

The Urban-Rural Happiness Gradient Across Countries

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This study shows, for the first time, that city unhappiness is common across the world. We use the World Values Survey cumulative dataset 1981-2020 from www.worldvaluessurvey.org. In all developed countries, without exception, we find that city dwellers are not happier than rural residents.

HAPPINESS, LIFE SATISFACTION, SUBJECTIVE WELLBEING (SWB), CITIES, URBANICITY, URBAN-RURAL, URBAN-RURAL GRADIENT, WORLD VALUES SURVEY (WVS)

Research by Berry and Okulicz-Kozaryn (2011) provided evidence of an “urban-rural gradient” in many countries, where happiness levels rise from lowest in the largest cities to highest in the smallest places. The gradient is non-linear—the very largest cities are markedly less happy than all other areas in a country, e.g.: New York City (Okulicz-Kozaryn and Mazelis 2016, Senior 2006), London (Office for National Statistics 2011, Chatterji 2013), Helsinki (Morrison 2015), Bucharest (Lenzi and Perucca 2016), and Sydney (cited in Morrison 2011). The goal of this paper is to test the gradient across countries using one dataset with a uniform set of variables. This study shows, for the first time, that city unhappiness is common across the world.

Subjective wellbeing (SWB) is an umbrella term for various subjective measures of wellbeing, notably positive and negative affects, happiness, and life satisfaction. Most of the SWB research, including this study, uses the life satisfaction measure, which is a global self evaluation of one’s life as a whole. This measure is mostly cognitive and not affective—a respondent evaluates her life as whole globally (professional, personal, family, community, etc.) (for a review see Diener 2009). Following usual practice, for simplicity, we use these terms interchangeably: SWB, happiness, and life satisfaction, but we mostly refer to life satisfaction as previously defined.

The SWB measure is at least adequately reliable, valid, and considered acceptable for public policy making and public administration (Diener 2009, Stiglitz et al. 2009). It is also used frequently in urban research (e.g., Moeinaddini et al. 2020, Mouratidis 2019, Wang et al. 2019, Mouratidis 2017, Ma et al. 2017, Wkeziak-Bialowolska 2016, Valente and Berry 2016, Chen et al. 2015).

There are cross-cultural comparability caveats, however, and SWB may not be adequately comparable across countries (Kahneman et al. 1999, Diener 2009). This limitation should be kept in mind when comparing results across countries in the present study. More focus should be on within-country differences, and this is what this study is mostly about—the difference between smaller and larger places in terms of SWB within different countries. We treat each country separately and do not pull the data together. In short, one should focus on within-country differences across urbanicity and exercise caution when comparing effects across countries.

Most research on the urbanicity–happiness relationship points to an urban-rural happiness gradient, where happiness raises from its lowest level in the largest cities, to the highest level in the

smallest rural areas (e.g., Campbell et al. 1976, Berry and Okulicz-Kozaryn 2011, Okulicz-Kozaryn and Mazelis 2016, Okulicz-Kozaryn and Valente 2020). Yet, most research has been conducted in the US or Western Europe, and there are only three cross-country investigations using a common dataset: Berry and Okulicz-Kozaryn (2009), Easterlin et al. (2010) and Burger et al. (2020).

There are multiple problems with the Gallup data used by Easterlin et al. (2010) and Burger et al. (2020).¹ First, the Gallup data is not meant for research but for commerce—Gallup charges \$30,000 (per year) for data access (authors’ inquiry).

Second, the urbanicity classification is twice less precise than in the World Values Survey (WVS) used in the present study: 4 versus 8 categories. Third, while the WVS uses precise population size with numeric cutoffs, Gallup uses fuzzy concepts such as “rural area,” “small town or village,” and “large city.” Fourth, Gallup uses self-reports of urbanicity, which is highly subjective and problematic in this case—many, if not most people, would likely classify themselves completely arbitrarily into “rural area” v “village” and so forth. The WVS uses interviewer’s information about the place. Fifth, apparently much of the data are missing—Easterlin et al. (2010) notes that in 14 countries “rural area” responses were exceptionally low. About half of the world population is rural, but in Burger et al. (2020) only about a quarter of respondents are of rural residence. Hence, the present study is the first to analyze the urban–rural happiness gradient across countries using a suitable and accurate dataset.

Data And Model

We use the World Values Survey cumulative file 1981-2020 from www.worldvaluessurvey.org, which is representative of about 90% of the world population,² and as elaborated in the previous section, is much better suited for the study than an inadequate and poorly designed Gallup survey. The variables are listed in table 1. Country codes and descriptive statistics are in the Supplementary Online Material (SOM).

The SWB question reads, “All things considered, how satisfied are you with your life as a whole these days? Using this card on which 1 means you are ‘completely dissatisfied’ and 10 means you are ‘completely satisfied’ where would you put your satisfaction with your life as a whole?”

Urbanicity is operationalized with the WVS variable “X049,” objective and recorded by the interviewer, not the respondent. There are eight categories ranging from ‘<2k’ to ‘>500k.’ This is an important advantage, because urbanicity or urbanness is a continuum, not a binary urban versus rural dichotomy. We conduct the analysis using a set of dummy variables for all eight categories (leaving out the base case) in the SOM. For simplicity and ease of exposition, however, we present simplified results in the body of the paper using three categories only. Thus, please refer to the SOM for the results of all categories.

Because in many countries, there are either no observations or few observations in the first two bottom categories –2k and 2–5k, we combined them together for the analyses in the main body of the paper. These two categories together proxy a city-free natural environment most closely resembling the natural human habitat where we have evolved, and it includes: wilderness, open country, and small villages. The other critical category that must be measured is large cities. There is likely to be a threshold at several hundred thousand, hence we use the top category on the WVS

¹Easterlin et al. (2010) acknowledge Gallup’s limitations and attempts to address them. Burger et al. (2020), on the other hand, does not.

²While the WVS is conducted in about 100 countries that represent about 90% of the world population, due to missing data for the particular variables of interest, the present’s study coverage is slightly smaller, covering about 70 countries (depending on the model and specification).

variable “X049,” which is ‘>500k,’ as a proxy of large cities. Such places are the least resembling of the natural human habitat and are mostly consisting of man-made objects such as asphalt, concrete, glass, etc., and accordingly are likely to be the least happy.

The classification into large cities versus natural areas produces a third category in between for places with a population size of 5–500k. The two cutoffs are driven by theory. It would be a gross oversimplification to use an urban–rural dichotomy with one cutoff, for example, ‘<100k’ vs. ‘>100k’ (or any other value). A place never changes abruptly from rural to urban at some cutoff—it is a continuum—although it can be simplified to carefully chosen extreme categories, one must always start with the continuum. Since this aggregation or simplification into 3 categories is still somewhat arbitrary, we present our alternative aggregations in the supplementary online material in addition to the full 8-step urbanness gradient.

Table 1: Variable definitions.

name	description
happiness	‘All things considered, how satisfied are you with your life as a whole these days?’ 1=‘dissatisfied’ to 10=‘satisfied’
place size	‘OBSERVATIONS BY THE INTERVIEWER; Code size of town where interview was conducted’
year survey	year of survey
age	age
age2	age squared
male	male
married or living together as married	married or living together as married
divorced/separated/widowed	divorced/separated/widowed
education	‘Highest educational level attained’
income	‘Scale of incomes’
class	‘Social class (subjective)’
health	‘State of health (subjective)’
postmaterialist	‘Post materialist index ’
god important	‘How important is God in your life? Please use this scale to indicate- 10 means very important and 1 means not at all important.’
religion important	‘For each of the following aspects, indicate how important it is in your life. Would you say it is: Religion’
autonomy	‘Autonomy index’
freedom	‘Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Please use this scale where 1 means ‘none at all’ and 10 means ‘a great deal’ to indicate how much freedom of choice and control you feel you have over the way your life turns out.’
trust	‘Most people can be trusted’

In the choice of controls we generally follow Okulicz-Kozaryn and Valente (2020). Table 1 lists the control variables used in the body of the paper and there are specific controls worth discussing. Young, single, childless persons and young men with tertiary education are relatively more satisfied with urban areas as a place of residence (Carlsen and Leknes 2019). Income, class, and education not only predict greater SWB, but are also confounded and higher in cities.³

One great advantage of city life that is often forgotten is freedom (Park et al. [1925] 1984), hence we control for freedom. Likewise, trust is important, as it predicts SWB, and it is lower in cities (Milgram 1970). Health is a key predictor of SWB, and the subjective health measure used here is

³Simply comparing unadjusted means may result in oversimplified or biased research claiming that people are happier in cities (e.g. (Burger et al. 2020))—there is confounding of urbanicity with higher income, education and class—see SOM for tables with and without controls.

a reasonable measure of actual health (Subramanian et al. 2009).

We use a standard OLS regression with robust standard errors. We treat the 10-step happiness variable as continuous. An ordinal happiness variable can be treated as a continuous variable (Ferrer-i-Carbonell and Frijters 2004). OLS has become the default method in happiness research (Blanchflower and Oswald 2011). Theoretically, while there is still debate about the cardinality of SWB, there are strong arguments to treat it as a cardinal variable (Ng 1996, 1997).

Results

There is a tradeoff in this study between ease of presentation and elaboration as there are dozens of countries and presenting elaborated specifications would result in unwieldy presentation—additional specifications are in the SOM. Here we just present one model that is our full model. It includes all necessary and some additional controls (yet, not over-saturated where too many controls would result in collinearity and many missing observations)—we use here models with controls listed in table 1. The model presented here uses 3 urbanicity categories, **<5k (base)**, **5k–500k**, and **>500k**. Results are set in Table 2. We are interested in the comparison between **<5k** vs. **>500k** because places larger than several hundred thousand are the most unnatural environment for humans.

	5-500k	500k-	N
ALB	-0.4*	0.4+	1,582
ARG	-0.2	-0.0	855
AUS	-0.0	-0.1	3,728
AZE	-0.1	0.3	964
BFA	0.3	0.0	567
BGD	0.0	0.7*	2,104
BGR	-0.0	-0.5*	1,229
BLR	-0.1	-0.1	2,815
BRA	-0.2	-0.4*	3,576
CAN	-0.1+	-0.3*	3,177
CHL	-0.7*	-0.7*	3,527
CHN	0.0	-0.4*	2,005
COL	0.0	-0.1	1,376
DEU	-0.1	0.0	4,795
DZA	-0.4*	-0.6	1,596
ECU	-0.9*	-0.7*	1,182
EGY	-0.4*	-1.1*	3,428
ESP	-0.1	-0.1	1,487
ETH	0.3	0.4	1,017
GEO	0.1	0.1	2,401
GHA	0.3*	-0.0	2,572
HUN	0.0	-0.4*	887
IDN	0.1	-0.0	2,056
IND	-0.0	0.3*	5,857
IRN	-0.3*	-0.0	2,119
IRQ	-0.1	-0.0	1,123
ITA	-0.1	0.2	585
JOR	0.1	-0.2	2,089
KAZ	-0.0	-0.3*	1,497
KGZ	-0.1	-0.3*	2,293
LBN	0.1	0.2	731
LTU	0.3	0.3	750
LVA	-0.1	-0.6*	963
MAR	0.0	-0.2	845
MDA	0.2*	0.2	2,478
MEX	-0.1	-0.2+	3,544
MKD	-0.2	-0.1	1,385
MYS	0.1	-0.4*	1,541
NGA	-0.1	-0.1	4,488
NZL	-0.1		417
PAK	0.4+	0.3	900
PER	0.3*	-0.5	1,026
PHL	0.4	0.5	2,294
POL	-0.1	-0.1	1,533
ROU	-0.2*	0.3*	3,568
RUS	0.2*	0.2*	3,253
RWA	-0.7*	-0.4+	2,398
SRB	0.1	-0.4*	2,539
SVN	0.2+	-0.2	1,620
SWE	0.2	0.2	1,769
THA	0.1	0.1	2,178
TUN	0.1		826
UKR	0.0	-0.1	2,985
URY	0.2	0.1	2,017
USA	-0.1	-0.2*	3,372
UZB	0.0	-0.3*	1,247
VEN	-1.7*	-1.2*	1,034
VNM	0.1	-1.5*	2,039
ZAF	0.2*	0.0	5,330
ZWE	0.1	0.2	1,487

* p<0.05,
+ p<0.1;
robust
std err

Table 2: OLS regressions of SWB on place size for each country separately controlling for predictors of SWB listed in table 1.

The results in table 2 show that in 80% of countries with significant happiness differences across urbanicity, people are less happy in cities than in smaller areas. The only exceptions are in the East European Post Soviet countries (ALB, ROU, RUS), and in South-Asian countries (BGD and IND). Notably, these are all poor or developing countries. In all developed countries, people are happier in smaller places than in large places—without exception, we find that city dwellers are not happier

than rural residents.

The conclusion is that in all developed countries studied here, AUS, CAN, DEU, ESP, ITA, NLD,⁴ NZL, SWE, and the USA, people in the largest areas have lower happiness levels than those in smaller areas.⁵

This finding is important because it contradicts a common belief that emerged recently, possibly due to ideological reasons (e.g., Glaeser 2011, Glaeser et al. 2016, Burger et al. 2020), claiming that urban areas are happier. The effort to contravene the findings that cities tend to be less happy than smaller areas is arguably due to economics axioms: money is centered in cities (production, productivity, income, and consumption increase with population size), and therefore, cities have greater utility, so they must be happier. Yet, empirical evidence says otherwise.

The urban-rural gradient is greatest in EGY, VEN,⁶ and VNM where the effect sizes are larger than one, while the effect sizes for most other places are small to moderate, around .3 to .5 (on the 1–10 SWB scale). Yet, as indicated earlier, because of the limited cross-cultural comparability of the SWB measure, when interpreting our results, the focus should be on within-country SWB differences across urbanicity, and not on comparing cross-country effect sizes.

It is worth noting that in the first column (5–500k), the majority of the results are negative with only 5 countries yielding a positive result: GHA, MDA, PER, RUS, and ZAF—reiteratively, what is remarkable is that none of these countries are considered developed.

In the vast majority of countries, the results show a negative effect, and are only positive in East European Post Soviet (ALB, ROU, and RUS), and South-Asian countries (BGD and IND). East European Post Soviet countries are still quite centralized where power, opportunity, and resources are located in the large cities. India and Bangladesh are curious outliers (for some discussion see Deb 2020). Also note that in about a third or even half of the countries (depending on the model), there is no SWB difference across urbanicity. This is also a finding worth reporting as it runs counter to the common pro-urbanism and city triumphalism claim (e.g., Glaeser 2011). One would think that cities are the best places to live as people flock there in doves. Thus, a finding showing no difference for many cases is already surprising.

Even though coefficient estimates are small to moderate, the practical significance of the results is very strong because of the sheer size of urbanization. Even a minuscule negative effect of .1 (on a scale 1–10) on a large place versus a smaller place for a small country of 10 million people translates into an effect equivalent of making 100 thousand people go from the most miserable to the most happy level on the SWB scale 1–10. Globally, for billions of people living in cities, there is a massive amount of human misery produced.

Why are people less happy in large cities in the developed world, yet happier in some developing countries? There is at least one reason. In many developing countries, life is simply unbearable outside of the city lacking basic necessities such as shelter, food, water, sanitation, and healthcare. In developed countries, even the smallest places have reasonable access to necessities, and small places do not suffer from urban disamenities.

As per Maslow’s pyramid of needs (Maslow [1954] 1987), survival and opportunity come first, and this arguably can explain much of the paradox found in this paper—despite the city being biologically, neurologically, and socially negative for humans, cities can be useful for human wellbeing at the early stage of a country’s economic development.

⁴Results for NLD are only in SOM.

⁵At least in less elaborate specifications shown in the SOM, but even in the most elaborate specifications, even when the coefficient on larger places is insignificant, it is still negative.

⁶Note: result for VEN should be interpreted with caution—this is the main difference with table exT4-3 in SOM and probably has to do with the fact that there are only 60 obs on the base case category. Other results are similar between the two tables.

References

- BERRY, B. J. AND A. OKULICZ-KOZARYN (2011): “An Urban-Rural Happiness Gradient,” *Urban Geography*, 32, 871–883.
- BERRY, B. J. L. AND A. OKULICZ-KOZARYN (2009): “Dissatisfaction with City Life: A New Look at Some Old Questions,” *Cities*, 26, 117–124.
- BLANCHFLOWER, D. G. AND A. J. OSWALD (2011): “International happiness: A new view on the measure of performance,” *The Academy of Management Perspectives*, 25, 6–22.
- BURGER, M. J., P. S. MORRISON, M. HENDRIKS, AND M. M. HOOGERBRUGGE (2020): “Urban-Rural Happiness Differentials across the World,” *World Happiness Report*.
- CAMPBELL, A., P. E. CONVERSE, AND W. L. RODGERS (1976): *The quality of American life: perceptions, evaluations, and satisfactions*, Russell Sage Foundation, New York NY.
- CARLSEN, F. AND S. LEKNES (2019): “The paradox of the unhappy, growing city: reconciling evidence?” *Unpublished*.
- CHATTERJI, A. (2013): “London is the Unhappiest Place to Live in Britain,” *International Business Times*.
- CHEN, J., D. S. DAVIS, K. WU, AND H. DAI (2015): “Life satisfaction in urbanizing China: The effect of city size and pathways to urban residency,” *Cities*, 49, 88–97.
- DEB, S. (2020): “Exploring the effects of disparities on subjective well-being in India,” Ph.D. thesis, Rutgers University-Camden Graduate School.
- DIENER, E. (2009): *Well-being for public policy*, Oxford University Press, New York NY.
- EASTERLIN, R. A., L. ANGELESCU, AND J. ZWEIG (2010): “The Impact of Modern Economic Growth On Urban-Rural Differences in Subjective Well-Being,” WEAI Conference, Portland, OR, June 29 - July 3.
- FERRER-I-CARBONELL, A. AND P. FRIJTERS (2004): “How Important is Methodology for the Estimates of the Determinants of Happiness?” *Economic Journal*, 114, 641–659.
- FLORIDA, R. (2008): *Who’s your city?*, Basic Books, New York NY.
- GLAESER, E. (2011): *Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier*, Penguin Press, New York NY.
- GLAESER, E. L., J. D. GOTTLIEB, AND O. ZIV (2016): “Unhappy Cities,” *Journal of Labor Economics*, 34, S129–S182.
- INGLEHART, R. (1997): *Modernization and postmodernization: Cultural, economic, and political change in 43 societies*, Princeton Univ Pr, Princeton NJ.
- KAHNEMAN, D., E. DIENER, AND N. SCHWARZ (1999): *Well-being: Foundations of hedonic psychology*, Russell Sage Foundation.

- LENZI, C. AND G. PERUCCA (2016): “The Easterlin paradox and the urban-rural divide in life satisfaction: Evidence from Romania,” *Unpublished*; <http://www.grupposervizioambiente.it>.
- MA, J., G. DONG, Y. CHEN, AND W. ZHANG (2017): “Does satisfactory neighbourhood environment lead to a satisfying life? An investigation of the association between neighbourhood environment and life satisfaction in Beijing,” *Cities*.
- MASLOW, A. ([1954] 1987): *Motivation and personality*, Longman, 3 ed.
- MILGRAM, S. (1970): “The experience of living in cities,” *Science*, 167, 1461–1468.
- MOEINADDINI, M., Z. ASADI-SHEKARI, M. AGHAABBASI, I. SAADI, M. Z. SHAH, AND M. COOLS (2020): “Applying non-parametric models to explore urban life satisfaction in European cities,” *Cities*, 105, 102851.
- MORRISON, P. (2015): “Capturing effects of cities on subjective wellbeing,” *European Regional Science Association Conference, Lisbon*.
- MORRISON, P. S. (2011): “Local expressions of subjective well-being: The New Zealand experience,” *Regional studies*, 45, 1039–1058.
- MOURATIDIS, K. (2017): “Built environment and social well-being: How does urban form affect social life and personal relationships?” *Cities*.
- (2019): “Compact city, urban sprawl, and subjective well-being,” *Cities*, 92, 261–272.
- NG, Y.-K. (1996): “Happiness surveys: Some comparability issues and an exploratory survey based on just perceivable increments,” *Social Indicators Research*, 38, 1–27.
- (1997): “A case for happiness, cardinalism, and interpersonal comparability,” *The Economic Journal*, 107, 1848–1858.
- OFFICE FOR NATIONAL STATISTICS (2011): “Analysis of Experimental Subjective Well-being Data from the Annual Population Survey,” *The National Archives*.
- OKULICZ-KOZARYN, A. (2015): *Happiness and Place. Why Life is Better Outside of the City.*, Palgrave Macmillan, New York NY.
- OKULICZ-KOZARYN, A. AND J. M. MAZELIS (2016): “Urbanism and Happiness: A Test of Wirth’s Theory on Urban Life,” *Urban Studies*.
- OKULICZ-KOZARYN, A. AND R. VALENTE (2020): “The perennial dissatisfaction of urban upbringing,” *Cities*.
- PARK, R. E., E. W. BURGESS, AND R. D. MAC KENZIE ([1925] 1984): *The city*, University of Chicago Press, Chicago IL.
- SENIOR, J. (2006): “Some Dark Thoughts on Happiness,” *New York Magazine*.
- STIGLITZ, J., A. SEN, AND J. FITOUSSI (2009): “Report by the Commission on the measurement of economic performance and social progress,” *Available at www.stiglitz-sen-fitoussi.fr*.

- SUBRAMANIAN, S., M. A. SUBRAMANYAM, S. SELVARAJ, AND I. KAWACHI (2009): “Are self-reports of health and morbidities in developing countries misleading? Evidence from India,” *Social science & medicine*, 68, 260–265.
- VALENTE, R. R. AND B. J. BERRY (2016): “Dissatisfaction with city life? Latin America revisited,” *Cities*, 50, 62–67.
- WANG, D., T. SCHWANEN, AND Z. MAO (2019): “Does exposure to richer and poorer neighborhoods influence wellbeing?” *Cities*, 95, 102408.
- WKEZIAK-BIALOWOLSKA, D. (2016): “Quality of life in cities—Empirical evidence in comparative European perspective,” *Cities*, 58, 87–96.

SOM: ONLINE APPENDIX (THIS WILL NOT BE A PART OF THE PAPER)

Descriptive Statistics

code	name
ALB	Albania
ARG	Argentina
AUS	Australia
AZE	Azerbaijan
BFA	BurkinaFaso
BGD	Bangladesh
BGR	Bulgaria
BLR	Belarus
BOL	Bolivia
BRA	Brazil
CAN	Canada
CHL	Chile
CHN	China
COL	Colombia
DEU	Germany
DZA	Algeria
ECU	Ecuador
EGY	Egypt
ESP	Spain
ETH	Ethiopia
FRA	France
GEO	Georgia
GHA	Ghana
GRC	Greece
GTM	Guatemala
HRV	Croatia
HUN	Hungary
IDN	Indonesia
IND	India
IRN	Iran
IRQ	Iraq
ITA	Italy
JOR	Jordan
KAZ	Kazakhstan
KGZ	Kyrgyzstan
KWT	Kuwait
LBN	Lebanon
LTU	Lithuania
LVA	Latvia
MAR	Morocco
MDA	Moldova
MEX	Mexico
MKD	NorthMacedonia
MYS	Malaysia
NGA	Nigeria
NLD	Netherlands
NOR	Norway
NZL	NewZealand
PAK	Pakistan
PER	Peru
PHL	Philippines
POL	Poland
ROU	Romania
RUS	Russia
RWA	Rwanda
SRB	Serbia
SVN	Slovenia
SWE	Sweden
THA	Thailand
TJK	Tajikistan
TUN	Tunisia
TUR	Turkey
UKR	Ukraine
URY	Uruguay
USA	UnitedStates
UZB	Uzbekistan
VEN	Venezuela
VNM	Vietnam
ZAF	SouthAfrica
ZWE	Zimbabwe

Table 3: Country codes.

Some countries were dropped if data were missing on major categories. If there were less than 30 observations on both collectively 2 smallest categories or on top category a country was dropped.

code	T 1	T 2	T 3	T 4	T 5	T 6	T 7	T 8
ALB	743	235	198	74	187	195	201	134
ARG	261	120	80	140	142	160	254	2880
AUS	404	420	440	469	698	621	779	2681
AZE	164	232	65	46	61	82	80	272
BFA	60	124	271	331	342	128	30	169
BGD	437	1498	781	371	397	223	289	156
BGR	500	246	103	133	178	247	348	318
BLR	917	111	61	252	251	160	1063	812
BOL	423	30	101	71	254	109	378	701
BRA	72	301	340	539	835	852	1740	2814
CAN	1321	490	537	372	410	762	693	1145
CHL	141	43	9	23	110	702	3466	2206
CHN	237	274	126	373	1812	1999	2139	2568
COL	16	48	225	358	1053	910	1476	1940
DEU	784	825	645	1279	1373	601	1147	996
DZA	190	7	364	278	456	544	549	92
ECU	50	132	127	144	179	301	916	553
EGY	119	362	1464	1143	1149	504	313	1072
ESP	307	328	365	451	433	362	946	729
ETH	98	108	360	291	207	691	904	71
FRA	246	82	39	48	47	85	67	387
GEO	742	442	138	151	189	49	309	682
GHA	159	1541	238	242	374	139	156	237
GRC	290	30	50	50	150	140	50	440
GTM	263	121	92	77	321	151	201	977
HRV	375	181	4	141	8	104	127	215
HUN	153	320	73	189	216	171	223	312
IDN	801	1204	1270	796	426	211	304	1203
IND	2965	2368	1421	1234	987	834	1171	1238
IRN	439	384	295	140	261	176	542	1737
IRQ	84	467	73	182	184	85	449	1117
ITA	70	148	135	176	131	124	100	128
JOR	310	489	459	356	676	286	299	754
KAZ	293	449	173	225	193	95	702	646
KGZ	983	958	373	194	168	141	231	695
KWT	114	61	19	70	23	6	297	462
LBN	80	265	336	336	529	275	153	191
LTU	324	12	48	114	66	30	252	163
LVA	373	24	57	81	101	108	57	399
MAR	44	270	292	474	100	51	293	921
MDA	700	906	370	202	214	20	261	365
MEX	1196	1129	749	653	697	566	1686	2764
MKD	475	253	163	60	326	343	48	382
MYS	300	503	269	282	314	276	735	241
NGA	318	804	669	658	1044	1123	1774	1428
NZL	308	0	270	182	152	190	516	187
PAK	529	1124	566	251	62	10	251	1935
PER	590	137	60	108	175	339	1070	131
PHL	350	295	210	105	590	430	1000	620
POL	1097	173	111	168	318	277	629	343
ROU	819	1203	568	411	487	482	1326	468
RUS	1166	600	541	417	784	461	1810	2532
RWA	15	76	92	128	419	1620	634	50
SRB	691	508	580	316	606	758	544	732
SVN	1520	475	240	149	226	78	278	118
SWE	123	56	91	166	377	545	762	766
THA	2450	613	389	164	190	93	45	153
TJK	360	370	80	70	90	90	30	110
TUN	73	468	669	429	251	252	191	80
TUR	96	12	84	48	264	230	1273	408
UKR	962	527	178	327	294	305	806	912
URY	99	129	118	229	493	328	1	1336
USA	410	352	357	636	960	746	972	1168
UZB	500	440	40	40	60	20	260	140
VEN	20	40	172	192	242	242	484	1008
VNM	63	708	736	784	190	94	966	154
ZAF	3912	218	194	258	269	238	390	987
ZWE	470	687	317	86	183	422	323	227

* p<0.05, + p<0.1; robust std err

Table 4: Counts by 8 urbanicity categories on X049.

Limitations

We do not use the Gallup dataset. Some may argue that this is a limitation because Gallup covers more countries than the WVS. However, given that the Gallup data cost tens of thousands of dollars, we cannot afford it. In fact, we’d discourage scientists from paying from their tax money to private corporations to do research. Therefore, we actually consider it an advantage not to use the Gallup dataset. Still, many world countries are missing, and using more waves of WVS data in the future as they become available would contribute significantly to the literature.

A limitation is that many countries covered by the WVS were not included as a result of not having many people in the smallest or the largest areas. In addition, cross cultural comparability is a caveat. Hence, we run separate analysis for each country and don’t pool the data together, but still, it should be kept in mind that happiness can mean something different in different societies. Similarly, cities around the world are very different. The breadth of the study is accompanied by oversimplification. Some research in this area claims that urban-rural differentials might be country-specific and not be generalizable at all.

Again, we would like to have more gradation at the top of the distribution, but 500 thousand is a reasonable and adequate cutoff to distinguish a large city from other places. Unfortunately, there are no other data better suited for this purpose and we do the best we can with what’s available. The results are conservative—if we had a cutoff at 750 thousand or 1 million, they’d be stronger (Okulicz-Kozaryn 2015).

The limitation of X049 is not only a low top cutoff for the largest cities (500k+), but also the fact that about a third of values are missing. Future research can focus on specific countries using other data or WVS data using the X049CS variable, which has country specific sizes of places, which however are not directly or easily comparable—bins differ across countries and in some cases have unique place names (e.g., ‘major city’, ‘Farm/Mountain/Fishing village’).

Cities in Developing Countries

Cities can be actually useful for human wellbeing at the early stage of a country’s development. Figure 1 and 2 elaborate the Maslow’s pyramid mentioned in the body of the paper. At first, one needs to focus on necessities such as survival and cities do help, which could explain why people in developing countries are happier there; Yet, it is remarkable that in all developed countries studied here, people in cities are less happy.

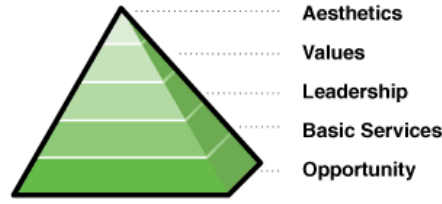


Figure 1: Place Pyramid, (Florida 2008, p 294).

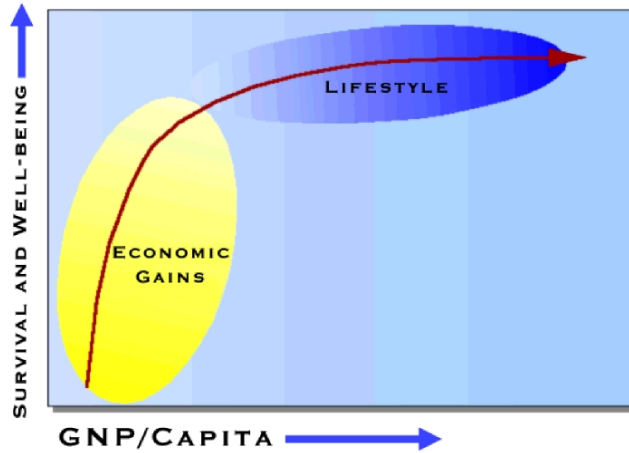


Figure 2: Well-being and income, (Inglehart 1997).

Urbanicity Definition and Operationalization: Alternative Models

We have three different operationalizations of urbanicity: the original 8 categories, and categories collapsed in 2 alternative ways. There are 4 sets of models: bivariate (with year dummies), essentially the mean difference between categories; 2) basic set of controls, necessary/important ones; 3) full/extended (the one reported in the body of the manuscript); and 4) over-saturated models, with many observations missing.

The models are presented in the tables below, where the coding is as follows: T# is the type of setup: T is the original 8 categories on the urbanicity variable; T3 is three categories, and T4 is four categories. The number after the dash (-#) denotes the elaboration of the model: -1 only includes the urbanicity variable and year dummies

-2 adds age, gender, marital status, education, income, social class, and health

-3 adds materialism, religiosity, autonomy, freedom and trust

-4 adds crime and financial satisfaction

	-10	10-50k	50-500k	500k-	N
ALB	0.0	0.1	0.2*	0.4*	1960
ARG	0.0	0.2+	-0.0	-0.1	4010
AUS	0.0	-0.0	-0.0	-0.0	6466
AZE	0.0	-0.2	-0.3	0.4*	1002
BFA	0.0	-0.3*	0.6*	-0.0	1421
BGD	0.0	-0.2*	0.4*	1.5*	4106
BGR	0.0	0.6*	0.7*	0.8*	2014
BLR	0.0	0.5*	0.4*	0.5*	3603
BOL	0.0	-0.1	-0.0	0.1	2058
BRA	0.0	-0.0	-0.3*	-0.3*	7462
CAN	0.0	-0.1	-0.1*	-0.5*	5720
CHL	0.0	0.3	-0.2	-0.2	6657
CHN	0.0	0.2	0.4*	0.2+	9407
COL	0.0	-0.0	-0.0	-0.1	6025
DEU	0.0	-0.1*	0.0	-0.0	7625
DZA	0.0	0.3+	0.1	0.4	2433
ECU	0.0	-0.2	-0.1	0.0	2400
EGY	0.0	-0.2+	-0.1	-0.5*	6120
ESP	0.0	-0.0	-0.1	-0.2+	3898
ETH	0.0	-0.5*	0.1	0.1	2719
FRA	0.0	0.0	0.3+	0.1	1000
GEO	0.0	0.0	0.5*	0.5*	2676
GHA	0.0	0.7*	0.7*	0.5*	3080
GRC	0.0	0.0	0.2	-0.4*	1200
GTM	0.0	0.6*	0.8*	0.3*	2202
HRV	0.0	0.1	-0.1	0.3	1152
HUN	0.0	0.0	0.1	0.1	1649
IDN	0.0	0.2*	0.4*	0.3*	6092
IND	0.0	0.6*	0.1+	0.5*	11971
IRN	0.0	0.2	-0.3*	0.0	3973
IRQ	0.0	0.1	-0.1	0.2+	2631
ITA	0.0	-0.0	-0.1	0.1	1006
JOR	0.0	0.2*	-0.0	0.1	3622
KAZ	0.0	0.1	0.1	-0.0	2761
KGZ	0.0	-0.2	0.2	-0.7*	3731
KWT	0.0	-0.6*	0.4+	0.1	1034
LBN	0.0	0.0	-0.1	-0.1	2159
LTU	0.0	0.5+	0.6*	0.6*	996
LVA	0.0	-0.0	-0.2	-0.4*	1190
MAR	0.0	0.2+	0.7*	0.2	2442
MDA	0.0	0.3*	0.9*	0.7*	3000
MEX	0.0	0.1	0.0	-0.0	9329
MKD	0.0	-0.1	0.2	0.4*	2031
MYS	0.0	0.1	0.0	-0.1	2919
NGA	0.0	-0.0	0.1	0.5*	7807
NZL	0.0	-0.1	-0.2+	0.1	1770
PAK	0.0	0.6*	0.1	0.4*	3677
PER	0.0	0.3+	0.6*	0.5*	2602
PHL	0.0	0.6*	0.4+	0.7*	3600
POL	0.0	0.1	0.2*	0.0	3093
ROU	0.0	0.1	0.4*	0.4*	5618
RUS	0.0	0.2*	0.1	0.4*	8187
RWA	0.0	-0.0	-0.2	-0.3	3030
SRB	0.0	0.2*	0.4*	0.2+	4654
SVN	0.0	0.3*	0.4*	0.1	3065
SWE	0.0	0.2	0.3*	0.2	2882
THA	0.0	0.2	-0.1	-0.7*	4086
TJK	0.0	-0.1	-0.2	-0.1	1200
TUN	0.0	0.1	0.0	-0.8*	2405
TUR	0.0	0.7*	0.9*	1.0*	2405
UKR	0.0	0.2+	0.0	0.0	4169
URY	0.0	0.1	-0.0	0.1	2717
USA	0.0	-0.0	-0.2*	-0.3*	5586
UZB	0.0	-0.2	-0.2+	-0.4*	1493
VEN	0.0	-0.2	-0.2	0.1	2385
VNM	0.0	0.4*	0.5	0.0	3674
ZAF	0.0	0.9*	1.2*	1.1*	6448
ZWE	0.0	0.2	0.2	0.2	2714

* p<0.05, + p<0.1;
robust std err

Table 5: exT4-1

	-5	5-500k	500k-	N
ALB	0.0	0.1	0.4*	1960
ARG	0.0	0.1	-0.1	4010
AUS	0.0	-0.1	-0.1	6466
AZE	0.0	-0.4*	0.3	1002
BFA	0.0	-0.1	-0.0	1421
BGD	0.0	0.1+	1.5*	4106
BGR	0.0	0.7*	0.9*	2014
BLR	0.0	0.4*	0.5*	3603
BOL	0.0	-0.1	0.1	2058
BRA	0.0	0.1	-0.0	7462
CAN	0.0	-0.1*	-0.5*	5720
CHL	0.0	-0.1	-0.1	6657
CHN	0.0	0.5*	0.3*	9407
COL	0.0	0.1	0.1	6025
DEU	0.0	-0.0	-0.0	7625
DZA	0.0	0.2	0.4	2433
ECU	0.0	-0.1	0.0	2400
EGY	0.0	-0.6*	-1.0*	6120
ESP	0.0	-0.1	-0.2*	3898
ETH	0.0	0.2	0.3	2719
FRA	0.0	0.0	0.0	1000
GEO	0.0	0.3*	0.5*	2676
GHA	0.0	0.7*	0.5*	3080
GRC	0.0	0.2	-0.4*	1200
GTM	0.0	0.6*	0.3*	2202
HRV	0.0	0.0	0.3+	1152
HUN	0.0	-0.0	-0.0	1649
IDN	0.0	0.2*	0.3*	6092
IND	0.0	0.2*	0.4*	11971
IRN	0.0	-0.1	-0.0	3973
IRQ	0.0	0.0	0.2+	2631
ITA	0.0	-0.0	0.1	1006
JOR	0.0	0.1	0.1	3622
KAZ	0.0	0.1	-0.0	2761
KGZ	0.0	-0.1	-0.7*	3731
KWT	0.0	0.1	0.1	1034
LBN	0.0	-0.1	-0.2	2159
LTU	0.0	0.6*	0.7*	996
LVA	0.0	-0.0	-0.4*	1190
MAR	0.0	0.4*	0.3	2442
MDA	0.0	0.5*	0.8*	3000
MEX	0.0	0.0	-0.0	9329
MKD	0.0	0.0	0.3*	2031
MYS	0.0	0.1	-0.1	2919
NGA	0.0	-0.2*	0.2*	7807
NZL	0.0	-0.3*	0.0	1770
PAK	0.0	0.2*	0.4*	3677
PER	0.0	0.5*	0.5*	2602
PHL	0.0	0.3*	0.6*	3600
POL	0.0	0.2*	0.1	3093
ROU	0.0	0.3*	0.4*	5618
RUS	0.0	0.3*	0.5*	8187
RWA	0.0	-0.6*	-0.7*	3030
SRB	0.0	0.3*	0.2*	4654
SVN	0.0	0.4*	0.1	3065
SWE	0.0	0.4*	0.3*	2882
THA	0.0	0.1	-0.7*	4086
TJK	0.0	-0.2	-0.1	1200
TUN	0.0	0.1	-0.7*	2405
TUR	0.0	1.2*	1.4*	2405
UKR	0.0	0.1	0.0	4169
URY	0.0	0.1	0.1	2717
USA	0.0	-0.1	-0.3*	5586
UZB	0.0	-0.1	-0.4*	1493
VEN	0.0	-1.8*	-1.5*	2385
VNM	0.0	0.2*	-0.3+	3674
ZAF	0.0	1.0*	1.1*	6448
ZWE	0.0	0.3*	0.3+	2714

* p<0.05, + p<0.1;
robust std err

Table 6: exT3-1

	-2k	2-5k	5-10k	10-20k	20-50k	50-100k	100-500k	500k-	N
ALB	0.0	0.3+	-0.0	0.0	0.2	0.1	0.5*	0.5*	1960
ARG	0.0	0.5*	0.2	0.4*	0.4*	0.6*	-0.2	0.0	4010
AUS	0.0	0.1	-0.1	0.1	-0.1	0.0	-0.1	-0.0	6466
AZE	0.0	-0.1	-0.8*	-0.5	-0.2	-0.3	-0.6*	0.2	1002
BFA	0.0	-0.8*	-0.4+	-1.0*	-0.6*	0.2	-0.1	-0.5*	1421
BGD	0.0	-0.4*	-0.1	-0.6*	-0.3*	0.1	0.1	1.2*	4106
BGR	0.0	0.5*	0.6*	0.7*	0.8*	0.9*	1.0*	1.0*	2014
BLR	0.0	0.7*	0.1	0.8*	0.3+	0.7*	0.5*	0.6*	3603
BOL	0.0	-0.0	-0.1	-0.1	-0.1	0.2	-0.1	0.1	2058
BRA	0.0	0.1	0.7*	0.3	0.4	0.3	0.0	0.1	7462
CAN	0.0	0.1	-0.1	-0.1	-0.0	-0.1	-0.2+	-0.5*	5720
CHL	0.0	0.6+	0.8	0.4	0.5+	0.1	-0.1	0.0	6657
CHN	0.0	-0.1	0.6*	0.7*	0.2	0.5*	0.6*	0.3+	9407
COL	0.0	-0.9+	-0.5	-0.7+	-0.5	-0.5	-0.6	-0.6+	6025
DEU	0.0	0.1	0.1	-0.0	-0.1	0.1	0.0	0.0	7625
DZA	0.0	1.9*	0.1	0.2	0.5*	0.2	0.3	0.5	2433
ECU	0.0	-0.2	-0.2	-0.1	-0.6+	-0.3	-0.2	-0.1	2400
EGY	0.0	0.6*	-0.2	-0.1	-0.2	0.0	-0.4	-0.5+	6120
ESP	0.0	-0.2	-0.2	-0.3+	-0.1	-0.1	-0.3*	-0.3*	3898
ETH	0.0	0.8+	0.9*	0.2	0.3	0.8*	1.1*	1.0*	2719
FRA	0.0	-0.3	-0.8*	-0.3	0.1	0.3	0.0	-0.1	1000
GEO	0.0	0.1	0.4*	0.1	0.1	1.0*	0.5*	0.6*	2676
GHA	0.0	0.3	0.9*	1.0*	1.0*	1.1*	0.8*	0.7*	3080
GRC	0.0	0.2	0.4	-0.1	0.2	0.5*	-0.3	-0.3*	1200
GTM	0.0	-0.2	0.1	0.9*	0.5*	1.0*	0.7*	0.3+	2202
HRV	0.0	-0.3	2.0*	0.1	0.4	-0.7*	0.3	0.2	1152
HUN	0.0	0.3	-0.2	-0.1	0.4+	-0.2	0.7*	0.2	1649
IDN	0.0	0.1	0.2+	0.1	0.8*	0.6*	0.4*	0.4*	6092
IND	0.0	0.4*	0.0	0.7*	0.8*	0.1	0.4*	0.6*	11971
IRN	0.0	-0.2	-0.2	0.3	-0.0	-0.6*	-0.3+	-0.1	3973
IRQ	0.0	-0.5+	-0.4	-0.5	-0.1	-0.3	-0.6+	-0.3	2631
ITA	0.0	-0.4	-0.2	-0.2	-0.3	-0.4	-0.3	-0.1	1006
JOR	0.0	0.0	-0.0	0.3	0.2	-0.1	0.1	0.1	3622
KAZ	0.0	-0.1	-0.1	-0.3+	0.4*	0.4	-0.0	-0.1	2761
KGZ	0.0	-0.1	-0.2	-0.4*	-0.2	-0.5*	0.4*	-0.8*	3731
KWT	0.0	1.5*	0.4	-0.0	-0.2	0.4	0.9*	0.6*	1034
LBN	0.0	-0.0	-0.2	-0.1	-0.0	-0.2	-0.2	-0.2	2159
LTU	0.0	0.4	0.2	0.5	0.6+	-0.0	0.8*	0.7*	996
LVA	0.0	-0.0	0.4	0.1	-0.0	-0.0	-0.5	-0.4*	1190
MAR	0.0	-0.2	-0.0	0.1	-0.0	0.5	0.6*	0.1	2442
MDA	0.0	0.2*	0.4*	0.3+	0.7*	-2.0*	1.3*	0.9*	3000
MEX	0.0	0.1	0.1	-0.0	0.2*	0.1	0.1	0.0	9329
MKD	0.0	0.8*	0.0	0.3	0.1	0.3+	1.4*	0.6*	2031
MYS	0.0	0.4*	0.4*	0.4*	0.4*	0.2	0.3*	0.2	2919
NGA	0.0	-0.3+	-0.8*	-0.7*	-0.4*	-0.4*	-0.3+	0.0	7807
NZL	0.0		-0.3	-0.2	-0.3	-0.2	-0.4*	0.0	1770
PAK	0.0	0.1	0.2+	1.9*	0.4	2.3*	0.2	0.5*	3677
PER	0.0	0.1	-0.1	0.3	0.3	0.4*	0.7*	0.5*	2602
PHL	0.0	0.3	0.1	0.5+	0.8*	0.4+	0.7*	1.0*	3600
POL	0.0	0.2	0.3	0.4*	0.0	0.2	0.3*	0.1	3093
ROU	0.0	0.3*	0.2+	0.1	0.5*	0.2	0.8*	0.6*	5618
RUS	0.0	0.6*	0.6*	0.4*	0.6*	0.4*	0.4*	0.7*	8187
RWA	0.0	-0.7+	-1.5*	-1.3*	-1.0*	-1.3*	-1.0*	-1.3*	3030
SRB	0.0	0.3*	0.2	0.2	0.4*	0.7*	0.3*	0.3*	4654
SVN	0.0	0.3*	0.3*	0.7*	0.2+	0.4+	0.5*	0.2	3065
SWE	0.0	0.2	0.4	0.3	0.4*	0.4*	0.5*	0.4*	2882
THA	0.0	0.2+	0.2+	0.3+	0.1	-0.1	-0.0	-0.7*	4086
TJK	0.0	-0.1	-0.2	-0.7*	0.2	-0.2	-0.5*	-0.2	1200
TUN	0.0	-0.6	-0.4	-0.6+	0.2	-0.4	-0.2	-1.1*	2405
TUR	0.0	-3.2*	0.6*	0.2	0.9*	0.8*	0.9*	1.0*	2405
UKR	0.0	0.4*	0.1	0.5*	0.1	0.1	0.1	0.2	4169
URY	0.0	0.1	0.2	0.2	0.3	0.1	1.6*	0.2	2717
USA	0.0	-0.3*	-0.2	-0.1	-0.2*	-0.4*	-0.3*	-0.5*	5586
UZB	0.0	0.3*	0.5+	0.1	-0.2	-1.0*	-0.0	-0.3+	1493
VEN	0.0	1.5	-1.1	-0.9	-0.6	-0.8	-0.8	-0.5	2385
VNM	0.0	0.5*	0.4+	1.0*	0.3	1.2*	1.0*	0.5	3674
ZAF	0.0	-0.1	0.4*	0.9*	1.1*	1.2*	1.2*	1.2*	6448
ZWE	0.0	0.1	0.4+	0.1	0.5*	0.1	0.6*	0.4+	2714
* p<0.05, + p<0.1; robust std err									

Table 7: exT-1

	-10	10-50k	50-500k	500k-	N
ALB	0.0	-0.3*	-0.1	-0.0	1864
ARG	0.0	0.2	-0.2	0.1	955
AUS	0.0	0.1	-0.1	-0.1	3895
AZE	0.0	0.1	-0.2	0.2	995
BFA	0.0	-0.2	0.3	-0.4	636
BGD	0.0	-0.2	0.1	0.9*	2562
BGR	0.0	0.0	0.1	-0.1	1637
BLR	0.0	0.0	-0.0	0.0	3394
BRA	0.0	-0.2	-0.5*	-0.5*	3780
CAN	0.0	-0.1	-0.2*	-0.5*	3320
CHL	0.0	0.5	-0.7*	-0.6*	3823
CHN	0.0	0.2	0.3*	0.1	4371
COL	0.0	0.2	0.1	-0.0	4376
DEU	0.0	-0.2*	-0.0	0.0	5137
DZA	0.0	0.3+	0.0	-0.1	1806
ECU	0.0	-0.5	-0.6*	-0.5+	1187
EGY	0.0	-0.2	-0.0	-0.8*	3466
ESP	0.0	0.1	-0.0	-0.2+	1652
ETH	0.0	-1.8*	-0.2	-0.4	1246
GEO	0.0	-0.0	0.0	0.1	2602
GHA	0.0	0.3*	0.1	-0.2	2602
HUN	0.0	-0.1	-0.0	-0.6*	952
IDN	0.0	0.2+	0.1	0.1	2459
IND	0.0	0.5*	-0.4*	0.5*	6931
IRN	0.0	0.3	-0.5*	0.1	2208
IRQ	0.0	0.2	-0.4*	-0.2	1233
ITA	0.0	-0.3*	-0.5*	0.0	639
JOR	0.0	0.2*	0.1	-0.1	2137
KAZ	0.0	0.4*	-0.0	-0.3*	1497
KGZ	0.0	-0.3	0.3*	-0.5*	2427
KWT	0.0	-0.4	0.5*	0.1	953
LBN	0.0	0.1	0.1	-0.2	898
LTU	0.0	0.2	0.3	0.5+	889
LVA	0.0	-0.2	-0.5*	-0.7*	1119
MAR	0.0	0.2	0.2	-0.2	888
MDA	0.0	0.1	0.1	0.2	2740
MEX	0.0	0.0	-0.1	-0.3*	3782
MKD	0.0	-0.3+	0.1	-0.2	1600
MYS	0.0	0.3+	0.1	-0.2	1559
NGA	0.0	0.1	0.1	0.1	4628
NZL	0.0	0.2	-0.2		625
PAK	0.0		0.3	0.4*	1131
PER	0.0	0.2	0.7*	-0.3	1122
PHL	0.0	0.2	-0.1	0.1	2343
POL	0.0	-0.2	-0.0	-0.3+	2683
ROU	0.0	-0.3*	-0.1	0.3*	3966
RUS	0.0	0.2+	0.1	0.2*	3999
RWA	0.0	-0.1	-0.3*	0.3	2432
SRB	0.0	-0.1	0.3*	-0.5*	3128
SVN	0.0	0.2+	0.1	-0.3	1896
SWE	0.0	0.2	0.1	0.1	1888
THA	0.0	-0.2	0.1	0.0	2387
TUN	0.0	-0.1			901
UKR	0.0	0.0	-0.2*	-0.2*	3593
URY	0.0	0.3*	0.2	0.1	2511
USA	0.0	0.0	-0.2*	-0.2*	3493
UZB	0.0	-0.0	0.0	-0.3*	1407
VEN	0.0	-0.5	-0.8*	-0.1	1111
VNM	0.0	0.3*	-0.0	-0.5	2330
ZAF	0.0	0.3*	0.3*	0.1	5575
ZWE	0.0	-0.1	0.1	-0.0	1492

* p<0.05, + p<0.1;
robust std err

Table 8: exT4-2

	-5	5-500k	500k-	N
ALB	0.0	-0.2*	-0.1	1864
ARG	0.0	-0.2	-0.0	955
AUS	0.0	-0.1	-0.2*	3895
AZE	0.0	-0.2	0.1	995
BFA	0.0	0.3	-0.0	636
BGD	0.0	0.1	0.9*	2562
BGR	0.0	0.0	-0.1	1637
BLR	0.0	-0.0	-0.0	3394
BRA	0.0	0.1	-0.1	3780
CAN	0.0	-0.2*	-0.5*	3320
CHL	0.0	-0.5	-0.5	3823
CHN	0.0	0.4*	0.2+	4371
COL		0.0	-0.1	4376
DEU	0.0	-0.1	0.0	5137
DZA	0.0	-0.4+	-0.6	1806
ECU	0.0	-1.0*	-0.8*	1187
EGY	0.0	-0.4*	-1.1*	3466
ESP	0.0	-0.0	-0.3+	1652
ETH	0.0	0.0	-0.2	1246
GEO	0.0	0.1	0.1	2602
GHA	0.0	0.3*	-0.1	2602
HUN	0.0	-0.1	-0.6*	952
IDN	0.0	0.1	0.1	2459
IND	0.0	-0.0	0.4*	6931
IRN	0.0	-0.4*	-0.0	2208
IRQ	0.0	-0.2	-0.2	1233
ITA	0.0	-0.2	0.1	639
JOR	0.0	0.1	-0.1	2137
KAZ	0.0	0.1	-0.3*	1497
KGZ	0.0	-0.1	-0.5*	2427
KWT	0.0	0.3	0.2	953
LBN	0.0	-0.0	-0.3	898
LTU	0.0	0.2	0.5+	889
LVA	0.0	-0.3+	-0.7*	1119
MAR	0.0	0.0	-0.3	888
MDA	0.0	0.2+	0.2+	2740
MEX	0.0	-0.0	-0.3*	3782
MKD	0.0	-0.2+	-0.3	1600
MYS	0.0	0.1	-0.3	1559
NGA	0.0	-0.2+	-0.2	4628
NZL	0.0	0.0		625
PAK	0.0	0.5*	0.5*	1131
PER	0.0	0.5*	-0.3	1122
PHL	0.0	-0.0	0.1	2343
POL	0.0	-0.1	-0.3+	2683
ROU	0.0	-0.1+	0.3*	3966
RUS	0.0	0.3*	0.3*	3999
RWA	0.0	-0.8*	-0.3	2432
SRB	0.0	0.1	-0.6*	3128
SVN	0.0	0.2*	-0.3	1896
SWE	0.0	0.2	0.2	1888
THA	0.0	0.1	0.1	2387
TUN	0.0	0.1		901
UKR	0.0	-0.1	-0.2*	3593
URY	0.0	0.3*	0.1	2511
USA	0.0	-0.1	-0.2*	3493
UZB	0.0	0.1	-0.3+	1407
VEN	0.0	-2.2*	-1.6*	1111
VNM	0.0	0.1	-0.5+	2330
ZAF	0.0	0.3*	0.2	5575
ZWE	0.0	0.2	0.1	1492
* p<0.05, + p<0.1; robust std err				

Table 9: exT3-2

	-2k	2-5k	5-10k	10-20k	20-50k	50-100k	100-500k	500k-	N
ALB	0.0	0.3*	-0.3+	-0.6*	-0.2	-0.3	0.1	-0.0	1864
ARG	0.0	0.9*	-0.3	0.1	0.4	0.0	-0.4	0.1	955
AUS	0.0	0.0	-0.3	0.1	0.0	-0.1	-0.1	-0.2	3895
AZE	0.0	-0.0	-0.4	-0.2	0.1	-0.1	-0.4	0.1	995
BFA	0.0	0.1	0.6+	-0.2	0.3	0.6+	0.7	-0.0	636
BGD	0.0	-0.4*	-0.2	-0.4*	-0.5*	-0.1	-0.3	0.5*	2562
BGR	0.0	0.5*	0.1	0.2	0.2	0.0	0.4*	0.1	1637
BLR	0.0	0.3	-0.2	0.2	-0.1	0.1	-0.0	0.0	3394
BRA	0.0	-0.3	0.4	-0.1	-0.1	-0.2	-0.5	-0.4	3780
CAN	0.0	-0.0	-0.2	-0.2	-0.2+	-0.3*	-0.2*	-0.5*	3320
CHL	0.0	0.5	1.0	-0.1	1.2*	-0.2	-0.3	-0.2	3823
CHN	0.0	0.0	0.5*	0.8*	0.1	0.2	0.6*	0.4+	4371
COL			0.0	0.0	0.2	0.1	0.0	-0.0	4376
DEU	0.0	-0.1	-0.0	-0.2*	-0.2*	-0.0	-0.0	-0.0	5137
DZA	0.0	1.7*	-0.5*	-0.1	-0.1	-0.5+	-0.3	-0.5	1806
ECU	0.0	0.1	-1.2	-1.0*	-0.7*	-1.1*	-0.9*	-0.8*	1187
EGY	0.0	0.6+	0.0	-0.1	-0.1	0.3	-0.3	-0.7*	3466
ESP	0.0	-0.2	-0.2	-0.2	0.1	-0.0	-0.2	-0.4+	1652
ETH	0.0	0.7	2.2*	0.0	-2.0*	-0.2	0.5	0.1	1246
GEO	0.0	0.2+	0.3+	0.2	0.0	1.1*	-0.0	0.2+	2602
GHA	0.0	0.3+	0.8*	0.7*	0.6*	0.5+	0.3	0.1	2602
HUN	0.0	0.1	-0.3	-0.3	0.1	0.1	-0.0	-0.5+	952
IDN	0.0	-0.0	0.0	-0.2	1.0*	0.5+	-0.0	0.1	2459
IND	0.0	0.2*	-0.2*	0.6*	0.4*	-0.5*	-0.3*	0.4*	6931
IRN	0.0	-0.5*	-0.7*	-0.2	0.1	-1.0+	-0.7*	-0.2+	2208
IRQ	0.0	-0.6+	-0.6	-0.7	-0.3	-0.8+	-1.0*	-0.7*	1233
ITA	0.0	-0.5+	-0.0	-0.4+	-0.7*	-0.6*	-0.9*	-0.3	639
JOR	0.0	-0.1	-0.2	0.2	0.0	-0.2	0.1	-0.2	2137
KAZ	0.0	-0.5*	-0.4	-0.0	0.1	-0.6+	-0.3+	-0.6*	1497
KGZ	0.0	-0.2+	-0.6*	-0.5*	-0.3	-0.1	0.3+	-0.6*	2427
KWT	0.0	1.7*	0.5	0.2	0.1	1.3*	1.2*	0.8*	953
LBN	0.0	-0.6+	-0.6+	-0.5+	-0.3	-0.4	-0.4	-0.7+	898
LTU	0.0	1.0	0.1	0.2	0.2	-0.4	0.4+	0.5+	889
LVA	0.0	-0.0	0.2	-0.2	-0.2	-0.3	-0.7*	-0.7*	1119
MAR	0.0	-0.2	-0.4	-0.1	-0.2	-0.2	-0.0	-0.4	888
MDA	0.0	0.3*	0.4*	0.3+	0.5*	-3.0*	0.5*	0.4*	2740
MEX	0.0	0.2+	0.1	0.1	0.2	0.1	0.1	-0.1	3782
MKD	0.0	0.9*	-0.1	-0.2	-0.1	0.1	1.4*	-0.0	1600
MYS	0.0	0.1	-0.0	0.2	0.4	-0.2	0.2	-0.2	1559
NGA	0.0	-0.0	-0.6	-0.2	-0.2	-0.4	-0.1	-0.3	4628
NZL	0.0		0.2	0.4	0.0	-0.1	-0.1		625
PAK	0.0	0.0	0.5+				0.4	0.5*	1131
PER	0.0	-0.1	-0.4	0.1	0.2	0.3	0.6*	-0.3	1122
PHL		0.0		-0.5	0.2	-0.2	-0.0	0.1	2343
POL	0.0	-0.1	0.0	0.2	-0.4*	-0.0	-0.1	-0.3+	2683
ROU	0.0	0.0	0.0	-0.5*	-0.1	-0.4*	0.0	0.3*	3966
RUS	0.0	0.5*	0.5*	0.5*	0.5*	0.3*	0.5*	0.5*	3999
RWA	0.0	-0.3	-1.3*	-1.0+	-0.8	-1.2*	-0.8	-0.5	2432
SRB	0.0	0.2	0.0	0.1	-0.0	0.4*	0.2	-0.5*	3128
SVN	0.0	0.1	0.3*	0.4*	0.2	0.2	0.1	-0.3	1896
SWE	0.0	-0.7*	-0.0	0.2	0.0	0.0	0.0	-0.0	1888
THA	0.0	0.2*	0.3*	0.0	-0.2	0.0	0.7*	0.1	2387
TUN	0.0	-0.7	-0.5	-0.7	-0.4				901
UKR	0.0	0.4*	0.1	0.3*	0.0	-0.2	-0.0	-0.1	3593
URY	0.0	0.2	0.2	0.4+	0.5*	0.3	2.1*	0.2	2511
USA	0.0	-0.2	-0.1	-0.1	-0.1	-0.4*	-0.3+	-0.4*	3493
UZB	0.0	0.3*	0.5+	0.4	-0.1	-0.3	0.2	-0.1	1407
VEN	0.0	1.3	-1.6	-1.2	-1.0	-1.2	-1.6+	-0.7	1111
VNM	0.0	0.2	0.1	0.6*	-0.1	1.1*	0.0	-0.3	2330
ZAF	0.0	-0.3+	0.3+	0.2	0.4*	0.2	0.4*	0.1	5575
ZWE	0.0	-0.0	0.4	-0.3	0.1	0.1	0.3	0.1	1492

* p<0.05, + p<0.1;
robust std err

Table 10: exT-2

	-10	10-50k	50-500k	500k-	N
ALB	0.0	-0.4*	-0.2	0.5*	1582
ARG	0.0	0.1	-0.3	-0.0	855
AUS	0.0	0.1	0.0	-0.0	3728
AZE	0.0	0.1	-0.0	0.3*	964
BFA	0.0	-0.0	0.3	-0.2	567
BGD	0.0	-0.2*	0.1	0.6*	2104
BGR	0.0	-0.0	-0.1	-0.5*	1229
BLR	0.0	0.0	-0.1	-0.1	2815
BRA	0.0	-0.3*	-0.5*	-0.6*	3576
CAN	0.0	-0.1	-0.1+	-0.3*	3177
CHL	0.0	0.6+	-0.7*	-0.7*	3527
CHN	0.0	-0.3	-0.4	-0.7	2005
COL	0.0	0.1	0.0	-0.1	1376
DEU	0.0	-0.2*	-0.0	0.0	4795
DZA	0.0	0.3+	0.0	-0.0	1596
ECU	0.0	-0.7*	-0.7*	-0.5+	1182
EGY	0.0	-0.2	0.1	-0.8*	3428
ESP	0.0	-0.1	-0.0	-0.1	1487
ETH	0.0	-1.4+	0.1	0.1	1017
GEO	0.0	-0.0	0.1	0.0	2401
GHA	0.0	0.2+	0.1	-0.1	2572
HUN	0.0	0.0	-0.1	-0.4*	887
IDN	0.0	0.3*	0.2	0.1	2056
IND	0.0	0.5*	-0.4*	0.4*	5857
IRN	0.0	0.3	-0.5*	0.0	2119
IRQ	0.0	0.3+	-0.3*	-0.0	1123
ITA	0.0	-0.2	-0.3+	0.0	585
JOR	0.0	0.2*	-0.0	-0.2	2089
KAZ	0.0	0.2	-0.1	-0.3*	1497
KGZ	0.0	-0.1	0.2	-0.3*	2293
LBN	0.0	0.3+	0.1	0.2	731
LTU	0.0	0.3	0.3	0.2	750
LVA	0.0	-0.1	-0.4*	-0.7*	963
MAR	0.0	0.1	0.2	-0.1	845
MDA	0.0	0.2+	0.2	0.1	2478
MEX	0.0	-0.0	-0.1	-0.2+	3544
MKD	0.0	-0.3+	0.1	0.0	1385
MYS	0.0	0.2	0.0	-0.4*	1541
NGA	0.0	0.2	0.2+	0.1	4488
NZL	0.0	0.0	-0.1		417
PAK	0.0		0.2	0.2	900
PER	0.0	0.1	0.5*	-0.5	1026
PHL	0.0	0.4	0.4	0.5	2294
POL	0.0	-0.2	-0.1	-0.2	1533
ROU	0.0	-0.3*	-0.2*	0.3*	3568
RUS	0.0	0.1	0.1	0.2+	3253
RWA	0.0	-0.1	-0.2*	0.1	2398
SRB	0.0	0.0	0.2*	-0.4*	2539
SVN	0.0	0.3*	-0.1	-0.3	1620
SWE	0.0	0.2	0.1	0.1	1769
THA	0.0	-0.1	0.2	0.0	2178
TUN	0.0	-0.1			826
UKR	0.0	0.1	0.0	-0.1	2985
URY	0.0	0.3*	0.1	0.1	2017
USA	0.0	0.0	-0.1	-0.2*	3372
UZB	0.0	-0.1	0.0	-0.3*	1247
VEN	0.0	-0.2	-0.7+	0.1	1034
VNM	0.0	0.3*	0.2	-1.4*	2039
ZAF	0.0	0.2+	0.1	-0.0	5330
ZWE	0.0	-0.2	0.1	0.0	1487

* $p < 0.05$, + $p < 0.1$;
robust std err

Table 11: exT4-3

	-5	5-500k	500k-	N
ALB	0.0	-0.4*	0.4+	1582
ARG	0.0	-0.2	-0.0	855
AUS	0.0	-0.0	-0.1	3728
AZE	0.0	-0.1	0.3	964
BFA	0.0	0.3	0.0	567
BGD	0.0	0.0	0.7*	2104
BGR	0.0	-0.0	-0.5*	1229
BLR	0.0	-0.1	-0.1	2815
BRA	0.0	-0.2	-0.4*	3576
CAN	0.0	-0.1+	-0.3*	3177
CHL	0.0	-0.7*	-0.7*	3527
CHN		0.0	-0.4*	2005
COL		0.0	-0.1	1376
DEU	0.0	-0.1	0.0	4795
DZA	0.0	-0.4*	-0.6	1596
ECU	0.0	-0.9*	-0.7*	1182
EGY	0.0	-0.4*	-1.1*	3428
ESP	0.0	-0.1	-0.1	1487
ETH	0.0	0.3	0.4	1017
GEO	0.0	0.1	0.1	2401
GHA	0.0	0.3*	-0.0	2572
HUN	0.0	0.0	-0.4*	887
IDN	0.0	0.1	-0.0	2056
IND	0.0	-0.0	0.3*	5857
IRN	0.0	-0.3*	-0.0	2119
IRQ	0.0	-0.1	-0.0	1123
ITA	0.0	-0.1	0.2	585
JOR	0.0	0.1	-0.2	2089
KAZ	0.0	-0.0	-0.3*	1497
KGZ	0.0	-0.1	-0.3*	2293
LBN	0.0	0.1	0.2	731
LTU	0.0	0.3	0.3	750
LVA	0.0	-0.1	-0.6*	963
MAR	0.0	0.0	-0.2	845
MDA	0.0	0.2*	0.2	2478
MEX	0.0	-0.1	-0.2+	3544
MKD	0.0	-0.2	-0.1	1385
MYS	0.0	0.1	-0.4*	1541
NGA	0.0	-0.1	-0.1	4488
NZL	0.0	-0.1		417
PAK	0.0	0.4+	0.3	900
PER	0.0	0.3*	-0.5	1026
PHL	0.0	0.4	0.5	2294
POL	0.0	-0.1	-0.1	1533
ROU	0.0	-0.2*	0.3*	3568
RUS	0.0	0.2*	0.2*	3253
RWA	0.0	-0.7*	-0.4+	2398
SRB	0.0	0.1	-0.4*	2539
SVN	0.0	0.2+	-0.2	1620
SWE	0.0	0.2	0.2	1769
THA	0.0	0.1	0.1	2178
TUN	0.0	0.1		826
UKR	0.0	0.0	-0.1	2985
URY	0.0	0.2	0.1	2017
USA	0.0	-0.1	-0.2*	3372
UZB	0.0	0.0	-0.3*	1247
VEN	0.0	-1.7*	-1.2*	1034
VNM	0.0	0.1	-1.5*	2039
ZAF	0.0	0.2*	0.0	5330
ZWE	0.0	0.1	0.2	1487
* p<0.05, + p<0.1; robust std err				

Table 12: exT3-3

	-2k	2-5k	5-10k	10-20k	20-50k	50-100k	100-500k	500k-	N
ALB	0.0	0.2	-0.5*	-0.6*	-0.4*	-0.5*	0.0	0.4*	1582
ARG	0.0	0.6+	-0.0	0.0	0.3	-0.1	-0.3	0.1	855
AUS	0.0	0.0	-0.2	0.1	0.0	-0.1	-0.0	-0.1	3728
AZE	0.0	0.0	-0.5	-0.2	0.3	-0.0	-0.1	0.3	964
BFA	0.0	0.3	0.7+	0.1	0.6+	0.8+	0.8	0.2	567
BGD	0.0	-0.8*	-0.6*	-1.0*	-0.8*	-0.5*	-0.6*	-0.0	2104
BGR	0.0	0.4*	0.3	0.3	0.1	-0.1	0.2	-0.3+	1229
BLR	0.0	0.5*	-0.3	0.1	-0.0	0.1	-0.1	-0.0	2815
BRA	0.0	-0.6+	-0.2	-0.6+	-0.6*	-0.7*	-0.9*	-0.9*	3576
CAN	0.0	-0.1	-0.1	-0.1	-0.2	-0.3*	-0.1	-0.4*	3177
CHL	0.0	0.8+	0.3	0.8	1.1*	-0.2	-0.3	-0.3	3527
CHN			0.0	0.1	-0.4	-0.4	-0.3	-0.7	2005
COL			0.0	0.5	-0.0	0.2	-0.1	-0.1	1376
DEU	0.0	-0.0	-0.0	-0.2+	-0.2*	-0.1	-0.1	-0.0	4795
DZA	0.0	1.6*	-0.6*	-0.2	-0.1	-0.4	-0.4+	-0.5	1596
ECU	0.0	-0.0	-1.0	-1.3*	-0.8*	-1.0*	-0.9*	-0.8*	1182
EGY	0.0	0.4	-0.1	-0.2	-0.2	0.3	-0.4	-0.8*	3428
ESP	0.0	-0.4+	-0.4	-0.4*	-0.2	-0.2	-0.3+	-0.3+	1487
ETH	0.0	-0.3	2.3*	0.2	-2.0*	-0.2	0.4	0.2	1017
GEO	0.0	0.1	0.2	0.1	-0.0	0.8*	0.0	0.1	2401
GHA	0.0	0.4*	0.8*	0.6*	0.6*	0.5+	0.3	0.2	2572
HUN	0.0	0.1	0.2	-0.1	0.2	-0.1	0.0	-0.4	887
IDN	0.0	-0.2	-0.3	-0.1	0.4	0.2	-0.1	-0.1	2056
IND	0.0	0.1	-0.2*	0.5*	0.4*	-0.5*	-0.4*	0.3*	5857
IRN	0.0	-0.4*	-0.5*	-0.1	0.2	-0.9	-0.7*	-0.2	2119
IRQ	0.0	-0.0	-1.0	-0.4	0.3	-0.2	-0.4	-0.1	1123
ITA	0.0	-0.5+	-0.0	-0.4	-0.5+	-0.5	-0.7*	-0.2	585
JOR	0.0	-0.0	-0.1	0.2	0.2	-0.2	0.0	-0.2	2089
KAZ	0.0	-0.5*	-0.6*	-0.3	-0.1	-0.5+	-0.4*	-0.7*	1497
KGZ	0.0	0.0	-0.3	-0.2	-0.2	0.2	0.2	-0.3*	2293
LBN	0.0	-0.5	-0.5	-0.3	0.1	-0.4	-0.2	-0.2	731
LTU	0.0	0.6	0.3	0.4	0.3	-0.4	0.4+	0.3	750
LVA	0.0	-0.2	0.3	-0.1	-0.1	-0.3	-0.5+	-0.7*	963
MAR	0.0	-0.1	-0.2	0.0	-0.0	-0.0	0.0	-0.2	845
MDA	0.0	0.4*	0.5*	0.5*	0.6*	-2.9*	0.7*	0.4*	2478
MEX	0.0	0.1	0.0	0.0	-0.0	-0.1	-0.0	-0.1	3544
MKD	0.0	0.5+	-0.3	-0.6+	-0.1	0.1	1.3*	0.1	1385
MYS	0.0	0.1	0.1	0.2	0.3	-0.1	0.1	-0.4+	1541
NGA	0.0	0.5	-0.0	0.3	0.3	0.2	0.4	0.3	4488
NZL	0.0		-0.2	0.0	-0.1	-0.0	-0.2		417
PAK	0.0	0.1	0.5				0.3	0.3	900
PER	0.0	-0.2	-0.5	0.0	0.1	0.4	0.4*	-0.6	1026
PHL		0.0		-0.2	0.5	0.3	0.4	0.5	2294
POL	0.0	-0.1	0.1	-0.1	-0.2	0.0	-0.1	-0.2	1533
ROU	0.0	-0.1	-0.2	-0.7*	-0.2	-0.5*	-0.2	0.2	3568
RUS	0.0	0.5*	0.4*	0.3	0.4*	0.3+	0.4*	0.4*	3253
RWA	0.0	-0.7	-1.6*	-1.2*	-1.1*	-1.4*	-1.1*	-1.0*	2398
SRB	0.0	0.2	-0.0	0.2	0.1	0.3+	0.3+	-0.3*	2539
SVN	0.0	-0.0	0.2	0.6*	0.2	-0.0	-0.0	-0.3	1620
SWE	0.0	-0.8*	-0.1	0.1	-0.0	-0.1	-0.1	-0.1	1769
THA	0.0	0.3*	0.3*	0.2	-0.2	0.0	1.0*	0.1	2178
TUN	0.0	-0.4	-0.2	-0.4	-0.1				826
UKR	0.0	0.4*	0.2	0.4*	0.0	0.2	0.1	0.1	2985
URY	0.0	-0.5+	-0.3	-0.1	0.0	-0.3	1.2*	-0.3	2017
USA	0.0	-0.2	-0.2	-0.1	-0.1	-0.3*	-0.3+	-0.4*	3372
UZB	0.0	0.3*	0.3	0.3	-0.1	-0.5	0.2	-0.2	1247
VEN	0.0	1.6	-0.9	-0.2	-0.4	-0.6	-0.9	-0.1	1034
VNM	0.0	0.1	-0.0	0.4+	-0.1	1.0*	0.1	-1.4*	2039
ZAF	0.0	-0.5*	0.3	0.2	0.3+	-0.0	0.3+	-0.0	5330
ZWE	0.0	0.1	0.4+	-0.3	0.2	0.2	0.3+	0.2	1487

* p<0.05, + p<0.1;
robust std err

Table 13: exT-3

In table 8 several places appear happier like BGD, IND, LTU, PAK, ROU, and RUS, when adding more controls and full town categories that disappear except for 4 countries.

The results in table 13 are remarkable. In most countries, large cities are less happy than small settlements. Without exception, in no developed country the city is a happier place than the smallest areas.

	-10	10-50k	50-500k	500k-	N
ARG	0.0	0.2	-0.1	0.2	845
AUS	0.0	0.1	0.1	-0.1	925
AZE	0.0	0.3	0.2	0.4*	958
BLR	0.0	-0.2	-0.1	0.1	1254
BRA	0.0	-0.2	-0.2	-0.5*	1154
CHL	0.0	0.8*	-0.7*	-0.5*	797
CHN			0.0	-0.2*	1175
COL	0.0	0.1	0.1	0.1	1353
DEU	0.0	-0.2*	-0.0	-0.1	1832
DZA	0.0	0.2	0.1		732
ECU	0.0	-0.7*	-0.7*	-0.5*	1182
GEO	0.0	0.1	0.1	0.3*	1157
GHA	0.0	0.1	-0.2		1434
IND	0.0	0.2*	-0.3*	-0.4	2507
IRQ	0.0	0.1	-0.2+	-0.2	947
JOR	0.0	0.1	-0.2		1124
KAZ	0.0	0.2	-0.0	-0.2+	1443
KGZ	0.0	0.0	-0.1	0.0	1225
LBN	0.0	0.3+	-0.0	0.3	692
MEX	0.0	-0.1	-0.1	-0.2	1811
MYS	0.0	0.4	0.1	-0.8*	390
NGA	0.0	0.3+	0.0	0.3	1576
NLD	0.0	0.4	0.4	0.5	1448
NZL	0.0	0.1	0.0		408
PER	0.0	0.2	0.4*	-0.7	1018
PHL	0.0	0.4	0.6	0.5	1142
POL	0.0	0.0	0.0	-0.2	793
ROU	0.0	-0.1	-0.2	0.1	1323
RUS	0.0	-0.2	0.0	0.1	1665
RWA	0.0	-0.1	-0.1	0.2	1251
SVN	0.0	0.4*	-0.1	-0.5	807
SWE	0.0	0.1	0.0	0.1	981
THA	0.0	-0.5*	-0.3		922
TUN	0.0	0.0			822
UKR	0.0	-0.2	-0.3*	-0.1	1308
URY	0.0	0.2	-0.2	0.1	465
UZB	0.0	-0.0	0.1	-0.1	1179
ZAF	0.0	0.2	0.1		3058
ZWE	0.0	0.1	0.0	0.1	1478

* $p < 0.05$, + $p < 0.1$;
robust std err

Table 14: exT4-4

	-5	5-500k	500k-	N
ARG	0.0	-0.0	0.1	845
AUS	0.0	0.0	-0.1	925
AZE	0.0	0.1	0.4*	958
BLR	0.0	-0.3*	-0.0	1254
BRA	0.0	-0.1	-0.4+	1154
CHL	0.0	-0.6*	-0.6*	797
CHN		0.0	-0.2*	1175
COL		0.0	0.0	1353
DEU	0.0	-0.2*	-0.2	1832
DZA	0.0	-0.4+		732
ECU	0.0	-0.9*	-0.8*	1182
GEO	0.0	0.2	0.4*	1157
GHA	0.0	0.2+		1434
IND	0.0	0.0	-0.4	2507
IRQ	0.0	-0.1	-0.2	947
JOR	0.0	-0.1		1124
KAZ	0.0	-0.0	-0.3*	1443
KGZ	0.0	-0.1	-0.0	1225
LBN	0.0	0.1	0.2	692
MEX	0.0	-0.1	-0.2+	1811
MYS	0.0	-0.5	-1.4*	390
NGA	0.0	-0.1	0.0	1576
NLD	0.0	-0.7*	-0.5+	1448
NZL	0.0	-0.0		408
PER	0.0	0.3+	-0.7	1018
PHL	0.0	0.6	0.5	1142
POL	0.0	0.0	-0.2	793
ROU	0.0	-0.2	0.0	1323
RUS	0.0	-0.1	0.0	1665
RWA	0.0	-0.6*	-0.4	1251
SVN	0.0	0.2+	-0.4	807
SWE	0.0	0.0	0.1	981
THA	0.0	-0.3*		922
TUN	0.0	0.1		822
UKR	0.0	-0.3*	-0.1	1308
URY	0.0	0.1	0.1	465
UZB	0.0	0.1	-0.1	1179
ZAF	0.0	0.3*		3058
ZWE	0.0	0.2	0.2	1478

* $p < 0.05$, + $p < 0.1$;
robust std err

Table 15: exT3-4

	-2k	2-5k	5-10k	10-20k	20-50k	50-100k	100-500k	500k-	N
ARG	0.0	0.6	0.0	0.2	0.3	0.0	-0.1	0.2	845
AUS	0.0	0.0	-0.2	0.2	-0.0	0.0	0.1	-0.1	925
AZE	0.0	-0.1	-0.4	-0.3	0.5	0.3	-0.0	0.4+	958
BLR	0.0	-0.4	-1.2*	-0.2	-0.3+	-0.2	-0.2+	-0.0	1254
BRA	0.0	-0.5	-0.2	-0.4	-0.6+	-0.2	-0.7*	-0.8*	1154
CHL	0.0	0.8	-0.0	1.0+	1.1*	-0.5	-0.3	-0.2	797
CHN							0.0	-0.2*	1175
COL			0.0	0.3	-0.1	0.2	-0.0	0.0	1353
DEU	0.0	0.1	-0.1	-0.2	-0.3*	-0.2	0.0	-0.1	1832
DZA	0.0		-0.6*	-0.1	-0.3	-0.4	-0.2		732
ECU	0.0	-0.2	-1.0	-1.3*	-0.9*	-1.1*	-1.0*	-0.9*	1182
GEO	0.0	-0.1	0.3	0.4	-0.0	0.7	0.1	0.3*	1157
GHA	0.0	-0.1	0.2	0.1	0.2	-0.1	0.1		1434
IND	0.0	-0.2+	-0.2	0.2*	-0.6*	-0.5*	-0.2	-0.4	2507
IRQ		0.0			0.1	-0.3	-0.2	-0.2	947
JOR	0.0	0.1	-0.1	0.1	-0.0	-0.3			1124
KAZ	0.0	-0.5*	-0.5*	-0.1	-0.2	-0.5	-0.4*	-0.6*	1443
KGZ	0.0	-0.1	-0.2	-0.1	0.1		-0.2	-0.0	1225
LBN	0.0	-0.3	-0.4	-0.2	0.5	-0.3	-0.2	0.0	692
MEX	0.0	0.1	-0.1	0.0	-0.2	-0.1	-0.1	-0.2	1811
MYS	0.0	-0.8	-1.7+	-0.7	-0.9	-1.1	-1.1	-1.9*	390
NGA	0.0	0.4	-0.0	0.6+	0.3	0.1	0.2	0.4	1576
NLD		0.0	-1.2*	-0.6*	-0.6*	-0.7*	-0.6*	-0.5+	1448
NZL	0.0		-0.1	0.1	-0.1	0.0	-0.0		408
PER	0.0	-0.1	-0.5	0.1	0.1	0.3	0.4*	-0.7	1018
PHL		0.0		-1.2	0.4	0.7	0.6	0.5	1142
POL	0.0	-0.1	0.1	0.7+	-0.2	0.2	-0.0	-0.2	793
ROU	0.0	-0.6	-0.6	-0.9*	-0.4	-1.0*	-0.7+	-0.5	1323
RUS	0.0	0.5*	-0.0	-0.1	-0.1	0.3	0.1	0.2	1665
RWA		0.0	-0.9*	-0.6*	-0.5*	-0.7*	-0.5*	-0.3	1251
SVN	0.0	0.4*	0.3+	1.0*	0.4+	0.5	0.0	-0.4	807
SWE	0.0	-1.4*	-0.3	-0.0	-0.1	-0.2	-0.2	-0.2	981
THA	0.0	0.2	-0.1	-0.1	-0.6*	-0.2	-1.2*		922
TUN	0.0	0.4	0.4	0.4	0.4				822
UKR	0.0	0.2	-0.1	-0.3	-0.1	-0.3	-0.2	-0.0	1308
URY	0.0	-1.6*	-1.3*	-1.0+	-1.1+	-1.5*	-0.4	-1.2*	465
UZB	0.0	0.3*	0.2	0.3	-0.0	-0.5	0.3*	0.0	1179
ZAF	0.0	-0.3	0.5+	0.2	0.2	0.1			3058
ZWE	0.0	0.2	0.4+	-0.1	0.5*	0.2	0.2	0.3	1478

* p<0.05, + p<0.1;
robust std err

Table 16: exT-4