

SOCIAL DISORGANIZATION AND CRIME

Searching for the Determinants of Crime at the Community Level

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Abstract: Robert J. Sampson and W. Byron Groves (1989) analyzed data from 238 British neighborhoods to test the mediating effect of indicators of social disorganization. Basing their work on that of Clifford R. Shaw and Henry D. McKay (1942), these researchers created indicators such as friendship networks, organizational participation, and the control of street-corner teenaged peer groups, and developed a theory of community level. In this article, we apply the formal logic of Sampson and Groves using data from the first Belo Horizonte victimization survey. In addition, we use data from the 2000 Brazilian Census and the Military Police. The results support the social disorganization theory and demonstrate that crime-rate differences are an effect of community level.

Crime and violence have become more prevalent in Brazil since their marked increase in the 1980s, primarily in São Paulo and Rio de Janeiro, and in the 1990s in other large cities such as Belo Horizonte. Although the city of São Paulo has experienced a sharp reduction in homicide rates in recent years (Goertzel and Khan 2009), violent crimes, especially property crimes, still have extremely high levels. Not only the media but also official statistics have demonstrated that criminality has increased significantly in large cities in recent years. While in the United States in the 1970s and 1980s the public pointed to crime as one of the most severe social problems, in Brazil a survey conducted by the Confederação Nacional dos Transportes in 2010 showed that almost 23 percent of Brazilians elected urban violence as the major social problem to be tackled, followed by the problem of drugs (21.2 percent) and unemployment (19 percent) (CNT/SENSUS, 2010). Recent analyses have confirmed the rise of victimization in urban centers (Beato, Peixoto, and Andrade 2004).

This reality is evident when we observe that most individuals lock their homes and have constructed high walls and strengthened all of the forms of home security. Today, in the large urban centers, the home has become the best model of a fortress that one can imagine (Paixão 1991; Caldeira 2000). This generalized fear has made many Brazilians prisoners in their own homes, resulting in social behaviors of suspicion and isolation (Silva and Beato Filho 2013).

In Brazilian society, increasing crime has also fostered the demand by civil society for a defined public security policy. This Brazilian phenomenon is not new; other countries have confronted the same problem. When adopted, primarily in less developed countries, such public policies have not been guided by system-

atic studies on crime, and the appropriate follow-up on the implemented policies has not occurred. The United States and England are exceptions. There, scholars have been discussing the origins of crime for a long time, and the anticrime policies that have been adopted are based on criminological theories and criminal analysis.

In modern criminology, an important tradition of studies has shown the existence of geographic patterns of crime. The occurrence of crimes, as well as the concentration of criminals and victims, follows patterns that manifest themselves differently in space and time (Beato 2012; Bursik and Webb 1982; Brantingham and Brantingham 1981; Sherman, Gartin, and Buerger 1989). The evidence of the spatial-temporal distribution of urban crime has driven research not only to prove the existence of these patterns but fundamentally to understand the processes that produce them. Thus, the debate on the phenomenon of crime has moved from approaches that emphasize individual or psychological elements, such as genetic abnormalities or personal predispositions, to structural levels of explanation. These studies identify certain properties of community structures as determinants of patterns of crime distribution, which in turn characterize some places or neighborhoods as violent and dangerous.

Ecological studies are among those looking to associate the structural characteristics of neighborhoods with the occurrence of crimes. The concentration of poverty, urban segregation, and residential instability are, according to these studies, elements that are ecologically concentrated and strongly correlated to the phenomenon of crime.

THEORETICAL BACKGROUND

One of the most important ecological approaches in sociology to the study of crime and delinquency originates in the research of the Chicago school, specifically in the work of Clifford R. Shaw and Henry D. McKay (1942). They investigated the relationship between the social organization of neighborhoods (or communities) and the process of growth of large cities. In particular, these scholars sought to understand why high rates of delinquency persisted in certain areas for many years, independent of changes in the composition of the population. According to their theory, crime appeared in communities characterized by social disorganization and was perpetuated through a process of cultural transmission whereby the traditions were passed from generation to generation.

Shaw and McKay affirmed that three structural factors—low socioeconomic status, ethnic heterogeneity, and residential mobility—disrupt a community's social organization, which in turn explains the spatial variations in the rates of crime and delinquency. Thus the community, treated as a small area in the interior of the urban space, became the unit of analysis of the environmental sociologist in the search for the causes of crime in large cities.

From the 1950s until the 1980s, social disorganization theory was the target of substantial criticism, resulting in its abandonment as a viable explanation for empirical studies of crime. These criticisms were focused on the utility and capac-

ity of macro-level interpretation, the assumed stability in the standards for urban land use, and the measurement of social disorganization as a construct independent of that construct's outcome (Veysey and Messner 1999).

However, social disorganization theory has received attention from researchers in recent decades with the advance of computer-based statistical techniques and new methodologies and theoretical approaches. At the end of the 1980s, Robert J. Sampson and W. Byron Groves followed the principles and logic of the original theory of Shaw and McKay while also relying on more recent work concerning the ecology of crime to construct a theoretical explanation of crime at the community level. Sampson and Groves (1989) tested the mediating effect of what they term the "intervening dimensions of social disorganization" in relation to the structural characteristics of the community, or "exogenous sources of social disorganization," and crime rates.

For Sampson and Groves, the structural characteristics of a community, such as urbanization and degree of family disruption, affect the capacity of the community to impose informal and formal controls on its members and outsiders. This inability to exert social control is reflected in the direct indicators of social disorganization, including friendship networks, involvement in organizations, and the supervision of teenaged peer groups. Reduction in the mechanisms of social control and, consequently, increase in social disorganization result in high crime rates. Social disorganization, in this case, emphasizes the inability of "a community structure to realize common values of its residents and to keep the effective social control" (Sampson and Groves 1989, 777). This results in weakened social bonds, poor internal control, and limited institutional capacity to access external resources (Berry and Kasarda 1977).

Since then, several studies have sought to test the explanatory power of the theory of social disorganization in varied urban contexts. For Bursik and Grasmick (1993), the local community, or neighborhood, should be understood as a complex relational system made up of family and friends as well as formal and informal associative ties formed through the socialization process prevailing in the neighborhood. In this regard, variations in the ability of neighborhoods to regulate and control themselves explain the differential rates of criminal behavior and victimization among neighborhoods.

By highlighting that the main deficiency of the original model of social disorganization is the failure to consider the role of the public sphere of local control, Bursik and Grasmick propose a systemic theory in which lower levels of crime and violence stem from greater effectiveness of a community to negotiate with external agencies, such as the police or city officials. It is these inter-institutional connections that in turn are capable of maximizing decisions taken internally by the local residents (Bursick and Grasmick 1993; Sampson 2012).

Along this same line of reasoning, Sampson and his colleagues developed a new theoretical approach in which local social control depends on the level of "collective efficacy" present to solve the community problems (Sampson, Raudenbush, and Earls 1997). The basic premise of this concept is that social and organizational characteristics of neighborhoods explain variations in rates of crimes that should not be attributed only to aggregated demographic characteristics of

individuals. Indeed, the lowest crime rates would be the result of neighborhood environments in which the residents share common values and at the same time act to control local activities. Higher levels of informal social control of the neighborhood are exercised when there is greater social cohesion and trust among its residents, that is, more collective efficacy. Thus, collective efficacy is a resource differentially available among communities, and it is activated at the crucial and specific moment for social control.

Furthermore, it is important to note that collective efficacy is much more than the accumulation of individual properties. The theoretical orientation of the concept consists in shared expectations for action, which is potentially activated to perform specific tasks in conditions of mutual trust and social cohesion. In a community context where the rules are unclear and external resources capable of supporting the community are lacking, the possibility of finding people predisposed to intervene is minimal. Thus, this could lead to the emergence of what Elliott and colleagues (1996) call "illegitimate opportunity structures and dysfunctional lifestyles" or, more precisely, an enabling environment for "alternative behavioral strategies" (Cohen and Machaleck 1988), with low capacity to exercise effective collective local control.

DATA AND METHOD

The decision to focus the present study on the city of Belo Horizonte results from two factors: the rise of crime in this city (figure 1), primarily in recent years, and Belo Horizonte's privileged position among other Brazilian cities of similar size with respect to the database. This second factor facilitates the integration and construction of important indicators for the study.

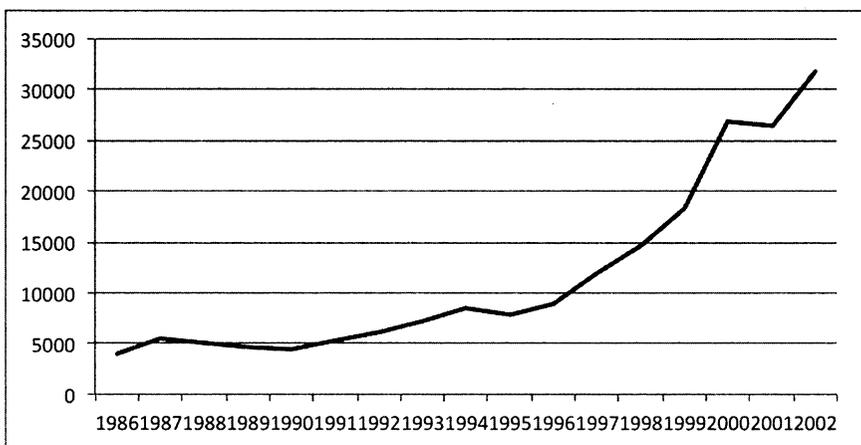


Figure 1 The number of violent crimes in Belo Horizonte from 1986 to 2002. Based on data from CRISP (Center For Crime And Public Safety Studies).

As presented in the graph below, Belo Horizonte exhibits stability in the total number of violent crimes until the beginning of the 1990s. In 1986, there were 3,949 occurrences and in 1991 there were approximately 5,000 occurrences. However, in 1992, an increasing trend in the number of crimes began. In 1992, there were 6,133 occurrences, whereas in 2002, there were 27,000, an increase of 348 percent over ten years.

Unit of Analysis

Ecological studies of crime focus their analyses on three distinct levels: macroanalysis, mesoanalysis, and microanalysis (Brantingham and Brantingham 1981, 21). Macroanalysis examines the highest levels of spatial aggregation. Such studies involve the analysis of the spatial distribution of crimes among countries, states, or cities. Mesoanalysis examines an intermediate level of aggregation. These analyses focus on crimes that occur in a sub-area of a city or metropolitan region. For example, mesoanalysis studies aggregate crimes at the level of the police station, planning areas, neighborhoods, or the census tract. Finally, microanalysis examines specific locations where crimes occur. Such studies focus, for example, on a construction type or an abandoned area that is considered to be a high-crime area.

Understanding patterns of crime distribution becomes easier when the unit of analysis is well defined and allows capturing of the specific demographic, social, and cultural characteristics of the area. Thus, the better defined the level of analysis is, the clearer are the differences and peculiarities regarding the environment that must be considered to gain a good understanding of a pattern. In studies comparing countries, we obtain information at the macro level. However, we sacrifice detailed information on the crimes because of the large scale.

Ecological studies almost always focus on the differences in crime rates among neighborhoods, at a mesoanalytic level (Krivo and Petersen 1996; Sampson and Groves 1989; Bursik and Grasmick 1993). For this purpose, Murray Kempton provides a useful definition of neighborhood as a unit of analysis: "A neighborhood is where, when you go out of it, you get beat up" (quoted in Bursik and Grasmick 1993, 5). For Bursik and Grasmick (1993, 6), "a neighborhood is a small physical area embedded within a larger area in which people inhabit dwellings"; in the neighborhood, "there is a collective life that emerges from the social network and among the residents and from the institutional arrangements that overlap these networks." The neighborhood is an area where individuals perceive themselves to have a common interest in that area and to whom a common life is available. Additionally, in the neighborhood, there are certain traditions of identity that persist over time.

In this article, the unit of analysis chosen to represent a neighborhood is the census tract. Therefore, information on crime and the characteristics of the neighborhoods are aggregated at the level of the census tract. According to the 2000 decennial census, Belo Horizonte has a total of 2,563 census tracts with an average of 248 residences per tract. The 2000 census divided the tracts into special sectors

and common or “non-special” tracts, which comprise 12 percent and 88 percent of Belo Horizonte’s residential area, respectively.

A victimization survey conducted in Belo Horizonte in 2002 used a sample of 200 census tracts. The sampling procedure stratified the sample according to tract type (common or special) and the degree of interpersonal violence, which was represented by homicides. Then, the victimization census tracts were divided into common (nonviolent), special (nonviolent slum), and special (violent slum) neighborhoods. The final result was as follows: 148 census tracts were common, 26 census tracts were special (nonviolent), and 26 census tracts were special (violent), representing 74 percent, 13 percent, and 13 percent of the sample, respectively. The survey attained a reply rate of 97.5 percent per tract of the 200 tracts initially selected. Thus, it is possible to operationalize the answers into 195 sectors. The sample contained 4,000 questionnaires. Within each tract, 20 households were selected whose respondents were aged 18 years or older. Here, the questionnaire reply rate was 90.9 percent for a total of 3,636 answered questionnaires.

Dependent Variables

Two different databases provided information on crimes. The first database contains the crime geo-data of the Military Police for the years 1998 to 2002. The Military Police data are collected in two basic forms: the 190 emergency police telephone service data (the 190 system is similar to the 911 system in the United States) and the data gathered by policemen in the course of regular duty. The Military Police crime data supply information on homicides, vehicle thefts, and muggings. For the category of property crimes used in this work, information has been added regarding whether a robbery involved the use of a firearm. Another source of crime is from Belo Horizonte’s victimization survey at census tract level. In addition to self-reported crimes, this survey supplies information, for example, on victims, criminals, and the circumstance of crimes. In the present study, only the rape information was used.

Independent Variables

The friendship networks indicator is derived from questions regarding the relationship of individuals with their neighbors and the number of relatives or friends who inhabit a neighborhood. A high density of social ties (friendship or kinship) implies an increased degree of community social control because the community members are more involved with one another and, consequently, are able to recognize strangers or criminals in the neighborhood. Additionally, the residents engage themselves in guardianship behavior against predatory victimization.

Organizational participation refers to the participation of individuals in formal or voluntary institutions in their neighborhood. The greater the participation and involvement of the community members is, the greater is the discussion of problems in the neighborhood and therefore the capacity to mobilize to uphold

common interests. This indicator relates negatively with delinquency and crime because the capacity to mobilize is important in the construction of a healthy urban environment. It was elaborated from questions about the existence of some organization in the neighborhood focused on preventing crimes, and of another question concerning the existence of people or groups of people who are paid by the community to maintain security in that region, apart from police.

The terms *risk exposure* and *risk habits* express the probability of an individual being present at a criminal event. Individuals who expose themselves to certain sets of circumstances are more likely to be victimized (Warr and Stafford 1983). This probability applies not only to individuals but also to property, such as houses or vehicles. This variable is derived from questions regarding the daily routine of individuals who frequently sleep away from home or walk in the streets between 11:00 p.m. and 2:00 a.m.

For the structural level, variables were used that have a direct effect on the dimensions of the social organization of a neighborhood but an indirect effect on crime. Population density is a variable that affects both of these dimensions. Population density's effect is negative on the friendship network. That is, a high-density community is an area of many strangers, where individuals form few friendship networks. Additionally, the participation of residents in organizations is affected because the relationships between individuals are not strong. Thus the community members are unable to mobilize themselves to solve shared local problems.

Income is an indicator that is frequently used in various analyses and that originates in the work of Shaw and McKay. In the present study, I used the average income of the household head in each tract. A community with low socioeconomic status, that is with very low income, has a large demand for resources or money. Therefore, this community's capacity to organize to solve shared problems is decreased, which directly affects the organizational participation of the community and the crime rate.

Another variable that relates directly to the organizational participation of individuals in a community is the sense of belonging. This indicator is based on questions regarding how satisfied residents are with the conditions of their neighborhood. Another question concerns the ability of an individual to continue living in the neighborhood or to move elsewhere. Thus, the greater the sense of belonging a resident feels, the greater is the possibility for this resident to be involved in questions that concern neighborhood life.

According to Sampson (1987) and Krivo and Peterson (1996), family disruption was calculated as the ratio between the number of female household heads and number of male household heads. Family disruption is an important indicator of the degree to which teenaged peer groups are supervised. As a proxy, I used the number of female heads of household. A female head of household must leave the home to work almost every day. Thus the home is empty, or, if the woman has children, the children will receive less parental monitoring. Additionally, the literature demonstrates that women are more susceptible to certain crimes, such as rape or nonviolent robbery.

Finally, the variable functioned differently from the way that the variable was

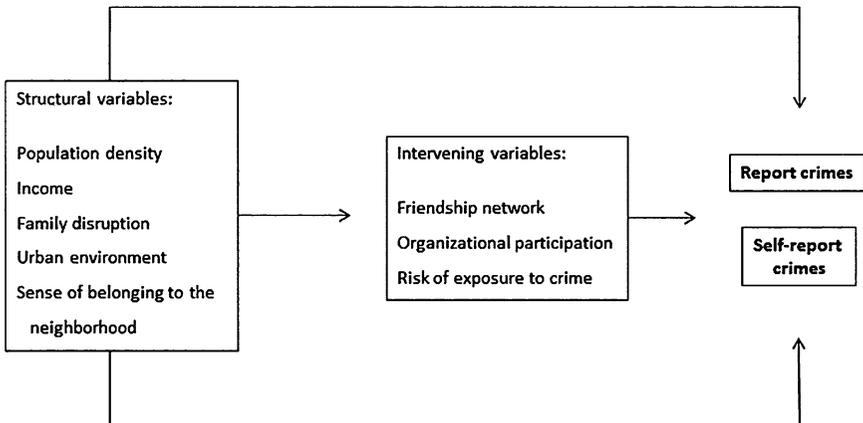


Figure 2 Causal model of crime in Belo Horizonte. Adapted version of Sampson and Groves's (1989) causal model of crime.

used by Sampson and Groves (1989). Whereas Sampson and Groves used a rural-urban comparison to investigate the capacity for social control, in the present article, urbanization is a measure of how much the urban environment of a neighborhood is degraded. A index of degraded urban environment was created using information on the presence of abandoned buildings, houses, or sheds; rubbish in the streets or on public sidewalks; and the prevalence in a neighborhood of loud music and residents who argue among themselves. Urbanization correlates directly and positively with crime and hinders the formation of friendship networks and participation in local institutions.

Based on these indices and Sampson and Groves's causal model of crime, the following causal model for crime in Belo Horizonte was developed.

For this article I first perform a Linear Model (LM) analysis to study the effects of exogenous variables on the intervening dimensions of social disorganization, because these variables are continuous. Besides the regular LMs, Generalized Linear Models (GLMs), a family of statistical models, overcome the limitations of LMs because they are indicated for binary response as well as count data. Further, since the number of crimes is in the form of counts, we perform a Poisson analysis, a GLM statistics model, to understand the relationship between the crimes and all independent variables (McCullagh and Nelder 1999).

FINDINGS

As we can see from the descriptive statistics displayed in table 1, the neighborhoods (census tracts) vary significantly along the theoretical dimensions. Although the variables that represent the sense of belonging and family disruption in the neighborhood have a small variability, the variables measuring the three intervening community factors vary widely. For example, organizational partici-

Table 1 Descriptive statistics of the dimensions of social disorganization in 195 Belo Horizonte census tracts (2002)

	N	Minimum	Maximum	Mean	Standard deviation
Local friendship network	195	2.30	10.05	6.11	1.43
Organizational participation	195	.00	38.00	5.69	6.36
Risk of exposure to crime	195	3.55	13.45	7.75	1.51
Population density	195	1.39	5.08	3.56	.47
Family disruption	195	.04	1.75	.55	.23
Income	195	168.69	6112.38	1099.34	1145.36
Degraded urban environment	195	.20	4.15	1.91	.78
Sense of belonging of neighborhood	195	2.80	5.20	4.24	.40

Source: Data from CRISP (Center for Crime and Public Safety Studies)

Table 2 Regression estimates of effects of community structure on the dimensions of social disorganization in 195 Belo Horizonte census tracts (2002)

	Local friendship network		Organizational participation		Risk of exposure to crime	
	B	t	B	t	B	t
Population density	0.703**	2,782	1.854*	1,753	0.32	1,051
Family disruption	-0.119**	-4,028	1.121**	9,067	0.133**	3,738
Income	0.938**	2,345	-1,856	-1,109	0.71	1,474
Degraded urban environment	0.199	1,531	1.702**	3,126	0.329**	2,103
Sense of belonging of neighborhood	0.102	0.396	0.724	0.672	-0.172	-0.555
Adjusted R ^{2a}	0.309		0.39		0.095	

Source: Data from CRISP (Center For Crime and Public Safety Studies)

^a $p < .005$; ** $p < .05$; * $p < .10$

pation ranges from zero to thirty-eight, and local friendship and risk of exposure have a roughly similar range of variation.

Table 2 shows the effects of the exogenous variables on the intervening dimensions of social disorganization. We can observe that income has the highest impact on the local friendship networks ($B = 0.938$) and that its effect is positive. Population density has a positive and significant impact on the same variable ($B = 0.703$). Additionally, the proxy of family disruption has a significant impact on friendship networks. However, the effect is negative. The other exogenous variables do not have a significant effect on friendship networks.

Regarding organizational participation, income has a negative effect. However, income's coefficient is not significant. Population density and degraded urban environment exhibit similar values ($B = 1.854$ and $B = 1.702$, respectively) for their coefficients, and their effect is positive and significant. Family disruption ($B = 1.121$) has a positive and significant effect on the organizational participation of a neighborhood.

Regarding risk of exposure, only family disruption ($B = 0.133$) and degraded urban environment ($B = 0.329$) have a significant effect. The other variables do not have a significant effect. In no case does the sense of belonging have a significant effect.

Importantly, in this model, the exogenous variables provide a good explanation of the intervening variables of social disorganization, primarily friendship networks ($R^2 = 0.309$) and organizational participation ($R^2 = 0.390$). However, these variables explain only 9.5 percent of risk of exposure ($R^2 = 0.095$).

In table 3, I run the Poisson regression (Land, McCall, and Nagin 1996; McCullagh and Nelder 1999) using each variable from the model—the exogenous sources and the intervening variables of social disorganization—to estimate the number of crimes. We can observe that for homicides, only income has a significant coefficient. However, the explained variance is 12.36 percent. Income, degraded urban environment, and organizational participation all have significant effects on vehicle crimes. In this case, the variable with the highest impact on crime is degraded urban environment, and its effect is negative.

For mugging, there were six outlier cases, which were necessarily dropped. Thus, in the final regression, there were 189 cases, and only the local friendship network was not significant. Every other variable was significant, and population density had the largest impact (coef. = -0.356). For rape, only one variable did not have a significant effect. All of the other variables had a stronger impact, above all population density and family disruption. For property crimes, population density had the most significant effect (coef. = -0.593). For total crime, family disruption had the most significant effect (coef. = 1.057).

DISCUSSION

We can observe that the model has a good explanatory capacity for all of the studied crimes. For homicides, the model explains 12.36 percent of the variance; for property crimes, 15.60 percent; for vehicle crimes, 17.89 percent; for mugging, 22.19 percent, and 28.58 percent for rape. The total explained variance for all of the crimes is 35.97 percent.

As explained above, the local friendship network is associated positively with a high density of social ties, which results in low crime rates. The divergent results of the tested models suggest two reflections. First, the model showed that friendship networks have a positive effect with respect to rape. As noted by Hunter (1985), this effect occurs because rape is a crime that often takes place in the home of victims who, generally, know their offender. Because this index was created using questions regarding the number of relatives, friends, or acquaintances that inhabit a neighborhood, this result supports rape's real-world occurrence pattern. Second, the negative effect of friendship networks on total crimes in the final model provides evidence in support of the hypothesis that a neighborhood with stronger friendship networks exhibits more resident interaction, social cohesion, and informal social control (Sampson, Raudenbush, and Earls 1997), and therefore the probability that these neighborhoods will have high levels of crime rates is decreased.

Table 3 Poisson regression estimates of the effects of community structure on urban crimes in 195 census tracts in Belo Horizonte

	Homicides		Vehicle robbery		Mugging		Rape (self-reported)		Property crime		Total crime	
	Coef.	z	Coef.	z	Coef.	z	Coef.	z	Coef.	z	Coef.	z
Population density	0.174	0.70	-0.231	-1.54	-0.356**	-5.87	-1.768**	-2.61	-0.593**	-9.34	-0.492**	-15.03
Family disruption	0.035	0.11	0.003	0.01	0.232*	1.86	1.437*	1.91	-0.080	-0.68	1.057**	22.63
Income	-0.195**	-4.12	0.052**	2.63	0.088**	10.69	-0.479**	-2.61	-0.008	-0.79	0.0513**	10.02
Degraded urban environment	0.068	0.66	-0.228**	-2.63	-0.127**	-3.69	-0.755**	-2.39	-0.136**	-3.53	0.113**	5.95
Sense of belonging of neighborhood	0.865	0.25	1.345	0.18	1.333	0.05	0.309	0.67	0.237	0.04	1.006	0.03
Local friendship network	0.105	0.17	-0.062	-1.23	0.004	0.17	0.496**	2.46	0.022	0.94	-0.073**	-6.13
Organizational participation	0.012	0.61	0.0425**	5.01	-0.007	-1.89	0.050	0.76	0.039**	9.33	0.007**	3.10
Risk of exposure to crime	-.084	-1.51	-0.004	-0.12	-0.028	-1.86	0.503**	2.66	0.0412*	2.22	-0.106**	-12.10
Pseudo R ²	0.1236		0.1789		0.2219		0.2858		0.156		0.3597	

Source: Data from CRISP (Center For Crime and Public Safety Studies)

* $p < .10$; ** $p < .05$

Organizational participation does not completely support the relevant hypothesis. The hypothesis was that higher organizational participation results in an increased mobilization of individuals in defense of the common interest and consequently a lower crime rate. However, the results only support this hypothesis for mugging, where the effect was negative. For the other crimes, the coefficients were positive. We propose that this positive correlation between organizational participation and high crime rates area can be the result of a specific social process in Brazil in which concentrated poverty necessitates such participation as a strategy of daily survival in violent areas (Sampson 2012; Villarreal and Silva 2006).

The risk exposure index was created based on questions regarding the opportunity for crime to occur. The hypothesis was that the higher the risk of exposure to crime, the more likely a crime is to occur. For rape and property crimes, the effect supports the hypothesis. However, for the other crimes, the effect is negative.

The social disorganization theory was developed to explain delinquency in a context different from Brazil. However, in this article, I tried to follow the method proposed by Sampson and Groves (1989). If we understand the logic of each crime type and how and when the crime occurs, it is possible to demonstrate that the social disorganization theory is relevant to explain variations in crime rates in urban areas. Despite data limitations and the difficulty of making generalizations, the empirical results seem to be consistent with Shaw and McKay's theoretical formulation of social disorganization in communities. I acknowledge the difficulty of measuring certain concepts of social disorganization and use census tract as a proxy for neighborhoods, so I think that more ecological studies in the Brazilian context are clearly needed. However, I believe that ecological studies on the urban community level are a powerful approach to the better understanding of the dynamics of crime in large cities, especially outside the context of the United States and Western Europe. Finally, the availability of better surveys, more development of methodological techniques, and the integration of theories of crime can also contribute to an understanding of the relationship between urban crime and social processes.

REFERENCES

- Beato, Claudio
2012 *Crimes e cidades*. Belo Horizonte: Editora UFMG.
- Beato, Claudio, Betânia Totino Peixoto, and Mônica Veigas Andrade
2004 "Crime, oportunidade e vitimização." *Revista Brasileira de Ciências Sociais* 19 (2): 73–89.
- Berry, Brian J. L., and John D. Kasarda
1977 *Contemporary Urban Ecology*. New York: Macmillan.
- Brantingham, Paul J., and Patricia L. Brantingham
1981 *Environmental Criminology*. Beverly Hills, CA: Sage Publications.
- Bursik, Robert J., Jr., and Harold G. Grasmick
1993 *Neighborhoods and Crime: The Dimensions of Effective Community Control*. New York: Lexington Books.
- Bursik, Robert J., Jr., and Jim Webb
1982 "Community Change and Patterns of Delinquency." *American Journal of Sociology* 88 (1): 24–42.
- Caldeira, Teresa Pires do Rio
2000 *A cidade de muros: Crime, segregação e cidadania em São Paulo*. São Paulo: EDUSP.

- CNT (Confederação Nacional dos Transportes) / SENSUS
 2010 "Pesquisa de Opinião Pública Nacional – Rodada 100. Relatório de cruzamentos. 25 a 29 de janeiro de 2010." <http://www.cnt.org.br/Imagens%20CNT/PDFs%20CNT/Pesquisa%20CNT%20Sensus/2010/100%20Cruzamento.pdf>.
- Cohen, Lawrence E., and Richard Machalek
 1988 "A General Theory of Expropriative Crime: An Evolutionary Ecological Approach." *American Journal of Sociology* 94 (3): 465–501.
- Elliott, Delbert S., William Julius Wilson, David Huizinga, Robert J. Sampson, Amanda Elliott, and Bruce Rankin
 1996 "The Effects of Neighborhood Disadvantage on Adolescent Development." *Journal of Research in Crime and Delinquency* 33 (4): 389–426.
- Goertzel, Ted, and Tulio Khan
 2009 "The Great São Paulo Homicide Drop." *Homicide Studies* 13 (4): 398–410.
- Hunter, Albert
 1985 "Private, Parochial and Public Social Orders: The Problem of Crime and Incivility in Urban Communities." In *The Challenge of Social Control: Citizenship and Institution Building in Modern Society*, edited by Gerald D. Suttles and Mayer N. Zald, 230–242. Norwood, NJ: Ablex.
- Krivo, Lauren J., and Ruth D. Peterson
 1996 "Extremely Disadvantaged Neighborhoods and Urban Crime." *Social Forces* 75 (2): 619–648.
- Land, Kenneth C., Patricia L. McCall, and Daniel S. Nagin
 1996 "A Comparison of Poisson, Negative Binomial, and Semiparametric Mixed Poisson Regression Models." *Sociological Methods and Research* 24 (4): 387–442.
- McCullagh, P., and J. A. Nelder
 1999 *Generalized Linear Models*. 2nd ed. Boca Raton, FL: Chapman and Hall.
- Paixão, Antônio Luiz
 1991 "Segurança privada, direitos humanos e democracia: Notas preliminares sobre novos dilemas políticos." *Novos Estudos CEBRAP* 31:131–141.
- Sampson, Robert J.
 1987 "Urban Black Violence: The Effect of Male Joblessness and Family Disruption." *American Journal of Sociology* 93 (2): 348–382.
 2012 *Great American City: Chicago and the Enduring Neighborhood Effect*. Chicago: University of Chicago Press.
- Sampson, Robert J., and W. Byron Groves
 1989 "Community Structure and Crime: Testing Social-Disorganization Theory." *American Sociological Review* 94 (4): 774–802.
- Sampson, Robert J., Stephen W. Raudenbush, and Felton Earls
 1997 "Neighborhoods and Violent Crime: A Multilevel Study of Collective Efficacy." *Science* 277, no. 5328:918–924.
- Shaw, Clifford R., and Henry D. McKay
 1942 *Juvenile Delinquency and Urban Areas*. Chicago: University of Chicago Press.
- Sherman, Lawrence W., Patrick R. Gartin, and Michael E. Buerger
 1989 "Hot Spots of Predatory Crime: Routine Activities and the Criminology of Place." *Criminology* 27 (1): 27–55.
- Silva, Bráulio F. A., and Claudio C. Beato Filho
 2013 "Ecologia social do medo: Avaliando a associação entre contexto de bairro e medo de crime." *Revista Brasileira de Estudos de População* (Rio de Janeiro) 30 (suppl.): 155–170.
- Veysey, Bonita M., and Steven F. Messner
 1999 "Further Testing of Social Disorganization Theory: An Elaboration of Sampson and Groves's 'Community Structure and Crime.'" *Journal of Research in Crime and Delinquency* 36 (2): 156–174.
- Villarreal, Andrés, and Bráulio F. A. Silva
 2006 "Social Cohesion, Criminal Victimization, and Perceived Risk of Crime in Brazilian Neighborhoods." *Social Forces* 84 (3): 1725–1753.
- Warr, Mark, and Mark Stafford
 1983 "Fear of Victimization: A Look at the Proximate Causes." *Social Forces* 61 (4): 1033–1043.