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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.

JEL codes: I31, R19 R23

Keywords: Happiness, Life-satisfaction, Geography, European Social Survey

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Europe's capital cities and the happiness penalty: an investigation using the European Social Survey

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).

As is well-known, over the last twenty 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-Carbonnel 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 Neue 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.

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 (2013) 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"¹ (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.

¹ 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).

Citizens of other capital cities often have similar reputations. Perhaps any such grumpiness reflects unhappiness? 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 paragraph 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 the many of the negative consequences of loneliness and isolation.) Alternatively, 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 (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).²

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 section 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

² 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 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 section 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 the present study, but in future work with different datasets could. Finally, Section 6 provides some concluding remarks.

2. Data and Method

The data come from the European Social Survey (ESS), (freely available at www.europeansocialsurvey.org). 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.³ Also, as mentioned at the end of section 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.

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 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,

³ Changes in how the region is coded between ESS round 4 and ESS round 5, mean that this study can only take advantage of the first 4 ESS rounds which cover 2002 to 2008.

Great Britain⁴, Greece, Ireland, Portugal, Spain, Sweden and the Ukraine).⁵ 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.

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 (or 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. This result, for all countries together, is also found when country dummies and time dummies are included in this overall estimate. A quick summary of this initial inspection as 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.⁶ 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.⁷

⁴ 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'.

⁵ 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 presented in endnotes.

⁶ 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.

⁷ 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

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 (for a review see Dolan et al. 2008). 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 section 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 (Mogliner 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 8 for the differences between young and older people with respect to the otherwise unmediated inspection). With these standard socio-economic controls, we can assess the impact of living in a capital city controlling for some

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).

potentially important variables that might be potentially responsible for the relationships found in section 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.⁸ 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

⁸ 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.

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 table 3. 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.⁹ Thus here, in contrast to table 2, in the 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 Wheatley-Price 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.¹⁰

⁹ The reason is to do with space, as a complete presentation of these results would require 15 more pages.

¹⁰ 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.

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 3b). 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.¹¹ 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.¹²

¹¹ 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.

¹² 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.

4. Capital cities and happiness, including 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.¹³

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 section 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 section 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 the

¹³ 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.

appendix, and the results for the estimations are in table 4. 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).

In summary, the inclusion of these additional variables made no difference in the majority of cases. 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 other countries 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 elsewhere in those countries are found outside of the possibilities included in the model. Speculations about 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 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.¹⁴ 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

¹⁴ 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.

pointing at a solution to Berliner ‘grumpiness’ (see introduction), 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 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 Kruger 2006), but cannot adapt to fears? Adaptation arguments like this are supported by the analysis of Piper (2012b) 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 that one 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.

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. 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 negatively associated with happiness. Equivalent to table 3 (i.e. socio-economic controls only) the size of the both effects is -0.16, 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 table 4 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.

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 a 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 the standard socio-economic controls and environmental variables discussed above.

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. 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 overall 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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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
st.dev.	2.0	1.9	2.0	st.dev	1.6	1.7	1.6
N	5484	1375	6859	N	6757	463	7220
Bulgaria				Cyprus			
mean	5.1	5.8	5.2	mean	7.7	7.3	7.6
st.dev.	2.6	2.4	2.6	st.dev	1.8	1.4	1.7
N	3069	478	3547	N	1536	668	2204
Czech Republic				Denmark			
mean	6.8	6.8	6.8	mean	8.3	8.1	8.3
st.dev.	2.0	1.9	2.0	st.dev.	1.4	1.5	1.4
N	3886	454	4340	N	4110	350	4460
France				Germany			
Mean	7.2	7.3	7.2	mean	7.1	7.1	7.1
st.dev.	1.8	1.8	1.8	st.dev	2.0	2.0	2.0
N	6255	1105	7360	N	10063	1353	11416
Great Britain				Greece			
Mean	7.5	7.3	7.4	mean	6.8	6.4	6.6
st.dev	2.0	1.8	1.9	st.dev.	2.1	2.1	2.1
N	7926	760	8686	N	4577	2438	7015
Ireland				Portugal			
Mean	7.8	7.7	7.8	mean	6.6	6.2	6.5
st.dev	1.8	1.7	1.8	st.dev	2.0	2.1	1.9
N	6009	1856	7865	N	1397	964	2361
Spain				Sweden			
Mean	7.5	7.5	7.5	mean	7.9	7.8	7.9
st.dev	1.8	1.5	1.7	st.dev	1.6	1.6	1.6
N	6269	1401	7670	n	5438	276	5714
Ukraine				All countries			
Mean	5.5	5.9	5.5	mean	7	7	7
st.dev	2.4	2.2	2.4	st.dev	2	2	2
N	5438	276	5714	N	79609	14910	94519

Table 2 Relative happiness and capital city inhabitants, European Social Survey (2002-2008)

VARIABLES	(1) Happiness - all countries	(2) Happiness - Austria	(3) Happiness - Belgium
capital	-0.11*** (0.018)	-0.30*** (0.059)	-0.42*** (0.076)
Constant	7.44*** (0.014)	7.65*** (0.043)	7.78*** (0.037)
Observations	94,519	6,859	7,220
Adjusted R-squared	0.007	0.004	0.005

Standard errors in
parentheses

*** p<0.01, ** p<0.05, * p<0.1

(4) Happiness - Bulgaria	(5) Happiness - Cyprus	(6) Happiness - Czech Republic	(7) Happiness - Denmark	(8) Happiness - France
0.72*** (0.128)	-0.36*** (0.078)	0.05 (0.101)	-0.28*** (0.060)	0.16*** (0.060)
5.13*** (0.058)	7.59*** (0.054)	6.74*** (0.057)	8.35*** (0.037)	7.31*** (0.049)
3,547 0.008	2,204 0.0013	4,340 -0.000	4,460 0.002	7,360 0.003

(9) Happiness - Germany	(10) Happiness - Great Britain	(11) Happiness - Greece	(12) Happiness - Ireland	(13) Happiness - Portugal
-0.04 (0.057)	-0.20*** (0.072)	-0.39*** (0.053)	-0.11* (0.047)	-0.46*** (0.086)
7.16*** (0.037)	7.56*** (0.043)	6.64*** (0.045)	7.92*** (0.041)	6.62*** (0.055)
11,416 0.001	8,686 0.001	7,015 0.010	7,865 0.007	2,361 0.012

(14) Happiness - Spain	(15) Happiness - Sweden	(16) Happiness - Ukraine
0.06 (0.059)	-0.10** (0.047)	0.48*** (0.150)
7.29*** (0.042)	7.90*** (0.037)	5.32*** (0.058)
7,802 0.008	7,670 0.000	5,714 0.003

Table 3a 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-squared	0.00*** (0.000)
Child(ren) at home	-0.05*** (0.015)
Constant	7.03*** (0.073)
Observations	76,194
Adjusted R-squared	0.274

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Note: 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.

Table 3b 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
capital	-0.25*** (0.019)	-0.12* (0.064)	-0.31*** (0.084)
Constant	7.43*** (0.072)	6.94*** (0.319)	7.93*** (0.204)
Observations	76,194	5,407	5,766
Adjusted R-squared	0.245	0.155	0.140

Standard errors in
parentheses

*** p<0.01, ** p<0.05, * p<0.1

(4) Happiness - Bulgaria	(5) Happiness - Cyprus	(6) Happiness - Czech Republic	(7) Happiness - Denmark	(8) Happiness - France
0.01 (0.132)	-0.30*** (0.093)	-0.23** (0.110)	-0.08 (0.085)	0.02 (0.086)
5.87*** (0.570)	6.21*** (0.802)	7.20*** (0.477)	8.29*** (0.268)	8.86*** (0.372)
2,880 0.254	1,628 0.172	3,296 0.146	3,788 0.124	2,841 0.211

(9) Happiness - Germany	(10) Happiness - Great Britain	(11) Happiness - Greece	(12) Happiness - Ireland	(13) Happiness - Portugal
-0.15*** (0.057)	-0.08 (0.077)	-0.59*** (0.055)	-0.10** (0.048)	-0.33*** (0.091)
7.03*** (0.222)	7.26*** (0.217)	7.04*** (0.300)	7.26*** (0.023)	7.68*** (0.576)
9,165 0.196	6,768 0.154	6,207 0.172	6,331 0.154	1,837 0.221

(14) Happiness - Spain	(15) Happiness - Sweden	(17) Happiness - Ukraine
-0.00 (0.062)	-0.06 (0.050)	-0.18 (0.154)
8.13*** (0.236)	8.17*** (0.211)	6.75*** (0.366)
6,227 0.151	5,778 0.168	4,786 0.184

Table 4a Europe's capitals and happiness with socio-economic controls, 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-squared	0.00*** (0.000)
Child(ren) at home	-0.04 (0.023)
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-squared	0.33

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

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.

Table 4b 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
capital	-0.19*** (0.028)	-0.08 (0.140)	-0.51*** (0.132)
Constant	6.34*** (0.147)	4.66*** (0.929)	7.97*** (0.411)
Observations	344,146	1,405	2,610
Adjusted R-squared	0.293	0.167	0.153

Standard errors in
parentheses

*** p<0.01, ** p<0.05, * p<0.1

(4) Happiness - Bulgaria	(5) Happiness - Cyprus	(6) Happiness - Czech Republic	(7) Happiness - Denmark	(8) Happiness - France
0.14 (0.138)	-0.30*** (0.097)	Could not estimate	-0.03 (0.172)	0.04 (0.087)
3.30*** (0.762)	4.39*** (0.841)		8.31*** (1.442)	7.74*** (0.458)
2,579 0.275	1,535 0.211		1,078 0.187	2,795 0.233

(9) Happiness - Germany	(10) Happiness - Great Britain	(11) Happiness - Greece	(12) Happiness - Ireland	(13) Happiness - Portugal
0.01 (0.082)	-0.01 (0.0114)	-0.14 (0.108)	-0.24*** (0.089)	-0.24*** (0.095)
5.10*** (0.521)	5.94*** (0.424)	6.09*** (0.767)	5.91*** (0.573)	6.68*** (0.623)
3,992 0.226	3,384 0.198	1,452 0.152	2,122 0.185	1,795 0.239

(14) Happiness - Spain	(15) Happiness - Sweden	(17) Happiness - Ukraine
-0.13 (0.088)	-0.06 (0.077)	-0.20 (0.212)
7.20*** (0.410)	7.97*** (0.678)	4.54*** (0.674)
3,027 0.192	2,291 0.180	2,527 0.201

Appendix

Happiness question and local area/environmental questions from the European Social Survey

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																							Extremely happy		
00	01	02	03	04	05	06	07	08	09	10															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