes within a country there is some evidence that this does impact on happiness but not that strongly. Fahey and Smyth (2004) have examined the impact of a different indicator of living standards, namely GDP per capita, on life satisfaction for a range of 33 European countries finding a nonlinear relationship suggesting that it peaked at approximately \$24,000⁴.

There is considerable evidence to suggest that job satisfaction has a significant impact on overall satisfaction (see Warr, 1999, for a survey of this literature). Further evidence for the importance of the work domain comes from the considerable evidence that being unemployed reduces happiness. Di Tella, MacCulloch and Oswald (2001) using Eurobarometer data for the period 1975-91, find unemployment

³ Using data from the World Values Survey

to significantly reduce life satisfaction. Similarly Clark and Oswald (1994) conclude that “joblessness depressed mental well-being more than any other characteristic, including important ones such as divorce and separation”. The evidence also suggests that this is a more important factor for men than women. These effects are, of course, in addition to the impact of unemployment on income. This may be explained by a combination of psychic and social costs. The former involves loss of self-esteem and the latter is related to social norms. However, there is another possibility related to an aspirational standard of living. Regardless of what their income is whilst unemployed, it will have fallen compared to when the individual was in work. Thus their income whilst unemployed will be further from their aspirations compared to others on a similar income who are not unemployed.

Marital status may also impact upon happiness and life satisfaction and this type of variable has been included in work by, amongst others, Diener et al (2000). Frey and Stutzer (2002b) put forward two reasons why this should be the case. Firstly, marriage provides support in dealing with problems and secondly, married people gain from company. 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 and gender. Hayo and Seifert (2003) find education to have a positive impact upon happiness, defined somewhat unusually with respect to an evaluation of economic situation, in the transition countries of Eastern Europe. There are several reasons why this should be so and, for example, Scitovsky (1976) emphasized the importance of education in

⁴ At 1997 prices

allowing people to take advantage of activities which generate well-being, particularly appreciation of music, painting, literature and history. 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. The literature makes some distinction between factors termed 'life changes' and more stable and unchanging factors. Thus Erhardt, Saris and Veenhoven (2000) in a panel data analysis for Germany show that 30% of the initial variance in life satisfaction is explained by life changes and a similar proportion is explained by stable factors such as personal capabilities and social relations.

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 equations 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.

The bulk of happiness research, certainly from an economics' perspective, when analyzing individual response data, has tended to focus upon the impact of personal socio-economic circumstances or individual characteristics on happiness. There are a number of exceptions. There is, for example, a literature which focuses on the impact of geographical location on well-being. Hence 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 cities of different size produce different externalities. 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. Brereton, Clinch and Ferreira (2008) show that location-specific factors, such as climate, environmental and urban conditions, have a direct impact on life satisfaction. There has also been some work examining the impact of religion. Religious beliefs provide value systems and often help to define what a full life constitutes (Dorn et al, 2008), hence it may impact on aspirations. They also show that Christians are happier than others. Ferriss (2002) finds that church attendance increases happiness. This could be due to the gains from social interaction similar to many other clubs. But he also finds religious denomination impacts differentially on happiness.

Many of these are factors on which governance can have an impact, but is there a more direct impact on happiness? The evidence, particularly recent evidence, would suggest yes. Veenhoven (2000) has concluded that economic, but not political freedom contributes to happiness particularly in poor countries, whilst political freedom contributes to happiness in richer countries. 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 life satisfaction variations 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. Helliwell and Huang (2008) use World Values Survey data,

aggregated to the level of the country. They find a link between life satisfaction and governance. The ability of governance 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. Inglehart et al. (2008) also found evidence for the impact of freedom, and hence democracy, on well-being.

There has been little comparative work relating to life satisfaction and happiness. Most research has recognized that they 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. Salim (2008) and Gitmex and Morcol (1994) also argue that although there is some correlation between the two they are nonetheless distinct concepts. Salim 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.

3. Theory

In terms of the determinants of life satisfaction and happiness we initially focus on underlying well-being (W), a concept which we will argue underlies both life satisfaction and happiness. We assume this to be in part the outcome of a

maximization process in which the individual is faced with income, time and ability constraints. For this reason it is a function of socio-economic variables (**X**) such as income, employment status, education, and age, as reviewed in the previous section. The individual will also be constrained by their institutional and locational environment which for example impacts upon the transactions costs people incur in everyday life. The state also provides public goods, which may be equally provided to all, at least in a locality. Hence we assume **W** to be also a function of governance (**G**), locational (**L**) and other non-governance institutional variables (**I**) which reflect on the individual's place in society and which potentially constrain their maximization problem:

$$W = g(\mathbf{X}, \mathbf{G}, \mathbf{L}, \mathbf{I}) \quad (1)$$

I will include religion and to what extent the individual is in a minority grouping. Democracy will be one of the key governance variables we will be examining for several reasons. Firstly democracy impacts upon the responsiveness of government to the population and may help promote human rights, the rule of law and result in policies which benefit a majority of the people, the latter being a prerequisite of becoming elected. This of course suggests the potential importance of being part of a majority grouping in society. 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 wellbeing.

The variable relating to life satisfaction measures how satisfied people are with their life. In modeling this we first assume underlying well-being (**W**) to be a

continuous variable. We also assume life satisfaction (L) to be a function of both W and its level in comparison to some level of expectations or aspirations (W*):

$$L=W + \alpha(W^*-W) \quad (2)$$

That is we assume that life satisfaction is based on actual underlying well-being and also ‘an aspirations gap’. This seems reasonable. Someone who is rich and living in a pleasant locality is unlikely to answer that they are dissatisfied with their life even if life satisfaction falls below their aspirations. But equally, given two people with identical W, we would expect that the one with the smaller aspirations gap will be more satisfied. In this respect the aspirations gap (W*-W) modifies people’s underlying well-being and the greater α is, the more important this modification becomes. This approach is consistent with the literature, e.g. Salim (2008) defines life satisfaction as dependent upon an evaluation with respect to an individual’s desires, expectations and hopes, i.e. their aspirations. Equation (2) is also similar to the Stutzer’s (2004) analysis which links life satisfaction to income and the gap between income and aspired income. The difference with our analysis is that we extend this gap to an individual’s well-being per se and not just income.

Turning now to happiness (H), we define this as also being dependent upon W, but potentially too other, more short term, factors (Γ). These affect mood and other short terms factors which impact upon well-being such as temporary ill health, temporary problems with social life, at work or in the community, e.g. being the recent victim of crime. They are largely random and cannot be modeled with the data we have.

$$H = W+h(\Gamma) \quad (3)$$

Again this is consistent with the literature, e.g. Tsou and Lin (2001) define happiness as an emotional state, which is subject to sudden mood changes, and thus, given the variables which we have access to, will be substantially random. Yet the literature also identifies significant correlation between the two concepts of subjective well-being and our formulation captures this with the inclusion of underlying well-being W in both (2) and (3).

Because Γ will be largely related to variables about which we have no information, it is a consequence, and indeed a test, of the theory that the happiness equations should be less well determined than the life satisfaction ones. The difference between the two measures of well-being is then

$$L-H = \alpha(W^*-W) - h(\Gamma) \quad (4)$$

That is, it is composed of the short term factors which impact on happiness, but not life satisfaction, and also the aspiration gap (W^*-W). We term $L-H$ the ‘happiness gap’, and it depends upon the aspirations gap plus a random component. An alternative specification would see happiness in (3) depend not upon underlying well-being but on life satisfaction. In which case the happiness gap as defined in (4) will simply be a function of $h(\Gamma)$ and hence largely random. This will provide a further test of our theorizing. In addition because the aspirations gap will in general see $W < W^*$ ⁵, our analysis implies that life satisfaction will in general be less than happiness. This then is a further test of the theory.

⁵ If the reverse were the case we would expect W^* to increase over time.

Our approach also helps with potential problems of endogeneity, particularly with respect to governance. For example, a 'happy population' may foster democracy and democratic institutions (Frey and Stutzer, 2002b). The use of country fixed effects, as in our analysis, effectively solves many, if not all, of the problems raised by this possibility. However, satisfied or happy people may be also 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. This is less likely to be a problem for the happiness gap as in (4). There may still be endogeneity if people with a small aspirations gap are more favorable to the government, but if so it will be because they recognize that the conditions of governance have facilitated their ability to meet their expectations, rather than happy people are benign in their evaluations of everything. Hence causality in either direction implies people perceive good governance as contributing to their well-being. This is a point we return to later.

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 wave⁶. All variables are defined in a data appendix where there is also a list of countries.

The dependent variables relate to standard questions on happiness and life satisfaction. Because of the discrete nature of the data, we primarily use ordered probit regressions to estimate the equations. These have been done in STATA. Life satisfaction is measured on a ten point scale, happiness on a four point one. In order to calculate the happiness gap we need to make them comparable, which we do by dividing life satisfaction by 2.5. This is the same transformation used by Inglehart et al (2008) in adding the two measures together to get an aggregate measure of well-being. Socio-economic variables include age, income, gender, education, marital and employment status as well as the individual's state of health. We also include a question on savings which partially relates income to need, the expectation being 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. Also included is information on religious denomination. The variables which relate to an individual's place in a society are two minority variables, a linguistic one and a religious one.

⁶ Certain key variables are not included in the fifth wave. These include the time variables and more crucially the governance variable relating to the way the country is being run. In addition, there are variables relating to democracy, but not satisfaction with democracy per se.

We also include information on how the individual allocates leisure time between work colleagues, friends and family. We would expect individuals to allocate their time in such a way as to maximise their well-being. But underlying this maximisation problem are constraints on behaviour, constraints in terms of amount of free time, locational characteristics and the quality of public space and personality characteristics. Hence this time allocation will be a function of both socio economic variables, which underlie preferences, and these constraints. The former are already included in the regressions and it is thus the latter which are being proxied by their inclusion in the analysis.

The governance variables include satisfaction with democracy and the way the country is being run. Together they allow us to distinguish between outcomes and procedures. Does a lack of democracy matter, even if people perceive the country as being well run? These are perceptions and hence subjective rather than objective measures. But the assumption is that they are based on reality. This is supported by Wagner, Schneider and Halla (2009) who conclude that higher-quality institutions increase satisfaction with democracy. Better rule of law, lower corruption, less regulation of political participation are all associated with higher degrees of satisfaction with democracy. The governance variables are likely to vary from location to location within a country reflecting the impact of regional and local governance, which is why a single governance measure for a country is likely to be inadequate. Perceptions are also likely to vary according to socio-economic status. This is already included in the regression and hence the impact of perceptions of governance in the regressions will largely reflect the impact of actual governance. The country fixed effects will then reflect country specific factors, other than those linked to democracy and the way the country's affairs are being run.

Table 1 shows the cross tabulations between happiness and life satisfaction. It can be seen that the two are reasonably closely correlated. But there are also clear differences. Just over 12% of those who expressed themselves very happy were on the bottom four levels in terms of life satisfaction. Similarly, virtually the same proportion who expressed themselves as ‘not at all happy’ were on the top four levels in terms of life satisfaction. Overall most people, 80%, were either very happy or quite happy. More people also expressed themselves as more satisfied than dissatisfied, although as Figure 1 shows, the average level of life satisfaction is not that high. Figure 2 shows the happiness gap, as defined in (4). There is a preponderance of negative values which is suggestive of the impact of the aspirations gap.

Insert Table 1 about here.

Insert Figure 1 about here

Insert Figure 2 about here

5. The Empirical Results

Insert Table 2 about here

Table 2 shows the regression results with respect to happiness. The impact of the socio-economic variables is largely as in other studies and thus we will focus on the other variables. Time spent with family and friends increases happiness and to a lesser extent so does time spent with work colleagues. This suggests that factors which

facilitate social interaction increase happiness. The linguistic minority variables are both significant and indicate that happiness is relatively low for small linguistic minorities, but also for those in larger linguistic groupings. The coefficients suggest peak happiness results from being in a linguistic group which corresponds to just less than half of the population. The religious minority variable is not significant, although Protestants tend to be happier than other people⁷. Finally the two governance variables are both significant. In column two we omit the governance variables because of concerns about endogeneity. The results are largely unchanged. In the remaining columns we present results disaggregated in various ways beginning with gender. The responses are reasonably consistent across groups and we focus on the differences. Satisfaction with the way the country is being run is not significant for richer people and richer countries. The age variables are significant for women but not men. The minority variables are insignificant for men and also when we divide the sample into rich and poor individuals.

Insert Table 3 about here

In Table 3 we present the results for life satisfaction. They are largely similar to the happiness ones, but there are differences. The first point to note is that they are better defined than the happiness equations as reflected by the likelihood ratio statistics. This indicates that randomness is less important in explaining life satisfaction than in explaining happiness. This is consistent with, and thus supports, the theoretical analysis. Apart from that, both income *and income squared* are now significant.

⁷ We include country fixed effects, hence the impact of Protestantism is related to the individual rather

Location is now also more significant and life satisfaction tends to increase with urban size, particularly for the rich and those in poor countries. In richer countries the reverse is the case. This may reflect the impact of urban size on the aspirations gap and the relative merits of urban and rural locations as we move from developing to developed countries.

Table 4 shows the results of estimating equation (4), the happiness gap, i.e. the gap between life satisfaction and happiness. A positive value indicates that life satisfaction is high relative to happiness. If an increase in a socio-economic variable increases this, i.e. its regression coefficient is positive, we will refer to this as the happiness gap increasing. We have argued that the happiness gap reflects the short term determinants of happiness together with the aspirations gap, with the emphasis on the latter as the former are likely to be largely random given the data we have. Hence an increase in the happiness gap corresponds to a reduction in the aspirations gap. From this perspective, there is a tendency for the aspirations gap to decline for those living in cities and for those who are satisfied with democracy and the way the country is being run. There is some suggestion that the aspirations gap declines with poor health for some people, e.g. men, which may reflect a dampening of aspirations. But it is greater for married people, at least for men. There is no impact of age, but the aspirations gap declines continually, although at a declining rate, with income, and linearly with respect to the savings variable. Thus. the aspirations gap is less for those who managed to save over the past year compared with those who spent their savings or had to borrow. It is also greater for the unemployed. The impact of the linguistic minority variable is nonlinear, indicating that the smallest gap is for those in a

than on the culture of the country.

linguistic group representing approximately half of the population. It is greater for those in small linguistic groups and also those in large majority groups⁸. As with other regressions, the same is not true for religious minorities. The time variables were also not significant in these equations and thus have been omitted.

Turning to the other equations in this table, satisfaction with democracy has a greater impact on women than men, whilst the reverse is the case for satisfaction with the way the country is being run. The former suggests that democracy benefits women more than men in allowing them to reduce their aspirations gap. Conversely, the latter suggests that an effectively run country with respect to the economy etc benefits men more than women. Being married increases the aspirations gap for men but not women, the same is true for being unemployed.⁹ The linguistic minority variables also have a differential impact and are not significant for richer people in society. This would suggest that wealth or income can reduce disadvantages which impact on other people.

Insert Table 4 about here

6. Conclusions and Policy Implications

We have analysed the difference between life satisfaction and happiness, something we call the happiness gap. We have found that perceptions of governance impact on

⁸ It is not difficult to understand why this should be the case for people in a minority, but more difficult to understand why being part of a large majority should have the impact on well-being we have discovered. It could be a problem related to using a quadratic form. However, in the first regression in Table 4 if we replace the two minority variables with four dummy variables relating to being in a linguistic group shared with less than 20% of the population, between 20% and 40%, etc, the results still suggest being in a substantial minority or majority impacts adversely on the aspirations gap. Thus, it may be that being within a substantial linguistic group in a heterogeneous society is optimal. Further research on this issue is needed.

this gap which we then link to an aspirations gap, Both the quality of governance, in terms of satisfaction with the way the country's affairs are being handled, and the method of governance in terms of satisfaction with democracy, impact on people's well-being. Thus we can conclude that people live their lives in such a way that they attempt to maximise their well-being. But in this they are constrained by both their own personal circumstances and the institutional environment, partially determined by governance. Therefore our results confirm the growing work which indicates that the context in which people live their lives is important for well-being.

Quite apart from this, the work on the happiness gap and the framework we have developed to analyse the two measures of subjective well-being is of interest, and we believe innovative. The analysis resulted in a number of testable predications: (i) life satisfaction will in general, but not always, be less than happiness, (ii) life satisfaction will be less random than happiness, (iii) the two variables will be correlated and (iv) the gap between the two will not be random. The empirical work supported all of these predications.

The results also lead us to conclude that people are different, not least because of the different constraints they face. There are substantial differences between richer and poorer countries. In particular health is a cause of unhappiness everywhere but more so in poorer countries, where presumably medical facilities are not as good as in richer countries. In addition the family as a source of well-being is less important for richer people. Perhaps this is a reflection of the increasing options open to richer people, or it reflects changes in the family as people become richer. The differing impact of urban living on subjective well-being is possibly a reflection of the stages of

⁹ This suggests that both are constraints on men more than women.

growth as a country becomes richer. Larger cities everywhere have better facilities for leisure, work and living, better schools, better health care, better public transport. But arguably their relative advantage declines as a country becomes more affluent and the institutional framework of rural areas and small towns improves, whilst the disadvantages of cities, congestion; crime, pollution impact increasingly on well-being.

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Data Appendix: Variable Definitions

| | |
|--|---|
| 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) |
| Happiness gap | The difference between life satisfaction and happiness, where life satisfaction is transformed (by dividing by 2.5) to be on the same range as happiness. |
| Male | Takes a 1 (0) if the respondent is a man (woman) |
| Education | Coded from 1 (no formal education) to 9 (university level education with degree) |
| Age | Age of the respondent in years |
| 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. |
| Unemployed | Takes a 1 if the respondent is unemployed, otherwise 0. |
| Children | Takes a value of 1 if the respondent has children; otherwise zero. |
| Married | Takes a value of 1 if the respondent is married, otherwise zero. |
| Widow | Takes a value of 1 if the respondent is widowed, otherwise zero. |
| Savings | Coded 1 if the respondent's family saved money in the previous year to 4 if they spent savings and borrowed money. |
| Health | The self-perceived state of the individual's health ranging from very good (coded 1) to poor (coded 4). |
| Location | Coded 1 to 8 (large city) reflecting the size of the settlement in which the individual lives. |
| Time Friends | The amount of time spent with friends ranging from weekly (coded 1) to not at all (coded 4). |
| Time Family | The amount of time spent with family ranging from weekly (coded 1) to not at all (coded 4). |
| Time Work | The amount of time spent socially with work colleagues ranging from weekly (coded 1) to not at all (coded 4). |
| Satisfied Country | Coded 1 if the respondent is either very or fairly satisfied with the way people in national office are handling the country's affairs, otherwise coded 0. |
| Satisfied Democracy | Coded 1 if the respondent is very satisfied with the way democracy is developing in their country to 4 (very dissatisfied). |
| Religious Group | Coded 1 if the individual identified themselves as members of a religious group (Catholic, Protestant, Orthodox, Jew, Muslim, respectively). |
| Linguistic Minority | Equals the proportion of the population having as their first language the same as the respondent, where first language is defined as the one normally spoken at home. |
| Religious Minority | Equals the proportion of the 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: Cross Tabulation Happiness and Life Satisfaction

| Life satisfaction | Not at all happy | Not very happy | Quite happy | Very happy | No answer | Don't know | Total |
|-------------------|------------------|----------------|-------------|------------|-----------|------------|--------|
| 1 (Dissatisfied) | 633 | 1,104 | 1,126 | 660 | 4 | 51 | 3,578 |
| 2 | 253 | 779 | 1,421 | 591 | 2 | 22 | 3,068 |
| 3 | 305 | 1,490 | 1,468 | 403 | 3 | 54 | 3,723 |
| 4 | 145 | 1,150 | 1,855 | 513 | 7 | 44 | 3,714 |
| 5 | 222 | 1,945 | 6,077 | 1,830 | 6 | 117 | 10,197 |
| 6 | 83 | 946 | 3,874 | 1,399 | 5 | 60 | 6,367 |
| 7 | 66 | 747 | 4,583 | 1,958 | 7 | 66 | 7,427 |
| 8 | 53 | 504 | 4,438 | 2,946 | 4 | 54 | 7,999 |
| 9 | 44 | 284 | 2,938 | 2,432 | 4 | 25 | 5,727 |
| 10 (Satisfied) | 55 | 388 | 2,372 | 4,677 | 5 | 38 | 7,535 |
| No answer | 1 | 2 | 8 | 18 | 7 | 4 | 40 |
| Don't know | 21 | 112 | 325 | 139 | 0 | 75 | 672 |
| Total | 1,881 | 9,451 | 30,485 | 17,566 | 54 | 610 | 60,047 |

Table 2: The Determinants of Happiness

| Variable | ALL | Men | Women | Poor people | Rich people | Poor countries | Rich countries |
|----------------------------------|----------------------|----------------------|----------------------|---------------------|----------------------|----------------------|---------------------|
| Location | -0.00081 (0.23) | -0.0025 (0.52) | 0.0036 (0.70) | -0.0069 (1.56) | 0.0054 (0.91) | 0.0062 (1.34) | -0.0138 (1.78) |
| Time friends | 0.1169** (6.85) | 0.0902** (3.81) | 0.1445** (5.79) | 0.1174** (5.41) | 0.1111** (3.98) | 0.1167** (5.52) | 0.129** (3.23) |
| Time family | 0.109** (6.58) | 0.088** (3.81) | 0.1306** (5.42) | 0.1106** (5.25) | 0.1007** (3.71) | 0.0946** (4.60) | 0.1246** (3.31) |
| Time workers | 0.0668** (3.79) | 0.069** (2.98) | 0.0812** (2.94) | 0.0492* (2.19) | 0.1028** (3.58) | 0.0658** (3.06) | 0.156** (3.55) |
| Children | -0.0578** (2.57) | -0.0705* (2.23) | -0.0552 (1.70) | -0.0452 (1.60) | -0.0731 (1.92) | -0.060* (2.10) | -0.0344 (0.73) |
| Satisfied democracy | -0.0932** (7.91) | -0.0965** (6.04) | -0.0915** (5.21) | -0.0939** (6.36) | -0.0993** (5.00) | -0.1095** (7.56) | -0.1022** (3.76) |
| Satisfied country run | -0.065** (5.60) | -0.0538** (3.41) | -0.0757** (4.39) | -0.0811** (5.59) | -0.0473* (2.41) | -0.0699** (4.96) | -0.0325 (1.17) |
| Age | -0.019** (3.15) | -0.0111 (1.43) | -0.0295** (3.04) | -0.0193* (2.46) | -0.0133 (1.37) | -0.0096 (1.23) | -0.031* (2.42) |
| Age ² /100 | 0.0278** (2.87) | 0.0195 (1.57) | 0.0396* (2.51) | 0.0272* (2.11) | 0.0216 (1.44) | 0.0077 (0.58) | 0.0513** (2.63) |
| Male | -0.1419** (8.99) | | | -0.1242** (6.13) | -0.1686** (6.61) | -0.1548** (7.82) | -0.1913** (5.27) |
| Log education | 0.0707* (2.54) | 0.1096** (2.90) | 0.0099 (0.24) | 0.0766* (2.23) | 0.0325 (0.66) | 0.0438 (1.30) | 0.1068 (1.62) |
| Health | -0.6881** (19.07) | -0.7277** (14.17) | -0.6457** (12.66) | -0.672** (15.89) | -0.7267** (10.30) | -0.6775** (14.51) | -0.8044** (9.11) |
| Income | 0.0481** (12.39) | 0.0449** (8.32) | 0.0523** (9.28) | 0.0507** (6.10) | 0.0368** (3.40) | 0.063** (12.04) | 0.0093 (1.23) |
| Savings | -0.0854** (9.52) | -0.0866** (7.01) | -0.0852** (6.50) | -0.0799** (6.95) | -0.088** (6.02) | -0.0706** (6.30) | -0.125** (6.47) |
| Married | 0.2353** (10.80) | 0.2443** (7.87) | 0.2187** (7.07) | 0.2118** (7.76) | 0.2837** (7.63) | 0.1926** (6.94) | 0.3782** (8.21) |
| Widow | -0.0678 (1.54) | 0.077 (0.91) | -0.1243* (2.35) | -0.0681 (1.33) | -0.0724 (0.82) | -0.1043 (1.71) | -0.0449 (0.49) |
| Unemployed | -0.1355** (5.55) | -0.1578** (4.67) | -0.1144** (3.21) | -0.1335** (4.69) | -0.0962* (1.97) | -0.1429** (4.90) | -0.1707* (2.37) |
| Linguistic Minority | 0.9485** (3.72) | 0.6074 (1.78) | 1.442** (3.72) | 0.4698 (1.48) | 0.8453 (1.76) | 1.111** (3.73) | 2.675** (3.37) |
| Linguistic Minority ² | -1.110** (3.83) | -0.7197 (1.86) | -1.685** (3.84) | -0.5771 (1.59) | -0.9984 (1.86) | -1.326** (3.87) | -3.041** (3.45) |
| Religious Minority | -0.0317 (0.92) | -0.0725 (1.53) | 0.0098 (0.19) | -0.0164 (0.37) | -0.0698 (1.23) | -0.0589 (1.29) | -0.1273 (1.78) |
| Muslim | 0.0153 (0.45) | 0.0132 (0.29) | 0.0218 (0.42) | 0.0068 (0.16) | 0.0343 (0.58) | -0.0421 (0.95) | -0.1423 (0.48) |
| Catholic | 0.0683** (2.57) | 0.092* (2.48) | 0.0387 (1.01) | 0.0811* (2.39) | 0.0407 (0.94) | 0.007 (0.20) | 0.1096* (2.25) |
| Protestant | 0.1327** (3.70) | 0.157** (3.09) | 0.1042* (2.05) | 0.0838 (1.80) | 0.1686** (2.97) | 0.1137* (2.38) | 0.104 (1.62) |
| Orthodox | -0.003 (0.07) | 0.1075 (1.82) | -0.1072 (1.77) | -0.0111 (0.21) | 0.0073 (0.10) | 0.0233 (0.38) | 0.2732 (1.07) |
| Jew | -0.0999 (0.89) | 0.0566 (0.35) | -0.2768 (1.75) | -0.1187 (0.79) | -0.0626 (0.37) | 0.0559 (0.30) | -0.1765 (1.05) |
| Observations | 22097 | 11572 | 10525 | 13380 | 8717 | 14110 | 4445 |
| Log liked. | -21157 | -11254 | -9840 | -13317 | -7728 | -14038 | -3783 |
| X ² | 4075 | 2077 | 2071 | 2520 | 1346 | 2614 | 559 |

Equations estimated by ordered probit, (.) represent t statistics, X² represents the likelihood ratio statistic. Country fixed effects included.

Table 3: The Determinants of Life Satisfaction

| Variable | ALL | Men | Women | Poor people | Rich people | Poor countries | Rich countries |
|----------------------------------|----------------------|---------------------|---------------------|----------------------|---------------------|---------------------|---------------------|
| Location | 0.0063* (1.99) | 0.0047 (1.08) | 0.0086 (1.88) | 0.0016 (0.39) | 0.0132* (2.53) | 0.0132** (3.14) | -0.0242** (3.56) |
| Time friends | 0.0853** (5.53) | 0.0546* (2.55) | 0.1207** (5.38) | 0.0986** (4.97) | 0.063* (2.56) | 0.0748** (3.89) | 0.1022** (2.91) |
| Time family | 0.0514** (3.43) | 0.0489* (2.34) | 0.0612** (2.82) | 0.0585** (3.04) | 0.030 (1.25) | 0.0484** (2.58) | 0.0867** (2.62) |
| Time workers | 0.0397* (2.50) | 0.0707** (3.38) | 0.0106 (0.43) | 0.0144 (0.71) | 0.087** (3.43) | 0.0429* (2.19) | 0.116** (3.00) |
| Children | -0.0562** (2.77) | -0.0411 (1.44) | -0.0654* (2.25) | -0.0911** (3.55) | 0.0121 (0.36) | -0.0477 (1.83) | -0.0638 (1.54) |
| Satisfied democracy | -0.0883** (8.30) | -0.0763** (5.26) | -0.1043** (6.63) | -0.0899** (6.66) | -0.0954** (5.45) | -0.0849** (6.44) | -0.0947** (3.95) |
| Satisfied country run | -0.0585** (5.58) | -0.0568** (3.97) | -0.0571** (3.69) | -0.0932** (7.02) | -0.0109 (0.63) | -0.0606** (4.74) | -0.0169 (0.69) |
| Age | -0.0149** (2.77) | -0.0106 (0.52) | -0.0193* (2.26) | -0.0155* (2.17) | -0.0111 (1.31) | -0.0008 (0.12) | -0.0285** (2.63) |
| Age ² /100 | 0.0213* (2.48) | 0.0161 (1.46) | 0.0272* (1.97) | 0.022 (1.88) | 0.0168 (1.30) | -0.0045 (0.37) | 0.0457** (2.85) |
| Male | -0.0897** (6.31) | | | -0.0751** (4.06) | -0.1165** (5.18) | -0.1082** (6.02) | -0.0821** (2.58) |
| Log education | 0.0549* (2.17) | 0.056 (1.62) | 0.0572 (1.52) | 0.0342 (1.09) | 0.0753 (1.72) | 0.0358 (1.16) | -0.0181 (0.31) |
| Health | -0.4227** (12.64) | -0.3908** (8.21) | -0.4495** (9.53) | -0.4524** (11.43) | -0.337** (5.29) | -0.3772** (8.63) | -0.5603** (7.01) |
| Income | 0.1112** (8.56) | 0.0983** (5.34) | 0.1211** (6.56) | 0.0665 (1.82) | 0.0583 (0.52) | 0.1352** (8.04) | 0.0241 (0.89) |
| Income ² | -0.004** (3.35) | -0.0032 (1.91) | -0.0045** (2.66) | 0.0035 (0.62) | -0.0003 (0.04) | -0.0053** (3.31) | 0.00083 (0.36) |
| Savings | -0.1107** (13.63) | -0.110** (9.80) | -0.1134** (9.61) | -0.0983** (9.33) | -0.1149** (8.89) | -0.1006** (9.84) | -0.1362** (7.97) |
| Married | 0.1305** (6.64) | 0.0852** (3.04) | 0.171** (6.15) | 0.1448** (5.82) | 0.1123** (3.41) | 0.0859** (3.40) | 0.3473** (8.58) |
| Widow | 0.0463 (1.15) | 0.1002 (1.29) | 0.0558 (1.16) | 0.0645 (1.37) | 0.026 (0.33) | -0.0138 (0.25) | 0.1658* (2.03) |
| Unemployed | -0.1571** (7.07) | -0.2263** (7.29) | -0.0852** (2.65) | -0.1497** (5.72) | -0.158** (3.64) | -0.1809** (6.76) | -0.2766** (4.31) |
| Muslim | 0.0667* (2.15) | 0.0348 (0.83) | 0.1092* (2.34) | 0.0561 (1.45) | 0.1154* (2.20) | 0.0406 (1.01) | -0.1722 (0.65) |
| Catholic | 0.0016 (0.07) | 0.0203 (0.61) | -0.0279 (0.81) | -0.0102 (0.33) | 0.0108 (0.28) | 0.0036 (0.11) | -0.0057 (0.13) |
| Protestant | 0.0904** (2.84) | 0.1196** (2.63) | 0.0723 (1.62) | 0.0758 (1.80) | 0.0788 (1.60) | 0.1441** (3.37) | 0.0067 (0.12) |
| Orthodox | -0.0532 (1.39) | -0.0127 (0.24) | -0.0757 (1.38) | -0.1006* (2.08) | 0.0392 (0.62) | -0.031 (0.56) | 0.0684 (0.31) |
| Jew | -0.1369 (1.35) | -0.1657 (1.16) | -0.1021 (0.71) | -0.0187 (0.14) | -0.2605 (1.72) | -0.1907 (1.15) | -0.1559 (1.05) |
| Linguistic Minority | 1.393** (6.06) | 1.131** (3.68) | 1.762** (5.05) | 1.335** (4.63) | 0.812 (1.92) | 1.731** (6.39) | 1.151 (1.64) |
| Linguistic Minority ² | -1.531** (5.86) | -1.272** (3.63) | -1.921** (4.87) | -1.471** (4.46) | -0.8603 (1.82) | -1.937** (6.23) | -1.258 (1.62) |
| Religious Minority | -0.0603 (1.94) | -0.1077* (2.51) | -0.0226 (0.50) | -0.031 (0.77) | -0.1074* (2.14) | -0.1138** (2.75) | -0.1545* (2.43) |
| Observations | 22160 | 11613 | 10547 | 13411 | 8749 | 14154 | 4440 |
| Log Liked. | -46596 | -24498 | -22036 | -28397 | -1.8e+04 | -30273 | -8318 |
| X ² | 5030 | 2617 | 2477 | 2965 | 1568 | 2861 | 740.5 |

Equations estimated by ordered probit, (.) represent t statistics, X² represents the likelihood ratio statistic. Country fixed effects included.

Table 4: The Happiness Gap

| Variable | ALL | Men | Women | Poor people | Rich people | Poor countries | Rich countries |
|----------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Location | 0.0062* (2.13) | 0.0074 (1.81) | 0.0041* (0.98) | 0.0041 (1.06) | 0.0098* (2.15) | 0.0087* (2.07) | 0.0041 (1.06) |
| Satisfied democracy | -0.0287** (3.18) | -0.0181 (1.46) | -0.0405** (3.09) | -0.0351** (2.95) | -0.0229 (1.66) | -0.0173 (1.41) | -0.0351** (2.95) |
| Satisfied country run | -0.0156** (2.72) | -0.0218** (2.57) | -0.0098 (1.25) | -0.0264** (3.57) | 0.0012 (0.13) | -0.0164* (2.15) | -0.0264** (3.57) |
| Log education | 0.0169 (0.85) | -0.0215 (0.78) | 0.0735* (2.51) | -0.0133 (0.51) | 0.0674* (2.16) | 0.0241 (0.89) | -0.0133 (0.51) |
| Health | 0.037 (1.20) | 0.1066* (2.41) | -0.030 (0.70) | 0.0092 (0.25) | 0.1223* (2.18) | 0.0947* (2.17) | 0.0092 (0.25) |
| Married | -0.0305* (2.17) | -0.0629** (3.24) | 0.0108 (0.53) | -0.0278 (1.47) | -0.0253 (1.21) | -0.0386* (2.02) | -0.0278 (1.47) |
| Widow | 0.070* (1.97) | 0.0463 (0.66) | 0.1093** (2.61) | 0.0780 (1.82) | 0.0816 (1.23) | 0.0525 (0.96) | 0.078 (1.82) |
| Income | 0.0679** (5.72) | 0.0517** (3.04) | 0.0801** (4.82) | 0.0399 (1.15) | 0.1632 (1.70) | 0.0802** (4.81) | 0.0399 (1.15) |
| Income ² | -0.0029** (2.65) | -0.0017 (1.12) | -0.0037* (2.44) | 0.0021 (0.39) | -0.009 (1.46) | -0.0038* (2.41) | 0.0021 (0.39) |
| Savings | -0.0474** (6.35) | -0.0463** (4.44) | -0.0491** (4.59) | -0.0419** (4.19) | -0.0449** (4.01) | -0.0489** (4.77) | -0.0419** (4.19) |
| Unemployed | -0.0684** (3.37) | -0.1221** (4.28) | -0.0081 (0.28) | -0.0536* (2.19) | -0.0992** (2.64) | -0.0904** (3.41) | -0.0536* (2.19) |
| Muslim | 0.0534 (1.89) | 0.038 (0.99) | 0.0715 (1.70) | 0.0445 (1.23) | 0.0865 (1.90) | 0.0525 (1.36) | 0.0445 (1.23) |
| Linguistic Minority | 0.7527** (3.54) | 0.6636* (2.30) | 0.8889** (2.81) | 0.9964 (3.63) | 0.1526 (0.41) | 0.9837** (3.65) | 0.9964** (3.63) |
| Linguistic Minority ² | -0.7876** (3.27) | -0.7401* (2.27) | -0.8935* (2.49) | 1.045** (3.35) | -0.1414 (0.34) | -1.056** (3.43) | -1.045** (3.35) |
| Catholic | -0.0342 (1.52) | -0.0202 (0.63) | -0.0569 (1.80) | -0.0526 (1.77) | -0.0098 (0.29) | -0.013 (0.39) | -0.0526 (1.77) |
| Orthodox | -0.0334 (0.95) | -0.0546 (1.09) | -0.0074 (0.15) | -0.0719 (1.58) | 0.0358 (0.64) | -0.034 (0.61) | -0.0719 (1.58) |
| Religious Minority | -0.0623 (0.55) | -0.1316 (0.82) | 0.0254 (0.16) | -0.1357 (0.88) | 0.055 (0.32) | -0.057 (0.35) | -0.1357 (0.88) |
| Religious Minority ² | 0.0448 (0.39) | 0.1075 (0.66) | -0.0457 (0.28) | 0.1336 (0.85) | -0.0845 (0.50) | 0.023 (0.13) | 0.1336 (0.85) |
| Constant | -0.6349** (8.22) | -0.4385** (4.02) | -0.8456** (7.66) | -0.5567** (5.20) | -1.033** (2.72) | -0.9172** (7.30) | -0.5567** (5.20) |
| Observations | 22466 | 11733 | 10733 | 13810 | 8856 | 14360 | 13610 |
| R ² | 0.112 | 0.135 | 0.100 | 0.124 | 0.091 | 0.116 | 0.124 |

Because of the transformation of life satisfaction it was not possible to use ordered probit and as a consequence OLS has been used. Country fixed effects included.

