Life satisfaction, neighborhood quality of life and crime (working paper series — center for business research and studies)

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Abstract

This paper builds on Kanehman's Prospect Theory, adapting the idea of a reference point to insecurity and neighborhood quality of life. We take advantage of a novel tailored survey to show that as occur with income gains and losses, the value function associated with neighborhood quality of life is steeper in the domain of losses, than in the space of gains, when it comes to the position of a neighborhood relative to others, in terms of security. The finding has profound implications in security policies, because unless the policy is designed to avoid spillovers, the welfare aggregated effect will be negative.

1. UNLP-UBA - UNoBA

Introduction

In their seminal papel, Kahneman and Tversky (1979) established the idea that in considering different uncertain prospects, people penalized losses heavier than they favored gains. Specifically they stated that "The value function is normally concave for gains, commonly convex for losses, and is generally steeper for losses tan for gains"

The difference between losses and gains, gives birth to the concept of reference point, that in turn changed the bases of consumer behavior theory, and connects Kanheman's work with that of Richard Easterlin, the father of "The economics of happiness"

According to Easterlin (1974) there is no relation between per capita income and life satisfaction, neither in the cross section analysis of countries, nor in the time series exploration of United States data.

One of the plausible explanations of the Easterlin paradox, is the adaptation effect, put forward by Fray and Stutzer (2002) and Di Tella and MacCulloch (2008). The presumption is that people get used to their daily situation and only react to (and consider into their utility functions) changes to the statu quo. That is why a rich that losses 100.000 dollars is less happy than a poor that wins 100.000, even when the rich was still wealthier than the poor, by far.

We know then, that absolute level of income does not matter so much; conversely, the key relies on income changes and relative income in regard to the subject's reference group (Lora et. Al. 2008).

On the other hand, the relation between insecurity and happiness is more controversial. Some scholars such as Graham and Chaparro (2012) have indeed found a correlation, although they also reported an adaptation effect. In contrary, Di Tella and Shargrodsky (2009) did not find any relation, using data from Argentina.

Our hypothesis is that the absence of correlation may emerge because people adapt to their neighborhood safety conditions, as suggested by Powdthavee (2005), who reports happiness being lower for non-victimized respondents living in higher crime areas, along with the fact that criminal victimization hurts less, the higher the regional crime rate on the reference group is. Another possible explanation is that people suffer habituation effect (Thompson 1966), getting used to the unfavorable conditions.

Interesting as the debate may be, however, the controversy on the effect of insecurity on happiness is not the object of this paper.

Rather, we focus on the asymmetric effect of subjective insecurity, on the perceived neighborhood quality of life.

The remaining of the paper is as follow. We begin by exploiting a novel data set on quality of life and neighborhood quality of life tailored by Gallup Argentina, with particular aim at understanding the relation between insecurity and neighborhood quality of life.

Then, we discuss the main results, offering some possible explanations and producing some suggestions to policy makers.

The Data

Gallup Argentina runs a poll on a regular basis, called "Encuesta Omnibus". It is based on a random sample of urban population, representative of Argentina's main cities.

The following table shows the descriptive statistics of the July 2014 wave

Table 1 Descriptive statistics (weighted)

Variable	Obs	Mean	Std. Dev.	Min	Max
age	1015	42,39	16,78	18	91
male	1015	0,47	0,50	0	1
abc1	1015	0,05	0,22	0	1
c2c3	1015	0,38	0,49	0	1
d1	1015	0,32	0,47	0	1
d2e	1015	0,24	0,43	0	1
Life satisfaction	1008	8,43	1,53	1	10
Satisfaction with family life	1011	8,89	1,39	1	10
Satisfaction with social life	1006	8,52	1,55	1	10
Satisfaction with job	935	7,61	2,35	1	10
Satisfaction with House	1006	8,35	1,82	1	10
lives in Capital	1015	0,09	0,29	0	1
lives in Gran Buenos Aires	1015	0,25	0,43	0	1
lives in other cities	1015	0,66	0,47	0	1
Satisfaction with neighborhood	1010	4,36	0,93	1	5
Good relation with neighbors	1010	4,55	0,73	1	5
Parks and public facilities	1009	3,90	1,28	1	5
Transport availability	1001	4,23	1,10	1	5
Neighborhood identity	998	4,36	0,95	1	5
Poor neighborhood	983	0,20	0,40	0	1
Safer neighborhood	1015	0,31	0,46	0	1
Less safe neighborhood	1015	0,11	0,31	0	1
Victimization	1006	0,21	0,41	0	1

The weighted population (the sampling is stratified) has 42 years old on average and 47% are males. The socioeconomic composition is also representative of that of Argentina

as a whole; just 5% belongs to the upper class (ABC1), whereas 38% is consider upper-middle and middle class, 32% is lower-middle class, and 24% is low class.

When it comes to life satisfaction and its domains, the responses are mainly optimistic. With the exception of job satisfaction, all the remaining domains scores above 8 on a 1 to 10 scale, and the dispersion of answers is also small.

Nine percent of the sample lives in the capital city of Buenos Aires, while 25% inhabit the surrounding Gran Buenos Aires, and 66% belongs to the remaining part of the country.

Regarding neighborhood quality of life and its domains, we also have a concentrated optimistic population scoring on average above 4 in a 1 to 5 scale, with the exception of the satisfaction to the availability of parks and public facilities. Just 20% of the population consider themselves to be living in a poor neighborhood.

Finally, in terms of security, 21% of the sample report to have been victimized within the last 12 months. Besides, 31% consider they live in a safer than average neighborhood, whereas 11% think they populate a less safe than average quarter.

Life satisfaction

In Schiaffino and Tetaz (2014), and Braun, Schiaffino and Tetaz (2014) we had found no relation between socioeconomic status and happiness, using a 2013 wave of the same data base used in this paper. In that survey we were able to asked people how active they were in several domains of their lives, coming to the conclusion that the key to happiness relied on the level of family activity, social life, and the time spent with our couples. We even showed that sex activity did not boost happiness by itself unless it came in the context of a stable relationship.

Now, we run into the same kind of results here. As can be seen in the table below, socioeconomic position does not change life satisfaction, and contrary to our previous study males show a lower happiness than females. The quadratic effect of age is a classic in the literature; almost a check for data quality: always and in every study around the world, life satisfaction declines with age at a decreasing pace, until middle age, recovering then as we age. In this wave the saddest moment of life is at 52 years old. Last but not least, family satisfaction is the most powerful predictor of happiness, followed by social life satisfaction, house satisfaction and job satisfaction, in this particular order.

Neither the city of residence nor the satisfaction with neighborhood seem to play a statistically significant role. The same can be said regarding relative economic status, because even when we asked whether people consider their family to have a superior standard of living than the average household in the neighborhood, we failed to find a systematic correlation between that answer and the reported life satisfaction.

In contrast to our previous study, we now introduce a couple of questions related to security and crime.

Besides the fact that 21% of our subjects were victims of insecurity within the last twelve months, they did not report lower levels of life satisfaction than the not victimized. As discussed earlier, the lack of correlation may be due to either habituation effect, adaptation strategies, or other causes such as those described by Powdthavee.

It's important to mention that regression coefficients do not reflect neither semi elasticites nor simple first derivative effects, but they can be understood by its signs, and relative to the size of other coefficients. For instance the -0.19 coefficient on "Male" does indeed mean that males are less happy than women, but not necessarily 0.19 less happy. However, the 0.19 really means that being male is three times as important as belonging to the upper class (ABC1), in terms of its effect on life satisfaction.

Table 2; Life satisfaction and its determinants

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Ordered probit regression                      Number of obs   =        900
                                               LR chi2(17)     =     620.30
                                               Prob > chi2     =     0.0000
Log likelihood = -1158.7925                    Pseudo R2       =     0.2111
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life_sat	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
age	-.0216671	.0119695	-1.81	0.070	-.0451269	.0017926
age2	.0002132	.0001274	1.67	0.094	-.0000365	.0004628
male	-.1908803	.0751044	-2.54	0.011	-.3380821	-.0436785
abc1	-.0604836	.1737067	-0.35	0.728	-.4009424	.2799752
d1	.0774045	.0888647	0.87	0.384	-.0967671	.2515762
d2e	.1210739	.0987492	1.23	0.220	-.0724709	.3146188
capital	-.0236426	.1306909	-0.18	0.856	-.2797921	.2325068
gba	-.0961951	.0885757	-1.09	0.277	-.2698003	.0774101
family_sat	.3228753	.0327551	9.86	0.000	.2586764	.3870742
social_lif~t	.2556316	.0294525	8.68	0.000	.1979058	.3133574
job_sat	.1317193	.0175359	7.51	0.000	.0973495	.1660891
house_sat	.1376396	.0246737	5.58	0.000	.08928	.1859992
satisf_neigh	-.0116212	.0417199	-0.28	0.781	-.0933908	.0701484
insec_victim	-.0444909	.0924002	-0.48	0.630	-.2255919	.1366102
smokes	-.0750666	.082079	-0.91	0.360	-.2359386	.0858054
above_ref_~p	.0337628	.151375	0.22	0.824	-.2629269	.3304524
below_ref_~p	.0349139	.1257343	0.28	0.781	-.2115209	.2813486
/cut1	1.951999	.5813663			.812542	3.091456
/cut2	2.514758	.4404353			1.651521	3.377995
/cut3	2.877664	.4227532			2.049083	3.706245
/cut4	3.334619	.411942			2.527228	4.142011
/cut5	4.18051	.4109448			3.375073	4.985947
/cut6	4.572555	.4112848			3.766452	5.378659
/cut7	5.492781	.4171968			4.67509	6.310471
/cut8	6.566584	.4275785			5.728546	7.404623
/cut9	7.338669	.4366228			6.482904	8.194434

Neighborhood quality of life

Cruces, Tetaz y Ham (2008) have found that the subjective perception of "security during the day" wan an important predictor of neighborhood satisfaction, among other variables.

Because we know from previous research (Tetaz 2014) that people form their impressions not only from absolute judgments but upon relative perceptions, and that

it's the change from the reference point what makes a difference in terms of satisfaction, in this section we take advantage of a novel tailored question introduced in the survey that asks neighbors whether they consider their neighborhoods to be safer, less safe than average or as safe as the average neighborhood.

The satisfaction with neighborhood is now measured on a 1 to 5 scale, and we run the usual ordered probit regression.

In contrast to what happened in the life satisfaction model, socioeconomic variables do play a role here. Specifically, those who belong to the upper class feel more satisfied with their neighborhoods.

Variables capturing the quality of parks and transport availability are also significantly correlated with neighborhood satisfaction.

However the most important single predictor is the variable that captures the extent to which the neighbor thinks her neighborhood really reflects her believes, letting her to feel therefore identify with her neighborhood and its neighbors. Every point increase in neighborhood identification, has seven times the impact of a one point change in the quality of parks and public facilities, for instance.

Table 3; Neighborhood satisfaction and its determinants

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Ordered probit regression                      Number of obs    =        937
                                               LR chi2(11)      =     544.23
                                               Prob > chi2      =     0.0000
Log likelihood = -719.59786                    Pseudo R2        =     0.2744
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satisf_neigh	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
abc1	.5943448	.2165659	2.74	0.006	.1698835	1.018806
d1	.090414	.1016799	0.89	0.374	-.1088749	.2897029
d2e	.1528267	.1105344	1.38	0.167	-.0638168	.3694702
good_rel_n~h	.1857318	.0585909	3.17	0.002	.0708958	.3005679
parks_and_~c	.1027901	.0345483	2.98	0.003	.0350766	.1705037
transport_av	.1378911	.0389575	3.54	0.000	.0615359	.2142463
neigh_inde~y	.7380294	.0500284	14.75	0.000	.6399755	.8360832
poor_neigh	-.3791346	.1048344	-3.62	0.000	-.5846063	-.1736629
safer_neigh	.3552938	.1006371	3.53	0.000	.1580487	.5525389
less_safe_~h	-.5593664	.1296468	-4.31	0.000	-.8134695	-.3052633
insec_victim	-.3702217	.1022908	-3.62	0.000	-.570708	-.1697355
/cut1	2.018096	.3258293			1.379482	2.656709
/cut2	2.711027	.3147801			2.09407	3.327985
/cut3	3.392192	.3149556			2.77489	4.009493
/cut4	4.839957	.3315353			4.19016	5.489755

The set of questions related to security, also affects quality of life perceptions significantly. Those victim of a crime in the last twelve months experimented a drop in neighborhood satisfaction almost equivalent to a three points fall in satisfaction with transport availability (in a 1 to 5 scale), for example, or of the same magnitude of living in a poor neighborhood.

Our most interesting result, however, has to do with the relative perception of security, in contrast to other neighborhoods.

Those believing that their neighborhood is safer than other quarters feel more satisfied with their neighborhoods (0.35), but the group of those thinking that the opposite is true, report a 57% higher, and obviously negative, effect (a 0.55 coefficient).

Discussion

The literature on crime security and happiness is controversial. Our research did not come to a significative association either.

However we find, indeed, a correlation between victimization and neighborhood quality of life.

Moreover, even controlling for victimization, we showed that the (negative) impact of feeling that the neighborhood is less safe than the average quarter, is 57% bigger than the (positive) impact of sensing the opposite.

This may be consistent with people facing a "prospect" utility function a la Kahneman, whereby losses hurt more than gains heal, or to put it in other worlds, where the function, from a reference point, is steeper for losses than for gains.

The result has important implications to the administration of security, because investments in one quarter, or city may have significant spillovers toward other non-protected places (Glaeser 1996) if criminals react to the novelty moving to a (relatively) less protected place.

If this were the case, policy interventions should be centralized, so as to equalize the marginal profitability of committing a crime across different cities and neighborhoods, because if an investment in CCTV cameras, police or any other anti-crime measure makes an average neighborhood safer, but sends another quarter down (negative spillovers), then social welfare would fall, because the gains in the place favored by the police would be lower than the losses of a neighboring quarter.

Conclusions

Security is a major concern in modern societies. Polls indicate that the issue is among the most important citizen's worries around the world. Yet, this paper, in accordance with many other publications find no relation between happiness and victimization.

Insecurity, however, impacts negatively on neighborhood quality of life. Not only victimization erodes the satisfaction with the neighborhood, but the belief that the quarter is less safe than average plays has also a negative effect.

Our results indicate that the value function is reference dependent, being steeper

for losses than for gains. Apart from considering the absolute level of security in the neighborhood (victimization), people also estimate how safe a neighborhood is, comparing it with others (the reference point)

Contrary, while the perception that living in a safer neighborhood improves the perceived quality of life in that place, the magnitude of the difference is smaller than the one caused by the opposite sensation.

As a result any policy that instead of reducing overall crime, just spills it to other jurisdictions, is welfare worsening, because the gains in the place where the policy is taken is smaller than the losses in the community that receives the crime spillover.

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