FEAR OF CRIME AND RESIDENTIAL FORTIFICATION IN BRAZIL

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High walls and tall security fences. Bars and security grills protruding from windows. Walls surrounding individual homes lined with shards of broken glass bottles. Barbed wire. These defensive elements, highly visible in the everyday built environment of Brazil, influence the thoughts and perceptions of passersby. They create a sense of anomie and isolation, ultimately restricting one's ability to move about freely in the city and its public spaces. The feelings of insecurity and lack of safety, along with the fear of crime (or perception of it) is not unique to just tourists or foreigners, but it is something Brazilians experience as part of caldeiraheir daily lives. The proliferation of walls and high-security gated communities in Brazil and other countries of Latin America is evidence of the prevailing fear of crime felt by residents in urban areas.

The fortified homes and communities are both inspired by and inspire a fear of crime (Davis, 1990; Caldeira, 2000; Atkinson & Flint, 2004). But, what is the reality of the culture of fear and crime in Brazil? Based on the Americas Barometer public opinion poll from 2010 (LAPOP, 2010), approximately one-third of Brazilians believe that issues related to violence and personal security are major problems for their country. When asked about issues or problems that worry them, Brazilians' second most frequent answer is security, crime, and gangs. Additionally, about one-third of the Brazilian population fears being a victim of a crime in their neighborhood. Furthermore, crime in urban areas is spreading, with a greater increase in urban over rural property crimes in recent decades (Wood and Ribeiro, 2013). Victimization rates from property crimes have increased from 6.3% to 7.9% of the general population. Males were the most vulnerable or most likely victims (Wood and Ribeiro, 2013), and racial differences had minimal impact, though "Browns" were found to be slightly more vulnerable.

Fear of crime, irrespective of the actual incidence of crime, has shown to negatively affect quality of life due to its emotional, environmental, social, and economic impacts (Hale, 1996 in Bannister & Fyfe, 2001). The general climate of insecurity in Brazil is evident in peoples' increasing isolation and retreat to private spaces, their disconnection from community and public space. Economic effects of both crime and fear of crime are vast, including increasing expenditures by the public and private sectors on private security and security infrastructure. Moreover, individuals are willing to pay more for housing in order to feel safe, according to a recent IADB study (Vetter et al, 2013). The investment on security could be better spent in needy areas, such as education and health.

Clearly, addressing the issue of fear of crime and attempting to reduce it may improve the quality of life for Brazilians. It may also have positive social and economic effects, in addition to long-term effects on the character of the built environment in Brazilian cities. Improving human security could lead to positive growth and development of the country in a time when Brazil is under the spotlight on the world stage.

Fear of crime, oftentimes unrelated to actual crime rates, may result in an over-fortified built environment which, as alluded to previously, is only reproducing these fears and feeding a fear cycle. Much literature focuses on how fortified residences and gated communities reproduce the fear that inspired them. But, is the relationship between fear of crime and home securitization being taken for granted? Is it just that the fear of crime is the logical and intuitive connection between high rates of crime and choosing to live in a secure residence? Although this has been suggested implicitly in the literature, this relationship has not been tested explicitly. This paper re-analyzes the original claim that fear of crime is what motivates people to secure and protect their home and loved ones. The hypothesis to be tested is that: a strong association exists between fear of crime in the city and the degree of residential fortification when the net effect of victimization and various housing and socioeconomic factors are controlled. We argue that the production of fortified residential space is a consequence of the perception of insecurity rather than evidence that cities are dangerous places to live.

Literature Review

The definition of fear of crime is often taken for granted and left undefined, allowing for ambiguities of understanding. Fear of crime can be defined as "an emotional

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response or dread or anxiety to crime or symbols that a person associates with crime. This definition of fear implies that some recognition of potential danger, what we may call perceived risk, is necessary to evoke fear" (Ferraro, 1995, p.8). But, fear of crime is not an emotional or cognitive response existing in a vacuum. Indeed, as it relates to the built environment, fear of crime is both an exogenous and endogenous self-defeating factor in the processes related to the shaping of the built environment (Lee, 2001; Wilkinson, 1998). In other words, it is one of the factors that impacts and is impacted by the built environment, leading to a self-perpetuating cycle of fear of crime and the defensive design of the built environment.[1]

Several researchers attempted to define and understand fear of crime and to identify its origins (Skogan and Maxfield, 1981, Ferraro, 1995, Lab, 2000, Warr and Ellison, 2000, Lee, 2001). The varied responses to fear of crime have been extensively covered in the literature and across disciplines and it has been shown that fear of crime leads to changes and adaptations within the physical and social realms, like increasing home security, moving into gated communities, and avoiding behavior and changes in daily routine (Blandy, 2007; Caldeira, 2000; Giblin, 2008; Lab, 1990; Lab, 2000; Lemanski, 2006). Much of the extant literature on the relationship between fear of crime and the built environment in Latin America focuses on the building of walls, residential fortification, and the rise of gated communities; it is often stated that fear of crime is the cause of these phenomena in Latin American cases (Caldeira, 1996; Caldeira, 2000; Coy & Pohler, 2002; Borsdorf et al., 2007; Giglia, 2008; Silva, 2007; Vilalta, 2011a; Vilalta, 2012). There have been several qualitative studies carried out across the globe, in North America, Europe, South Africa, and Australia (Blakely & Snyder, 1997; Wilkinson, 1998; Atkinson & Flint, 2004; Lemanski, 2006; Blandy, 2007; Low, 2008). These studies link fear with self-protective home security measures, where residents were asked about their motivation for moving into gated communities, and often cited "fear" or the desire for "security" as the main motivation.

Coy and Pohler (2002) emphasize the impact of fear of crime on fortification and note that gated communities in Brazil and Latin America tend to be much more fortified and use more advanced security technology than their equivalents in the United States. Beyond fear of crime as a reason for fortification, these authors also cite a desire for social differentiation, for an escape from the chaos and disorder of the city, or for a residence where

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[1] Also known as the causality dilemma. Because of the causality dilemma inherent in the relationships between the concepts used in this research, it is important to reemphasize that there is no causal ordering being established by the models used in this study. Associations and correlations can be established between these concepts, but the shape and direction of causality cannot. It is both possible that fear of crime may result in residential fortification or that residential fortification may influence or lead to fear of crime.

all of the amenities of daily life are located in one place; however, they conclude that more often than not these high-tech fortified communities produce a false sense of security. Caldeira (1996) states that fear of crime enforces segregation in the built environment by creating distance and separation among social groups. She suggests fear of crime is a strong motivator for residential fortification by the upper and middle classes in São Paulo, Brazil, while Silva (2007) exemplifies in her study of gated communities in Natal, Brazil, that fortified communities are created from this "culture of fear" regardless of level of income.

People secure their homes based on an instinctive response to crime and fear of crime and an almost intuitive awareness or knowledge of place-based crime prevention. This phenomenon has been recognized within the urban planning field, mainly in North American and Western Europe, introducing the notion of crime prevention through environmental design (CPTED). The principles of CPTED arise out of Oscar Newman's Defensible Space theory. Newman (1972) argues that certain spaces are conducive to criminal activities and proposes four important dimensions of crime prevention techniques through design: image, milieu, territoriality, and natural surveillance. Since the 1970s, defensible space theory has been influenced by the "broken windows" theory emphasizing maintenance (Wilson & Kelling, 1982), environmental criminology (Brantingham & Brantingham, 1981), and Clarke's "situational crime prevention" (1995), leading ultimately to Tim Crowe's publication of Crime Prevention Through Environmental Design in 1991. The main principles of contemporary CPTED draw from defensible space theory and have been updated into the following dimensions of preventive measures: natural surveillance, boundary definition, access control, ownership of territory, maintenance, and the relation between land use and activity locations (Clarke, 1995; Schneider & Kitchen, 2002). The literature in this field, however, has focused more on the effects of CPTED and not on the motivations of residents' use and employment of said techniques.

Lavrakas and Lewis (1980) tested crime prevention measures empirically and found four different types of crime preventive behavior: avoidance, access control, surveillance, and territoriality. Their study provides evidence that home security measures alone are not efficient in preventing crime. Skogan and Maxfield (1981) measure correlations between household protection techniques and crime conditions and determine that less vulnerable households take more precautions to prevent crime, leading to the conclusion that fear is an indirect consequence of actual crime, where actual crime is experienced by some,

yet the indirect or vicarious experience of crime affects many. Their finding is consistent with the phenomenon in Brazil, where most criminal activity and violence occur away from middle- and upper-class neighborhoods, yet security services and equipment are concentrated in these areas (Rial & Grossi, 2002). While some studies have shown that demographic variables have minimal impact on victimization and fear of crime (Lab, 1990, Giblin, 2008), others suggest that socio-economic variables are key influencers on fear of crime and crime prevention activity (Skogan and Maxfield, 1981, San-Juan et al., 2012).

In recent studies on fear of crime in Mexico City (Vilalta, 2011a; Vilalta, 2011b; Vilalta, 2012), focusing on its relationship to the use of public transportation, gated communities and housing typologies, and home security systems, crime data is analyzed and show a lack of relationship between fear of crime at home and the use of home security systems. Vilalta (2012) also suggests that people may be pointlessly over-fortifying their homes, especially in light of the fact that in an earlier study, he found that gated communities do not solve the problem of fear of crime. In fact, people who moved to gated communities and apartment buildings in Mexico City for the purposes of increasing safety and security did not experience lower levels of fear of crime than those that do not live in gated communities or apartments (Vilalta, 2011a). While helpful in determining the pertinent independent variables that may influence self-protective behavior and guiding the discussion on the topic of crime prevention through environmental design, the current literature is not conclusive on the relationship between fear of crime and residential security and fortification in Brazil.

Methodology

The 2009 PNAD (*Pesquisa Nacional por Amostra Domiciliar*, or Brazilian National Household Sample Survey) included questions on household security devices and thus provided the data needed on fear of crime and home security, along with pertinent socioeconomic indicators, used in this study. The sampling frame for the PNAD follows three stages of selection based on municipality, census tract, and housing units. Because security devices are a household-level indicator, the analysis was limited to heads of households in urban areas to avoid the overrepresentation of larger households in the results, resulting in 103,963 valid cases to be used for further analyses from the 153,837 households included in the original dataset. This dataset is available at the national, regional, and state levels, in addition to being available for nine metropolitan regions in select states.

The key concepts in this study are residential fortification and fear of crime in the city. In order to test the hypothesis that residential fortification is influenced by fear of crime in the city, it was necessary to find a way to directly measure these concepts. *Fear of crime in the city* is the primary independent variable, and using the information available in the PNAD 2009 Survey, was logically operationalized as the converse of *Feelings of safety in the city*. In the case of *Residential fortification*, the dependent variable, there is no single indicator or variable that can fully measure it. In order to operationalize residential fortification, it was therefore necessary to combine several variables from the PNAD survey into a composite index of residential fortification. The survey asks one question that includes seven yes/no sub-questions, all relating to whether or not the residence has certain security mechanisms to increase security/safety.[2] We performed a reliability test (Cronbach's Alpha) to measure the internal consistency of the seven variables used in the composite index. The most reliable index was achieved by excluding Grates/grills and Other (Cronbach's Alpha [standardized] = 0.614). The result is a 5-item index of residential fortification, representing a count of the security devices in a household[3], to include Peephole, Extra locks/bars, Tall or electric fence/wall or security alarm, Video camera, and Private security guard or gated entry.

Factor analysis ascertained that these items in the index did indeed measure only one, not more, concept or underlying construct. The regression models include control variables in order to remove the effects of other variables thought to influence residential fortification. The control variables comprise age, gender, education, income, race, geographic location, type of residence, tenancy/type of home ownership, and three variables on actual experience of victimization[4]. These variables were chosen based on the literature and past research, as these are likely to influence a person's choice to self-protect and their vulnerability, their likelihood of feeling unsafe or being a victim. Table 1 lists and describes in more detail the security devices actually used in the analyses, along with the control

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[2] It is true that many of these devices have multiple uses; however, the survey question is phrased in a way that reduces any bias or questions of validity: "*Para aumentar a segurança, existe neste* domicílio..." (Instituto Brasileiro de Geografia e Estatistica, 2010). Literally translating: "To increase security/safety, in this household there is …" The seven security devices included in the PNAD are: Peephole, Extra locks/bars, Grates/grills, Tall or electric fence/wall or security alarm, Video camera, Private security guard or gated entry, and Other.

[3] A weighted index of security devices was created and tested as a result of factor analysis. This index produced similar results to the non-weighted index, and therefore was determined to be unnecessary.

[4] It is important to note here that these questions only took into account victimization events that occurred in the previous year, and not before. The form of the question introduces a potential bias inasmuch as respondents may still experience the emotional effects of being a victim of a crime even though the incident may have occurred in an earlier time period. It also does not take into account whether the respondent knew someone who had been a victim. Notwithstanding, this is another shortcoming to this dataset that must be acknowledged and considered while carrying out this study and analyzing the results.

variables.[5] To test the hypothesis, several ordinary least squares regressions were performed. This method allowed for the simultaneous inclusion of several independent variables, both categorical and continuous. Four models were used, including more variables in each model in a stepwise process, in order to test the ability of Fear of Crime in the City to predict residential fortification while controlling for several other indicators.

The models used and the variables included in each are as follows: Model 1 regresses the level of residential fortification on fear of crime in the city to ascertain its predictive validity alone. Model 2 adds victimization variables to the model. In Model 3, socioeconomic control variables (see list in Table 1) were added to the regression model to determine if the primary independent variable (Fear) continues to have an effect on Residential fortification net of the effects of social status. Finally, Model 4 added the variables related to housing (see Table 1).

Results

This study finds the strongest socioeconomic predictors of residential fortification are age, education, and income. Results also indicate a strong association between perceptions of safety and level of home security when the net effect of various socio-economic factors and related indicators are controlled. In other words, fear of crime in the city is a strong predictor of intensity of residential fortification, as shown through the results of the regression models in Table 2. In Model 1, in fact, Fear of crime in the city explains 1.3% of the variance in level of residential fortification.

The majority of respondents (86.8%) had not been a victim of any type of property crime in the year previous to the survey. Of those, nearly half, 49.2%, still felt unsafe in their city. Nonetheless, of the 13.2% that had been victims, 70.7% reported feeling unsafe in their city. Based on this alone, it could be concluded that actual victimization increases the likelihood of a person feeling unsafe in and fearing crime in their city. Therefore, actual victimization could be associated with their usage of security devices and the level to which one fortifies the home. In fact, by adding victimization variables to the equation in Model 2, the proportion of variance explained increases to 1.5% (an increase of 0.2%). The increase in

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[5] Regarding the limitations of the questions on security devices in the PNAD survey, it is important to mention that a positive answer to a question does not actually indicate which device the respondents have, or how many they have. This is inherently problematic, because it allows for ambiguous data. Since the level of detail necessary is not available, the security device index assumes that each sub-question represents one security device. In the absence of more detailed and accurate data, this study works within the constraints of the survey and uses the PNAD dataset despite its inherent biases.

explanatory power associated with victimization is 0.2%, indicating that Fear of crime in the city is actually a stronger explanatory variable in the model than victimization; however, both are statistically significant and have a positive effect on the dependent variable.

Model 3 adds socioeconomic variables to the equation as control variables. Adding these increases the proportion of variance explained to 21.8%, which means 20.3% is the explanatory power associated with these variables. Finally, by adding housing-related control variables (Tenancy and Type of residence), the variance explained increases to 29.9% in Model 4. The strength of the model was improved by an additional 8.2%, which is the amount of increase in explanatory power associated with these housing-related variables.

The majority of Brazilians live in houses as opposed to apartments, with 87.5% of respondents living in houses and 12.1% living in apartments. Interestingly, the Type of residence is the best explanatory variable in the equation. By comparing standardized Beta coefficients, living in a house decreases the residential fortification index the most. Per capita household income and Years of school are the next best explanatory variables. Not surprisingly, Race is also a telling factor. Blacks have fewer security devices than Whites, and Browns also have fewer but not as few as Blacks, while Yellows have more. The final regression model, Model 4, shows a positive relationship between Residential fortification and Fear of crime in the city. This model is strong and statistically significant, explaining 29.9% of the variance in residential fortification. Each independent variable in this model, except the "Color" Indian, has a statistically significant contribution to the strength and fit of the model. It can be concluded then, that the proposed hypothesis can be accepted: controlling for socioeconomic variables, victimization, and housing-related variables, fear of crime in the city has a positive and significant effect on degree of usage of residential security devices by heads of households in urban areas of Brazil.

Discussion & Conclusion

This study tests the dimensions of fear of crime, victimization, housing, and socio-economic variables on crime preventive behavior in the household, and finds that socio-economic factors are the strongest predictor of this type of behavior in line with findings from previous empirical studies (Skogan and Maxfield, 1981, Lab, 1990, Giblin, 2008) but also in contrast with others (San-Juan et al., 2012). Lab (1990) found age to be the strongest socio-economic factor in his study, along with education and tenancy. This study distinctively finds housing variables, including tenancy, to be significant factors with type of housing being the

strongest factor. Based on the PNAD dataset, we found that increases in age, years of education, and income increase the Index of residential fortification, and while fear of crime and victimization are positively correlated with this behavior, they are of minimal yet significant impact. Though no causal relationship can be established, this finding supports the claims frequently made in the literature (Caldeira, 1996; Caldeira, 2000; Coy & Pohler, 2002; Borsdorf et al., 2007; Giglia, 2008; Silva, 2007; Vilalta, 2011a; Vilalta, 2012).

The findings that wealthier and more educated heads-of-households choose to have more home security supports the claims of Caldeira (1996) and may have implications for those researching residential segregation in Brazil and elsewhere. Because of the social inequality in Brazil and the history of socio-spatial segregation, it is not surprising that income and education, highly correlated, both have a positive relationship with security measures. It is important to note that fear of crime is a stronger predictor of crime preventive measures of the household in this model than actual victimization, reinforcing the concept that more people experience fear of crime than are actual victims of crime (Skogan & Maxfield, 1981). Coupled with the findings that a majority of Brazilians have not been the victim of a recent property crime yet nearly half of them experience a fear of crime in their city, it also supports the view that a culture of fear prevails in Brazil (Caldeira, 2000; Coy & Pohler, 2002; Silva, 2007). This does not in any way mean that fighting crime is less important than addressing fear of crime, since the two are inextricably linked; however, it highlights the need to think beyond the traditional crime fighting measures, as fear of crime itself deserves attention (Lab, 2000). One possible solution is to use CPTED principles in the production of public spaces, housing and neighborhoods that create feelings of safety (Newman, 1972; Schneider & Kitchen, 2002). The production of urban spaces that does not cater to the culture of fear instituted in our cities can preemptively reduce fear of crime.

This study specifically focuses on the ability of fear of crime in the city, in addition to victimization, housing, and socio-demographic characteristics, to predict crime prevention behaviors of the home. Along with Vilalta's research (2011a, 2012), this study indicates the need for research on the relationship between home security and fortification and fear of crime for the purposes of solving the causality dilemma, or determining the directionality of causal relationships. Although 43.9% of Brazilians do not experience any fear anywhere, the majority (52%) feels more unsafe in their city than in their homes or neighborhoods. Future research should incorporate more detailed surveys inquiring about the

direct relationship between household head and the installation of certain security devices, motivations for moving into an already secured location, and other questions about fear, perceptions of risk and safety, and worries and anxieties. Disaggregating the list of home security measures while also expanding on them to include more mechanisms across more CPTED categories would make future data and studies more comprehensive.

When people lack a sense of safety, there is an inherent threat to quality of life, democracy, openness, and freedom in society. People inherently react to feelings of insecurity and fear by protecting themselves in one way or the other, one way being self-protective and crime preventive measures in the household. Besides fear of crime, victimization, housing typology and tenancy, and socioeconomic factors influence a person's choice to secure the home and the level to which they will do so. Crime preventive behavior is clearly multi-dimensional, and future research could explore more options that may influence this behavior to improve the model here.

This study, despite its inherent limitations, has provided a multitude of insights into home security and fear of crime in the Latin American context, specifically in urban areas of Brazil. The results have illuminated several areas for further exploration and research, having implications for many academic fields to include criminology, urban planning, and Latin American Studies. This research contributes to the body of literature on the relationship between the built environment, namely residential fortification, and fear of crime in Latin America. It supports the theory that fear of crime is an important and significant motivator behind residential fortification.

The fear of crime is definitely a theme worth paying attention as it is surely driving producers and consumers towards more secure design in housing. Is this shift toward high-security design of the built environment actually effective in reducing fear? This remains to be seen. Future research, in the same vein as Vilalta (2012), is needed on measuring the effectiveness of these security measures and CPTED-related techniques in actually reducing fear of crime in Brazil and Latin America. Nonetheless, fear has consequences for quality of life and development, of both people, cities, and nations. It is important to understand the relationship between these elements to make important improvements in urban lives and environments.

Tables

Table 1. Variable Descriptions

Concept	Variables description	Range
Dependent Security devices	*Composite index* Peep hole; an opening in the door for viewing; a security chain on the door; intercom (yes=1)(no=0) Extra locks, security bars on door/window (yes=1)(no=0) Electric fence; wall or grate/fence higher than 2 meters or with shards of glass or barbed wire; electronic security alarm (yes=1)(no=0) Video camera (yes=1)(no=0) Private security; gated entry (yes=1)(no=0) *Cronbach's Alpha score*=0.614	0-5
Primary independent Fear of crime in city	Do you feel safe in your city? (yes=1)(no=0)	0-1
Control variables Socioeconomic		
Age	In years	14-109
Sex	Gender (male=1)(female=0)	0-1
Education	Years of school completed	1-17
Income	Per capita household income in *Reais*	$0-$94,669
Race	By color: White, Black, Brown, Yellow, Indian (yes=1)(no=0)	0-1
Geographic location	By region: North, Northeast, Center-West, Southeast, South (yes=1)(no=0)	0-1
Housing		
Type of residence	House or Apartment (yes=1)(no=0)	0-1
Tenancy	Type of ownership/ownership status: owned, mortgaged, rented, gifted, other (yes=1)(no=0)	0-1
Victimization	Were you the victim of [an attempted robbery / theft / robbery with violence or threat] in previous year? (yes=1)(no=0)	0-1

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Table 2. Level of Residential Fortification Regressed on Fear of Crime in the City and Selected Indicators: Brazil, 2009 (OLS regression coefficients)

Independent Variables		Model 1	Model 2	Model 3	Model 4
		(1)	(2)	(3)	(4)
Constant	(1)	.636	.626	-.394	.765
Age	(2)	-	-	.006	.005
Sex					
Female (ref)	(3)	-	-	-	-
Male	(4)	-	-	-.006*	.022
Years of School	(5)	-	-	.065	.050
Per Capita Household Income	(6)	-	-	.000	.000
Race					
White (ref)	(7)	-	-	-	-
Brown	(8)	-	-	-.151	-.128
Black	(9)	-	-	-.182	-.169
Yellow	(10)	-	-	.445	.367
Indian	(11)	-	-	-.077*	-.068*
Region of Residence					
North (ref)	(12)	-	-	-	-
Northeast	(13)	-	-	.152	.104
Southeast	(14)	-	-	.120	.065
South	(15)	-	-	.159	.108
Center West	(16)	-	-	.101	.092
Type of Residence					
Apartment (ref)	(17)	-	-	-	-
House	(18)	-	-	-	-.982
Tenancy/Type of Ownership					
Owned/Paid in Full (ref)	(19)	-	-	-	-
Mortgaged	(20)	-	-	-	.201
Rented	(21)	-	-	-	-.151
Gifted	(22)	-	-	-	-.131
Other	(23)	-	-	-	-.086
Theft					
Not Victim (ref)	(24)	-	-	-	-
Victim	(25)	-	.036	.015*	.032

Table 2. Continued

Independent Variables		Model 1	Model 2	Model 3	Model 4
		(1)	(2)	(3)	(4)
Robbery with Force					
Not Victim (ref)	(26)	-	-	-	-
Victim	(27)	-	.071	.059	.046
Attempted Robbery					
Not Victim (ref)	(28)	-	-	-	-
Victim	(29)	-	.159	.102	.094
Crime in the City					
No Fear (ref)	(30)	-	-	-	-
Fear	(31)	.244	.230	.168	.127
R^2	(32)	.013	.015	.218	.299

Source: PNAD Survey 2009
*Not statistically significant.
Note: Sample limited to Heads of Household in urban areas
Note: Coefficients statistically significant at less than .05 unless otherwise noted.

List of References

Atkinson, R., & Flint, J. 2004. Fortress UK? Gated communities, the spatial revolt of the elites and time-space trajectories of segregation. *Housing Studies, 19*(6), 875-892.

Bannister, J., & Fyfe, N. 2001. Introduction: Fear and the city. *Urban Studies, 38*(5-6), 807-813.

Blakely, E. J., & Snyder, M. G. 1997. *Fortress america: Gated communities in the United States.* Washington, DC: Brookings Institution Press.

Blandy, S. 2007. Gated communities in England as a response to crime and disorder: context, effectiveness and implications. *People, Place & Policy Online, 1*(2), 47-54.

Borsdorf, A., Hidalgo, R., & Sanchez, R. 2007. A new model of urban development in Latin America: The gated communities and fenced cities in the metropolitan areas of Santiago de Chile and Valparaiso. *Cities, 24*(5), 365.

Brantingham, & Brantingham. 1981. *Environmental Criminology.* Beverly Hills: Sage Publications.

Caldeira, T. 1996. Building Up Walls: The New Pattern of Spatial Segregation in Sao Paulo. *Internation Social Science Journal*(48), 55-66.

Caldeira, T. 2000. *City of Walls: Crime, Segregation, and Citizenship in Sao Paulo.* Berkeley: University of California Press.

Clarke, R. V. 1995. Situational crime prevention. *Crime and Justice, 19*, 91-150.

Coy, M., & Pohler, M. 2002. Gated Communities in Latin American megacities: case studies in Brazil and Argentina. *Environment and Planning B: Planning and Design, 29*(3), 355-370.

Davis, M. 1990. Fortress L.A. In M. Davis, *City of quartz: Excavating the future in Los Angeles.* New York: Verso.

Ferraro, K. F. 1995. *Crime: Interpreting victimization risk.* Albany: SUNY Press.

Giblin, M. J. 2008. Examining Personal Security and Avoidance Measures in a 12-City Sample. *Journal of Research in Crime and Delinquency, 45*(4), 359-379.

Giglia, A. 2008. Gated communities in Mexico City. *Home Cultures, 5*(1), 65-84.

Instituto Brasileiro de Geografia e Estatistica 2010. *PNAD 2009.* Available: http://www1.ibge.gov.br/home/estatistica/populacao/trabalhoerendimento/pnad2009/question arios_pnad_2009.pdf

Lab, S. 1990. Citizen Crime Prevention: Domains and Participation. *Justice Quarterly, 7*(3), 467-491.

Lab, S. P. 2000. *Crime prevention: approaches, practices and evaluations, 4th edition.* Cincinnati: Anderson Publishing Co.

Lavrakas, P. J., & Lewis, D. A. 1980. The conceptualization and measurement of citizens' crime prevention behaviors. *Journal of Research in Crime and Delinquency, 17*, 254-272.

Lee, M. 2001. The genesis of 'fear of crime'. *Theoretical Criminology*, 467-482.

Lemanski, C. 2006. Residential responses to fear (of crime plus) in two Cape Town suburbs: Implications for the post-apartheid city. *Journal of International Development, 18*, 787-802.

Newman, O. 1972. *Defensible Space.* New York: The Macmillan Company.

San-Juan, C., Vozmediano, L., & Vergara, A. 2012. Self-protective behaviours against crime in urban settings: An empirical approach to vulnerability and victimization models. *European Journal of Criminology, 9*(6), 652-667.

Schneider, R. H., & Kitchen, T. 2002. *Planning for Crime Prevention.* New York: Routledge.

Silva, M. F. 2007. Gated communities: The new ideal way of life in Natal, Brazil. *Housing Policy Debate, 18*(3), 557-576.

Skogan, W. G., & Maxfield, M. G. 1981. *Coping with crime: Individual and neighborhood reactions.* Beverly Hills: Sage Publications.

The Latin American Public Opinion Project (LAPOP). 2010. The AmericasBarometer. Available: www.LapopSurveys.org

Vetter, D. M., Beltrao, K. I., & Massena, R. M. 2013. *The impact of the sense of security from crime on residential property values in Brazilian metropolitan areas.* Washington, DC: Inter-American Development Bank.

Vilalta, C. J. 2011a. Fear of crime in gated communities and apartment buildings: a comparison of housing types and a test of theories. *Journal of Housing and the Built Environment, 26,* 107-121.

Vilalta, C. J. 2011b. Fear of crime in public transport: Research in Mexico City. *Crime Prevention & Community Safety, 13*(3), 171-186.

Vilalta, C. J. 2012. Fear of crime and home security systems. *Police Practice and Research, 13*(1), 4-14.

Warr, M., & Ellison, C. G. 2000. Rethinking Social Reactions to Crime: Personal and Altruistic Fear in Family Households. *American Journal of Sociology, 106*(3), 551-578. Available: http://www.jstor.org/stable/10.1086/318964

Wilkinson, C. 1998. Deconstructing the fort -- the role of postmodernity in urban development. *Journal of Australian Studies, 57,* 194-205.

Wilson, J. Q., & Kelling, G. L. 1982. Broken windows: The police and neighborhood safety. *The Atlantic Monthly,* pp. 29-38. Available: http://www.theatlantic.com/magazine/archive/1982/03/broken-windows/304465/

Wood, C. H., & Ribeiro, L. 2013. Crime vicitmization in Brazil, 1988-2009: Changing vulnerabilities by race, class, and place. *Working Paper presented at the 62nd Annual Conference of the University of Florida's Center for Latin American Studies, "Emergent Brazil".* Gainesville, Florida.