

Europe's Capital Cities and the Happiness Penalty: An Investigation Using the European Social Survey

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Abstract This study investigates in three steps whether there is an association between happiness and living in one of Europe's capital cities. Making use of the European Social Survey, the first step is a raw unadjusted correlation assessment which, overall, finds a negative and statistically significant effect on happiness of living in one of Europe's capitals. The second step is the addition of socio-economic controls which (overall) increases the happiness penalty associated with living in a European capital city. The third step adds environmental factors and perceptions (safety of local area, worries about crime, for example) to control for further potential confounding factors. Tentative evidence is also presented that this is not just a big city effect. Overall, there is a happiness penalty associated with living in Europe's capitals though this result is dominated by a few particularly unhappy capitals.

Keywords Happiness · Life-satisfaction · Geography · European Social Survey

JEL Classification I31 · R19 · R23

1 Introduction

Capital cities play a crucial role in the well-being of the EU and its Member States. Europe's capital cities are not only a major part of the EU's image abroad, its cultural identity and attractiveness, but powerful motors for competitiveness, employment and innovation. At the same time they have a concentration of Europe's problems, including increasing social and economic disparities. Capital cities are the laboratories where solutions to the EU's social and economic problems must be found (European Commission Memo 13-156, 2013).

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As is well-known, over the last 20 years, economics has concerned itself with well-being; an innovation possible because of rich national and transnational datasets as well as advances in our collective understanding of the econometric issues (coupled with increasingly sophisticated software). Together this has made utility measurable and operational as a concept (Van Praag and Ferrer-i-Carbonell 2007). With these advances, economists have been able to investigate the relationship between well-being and many other variables. Recent examples include the consumption of fruit and vegetables (Blanchflower et al. 2013), genes (De Neve et al. 2010), immigrant well-being and bilateral relations (Becchetti et al. 2011), overeducation (Piper 2014) and poverty (Clark et al. 2013). All of these studies, presented as a recent snapshot of many more, take advantage of ‘happiness’ data to investigate the complex concept of human utility. As well as a subject of much interest in economics, the study of well-being is also a current frontier of academic debate within demography and sociology. In these areas, examples of well-being research include, for example, fertility decisions (Aassve et al. 2012) and trust (Ward and Meyer 2009). Many scholars from different social sciences are researching well-being from various angles: it is an exciting time to be investigating happiness.¹

One nascent area of economic enquiry relates to well-being comparisons between individuals in different regions. Oswald and Wu (2010) investigate the well-being of individuals in the different US states, and Vatter (2012) is an initial investigation into the differences of well-being responses by people in different regions of Germany. Steiner et al. (2013) consider the individual life satisfaction or well-being impact of a city being the European Capital of Culture and finds, on average, a significant negative impact in the year a city is the European Capital Culture, but no impact in the years before or afterwards. Furthermore, regional considerations are potentially important even when they are not the main focus of the investigation. For example, Grözinger and Matiaske (2014) show that a previous finding regarding religion and well-being for one country is quite different when more detailed regional factors are considered. Thus regional aspects are potentially important, both directly and indirectly. This study investigates regional differences by asking whether there is a systematic difference in happiness between individuals who live in capital cities and those who do not, using a pan-European dataset. The investigation considers this question both across Europe and within individual European countries.

Europe’s capital cities are complex, multi-faceted places, and as a recent report signed by 27 European capital cities’ mayors states, they contribute enormously to the well-being of the Europe (European Commission Memo 13-156, 2013). But, this study asks, what about the well-being of individuals who live in our capitals? People living there often have a reputation for being less friendly, and somewhat more miserable, than people who live elsewhere. In some capitals this is officially recognised. Authorities in Berlin, for example, have tried to improve the well-being of its citizens having, in the words of one newspaper headline, “spent 200,000 euros trying to cure grumpiness”² (The Local 2009).

¹ As is quite common within the economic analysis of well-being, I use life satisfaction, happiness and (subjective) well-being as synonyms.

² A key motivation for this was the fear that tourism may be negatively affected by the apparent grumpiness of Berliners, and grumpiness was to be alleviated by the appointment of goodwill ambassadors (for example civil servants and train drivers). More explanation is provided by the news report: “As part of the campaign, civil servants will hand out ironic postcards printed with legendary grumpy Berlin phrases such as “What do you think you’re looking at?” and “Do I look like an information desk?”. The idea is to poke fun at the stereotype of the grumpy Berliner... The cards are also meant to show that it is possible to be courteous and friendly on a day-to-day basis. “These cards are fantastic, they show that we don’t always take ourselves seriously and that we can laugh at ourselves too,” [city spokesman Richard] Meng said (The Local 2009).

This Berliner grumpiness is well-known, and has found expression in the phrase ‘Berliner Schnauze’, which, in part, refers to a kind of offish snootiness, or a sense of superiority. Citizens of other capital cities often have similar reputations.³ Perhaps any such grumpiness reflects unhappiness? Smart (2012), in an analysis of well-being in London from 2006 until 2011, presents graphs of raw annual data showing the responses of individuals in the UK to questions about well-being (happiness and life satisfaction, specifically). The responses of Londoners to questions about happiness are, in every year, lower than those in every other area of the UK with one exception. The North East has (very) slightly lower scores for 2011. The life satisfaction scores tell the same story, with Londoners reporting less satisfaction with life than those who live elsewhere (Smart 2012, pp. 7–11). To investigate this further, this study uses economic analysis, and European-wide happiness data, to ascertain whether people who live in Europe's capital cities really are less happy than people who live elsewhere and, in some cases, finds evidence regarding potential reasons why this might be so.

Why might such a phenomenon occur, if indeed it does? The preceding two paragraphs highlighted the perceived character and personality of the typical (or stereotypical) capital city inhabitant, characteristics that are perhaps not conducive to personal happiness. Many studies highlight the relative nature of happiness and how we are social animals (see, as a fraction of many studies, Frank 1985; Easterlin 2001; Clark et al. 2008), so such superior, comparative attitudes may be self-reinforcing. The people an individual sees and interacts with in the capital may appear somewhat unhappy and stand-offish, which may make the individual herself unhappy, which, in turn, may make others unhappy and so on. Perhaps, more than elsewhere, capital city life is similar to how John Stuart Mill described ‘the existing type of social life’ during the industrial revolution: “trampling, crushing, elbowing, and treading on each other's heels... disagreeable symptoms of... industrial progress” (1848; 1965, p. 754). Perhaps people feel anonymous in the capital cities, less connected to others? Perhaps, too, compared to other places, people do not know their neighbours, and there may subsequently be less sense of a community? (Shulevitz 2013 summarises many of the negative consequences of loneliness and isolation.) Classical sociologists, and particularly Georg Simmel, certainly thought so and saw living in a ‘metropolis’ as having negative consequences for ‘mental life’. ‘The Metropolis and Mental Life’ is Simmel's major work on this theme and it details, again and again, the pressures (and ‘dangers’) and increased impersonality of life in large cities. It is in this 1903 work where he introduced the concept of the blasé attitude of urban life. Alternatively, though Simmel recognised this possibility too, perhaps there is just too much to do, a surfeit of choice has been repeatedly shown to be associated with dissatisfaction. For a review of many studies supporting this possibility see Schwartz (2005).

Capital cities often have higher levels of inequality than other cities, and higher inequality has been linked with lower well-being. The opening quote highlights the inequalities in Europe's capitals—“increasing social and economic disparities”—perhaps implicitly appreciating arguments and evidence that more unequal societies have been found to be less happy societies, a result that holds at the top and bottom of the disparity

³ Recently, a London based organisation, ‘Talk to Me London’, has been set up with very similar aims and methods to the Berlin-based initiative. The organisation aims to get people in the capital talking to each other, and several times links this explicitly with an expected outcome of increased happiness and well-being for individuals and societies. See <http://www.talktomelondon.org/why-talk> for these claims. The website for the organisation explicitly state that they chose London because it is where the greatest need is for such an initiative in the UK. A youth organisation connected to the European Union has provided some of the organisation's funding.

(Böhnke and Kohler 2009; Wilkinson and Pickett 2010). Wilkinson and Pickett (2010) also demonstrate that societies with a high incidence of inequality have more crime, which suggests two additional possibilities regarding capital city inhabitants and reduced life satisfaction: being a victim of crime, and the fear of crime, both of which are tested below. Other possibilities may be about air quality (MacKerron and Mourato 2009; Ferreira et al. 2012), and noise (Van Praag and Baarsma 2005, who investigate the impact on well-being of noise from Amsterdam's Schiphol airport), and greater commuting costs (Stutzer and Frey 2008).⁴

Some of these issues are of course not exclusive to capital cities and could be described as big city phenomena, and arguably the main difference hypothesised above relates to an attitude or a sense of superiority that capital city dwellers are sometimes supposed to have; an attitude that is perhaps not conducive to one's own happiness nor the happiness of other capital city dwellers. Whilst it is not always easy to distinguish explanations unique to capital cities and explanations common to all cities, we can isolate many capital cities with the dataset employed here, the European Social Survey (ESS), and make empirical comparisons with other regions (which include the other big cities). This is discussed in Sect. 2, where raw unadjusted correlations are undertaken as a first step in investigating the relative happiness (or unhappiness) of capital city dwellers. A sensible next step for this research area would be to isolate other cities (where there is more detailed regional information than in the dataset used here). A partial 'big-city' related test of the results here is undertaken towards the end of this study, making use of a subjective question in the ESS that asks how an individual would describe the area they live in.

Section 3 extends this simple analysis by including standard socio-economic controls, and finds that individuals in several European capital cities are less happy than their compatriots, and no capital city (among the 19 countries individually assessed) is associated with more happiness, on average, than the rest of that country. Section 4 makes use of questions that ask about the local area, whether an individual has been a victim of crime, whether an individual has worries about crimes (specifically burglary and violent crime), and how often an individual meets with his or her friends as well as whether the individual has a confidant. The latter two measures can potentially account for loneliness, feeling anonymous or alienation, in the estimations and, with the other variables listed here, go some way towards accounting for a few of the potential confounding factors posited above. This third step in the analysis provides evidence of a potential reason for the relative unhappiness of some capital city inhabitants.

Limitations and future research possibilities, which are quite closely linked, are discussed in Sect. 5. As an example, a key limitation is that the data is repeated cross-sections and not panel data. Thus, the method used is pooled cross-section regression analysis, which means that no claims can be made about causality. Does living in a capital city make people less satisfied with their life, or do dissatisfied people move to the capital? This potentially important question, discussed in the limitations section, cannot be assessed in

⁴ There are even arguments found within evolutionary psychology, with, for example, one study in this area linking city living to "greater activation of the amygdala—an area of the brain associated with anger, aggressive behaviour, and perceiving environmental threat—when experiencing social stress." (Fitzgerald and Danner 2012). Grinde (2002) discusses 'discords' when modern life clashes with our evolutionary heritage and may cause unhappiness. He suggests one such discord as loneliness, because people live lives often separated from extended kin (which was not the case in the ancestral environment). However, these discords offer a potential reason for every modern phenomena investigated: we did things differently back then.

the present study, but in future work with different datasets could. Finally, Sect. 6 provides some concluding remarks.

2 Data and Method

The data come from the ESS, (freely available at www.europeansocialsurvey.org). The ESS is a cross-section survey with rounds every 2 years, starting with round 1 in 2002. Each sample from each country in each round (how the sample has been drawn has evolved over time) is representative of that country in that year. The ESS is an impressive cross-national dataset and a complex one too, with varying levels of regional analysis permitted within each country sample. For many countries statistical inferences can be made from more disaggregated regional analyses than that required in this study. In others a degree of caution is required. Because of this variation more details about the sample itself are contained in “Appendix 1”.

The data used is an ‘integrated’ file, and its compilation took advantage of the cumulative ESS data wizard. This enables researchers to create datasets using cumulative data from countries that have been included in the integrated ESS files in two or more rounds. An advantage of this is that any results reflect averages from more than one period in time when compared to single wave ESS analyses. However, there are also costs that come with this integrated file, and the introduction into the analysis of more than one time period. These relate to the consequences of the coding of some variables including how the coding changes over the different waves. This is mentioned further when the addition of socio-economic variables is discussed, because this is when this problem becomes particularly important.⁵ Also, as mentioned at the end of Sect. 1, although the data covers more than one wave the ESS is not a panel. Care must be taken when interpreting the results: evidence of an association can be found, but no inferences about causation can be made. Furthermore, with regional analysis, the possibility of the problem of ecological fallacy presents itself. Ecological fallacy is concerned with spurious inferences when interpreting the results at some aggregate or group level—ecological analysis—“in terms of the individuals who give rise to the data” (Piantadosi et al. 1988, p. 893), and any inferences should be confined to the level of analysis (Piantadosi et al. 1988, p. 902). To be clear, here all of the data is at an individual level and all inferences should be regarded as being about individuals: the interest is on the average level of happiness of individuals who live in Europe’s capitals and who do not.

The dataset contains information from many European countries including people’s happiness, the region that they live in, and many other socio-economic variables. The happiness data come from individuals’ responses to the question ‘taking all things together, how happy would you say you are’ with a eleven point scale of 0 (extremely unhappy) to 10 (extremely happy). Whether someone lives in a country’s capital or not is captured by a dummy variable, created from regional information in the survey. Isolating the capital city was possible for 15 countries (Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, France, Germany, Great Britain,⁶ Greece, Ireland, Portugal, Spain, Sweden and

⁵ Changes in how the region is coded between ESS rounds 4 and 5, mean that this study can only take advantage of the first 4 ESS rounds which cover 2002–2008.

⁶ What the ESS calls Great Britain is really the United Kingdom because it includes Northern Ireland, and London has been used as the capital. If the analysis is restricted to England, the results are qualitatively the same as the ones presented throughout for ‘Great Britain’.

the Ukraine).⁷ Table 1 presents the mean and standard deviation of the responses to this happiness question in these countries, for capital city dwellers, the rest of the population, and the overall population.⁸

As a first step, estimations of the raw unadjusted correlation between happiness and living in a capital city were undertaken: i.e. a simple regression of the capital city dummy on happiness, controlling for the time period (i.e. ESS round). This was initially performed for all countries combined, and then for each country individually. The results are presented in Table 2, and are quite striking. There is, taking all countries together, and for many countries individually, a negative association between living in a capital city and happiness.⁹ This result, for all countries together, is also found when country dummies and time dummies are included in this overall estimate. Recognising that the data is not independent, that individuals in one country may have commonalities with other individuals in that country compared to those living elsewhere, the last part of Table 2 reports the outcome when the capital, wave and country dummy regression employs intra-country cluster robust standard errors. As can be seen, this raises the standard error reducing the significance of the capital city coefficient (the p value is now 0.08). A quick summary of this initial inspection for the individual countries follows. Countries where inhabitants of the capital are significantly less happy than other individuals are Austria, Belgium, Cyprus, Denmark, Great Britain, Greece, Ireland (with a p value just above 0.05), Portugal, and Sweden. There is no significant difference between these two groups of inhabitants in the Czech Republic, Germany, and Spain. The countries where individuals are happier in the capital than individuals living elsewhere are Bulgaria, France and the Ukraine.¹⁰ In summary, overall a negative relationship is found between living in a capital city and happiness, a result that appears to reflect the same outcome in a majority of the countries when investigated individually.¹¹

⁷ An alternative capital city dummy variable was created with the inclusion of four more countries (Italy, Netherlands, Norway, and Slovakia) where the data allowed at least a partial possibility of highlighting the capital city, for example there is data for 'groot-Amsterdam' or greater Amsterdam. This is not fully satisfactory, so the outcome for these four countries will be briefly presented in footnotes.

⁸ Additionally, the polarities of the response to the happiness question in each country were also investigated. Differences between those near the extremes of the distribution who live in the capital and those who do not were noteworthy in just one country. In Bulgaria, but outside of the capital there is a substantial tail of low happiness scores when compared to distribution of those who live in Sofia.

⁹ Furthermore, an additional single equation model was employed including country dummies and interactions between the capital city and country dummies to compare the size of the happiness differentials. Broadly, they follow the picture presented by the individual country estimations. Bulgaria has the biggest differential of approximately 0.75, followed by the Ukraine with just under 0.5. Both of these are positive differentials, representing happier individuals in the capital than elsewhere in the capital. The following countries have comparable negative differentials of just under 0.5: Austria, Belgium, Cyprus Denmark, Greece, Portugal. Other countries have very small differentials.

¹⁰ For the additional countries, Italy is in the positive association category, the Netherlands negative (the p value is 0.063, however), Norway negative, and Slovakia had no significant difference.

¹¹ Not shown, but this analysis was also undertaken restricting the sample to females only, and then males only. The size of the effect does vary by gender, and in three cases the association with happiness is different with gender: females who live in Copenhagen (Kiev) are less happy (happier) than females who live in the rest of Denmark (Ukraine); in Paris, males are happier than males who live elsewhere in France. Similar restrictions were made for young people (age less than or equal to 30) and older people (age 55 or higher). As predicted in the introduction, the results are consistent with young people being happier than older people in the capital compared to their peers elsewhere (however, both groups of capital city inhabitants are less happy than the comparator group. For the individual countries, the most striking differences are found in Austria and Germany (in both cases, older people unhappier than elsewhere but the young are not), Bulgaria (young people happier, but older people are not), Cyprus (young people unhappier than elsewhere but the old are not), and France (older people happier than elsewhere but the young are not).

Table 1 Comparison of the mean and standard deviation of happiness, by country and capital (ESS 2002–2008)

Country	Not in capital	In capital	Total	Country	Not in capital	In capital	Total
Austria				Belgium			
Mean	7.6	7.3	7.5	Mean	7.7	7.3	7.7
SD	2.0	1.9	2.0	SD	1.6	1.7	1.6
N	5,484	1,375	6,859	N	6,757	463	7,220
Bulgaria				Cyprus			
Mean	5.1	5.8	5.2	Mean	7.7	7.3	7.6
SD	2.6	2.4	2.6	SD	1.8	1.4	1.7
N	3,069	478	3,547	N	1,536	668	2,204
Czech Republic				Denmark			
Mean	6.8	6.8	6.8	Mean	8.3	8.1	8.3
SD	2.0	1.9	2.0	SD	1.4	1.5	1.4
N	3,886	454	4,340	N	4,110	350	4,460
France				Germany			
Mean	7.2	7.3	7.2	Mean	7.1	7.1	7.1
SD	1.8	1.8	1.8	SD	2.0	2.0	2.0
N	6,255	1,105	7,360	N	10,063	1,353	11,416
Great Britain				Greece			
Mean	7.5	7.3	7.4	Mean	6.8	6.4	6.6
SD	2.0	1.8	1.9	SD	2.1	2.1	2.1
N	7,926	760	8,686	N	4,577	2,438	7,015
Ireland				Portugal			
Mean	7.8	7.7	7.8	Mean	6.6	6.2	6.5
SD	1.8	1.7	1.8	SD	2.0	2.1	1.9
N	6,009	1,856	7,865	N	1,397	964	2,361
Spain				Sweden			
Mean	7.5	7.5	7.5	Mean	7.9	7.8	7.9
SD	1.8	1.5	1.7	SD	1.6	1.6	1.6
N	6,269	1,401	7,670	n	5,438	276	5,714
Ukraine				All countries			
Mean	5.5	5.9	5.5	Mean	7.22	7.10	7
SD	2.4	2.2	2.4	SD	2.06	1.96	2
N	5,438	276	5,714	N	79,609	14,910	94,519

3 Capital Cities and Happiness with Socio-economic Controls

The outcomes discussed above, being based on simple pooled cross-section correlations, do not include anything else that might be important; the result is unmediated by other factors that might matter. Many well-being studies include socio-economic variables to control for their potential importance when investigating happiness, for example income, job status, marital status, health, education, having children at home, and age. Many of these variables have well-documented effects on happiness, and need to be controlled for

Table 2 Relative happiness and capital city inhabitants, ESS (2002–2008)

Variables	(1) Happiness— countries	(2) Happiness— Austria	(3) Happiness— Belgium	(4) Happiness— Bulgaria	(5) Happiness— Cyprus	(6) Happiness—Czech Republic	(7) Happiness— Denmark	(8) Happiness— France
Capital	-0.11*** (0.018)	-0.30*** (0.059)	-0.42*** (0.076)	0.72*** (0.128)	-0.36*** (0.078)	0.05 (0.101)	-0.28*** (0.060)	0.16*** (0.060)
Constant	7.44*** (0.014)	7.65*** (0.043)	7.78*** (0.037)	5.13*** (0.058)	7.59*** (0.054)	6.74*** (0.057)	8.35*** (0.037)	7.31*** (0.049)
Observations	94,519	6,859	7,220	3,547	2,204	4,340	4,460	7,360
Adjusted R ²	0.007	0.004	0.005	0.008	0.0013	-0.000	0.002	0.003

Variables	(9) Happiness— Germany	(10) Happiness— Great Britain	(11) Happiness— Greece	(12) Happiness— Ireland	(13) Happiness— Portugal	(14) Happiness— Spain	(15) Happiness— Sweden	(16) Happiness— Ukraine	(17) Happiness— all countries
Capital	-0.04 (0.057)	-0.20*** (0.072)	-0.39*** (0.053)	-0.11* (0.047)	-0.46*** (0.086)	0.06 (0.059)	-0.10** (0.047)	0.48*** (0.150)	-0.12* (0.065)
Constant	7.16*** (0.037)	7.56*** (0.043)	6.64*** (0.045)	7.92*** (0.041)	6.62*** (0.055)	7.29*** (0.042)	7.90*** (0.037)	5.32*** (0.058)	6.52*** (0.041)
Observations	11,416	8,686	7,015	7,865	2,361	7,802	7,670	5,714	94,519
Adjusted R ²	0.001	0.001	0.010	0.007	0.012	0.008	0.000	0.003	0.007

Standard errors in parentheses

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$

^a Uses intra-country cluster robust standard errors and includes country dummies

(for a review see Dolan et al. 2008).¹² Including these variables is the second step in our investigation. For an analysis of living in a capital city, it is particularly easy to see the potential impact of income on well-being. Perhaps the negative result found in Sect. 2 reflects dissatisfaction with one's income for life in the capital city; perhaps income not stretching so far, reflecting a higher cost of living, is a cause of dissatisfaction. Age is a potentially important variable too. Kamvar et al. (2009) and the follow-up study (Mogilner et al. 2011) argue happiness has a different meaning for young people compared with older people. Younger people, the authors show, associate happiness with excitement whereas older people are more inclined to associate it with peace-of-mind. This may indicate a difference in the living in a capital city-happiness relationship by age (see footnote 11 for the differences between young and older people with respect to the unmediated inspection). With these standard socio-economic controls, we can assess the impact of living in a capital city controlling for some potentially important variables that might be potentially responsible for the relationships found in Sect. 2.

Many of the socio-economic controls now employed in this second step are straightforward (marital status dummies, job-status dummies, education, health, age variables, children at home) and common in the literature. Hence they are not discussed further here. Income, however, does require a brief explanation. Here, income used is not an absolute value but instead reflects an individual's verdict on his or her own income. This is for two main reasons. Firstly, controlling for an absolute level of income means we make an assumption that income means the same in each country for an individual's happiness in the all countries combined estimate (though this matters less when country dummy variables are included); similarly, and perhaps somewhat less of a problem, this implies also that income means the same in the capital and other regions for the individual country estimates. This may not be the case, and living in a capital city may have extra costs that other areas of the same country do not have.¹³ The second reason is more pragmatic: the dataset contains only grouped categories of income based on the absolute level rather than the actual level, and this is not particularly consistent within the dataset. Some rounds (i.e. years) of the data have more categories than other rounds (12 rather than 10), and for some countries the coding is different too. Thus, there is a substantial complication in using these measures. However, in the ESS individuals are asked about how they are coping with their household income and the answers range, in four categories, from very difficult to living comfortably. Importantly, this variable is coded consistently between countries, and over time. If a person's perception of how far their income goes in the capital is different to that of others in other regions, this subjective measure will control for it. The responses to this question are used to create dummy variables, and this is how income is captured in the results. Where cross-checking with the grouped income categories was possible this was undertaken, and the results are not qualitatively different.

The results of the estimations with the controls are found in Tables 3 and 4. All of the coefficients (with the exception of the country and time dummies) are presented for the 'all countries' sample, but for the individual countries just the coefficient for the capital city dummy variable and constant term are presented.¹⁴ Thus here, in contrast to Table 2, in the

¹² It should be noted, too, that given the cross-sectional nature of the data set, these controls could also be a result of happiness (for example marriage, Stutzer and Frey 2006).

¹³ The London-weighting paid to new starters in many jobs reflects a perception that the cost of living is higher in the UK's capital than elsewhere.

¹⁴ The reason is to do with space, as a complete presentation of these results would require substantially more pages.

estimations taken for the ‘all countries’ sample, country and wave (i.e. ESS round) dummies are included, capturing anything specific to a particular country or a particular year. In practice, including these additional dummy variables does not significantly alter any of these results. With respect to the coefficients on the standard controls, the results are in line with those found elsewhere in the economics of well-being literature. Good health, marriage, and enough income to live comfortably are all significant and positively associated with happiness. Education, both secondary and tertiary, is positively related to happiness too but the size of the effect is negligible (being about a quarter of the capital city penalty, discussed below). Money worries, unemployment, being sick (too ill to work), being separated, or widowed are all significant, and negatively associated with happiness. Age follows the common U-shape pattern too, bottoming out (in terms of ‘ceteris paribus’ happiness) at about 44. Having a child at home, here, is negative for well-being: a result that is not especially unusual (Shields and Wooden 2003). When the countries are investigated individually, having children at home is never positively associated with happiness. In many countries, it is insignificantly different from zero and in a handful of countries it is associated with unhappiness.¹⁵

Living in a capital city, after the inclusion of these controls, remains negative for happiness at the 1 % significance level although the size of the coefficient is now higher: the size of this effect approaches that of having a labour force status of being too sick to work, and is about 60 % of the negative association of unemployment with unhappiness, hence a quite substantial result. Overall, the inclusion of the controls has emphasised the reduced happiness of inhabitants of Europe’s capital cities when compared to inhabitants of other regions. The picture is more mixed when we look at the results for the individual countries (Table 4). The socio-economic controls remove the happiness difference between individuals who live in the capital city and those who do not in the following countries: Bulgaria, Denmark, France, Great Britain, Sweden, and the Ukraine.¹⁶ In some countries there is no change from the previous estimate which results from the inclusion of these standard controls, and these are as follows: Austria (which remains negative with an approximate *p* value just above 0.05); Belgium (though the size of the relationship is slightly smaller); Cyprus (which remains negative), Ireland (which remains negative); Spain (which remains insignificantly different from zero); as well as in Greece, and Portugal. In the two latter countries, the negative effect remains and becomes larger when any potential influence from income, job status, marital status, health, age, and having children at home are controlled for. This leaves the capitals of the Czech Republic and Germany, whose inhabitants move from being insignificantly different from zero to negative for relative happiness.^{17,18}

¹⁵ Remember that the question utilised for the dependent variable asks ‘how happy are you’ with values from extremely unhappy and extremely happy, so a variable with a negative coefficient can be viewed as having an association with unhappiness.

¹⁶ Just as a recap, three of these countries (Denmark, Great Britain, and Sweden) had previously a negative association with happiness and living in the capital and for the other three (Bulgaria, France, and the Ukraine) the unmediated effect was positive.

¹⁷ Regarding the single equation model enabling comparison of the differentials, Greece has the biggest differential being -0.6 , then the following countries have a negative differential of roughly a 0.35: Belgium, Cyprus, the Czech Republic, Denmark and Portugal. The differentials in the other countries are smaller.

¹⁸ For the additional countries, there is only one substantial change when the socio-economic controls are added. Citizens of groot-Amsterdam do not report significantly different happiness than citizens in the rest of the Netherlands, when they did in the estimate without controls.

Table 3 Europe's capitals and happiness with socio-economic controls, ESS cumulative dataset (2002–2008)

Variables	(1) Happiness—all countries
Capital city inhabitant	−0.21*** (0.017)
Income: very difficult to cope with	−1.46*** (0.027)
Income: difficult to cope with	−0.63*** (0.019)
Income: live comfortably with	0.38*** (0.017)
Currently in education	0.11*** (0.038)
Unemployed	−0.35*** (0.032)
Sick (labour force status)	−0.25*** (0.048)
Retired	0.11*** (0.024)
House worker	0.10*** (0.022)
Other labour force status	−0.02 (0.061)
Has secondary education	0.05*** (0.020)
Has tertiary education	0.06*** (0.022)
Health: excellent	1.10*** (0.020)
Health: good	0.63*** (0.016)
Married	0.46*** (0.025)
Separated	−0.33*** (0.052)
Divorced	−0.05 (0.040)
Widowed	−0.31*** (0.034)
Age	−0.03*** (0.003)
Age ²	0.00*** (0.000)
Child(ren) at home	−0.05*** (0.015)

Table 3 continued

Variables	(1) Happiness—all countries
Constant	7.03*** (0.073)
Observations	76,194
Adjusted R ²	0.274

Capital city inhabitant is a dummy; the income base category is coping; in education is a dummy; the job status base category is employed; the education base category is primary (less than secondary); the health base category is less than good responses (fair, poor, very poor); the marital status base category is never married; child(ren) at home is a dummy. Additionally, the estimates these results are based on also include country and wave (ESS round) dummy variables

Standard errors in parentheses

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$

4 Capital Cities and Happiness, with Socio-economic Controls and Environmental Controls

Section 3 demonstrated that, for some countries, including socio-economic control variables changed the effect of living in the capital on happiness. An example of this is Germany. When we take into account income satisfaction, age, children and the other controls listed above, Berlin's citizens are significantly less happy than citizens from the rest of Germany.¹⁹ Without the socio-economic controls, Berlin's citizens reported similar levels of happiness as the rest of Germany.

The ESS dataset makes it possible for further analysis, and enables consideration of other factors that might systematically differ between individuals who live in Europe's capitals and those who do not. Taking advantage of this data, the estimates of Sect. 3 can be extended to include more social factors (how frequently does an individual meet with friends and family, whether they have a close confidant), and worries about the safety of the local area and crime (both burglary and violent crime). For crime, there is data regarding whether an individual, or someone they know, has been a victim of crime as well as data about an individual's worries regarding crime. Both are included in the analysis below, with interesting results. The social questions can capture the possibility of having more friends and more opportunities to meet in the capital (or less if individual atomisation or alienation is one consequence of capital city living) and the safety/crime questions can capture the possibility that living in a capital city has increased worries regarding crime and safety that other regions may not have. Perhaps the negative effect found in Sect. 3 for many countries reflects some of these possibilities. In short, we extend our equation to be estimated by including variables that provide information about these factors. The relevant questions for this section from the ESS are presented in "Appendix 2", and the results for the estimations are in Tables 5 and 6. Again, the results for all countries are presented first with all of the coefficients listed (excepting the time and country dummies), and just the capital and constant term coefficients are presented for the individual countries, with the exception of the Czech Republic where no estimate could be calculated (because of missing data).

¹⁹ A check was made with socio-economic controls comparing Berlin, Hamburg and the rest of Germany using the SOEPlong panel file. Berlin is associated with significantly less happiness than the rest of Germany, whereas Hamburg is associated with more happiness.

Table 4 Europe's capitals and happiness with socio-economic controls, ESS cumulative data set (2002–2008)

Variables	(1) Happiness—all countries	(2) Happiness— Austria	(3) Happiness— Belgium	(4) Happiness— Bulgaria	(5) Happiness— Cyprus	(6) Happiness—Czech Republic	(7) Happiness— Denmark	(8) Happiness— France
Capital	-0.25*** (0.019)	-0.12* (0.064)	-0.31*** (0.084)	0.01 (0.132)	-0.30*** (0.093)	-0.23** (0.110)	-0.08 (0.085)	0.02 (0.086)
Constant	7.43*** (0.072)	6.94*** (0.319)	7.93*** (0.204)	5.87*** (0.570)	6.21*** (0.802)	7.20*** (0.477)	8.29*** (0.268)	8.86*** (0.372)
Observations	76,194	5,407	5,766	2,880	1,628	3,296	3,788	2,841
Adjusted R ²	0.245	0.155	0.140	0.254	0.172	0.146	0.124	0.211
Variables	(9) Happiness— Germany	(10) Happiness— Great Britain	(11) Happiness— Greece	(12) Happiness— Ireland	(13) Happiness— Portugal	(14) Happiness— Spain	(15) Happiness— Sweden	(17) Happiness— Ukraine
Capital	-0.15*** (0.057)	-0.08 (0.077)	-0.59*** (0.055)	-0.10** (0.048)	-0.33*** (0.091)	-0.00 (0.062)	-0.06 (0.050)	-0.18 (0.154)
Constant	7.03*** (0.222)	7.26*** (0.217)	7.04*** (0.300)	7.26*** (0.023)	7.68*** (0.576)	8.13*** (0.236)	8.17*** (0.211)	6.75*** (0.366)
Observations	9,165	6,768	6,207	6,331	1,837	6,227	5,778	4,786
Adjusted R ²	0.196	0.154	0.172	0.154	0.221	0.151	0.168	0.184

Standard errors in parentheses

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$

Table 5 Europe's capitals and happiness with socio-economic controls and environment variables, ESS cumulative data set (2002–2008)

Variables	(1) Happiness—all countries
Capital city inhabitant	−0.16*** (0.028)
Income: very difficult to cope with	−1.42*** (0.040)
Income: difficult to cope with	−0.60*** (0.028)
Income: live comfortably with	0.41*** (0.025)
Currently in education	0.02 (0.135)
Unemployed	−0.24*** (0.049)
Sick (labour force status)	−0.30*** (0.067)
Retired	0.11 (0.035)
House worker	0.10*** (0.032)
Other labour force status	−0.12 (0.103)
Has secondary education	−0.04 (0.029)
Has tertiary education	−0.06*** (0.033)
Health: excellent	0.93*** (0.031)
Health: good	0.58*** (0.024)
Married	0.14** (0.069)
Separated	−0.57*** (0.098)
Divorced	−0.35*** (0.074)
Widowed	−0.54*** (0.076)
Age	−0.03*** (0.004)
Age ²	0.00*** (0.000)
Child(ren) at home	−0.04 (0.023)

Table 5 continued

Variables	(1) Happiness—all countries
Meet friends monthly	0.52*** (0.072)
Meet friends weekly	0.86*** (0.068)
Meet friends very frequently	1.09*** (0.069)
Has a confidant	0.52*** (0.032)
Victim of crime	0.04 (0.027)
Local area safe after dark	0.12*** (0.024)
Worries about burglary	0.01 (0.024)
Worries about violent crime	-0.16*** (0.027)
Constant	5.54*** (0.147)
Observations	34,146
Adjusted R ²	0.33

Variable note: the meeting variables are compared to a base category of never meeting friends and colleagues; any confidant is a dummy variable representing individuals who say that they have someone who they can talk to about intimate matters; crime victim is a dummy variable representing whether the individual or a member of their family has been a victim of crime; safe local area is a dummy variable asking if an individual feels safe walking alone after dark; the burglary worry and violent crime worry reflect whether the individual has reasonably frequent worries about these particular types of crime. See the note under Table 3 for a brief explanation of the other variables

Standard errors in parentheses

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$

In summary, the inclusion of these additional variables made no difference in the majority of cases.²⁰ Countries where happiness in the capital was no different to other regions previously, and remained no different after these extra variables are the following: Bulgaria, Denmark, France, Great Britain, Spain, Sweden and the Ukraine. Countries where capital city citizens were less happy than their compatriots before these controls, and remained less happy after their inclusion, are Belgium, Cyprus, Ireland, and Portugal. This suggests that the reason for people in the capital being less happy than people elsewhere in those countries are found outside of the possibilities included in the model. Speculations regarding possible reasons are made below. For Austria, Germany and Greece, the inclusion of these additional controls lead to a change in the capital city coefficient. Where

²⁰ There was also little change in the case in the single equation estimation. One notable change is the shrink in the differential for Greece which, with these additional controls, is now 40 % of what it was. A comparison of the differentials for the other countries retains the pattern of step 2 briefly summarised in footnote 17 above.

Table 6 Europe's capitals and happiness with socio-economic controls and environment variables, ESS cumulative data set (2002–2008)

Variables	(1) Happiness—all countries	(2) Happiness— Austria	(3) Happiness— Belgium	(4) Happiness— Bulgaria	(5) Happiness— Cyprus	(6) Happiness— Czech Republic	(7) Happiness— Denmark	(8) Happiness— France
Capital	-0.19*** (0.028)	-0.08 (0.140)	-0.51*** (0.132)	0.14 (0.138)	-0.30*** (0.097)	Could not estimate	-0.03 (0.172)	0.04 (0.087)
Constant	6.34*** (0.147)	4.66*** (0.929)	7.97*** (0.411)	3.30*** (0.762)	4.39*** (0.841)		8.31*** (1.442)	7.74*** (0.458)
Observations	344,146	1,405	2,610	2,579	1,535		1,078	2,795
Adjusted R ²	0.293	0.167	0.153	0.275	0.211		0.187	0.233

Variables	(10) Happiness— Great Britain	(11) Happiness— Greece	(12) Happiness— Ireland	(13) Happiness— Portugal	(14) Happiness— Spain	(15) Happiness— Sweden	(17) Happiness— Ukraine
Capital	-0.01 (0.0114)	-0.14 (0.108)	-0.24*** (0.089)	-0.24*** (0.095)	-0.13 (0.088)	-0.06 (0.077)	-0.20 (0.212)
Constant	5.94*** (0.424)	6.09*** (0.767)	5.91*** (0.573)	6.68*** (0.623)	7.20*** (0.410)	7.97*** (0.678)	4.54*** (0.674)
Observations	3,384	1,452	2,122	1,795	3,027	2,291	2,527
Adjusted R ²	0.198	0.152	0.185	0.239	0.192	0.180	0.201

Standard errors in parentheses

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$

before citizens of Athens, Berlin, and Vienna were less happy than their compatriots, when we control for these social, environmental and local area variables this effect disappears.²¹ Further investigation reveals that for Austria and Germany, it is the fear of crime, either burglary or violent crime, which drives this result: when the fear of crime is accounted for, inhabitants of Berlin and Vienna are no less happy than their respective compatriots. In Athens, it is again worries about these two types of crime together that are important. Including just one in the model substantially reduces the size of the capital city coefficient, and controlling for both makes the citizens of Athens no less happy than other citizens of Greece. In addition to being an interesting result in its own right and perhaps pointing at a solution to Berliner 'grumpiness' (see Sect. 1), this also means that happiness researchers should, where possible, consider including crime or, more particularly, the fear of crime in their estimates and analysis.

5 Future Research and Limitations

This research raises many questions. Why are the citizens of Brussels so unhappy? What about the capital city inhabitants of Portugal, Cyprus and Ireland too? This study has provided evidence that these individuals are significantly less happy than others who live elsewhere in these countries, and that the reason lies beyond the standard socio-economic variables and environmental factors included in our analysis (in an attempt to capture aspects of capital city life). Perhaps the reasons for this unhappiness relate to local politics? Does this finding have anything to do with the capital's institutions? Are the capitals less beautiful places to live than many other parts of the country? Future research could better investigate these possibilities (and others) with regionally-representative national datasets.

The investigation has, for three countries, demonstrated that the fear of crime is a contributor to unhappiness. Future research about capitals (or, perhaps more widely, any other aspect of the 'economics of happiness') should at least include or control for the impact of crime or the fear of crime. Here being a crime victim was much less important for an individual's happiness than the fear of being a crime victim. Perhaps individuals adapt or 'bounce back' from being a crime victim, like they have been found to do for marriage and divorce (Lucas et al. 2003; Kahneman and Krueger 2006), but cannot adapt to fears? Arguments like this are supported by the analysis of Piper (2013) where, using dynamic panel analysis, happiness was shown to be associated with largely contemporaneous concerns. Being a victim of crime in the past is perhaps less likely to have an impact on our happiness, whereas our contemporaneous fears about crime may well reduce happiness. Similarly, this provides an explanation for the finding, reported in the introduction, that 1 year after being the European Capital of Culture there is no happiness impact of the event, whereas in the particular year it happens there is a negative association with life satisfaction (Steiner et al. 2013). Seen in such a context it is unsurprising that any well-being impact does not last. Such arguments about the contemporaneous nature of happiness highlight the possibility that our hopes and fears (more generally) may play a significant role in how happy we are, and an inclusion of these factors (if possible, given current datasets) could give well-being models more explanatory power.

²¹ For the additional countries, both the Netherlands and Norway have areas that include the capital where individuals are significantly less happy than people who live elsewhere. For Slovakia, there is no significant difference and for Italy, no estimation was possible.

Given the cross-section nature of the dataset, we need to be cautious about attaching too strong explanations to these results. What has been demonstrated is an association, or a correlation, between living in a capital city and happiness, or rather unhappiness. Whilst we can find things that increase or reduce this association we do not know why the association exists (when it does). We cannot make inferences about causation. Does living in the capital city of a country make people unhappy, or do unhappy or dissatisfied people move to the capital of their country. To answer this question, a longitudinal data set is required. Similarly, with this dataset we cannot make a potentially important distinction between people who have lived in the capital for some time and those who are recent arrivals. The latter group may well have a 'honeymoon' period with capital city life, and positively associate it with happiness unlike our overall result above. Future research could investigate this distinction.

Some of the possible explanations discussed could be termed 'big city phenomena' and not just relate to capital cities. To be clear, the results here reflect capital cities, and not big cities, even if some of the reasons put forward for any potential association do not. Other big cities are in the group with which we are comparing the capital city inhabitants with. This does not preclude big city explanations though, and is another reason for caution regarding these results, which should be seen as requiring further support. That said, a brief check was possible and is briefly discussed below.

As mentioned in the introduction, the ESS has a question where individuals are asked to describe where they live with the possible responses being big city, outskirts or suburbs of big city, a town or small village, a country village, or a farm or home in the countryside.²² Whilst objective regional data would be preferable, this means that an initial inspection can be made controlling for living in a big city, or controlling for living in a big city or the suburbs or outskirts of a big city. Overall, i.e. for all countries combined, the inclusion of a big city variable does not change the statistically significant finding of a negative association with living in a capital city. When they are both included in the same estimated equation, living in a capital city and living in big city are statistically significant and negatively associated with happiness. Equivalent to Tables 3 and 4 (i.e. socio-economic controls only) the size of both effects is -0.16 each, representing about 60 % of the unhappiness impact of being unemployed. Both city (capital and big) effects (capital and big city) are significant at the 1 % level. For the Tables 5 and 6 equivalent (i.e. additional social and environmental controls), both effects are again negative though the size is reduced. The capital city effect is -0.10 and the big city effect is -0.09 , with both being statistically significant at a 1 % level. Overall, this inspection provides evidence of a capital city effect when big cities are controlled for. The results for the individual countries are largely supportive, with one exception. The negative finding for Vienna appears to reflect dissatisfaction with living in Austria's big cities and not just Vienna. The capital city effect disappears for Austria. More sophisticated analysis with more detailed regional data could go further in investigating big city effects and capital city effects. This is presented here as a first step towards future research. There is much interesting work that could be done investigating some of the possibilities discussed in this section, both across Europe and within countries. Future work could test this with national datasets that contain much regional and environmental information.

²² Caution needs to accompany the analysis here because of the question's subjectivity (a big city to one person may not be to another), and because any results are not necessarily representative results. The countries chosen for this analysis can be adequately used for capital cities with, in most cases, little concern. However, 'big cities', even if objectively defined, were not always employed as primary sampling units for sample design in the individual countries.

6 Concluding Remarks

This investigation finds, for Europe as a whole, and several individual countries, a negative association between living in a capital city and happiness, when compared to citizens who live elsewhere in that country. Given that this result is about 60 % of the happiness penalty of unemployment, it is noteworthy. The result holds when socio-economic controls are taken into account, as well as when both environmental controls and socio-economic controls are included in the estimates. Furthermore, when socio-economic controls are included, in no country (of the 19 assessed) were the citizens of the capital happier than others who live elsewhere. While the relationship is negative overall, there are different effects in different countries along with different causes. The overall result seems to be driven by people living in Brussels, Dublin, Lisbon and Nicosia. Reasons for why individuals in these capitals are not as happy as individuals elsewhere (in the same country) appear to lie beyond standard socio-economic controls and environmental variables.

Many possibilities were put forward at the start for why we might find a different relationship between capital city dwellers and others but it is hard to determine which are accurate. This study was able to provide some evidence for the reason why people in Athens, Berlin and Vienna (though the Vienna effect itself might be a big city effect) are less happy than the rest of Greece, Germany and Austria respectively. This relative unhappiness seems to be explained by the fear of crime. When the analysis includes individual's worries about burglary and violent crime, the happiness difference disappears. The introduction used Berlin as an example, because authorities there have tried to address the perception of a 'happiness problem' with respect to its citizens. The attempted solution was to highlight, make fun of, and possibly change, the grumpy stereotype. This analysis presents possible alternative solutions for the improvement of the happiness of Berliners (as well as Athenians and the Viennese).

Future research can build on this result providing more explanation and analysis with more detailed regional data. These findings could also be combined with historical and urban studies concerning the characteristics of the cities and of the urban systems in different countries. The analysis and discussion here suggest next steps for the methodological analysis as well as giving an indication regarding which individual countries it might be particularly fruitful to investigate. This research presents an initial picture, and future research can develop this and provide more evidence about the reasons why individuals in some capitals are significantly less happy than others in their countries, and hence what policy makers might be able to do about it.

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Appendix 1

About the sample:

The ESS is a biannual survey that contains a random sample from, in the latest round, approximately 30 countries. The sample from each country is representative for that

country, and in many cases the individual country samples have been constructed to allow representative analysis at a more disaggregated level. This appendix gives more detail regarding the sampling procedures of the ESS and provides evidence about which level of regional disaggregation is possible for statistical inference.

There are some general principles guiding the individual country samples, but how the sample of each country is collected can (must, really) be different. These differences reflect the availability or otherwise of good sampling frames. For example Denmark has the Danish Central Persons Register (covering approximately 99 % of people resident in Denmark), while the UK and the Netherlands has reliable lists of addresses (postal delivery points) which enable almost full coverage. However countries such as Portugal and Greece do not, for every round, have reliable lists. With these different national starting points the ESS draws its sample.

Within most countries, a first stage in the sampling was stratification by region. Sometimes the regional stratification for a country in a particular round meant that it was impossible to identify the capital city adequately, and these countries were no longer included in the analysis. For the countries where isolation of the capital is possible, there are varying degrees of acceptability for statistical inference.

Essentially, the analyses of the paper are national analyses, employing a capital city dummy variable to separate inhabitants of the capital city to other citizens of that country (no different for dummy variables for unemployed individuals, married individuals et cetera). However, with some of the nationally representative samples, further disaggregation is possible. For example, Germany: Berlin is selected with certainty in the first strata along with the other NUTS level 1 regions (see Table 7 below for more information), and can be considered a representative sample of Berlin. It is randomly chosen at an early stage in the stratification procedure like other *Länder*. Separate regional analysis can take place at the level of the *Länder* though this is not necessary for the analysis of this investigation. Some countries are suitable for statistical inference at a further degree of disaggregation, such as Denmark which, impressively for a national sample in a cross-national project, is disaggregated and appropriately sampled to allow for inference at NUTS level 3. Other countries have minor problems with regional disaggregation. For example, in Spain for one round, there was a problem with the field work in Valencia, which necessitates a bit of caution with results. Arguably this does not affect the analyses made in the paper for Spain which employs a dummy variable (1 for Madrid, 0 otherwise) with the national sample. Details regarding all the countries in the sample follow in two tables. Table 7 is an estimate of the level of caution that should be attached to necessary for regional analysis, which is based on the information presented in Table 8, which is itself and a summary follows of the disaggregation possible for statistical analysis possible for the different countries.

Table 7 Summarising of the level of caution needed with each country

Minimal caution: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Germany, Greece, Ireland, Spain, and Sweden
Moderate caution: France, Great Britain, Portugal, and the Ukraine

Table 8 The varying levels of regional analysis for the countries in the sample used

ESS round	Round 1	Round 2	Round 3	Round 4
Country:				
Austria (AT)	NUTS level 2	NUTS level 2	NUTS level 2	NUTS level 2
Belgium (BE)	*	*	NUTS level 1	NUTS level 1

Table 8 continued

ESS round	Round 1	Round 2	Round 3	Round 4
Bulgaria (BG)	N/A	N/A	NUTS level 3 ^Λ	NUTS level 3
Cyprus (CY)	N/A	N/A	^	^
Czech Rep. (CZ)	NUTS level 3	NUTS level 3 ^Θ	N/A	N/A
Germany (DE)	NUTS level 1	NUTS level 1	NUTS level 1	NUTS level 1
Denmark (DK)	NUTS level 3	NUTS level 3	NUTS level 3	NUTS level 2
Spain (ES)	***	NUTS level 2	NUTS level 2	****
France (FR)	**	****	****	NUTS level 1
Great Britain (GB)	NUTS level 1 ^κ	NUTS level 1 ^Λ	NUTS level 1 ^{****}	NUTS level 1 ^{****}
Greece (GR)	NUTS level 2	NUTS level 2	N/A	^
Ireland (IE)	NUTS level 3 ^κ	*****	NUTS level 3	^
Portugal (PT)	N/A	^κ	****	****
Sweden (SE)	NUTS level 2	NUTS level 2	NUTS level 2	NUTS level 2
Ukraine (UA)	N/A	*****	^	^

NUTS refers to the Nomenclature of Territorial Units for Statistics, and the higher the level the more disaggregated the regional data. For Austria, for example, NUTS level 1 represents just three regions (Eastern, Southern and Western Austria) whereas NUTS level 2 splits Austria up into 9 regions (including Vienna). Because statistical inference is possible for Austria at the NUTS level 2 regions the relative happiness of Vienna's citizens can be adequately investigated. A key to the symbols on the next page

* Correspondence with NUTS: Brussels (BE1). Flanders (BE2). Wallonia (BE3)

** Correspondence with NUTS: (1) Région parisienne = FR1. Île de France. (2) Bassin parisien est = FR21. Champagne-Ardenne, FR22. Picardie, FR26. Bourgogne. (3) Bassin parisien ouest = FR23. Haute-Normandie, FR24 Centre, FR25 Basse-Normandie. (4) Nord = FR3. Nord-Pas-de-Calais. (5) Ouest = FR5. Ouest. (6) Est = FR4. Est. (7) Sud Ouest = FR6. Sud Ouest. (8) Sud Est = FR7. Centre-Est. (9) Méditerranée = FR8. Méditerranée

^κ Caution required: rather small sample size

^κ Caution recommended at this level of disaggregation

*** Correspondence with NUTS: The 17 regional categories used in the survey have been coded according to NUTS Level, 2 codes for Spain, the only exception being CANARIAS which is coded in the dataset as 70 instead of being coded as 7 (NUTS Level 2 code for the Canary Islands). Suggested grouping of the regional categories: In theory, all regional samples are representative at the regional level, since these regional categories were used to stratify the national population for the sample design. However, it is important to point out the following: (1) the number of individuals successfully interviewed is not enough in most of the regions as to provide estimations sufficiently precise at the regional level. (2) Some problems in the fieldwork process in a region (Valencia) oblige us to be cautious about the representativity of the subsample for this specific region

^Θ NUTS level 2 is preferred for regional analysis because NUTS 3 (regions) significantly differ in their sizes whereas NUTS 2 (area) correspond one to another and also to EU average

**** Statistical inference should only be made at the national level

^Λ The sample size for each individual region is too small for a separate analysis

***** Statistical inference is feasible at level of 3-fold categories of (1) Dublin; (2) Border/Midland/West and (3) Rest of country

[^] No NUTS correspondence, though statistical inference is possible at a regional level

Appendix 2

Happiness question and local area/environmental questions from the ESS.

The happiness dependent variable comes from this question:

Taking all things together, how happy would you say you are? Please use this card.

**Extremely
unhappy**

00

01

02

03

04

05

06

07

08

09

**Extremely
happy**

10

The dummy variables for how often an individual meets with others are created from this question:

How often do you meet **socially** with friends, relatives or work colleagues?

Never 01

Less than once a month 02

Once a month 03

Several times a month 04

Once a week 05

Several times a week 06

Every day 07

The any confidant dummy variable comes from this question:

Do you have anyone with whom you can discuss intimate and personal matters?

Yes 1

No 2

The victim of crime dummy variable comes from this question:

Have you or a member of your household been the victim of a burglary or assault in the last 5 years?

Yes 1

No 2

The local area safe dummy comes from this question:

How safe do you – or would you - feel walking alone in this area after dark? Do – or would – you feel...

very safe, 1

safe, 2

unsafe, 3

or, very unsafe? 4

And the two worries about crime variables come from the following two questions:

How often, if at all, do you worry about your home being burgled?

All or most of the time 1

Some of the time 2

Just occasionally 3

Never 4

How often, if at all, do you worry about becoming a victim of violent crime?.

All or most of the time 1

Some of the time 2

Just occasionally 3

Never 4

References

- Aassve, A., Goisis, A., & Sironi, M. (2012). Happiness and childbearing across Europe. *Social Indicators Research*, 108(1), 65–86.
- Becchetti, L., Clark A. E., & Ricca, E. G. (2011). *The value of diplomacy: Bilateral relations and immigrant well-being*, CEIS research paper 190, Tor Vergata University, CEIS.
- Blanchflower, D. G., Oswald, A. J., & Stewart-Brown, S. (2013). Is psychological well-being linked to the consumption of fruit and vegetables? *Social Indicators Research*, 114(3), 785–801.
- Böhnke, P., & Kohler, U. (2009). Well-being and inequality. In S. Immerfall & G. Therborn (Eds.), *Handbook of European societies* (pp. 629–668). Heidelberg, NY: Springer.
- Clark, A. E., D'Ambrosio, C., & Ghislandi, S. (2013) *Poverty and well-being: Panel evidence from Germany*, PSE Working papers hal-00814659, HAL.
- Clark, A. E., Frijters, P., & Shields, M. A. (2008). Relative income, explanation for the easterlin paradox and other puzzles. *Journal of Economic Literature*, 46(1), 95–144.
- De Neve, J., Christakis, N. A., Fowler, J. H., & Frey, B. S. (2010) *Genes, economics, and happiness*, CESifo working paper series 2946, CESifo Group Munich.
- Dolan, P., Peasgood, T., & White, M. P. (2008). Do we really know what makes us happy? The factors associated with subjective wellbeing. *Journal of Economic Psychology*, 29, 94–122.
- Easterlin, R. A. (2001). Income and happiness: Towards a unified theory. *Economic Journal*, 111, 465–484.
- European Commission. (2013). *Smart, sustainable and inclusive growth: EU Capital Cities—essential partners for Europe 2020*, Mem 13-156.
- Ferreira, S., Akay, A., Brereton, F., Cuñado, J., Martinsson, P., & Moro, M. (2012) *Life satisfaction and air quality in Europe IZA Discussion Papers 6732*, Institute for the Study of Labor (IZA).
- Fitzgerald, C. J., & Danner, K. M. (2012). Evolution in the office: How evolutionary psychology can increase employee health, happiness, and productivity. *Evolutionary Psychology*, 10, 770–781.
- Frank, R. H. (1985). *Choosing the right pond. Human behaviour and the quest for status*. New York: Oxford University Press.
- Grinde, B. (2002). *Darwinian happiness: Evolution as a guide for living and understanding human behavior*. Princeton: Darwin Press.
- Grözinger, G., & Matiaske, W. (2014). The direct and indirect impact of religion on well-being in Germany. *Social Indicators Research*, 116(2), 373–387.
- Kahneman, D., & Krueger, A. (2006). Developments in the measurement of subjective well-being. *Journal of Economic Perspectives*, 20(21), 3–24.
- Kamvar, S., Mogilner, C., & Aaker, J. L. (2009) *The meaning of happiness stanford graduate school of business research paper no. 2026*.
- Lucas, R. E., Clark, A. E., Georgellis, Y., & Diener, E. (2003). Re-examining adaptation and the set point model of happiness: Reactions to changes in marital status. *Journal of Personality and Social Psychology*, 84, 527–539.
- MacKerron, G., & Mourato, S. (2009). Life satisfaction and air quality in London. *Ecological Economics*, 68 (5), 1441–1453.
- Mill, J. S. (1848). Principles of political economy. In J. M. Robson (Ed.), *The collected works of John Stuart Milled*. Toronto: University of Toronto Press.
- Mogilner, C., Kamvar, S., & Aaker, J. (2011). The shifting meaning of happiness. *Social Psychological and Personality Science*, 2(4), 395–402.
- Oswald, A. J., & Wu, S. (2010) *Objective confirmation of subjective measures of human well-being: Evidence from the USA. IZA discussion papers 4695*, Institute for the Study of Labor (IZA).
- Piantadosi, S., Byar, D., & Green, S. (1988). The ecological fallacy. *American Journal of Epidemiology*, 127(5), 893–904.
- Piper, A. T. (2013) *Happiness, dynamics and adaptation. MPRA Paper 52342*, University Library of Munich, Germany.
- Piper, A. T. (2014). Heaven knows i'm miserable now: Overeducation and reduced life satisfaction. *Education Economics*, doi:10.1080/09645292.2013.870981.
- Schwartz, B. (2005). *The paradox of choice*. New York: Harper Collins.
- Shields, M. A., & Wooden, M. (2003) Marriage, children and subjective well-being. In *8th Australian Institute of Family Studies conference*, Melbourne.
- Shulevitz, J. (2013). The lethality of loneliness. *New Republic*.
- Smart, E. (2012). *Well-being in London: Measurement and use, GLA economics current issues note 35*. Greater London Authority publications.
- Steiner, L., Frey, B. S., & Hotz, S. (2013). *European capitals of culture and life satisfaction, ECON—working papers 117*, Department of Economics, University of Zurich.

- Stutzer, A., & Frey, B. S. (2006). Does marriage make people happy, or do happy people get married? *Journal of Socio-Economics*, 35, 326–347.
- Stutzer, A., & Frey, B. S. (2008). Stress that doesn't pay: The commuting paradox. *Scandinavian Journal of Economics*, 110(2), 339–366.
- Van Praag, B. M. S., & Baarsma, B. E. (2005). Using happiness surveys to value intangibles: The case of airport noise. *Economic Journal*, 115(500), 224–246.
- Van Praag, B. M. S., & Ferrer-i-Carbonell, A. (2007). *Happiness quantified: A satisfaction calculus approach*. Oxford: Oxford University Press.
- Vatter, J. (2012) *Well-being in Germany: What explains the regional variation? SOEP papers on multidisciplinary panel data research* 435, DIW Berlin, The German Socio-Economic Panel (SOEP).
- Ward, P., & Meyer, S. (2009). Trust, social quality and wellbeing: A sociological exegesis. *Development and Society*, 38(2), 339–363.
- Wilkinson, R., & Pickett, K. (2010). *The spirit level: Why equality is better for everyone* (2nd ed.). New York, NY: Bloomsbury Press/Penguin Books.