Covid19 and Urban Unhappiness

Adam Okulicz-Kozaryn*
Rutgers - Camden

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URBAN, RURAL, URBAN-RURAL HAPPIENSS GRADIENT, HAPPINESS, SUBJECTIVE WELLBEING

'Here is the great city: here have you nothing to seek and everything to lose.' Nietzsche

Timing is everything. Ed Glaeser wrote a bestselling book 'Triumph of the city' just several years before the collapse of the city. Cities are hollowed out by the covid19 pandemic.

We know that one of the disadvantages of city is increased infectious disease spread. Put simply, one city feature is increased infectious disease spread. Indeed such population scaling is so consistent and strong, it is universal(Bliss 2014, Bettencourt et al. 2010, Bettencourt and West 2010, Bettencourt et al. 2007). Indeed, it could be called "law", like physics laws such as gravity.

Covid19, an infectious disease, fits this pattern (Stier et al. 2021).

Massive infectious diseases happene every now and then, SARS, Ebola, etc, and recently COVID19. The research hypothesis is that as cities suffer disporportionately from infectious diseases, city happiness decreased disproportionaly as well with covid19.

1 Data

We use World Values Survey cumulative file 1981-2022, 7 wave file. We proceed as follows with the sample selection. Covid19 didn't really take off untill later in 2020, peaked in 2021, and still had a considerable effect in 2022. Hence we look at data in 2021 and 2022. Data in 2021 has only developing countries, and rather small with small cities: Armenia, Kenya, Maldives, Morocco, and Venezuela. Hence, we will focus on 2022: Czechia, Libya, Netherlands, Northern Ireland, Slovakia, United Kingdom, and Uruguay. Next, we check sample sizes by year and urbanicity (X049) for each country. We exclude: Czechia: no city ¿500k before 2022. Libya: only 7 respondents in city ¿500k before 2022. Northern Ireland: total sample size is 447 and only one wave. Slovakia: only 61 respondents in city ¿500k pre 2022. Which leavs us with United Kingdom (GBR), Netherlands (NLD), and Uruguay (URY).

*EMAIL: adam.okulicz.kozaryn@gmail.com

I thank XXX. All mistakes are mine.

2 Results

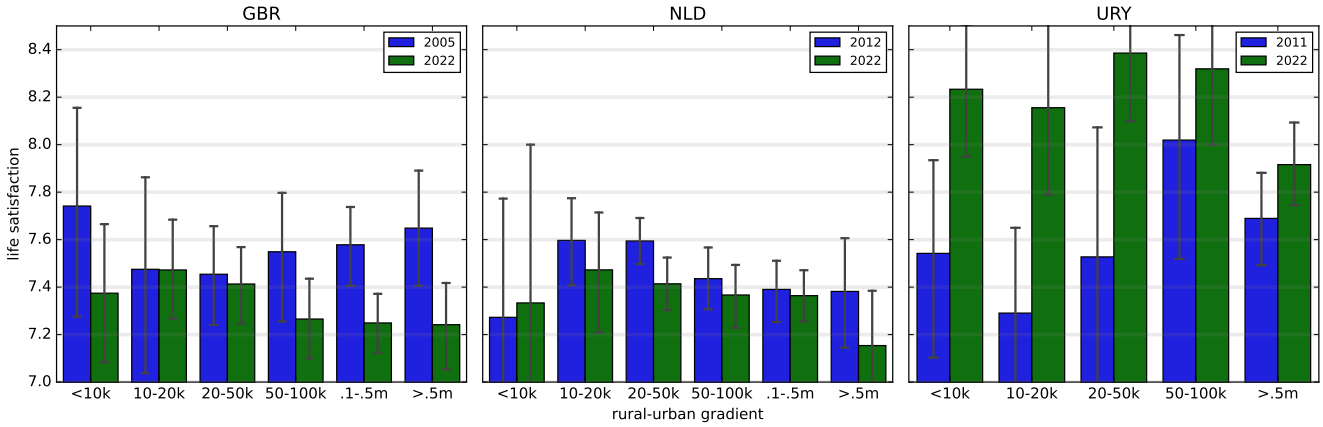

Figure 1: Life satisfaction ($1 = unhappy$ to $10 = happy$) means with 95% CI against rural urban gradient categories. $GBR =$ United Kingdom, $NLD =$ Netherlands, $URY =$ Uruguay. Note: URY is missing .1-.5m cat due to small cell sizes.

GBR: so prepandemic -10k happiest; pandemic: both smallest and largest most hit; unexpected for smallest, what it could be?

may be some country specific

NLD: rural not much change pre post, except for largest cities as expected; but also weirdly 10-20, and esp 20-50

URY is a different story: SWB increased everywhere ; and increased in ¿500k too, but increased least there–so also as expected

(again .1-.5m cat cut out)

Many of the CI are wide. Next we test the differences with regression.

The hypothesis is that while the pandemic decreased wellbeing in general, it especially did so in the large cities. Again, a city feature is increased infectious disease spread.

First we could look at overall change in happiness pre-post pandemic or such change for all areas except large cities. Results are set in table 1.

	GBR		NLD		URY	
	$< .5m$	$> .5m$	$< .5m$	$> .5m$	$< .5m$	$> .5m$
2022	-0.21**	-0.41**	-0.12**	-0.23	0.75***	0.23+
constant	7.54***	7.65***	7.50***	7.38***	7.54***	7.69***
N	3111	521	3572	373	1154	836
+ 0.10 * 0.05 ** 0.01 *** 0.001; robust std err						

Table 1: OLS regressions of life satisfaction.

Whats remarkable is about 2x difference for GBR and NLD and 3x for URY, this is a very strong differential. Still one of the coef for NLD not sig, and weakly sig for URY, and may be left out variable bias. SO we elaborate models with an extensive set of SWB predictors in table 2.

	GBR		NLD		URY	
	$< .5m$	$> .5m$	$< .5m$	$> .5m$	$< .5m$	$> .5m$
2022	-0.18*	-0.39+	-0.20***	-0.45**	0.42***	0.21
income	0.09***	0.01	0.06***	0.14***	0.07*	0.13***
age	-0.03*	-0.08**	-0.02+	-0.06+	0.00	-0.06**
age2	0.00**	0.00**	0.00**	0.00*	-0.00	0.00**
male	-0.18**	-0.13	-0.11*	-0.27+	0.06	0.19
married or living together as married	0.53***	0.74***	0.44***	0.23	0.46**	0.06
divorced/separated/widowed	0.07	0.15	-0.11	-0.14	-0.37+	-0.19
autonomy	-0.11*	-0.07	-0.11**	-0.01	-0.06	0.06
freedom	0.44***	0.42***	0.35***	0.43***	0.43***	0.36***
trust	0.12+	0.42**	0.43***	0.28+	-0.05	0.10
postmaterialist	-0.05	-0.18	-0.11*	0.14	-0.02	0.15
god important	0.01	0.05*	0.02*	-0.01	0.05**	0.06**
constant	4.08***	5.95***	4.59***	4.80***	3.47***	4.58***
N	1985	309	2283	237	736	579

+ 0.10 * 0.05 ** 0.01 *** 0.001; robust std err

Table 2: OLS regressions of life satisfaction.

Again about 2x difference for GBR and NLD persists, and for URY it is reduced from about 3x to about 2x as well

Finally, as a robustness check we add health variable in table 4. Obviously, there will bethen confounding between pre-post covid and health by definition. And there will be also confounding between urbanicity and health as again covid is more prevelent in cities. Hence these regressions are less useful in determing pre-post covid urb-rur differentials. Now taking into account health, as expected, results on over time difference are smaller and less significant (pre-post confounding with health). Remarkably though, the urbanicity differentials even though less statistically significant are still about x2 for GBR and URY and even stronger for NLD. Perhaps and arguably covid city in addition to bad health caused other problems such as misanthrophy and overal malaise. Future research is needed.

	GBR		NLD		URY	
	$< .5m$	$> .5m$	$< .5m$	$> .5m$	$< .5m$	$> .5m$
2022	-0.12	-0.26	-0.06	-0.24+	0.44***	0.23
health	0.48***	0.67***	0.62***	0.77***	0.56***	0.32**
income	0.05**	-0.01	0.04***	0.08**	0.05	0.12***
age	-0.02*	-0.07*	-0.01	-0.03	0.01	-0.05*
age2	0.00**	0.00**	0.00**	0.00+	-0.00	0.00*
male	-0.16*	-0.15	-0.09+	-0.23+	-0.01	0.14
married or living together as married	0.49***	0.60**	0.38***	0.21	0.41**	0.04
divorced/separated/widowed	0.05	0.20	-0.15	-0.27	-0.36+	-0.16
autonomy	-0.12**	-0.09	-0.10**	0.07	-0.09	0.04
freedom	0.38***	0.29***	0.29***	0.31***	0.40***	0.35***
trust	0.07	0.28*	0.34***	0.21	-0.07	0.01
postmaterialist	-0.05	-0.26+	-0.09*	0.06	0.01	0.12
god important	0.01	0.02	0.02+	0.00	0.05**	0.06**
constant	2.72***	4.29***	2.46***	2.01*	1.31+	3.31***
N	1985	309	2279	236	736	578

+ 0.10 * 0.05 ** 0.01 *** 0.001; robust std err

Table 3: OLS regressions of life satisfaction.

Our final set of results will pool all the data together. Earlier we split the sample by pre-post and large city v town and rural for simplicity and ease of interpretation, but it is also useful to formally test the differences with interactions.

in table **??** we start with a basic model where we regress life satisfaction on a dummy for largest cities and post-pandemic wave dummy $= 1if yr == 2022$, we also include country dummies as we now pull all the data together. Finally, we also include year dummies in addition to pre-post dummy as data were collected in different countries in differemt years.

in column a1, as expected we see that post pandemic swb went down by .2, and especially so for cities by additional .26. addition of basic controls in a2, post*city interaction stays about the same. extended controls in a3, same. only addition of hea in a4 cuts it to .21, and addition of freedom in a5 cuts most substaintally to .15 an kills significance. freedom kills it! future research: look more at freedom

	a1	a2	a3	a4	a5
post pandemic	-0.20**	-0.13+	-0.10	-0.02	-0.18*
city lg500k	0.05	0.19*	0.20*	0.10	0.07
post pandemic × city lg500k	-0.27*	-0.26*	-0.25*	-0.21+	-0.14
Netherlands	0.00	0.00	0.00	0.00	0.00
United Kingdom	-0.04	0.03	0.08	-0.01	-0.04
Uruguay	0.84***	0.93***	0.95***	0.68***	0.43***
2005	0.00	0.00	0.00	0.00	0.00
2011	-0.83***	-0.73***	-0.53***	-0.47***	-0.44***
2012	-0.10	0.15+	0.11	0.02	0.05
2022	0.00	0.00	0.00	0.00	0.00
income		0.14***	0.13***	0.08***	0.08***
age		-0.05***	-0.04***	-0.03***	-0.03***
age2		0.00***	0.00***	0.00***	0.00***
male		-0.16***	-0.17***	-0.16***	-0.11**
married or living together as married		0.47***	0.46***	0.39***	0.44***
divorced/separated/widowed		0.01	0.00	-0.03	-0.08
god important			0.03***	0.03***	0.02***
trust			0.38***	0.25***	0.26***
postmaterialist			-0.04	-0.05+	-0.04
autonomy			-0.11***	-0.11***	-0.09***
health				0.71***	
freedom					0.40***
constant	7.58***	7.43***	7.16***	4.41***	4.49***
N	9227	7775	6061	6055	5993
+ 0.10 * 0.05 ** 0.01 *** 0.001; robust std err					

Table 4: OLS regressions of life satisfaction.

TODO: have separate som-r.tex as opposed to having it below; and in paper say see supplemetary material as opposed to see appendix!

References

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