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HAPPINESS ACROSS EU CITY-REGIONS

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Abstract

Motivated by the increasing interest on happiness in cities and the debate on the relative economic performance of cities across the urban hierarchy level, this paper studies the relationship between urbanization and happiness across European city-regions in the period 2004-2011. Differently from some accounts reporting a greater satisfaction in rural settings or finding no differences across settings of different size, results suggest that happiness is especially higher in intermediate ranks city-regions. This evidence is also interpreted in light of the Easterlin's hypothesis suggesting a diverging trend between happiness and economic growth.

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1. Introduction

The economic role of cities is definitively back in both academic and policy makers agenda (Glaeser, 1998 and 2011). Significant demographic and spatial shifts are actually occurring in developed and emerging countries, stimulating research and debate on the relationship between cities, agglomeration, economic performance as well as on the social and environmental consequences of increased urbanization (Dijkstra et al., 2013), and, more generally, on the sustainability of different urban settlements (Shucksmith et al., 2009).

The literature on North America (Scott, 1988; Florida, 2002, 2005; Sassen, 2002; Rosenthal and Strange, 2004; Glaeser, 2011) and emerging countries (McCann and Acs, 2011; Vernon, 2010) has richly elaborated and developed evidence on the paramount role played by agglomeration economies in explaining the performance and productivity of cities.

Coming to the European case, however, recent studies suggest a less straightforward relations between city size, density and economic performance. Rather, consistent evidence has been produced showing that on average in Europe over the last years second rank cities have outperformed first rank cities, becoming the main driving forces in the national economic performance (Dijkstra et al., 2013; Camagni et al., 2015).

Understanding and assessing the relative performance of cities of different size is indeed at the core of urban studies as well as closely intertwined to those scientific endeavors aimed to measure the quality of life in different urban areas (Cheshire and Magrini, 2006; Carlinio and Saiz, 2008; Albouy, 2008 and 2015), and consequently, to research aimed at understanding individual benefits in terms of satisfaction and well-being from living in denser settings¹ (Florida et al., 2013; Glaeser et al., 2014, Sørensen, 2014).

As noted by Florida et al. (2013), considering happiness in urban centers is critically and increasingly important as people decide the place to live in according to the job opportunities, services and amenities available, but also develop common sense of belonging and identification with, satisfaction and emotional attachment from the place where they reside. This topic is especially relevant in the European context where, as of 2011, about 78% of population lived in urban areas while accounting for almost 85.5% of total GVA. Moreover, studying happiness in cities is increasingly of policy importance as it offers a means of monitoring the progress and success of the main EU policy strategies, chiefly the Europe 2020 strategy and the related urban agenda, seeking to promote social cohesion, to empower people and improve their quality of life, so to achieve sustainability goals (Shucksmith et al., 2009).

In current years, interest on the possibility of an urban-rural divide in life satisfaction is somewhat growing (albeit without providing consistent and definitive results) largely influenced by and framed within the notion of the so-called Easterlin paradox (1995) (Florida et al., 2013; Glaeser et al., 2014; Sørensen, 2014). More recently re-shaped by Grahman (2009) through the metaphor of the 'happy peasant and the miserable millionaire', the core of Easterlin's intuition is in that he admits the possibility of a tension between objective (economic) and subjective (self-reported happiness) well-being, thus breaking the link between income and happiness, at least in cross-country comparisons.

¹ As it is customary in the literature, this paper uses the words life satisfaction, happiness and subjective well-being interchangeably (Blanchflower and Oswald, 2004).

Even if highly criticized, and sometimes not supported by empirical analyses (Deaton, 2008; Stevenson and Wolfers, 2008; Easterlin et al., 2011), the original Easterlin's intuition applied in a spatial context stimulates an intriguing question. More than simply contrasting the satisfaction levels across spatial units characterized by different agglomeration levels, in fact, it is of interest to social scientists and, in particular, to economists to understand whether the different if not diverging economic performance characterizing spatial settings of different density/size is also matched by a reverse pattern in life satisfaction, i.e., wealthier areas underperform the others in terms of happiness. In a time of increasing competition of spatial entities in attracting people and economic activities, shaped by the paramount role played of agglomeration economies (Glaesler et al., 2011), especially in developing countries (McCann and Acs, 2011), assessing the relative advantages in terms of increased happiness that different territorial contexts offer to their inhabitants provides an interesting perspective on territorial competitiveness and attractiveness, which complements more traditional analyses focusing on economic performance and growth patterns across space.

By adapting this reasoning to the specific European case, interesting and related research questions arise and are consequently explored in this paper. First, in times when the rather unbalanced and contrasting patterns of economic performance detected in European cities and their respective regions has favoured especially larger and capital ones at the expenses of more peripheral and rural areas, do smaller (rural) settings have enjoyed higher levels of happiness? Second, and parallel, in times when smaller cities have played the lion's share of the growth engine of their respective countries, did their advantages in terms of greater happiness level diminish in favour of larger and denser settings? In short, given their positive economic dynamics, especially in recent times and with respect to larger cities, are less denser settings still enjoying greater satisfaction levels, as some European literature suggests (Sørensen, 2014)? Are positive urbanization effects only direct and benefitting only urban residents or are they also indirect and do benefit also rural residents living in more urbanized areas? Also, are there any differences among European countries in this respect?

The empirical answer to these questions largely depends on the notion of urbanization adopted and the way in which urbanization effects are conceptualized and measured. In this respect, the paper introduces a novelty with respect to previous literature. Differently from previous studies on the European case (e.g., Sørensen, 2014; Shucksmith et al., 2009), the paper complements with a new urbanization classification the rather simplistic and dichotomous urban-rural categorization provided by official European surveys (namely Eurobarometer and European Value Survey), which suffers of comparability problems across waves, and, possibly, of respondents heterogeneity in their self-assessment of the size of the settlement where they reside (and therefore of the rural-urban dichotomy). In particular, the paper measures the urbanization level in regions through the notion of ranks of city-regions (Camagni et al., 2015). Despite its increasingly widespread use, there is no commonly accepted definition of what a city-region is (Parr, 2005). In this paper, a city-region refers to the presence in a region either of a core city linked by functional ties to a hinterland, or a polycentric geographical unit which frequently leads to the formation of networked city-regions (Scott et al., 2001; Faludi, 2002; Hall and Pain, 2006; Rodríguez-Pose, 2008), since for the purpose of this study, the internal structure of the city-region is neutral vis-à-vis the research hypotheses, while the size of the urban system matters.

The empirical analysis is based on a large dataset covering the 2004-2011 period and 24 out of the 28 European Union (EU) countries assembled from different Eurobarometer surveys and integrated with regional economic data from EUROSTAT.

The remainder of the paper unfolds as follows. The next section describes data and methods adopted to address the above mentioned research questions and the definition and measurement of urbanization effects used. The third section comments on the key empirical results and the last section concludes by outlining possible future research directions.

2. Data and methods

2.1. Eurobarometer surveys

The database employed in the empirical analysis has been built by pooling several waves of Eurobarometer survey studies. Since 1973 the European Commission has been monitoring the evolution of the public opinion in Member States on a broad variety of issues. Among the latter, a recurrent question concerns the degree of life satisfaction of EU citizens. Respondents are typically asked to report their satisfaction with life on a four-point scale: from “Very unsatisfied”, to “Rather unsatisfied”, from “Rather satisfied”, to “Very satisfied”. A question on self-reported happiness was included in 19 editions of the survey between 2004 and 2011². Pooling all these Eurobarometer waves allows for the creation of a rich dataset (including more than 430,000 observation) on individual life satisfaction.

Jointly with their self-reported happiness, individuals are requested to provide some information on their demographic and socioeconomic status, such as age, gender, occupation and marital status. As pointed out by previous literature (Frey and Stutzer, 2000) these individual characteristics are among the most significant determinants of life satisfaction.

Importantly, each respondent can be associated to the NUTS2 region of residence. This is particularly relevant for the present research, since it enables to classify individuals according to the rank of the city-region they live in. Due to a different classification of regions, data on four countries (Croatia, Finland, Germany, and UK) are not comparable with the others and, as a consequence, they are excluded from the analysis discussed in the following sections.

2.2. The empirical model

Life satisfaction is classified in Eurobarometer surveys according to a qualitative four-point scale. Although the relative distance between the alternative options of the scale response is idiosyncratic and, therefore, remains unknown to researchers, it is still reasonable to assume that all individuals share the same interpretation of each alternative answer. Thus, individual statements about satisfaction can become comparable in an ordinal way.

The real, unobserved, level of happiness is represented by a continuous latent variable depending on a vector of observable characteristics (X_i) and a random error term (ε_i) characterized by a logistic distribution:

The categorical measurement of self-reported life satisfaction (S_i) can be interpreted as a collapsed version of S_i^* . The value of S_i depends on whether the continuous variable crosses a particular threshold τ , with

² The data set includes the results from the following “Standard and Special Eurobarometer Series”: edition 2004 (ZA4229 and ZA4231), 2005 (ZA4411 and ZA4414), 2006 (ZA4506 and ZA4526), 2007 (ZA4530 and ZA4565), 2008 (ZA4744 and ZA4819), 2009 (ZA4971, ZA4972 and ZA4973), 2010 (ZA5234, ZA5235 and ZA5449), 2011 (ZA5481, ZA5564 and ZA5567).

where K represents the number of categories of the ordinal dependent variable (four in the present case). Given this formulation of the problem, it is possible to estimate the probability of Y to take any particular value from 1 to K through logistic regression by letting change the value of the independent variables.

In the empirical analysis, the dependent variable is represented by the categorical, self-reported, life satisfaction level. Two main typologies of independent variables are considered and described in Table 1.

The first group is represented by individual level determinants of happiness. As reported by Dolan et al. (2009) and Banchflower and Oswald (2011), the literature in fact highlights some stable results. In particular, younger people tend to be happier than adults but elder people as well are happier than adults, meaning that the relationship between age and happiness is U-shaped (with a minimum around 30-50 years, depending on the study). Age is here measured as number of years and a quadratic effect is also introduced to check for a non-linear relationship between age and life satisfaction. Also women tend to be happier than men, although the statistical significance of its effect frequently disappears when other controls are inserted; its effect is captured through a dummy variable taking value 1 if the respondent is female and 0 if he is male (which is the reference category in all estimations). Education as well seems to have a positive impact on happiness, especially in lower income countries, despite its effect can be influenced by the introduction of other variables as education often reflects also unobservable traits at the individual level such as motivation, intelligence or family background. The effect of education has been captured by three dummy variables each accounting for different educational attainment level according to the ISCED classification (ISCED 1-2: low education (the reference category in all estimations); ISCED 3-4: medium education; ISCED 5-6: high education). Moreover, being employed is found consistently and significantly associated with higher subjective well-being. The effect of occupation has been captured by four dummy variables each accounting for a different occupational status (non-working (the reference category in all estimations), employed, self-employed, student). Finally, empirical evidence also indicates that happiness is highest for married people and lowest for divorced. The effect of marital status has been captured by four dummy variables each accounting for a different status (married (the reference category in all estimations), divorced, widow, single).

The second group of controls include the variables defined at the regional (NUTS2) level. The first one is per capita income, which is an important determinant of individual happiness is income (Easterlin, 1995) and is proxied by the per capita GDP in the respondent's NUTS2 region of residence. In fact, Eurobarometer surveys do not provide consistent information about the income of the respondents across all waves; hence, controlling for the overall level of wealth in the region of residence allows mitigating the issue raised by the omission of this individual characteristic.

The most relevant independent variable is the categorical one accounting for the rank of the city-region of residence of the respondent. The taxonomy employed in the present work, originally elaborated by Camagni et al. (2015), hierarchically classifies regions in mutually

exclusive groups according to their urban structure, i.e., the degree of urbanization, captured by the regional population residing in large urban zones (LUZs). LUZs are defined by EUROSTAT as an approximation of the functional urban area extending beyond the core city (i.e., its administrative and/or political boundaries).³ Rank 1 city-regions are defined as regions in which at least 1,500,000 inhabitants reside in LUZ and represent 16.41 percent of EU regions (i.e., 43 regions); rank 2 city-regions are defined as regions in which at least 300,000 inhabitants (and less than 1,500,000 inhabitants) reside in LUZ and represent the majority of EU regions (i.e., 121 regions that amounts to 46.18 percent); the remaining 37.40 percent regions are defined as rank 3 city-regions (i.e., 98 regions).

A city-region in this paper therefore refers to the presence of a core city linked by functional ties to a hinterland or a polycentric geographical unit that frequently leads to the formation of networked mega-city regions (Faludi 2002; Hall and Pain 2006; Rodríguez-Pose 2008; Scott et al. 2001). In fact, the proposed typology does not differentiate city-regions according to the type of their urban systems (monocentric versus polycentric urban systems), but according to the size of their urban system, what is exactly required to capture the intensity of urbanization effects. The focus on city-regions rather than on regions emphasizes the importance of the externalities of the regional urban system as a whole and the synergic effects that might be generated by city networks (Camagni 1993).

This typology improves on relatively more traditional indicators such as regional population density (and the categorization that can be derived from this data); by capturing the regional population living in (functional) urban areas, the proposed typology is in fact a more precise measure of the degree of urbanization in the region able to embrace in a more specific way the intensity of urbanization externalities than the regional population density indicator.

Notwithstanding this, population density is included as additional regional indicator in the empirical analysis. This variable is expected to be positively associated to life satisfaction; proximity to other people and services is expected to have a positive impact on individuals' well-being. Importantly, it is worth noting that the simultaneous inclusion of both population density and city-region ranking is not redundant. In fact, the former is aimed at capturing the overall effect of agglomeration economies on life satisfaction, while the latter measures the impact of specific urban typologies on self-reported happiness.

Finally, all models include country and year fixed effects. Country fixed effects are expected to control for social and economic institutional conditions (Frey and Stutzer, 2000), as the design of federal institutions, not included in the empirical analysis and expected to be homogeneous across the same country. The same holds for some macroeconomic factors at national level, as for instance the inflation and unemployment rates. Year dummies, likely, can control for their evolution over time, and are particularly important in the present analysis because of the deep socioeconomic changes that affected especially Central and Eastern European Countries (CEEC) in the period considered. Errors are clustered at the year level to correct for any correlation that may affect all individuals in a given year.

³ <http://ec.europa.eu/eurostat/web/cities/spatial-units>.

Table 1. Variable description.

Name	Description	Source	Year
Individual characteristics (survey data)			
<i>Gender</i>	Gender of the respondent (reference category = males)	Eurobarometer	2004-2011
<i>Age</i>	Age of the respondent (number of years). A quadratic effect is introduced to check for a non-linear relationship between age and life satisfaction	Eurobarometer	2004-2011
<i>Education</i>	Level of education of the respondent according to the ISCED classification. Low education = ISCED 1-2, medium education = ISCED 3-4, high education = ISCED 5-6, (reference category = low education)	Eurobarometer	2004-2011
<i>Occupation</i>	Occupation of the respondent: non-working, student, employed, self-employed (reference category = non-working)	Eurobarometer	2004-2011
<i>Marital status</i>	Marital status of the respondent: single, married, divorced, widow (reference category = married)	Eurobarometer	2004-2011
Regional variables (NUTS2)			
<i>Per capita GDP</i>	Per capita GDP in NUTS2 regions	Eurostat	2004-2011
<i>Population density</i>	Number of residence per square kilometre	Eurostat	2004-2011
<i>City-region ranking</i>	Set of three dummy variables: Rank 1 city-regions: dummy equal to 1 if at least 1,500,000 inhabitants reside in LUZ, and 0 otherwise Rank 2 city-regions: dummy equal to 1 if at least 300000 (and less than 1,500,000 inhabitants) inhabitants reside in LUZ, and 0 otherwise Rank 3 city-regions: dummy equal to 1 if less than 300000 inhabitants reside in LUZ, and 0 otherwise	Camagni et al., 2015	2004-2011

3. Life satisfaction across EU city-regions

In the first step of the empirical analysis self-reported satisfaction has been made dependent on the set of individual characteristics, on the variables defined at the regional level (per capita income and population density) and on the different typologies of city-region rankings. In order to avoid multicollinearity issues, the three groups of regressors have been introduced progressively in estimations. Moreover, as a robustness check of our results, the same models have been estimated by applying both ordered logistic and binomial logit regression, where the binary dependent is equal to 1 if the respondent is “very satisfied” or “rather satisfied” with her/his life and equal to 0 otherwise. Results are reported in Table 2 and qualitatively consistent across estimation methods.

Table 2. Life satisfaction across city-regions.

	ORDERED LOGIT ESTIMATES			BINOMIAL LOGIT ESTIMATES		
	(1)	(2)	(3)	(1)	(2)	(3)
Age	-0.025*** (0.001)	-0.025*** (0.001)	-0.025*** (0.001)	-0.025*** (0.001)	-0.025*** (0.001)	-0.025*** (0.001)
Age^2	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
Female	0.071*** (0.006)	0.070*** (0.006)	0.071*** (0.006)	0.075*** (0.008)	0.075*** (0.008)	0.075*** (0.008)
Employed	0.456*** (0.008)	0.453*** (0.008)	0.453*** (0.008)	0.590*** (0.010)	0.583*** (0.010)	0.583*** (0.010)
Self employed	0.547*** (0.013)	0.542*** (0.013)	0.543*** (0.013)	0.649*** (0.016)	0.641*** (0.016)	0.642*** (0.016)
Student	0.889*** (0.016)	0.888*** (0.016)	0.889*** (0.016)	1.113*** (0.023)	1.111*** (0.023)	1.111*** (0.023)
Medium education	-0.022** (0.010)	-0.024** (0.010)	-0.023** (0.010)	-0.034*** (0.012)	-0.035*** (0.012)	-0.034*** (0.012)
High education	0.382*** (0.011)	0.380*** (0.011)	0.381*** (0.011)	0.436*** (0.014)	0.432*** (0.014)	0.434*** (0.014)
Single	-0.238*** (0.008)	-0.238*** (0.008)	-0.237*** (0.008)	-0.210*** (0.011)	-0.211*** (0.011)	-0.210*** (0.011)
Divorced	-0.760*** (0.012)	-0.760*** (0.012)	-0.759*** (0.012)	-0.795*** (0.014)	-0.797*** (0.014)	-0.796*** (0.014)
Widow	-0.556*** (0.011)	-0.556*** (0.011)	-0.555*** (0.011)	-0.507*** (0.014)	-0.507*** (0.014)	-0.508*** (0.014)
Log of per capita GDP		0.210*** (0.016)	0.347*** (0.020)		0.270*** (0.020)	0.480*** (0.026)
Log of pop. density		0.065*** (0.005)	0.059*** (0.006)		0.076*** (0.007)	0.044*** (0.008)
1 st rank city-regions			-0.078*** (0.017)			-0.209*** (0.023)
2 nd rank city-regions			0.105*** (0.009)			0.071*** (0.012)
2005	-0.198*** (0.013)	-0.207*** (0.013)	-0.213*** (0.013)	-0.200*** (0.017)	-0.212*** (0.017)	-0.223*** (0.017)
2006	-0.131*** (0.013)	-0.146*** (0.013)	-0.157*** (0.013)	-0.100*** (0.017)	-0.124*** (0.017)	-0.143*** (0.017)
2007	-0.118*** (0.013)	-0.143*** (0.013)	-0.158*** (0.013)	-0.071*** (0.017)	-0.108*** (0.017)	-0.138*** (0.017)
2008	-0.233*** (0.013)	-0.268*** (0.013)	-0.289*** (0.014)	-0.236*** (0.017)	-0.287*** (0.017)	-0.326*** (0.018)
2009	-0.245*** (0.012)	-0.281*** (0.012)	-0.304*** (0.013)	-0.273*** (0.015)	-0.327*** (0.016)	-0.369*** (0.016)
2010	-0.383*** (0.013)	-0.406*** (0.013)	-0.419*** (0.013)	-0.384*** (0.016)	-0.420*** (0.016)	-0.447*** (0.017)
2011	-0.191*** (0.012)	-0.217*** (0.012)	-0.232*** (0.012)	-0.208*** (0.015)	-0.247*** (0.016)	-0.276*** (0.016)
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant cut1	-3.810*** (0.026)	-2.975*** (0.066)	-2.499*** (0.075)			
Constant cut2	-1.912*** (0.025)	-1.077*** (0.066)	-0.600*** (0.075)			
Constant cut3	1.131*** (0.025)	1.968*** (0.066)	2.446*** (0.075)			
Constant				1.927*** (0.032)	0.875*** (0.083)	0.261*** (0.094)
Observations	438,727	437,638	437,638	441,090	439,984	439,984

All individual characteristics have the expected signs, consistently with recent findings in the literature (Blanchflower and Oswald, 2008). Young and elderly people are more likely to be satisfied than middle-aged respondents confirming that the relationship between age and happiness is U-shaped. Women tend to be more satisfied than men while, taking the unemployed respondents as reference, all the other occupational status (employed, self-employed and student) are associated with higher self-reported happiness. Also, graduated respondents are more satisfied than the others (although those with intermediate educational attainment seem at disadvantage with respect to those with low educational attainment⁴) and the same holds for married people when compared with other categories of marital status. Finally, time dummies indicate a progressive deterioration of individual happiness over time as the years of the financial and debt crisis are approaching.

The independent variables measured at the regional level show that individuals living in richer areas tend to report a higher level of happiness; as this variable is also an indirect proxy for income, this result confirms previous findings in the literature (Rodríguez-Pose and Maslauskaitė, 2012). Also residents in densely populated regions turn to be more satisfied. A possible interpretation is that the higher accessibility of dense areas and all agglomeration advantages arising in more agglomerated regions lead to an increase in the probability of being satisfied.

Interestingly and importantly, the significance and, to a lesser extent, the magnitude of the coefficient of population density is left unchanged by the inclusion of the dummy variables for the rank of EU city-regions.

Indeed, Model (3) accounts for the urbanization level of regions by introducing the city-region ranking variables. Results show that the probability of reporting a higher level of life satisfaction is lower in first rank and higher in second rank city-regions, with respect to rank 3 areas, taken as the reference case. A possible interpretation of this finding is that the perceived effect of the diseconomies arising in metropolitan areas, such as congestion, pollution, greater costs of living (Glaeser and Kahn, 2008) prevail with respect to the perception of its advantages. On the other hand, the opposite mechanisms holds in regions characterized by intermediate urbanization level (i.e. second rank city-regions), consistently with recent related research (Lenzi and Perucca, 2014). Importantly, and differently from the Easterlin's hypothesis, it seems that second rank city-regions have enjoyed both greater economic performances (Camagni et al., 2015) but also greater happiness levels.

Albeit the city-region ranking allows to uncover important spatial differences in the perceived level of self-reported satisfaction, it is worth acknowledging that also city-regions are characterized by some internal heterogeneity in the degree of urbanization; yet, less densely populated communities located in urbanized regions may benefit from the positive externalities generated by larger cities in the region, by enjoying their advantages without suffering from their diseconomies. The analysis reported in Table 2 leaves unanswered this important issue and leaves open the following questions: if the probability of being satisfied varies across city-regions of different rank, as Table 2 shows, does happiness also vary *within* regions characterized by the same level of urbanization? Does it make any difference, for those living in rural settings, to be localized in urban regions and, therefore, to indirectly catch the effects

⁴ This result looks counter-intuitive at a first glance. The categorization of data can partly provide an explanation. Evidence on Romania, for example, shows that 32 per cent of low educated individuals are older than 61 years, while the same share for those with intermediate education is about 15 per cent (Lenzi and Perucca, 2014). Since retired people are generally more satisfied than both housekeepers and unemployed workers (Blanchflower and Oswald, 2004), the coefficients for the educational attainment may reflect, at least in part, the categorization of the data.

of urbanization? To answer to these questions a further explanatory variable defined at the individual level is included in the empirical analysis. One of the questions of the Eurobarometer surveys, in fact, asked the respondents to state whether they are living in a rural or urban community. This question, therefore, allows to discriminate, within each region, between the residents living in rural settings and those living in urban ones.

The effects of the inclusion of this variable are shown in Table 3. Model (1) comprehends a dummy variable equal to 1 for those living in a rural community and equal to 0 for the others. On average, these respondents are more satisfied than those living in urban settings as recent papers suggest (Sørensen, 2014). Nevertheless, this association is likely to vary across regions with a different level of urbanization.

To verify this conjecture, the model specification is augmented by adding an interaction variable for the respondents living in rural communities of first rank (Model 2) and second rank (Model 3) city-regions, introduced separately to avoid multicollinearity risks and to ease interpretation of the interaction effects. Estimates in Model (2) show that those people living in rural communities embedded in first rank city-regions are, other things constant, happier than the ones living in urban settlements located in the same typology of city-regions, suggesting that indirect effects of urbanization are valued more in terms of happiness than direct effects of urbanization. Also, the direct effect of living in rural communities (to be interpreted as the effect of residing in rural areas of all the other types of city-regions but first rank ones) indicates that residents of rural areas are, on average, still more probable to be satisfied than those living in more urbanized areas.

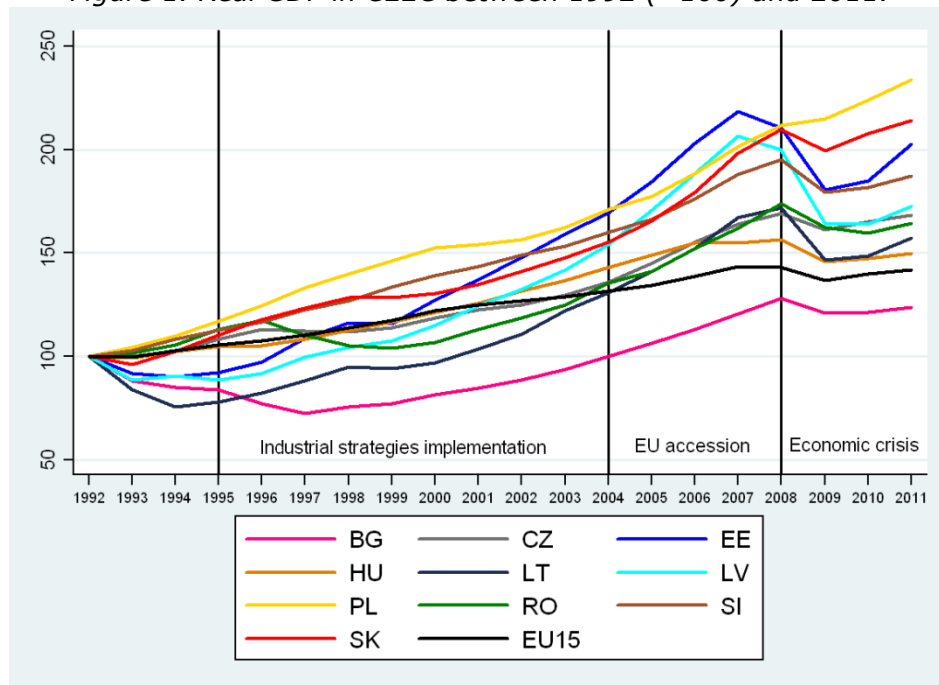
Table 3. Life satisfaction within city-regions of the same rank.

	(1)	(2)	(3)
Log of per capita GDP	0.349*** (0.020)	0.351*** (0.020)	0.348*** (0.020)
Log of pop. density	0.057*** (0.006)	0.056*** (0.006)	0.057*** (0.006)
1 st rank city-regions	-0.078*** (0.017)	-0.089*** (0.018)	-0.083*** (0.017)
2 nd rank city-regions	0.105*** (0.009)	0.105*** (0.009)	0.086*** (0.011)
Rural community	0.020*** (0.006)	0.014** (0.007)	-0.002 (0.009)
Rural community (1 st rank)		0.037** (0.017)	
Rural community (2 nd rank)			0.043*** (0.013)
Individual effects	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes
Country dummies	Yes	Yes	Yes
Constant cut1	-2.482*** (0.075)	-2.484*** (0.075)	-2.496*** (0.075)
Constant cut2	-0.584*** (0.074)	-0.585*** (0.074)	-0.597*** (0.075)
Constant cut3	2.463*** (0.075)	2.461*** (0.075)	2.449*** (0.075)
Observations	437,638	437,638	437,638

As far as second rank city-regions are concerned, the evidence is to a certain extent similar. Likewise, estimates in Model 3 show that those people living in rural communities embedded in second rank city-regions are, other things constant, happier than those ones living in urban settlements located in the same typology of city-regions, suggesting once more that indirect effects of urbanization are valued more in terms of happiness than direct effects of urbanization. Differently, however, the rural residents of second rank city-regions are likely to be more satisfied than all the others living in the rural communities while living in rural areas of the other types of city-regions does not offer significant advantages in terms of greater happiness (as the not significant coefficient of the non-interacted rural community dummy shows). In other words, rural inhabitants tend to be happier than the others (Model 1), but only if they live in city-regions of the second or first order (Models 2 and 3). This result definitively departs from previous evidence (Sørensen, 2014) claiming that living in rural areas is per se beneficial for individual happiness and interestingly points to the relevance of indirect urbanization effects.

Another important source of heterogeneity that may affect the consistency of results reported in Tables 2 and 3 refers to the possible differences among EU countries. In the last decades, CEEC experienced a highly differentiated growth in space with respect to their western counterparts. On the road to EU accession, all CEEC enjoyed a stable and intense economic growth after the period of crisis following the fall of the Iron Curtain (Figure 1). However, economic recovery was led, in the first place, by capitals and large cities (Kallioras and Petrakos, 2010). The prevalence of agglomeration benefits over agglomeration costs was at the basis of the diverging trend detected for economic growth and of the largely documented increasing urban-rural divide in growth and income.

Figure 1. Real GDP in CEEC between 1992 (=100) and 2011.



By extension, therefore, regional disparities in regional economic development could also be associated to unbalances in life satisfaction and, in turn, explain the observed (unusually) joint

evolution of GDP and life satisfaction. Some preliminary evidence on Romania (Lenzi and Perucca, 2014) actually provide an affirmative answer to this question.

In this perspective, the negative relationship linking first rank city-regions to lower levels of satisfaction reported in Table 3 should characterize the CEEC group, where the rapid urban expansion led to a fast economic growth, probably, associated with negative externalities. Yet, the ways in which aggregated effects of economies and diseconomies deriving from agglomeration may be mirrored in the levels of life satisfaction is difficult to be resolved *ex ante*. Therefore, to shed further light on this issue, two additional models have been estimated, with similar specification of Model (2) in Table 3, one including only respondents from CEEC, and the other including only residents in older member countries (EU15).

Results are reported in Table 4. As expected, for the residents in CEEC, the probability of being satisfied in first rank city-regions is much lower compared with the other regional typologies. As before, however, those living in second-rank city-regions are more likely to report a higher degree of happiness. The association between second-rank city-regions and higher levels of life satisfaction holds also for EU15 countries; differently, however, people residing in first rank city-regions do not appear to be less satisfied than those living in third rank city-regions.

Put differently, it is possible to infer that urbanization diseconomies associated to higher rank city-regions play a more relevant role in a context of more unbalanced regional growth pattern (as in CEECs), such as the one characterizing the new member states, whereas this effect cannot be detected for older member countries. Interestingly, the superior happiness of second rank city-regions is consistent across all EU countries. However, differences stand out between the CEEC and EU15 blocks. In the EU15 group economic performance and happiness go hand in hand and benefit second rank city-regions at most. Differently, in the CEEC economic growth has been primarily concentrated in large cities and regions, while happiness was not, and it was mostly enjoyed in second rank city-regions, somewhat consistently with the Easterlin's hypothesis stressing divergence between economic growth and individual satisfaction.

Table 4. Life satisfaction across city-regions in CEEC12 vs EU15.

	ORDERED LOGIT ESTIMATES	
	CEEC	EU15
Age	-0.029*** (0.001)	-0.020*** (0.001)
Age^2	0.000*** (0.000)	0.000*** (0.000)
Female	0.065*** (0.009)	0.074*** (0.008)
Employed	0.524*** (0.012)	0.400*** (0.011)
Self employed	0.736*** (0.021)	0.415*** (0.017)
Student	1.009*** (0.024)	0.766*** (0.021)
Medium education	-0.186*** (0.017)	0.117*** (0.012)
High education	0.377*** (0.019)	0.397*** (0.014)
Single	-0.102*** (0.013)	-0.321*** (0.010)
Divorced	-0.625*** (0.017)	-0.870*** (0.017)
Widow	-0.386*** (0.016)	-0.676*** (0.017)
Log of per capita GDP	0.557*** (0.038)	0.099*** (0.030)
Log of pop. density	0.133*** (0.013)	0.028*** (0.007)
1 st rank city-regions	-0.211*** (0.032)	-0.004 (0.020)
2 nd rank city-regions	0.029** (0.014)	0.132*** (0.012)
2005	-0.234*** (0.019)	-0.210*** (0.018)
2006	-0.167*** (0.020)	-0.170*** (0.018)
2007	-0.108*** (0.021)	-0.228*** (0.018)
2008	-0.217*** (0.022)	-0.381*** (0.018)
2009	-0.276*** (0.021)	-0.365*** (0.017)
2010	-0.423*** (0.021)	-0.445*** (0.018)
2011	-0.185*** (0.020)	-0.309*** (0.017)
Country dummies	Yes	Yes
Constant cut1	-2.216*** (0.106)	-3.178*** (0.114)
Constant cut2	-0.256** (0.106)	-1.356*** (0.113)
Constant cut3	2.912*** (0.106)	1.627*** (0.113)
Observations	192,372	245,266

4. Conclusions

Urban studies have been ever since centered on understanding and assessing the relative performance of cities of different size as well as on measuring the quality of life in different urban areas (Cheshire and Magrini, 2006; Carlini and Saiz, 2008; Albouy, 2008 and 2015).

Happiness in urban centers is critical, and increasingly so; in fact, it can be considered as a measure of places' attractiveness as people decide the place to live in according to the job opportunities, services and amenities available. This topic is also of crucial policy importance, especially in the EU context, as it offers a means of monitoring the progress and success of the main EU policy strategies, chiefly the Europe 2020 strategy and the related urban agenda, seeking to promote social cohesion, to empower people and improve their quality of life, so to achieve sustainability goals (Shucksmith et al., 2009).

Existing literature provide conflicting arguments and inconclusive results on the relationship between urbanization and life satisfaction (Florida et al., 2013; Glaeser et al., 2014, Sørensen, 2014). The paper moved from the idea that empirical inquiry can provide important guidance in replying to the questions whether the advantages of agglomeration prevail over the corresponding disadvantages, and whether this evidence is consistent across cities of different sizes, as the ways in which economies and diseconomies deriving from agglomeration may be mirrored in the levels of life satisfaction are difficult to be determined *ex ante*. This paper approached once more the relationship between urbanization and happiness by offering some fresh, albeit preliminary, empirical evidence on individual satisfaction and well-being across settings of different size and density.

In particular, the paper indicates that happiness is the lowest in first rank city-regions and the highest in second rank city-regions. Importantly, this result diverges from the Easterlin's hypothesis, as it seems that second rank city-regions have enjoyed both greater economic performances (Camagni et al., 2015) but also greater happiness levels.

Interestingly, some spatial heterogeneity also characterize the impact of urbanization within city-regions suggesting that the benefits of agglomeration are not only direct but also indirect. In fact, less densely populated communities located in urbanized regions benefit from the positive externalities generated by larger cities in the region, and enjoy their advantages without suffering from their diseconomies. The analysis shows that this pattern takes place both in first and second ranks city-regions indicating that indirect effects of urbanization are valued more in terms of happiness than direct effects of urbanization. More importantly, rural inhabitants tend to be happier than the others but only if they live in city-regions of the second or first order. This result definitively departs from previous evidence (Sørensen, 2014) claiming that living in rural areas is per se beneficial for individual happiness and interestingly stresses the relevance of indirect urbanization effects.

Also, the negative relationship between urbanization, in particular related to first rank city-regions, and satisfaction characterizes only CEEC, where the rapid urban expansion possibly led to a fast economic growth associated with negative externalities: greater urbanization diseconomies played possibly a more relevant role in a context of more unbalanced regional growth pattern.

Finally, the superior happiness of second rank city-regions is consistent across all EU countries.

Given the preliminary nature of these findings, further interesting research extensions can be envisaged by exploring more in depth this *prima facie* evidence. In particular, a promising future research extension refers to the conceptualization, definition and measurement of urbanization effects. This paper has used the notion of city-region. It would be extremely interesting to replicate the empirical analysis by looking directly at the operation of agglomeration economies and diseconomies and their impact on individual satisfaction, i.e. by taking into account the size and density of the city in which people reside and specific types of agglomeration economies and diseconomies. We hope to extend our analysis of the relationship between urbanization and happiness in this direction.

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