Hey! Cities! Leave Them Kids Alone!*
(Urban Adolescents Have Lower Life Satisfaction and Eudamonia)

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strong effects! on the whole, about 0.5 on 1-10 scale, and for some countries close to 1! Not just cognitive life satisfaction, but also rarely studied Eudamonia. By studying adolescents, we are able to refute self-sorting counterarguments, i.e., that cities do not produce unhappiness but unhappy people move to cities–adolescents in general do not move, but are born into a place.

Happiness may not be the ultimate goal for adults (but duty, service, doing the right thing, etc), but what else we want for kids if not happiness. And what else kids want themselves if not happiness. Findings should be of interest to policymakers, administrators, schools, parents–to achieve greater happiness for the kids, kids should experience more urbanity or rurality?

We know that adults tend to be less happy in cities across the world (except in the poorest nations such as Sub-Saharan Africa) (Okulicz-Kozaryn and Valente 2021). But we do not know about the children.

Theory and Mechanisms of Urban Unhappiness

Genes determine about half of SWB (Schnittker 2008, Lykken and Tellegen 1996, Brooks 2013). Humans have not evolved for city life among thousands of people densely packed together in an artificial setting, a city. Some animals such as ants or bees may thrive at a high density, but human nature is unlike that of bees: by one estimate we're 90% chimp and only 10% bee (Haidt 2012). For over 95% of human evolutionary history there were no cities–hunters-gatherers lived in bands of 50-80 (Maryanski and Turner 1992).

Ingroup preference or homophily ("love of the same") theory states that a human has a preference for other humans like her (McPherson et al. 2001, Tajfel 1982, Tajfel et al. 1971, Smelser and Alexander 1999, Putnam 2007, Fowler and Christakis 2008). A defining feature of a city is heterogeneity or diversity (Wirth 1938), which accordingly produces: mistrust, uneasiness, conflict, and misanthropy (Milgram 1970, Thrift 2005, Amin 2006).[1]

Livability theory (Veenhoven and Ehrhardt 1995, Veenhoven 2014, 2000) states that humans, just as other animals, have needs (such as those on Maslow hierarchy of needs (Maslow [1954] 1987)), and if those needs are satisfied, then conditions are livable and happiness follows. As opposed to evolution and homophily predicting urban unhappiness, it is unclear what livability theory predicts regarding urbanism. Some aspects of urbanism may improve livability, and hence, happiness. Cities have multiple benefits (Meyer 2013, Florida 2008, Glaeser 2011, O'Sullivan 2009), notably jobs and amenities that improve livability and happiness. But cities also do have multiple disamenities such as more congestion, crime, infectious disease spread, air, noise, and light pollutions (Bettencourt and West 2010, Bettencourt et al. 2007, Meyer 2013, Okulicz-Kozaryn 2015).[2] And those disamenities may especially affect adolescents. Urban crime (and bullying) is perhaps more of a problem for adolescents (especially females) than for adults who may be better

*The title paraphrizes Pink Floyd's song: https://www.youtube.com/watch?v=qs35t2xFqdU

[1]Yet, on the other hand, in a city there can be community, a neighborhood village, that at least in some ways can simulate a more natural habitat for a human (Fischer 1995, 1975, Jacobs [1961] 1993).

[2]Measuring it with happiness yardstick, city disadvantages outweigh city advantages–cities are less happy (at least in the developed world) (Okulicz-Kozaryn and Valente 2021).

able to insulate themselves from it[3] and cope with it. Clearly, by definition, adults have better coping mechanisms than more fragile adolescents–coping increases with age (Leipold et al. 2019).

It has been theoretized already a century ago that urbanism has a negative effect on human brains / neural processing (Simmel 1903), and it has been recently confirmed by neuroscience, including that even growing up in a city has lasting negative effects later in life (Lederbogen et al. 2011). Again adolescents are arguably more at risk than adults.

Multiple Discrepancies Theory (MDT) (Michalos 1985, 2014) states that happiness is relative and a result of multiple comparisons. Visual and social comparisons are more likely in urban areas as there are more people and more stimuli. And there is some evidence that humans tend to make upwards comparisons (Frey and Stutzer 2002) thus ending up relatively deprived (e.g., Luttmer 2005, Frank 2012). Adolescents, like adults, are likely to want to keep up with Joneses, just in slightly different ways, e.g., clothing, jewelry, parties, cars–see some examples in Frank (2012). And there are usual mechanisms, same as for adults. The more city, the less nature Okulicz-Kozaryn (2015) and nature is the key for human flourishing, maybe even more so for the children and adolescents who actually have time to experience it (Pretty 2012). Cities are the most polluted places (although they pollute least per capita) Meyer (2013), and not just air, but also light and noise polluted. Pollutions, of course, kill happiness Signoretta et al. (2019), Poon (2018), Lee (2016), Metcalfe (2016), Weinhold (2013), Rehdanz and Maddison (2008), Welsch (2005), York et al. (2003) Materialism and consumerism (and unethical behavior) are as prevalent as pollutions but arguably more overlooked and more urban (e.g., Okulicz-Kozaryn and Valente 2017, Okulicz-Kozaryn 2022, Morris et al. 2021, Wirth 1938) and materialism and consumerism are likely to result in unhappiness especially if they are on stuff and not experience and at a cost of human needs such as social connection (e.g., Frank 2012, Leonard 2010, Van Boven 2005, Burroughs and Rindfleisch 2002, Dumludag et al. 2021) (but see Wu (2020), Wang et al. (2017), Brown and Gathergood (2019, 2017)). And the smaller the place, the more homegeneity, the more trust and wellebing (Putnam 2007, Okulicz-Kozaryn and Valente 2022, Herbst and Lucio 2014, Vogt Yuan 2007).

Studying urban-rural happiness gradient in kids/adolescents has an advantage over adults. Some argue that there may be self sorting of unhappy adults into cities, i.e. it is not that cities make people unhappy, but that unhappy people move to cities. For instance, "Veenhoven (1994) argues that cities attract those already dissatisfied with their life in rural areas, and hence there could be an excess of unhappy/unsatisfied people in cities. For him, cities do not make unhappy people but attract them."(cited in Mikhaeil et al. 2024). Children/adolescents do not self-sort or move into areas, they are born into areas. The issue was somewhat addressed in Okulicz-Kozaryn and Valente (2020), which utilized the US GSS item "Which of the categories on this card comes closest to the type of place you were living in when you were 16 years old?" Here instead of asking adults to recall adolescence, we study actual adolescents, 15yo, and not just in the US, but across the world.

Happiness in Kids

TODO: write sth about happness in kids; btw looks like they used normal happiness question; not smileys

Data

We use 2018 PISA (Programme for International Student Assessment) from `https://www.oecd.org/pisa/data/2018database/`. Adolescents are 15 (several percent upto 16.3).

PISA is a large dataset for 142 countries with $> .5m$ observations. And it has a wellbeing module with dozens of SWB items. At the same time it is not widely used in the field–indeed we would like advertise PISA data for happiness and in general social indicators

[3] An adult would spend much time at work, home, or in a car, which are relatively crime free. An adolescent is arguably less able to insulate herself from neighborhood and peers, which are often infested with crime in large cities. It needs to be remebered that crime is a a city feature–all large cities have large crime problem–crime does increase extremely consistently with city size Bliss (2014), Bettencourt (2013), Bettencourt et al. (2010), Bettencourt and West (2010), Bettencourt et al. (2007).

research. We do not have any relationship with OECD or PISA and no conflict of interest.

Urbanicity is recorded in School questionnaire administered to school principals:

Which of the following definitions best describes the community in which your school is located?

- A village, hamlet or rural area (fewer than 3 000 people)
- A small town (3 000 to about 15 000 people)
- A town (15 000 to about 100 000 people)
- A city (100000 to about 1 000 000 people)
- A large city (with over 1 000 000 people). This is an advantage over widely used World Values Survey, where the top cutoff is only .5m Deb and Okulicz-Kozaryn (2023), Mikhaeil et al. (2024).

A nice feature of PISA data is that urbanicity is missing for only 5.5 percent of observations.

There are limitations. There are no measures of siblings and grandparents. We do not see a good health variable–exisiting ones are missing for vast majroity. Health is of course a key happiness predictor, but arguably less imoportant for kids as they are healthier than adults, and as age is constant there is less variability in health, too.

PISA has usual life satisfaction 0-10 measure: "Overall, how satisfied are you with your life as a whole these days?"

PISA 2018 defines meaning in life as the extent to which 15-year-olds comprehend, make sense of, or find significance in their lives (Schleicher 2019). PISA 2018 asked students whether they agree or disagree ("strongly disagree", "disagree", "agree", "strongly agree") with the following statements: "My life has clear meaning or purpose"; "I have discovered a satisfactory meaning in life"; and "I have a clear sense of what gives meaning to my life". These statements were combined to create the index of meaning in life

A big happiness killer of the youth is social media Twenge (2017, 2014). We control for internet use, and we do have specific measures how used, eg we measure social media use. We also measure out of school usage and useage "for fun"–see table 1 for all variables definitions.

Table 1: Variable definitions.

name	description
life satisfaction	"Overall, how satisfied are you with your life as a whole these days?" [0,10]
eudamonia	"Eudaemonia: meaning in life (WLE)" "PISA 2018 asked students (ST185) to report the extent to which they agree ("strongly agree", "agree", "disagree", "strongly disagree") with the following statements: "My life has clear meaning or purpose"; "I have discovered a satisfactory meaning in life"; and "I have a clear sense of what gives meaning to my life". These statements were combined to form the index of meaning in life (EUDMO). Positive values in the index indicate greater meaning in life than the average student across OECD countries." https://www.oecd-ilibrary.org/sites/0a428b07-en/index.html?itemId=/content/component/0a428b07-en [-2.1,1.7]
rural-urban	"Which of the followingdefinitions best describes the community in which your school is located?" [1 (A village, hamlet or ruralarea (fewer than 3 000 people)), 5 (A large city (with over 1 000 000 people))]
Family wealth (WLE)	"The index of family wealth (WEALTH) is based on the students' responses on whether they had the following at home: a room of their own, a link to the Internet, a dishwasher (treated as a country-specific item), a DVD player, and three other country-specific items (some items in ST20); and their responses on the numberof cellular phones, televisions, computers, cars and the rooms with a bath or shower (ST21). " NCES 2011-025U.S. DEPARTMENT OF EDUCATIONTechnical Report and User's Guide for the Program for International Student Assessment (PISA)2009 Data Files and Database with U.S. Specific Variables: https://nces.ed.gov/surveys/pisa/pdf/2011025.pdf [-7.5,4.7]
father's education	"What is the <highest level of schooling> completed by your father?"
weekday Internet use	"During a typical weekday, for how long do you use the Internet outside of school" [1 (0),7 (>6 hrs a day)]
weekend Internet use	"During a typical weekend day, for how long do you use the Internet outside of school" [1 (0),7 (>6 hrs a day)]
social networks use	"How often do you use digital devices for the following activities outside of school?" "Participating in social networks (e.g.<Facebook>, <MySpace>)." [1 (never/hardly ever),5 (every day)]
use internet for fun	"How often do you use digital devices for the following activities outside of school?" "Browsing the Internet for fun (such as watching videos, e.g.<YouTube>)" [1 (never/hardly ever),5 (every day)]

Results

It needs to be remembered that ecological variables have small effects on SWB as expected–most SWB is explained by genes (Schnittker 2008) and person level predictors (Veenhoven 2014)). The effect of urbanicity is quite large about .5 on 0-10 SWB scale. Regressions of life satisfaction on urbanicity are shown in table 2.[4] In a1-a3[5] there is a big difference between the largest cities (gt1m) and smaller areas just like for adults (Okulicz-Kozaryn 2016). But interestingly, not necessarily like adults, there is also a large gap between lt3k and 3-15k, again especially in models a1-a3, perhaps in the open country (lt3k) there are best outdoor play opportunities for the kids.

As in adults (Okulicz-Kozaryn and Valente 2021), addition of income/wealth makes results stronger–income/wealth confounds with urbanicity. In full model, a4, effect sizes are large: beta (fully standardized; not shown) for gt1m is 65 percent of wealth. In a4m and a4f we split by gender–interestingly city penaly is higher for female perhaps because females wellbeing is more affected by urban crime. Model a5 adds the 4 internet use variables in (we postpone it to the last model as the internet variables cut the sample size by

[4]We use a standard OLS regression with robust standard errors. We treat the 10-step happiness variable as continuous. Ordinal happiness 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).

[5]Not in a4 controling for country dummies.

about 200k), results are similar[6] Could it be that children in smaller places don't need as much material wealth to be happy because they have other non-costly options for entertainment. We will test this by interacting the family wealth variable with the urban/rural categories to see if the effect of material wealth on life satisfaction differs according to place (hopefully having a smaller effect on happiness in smaller places). And indeed it is the case in model a6, but then when adding country dummies the effect goes away in a7.

Table 2: OLS regressions of life satisfaction.

	a1	a2	a3	a4	a4f	a4m	a5	a6	a7
3-15k	-0.34***	-0.38***	-0.37***	-0.19***	-0.21***	-0.16***	-0.18***	-0.35***	-0.20***
15-100k	-0.37***	-0.41***	-0.41***	-0.25***	-0.30***	-0.20***	-0.22***	-0.36***	-0.25***
100k-1m	-0.44***	-0.47***	-0.49***	-0.40***	-0.45***	-0.34***	-0.36***	-0.41***	-0.39***
gt1m	-0.61***	-0.65***	-0.67***	-0.46***	-0.53***	-0.37***	-0.41***	-0.59***	-0.46***
Family wealth (WLE)		0.07***	0.05***	0.21***	0.20***	0.21***	0.25***	0.00	0.21***
female			-0.40***	-0.39***			-0.50***	-0.40***	-0.39***
father's education			-0.03***	-0.02***	-0.02***	-0.02**	-0.02***	-0.03***	-0.02***
3-15k × Family wealth (WLE)								0.00	-0.02
15-100k × Family wealth (WLE)								0.05***	0.01
100k-1m × Family wealth (WLE)								0.09***	0.03*
gt1m × Family wealth (WLE)								0.11***	-0.01
constant	7.63***	7.70***	7.97***	9.34***	9.15***	9.14***	10.08***	7.92***	9.34***
4 internet use vars	no	no	no	no	no	no	yes	no	no
country dummies	no	no	no	yes	yes	yes	yes	no	yes
N	471551	470216	452931	452931	228834	224097	250497	452931	452931
*p<0.05 **p<0.01 ***p<0.001									

[6]Actually interent use has very low correlation with urbanicity–see online appendix for details. It probably has been the case that internet was more of an urban phenomenon, but in an era of smartphones–they are ubiquitious throught degrees of urbanness and development levels.

	lt3k	3-15k	15-100k	100k-1m	gt1m	N
ALB	0.0	-0.0	-0.2*	-0.3*	-0.2	5916
ARE	0.0	-0.4*	-0.7*	-0.8*	-1.2*	16145
ARG	0.0	-0.1	-0.2	-0.3*	-0.2	9409
AUT	0.0	-0.1	0.0	-0.0	-0.4*	6090
BGR	0.0	-0.4	-0.4	-0.7*	-0.7*	4215
BIH	0.0	-0.0	-0.1	-0.3+		5901
BLR	0.0	-0.2*	-0.0	-0.4*	-0.7*	5404
BRA	0.0	-0.0	-0.2	-0.5*	-0.4+	7851
BRN	0.0	-0.1	-0.1	-0.2+		6360
CHE	0.0	-0.1	-0.1	-0.1		5114
CHL	0.0	0.8*	0.3	0.2	0.2	6009
COL	0.0	0.2	-0.1	-0.3*	-0.5*	6460
CRI	0.0	-0.2+	-0.2*	-0.5*	-0.9*	6049
CZE	0.0	0.0	0.1	-0.0	-0.5*	6198
DEU	0.0	-0.0	0.0	-0.0	0.2	3322
DOM	0.0	0.1	0.1	-0.2	-0.2	3528
ESP	0.0	-0.3*	-0.3*	-0.5*	-0.3*	31904
EST	0.0	-0.2+	0.0	-0.1		4942
FIN	0.0	-0.1	-0.0	0.1		5203
FRA	0.0	-0.0	0.1	-0.0	0.4	5007
GBR	0.0	-0.1	-0.1	-0.2	0.1	9546
GEO	0.0	0.1	-0.1	-0.3*	-0.4*	4784
GRC	0.0	-0.1	-0.4*	-0.3*	-0.4*	5948
HKG	0.0	0.4	0.4	0.1	0.2	4078
HRV	0.0	0.6	0.7+	0.5	0.3	6289
HUN	0.0	-0.3	-0.5	-0.5	-0.6*	4801
IDN	0.0	-0.1	-0.2+	-0.3*	0.2+	9950
IRL	0.0	-0.3*	-0.3*	-0.1	-0.4*	5182
ISL	0.0	-0.0	0.0	-0.1		2915
ITA	0.0	-0.1	-0.3*	-0.3*	-0.5*	10478
JOR	0.0	-0.3*	-0.5*	-0.6*	-0.4*	8090
JPN		0.0	0.2	0.1	0.1	5669
KAZ	0.0	-0.2*	-0.4*	-0.9*	-0.7*	17919
KOR	0.0	-0.9*	-0.4	-0.6*	-0.6*	6450
KSV	0.0	-0.4*	-0.4*	-0.7*		4468
LBN	0.0	0.5*	0.4*	0.5*	1.0*	3999
LTU	0.0	-0.3*	-0.1	-0.4*		6084
LUX		0.0	-0.2+	-0.2*		4465
LVA	0.0	0.1	0.1	-0.0		4675
MAC	0.0			0.1		3707
MAR	0.0	-0.2	-0.5*	-0.4*	-0.6*	4846
MDA	0.0	-0.1	-0.1	-0.4*	-0.6*	4892
MEX	0.0	-0.1	-0.2+	-0.2+	-0.3*	5811
MKD	0.0	-0.5*	-0.7*	-0.7*	-0.8*	4391
MLT	0.0	0.1	-0.1			3030
MNE	0.0	-1.3*	-1.3*	-1.4*		6138
MYS	0.0	-0.0	-0.1	-0.5*	-0.5*	5853
NLD	0.0	-0.2	-0.1	-0.2		3514
PAN	0.0	0.3+	0.1	-0.2	-0.5*	3505
PER	0.0	-0.2+	-0.1	-0.3*	-0.5*	4855
PHL	0.0	0.3*	0.1	-0.1	-0.0	6142
POL	0.0	-0.2+	-0.2*	-0.2+	0.0	5274
PRT	0.0	-0.6*	-0.6*	-0.6*	-0.6*	5265
QAT	0.0	0.0	-0.1	-0.1	-0.3+	11765
QAZ	0.0	0.5	0.6	0.2	0.6	3664
QCI	0.0	-0.2	-0.1	-0.2+	-0.1	11923
QMR	0.0	-0.7*	-0.6*	-0.7*	0.1	1885
QRT	0.0	-0.4*	-1.0*	-1.0*	-1.0*	5293
ROU	0.0	0.3	0.2	0.1	0.1	4817
RUS	0.0	-0.5*	-0.7*	-0.7*	-1.0*	6587
SAU	0.0	-0.5*	-0.4*	-0.7*	-0.8*	5452
SRB	0.0	0.3	0.6	0.4	0.2	5832
SVK	0.0	0.0	-0.1	-0.4*		5162
SVN	0.0	-0.3	-0.2	-0.2		5473
TAP	0.0	-0.1	-0.1	-0.1	-0.2	6887
THA	0.0	-0.1+	-0.3*	-0.4*	-0.6*	8279
TUR	0.0	1.2*	0.7*	0.5	0.4	6598
UKR	0.0	-0.3*	-0.5*	-0.6*	-0.9*	5632
URY	0.0	-0.1	-0.2	-0.2	-0.5*	4330
USA	0.0	-0.0	-0.2	-0.5*	-0.2	4121
VNM	0.0	-0.0	-0.2+	-0.3*	-0.6*	5191

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

Table 3: OLS regressions of life satisfaction on place size for each country separately includiOBng covariates from a4 (not shown). Only LBN and HUN marginally happier in cities lt1m

Results with sampling weights in appendix are similar.

0.1 Eudamonia

We turn to eudamonia, a rarely studied type of SWB. In table 4 different from life satisfaction, biggest hit from lt3k to 3-15k in b1-b3, and in b4 controllig for countruy dummies, there is rather a smooth gradient in b4f and b4m–females lose abot 2x more eudamonia than males going up on urbanicity.

Table 4: OLS regressions of Eudamonia.

	b1	b2	b3	b4	b4f	b4m	b5	b6	b7
3-15k	-0.09***	-0.08***	-0.08***	-0.05***	-0.06***	-0.03***	-0.04***	-0.09***	-0.06***
15-100k	-0.13***	-0.12***	-0.12***	-0.06***	-0.09***	-0.03***	-0.05***	-0.12***	-0.08***
100k-1m	-0.14***	-0.13***	-0.13***	-0.10***	-0.14***	-0.07***	-0.10***	-0.13***	-0.12***
gt1m	-0.15***	-0.13***	-0.13***	-0.13***	-0.17***	-0.08***	-0.11***	-0.12***	-0.15***
Family wealth (WLE)		-0.02***	-0.02***	0.06***	0.05***	0.06***	0.07***	-0.02***	0.07***
female			-0.07***	-0.07***			-0.12***	-0.07***	-0.07***
father's education			0.01***	0.01***	0.01***	0.00	0.01***	0.01***	0.01***
3-15k × Family wealth (WLE)								-0.01***	-0.01**
15-100k × Family wealth (WLE)								-0.01*	-0.01***
100k-1m × Family wealth (WLE)								0.01	-0.02***
gt1m × Family wealth (WLE)								0.03***	-0.03***
constant	0.27***	0.24***	0.27***	0.74***	0.71***	0.69***	0.97***	0.27***	0.75***
4 internet use vars	no	no	no	no	no	no	yes	no	no
country dummies	no	no	no	yes	yes	yes	yes	no	yes
N	483,844	482,944	465,568	465,568	236,002	229,566	264,857	465,568	465,568
*p<0.05 **p<0.01 ***p<0.001									

And like with life satisfaction in a5 controling for internet use does not change gt1m coefficent significantly in b5. Urban penalty of about .1-.15 is substantial as eduamonia ranges -2.1 to 1.7 with IQR -.6 to .8. In b7 unexpectedly wealth matters less in large cities.

In table 5 urban eudamonia penalty is less clear than life satisfaction–while most countries do have urban penalty, there is a handful with urban eudamonic premium.

	lt3k	3-15k	15-100k	100k-1m	gt1m	N
ALB	0.0	-0.0	-0.1	-0.1*	-0.1*	5940
ARE	0.0	-0.1*	-0.3*	-0.3*	-0.5*	16256
ARG	0.0	0.0	0.0	0.0	0.0	9071
AUS	0.0	-0.1	-0.0	-0.1	-0.0	10845
AUT	0.0	0.1+	0.1+	-0.0	-0.0	5946
BEL		0.0	0.0	-0.1	0.2*	4134
BGR	0.0	-0.0	0.1	-0.0	-0.1	4065
BIH	0.0	-0.0	0.0	-0.0		5836
BLR	0.0	-0.0	-0.0	-0.1*	-0.2*	5347
BRA	0.0	0.2*	0.1+	0.1	0.1+	7662
BRN	0.0	-0.1*	-0.1*	-0.1*		6195
CHE	0.0	0.0	-0.1+	-0.1		4867
CHL	0.0	0.1	-0.0	-0.1	-0.2+	5741
COL	0.0	0.0	0.0	0.0	-0.1+	6469
CRI	0.0	-0.0	-0.1+	-0.1*	-0.3*	6039
CZE	0.0	-0.1	-0.1+	-0.2*	-0.2*	6066
DEU	0.0	-0.1	-0.1	-0.1	-0.0	3127
DNK	0.0	0.1*	0.2*	0.2*	0.2*	5026
DOM	0.0	-0.1	0.0	-0.0	-0.1	3016
ESP	0.0	-0.0	-0.0	-0.1*	-0.0	30916
EST	0.0	0.0	0.1*	0.0		4923
FIN	0.0	0.0	0.0	0.1		5103
FRA	0.0	-0.1	-0.2*	-0.2*	-0.3*	4871
GBR	0.0	-0.0	-0.0	-0.1	0.2*	9358
GEO	0.0	-0.0	0.1+	-0.1	-0.1*	4524
GRC	0.0	0.0	-0.1	-0.1*	-0.1+	5911
HKG	0.0	-0.2	-0.2	-0.2*	-0.2*	4087
HRV	0.0	0.0	0.1	-0.1	-0.1	6179
HUN	0.0	0.0	-0.1	-0.1	-0.2*	4761
IDN	0.0	0.0	0.0	-0.0	0.1*	10289
IRL	0.0	-0.1*	-0.1*	-0.0	-0.1*	5090
ISL	0.0	-0.1+	0.0	-0.1		2854
ITA	0.0	-0.2*	-0.2*	-0.2*	-0.2*	10203
JOR	0.0	-0.1	-0.1	-0.1+	-0.1*	8095
JPN		0.0	-0.1	-0.1	-0.1	5636
KAZ	0.0	-0.1*	-0.2*	-0.2*	-0.2*	17553
KOR	0.0	-0.5*	-0.4*	-0.4*	-0.3*	6444
KSV	0.0	-0.0	-0.0	-0.1+		4349
LBN	0.0	0.1+	0.1+	0.1	0.1+	4069
LTU	0.0	-0.1*	-0.1*	-0.2*		5986
LUX		0.0	0.0	-0.1+		4348
LVA	0.0	-0.1+	-0.1*	-0.1*		4590
MAC	0.0			0.3		3718
MAR	0.0	-0.0	0.0	0.0	-0.0	4489
MDA	0.0	-0.1+	-0.2*	-0.2*	-0.3*	4886
MEX	0.0	0.1*	0.1	0.1*	0.1	5525
MKD	0.0	0.1	0.1	0.1	0.2	4399
MLT	0.0	0.1	0.0			2978
MNE	0.0	0.7	0.7	0.6		6025
MYS	0.0	-0.0	0.1+	-0.1*	-0.2*	5952
NLD	0.0	0.1	0.1	0.2		3480
PAN	0.0	0.2*	0.2*	0.1	-0.0	3052
PER	0.0	-0.1	-0.0	-0.1	-0.1	4484
PHL	0.0	-0.1	-0.0	-0.0	-0.0	6788
POL	0.0	-0.1	-0.1*	-0.1*	-0.0	5282
PRT	0.0	-0.0	-0.0	-0.1	-0.2	5200
QAT	0.0	0.0	-0.1*	-0.1*	-0.2*	11656
QAZ	0.0	-0.4+	-0.3	-0.5*	-0.3+	3516
QCI	0.0	-0.1+	-0.1+	-0.1*	-0.1*	11938
QMR	0.0	-0.1	-0.1	-0.1	0.4*	1827
QRT	0.0	-0.2*	-0.2*	-0.3*	-0.3*	5206
ROU	0.0	-0.1	-0.1*	-0.2*	-0.1+	4771
RUS	0.0	-0.2*	-0.3*	-0.2*	-0.3*	6410
SAU	0.0	-0.1	0.0	0.0	0.0	5268
SRB	0.0	-0.2*	-0.1*	-0.1*	-0.2*	5632
SVK	0.0	-0.1+	-0.1*	-0.3*		5066
SVN	0.0	-0.0	-0.0	-0.0		5432
TAP	0.0	0.0	0.0	-0.1	-0.1	6959
THA	0.0	-0.0	-0.1*	-0.1*	-0.1*	8389
TUR	0.0	0.2	0.1	0.1	0.1	6706
UKR	0.0	-0.1*	-0.2*	-0.2*	-0.3*	5546
URY	0.0	0.0	0.0	0.2+	-0.0	3899
USA	0.0	0.1	-0.0	-0.1	0.0	4086
VNM	0.0	0.0	-0.1	-0.1*	-0.1*	5216

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

Table 5: OLS regressions of Eudamonia on place size for each country separately including covariates from b4 (not shown). Most countries eudamoinc urban penalty, but a handful of countries have premium

Results with sampling weights in appendix are weaker.

Conclusion and discussion

Findings should be of interest to policymakers, administrators, schools, parents. To achieve greater happiness for the kids, kids should enjoy more rurality.

Happiness may not be the ultimate goal for adults (eg duty, service, doing the right thing), but what else we want for kids if not happiness. Rurality arguably is a more fertile ground for spontaneity and freedom–in rural can just go out there and hang out and have fun, fewer rules and restrictions; city can weigh down especially on kids and elderly with its setup, rules and complexity. City is really made for working age adults to do work and consume. Kids and elderly are neither productive for jobs nor fit for many city amenities like airports, universities, etc. (but are for others like entertainment, hospitals etc). We have cities and density to produce stuff (O'Sullivan 2009), like in Engels' Manchester, where a capitalist crammed factory workers to produce.[7] Now factories are largely gone to China, and what was left of productive city was office. But COVID shook that up too. So now really the main thing is amenities like airports, hospitals, etc.

Wealth does matter a lot in the city, it's totally different life at top and bottom in the city. Still when accounting for country dummies, we do not find differential positive effect of wealth in cities on life satisfaction, and if anything negative with eudamonia.

We would like to take into account granparents and siblings, but we do not have such measures in 2018 PISA. In cities, most people tend to leave with their nuclear family, far away from relatives and both parents usually work leaving their kids at day care or with nannies who arent related to them. Parents spend less time with their kids as a result. Whereas in smaller places, its possible that the kids have more contact and spend more time with at least one of the parents (main caregiver) or with grandparents and other extended relatives. Also future research should be controlling for number of siblings. Kids having other kids around to interact and play with might be a factor too. Finally, arguably after the pandemic adolescents in cities became even more unhappy just as adults did **¡¡blind for peer-review¿¿**.

References

Amin, A. (2006): "The good city," *Urban studies*, 43, 1009–1023.

Bettencourt, L. and G. West (2010): "A unified theory of urban living," *Nature*, 467, 912–913.

Bettencourt, L. M. (2013): "The origins of scaling in cities," *science*, 340, 1438–1441.

Bettencourt, L. M., J. Lobo, D. Helbing, C. Kühnert, and G. B. West (2007): "Growth, innovation, scaling, and the pace of life in cities," *Proceedings of the National Academy of Sciences*, 104, 7301–7306.

Bettencourt, L. M., J. Lobo, D. Strumsky, and G. B. West (2010): "Urban scaling and its deviations: Revealing the structure of wealth, innovation and crime across cities," *PloS one*, 5, e13541.

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.

Bliss, L. (2014): "Moving Toward an Evolutionary Theory of Cities," .

Brooks, A. C. (2013): "Formula for Happiness," *The New York Times*.

[7] In a rather deep hole, in a curve of the Medlock and surrounded on all four sides by tall factories and high embankments, covered with buildings, stand two groups of about two hundred cottages, built chiefly back to back, in which live about four thousand human beings, most of them Irish. The cottages are old, dirty, and of the smallest sort, the streets uneven, fallen into ruts and in part without drains or pavement; masses of refuse, offal and sickening filth lie among standing pools in all directions; the atmosphere is poisoned by the effluvia from these, and laden and darkened by the smoke of a dozen tall factory chimneys. A horde of ragged women and children swarm about here, as filthy as the swine that thrive upon the garbage heaps and in the puddles. In short, the whole rookery furnishes such a hateful and repulsive spectacle as can hardly be equalled in the worst court on the Irk. The race that lives in these ruinous cottages, behind broken windows, mended with oilskin, sprung doors, and rotten door-posts, or in dark, wet cellars, in measureless filth and stench, in this atmosphere penned in as if with a purpose, this race must really have reached the lowest stage of humanity. (Engels [1845] 1987)

Brown, G. D. and J. Gathergood (2017): "Consumption and life satisfaction: a micro panel data study," *Available at SSRN 2962837*.

Brown, G. D. A. and J. Gathergood (2019): "Consumption Changes, Not Income Changes, Predict Changes in Subjective Well-Being," *Social Psychological and Personality Science*, 0, 1948550619835215.

Burroughs, J. E. and A. Rindfleisch (2002): "Materialism and well-being: A conflicting values perspective," *Journal of Consumer research*, 29, 348–370.

Deb, S. and A. Okulicz-Kozaryn (2023): "Exploring the association of urbanisation and subjective well-being in India," *Cities*, 132, 104068.

Dumludag, D., O. Gokdemir, and R. Veenhoven (2021): "Does Spending Make Us Happy? The Role of Consumption on Life Satisfaction," .

Engels, F. ([1845] 1987): *The condition of the working class in England*, Penguin, New York NY.

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.

Fischer, C. S. (1975): "Toward a subcultural theory of urbanism," *American Journal of Sociology*, 80, 1319–1341.

——— (1995): "The subcultural theory of urbanism: A twentieth-year assessment," *American Journal of Sociology*, 543–577.

Florida, R. (2008): *Who's your city?*, Basic Books, New York NY.

Fowler, J. H. and N. A. Christakis (2008): "Dynamic Spread of Happiness in a Large Social Network: Longitudinal Analysis Over 20 Years in the Framingham Heart Study," *British Medical Journal, Vol. 3, January 09*.

Frank, R. (2012): *The Darwin economy: Liberty, competition, and the common good*, Princeton University Press, Princeton NJ.

Frey, B. S. and A. Stutzer (2002): "What Can Economists Learn from Happiness Research?" *Journal of Economic Literature*, 40, 402–435.

Glaeser, E. (2011): *Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier*, Penguin Press, New York NY.

Haidt, J. (2012): *The righteous mind: Why good people are divided by politics and religion*, Vintage.

Herbst, C. and J. Lucio (2014): "Happy in the Hood? The Impact of Residential Segregation on Self-Reported Happiness," *IZA Discussion Paper*.

Jacobs, J. ([1961] 1993): *The death and life of great American cities*, Random House, New York NY.

Lederbogen, F., P. Kirsch, L. Haddad, F. Streit, H. Tost, P. Schuch, S. Wust, J. C. Pruessner, M. Rietschel, M. Deuschle, and A. Meyer-Lindenberg (2011): "City living and urban upbringing affect neural social stress processing in humans," *Nature*, 474.

Lee, R. (2016): "Air Pollution Is Fourth Leading Cause Of Death Worldwide: Polluted Air Claims 5.5 Million Lives Per Year," *The New York Times*.

Leipold, B., M. Munz, and A. Michele-Malkowsky (2019): "Coping and resilience in the transition to adulthood," *Emerging Adulthood*, 7, 12–20.

Leonard, A. (2010): *The story of stuff: How our obsession with stuff is trashing the planet, our communities, and our health-and a vision for change*, Simon and Schuster.

Luttmer, E. F. P. (2005): "Neighbors as Negatives: Relative Earnings and Well-Being," *Quarterly Journal of Economics*, 120, 963–02.

Lykken, D. and A. Tellegen (1996): "Happiness is a Stochastic Phenomenon," *Psychological Science*, 7, 186–189.

Maryanski, A. and J. H. Turner (1992): *The social cage: Human nature and the evolution of society*, Stanford University Press.

Maslow, A. ([1954] 1987): *Motivation and personality*, Longman, 3 ed.

McPherson, M., L. Smith-Lovin, and J. M. Cook (2001): "Birds of a feather: Homophily in social networks," *Annual Review of Sociology*, 415–444.

Metcalfe, J. (2016): "The Worldwide Light-Pollution Plague," *City Lab*.

Meyer, W. B. (2013): *The Environmental Advantages of Cities: Countering Commonsense Antiurbanism*, MIT Press, Cambridge MA.

Michalos, A. (1985): "Multiple discrepancies theory (MDT)," *Social Indicators Research*, 16, 347–413.

Michalos, A. C. (2014): "An Interview with Alex C. Michalos," *International journal of wellebing*, 106–110.

Mikhaeil, E., A. Okulicz-Kozaryn, and R. R. Valente (2024): "Subjective Well-being and Urbanization in Egypt," *Cities*.

Milgram, S. (1970): "The experience of living in cities," *Science*, 167, 1461–1468.

Morris, E. A., D. Pfeiffer, and J. Gaber (2021): "Are people in bigger cities less ethical human beings? Evidence on urban living and moral values," *Cities*, 117, 103327.

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.

Okulicz-Kozaryn, A. (2015): *Happiness and Place. Why Life is Better Outside of the City.*, Palgrave Macmillan, New York NY.

——— (2016): "Unhappy metropolis (when American city is too big)," *Cities*.

——— (2022): "Materialism and immorality: more urban than rural?" *Societies*, 12, 123.

Okulicz-Kozaryn, A. and R. Valente (2020): "The perennial dissatisfaction of urban upbringing," *Cities*.

Okulicz-Kozaryn, A. and R. R. Valente (2017): "The Unconscious Size Fetish: Glorification and Desire of the City," in *Psychoanalysis and the GlObal*, ed. by I. Kapoor, University of Nebraska Press.

——— (2021): "Urban unhappiness is common," *Cities*, 103368.

——— (2022): "Misanthropolis: Do cities promote misanthropy?" *Cities*, 131, 103945.

O'Sullivan, A. (2009): *Urban economics*, McGraw-Hill.

Poon, L. (2018): "More Lights, More Diseases?" *City Lab*.

Pretty, J. (2012): *The earth only endures: On reconnecting with nature and our place in it*, Routledge, New York NY.

Putnam, R. (2007): "E pluribus unum: Diversity and community in the twenty-first century," *Scandinavian Political Studies*, 30, 137–174.

Rehdanz, K. and D. Maddison (2008): "Local environmental quality and life-satisfaction in Germany," *Ecological economics*, 64, 787–797.

Schleicher, A. (2019): "PISA 2018: Insights and interpretations." *oecd Publishing*.

Schnittker, J. (2008): "Happiness and Success: Genes, Families, and the Psychological Effects of Socioeconomic Position and Social Support," *American Journal of Sociology*, 114, S233–S259.

Signoretta, P. E., V. Buffel, and P. Bracke (2019): "Mental wellbeing, air pollution and the ecological state," *Health & place*, 57, 82–91.

Simmel, G. (1903): "The metropolis and mental life," *The Urban Sociology Reader*, 23–31.

Smelser, N. J. and J. C. Alexander (1999): *Diversity and its discontents: cultural conflict and common ground in contemporary American society*, Princeton University Press, Princeton NJ.

Tajfel, H. (1982): "Social psychology of intergroup relations," *Annual review of psychology*, 33, 1–39.

Tajfel, H., M. G. Billig, R. P. Bundy, and C. Flament (1971): "Social categorization and intergroup behaviour," *European journal of social psychology*, 1, 149–178.

Thrift, N. (2005): "But malice aforethought: cities and the natural history of hatred," *Transactions of the institute of British Geographers*, 30, 133–150.

Twenge, J. (2017): "Have Smartphones Destroyed a Generation? More comfortable online than out partying, post-Millennials are safer, physically, than adolescents have ever been. But they're on the brink of a mental-health crisis." *The Atlantic*.

Twenge, J. M. (2014): *Generation Me: Why Today's Young Americans Are More Confident, Assertive, Entitled–and More Miserable Than Ever Before*, Simon and Schuster.

Van Boven, L. (2005): "Experientialism, materialism, and the pursuit of happiness," *Review of general psychology*, 9, 132–142.

Veenhoven, R. (2000): "The four qualities of life," *Journal of happiness studies*, 1, 1–39.

——— (2014): "Livability Theory," *Encyclopedia of Quality of Life and Well-Being Research*, 3645–3647.

Veenhoven, R. and J. Ehrhardt (1995): "The Cross-National Pattern of Happiness: Test of Predictions Implied in Three Theories of Happiness," *Social Indicators Research*, 34, 33–68.

Vogt Yuan, A. S. (2007): "Racial composition of neighborhood and emotional well-being," *Sociological Spectrum*, 28, 105–129.

Wang, H., Z. Cheng, and R. Smyth (2017): "Consumption and Happiness," *The Journal of Development Studies*, 1–17.

Weinhold, D. (2013): "The Happiness-Reducing Costs of Noise Pollution," *Journal of regional science*, 53, 292–303.

Welsch, H. (2005): "Environment and happiness: Valuation of air pollution using life satisfaction data," *Ecological Economics*, 58, 801–813.

Wirth, L. (1938): "Urbanism as a Way of Life," *American Journal of Sociology*, 44, 1–24.

Wu, F. (2020): "An examination of the effects of consumption expenditures on life satisfaction in Australia," *Journal of Happiness Studies*, 21, 2735–2771.

York, R., E. A. Rosa, and T. Dietz (2003): "Footprints on the earth: The environmental consequences of modernity," *American Sociological Review*, 279–300.

ONLINE APPENDIX

[note: this section will NOT be a part of the final version of the manuscript, but will be available online instead]

	lt3k	3-15k	15-100k	100k-1m	gt1m	N
ALB	0.0	-0.0	-0.2*	-0.2*	-0.1	6002
ARE	0.0	-0.4*	-0.7*	-0.8*	-1.1*	16355
ARG	0.0	0.0	-0.1	-0.2	-0.1	10442
AUT	0.0	-0.1	0.0	-0.0	-0.5*	6466
BGR	0.0	-0.1	0.0	-0.2	-0.3	4403
BIH	0.0	-0.0	-0.1	-0.2		5982
BLR	0.0	-0.1	0.1	-0.3*	-0.6*	5712
BRA	0.0	-0.1	-0.2	-0.5*	-0.4*	8385
BRN	0.0	-0.1	-0.0	-0.2		6528
CHE	0.0	-0.2+	-0.2	-0.3+		5441
CHL	0.0	0.5*	0.3	0.2	0.3	6442
COL	0.0	0.2	-0.1	-0.3*	-0.6*	6633
CRI	0.0	-0.2*	-0.1+	-0.4*	-0.9*	6420
CZE	0.0	-0.0	-0.1	-0.1	-0.4*	6487
DEU	0.0	0.0	0.0	-0.0	0.1	3839
DOM	0.0	0.1	0.1	-0.1	-0.2	3694
ESP	0.0	-0.3*	-0.3*	-0.4*	-0.4*	33374
EST	0.0	-0.2+	-0.0	-0.0		5129
FIN	0.0	-0.1	0.0	0.1		5384
FRA	0.0	0.1	0.2	0.1	0.4+	5312
GBR	0.0	-0.1	-0.2	-0.2*	-0.2	11090
GEO	0.0	0.2+	0.1	-0.1	-0.2	4929
GRC	0.0	-0.0	-0.3*	-0.3*	-0.3*	5995
HKG	0.0	0.3	0.3	0.1	0.1	4205
HRV	0.0	0.7	0.8+	0.5	0.4	6376
HUN	0.0	-0.2	-0.4	-0.4	-0.4	4926
IDN	0.0	-0.1	-0.1	-0.2*	0.3*	10131
IRL	0.0	-0.3*	-0.3*	-0.1	-0.5*	5422
ISL	0.0	0.0	0.1	-0.0		3011
ITA	0.0	-0.1	-0.3*	-0.4*	-0.6*	10745
JOR	0.0	-0.1	-0.2	-0.2	0.0	8395
JPN		0.0	0.3+	0.2	0.2	6030
KAZ	0.0	-0.2*	-0.5*	-0.9*	-1.1*	18736
KOR	0.0	-0.9*	-0.3	-0.6*	-0.5+	6511
KSV	0.0	-0.3*	-0.3*	-0.6*		4522
LBN	0.0	0.6*	0.6*	0.6*	1.5*	4390
LTU	0.0	-0.2*	-0.1	-0.4*		6568
LUX		0.0	-0.1	-0.0		5010
LVA	0.0	0.1	0.2	0.1		4928
MAC	0.0			0.3		3746
MAR	0.0	-0.2	-0.4*	-0.3*	-0.4*	5116
MDA	0.0	0.1	0.1	-0.0	0.1	5232
MEX	0.0	-0.0	-0.1	0.1	-0.0	5961
MKD	0.0	-0.5*	-0.6*	-0.6*	-0.8*	4652
MLT	0.0	0.0	-0.2			3142
MNE	0.0	-1.3*	-1.3*	-1.4*		6253
MYS	0.0	-0.0	-0.0	-0.4*	-0.4*	5880
NLD	0.0	-0.1	-0.1	-0.2		3617
PAN	0.0	0.3+	0.1	-0.1	-0.5*	3775
PER	0.0	-0.2*	-0.2*	-0.3*	-0.6*	4926
PHL	0.0	0.5*	0.2+	0.1	0.2	6299
POL	0.0	-0.2+	-0.2*	-0.2	-0.0	5463
PRT	0.0	-0.6*	-0.6*	-0.6*	-0.6*	5477
QAT	0.0	0.0	-0.0	-0.1	-0.1	12127
QAZ	0.0	0.6	0.8	0.4	0.9	3719
QCI	0.0	-0.2	-0.1	-0.2	-0.0	11943
QMR	0.0	-0.8*	-0.6*	-0.7*	0.0	1942
QRT	0.0	-0.3*	-0.9*	-0.9*	-0.9*	5525
ROU	0.0	0.4*	0.4*	0.4*	0.4+	4948
RUS	0.0	-0.5*	-0.6*	-0.6*	-0.8*	6866
SAU	0.0	-0.5*	-0.4*	-0.7*	-0.8*	5794
SRB	0.0	0.4	0.7	0.6	0.4	5918
SVK	0.0	0.1	-0.1	-0.3*		5275
SVN	0.0	-0.3	-0.2	-0.2		5550
TAP	0.0	-0.1	-0.1	-0.1	-0.3	6962
THA	0.0	-0.1+	-0.3*	-0.4*	-0.6*	8357
TUR	0.0	1.1*	0.7*	0.5+	0.6+	6643
UKR	0.0	-0.2+	-0.3*	-0.4*	-0.6*	5898
URY	0.0	0.0	-0.1	-0.0	-0.2	4652
USA	0.0	0.0	-0.1	-0.4*	-0.2	4252
VNM	0.0	0.0	-0.2	-0.2*	-0.6*	5291

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

Table 6: OLS regressions of SWB on place size only (bivariate; a1) for each country separately.

1 internet use

Urbanicity has very low positive correlation with internet use

```
. d city int*
Variable      Storage   Display    Value
    name         type    format    label      Variable label
------------------------------------------------------------------------------
city            byte    %9.0g      city       RECODE of SC001Q01TA (Which of
                                                the following definitions best
```

```
                                                  describes the comm
intWday         byte    %2.0f      labels341
                                                  During a typical weekday, for how
                                                    long do you use the Internet
                                                    outside of school
intWend         byte    %2.0f      labels342
                                                  On a typical weekend day, for how
                                                    long do you use the Internet
                                                    outside of school
intSN           byte    %2.0f      labels374
                                                  Use digital devices outside of
                                                    school: Participating in Social
                                                    Networks (e.g. <F
intFun          byte    %2.0f      labels376
                                                  Use digital devices outside of
                                                    school: Browsing the Internet
                                                    for fun (such as wa

. pwcorr city int*
             |     city  intWday  intWend    intSN   intFun
-------------+------------------------------------------
        city |   1.0000
     intWday |   0.0488   1.0000
     intWend |   0.0720   0.7251   1.0000
       intSN |   0.0569   0.2594   0.2792   1.0000
      intFun |   0.0866   0.3066   0.3479   0.5249   1.0000
```

.9

Using some internet is good for an adolescent, but using a lot on the weekend is bad

```
reg ls i.city wealth fem faEd i.intWday i.intWend, robust
Linear regression                               Number of obs     =    266,770
                                                F(19, 266750)     =     340.73
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0238
                                                Root MSE          =     2.5032
------------------------------------------------------------------------------
             |               Robust
          ls | Coefficient  std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
        city |
      3-15k  |  -.4296694   .0196451   -21.87   0.000    -.4681732   -.3911656
    15-100k  |  -.4853962   .0185923   -26.11   0.000    -.5218366   -.4489557
    100k-1m  |  -.5295389   .0186871   -28.34   0.000    -.5661651   -.4929126
       gt1m  |  -.7087667   .0212434   -33.36   0.000    -.7504032   -.6671301
             |
      wealth |    .058285   .0053595    10.87   0.000     .0477805    .0687896
         fem |  -.4855582   .0097124   -49.99   0.000    -.5045942   -.4665223
        faEd |  -.0238479   .0051004    -4.68   0.000    -.0338445   -.0138513
             |
     intWday |
1-30 minu..  |   .1687749   .0381252     4.43   0.000     .0940505    .2434993
31-60 min..  |   .1174412   .0369693     3.18   0.001     .0449823    .1899001
Between 1..  |   .0837295   .0347786     2.41   0.016     .0155643    .1518946
Between 2..  |  -.0017767   .0345739    -0.05   0.959    -.0695406    .0659872
Between 4..  |  -.0369376   .0357303    -1.03   0.301    -.1069681    .0330928
More than..  |   .0083298   .0365747     0.23   0.820    -.0633557    .0800153
             |
     intWend |
1-30 minu..  |    .241415    .046509     5.19   0.000     .1502586    .3325714
31-60 min..  |    .296678   .0448001     6.62   0.000     .2088711     .384485
Between 1..  |   .2990314    .042022     7.12   0.000     .2166694    .3813934
Between 2..  |      .1492   .0414603     3.60   0.000     .0679389     .230461
Between 4..  |  -.0009641   .0418857    -0.02   0.982     -.083059    .0811307
More than..  |  -.2383889   .0423359    -5.63   0.000    -.3213662   -.1554117
             |
       _cons |   7.966607   .0429739   185.38   0.000     7.882379    8.050834
------------------------------------------------------------------------------
```

.9

And below another robustness check, using clustered std err on school and school level covariates–results similar

```
. d STRATIO SCHLTYPE CLSIZE EDUSHORT STAFFSHORT STUBEHA TEACHBEHA
Variable      Storage   Display    Value
    name         type    format    label      Variable label
------------------------------------------------------------------------------
STRATIO         double  %10.0g                Student-Teacher ratio
SCHLTYPE        byte    %10.0g                School Ownership
CLSIZE          byte    %10.0g                Class Size
EDUSHORT        double  %10.0g                Shortage of educational material
                                                (WLE)
STAFFSHORT      double  %10.0g                Shortage of educational staff
                                                (WLE)
STUBEHA         double  %10.0g                Student behaviour hindering
                                                learning (WLE)
TEACHBEHA       double  %10.0g                Teacher behaviour hindering
                                                learning (WLE)

. reg ls i.city wealth i.gender faEd i.Region STRATIO SCHLTYPE CLSIZE EDUSHORT
>  STAFFSHORT STUBEHA TEACHBEHA , robust cluster(CNTSCHID)
Linear regression                               Number of obs     =    389,098
                                                F(131, 15010)     =     129.21
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0686
                                                Root MSE          =      2.488
                          (Std. err. adjusted for 15,011 clusters in CNTSCHID)
------------------------------------------------------------------------------
```

```
             |               Robust
          ls | Coefficient  std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
        city |
      3-15k  |      -0.19       0.02    -8.07    0.00        -0.24       -0.14
    15-100k  |      -0.26       0.02   -11.18    0.00        -0.31       -0.22
    100k-1m  |      -0.41       0.02   -16.91    0.00        -0.45       -0.36
       gt1m  |      -0.44       0.03   -16.02    0.00        -0.49       -0.38
             |
      wealth |       0.21       0.01    38.32    0.00         0.20        0.22
             |
      gender |
        Male |       0.40       0.01    42.56    0.00         0.38        0.42
        faEd |      -0.02       0.00    -5.15    0.00        -0.03       -0.01
             |
      Region | -----COUNTRY DUMMIES OMITTED HERE---------
             |
     STRATIO |       0.00       0.00     0.71    0.48        -0.00        0.00
    SCHLTYPE |       0.06       0.01     5.75    0.00         0.04        0.09
      CLSIZE |       0.00       0.00     2.39    0.02         0.00        0.00
    EDUSHORT |       0.01       0.01     2.07    0.04         0.00        0.03
  STAFFSHORT |      -0.01       0.01    -1.07    0.29        -0.02        0.01
     STUBEHA |       0.01       0.01     1.15    0.25        -0.01        0.02
   TEACHBEHA |      -0.02       0.01    -2.34    0.02        -0.03       -0.00
       _cons |       8.66       0.07   117.75    0.00         8.52        8.81
------------------------------------------------------------------------------
```

.9

Finally sampling weights–results similar for life satisfaction, but weaker for eudamonia. Also see https://www.statalist.org/forums/forum/general-stata-discussion/general/1435058-should-i-apply-weights-when-i-use-the-tabulate-command-oe and https://largescaleassessmentsineducation.springeropen.com/articles/10.1186/s40536-021-00099-0

```
. reg ls i.city, robust  //it is huuuge yay!
Linear regression                               Number of obs     =    471,551
                                                F(4, 471546)      =     398.44
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0034
                                                Root MSE          =     2.5877
------------------------------------------------------------------------------
             |               Robust
          ls | Coefficient  std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
        city |
      3-15k  |      -0.34       0.01   -23.16    0.00        -0.37       -0.32
    15-100k  |      -0.37       0.01   -26.19    0.00        -0.40       -0.34
    100k-1m  |      -0.44       0.01   -30.78    0.00        -0.47       -0.41
       gt1m  |      -0.61       0.02   -38.86    0.00        -0.64       -0.58
             |
       _cons |       7.63       0.01   624.06    0.00         7.61        7.66
------------------------------------------------------------------------------
.
end of do-file
. do "/tmp/SD17808.000000"
. reg ls i.city [pw=W_FSTUWT], robust
(sum of wgt is 24,137,093.50498)
Linear regression                               Number of obs     =    471,551
                                                F(4, 471546)      =     107.54
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0060
                                                Root MSE          =      2.611
------------------------------------------------------------------------------
             |               Robust
          ls | Coefficient  std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
        city |
      3-15k  |      -0.31       0.04    -7.59    0.00        -0.39       -0.23
    15-100k  |      -0.48       0.04   -13.33    0.00        -0.56       -0.41
    100k-1m  |      -0.61       0.04   -16.85    0.00        -0.68       -0.54
       gt1m  |      -0.68       0.04   -18.14    0.00        -0.76       -0.61
             |
       _cons |       7.57       0.03   235.80    0.00         7.51        7.64
------------------------------------------------------------------------------
.
end of do-file
. do "/tmp/SD17808.000000"
. reg ls i.city wealth fem faEd i.Region, robust beta
Linear regression                               Number of obs     =    452,931
                                                F(128, 452802)    =     299.51
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0697
                                                Root MSE          =     2.4886
------------------------------------------------------------------------------
             |               Robust
          ls | Coefficient  std. err.      t    P>|t|                     Beta
-------------+----------------------------------------------------------------
        city |
      3-15k  |      -0.19       0.02   -12.48    0.00                   -0.03
    15-100k  |      -0.25       0.01   -17.35    0.00                   -0.04
    100k-1m  |      -0.40       0.01   -27.55    0.00                   -0.07
       gt1m  |      -0.46       0.02   -26.97    0.00                   -0.06
             |
      wealth |       0.21       0.00    48.55    0.00                    0.10
         fem |      -0.39       0.01   -52.08    0.00                   -0.07
        faEd |      -0.02       0.00    -5.06    0.00                   -0.01
             |
```

```
      Region | -----COUNTRY DUMMIES OMITTED HERE-----
       _cons |       9.34       0.03   305.46    0.00                      .
------------------------------------------------------------------------------

.
end of do-file

. do "/tmp/SD17808.000000"

. reg ls i.city wealth fem faEd i.Region [pw=W_FSTUWT], robust
(sum of wgt is 23,248,792.65115)
Linear regression                               Number of obs     =    452,931
                                                F(128, 452802)    =     252.32
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0587
                                                Root MSE          =     2.5304
------------------------------------------------------------------------------
             |               Robust
          ls | Coefficient  std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
        city |
      3-15k  |      -0.22       0.04    -5.04    0.00        -0.30       -0.13
    15-100k  |      -0.30       0.04    -7.60    0.00        -0.37       -0.22
    100k-1m  |      -0.46       0.04   -11.93    0.00        -0.54       -0.38
       gt1m  |      -0.45       0.04   -10.95    0.00        -0.53       -0.37
             |
      wealth |       0.18       0.01    17.53    0.00         0.16        0.20
         fem |      -0.32       0.02   -17.08    0.00        -0.36       -0.28
       faEd  |      -0.00       0.01    -0.13    0.90        -0.02        0.02
             |
      Region |-----COUNTRY DUMMIES OMITTED HERE-----
       _cons |       9.27       0.05   198.36    0.00         9.18        9.37
------------------------------------------------------------------------------

.
end of do-file

. do "/tmp/SD17808.000000"

. reg EUDMO i.city, robust
Linear regression                               Number of obs     =    483,844
                                                F(4, 483839)      =     242.03
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0019
                                                Root MSE          =     .97663
------------------------------------------------------------------------------
             |               Robust
       EUDMO | Coefficient  std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
        city |
      3-15k  |      -0.09       0.01   -16.55    0.00        -0.10       -0.08
    15-100k  |      -0.13       0.01   -25.09    0.00        -0.14       -0.12
    100k-1m  |      -0.14       0.01   -27.48    0.00        -0.15       -0.13
       gt1m  |      -0.15       0.01   -26.23    0.00        -0.16       -0.14
             |
       _cons |       0.27       0.00    61.12    0.00         0.26        0.28
------------------------------------------------------------------------------

.
end of do-file

. do "/tmp/SD17808.000000"

. reg EUDMO i.city [pw=W_FSTUWT], robust
(sum of wgt is 24,302,689.2416)
Linear regression                               Number of obs     =    483,844
                                                F(4, 483839)      =     121.94
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0062
                                                Root MSE          =       .955
------------------------------------------------------------------------------
             |               Robust
       EUDMO | Coefficient  std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
        city |
      3-15k  |      -0.07       0.01    -5.04    0.00        -0.09       -0.04
    15-100k  |      -0.17       0.01   -14.08    0.00        -0.20       -0.15
    100k-1m  |      -0.22       0.01   -17.58    0.00        -0.24       -0.19
       gt1m  |      -0.21       0.01   -16.79    0.00        -0.24       -0.19
             |
       _cons |       0.35       0.01    33.16    0.00         0.33        0.37
------------------------------------------------------------------------------

.
end of do-file

. do "/tmp/SD17808.000000"

. reg EUDMO i.city wealth fem faEd i.Region, robust beta
Linear regression                               Number of obs     =    465,568
                                                F(131, 465436)    =     226.40
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0575
                                                Root MSE          =     .94722
------------------------------------------------------------------------------
             |               Robust
       EUDMO | Coefficient  std. err.      t    P>|t|                     Beta
-------------+----------------------------------------------------------------
        city |
      3-15k  |      -0.05       0.01    -8.25    0.00                    -0.02
    15-100k  |      -0.06       0.01   -11.49    0.00                    -0.03
    100k-1m  |      -0.10       0.01   -19.37    0.00                    -0.05
       gt1m  |      -0.13       0.01   -20.65    0.00                    -0.05
             |
      wealth |       0.06       0.00    36.44    0.00                     0.07
         fem |      -0.07       0.00   -24.54    0.00                    -0.03
       faEd  |       0.01       0.00     4.07    0.00                     0.01
             |
      Region |-----COUNTRY DUMMIES OMITTED HERE-----
       _cons |       0.74       0.01    58.53    0.00                      .
------------------------------------------------------------------------------

.
end of do-file
```

```
. do "/tmp/SD17808.000000"

. reg EUDMO i.city wealth fem faEd i.Region [pw=W_FSTUWT], robust
(sum of wgt is 23,464,999.88423)
Linear regression                               Number of obs     =    465,568
                                                F(131, 465436)    =     179.18
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0696
                                                Root MSE          =     .92214
------------------------------------------------------------------------------
             |               Robust
       EUDMO | Coefficient  std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
        city |
      3-15k  |      -0.02       0.01    -1.29    0.20        -0.05        0.01
    15-100k  |      -0.03       0.01    -2.41    0.02        -0.06       -0.01
    100k-1m  |      -0.07       0.01    -5.14    0.00        -0.09       -0.04
       gt1m  |      -0.06       0.01    -4.04    0.00        -0.09       -0.03
             |
      wealth |       0.04       0.00    10.86    0.00         0.03        0.05
         fem |      -0.04       0.01    -5.29    0.00        -0.05       -0.02
        faEd |       0.01       0.00     1.66    0.10        -0.00        0.01
             |
      Region |-----COUNTRY DUMMIES OMITTED HERE-----
       _cons |       0.69       0.02    39.15    0.00         0.65        0.72
------------------------------------------------------------------------------

.
end of do-file

. do "/tmp/SD17808.000000"

. reg EUDMO i.city wealth fem faEd i.Region, robust beta
Linear regression                               Number of obs     =    465,568
                                                F(131, 465436)    =     226.40
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0575
                                                Root MSE          =     .94722
------------------------------------------------------------------------------
             |               Robust
       EUDMO | Coefficient  std. err.      t    P>|t|                     Beta
-------------+----------------------------------------------------------------
        city |
      3-15k  |      -0.05       0.01    -8.25    0.00                   -0.02
    15-100k  |      -0.06       0.01   -11.49    0.00                   -0.03
    100k-1m  |      -0.10       0.01   -19.37    0.00                   -0.05
       gt1m  |      -0.13       0.01   -20.65    0.00                   -0.05
             |
      wealth |       0.06       0.00    36.44    0.00                    0.07
         fem |      -0.07       0.00   -24.54    0.00                   -0.03
        faEd |       0.01       0.00     4.07    0.00                    0.01
             |
      Region |-----COUNTRY DUMMIES OMITTED HERE-----
       _cons |       0.74       0.01    58.53    0.00                       .
------------------------------------------------------------------------------

.
end of do-file

.
```

.9