Social capital, Urban Settings and Demographic Behavior in Latin America

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Abstract

Although Social Capital has become an influential concept in the social sciences, little is know of its relationship to demographic behavior. Based on data from probabilistic samples of 12,000 adults in eight Latin American countries, this paper studies two dimensions of social capital—(1) community participation and (2) trust in neighbors— and their relation with urbanization, fertility, out-migration, and crime. It aims to determinine whether social capital explains some of the differential demographic behavior of urban populations. Our data show that social capital clearly declines with urbanization, although the urban-poor show a bit higher community participation. There is a clear gradient of increased crime and reduced social capital related to urbanization. The relationship between social capital and fertility and migration is less clear and often restricted to certain sub-populations. The urban-poor do not exhibit demographic behavior significantly different than the expected given its compositional and spatial characteristics, and social capital does not help to explain their demography.

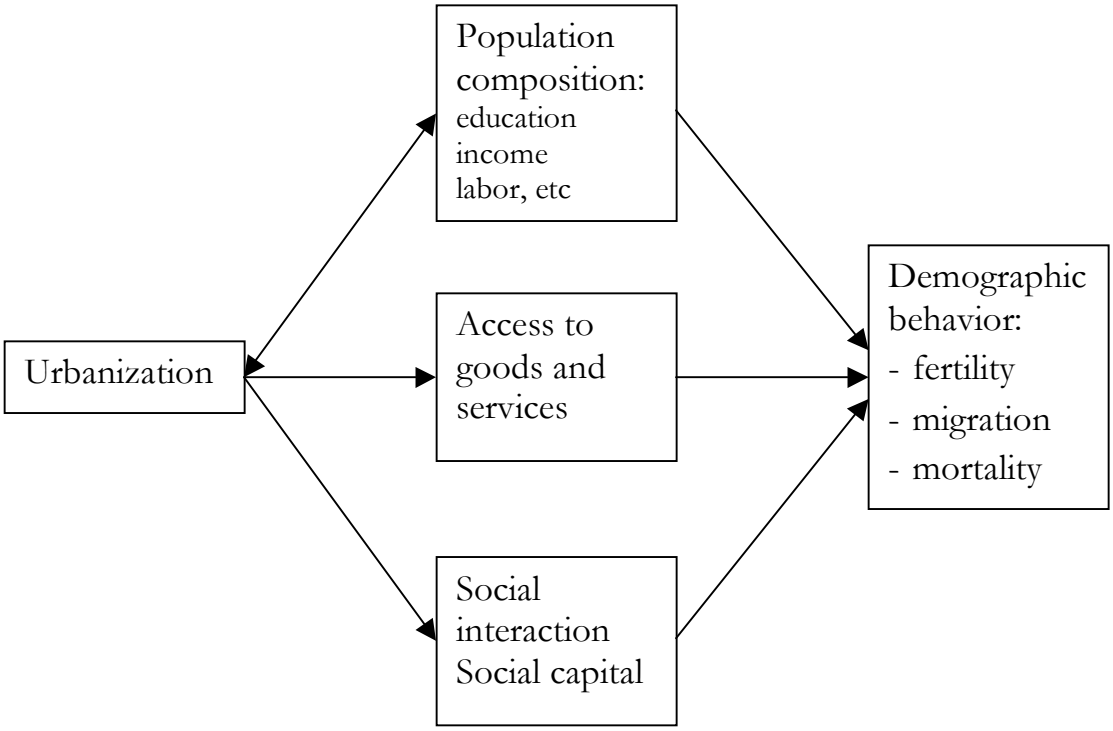
Introduction

Social Capital has become an influential concept in a variety of disciplines in the social sciences. The landmark works by Bourdieu (1986), Coleman (1988) and Putnam (1993) postulate that social capital – i.e, social networks, reciprocities, mutual trust, and their value for achieving common goals – is key for understanding economic development, democracy, population health, crime and other processes. Little is known, however, of the relationship between social capital and demographic behaviors, in particular regarding the decision to have children and the decision to migrate.

This paper explores the following postulates with data from eight Latin American countries: (1) urbanization often brings losses in the stock of social capital, although among the urban poor the situation may be different; (2) urbanization usually associates itself with lower fertility, higher out-migration, and higher man-made mortality (violence and accidents); (3) although some of these urbanization "effects" may be just compositional (i. e. due to education, income, occupation, and the like) others may be genuinely due to intrinsic characteristics of urban settings, such as accessibility to certain places and services, as well as the particular way in which urban neighbors relate to each other and accumulate social capital. The causal diagram in Figure 1 summarizes these relationships that frame our study.

The main purpose of this paper is thus to explore the relationship between social capital and demography in the Latin American context, particularly, whether social capital is affected by urbanization and whether it is one of the mechanism explaining urbanization differentials in demographic variables. In addition, the paper explores whether the urban poor differ in their stock of social capital, and the extent to which those differences result in differential demographic behavior of this group.

Figure 1. Causal diagram of urbanization, social capital and demography



Defining social capital

Social capital is both a new and an old concept at the same time. It is a subset notion of the concept of "social cohesion" developed by Durkheim (1897) in the late19th Century, which refers to the absence of latent social conflict and the presence of strong social bonds. A cohesive society is one with an abundance of "mutual moral support, which instead of throwing the individual on his own resources, leads him to share in the collective energy and supports when his own is exhausted" (cited by Kawachi & Berkman, 2000: 175).

However, it is only in the 1970s that the parallel works by Bourdieu, Coleman and Putnam introduce explicitly the concept of social capital to revalorize social relationships analogous to the concepts of physical and human capital. In a vague sense, social capital has to do with the value of "trust and networks." In Putnam's (2001:1) words "…the central idea of social capital is that networks and the associated norms of reciprocity have value." Social capital is thus a feature of social organizations that facilitates coordination and cooperation for mutual benefit; it is people acting together to pursue shared objectives (Putman, 1993). For Bourdieu (1986: 119) "social capital is the sum of resources … by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition". In the work of Coleman (1988) social capital has to do with levels of trustworthiness, extent of obligations, norms and effective sanctions, as well as information channels. For Portes (1998:8) an author often critical of social capital debates, social capital is "the ability to secure benefits through membership in networks and other social structures."

Links with demography

There is substantial literature linking social capital to migration. Most of the literature focuses on social capital as networks of migrants and knowledgeable individuals that facilitate migration in both the origin and destination. (Hugo, 1981; De Jong, 2000; Massey & Espinosa, 1997; Palloni et al, 2001). This literature usually shows that social ties have a direct effect on facilitating people migration. They "lower the costs and risks of movement and increase the expected net returns of migration…and gives access to an important kind of financial capital (foreign employment) which offer the possibility of accumulating savings abroad and sending remittances home" (Palloni et al, 2001:1263-1264). Social capital in this literature is thus a factor favoring migration and creating a sort of autonomous feedback that perpetuates the process in cumulative causation (Massey et al., 1994).

It is worth noticing that this literature assumes the existence of a social common goal—successful migration. One can think, however, of situations in which social capital in the place of origin may reduce the pressure to out-migrate by offering support to those who stay. The result in this case will be staying in the community. One can also think of situations in which social capital at the destination may be a trap that creates ghettos and reduces assimilation (Brenes, 2005; Portes & Sensenbrenner, 1993). It thus seems that social capital can be either a positive or a negative force on migration, depending, in our view, on the shared goals in the networks.

There is also substantial literature suggesting that social capital reduces crime and violence, the main causes of death among young adults, and improves population health. Most of this literature focuses on the spatial differences in mortality and health that are not explained by individual or compositional characteristics. Social capital is a major explanatory construct in the broadly cited book by Wilkinson (1996) on inequality and health, in which geographic differences in health seem significantly determined by social inequalities and relative (rather than absolute) income. Wilkinson shows that it is not the richest countries that have the best health indicators but those with the smallest income differences and that egalitarian societies are more cohesive; i.e., with higher stock of social capital. Social inequality in the work by Wilkinson undermines social networks, which increases crime and reduces health and wellbeing of the whole society. Kawachi *et al.* (1997) provide empirical support to these postulated relationships by showing a strong correlation between mortality, inequality and social capital among the states of the USA. Macintyre and Ellaway (2003) argue that both "who you are" and "where you are" explain geographical variations in health. Sampson complements the former observation postulating that "collective aspects of neighborhood life such as social cohesion, spatial diffusion, support networks, and informal social control" –aspects of social capital theories-- are at the root of "neighborhood effects" on health (Sampson, 2003: 135). Moreover, Sampson *et al.* (1997) singles out "collective efficacy" as the key aspect of social capital influencing crime rates and public health. His argument is in line with the seminal work by Granovetter (1973) underscoring the strength of "weak ties" to explain network's influences.

Research on social capital and fertility is harder to find. In a way, diffusionist, or social interaction, explanations of adoption of birth control implicitly acknowledge the importance of

social networks and social capital as factors to speed up fertility transition (Rosero-Bixby & Casterline, 1994; Montgomery & Casterline, 1996; Bongaarts & Watkins, 1996). More cohesive and socially integrated societies would move faster from high to low fertility levels by facilitating interaction diffusion effects.

The explanation above, however, applies only when birth control is an innovation, and its diffusion is a common goal facilitated by social capital. After completing the fertility transition, in low fertility societies, with "unwanted infertility" instead of "unwanted fertility", the effect of social capital on fertility may be positive. A reason for that could be reverse causation: couples have children to increase their social capital. According to Schoen et al. (1997) the social value of children is an important factor motivating childbearing. Astone et al. (1999:2) also postulate that "formation of sexual partnerships, the birth and rearing of children [] constitute major forms of investment in social capital." But causation may also go in the other direction, with social networks as sources of resources that reduce costs of having children, especially in some harsh circumstances. Evidence from Russia, Bulgaria, Hungary and Poland suggests "that the availability of at least one helpful network partner has a positive impact on women's intention to have a second child"(Bühler & Fratczak, 2004:13). Having access to social capital can also reduce single mother's work-family conflicts and facilitate childbearing (Ciabattari, 2004). There is yet another possible connection between social capital and fertility: social networks and cohesion may be a dissuasive factor of adolescent pregnancy, especially in contexts where adolescent fertility is high and neighborhoods are considered socially disorganized (Gephart, 1997; Sucoff & Upchurch, 1998; Upchurch et al., 1999)

Urbanization and social capital

"[New York] is a splendid desert—a doomed and steepled solitude, where a stranger is lonely in the midst of a million of his race," wrote mark Twain in 1867 (cited by Putnam 2000: 207). Social capital is clearly lower in the big city than in small towns. "The resident of a major metropolitan area is significantly less likely to attend public meetings, to be active in community organizations, to attend church, to sign a petition, to volunteer, to attend club meetings, to work on community projects, or even to visit friends. Metropolitans are less engaged because of where they are, not who they are… Living in a major metropolitan agglomeration somehow weakens civic engagement and social capital." (Putnam, 2000: 206). Some characteristics of urban settings that can deplete social capital stock are diversity, residential mobility, and migration by weakening the basis for cooperation in city neighborhoods (Montgomery, et al., 2003: 70). It is paradoxical that close proximity and high population density of cities have decreased, instead of increasing, the density of social connections. Anonymity and freedom are nice assets of city life but they also lower social capital.

Does the broadly observed depletion of social capital in large cities of developed countries repeat itself in the Latin American context? How about among the urban poor? This paper aims at answering these questions as a first step for determining the degree in which this is a mechanism explaining differential demographic behavior of cities.

Measuring social capital

Social capital being an abstraction and a relatively new concept, there is no consensus on how to measure it objectively, in contrast with the other capitals—physical, financial, and even human. The problem of operationalizing it in part comes from the immaturity of the concept and the vagueness of its definition (Schuller et al., 2000: 26). Under these conditions, the issue of validity is real, although hard to solve. Does the chosen indicator measures what is supposed to measure? For social capital there are no gold standards or objective landmarks available to check validity.

Perhaps the best practice is to follow the paradigm and use those indicators more often used by other researchers. This approach has the additional advantage of enabling comparisons. There are two dimensions of social capital measured by almost all mayor research efforts in the field: (1) trust and solidarity among fellow citizens and (2) density of associational membership. The seminal work by Putnam on democracy in Italy (1993) defined and used them. Inglehart (1997) also used them since the first wave of the World ValuesSurvey (Inglehart, 1997), as well as Kawachi et al. (1997) who took the data from the USA surveys conducted in 1986 to 1990 by the National Opinions Research Center. The European Social Survey 2002-3, conducted in 21 countries, also measured these indicators, along with two additional dimensions (Fernández *et al*., 2004). A group of researchers from the World Bank included them among the six dimensions of their proposal for an integrated questionnaire to measure social capital (Grootaert *et al*. 2003).

An important measurement aspect of social capital in which there is some degree of consensus it is its collective character. In contrast with human capital, it is not lodged within individuals, it is social, it is an ecologic characteristic, a feature of the collective that must be measured at the aggregated level (Kawachi & Berckman, 2000).

Data and Methods

The paper analyzes a database of about 12,000 interviews carried on probabilistic samples of adults in six Central American countries--Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica and Panama--plus Mexico and Colombia in March 2004, as part of a study of democratic values by the Latin American Public Opinion Project (LAPOP) currently in Vanderbilt University, web page: http://www.lapopsurveys.org.

Sampling size is about 1,500 in each country. The samples represent the countries' populations of voting-aged adults i.e., citizens aged 18 and over, except in Nicaragua where voting age starts at 16. We excluded 120 Nicaraguans under the age 18. The study was based on a common questionnaire and sample design, although each country was able to include specialized questions focusing on particular interests of that country. All samples were of multi-stage, stratified probability design, with quotas by age and gender at the level of the household (Seligson, 2005).

Given their objectives, the surveys lack refined indicators of demographic behavior and, to a lesser degree, of social capital. However, they have the advantage of comparability, assured by their common sampling design, questionnaire, and timing.

Demographic indicators

The indicator of fertility we use is the number of children of respondents aged 18 to 39 years, both sexes. By restricting ages up to 40 years, this indicator reflects recent fertility experience. The questionnaire did not asked items to improve this measure by taking into account child mortality and children fostering, as demographic surveys routinely do. These omissions are minor distortions of a pure fertility indicator we have to live with.

There are two indicators of out-migration: (1) intention to out-migrate to the US in the coming three years among respondents aged 18 to 39 years (we are excluding 40 and older since this question is probably not relevant for them, given the very low migration rates at those ages) and (2) whether the family received remittances in the last year.

There are no direct indicators of mortality in this data set. We instead focus on crime and violence, which is the most important cause of death among young adults and it has epidemic proportions in Latin America (Roberts, 1997). We use two indicators for crime available in the survey: (1) being a victim of violent crime in the last year and (2) feeling unsafe in the neighborhood.

Four out of these five dependent variables are binary-response variables that we modeled with logistic regression. The indicator of fertility is an always positive and integer count that we modeled assuming a Poisson distribution.

Regarding urbanization, we classified respondents in three categories of place of residence: (1) Metropolitan areas (28%), (2) other cities (33%), and (3) rural areas (39%). We took as metropolitan areas the countries' capitals, plus cities with more than one million inhabitants, namely: Guadalajara, Monterrey, Ciudad Juarez and Puebla in Mexico, San Pedro Sula in Honduras, and Medellin, Cali and Barranquilla in Colombia.

We also identified an "urban-poor" group of respondents using an index of "wealth" available in the surveys from adding 14 conveniences in the household (mean 5.1, range 2.9 in Nicaragua to 7.7 in Costa Rica). The urban poor are those living in cities (metropolitan or not) and with a wealth index lower than five. This group averages18% for the eight countries, ranging from a low of 2% in Costa Rica to a high of 37% in Nicaragua.

Social capital indicators

We measured the two dimensions of social capital for each respondent with: (1) a scale of participation in community organizations, and (2) an indicator of trust-mistrust in fellow neighbors. To take into account that social capital is a collective construct, we did not use directly respondent-level indexes but their average in each sampling cluster. The median size is nine respondents per cluster, with a range of 5 to 23. In averaging the cluster indicators, we

excluded the index-individual; i.e. the average is for all the other adults in the same sample cluster. In this way we avoid endogeneity or reverse causation. We avoid, for example, the problem that mistrust in neighbors may come from have been a victim of crime, which is our dependant or response variable.

The survey contains a block of eleven items to measure frequency of participation in civil society (5 items) and types of active (yes/no) contribution to solve community problems in the previous year (6 items). After normalizing responses and conducting factor analysis and Cronbach's Alpha tests, we added six items to form a scale of community participation, which has an Alpha of 0.87 that denotes high internal validity. The six items included in the scale, which range from 0-0.89, and have a mean of 0.22 and a standard deviation 0.14 after averaging by cluster), are as follows:

1. Frequency of attendance to a committee for community improvement.
2. Have worked to resolve a community problem
3. Have donated money or materials
4. Have given own work or manual labor
5. Have attended community meetings
6. Have helped to organize a problem-solving community group

The classic question on measuring trust is to ask, as these surveys have: "Now talking about the people from around here, would you say that the people of your community are very trustworthy, somewhat trustworthy, little trustworthy or not at all trustworthy." One important detail is that these surveys introduced the word "community" into the questions, whereas in the standard item, this term is missing. Thus, the question is not about people in general, but people from the community. The result of this change is substantially higher trust levels than in prior surveys in Latin America and elsewhere. In these surveys the percentage that trust people (neighbors are "very" or "somewhat" trustworthy) goes from a high 77% in Costa Rica to a low 50% in Nicaragua. By comparison, the average for 21 European countries is 37%, range 75% in Denmark to 18% in Poland (Source: European Social Survey 2002-2003, in Fernández et al., 2004: table 3).

Our surveys asked two additional questions on trust often used in other studies:

- Whether in most instances people are only worried by themselves or try to help others; and
- Whether most of the time people would try, or not, to take advantage of one if they have the opportunity.

These two questions, which are not exactly about trust but about helpness and fairness, resulted in responses comparable to Europe. Regarding that most people can be helpful, the average in Latin America is 34% compared to 34% in Europe. Regarding that most people can be fair, our average is 35% compared to 47% in Europe.

The three items do not add into a reliable scale (Cronbach's Alpha is 0.52). This finding is not new; in most surveys in which these three items have been included, the reliabilty of the series is low. There is an important group (about 60%) of respondents that somehow gave contradictory or ambivalent answers. For example, 36% said that neighbors are very or somehow trustworthy

and also said that people try to take advantage. Conversely, 9% said that neighbors are not trustworthy and, paradoxically, that people do not try to take advantage. Given these uncertainties, we created and indicator of trust-mistrust with only three categories:

- Those who trust (coded 1) if responses to the three questions consistently denoted trust: neighbors are somewhat or very trustworthy and people try to help others in most instances and people do not try to take advantage. Fourteen-percent of respondents fall in this category, range 10% in Nicaragua to 16% in El Salvador.

- Those who mistrust (coded -1) if responses to the three questions consistently denoted mistrust. Twenty-two percent fall in this category, range 13% Costa Rica to 29% Panama.

- All the others, which in our judgment cannot be classified or are ambivalent (64%)

We call this index "net trust minus mistrust" since its average shows the difference in the proportions that trust minus mistrust.

Control variables

Table 1 shows the control variables (and their mean values and standard deviation) used in this paper to isolate net effects of social capital on demographic behavior. All are self-explanatory.

Regression models

We estimated linear regression models on our two indexes of social capital to understand their determinants and covariations with control variables.

To study the effect of social capital on fertility we estimated Poisson regression models. For the effects on the other four demographic variables we estimated logistic regression models. Given that we used indicators of social capital that are averages by cluster and thus, their variances are not independent—a classic heteroskedasticity problem—we weighted each observation in the regression with the square root of cluster size (Hanushek & Jackson, 1977). These weights are called "analytic weights" in Stata, the package we used to estimate the models (StataCorp, 2002).

In preliminary regression analyses, we looked at all possible first-order statistical interactions with social capital indexes. Then we kept in the regressions only those statistically significant at $p < .05$.

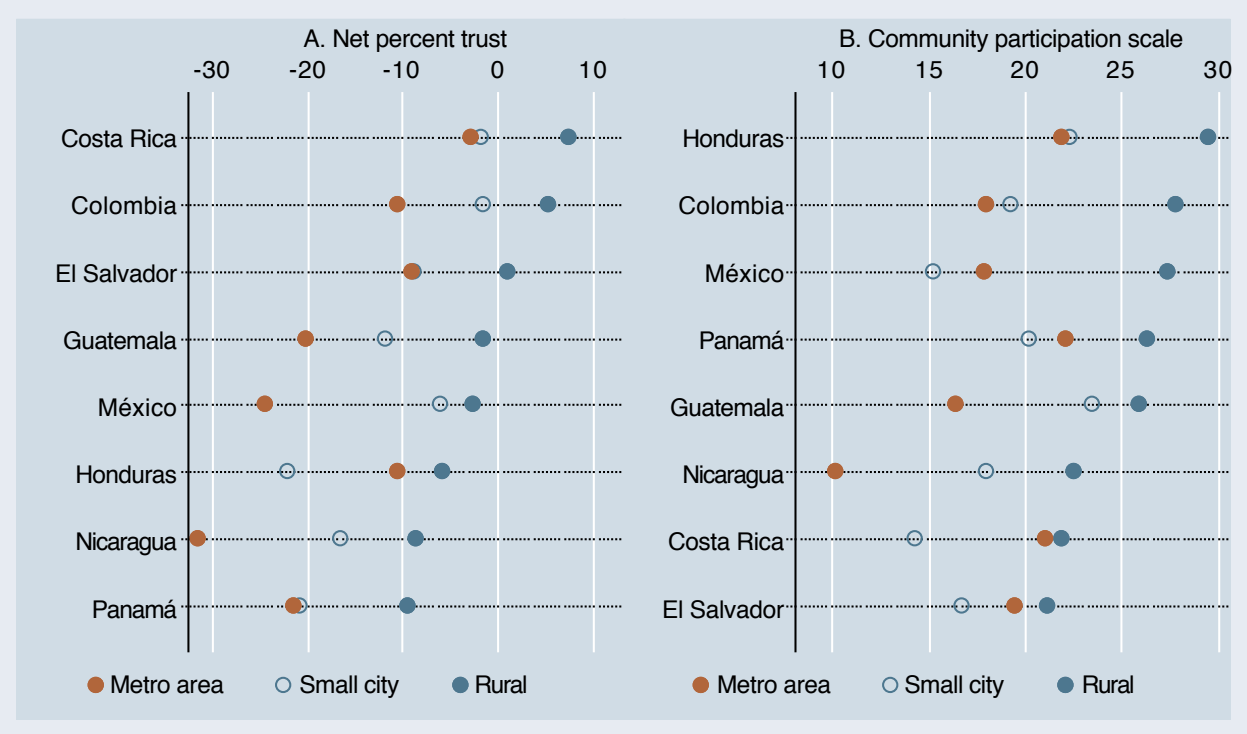
Results

Trust and community participation are indeed two different dimensions of social capital in our dataset, orthogonal between them, with a correlation of only 0.06.

Social capital, in its two dimensions, is clearly lower in metropolitan areas compared to rural areas in all eight countries (Figure 2). Intermediate cities behave somewhat erratically. Social capital in them is always lower than in rural areas, but compared to metropolitan areas

sometimes it is lower, sometimes (especially regarding participation) it is higher. The highest stocks of social capital occur in rural areas of Costa Rica for trust and in rural areas of Honduras for community participation. Managua, the capital of Nicaragua, is at the bottom in the two dimensions of social capital.

Figure 2. Trust and community participation by country and urbanization



Multiple regression models (Table 1) confirm these results. The models also show that the urban poor have significantly higher community involvement but they do not differ in terms of trust. Although social capital is a collective trait, there are individual's characteristics associated with it. Older and more religious people have higher stocks of social capital in its two dimensions, as people of Protestant faiths have lower. Males, married and more educated persons have highest involvement in community affairs, but they do not differ in terms of trust.

These individual-level associations hold firm even after controlling in the regressions (not shown) for the level of social capital in each cluster sample, computed as indicated in the previous section. The cluster-level indicator, however, is responsible for most of the variance explained by the regression on the individual-level indicator (67% in trust and 41% in participation). Context is thus the main determinant of individual variation in social capital stocks.

How do the five demographic indicators behave regarding social capital and urbanization? Table 3 shows that metropolitan areas, compared to rural areas, have substantially lower fertility (1.3 children vs. 2.0), as well as higher outmigration (both indicators: intentions and remittances), and substantially higher crime: victimization is almost 3 times higher and fear of crime is 72%

higher. The urban poor, compared to metropolitan areas, have higher fertility (39% or 0.51 children higher), similar outmigration intentions and, surprisingly, a bit lower crime. We wonder if the lower crime is an artifact of lower reporting to interviewers, an effect found in crime data in the U.S.

In a first approach to the effects of social capital, we dichotomized our two indicators in ways to have groups of approximately the same size. The differences in all five demographic indicators are modest, if any, by both trust and participation. However, this result should not be taken at face value. It is possible that third variables are concealing some differences. For example, Table 3 reveals that there is a great diversity of demographic behaviors by country. Fertility ranges from 1.3 children in Colombia to 2.0 in Honduras, remittance reception, from 5% in Colombia and Costa Rica to 23% in El Salvador, and violent crime is more than 50% higher in El Salvador, Honduras and Nicaragua than in Costa Rica and Panama. If, for example, there were a congruence of a country with high crime and low social capital, this congruence could reduce the univariate difference in crime by social capital observed in Table 3. Country effects must be thus controlled for, as effects of other variables that affect to both demographic behavior and social capital, such as age and sex. We use multiple regression models to control these confounders and obtain the net effects of social capital.

A first set of models does not include social capital among the explanatory variables. With these models we want to determine some traditional associations, such as the effect of urbanization or education on demographic behavior. Table 4 shows the main results of the regression models: the rate ratios for fertility and odd ratios for the other four variables. Regarding our variables of interest—urbanization and urban poor—fertility and intention to migrate do not show significant differences by urbanization after controlling for compositional factors such as education or age. Reception of remittances tends to be lower in metropolitan areas compared to rural areas and, especially, intermediate cities. There is a clear gradient of higher crime (victimization and feeling unsafe) and urbanization, with metropolitan areas presenting higher values than both small cities and rural areas, and with small cities with values in-between. These results came from multiple regression models and show effects above and beyond socioeconomic or individual characteristics. It seems that some of the univariate differences by urbanization (Table 3) were just compositional. For example, these effects are due to the fact that urban populations are more educated. Being urban poor, in turn, does not make any difference in any of the five indicators.

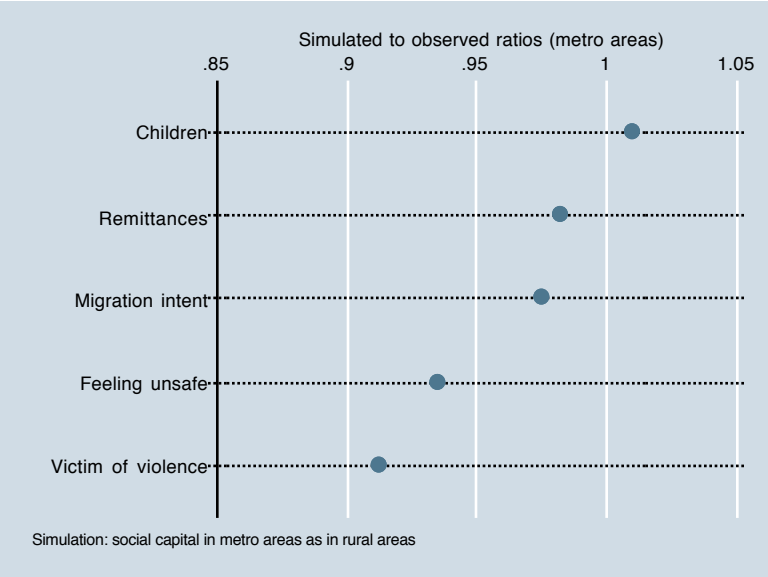
Table 5 shows the complete multiple regression models, with social capital and significant interactions. We focus there on the effects of the two indicators of social capital, which are net effects, above and beyond socioeconomic and individual characteristics. The relationship between social capital and fertility was weak, if any, in preliminary analyses, but some significant associations emerged after introducing interaction effects in the regression models, configuring a complex picture. The data show that community participation is associated with larger families but only among males, and that fertility may decline or increase with trust depending on wealth. Going from 0 to 1 in community participation (which is the entire scale's range) increases fertility by 34% among men, zero among females. Moving along the full scale of trust increases fertility in 8% among the non-wealthy and decreases it by 13% among the wealthy.

The intention to migrate to the US and reception of remittances are higher in places with higher community participation. The other dimension of social capital—trust—seems to have an effect only on remittances, which tend to be higher at higher levels of trust. All these effects are, however, weakened with urbanization. Going from zero to 1 in the scale of participation increases by 175% the odds of migration intention in rural areas, but in metropolitan areas reduces those odds by 16%. The scale of trust increases by 146% the odds of receiving remittances in rural areas but it has no effect (-2%) in metropolitan areas. Social capital thus appears as a factor favoring out-migration in rural areas confirming the importance of networks in the migration process often mentioned in the literature. Such effects, however, disappear in metropolitan areas.

The clearest effects of social capital are on crime. These effects are also easier to analyze since no meaningful interactions existed. Substantially lower odds of victimization and of unsafe feelings are linked to communities with high trust. The effects, however, are not that clear for community participation. In communities with the highest value in the scale of trust (one) the odds of victimization or of feeling unsafe are almost half those in communities with zero in the scale of trust.

To determine the real significance of all these effects of social capital we re-estimate our five demographic indicators in metropolitan areas under a hypothetical scenario in which social capital in these areas is higher and equal to that of rural areas in the same country. Figure 3 summarizes the results of this simulation. The simulated increase of social capital has no meaningful effect on fertility, remittances, and migration intent of metropolitan areas, which change by less than 3%. In contrast, there is a noticeable reduction in the likelihood of feeling unsafe and being a victim of violent crime (Figure 3). In other words, our data show that the lower social capital in Latin America cities increases crime and feelings of unsafety but have little effect, if any, on migration and fertility.

Figure 3. Ratios of simulated to observed demographic indicators in metropolitan areas



Discussion

Although Social Capital has become an influential concept in the social sciences, little is known of its relationship to demographic behavior. Based on data from probabilistic samples of 12,000 adults in eight Latin American countries, this paper has studied two dimensions of social capital—(1) community participation and (2) trust in neighbors— and their relation with urbanization, fertility, out-migration, and crime. It aimed to determine whether social capital explains some of the differential demographic behavior of urban populations. Our data show that social capital clearly declines with urbanization, although the urban-poor show a bit higher community participation. There is a clear gradient of increased crime and reduced social capital related to urbanization. The relationship between social capital and fertility and migration is less clear and often restricted to certain sub-populations. The urban-poor do not exhibit demographic behavior significantly different than the expected given its compositional and spatial characteristics, and social capital does not help to explain their demography.

Social capital is a resource available to individuals to reach certain goals shared with others e.g., getting a job, having a better life, educating children, and avoiding crime. The problem with fertility and migration probably is that there are no common, universal goals. Perhaps a universal goal regarding fertility is that couples have the children they want, no more no less, and social capital may help to reach that goal. However, in some communities, this could mean it helps couples to have fewer children while in other communities the dominant goal may be to help couples to have the desired first or second child. By the same token, in some communities the common goal regarding out migration could be to help people to leave whereas in others could be to stay. Because of this lack of common universal goals in migration and fertility we do not observe a clear effect of social capital. The situation is distinct with crime; there is a universal common goal—to avoid it—and thus we see a clear effect of social capital.

To see an effect of social capital on fertility and migration one probably needs to model the gap between what is desired and what is being achieved. Concepts like "unmet needs" or "unwanted situations" maybe more appropriate dependent variables to see an influence of social capital. A much more refined measurement of demographic intentions and achievements would be necessary to study these effect.

The Validity of our indicators of social capital is certainly an issue. Do they really measure social capital? Our indicator of trust was a very demanding one on responses' consistency. We accepted only responses that were consistent in three different questions. However, this left about two-thirds of respondents as "ambivalent" or "neutral" in the issue of trust which may hide some of the effects of this factor. Our measure of community participation was based on six items with high degree of internal consistency as shown by the Cronbach's Alpha of 0.87. However, we have no means to check its external validity. Having a high level of participation, may be an empty concept reflecting little more than ritual behavior, instead of genuine involvement in community issues or the existence of networks and solidarity linkages. The comparison by countries showed that Costa Rica has the highest level of trust, which is consistent with its democratic traditions and confidence in institutions. However, regarding

community participation, the highest scores occurred in contexts where there are no signals that make one to expect that

We used the cluster sampling averages of trust and participation, instead of the individual responses. We did so because of the collective character of social capital and to avoid endogeneity or reverse causation (e.g., to resolve, at least in part, the problem that high trust is caused by low crime and not vice versa). What would have happened if we had taken the individual scores? To respond, we re-estimated our regression models and found that using the aggregate-level indicators reduced the significance of community participation effects, but increased the effects of trust. Noaggregate or individual-level indicators of social capital showed, however, clear effects on fertility. Our main conclusions would have not changed if we had used individual-level responses.

Finally, the loss of social capital in urban settings seems clear and undisputable in this dataset. Latin America does not differ in this regard from other regions. This decline in social capital seem to be important for the higher crime rates in cities, but, again, it does not appear affecting fertility or outmigration.

Bibliography

Astone, N., Nathanson, C., Schoen, R. & Kim, Y. (1999). Family Demography, Social Theory, and Investment in Social Capital, Population and Development Review, 25(1), 1–31.

Bongaarts, J., & Watkins, S. C. (1996). Social interactions and contemporary fertility transitions. Population and Development Review, 22(4), 639-682.

Bourdieu, P. (1984). Distinction: A social critique of the Judgement of Taste. London: Routledge and Kegan Paul.

Bourdieu, P. (1986). The forms of Capital. In: J. G. Richardson, Editor. The handbook of theory: research for the sociology of education. New York: Greenwood Press, 241-258

Brenes, G. (2005). El efecto de las redes sociales sobre la interacción de los inmigrantes de México, Centroamérica y el Caribe con los nativos de los EEUU. Paper presented at the Seminar on "Migración Intrafronteriza en América Central, Perspectivas Regionales", Princeton University and University of Costa Rica, San José, 2005 .

Bühler, C. & Fratczak, E. (2004). Social Capital and Fertility Intentions: The Case of Poland, Max Planck Institute for Demographic Research, MPIDR WORKING PAPER, WP 2004-012.

Ciabattari, T. (2004). Single mothers, social capital, and work-family conflict. Center for Research on Child Wellbeing, Wake Forest University, Working paper #04-14-FF.

Coleman, J. S. (1988). Social capital in the creation of human capital. American Journal of Sociology, 94 (Supplement), s95-s120.

De Jong, G. (2000). Expectations, Gender, and Norms in Migration Decision-Making, Population Studies, 54 (3), 307-319.

Fernández, J.S, et al. (2004). Analysis and Relation Between Social Variables and Economic Variables in the European Social Survey and the World Bank and UNDP Reports Social Capital and Economic Capital in European Countries, Session: Improving Survey Methodology: the European Social Survey.

Gephart, M.A. (1997) Neighborhoods and Communities as Contexts for Development. In J. Brooks-Gunn, G. Duncan, & J. Aber (Editors.) Neighborhood Poverty, Volume I. New York: Russell Sage Foundation.

Granovetter, M. S. (1973). The stregth of weak ties. American Journal of Sociology, 78(6), 1360-1380.

Grootaert, C., Narayan, D., Nyhan, V., & Woolcock, M. (2003). Integrated Questionnaire for the Measurement of Social Capital. The World Bank Social Capital Thematic Group.

Hanushek, E. A. and Jackson, J. E. (1977). Statistical Methods for Social Scientists. Orlando, Florida: Academic Press;.

Hugo, G. J. (1981). Village-Community Ties, Village Norms, and Ethnic and Social Networks: A Review of Evidence from the ThirdWorld. In G. DeJong, & R. Gardner (Editors). Migration Decision Making: Multidisciplinary Approaches to Microlevel Studies in Developed and Developing Countries (pp.186–224). Pergamon Press, New York.

Inglehart, R. (1997). Modernization and Postmodernization: Cultural, Economic and Political Change in 43 Societies. Princeton, NJ: Princeton University Press.

Kawachi, I., & Berkman, L. (2000). Social Cohesion, Social Capital, and Health. In L. Berkman, & I. Kawachi (Editors), Social Epidemiology (pp. 174-190). New York: Oxford University Press.

Kawachi, I., Kennedy, B., Lochner, k., & Prothrow-Smith, D. (1997). Social capital, income inequality, and mortality. American Journal of Public Health, 87, 1491-1498.

Macintyre, S., & Ellaway, A. (2003). Neighborhoods and health: an overview. In I. Kawachi, & L.F. Berkman (Editors), Neighborhoods and Health (pp. 20-46). New York: Oxford University Press.

Massey, D. S., Arango, J., Hugo, G., Kouaouci, A., & Pellegrino, A. (1994). An evaluation of international migration theory: the North American case. Population and Development Review, 20(4), 699-751.

Massey, D., & Espinosa, K. (1997). "What's Driving Mexico-U.S. Migration? A Theoretical, Empirical, and Policy Analysis", The American Journal of Sociology, 102 (4), 939-999.

Montgomery, M., & Casterline, J. (1996). Social learning, social influence, and new models of fertility. In J. B. Casterline, R. D. Lee, & K. A. Foot (Editors), Fertility in the United States: New Patterns, new Theories. Supplement to Population and Development Review Vol. 22 (pp. 151-175). New York: Population Council.

Montgomery, M., Stren, R., Barney, C., & Holly, R. (2003). Cities Transformed: Demographic Change and its Implications in the Developing Word. Washington, D.C.: Committee on Population Division of Behavioral and Social Sciences and Education. The National Academy of Sciences.

Palloni, A., Massey, D. S., Ceballos, M., Espinosa, K. & Spittel, M. (2001). Social Capital and International Migration: A Test Using Information on Family Networks. American Journal of Sociology, 106 (5), 1262–1298.

Portes, A. (1998). Social Capital: Its Origins and Applications in Modern Sociology. Annual Review of Sociology, 24, 1-24.

Portes, A., & Sensenbrenmer, J. (1993). Embeddedness and immigration: notes on the social determinants of economic action. The American Journal of Sociology, 98(6), 1320-1350.

Putnam, R. (1993). Making Democracy Work: Civic Traditions in Modern Italy. Princeton: Princeton University Press.

Putnam, R. (2000). Bowling Along. New York: Simon & Schuster.

Putnam, R. (2001). Social Capital: Measurement and Consequences. Forthcoming as a publication of the Social Development Department, The World Bank.

Roberts, D. (1997). Mortality from Unintentional Injury and Violence in the Americas: a Source Book. Washington, DC: Pan American Health Organization.

Rosero Bixby, L., & Casterline, J. (1994). Interaction diffusion and fertility transition in Costa Rica. Social Forces, 73(2), 435-462.

Sampson, R. J. (2003). Neighborhood-level context and health: Lessons from sociology. In I. Kawachi, & L.F. Berkman (Editors), Neighborhoods and Health (pp. 132-146). New York: Oxford University Press.

Schoen, R., Kim, Y., Nathanson, C., Fields, J. & Astone, N. (1997). Why Do Americans Want Children?. Population and Development Review, 23, (2), 333-358.

Seligson, M. A. (2005). The Political Culture of Democracy in Mexico, Central America and Colombia, 2004. Washington, DC: Unpublished report, USAID and Vanderbilt University, LAPOP project.

StataCorp. (2003). Stata Statistical Software. Release 8.0. College Station, TX: Stata Corporation.

Sucoff, C. & Upchurch, D. (1998). Neighborhood context and the risk of childbearing among metropolitan-area black adolescents. American Sociological Review 63, 571-585.

Upchurch, D., Aneshensel C., Sucoff, C. & Levy-Storms, L. (1999). Neighborhood and Family Contexts of Adolescent Sexual Activity. Journal of Marriage and the Family, 61, 920-933.

Wilkinson, R. G. (1996). Unhealthy societies: the affliction of inequality. London: Routledge.

Table 1. Control variables

Variable	Mean	Standard Deviation
Country		
Mexico*	0.129	0.335
Guatemala	0.140	0.347
El Salvador	0.127	0.333
Honduras	0.123	0.328
Nicaragua	0.105	0.307
Costa Rica	0.125	0.33
Panama	0.136	0.343
Colombia	0.115	0.319
Age in years	38.729	15.655
Sex = Female	0.515	0.500
Currently married or in a union	0.623	0.485
Years of education	7.615	4.769
Wealth index	5.045	3.218
Religiosity (church attendance)		
Low* (every week)	0.263	0.440
Middle	0.329	0.470
High (seldom or never)	0.408	0.491
Protestant faith	0.207	0.405
Satisfaction with life index (1-4 range)	3.281	0.763

*Reference category when converted to dummy variables
N = 12,037

Table 2. Multiple regressions on the two indicators of social capital

Variables	Trust	(P>|t|)	Participation	(P>|t|)
Country				
Mexico	0.000	Ref.	0.000	Ref.
Guatemala	0.005	(0.82)	0.046	(0.00)
El Salvador	0.066	(0.00)	0.006	(0.57)
Honduras	-0.037	(0.09)	0.070	(0.00)
Nicaragua	-0.032	(0.18)	0.026	(0.04)
Costa Rica	0.090	(0.00)	-0.011	(0.35)
Panama	-0.072	(0.00)	0.017	(0.12)
Colombia	0.083	(0.00)	0.022	(0.04)
Urbanization				
Metropolitan area	-0.145	(0.00)	-0.109	(0.00)
Other cities	-0.082	(0.00)	-0.110	(0.00)
Rural area	0.000	Ref.	0.000	Ref.
Urban poor	-0.009	(0.66)	0.033	(0.00)
Age years	0.004	(0.05)	0.012	(0.00)
Age square	-2.4E-05	(0.24)	-1.1E-04	(0.00)
Female	-0.012	(0.27)	-0.074	(0.00)
Married	0.009	(0.46)	0.026	(0.00)
Education years	-0.001	(0.71)	0.011	(0.00)
Wealth index	0.000	(1.00)	0.002	(0.32)
Religiosity				
Low	0.000	Ref.	0.000	Ref.
Middle religiosity	0.055	(0.00)	0.027	(0.00)
High religiosity	0.100	(0.00)	0.059	(0.00)
Protestant faith	-0.051	(0.00)	-0.015	(0.04)
Satisfaction with life	0.079	(0.00)	0.010	(0.01)
Constant	-0.432	(0.00)	-0.154	(0.00)

Table 3. Demographic indicators by urbanization, social capital groups and country.

Variable & categories	(N)	Children	Migration intention	Remitt-ances	Victim violence	Unsafe perception
Total	(12,037)	1.64	25.7	11.8	4.7	14.0
Metropolitan	(3,306)	1.31	27.0	11.8	7.9	19.1
Other Cities	(3,903)	1.47	28.4	14.3	4.5	13.1
Rural	(4,828)	2.00	22.6	9.7	2.7	11.1
Urban poor	(2,170)	1.82	27.8	10.1	5.8	17.4
Trust						
Low	(6,385)	1.63	26.4	12.3	5.3	15.8
High	(5,651)	1.65	24.9	11.2	4.1	11.8
Participation						
Low	(6,072)	1.54	25.4	12.4	5.1	14.1
High	(5,964)	1.74	25.9	11.1	4.3	13.8
Mexico	(1,555)	1.50	17.7	10.5	4.8	8.3
Guatemala	(1,684)	1.99	25.2	12.9	4.3	15.0
El Salvador	(1,530)	1.50	34.8	23.1	5.8	16.9
Honduras	(1,477)	2.03	26.3	16.9	5.8	10.9
Nicaragua	(1,266)	1.75	31.2	15.0	5.7	17.7
Costa Rica	(1,499)	1.37	18.9	5.5	3.7	15.0
Panama	(1,639)	1.62	20.6	5.9	3.7	15.7
Colombia	(1,387)	1.28	30.7	5.2	4.1	12.6

Note: for the variables children and migration intention, the number of observations is approximately half since include only respondents under 40.

Table 4. Multiple regressions on demographic indicators with no effects of social capital

Variables	Children RR	P>|z|	Migration intention OR	P>|z|	Remitt-ances OR	P>|z|	Victim violence OR	P>|z|	Unsafe percept OR	P>|z|
Country										
Mexico	1.000	Ref	1.000	Ref	1.000	Ref	1.000	Ref	1.000	Ref
Guatemala	1.006	(0.87)	2.021	(0.00)	1.837	(0.00)	1.163	(0.38)	1.958	(0.00)
El Salvador	1.042	(0.31)	2.991	(0.00)	3.948	(0.00)	1.415	(0.04)	2.370	(0.00)
Honduras	1.057	(0.16)	2.226	(0.00)	2.666	(0.00)	1.552	(0.01)	1.350	(0.02)
Nicaragua	1.007	(0.86)	2.601	(0.00)	2.417	(0.00)	1.532	(0.03)	2.342	(0.00)
Costa Rica	1.023	(0.60)	1.086	(0.54)	0.389	(0.00)	0.708	(0.08)	1.914	(0.00)
Panama	1.160	(0.00)	1.251	(0.07)	0.568	(0.00)	0.695	(0.05)	2.072	(0.00)
Colombia	0.961	(0.35)	2.163	(0.00)	0.527	(0.00)	0.825	(0.31)	1.523	(0.00)
Urbanization										
Metropolitan	1.034	(0.35)	0.894	(0.27)	0.800	(0.04)	2.826	(0.00)	2.192	(0.00)
Other cities	1.017	(0.63)	0.987	(0.90)	1.156	(0.14)	1.411	(0.03)	1.242	(0.03)
Rural area	1.000	Ref	1.000	Ref	1.000	Ref	1.000	Ref	1.000	Ref
Urban poor	0.971	(0.40)	1.177	(0.14)	0.872	(0.25)	1.133	(0.45)	1.032	(0.76)
Age years	1.498	(0.00)	0.995	(0.92)	0.948	(0.00)	1.017	(0.34)	1.015	(0.13)
Age square	0.994	(0.00)	1.000	(0.86)	1.001	(0.00)	1.000	(0.11)	1.000	(0.06)
Female	1.339	(0.00)	0.569	(0.00)	0.991	(0.88)	0.481	(0.00)	1.218	(0.00)
Married	2.112	(0.00)	0.579	(0.00)	0.832	(0.01)	0.749	(0.00)	1.058	(0.36)
Education yrs	0.951	(0.00)	1.027	(0.00)	0.997	(0.72)	1.022	(0.10)	0.991	(0.27)
Wealth index	0.960	(0.00)	1.062	(0.00)	1.173	(0.00)	1.037	(0.14)	0.981	(0.22)
Religiosity										
Low	1.000	Ref	1.000	Ref	1.000	Ref	1.000	Ref	1.000	Ref
Middle	0.956	(0.07)	0.930	(0.31)	1.087	(0.31)	0.916	(0.46)	0.818	(0.01)
High	1.002	(0.95)	0.888	(0.11)	1.112	(0.18)	0.960	(0.73)	0.857	(0.03)
Protestant faith	1.027	(0.27)	1.165	(0.04)	1.040	(0.60)	1.220	(0.09)	1.074	(0.32)
Satisfact. life	0.951	(0.00)	0.760	(0.00)	1.090	(0.04)	0.773	(0.00)	0.792	(0.00)

RR = rate ratio from Poisson regression. OR = Odds ratio from logistic regression

Table 5. Multiple regressions on demographic indicators including social capital effects

Variables	Children RR	P>|z|	Migration intention OR	P>|z|	Remitt-ances OR	P>|z|	Victim violence OR	P>|z|	Unsafe percept OR	P>|z|
Participation index	1.337	(0.02)	2.746	(0.01)	1.450	(0.38)	0.761	(0.44)	1.341	(0.16)
Trust index	1.080	(0.34)	1.034	(0.89)	2.466	(0.00)	0.572	(0.00)	0.523	(0.00)
Country										
Mexico	1.000	Ref	1.000	Ref	1.000	Ref	1.000	Ref	1.000	Ref
Guatemala	1.005	(0.89)	2.054	(0.00)	1.869	(0.00)	1.189	(0.32)	1.998	(0.00)
El Salvador	1.042	(0.31)	3.171	(0.00)	4.030	(0.00)	1.487	(0.02)	2.536	(0.00)
Honduras	1.054	(0.19)	2.213	(0.00)	2.682	(0.00)	1.593	(0.01)	1.345	(0.02)
Nicaragua	1.010	(0.82)	2.674	(0.00)	2.501	(0.00)	1.497	(0.03)	2.334	(0.00)
Costa Rica	1.027	(0.54)	1.119	(0.41)	0.373	(0.00)	0.768	(0.18)	2.083	(0.00)
Panama	1.153	(0.00)	1.252	(0.07)	0.577	(0.00)	0.689	(0.05)	2.011	(0.00)
Colombia	0.958	(0.32)	2.238	(0.00)	0.535	(0.00)	0.891	(0.55)	1.646	(0.00)
Urbanization										
Metropolitan	1.004	(0.95)	1.131	(0.47)	1.111	(0.55)	2.545	(0.00)	1.997	(0.00)
Other cities	1.015	(0.77)	1.251	(0.14)	1.312	(0.08)	1.318	(0.09)	1.185	(0.09)
Rural area	1.000	Ref	1.000	Ref	1.000	Ref	1.000	Ref	1.000	Ref
Urban poor	0.986	(0.70)	1.178	(0.14)	0.860	(0.22)	1.129	(0.46)	1.026	(0.80)
Age years	1.500	(0.00)	0.996	(0.94)	0.948	(0.00)	1.017	(0.33)	1.015	(0.13)
Age square	0.994	(0.00)	1.000	(0.84)	1.001	(0.00)	1.000	(0.11)	1.000	(0.06)
Female	1.418	(0.00)	0.604	(0.00)	0.984	(0.89)	0.483	(0.00)	1.221	(0.00)
Married	2.108	(0.00)	0.578	(0.00)	0.832	(0.01)	0.750	(0.00)	1.060	(0.34)
Education yrs	0.951	(0.00)	1.026	(0.00)	0.998	(0.81)	1.023	(0.08)	0.992	(0.30)
Wealth index	0.959	(0.00)	1.059	(0.00)	1.161	(0.00)	1.039	(0.11)	0.986	(0.35)
Religiosity										
Low	1.000	Ref	1.000	Ref	1.000	Ref	1.000	Ref	1.000	Ref
Middle	0.954	(0.06)	0.926	(0.29)	1.077	(0.36)	0.925	(0.51)	0.825	(0.01)
High	1.001	(0.98)	0.888	(0.12)	1.102	(0.22)	0.981	(0.88)	0.873	(0.06)
Protestant faith	1.024	(0.31)	1.153	(0.06)	1.052	(0.50)	1.204	(0.11)	1.050	(0.49)
Satisfact. life	0.952	(0.00)	0.760	(0.00)	1.092	(0.03)	0.773	(0.00)	0.793	(0.00)
Interactions										
Participation*trust	1.149	(0.06)	0.787	(0.30)	0.459	(0.00)				
Particip.*Metrop.	1.171	(0.39)	0.305	(0.05)	0.197	(0.01)				
Particip.*Other city	0.953	(0.77)	0.358	(0.05)	0.480	(0.18)				
Particip.*female	0.750	(0.03)	0.759	(0.51)	1.037	(0.94)				
Particip.*wealth	0.985	(0.91)	1.451	(0.31)	1.794	(0.12)				
Trust*Metrop	1.037	(0.73)	0.689	(0.26)	0.402	(0.01)				
Trust*Other city	0.936	(0.44)	0.792	(0.40)	0.352	(0.00)				
Trust*female	0.912	(0.20)	1.024	(0.92)	1.064	(0.78)				
Trust*wealth	0.808	(0.01)	1.244	(0.39)	1.578	(0.08)				

RR = rate ratio from Poisson regression. OR = Odds ratio from logistic regression