Growing Cities are Happier than Shrinking Cities

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We study effect of population change on Subjective WellBeing (SWB) using over 100,000 observations from Behavioral Risk Factor Surveillance System (BRFSS) representative of 392 US counties. A remarkable result is the strength of the relationship: SWB correlates higher with population change than with county level crime and income. The strong effect size holds in regressions controlling for person level and county level predictors of SWB. But the absolute effect of population change, as these of other ecological variables, is small. This is only the second study on the effect of population change of a city/county on its residents' happiness. Such gap in the literature is remarkable. As in any non-experimental study, results are not causal and they may not generalize beyond the population studied, the US.

Subjective WellBeing, Life Satisfaction, Happiness, Behavioral Risk Factor Surveillance System (BRFSS), Population Change, Shrinkage

Introduction

Urbanization is rampant: according to UN, world urban population exploded from 30% to 50% over in 1950-2005, and is projected to grow to 70% in 2050 `population.un.org/wup`. Yet, many cities shrink.

Take for instance two counties that an author of this study has inhabited. Collin TX, a northern suburb of Dallas, mushroomed sevenfold just over 4 decades, from 150k in 1980 to 1m in 2019. Camden NJ stayed flat over the same period, while the county seat, city of Camden, shrank about 40% from its height of 125k in 1950 to 72k in 2020. Collin TX and Camden NJ tell a story of many other counties in South v North East. Sunny, spacious, and affordable South aka "Sunbelt" often mushrooms at mind boggling pace, while gritty, crowded, and expensive North East aka "Rustbelt" stays flat or shrinks. Many US counties shrink, and are desperate to regain population, even offering $15,000 to move in (Block 2021). Largest American cities are not growing or even shrinking recently (Thompson 2019).

While there is much research on population size and SWB as recently summarized in Okulicz-Kozaryn and Valente (2021), there is very little research on population change and SWB. Google Scholar queries such as "population change and happiness," "city growth and happiness," "population growth and happiness," "population decline and happiness" do not yield relevant literature. If anything, there is a sizable literature on shrinking city and little of it somewhat relates to quality of life (but not happiness)[1]

The only study on population change and SWB is a master thesis written under the direction of a "happiness grandfather," Ruut Veenhoven (Delken 2008). The thesis offers a conclusion: "Overall satisfaction with life appears not to be lower in shrinking cities and satisfaction with several domains of life even higher. This is not because inhabitants are unaware of the situation of their city, since they appear to be more concerned about job-chances and crime." We agree that job-chances and crime are critical for happiness, possibly the most important ecological variables when it comes to

[1]The terms 'quality of life' and 'happiness' are defined for instance in Okulicz-Kozaryn and Valente (2019).

place growth or shrinkage. But our study finds that even after controlling for crime and employment shrinkage is related to lower SWB.

Delken (2008) assumes three scenarios for cities: $growing >= 3\%$, $-3\% < stable > 3\%$, and $3\% < shrinking$. An advantage of Delken (2008) over our study is use of multiple domain satisfactions–we only use global life satisfaction. An advantage of our study is structural–Delken (2008) uses German data. Our study uses US data–the US is more dynamic in terms of population than Germany.

Hartt (2019) makes a similar point to Delken (2008)–people can live happily in shrinking cities, but Hartt (2019) does not use SWB measure and uses other proxies instead. Per shrinking cities literature, Hollander is perhaps the most prolific scholar in this area– Hollander (2011) argues similarly: cities can shrink successfully, enjoy "smart decline": shrinkage does not always mean decline in quality of life.

Indeed, shrinkage in population offers some opportunities for growth, e.g., in terms of urban gardens/agriculture, which do offer multiple benefits (Jackson 2012, Lima and Eischeid 2017). Urban gardens/agriculture are not feasible in economically successful places such as Manhattan or San Francisco, but viable in poor places such as Philadelphia or Camden NJ. And there is an useful and intriguing concept of Urban Spontaneous Vegetation (USV) .[2] USV occurs at no financial cost, is authentic and is always appropriate to the site conditions (Kühn 2006). USV is visualized in figure 1.

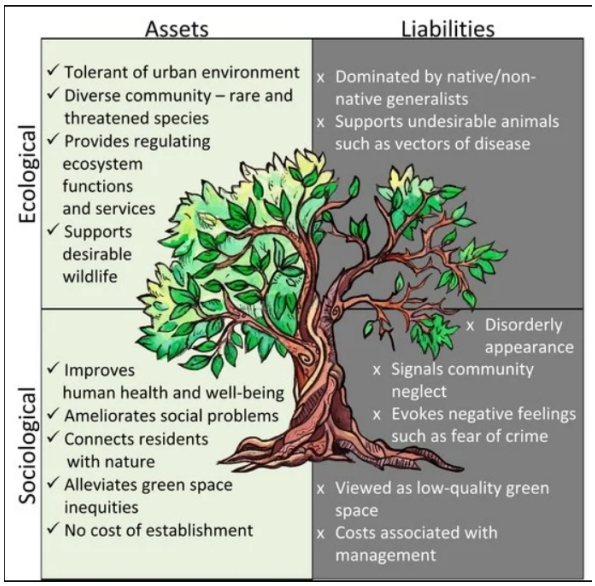


Figure 1: A graphical abstract of Riley et al. (2018).

The bottomline is that there is some related research to the population change-SWB nexus, but only one study, Delken (2008), uses SWB measure.

One other study that uses SWB measure has to be discounted as it is flawed. Similarly to our study, Glaeser et al. (2016) uses BRFSS data and finds positive effect of population growth on SWB. There are, however, critical problems with Glaeser et al. (2016): it cherry-picks only certain urban areas and drops from the data smaller counties without any good reason. Dropping cases from sample may lead to finding results that one wants to find. [3] In addition, the analyses are oversaturated with many controls. Specifically, by adding state fixed effects, which correlate with population size and

[2]USV colonizes large areas in and around cities, considered low economic value or dereliction, but can contribute valuable ecosystem services. USV may have equal or higher indicator values for habitat provisioning (plant species diversity, invertebrate abundance and taxonomic diversity) and indicators of climatic regulatory services than the other habitats (Robinson and Lundholm 2012).

[3]Notably, there seem to be a pattern–for instance Glaeser (2011) drops from the sample developed countries so that much of it contains African countries to make a case that urban places are happier, while in fact they are not, with exception of very poor countries such as those in Africa–and these are the very cases that Glaeser retains in his sample.

change, the relationship flips from negative to positive on urbanicity.

Several other studies are somewhat related to the present study, but fundamentally their approaches are disjoint, and hence, not relevant to the present study. Goetzke and Islam (2017) and Barreira et al. (2019) argue that unhappiness predicts population decline or happiness predicts population growth. We believe that population changes are mostly due to other factors than happiness, and it is rather decline or growth that leads to unhappiness or happiness, not the other way round. Park et al. (2021) offers a novel approach using Twitter data, but the research is conducted in one city only. We note that data from social media holds much promise for the future research. Finally, Chen et al. (2019) finds that shrinking or as they term "hollowing" rural areas are not less happy, however, study uses Chinese data–China has unique population change and migration patterns.

Theory

None of the several happiness theories (Brickman et al. 1978, Veenhoven and Ehrhardt 1995, Michalos 1985, Carver and Scheier 1990) help to explain very well why population growth or decline would change SWB. Livability theory may be somewhat explanatory (p. 3645 Veenhoven 2014) [blow could replace 'societies' with 'cities' or 'places']:

> Societies are systems for meeting human needs, but not all societies do that job equally well. Consequently, people are not equally happy in all societies.
>
> Improvement of the fit between social institutions and human needs will result in greater happiness.

Then perhaps growing places may better satisfy human needs–that's why they are growing, and places that fail to satisfy may be shrinking. There may be more resources available and even more coming if there is a growth, and hence a better/more positive outlook for the future. And opposite if a place is shrinking. But again what the literature finds as reviewed earlier is that shrinkage in population does not necessarily mean decline in other areas, and in fact, it is possible to have shrinking population, and growth in other areas.

But we find another theory that may explain the mechanism well. It may be signaling, visually explained with so called "tunnel effect"–humans think that whatever happens to others, whether things get better or worse, will eventually happen to them as well. Population growth/decline seems to be related to opportunities/jobs safety/crime, at least prospects or perceptions of those. Hence, if a place grows, there are positive connotations. If it shrinks, it's negative. This is so-called "tunnel effect":

> Suppose that I drive through a two-lane tunnel, both lanes going in the same direction, and run into a serious traffic jam. No car moves in either lane as far as I can see (which is not very far). I am in the left lane and feel dejected. After a while the cars in the right lane begin to move. Naturally my spirits lift considerably, for I know the jam has been broken and that my lane's turn to move will surely come at any moment now. Even though I still sit still, I feel much better off than before because of the expectation that I shall soon be on the move. (Hirschman, quoted in Ravallion and Lokshin 2000, p. 88)

In a sense, tunnel effect is related to Multiple Discrepancies Theory (MDT) (Michalos 1985)–if by comparison the area is doing well (growing as opposed to shrinking), then a person by association is thinking to be doing better as well, and is happier. Although there can also be negative effects of others doing better, "Schadenfreude", e.g., neighbors as negatives (Luttmer 2005), being together with those doing well v others doing not so well Firebaugh and Schroeder (2009).

Data and Method

All person level data come from the 2005-2010 Behavioral Risk Factor Surveillance System (BRFSS) `cdc.gov/brfss`. We use the SMART (Selected Metropolitan/Micropolitan Area Risk Trends) version of BRFSS that is representative of counties.

All county level data come from the Inter-university Consortium for Political and Social Research: County Characteristics, 2000-2007 `doi:10.3886/ICPSR20660.v2`. As most county level control variables are for 2000-2005, regression analyses use 2005 BRFSS only, and descriptive statistics at county level only use full 2005-2010 BRFSS collapsed by county.[4]. While we only have 392 counties in 2005-2010 BRFSS, 13% of about 3,000 US counties, there is a good representation across the country including the largest coastal cities, smaller cities, suburbs, exurbs, and rural counties.[5]

The SWB item reads "In general, how satisfied are you with your life?": 1 "very dissatisfied" 2 "dissatisfied" 3 "satisfied" 4 "very satisfied"–over 90 percent of respondents were either satisfied or very satisfied with their lives. All other variables are defined in table 4. We follow Okulicz-Kozaryn and Mazelis (2016) in terms of controls.

Table 1: Variable definitions.

name	description
person-level variables (`cdc.gov/brfss`):	
income	"Is your annual household income from all sources:"
married or member of an unmarried couple	"marital status; Are you:"
unemployed	"Are you currently: Out of work"
age	age
age squared	age squared
White	White
education level	"What is the highest grade or year of school you completed?"
soc/emo support	"How often do you get the social and emotional support you need? " BRFSS
general health	"Would you say that in general your health is" 1 (poor) - 5 (excellent)
county-level variables (`doi:10.3886/ICPSR20660.v2`:	
crime rate index	"Index crime rate (per 100,000 persons), 2004"
persistent poverty	"20 percent or more of residents were poor as measured by each of the last 4 censuses, 1970, 1980, 1990, and 2000"
% Black	"percent Black, 2005"
low education	"25 percent or more of residents 25-64 years old had neither a high school diploma nor GED in 2000."
housing stress	"30 percent or more of households had one or more of these housing conditions in 2000: lacked complete plumbing, lacked complete kitchen, paid 30 percent or more of income for owner costs or rent, or had more than 1 person per room."
low employment	"Less than 65 percent of residents 21-64 years old were employed in 2000."
population loss	"Number of residents declined both between the 1980 and 1990 censuses and between the 1990 and 2000 censuses."
pers. inc. (USD 1,000)/cap	"per capita personal income (USD 1,000), 2005"
population percent change 2000-2005	from county characteristics ICPSR file
population	"census 2000 total resident population"
population density per sq mile, 05-09 * 1,000,000	population density

Notable controls include person level `unemployed` and county level `low employment` and `crime rate index`–these

[4]In addition, in the supplementary analyses we use census data for 1990-00 and 2000-10 population growth.

[5]All 51 states are in the data, but most have fewer than 10 counties represented here, and several have only one or two counties. Small NJ has almost all of its 21 counties represented. And by far most counties in this dataset are from FL, over 40.

variables not only predict SWB but also correlate with population change.

We use a standard OLS regression with clustered standard errors on county with BRFSS sampling weights to account for oversampling. We treat the 4-step happiness variable as continuous. Ordinal happiness can be treated as a continuous variable (Ferrer-i-Carbonell and Frijters 2004).[6]

Results

First we provide broad descriptive statistics at county level using county level data and means of person level BRFSS variables collapsed over 2005-2010 to county level. Over just 5 years from 2000 to 2005 several counties shrank by about 5% and several grew by about 10%.[7]

Table 2 shows correlations. Among ecological (county-level) variables, remarkably, SWB's very strongest correlation is with population growth, >50% stronger than correlation with crime and about twice of the correlation with income. This is the key, and unexpected finding of this research. While positive and weak to moderate correlation was expected, such extremely large magnitude was unexpected.[8]

Table 2: Cross-correlation table

Variables	population percent change 2000-2005	crime rate index	% Black	housing stress	low employment	population loss	pers. inc. (USD 1,000)/cap	swb
population percent change 2000-2005	1.00							
crime rate index	-0.17	1.00						
% Black	-0.21	0.48	1.00					
housing stress	0.04	0.20	0.10	1.00				
low employment	0.09	0.04	0.03	0.18	1.00			
population loss	-0.27	0.18	0.27	-0.01	0.05	1.00		
pers. inc. (USD 1,000)/cap	-0.18	-0.17	0.00	0.05	-0.27	-0.04	1.00	
swb	0.39	-0.25	-0.24	-0.13	-0.18	-0.29	0.22	1.00

Nb. obs. : 376

The scatterplot between population change and SWB is shown in figure 2. There are curiously consistent geographic patterns circled in the graph, for instance, large North-Eastern cities cluster at bottom-left, Southern counties cluster at top-right, and three happiest counties in this sample are either in West or North. As per Hartt (2019), Delken (2008), Hollander (2011) shrinkage does not always mean decline in all other areas, and so we find outliers as shown in figure 2 at top-left, yet most places fit the pattern that the more growth, the more SWB.

[6]We used the following Stata command: regress <happiness> <person-level variables> <county-level variables> [pw=_cntywt] , robust cluster(<county>).

[7]Full county-level and auxiliary descriptive statistics (not shown here) are `https://colab.research.google.com/drive/1fFzDc73LbGAC-G6_I58FV1fH691NAs7_?usp=sharing`online. Over 10 years 1990-2000 or 2000-2010 several counties shrank by >30% and several grew by >50%.

[8]Population growth correlates significantly with several variables. Notably, in growing cities there is little less crime. Also, poorer cities tend to grow faster. While correlation between population change and SWB is remarkably high, the absolute differences on SWB are small. SWB ranges only between 3.2-3.6 on 1-4 scale.

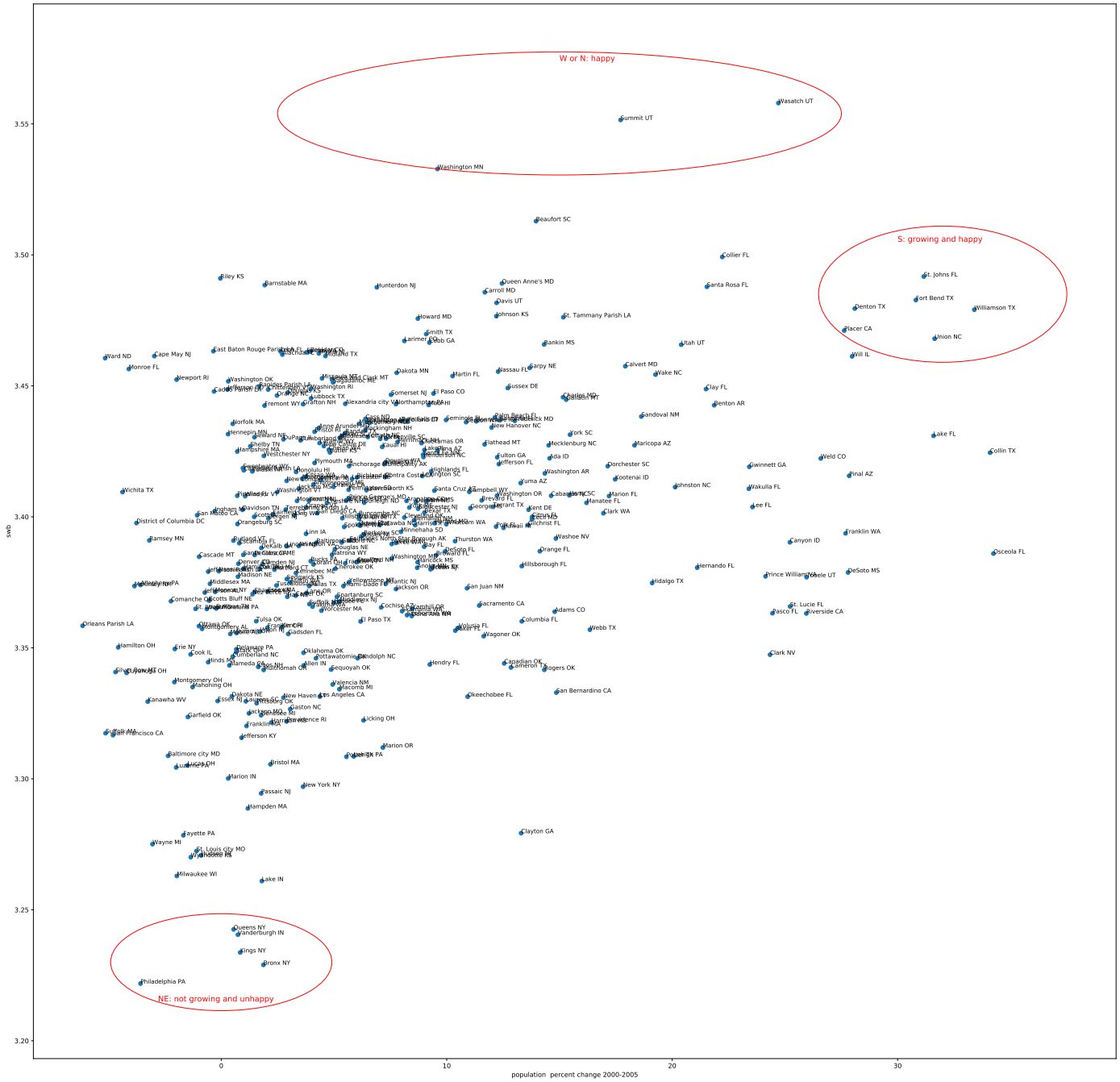
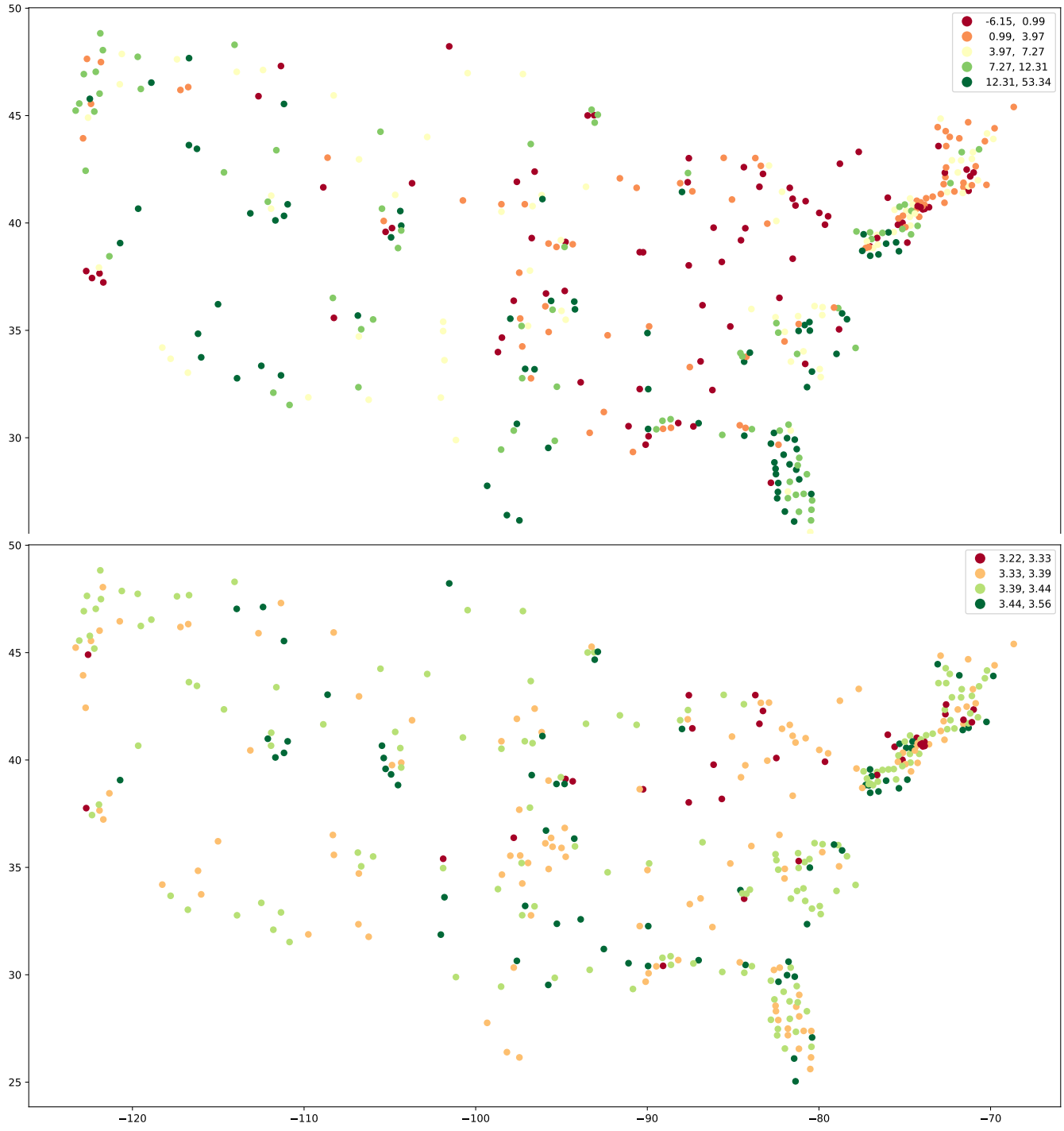


Figure 2: Note: this is a hi-res vector image that necessarily uses small font so that most labels are readable–zoom 2x to 10x to read county names. Ellipses mark patterns: NE: not growing and unhappy (except one IN county (Midwest)); S: growing and happy (except one IL county (Midwest)); W or N: happy. Also do note that in general around the regions marked with ellipses, there are many more counties from the same region. Notably at lower-left: Wayne MI that houses Detroit; and Suffolk MA that houses Boston. Right above the bottom-left ellipse, there is Hudson NJ (slightly hidden behind St Louis city MO), and Passaic NJ, both just outside of NYC and part of New York metro. New York NY (Manhattan) is right next to Passaic NJ. At upper-right, there are multiple Southern counties, mostly FL. All counties along with values on key variables are shown at `https://colab.research.google.com/drive/1fFzDc73LbGAC-G6_I58FV1fH691NAs7_?usp=sharing`.

Figure 3 shows thematic maps. Again, as in figure 2, North East and Midwest stays flat or shrinks and is unhappy, South grows and is happy, and North and West are happy as well.

Figure 3: Thematic maps across counties of `population percent change 2000-2005` (quantiles) in 1st panel and `SWB` (natural breaks) in 2nd panel. The first panel clearly shows Rust Belt shrinking, notably many Midwest counties shrinking (and unhappy in 2nd panel). Florida is both growing (1st panel) and happy (2nd panel)–one explanation may be many old people moving to Florida (old people tend to be happy). X and Y axes are labeled with latitude and longitude. Points are not labeled with county names for readability here, but all counties along with values on key variables are shown at `https://colab.research.google.com/drive/1fFzDc73LbGAC-G6_I58FV1fH691NAs7_?usp=sharing`.



Next we move to regressions of `SWB` on other person level controls using person level 2005 BRFSS data and county level data. The main independent variable of interest is `population percent change 2000-2005`.

We start with a simple bivariate model in column a0 and the effect of population change is cut by half in model a1

that controls for person level predictors of SWB. This is expected as SWB is mostly a function of person level characteristics, but what is remarkable and unexpected is that sequential addition of county level controls in subsequent columns does not attenuate the estimate on population change. Remarkably, in full model a4 the effect size of population change is almost twice larger than that of crime, and also substantially larger than the effect of county level income. Results using population change 2000-2010 are similar (see Supplemetary Online Material (SOM)). Results using 1990-2000 population change (also in SOM) are weaker, as expected, as that time period is further away from 2005 BRFSS data, but still the effects are significant and effect of 1990-2000 population change is similar to the effect of crime and county level income.

	a0	a1	a2	a3	a4
population percent change 2000-2005	0.036***	0.022***	0.019***	0.022***	0.022***
income		0.086***	0.088***	0.087***	0.086***
married or member of an unmarried couple		0.106***	0.107***	0.107***	0.107***
unemployed		-0.058***	-0.058***	-0.058***	-0.057***
age		-0.200***	-0.209***	-0.210***	-0.209***
age squared		0.290***	0.300***	0.301***	0.300***
White		-0.043***	-0.043***	-0.042***	-0.043***
education level		-0.014+	-0.019*	-0.019*	-0.019*
soc/emo support		0.316***	0.315***	0.315***	0.315***
general health		0.226***	0.229***	0.229***	0.228***
crime rate index			0.016**	0.018**	0.014*
persistent poverty			0.002	0.004	0.003
% Black			-0.017**	-0.013*	-0.006
low education				0.013	0.022
housing stress				-0.006	-0.001
low employment				-0.011	-0.009
population loss				-0.003	-0.003
pers. inc. (USD 1,000)/cap				0.007	0.017**
population density per sq mile, 05-09 * 1,000,000 population					-0.022**
					-0.009
N	163656	138453	132677	131657	131657

+ 0.10 * 0.05 ** 0.01 *** 0.001

Table 3: OLS beta (fully standardized) regressions of SWB: `population percent change 2000-2005`. Note that standardization does not allow robust cluster options–the standardized coefficients are useful for comparison, but their standard errors do not account for heteroscedascity and clustering at county level–however, the differences are negligible–see SOM for models with clustered standard errors (and without beta option). Note: only BRFSS 2005 data are used as most of the county level controls are available for 2000-2005. All regressions use BRFSS-SMART county weight variable "_cntywt."

Discussion and future research

This is only the 2nd study on county/city population growth/shrinkage. There is some related research to the population growth-SWB nexus, but only one study, Delken (2008), uses SWB measure. Such gap in the literature is remarkable.

A remarkable result is the strength of the relationship –SWB correlates higher with population change than with county level crime and income–and the stronger effect sizes hold in regressions controlling for person level and county level predictors of SWB. Yet, the absolute effect of population change, as those of other ecological vars, is small– 10 percent increase in population change leads to little additional happiness, about .01 or .02 increase on 1-4 SWB scale.

Still, we do not necessarily contradict the shrinkage literature (e.g., Delken 2008, Hartt 2019, Hollander 2011)– shrinkage does not mean low QOL. Likewise, we find that while shrinkage results in lower SWB, there are many outliers to this pattern as shown in figure 2

Abbreviations

- Behavioral Risk Factor Surveillance System (BRFSS)
- Multiple Discrepancies Theory (MDT)
- SMART (Selected Metropolitan/Micropolitan Area Risk Trends)
- Subjective WellBeing (SWB)
- Supplemetary Online Material (SOM)

- Urban Spontaneous Vegetation (USV)

Declarations

- Availability of data and material: only free publicly available data used; code available as python notebook online; other code as stata dofile available upon request
- Competing interests: none
- Funding: none
- Authors' contributions: one author
- Acknowledgements: none

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ONLINE APPENDIX

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

Descriptive statistics are at `https://colab.research.google.com/drive/1fFzDc73LbGAC-G6_I58FV1fH691NAs7_?usp=sharing`

Robustness Checks: Additional Regression Models

In addition to the variables used earlier, we use here two alternative measures of population change as defined in the table below.

Table 4: Variable definitions.

name	description
population percent change 2000-2010	popGro00 10=100*((census2010pop-pop00)/pop00); var census2010pop from https://www2.census.gov/programs-surveys/popest/datasets/2000-2010/intercensal/county/co-est00int-tot.csv
population percent change 1990-2000	popGro90 00=100*((pop00-apr1 1990Pop)/apr1 1990Pop); var apr1 1990Pop from https://www2.census.gov/programs-surveys/popest/datasets/1980-1990/counties/totals/comp8090.zip

Regarding regular OLS (not standardized coefficients)–the effect is small, about .002 or .001 depending on the model so if a place doubled in size (100% increase), SWB would go up by .2 or .1 on 1-4 scale, which is large at county level–as SWB ranges between 3.2 to 3.6 across counties in this sample, but increase of 100% over 5 years is very unlikely rather something like 10% which would result only in .02 or .01 increase, which is small. Still effect of population change from beta coefficients is much larger than that of crime or that of per capita income.

	a0rc	a1rc	a2rc	a3rc	a4rc
population percent change 2000-2005	0.004***	0.002***	0.002***	0.002***	0.002***
income		0.025***	0.026***	0.026***	0.025***
married or member of an unmarried couple		0.139***	0.140***	0.140***	0.140***
unemployed		-0.168***	-0.167***	-0.167***	-0.166***
age		-0.008***	-0.008***	-0.008***	-0.008***
age squared		0.000***	0.000***	0.000***	0.000***
White		-0.056***	-0.056***	-0.055***	-0.056***
education level		-0.008	-0.011*	-0.011*	-0.011*
soc/emo support		0.185***	0.184***	0.184***	0.184***
general health		0.134***	0.136***	0.135***	0.135***
crime rate index			0.000*	0.000*	0.000*
persistent poverty			0.012	0.025	0.018
% Black			-0.001*	-0.001	-0.000
low education				0.023*	0.041
housing stress				-0.008	-0.002
low employment				-0.028	-0.024
population loss				-0.006	-0.006
pers. inc. (USD 1,000)/cap				0.000	0.001**
population density per sq mile, 05-09 * 1,000,000					-1.436**
population					-0.000
constant	3.352***	2.057***	2.056***	2.037***	2.019***
N	163656	138453	132677	131657	131657
+ 0.10 * 0.05 ** 0.01 *** 0.001; clustered robust std err					

Table 5: OLS (robust cluster) regressions of SWB: `population percent change 2000-2005`

	b0	b1	b2	b3	b4
population percent change 2000-2010	0.041***	0.022***	0.019***	0.023***	0.023***
income		0.087***	0.088***	0.087***	0.086***
married or member of an unmarried couple		0.106***	0.107***	0.107***	0.107***
unemployed		-0.058***	-0.058***	-0.058***	-0.057***
age		-0.200***	-0.209***	-0.209***	-0.209***
age squared		0.290***	0.300***	0.300***	0.300***
White		-0.044***	-0.043***	-0.042***	-0.043***
education level		-0.015+	-0.020*	-0.020*	-0.019*
soc/emo support		0.316***	0.315***	0.315***	0.315***
general health		0.226***	0.229***	0.229***	0.228***
crime rate index			0.014*	0.014*	0.010+
persistent poverty			0.003	0.005	0.004
% Black			-0.017**	-0.011+	-0.004
low education				0.015	0.021
housing stress				-0.005	-0.000
low employment				-0.015	-0.011
population loss				-0.002	-0.003
pers. inc. (USD 1,000)/cap				0.006	0.016*
population density per sq mile, 05-09 * 1,000,000					-0.021**
population					-0.005
constant	***	***	***	***	***
N	163656	138453	132677	131657	131657

+ 0.10 * 0.05 ** 0.01 *** 0.001

Table 6: OLS beta (fully standardized) regressions of SWB: `population percent change 2000-2010`

	b0rc	b1rc	b2rc	b3rc	b4rc
population percent change 2000-2010	0.002***	0.001***	0.001***	0.001***	0.001***
income		0.026***	0.026***	0.026***	0.025***
married or member of an unmarried couple		0.139***	0.140***	0.140***	0.140***
unemployed		-0.168***	-0.167***	-0.167***	-0.166***
age		-0.008***	-0.008***	-0.008***	-0.008***
age squared		0.000***	0.000***	0.000***	0.000***
White		-0.057***	-0.057***	-0.055***	-0.056***
education level		-0.008+	-0.011*	-0.011*	-0.011*
soc/emo support		0.185***	0.184***	0.184***	0.184***
general health		0.134***	0.136***	0.135***	0.135***
crime rate index			0.000+	0.000+	0.000
persistent poverty			0.017	0.031	0.026
% Black			-0.001+	-0.001	-0.000
low education				0.027*	0.038
housing stress				-0.006	-0.000
low employment				-0.038+	-0.028
population loss				-0.005	-0.007
pers. inc. (USD 1,000)/cap				0.000	0.001*
population density per sq mile, 05-09 * 1,000,000					-1.399*
population					-0.000
constant	3.350***	2.058***	2.061***	2.043***	2.025***
N	163656	138453	132677	131657	131657

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

Table 7: OLS (robust cluster) regressions of SWB: `population percent change 2000-2010`

	c0	c1	c2	c3	c4
population percent change 1990-2000	0.033***	0.017***	0.012*	0.013**	0.013**
income		0.086***	0.087***	0.087***	0.086***
married or member of an unmarried couple		0.107***	0.108***	0.108***	0.108***
unemployed		-0.059***	-0.058***	-0.058***	-0.058***
age		-0.193***	-0.202***	-0.202***	-0.202***
age squared		0.283***	0.292***	0.293***	0.292***
White		-0.042***	-0.043***	-0.042***	-0.042***
education level		-0.015*	-0.020*	-0.020*	-0.020*
soc/emo support		0.317***	0.316***	0.316***	0.316***
general health		0.226***	0.229***	0.228***	0.228***
crime rate index			0.016**	0.014*	0.012*
persistent poverty			0.002	0.006	0.004
% Black			-0.021***	-0.012*	-0.007
low education				0.010	0.017
housing stress				-0.004	0.000
low employment				-0.017+	-0.012
population loss				-0.006	-0.006
pers. inc. (USD 1,000)/cap				0.002	0.011+
population density per sq mile, 05-09 * 1,000,000					-0.019*
population					-0.006
constant	***	***	***	***	***
N	162958	137885	132109	131089	131089

+ 0.10 * 0.05 ** 0.01 *** 0.001

Table 8: OLS beta (fully standardized) regressions of SWB: `population percent change 1990-2000`

	c0rc	c1rc	c2rc	c3rc	c4rc
population percent change 1990-2000	0.001**	0.001**	0.000*	0.001*	0.000*
income		0.025***	0.026***	0.026***	0.025***
married or member of an unmarried couple		0.140***	0.141***	0.141***	0.141***
unemployed		-0.169***	-0.168***	-0.168***	-0.167***
age		-0.007***	-0.008***	-0.008***	-0.008***
age squared		0.000***	0.000***	0.000***	0.000***
White		-0.055***	-0.056***	-0.055***	-0.056***
education level		-0.009+	-0.011*	-0.011*	-0.011*
soc/emo support		0.186***	0.185***	0.185***	0.185***
general health		0.134***	0.136***	0.135***	0.135***
crime rate index			0.000*	0.000+	0.000+
persistent poverty			0.012	0.031	0.022
% Black			-0.001*	-0.001	-0.000
low education				0.019+	0.033
housing stress				-0.005	0.000
low employment				-0.048*	-0.036
population loss				-0.013	-0.014
pers. inc. (USD 1,000)/cap				0.000	0.001
population density per sq mile, 05-09 * 1,000,000					-1.231+
population					-0.000
constant	3.351***	2.051***	2.053***	2.050***	2.032***
N	162958	137885	132109	131089	131089
+ 0.10 * 0.05 ** 0.01 *** 0.001; clustered robust std err					

Table 9: OLS (robust cluster) regressions of SWB: `population percent change 1990-2000`