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Perceived security of women in relation to their path choice toward sustainable neighborhood in Santiago, Chile

Mohammad Paydar [a,*], Asal Kamani-Fard [b], Roya Etminani-Ghasrodashti [c]

[a] Center for Sustainable Urban Development (CEDEUS), Faculty of Architecture, Design and Urban Studies, Pontifical Catholic University of Chile (UC), Avenue El Comendador 1916, Providencia, Santiago, Chile
[b] Department of Architecture, Faculty of Built Environment, University Technology of Malaysia (UTM), Skudai 81310, Johor, Malaysia
[c] Department of Urban Planning, Faculty of Art and Architecture, Science and Research Branch, Islamic Azad University, Tehran, Iran

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ABSTRACT

The fear of crime and perceptions of insecurity are among the most important issues with regard to a sustainability framework, relative to crime itself, in cities with low crime rates. Santiago in Chile is a city with a moderate to low rate of crime as compared to the average amount of crime in the cities around the world, but the fear of crime and perceptions of insecurity greatly concern the residents of this city. Therefore, in general, studying Santiago residents' perceived insecurity seems to be more important than considering actual urban insecurity and its aspects in regard to achieving a more comprehensive sustainability framework for this city. Regardless of the influence of individual and social factors on perceived insecurity, the design of the built environment plays an important role in enhancing perceptions of security. In addition, women have been found to be more fearful of crime and their perceived insecurity is recognized as being a serious problem for their walking patterns in the residential neighborhoods of Santiago. On this basis, and due to the importance of the design of the built environment for generating the fear of crime and perceived insecurity, this study focuses on design elements that are related to the perceived security/insecurity of women. By studying the typology of neighborhoods based on their inclusive houses and a selection of neighborhoods with apartment blocks, the three residential neighborhoods of Villa Frei, Villa Olimpica, and Villa Portales were selected for this study. To consider the influence of environmental factors on perceived security/insecurity, the routes traversed daily by the residents were identified using 3D maps. A survey questionnaire was used to measure women's perceived sense of security/insecurity, and to learn how these attitudes influenced their daily walking patterns. The qualitative data was analyzed through context analysis, and the quantitative data was analyzed using an ordered logistic regression. Although respondents mostly declared that their neighborhood is somewhat secure, they agreed that their feeling of insecurity influences the path they choose in their daily walking activities. This finding shows the importance of women's perceived insecurity or low perceived security for their daily walking patterns. The results of the open-ended questions show that the "presence of others", in terms of stationary and dynamic surveillance, "proximity to shops, schools and parks", "open spaces", and "presence of familiar people", emerged as the most important factors for enhancing women's sense of security. Moreover, findings from ordered regression analysis indicate that among the different dimensions of built environmental factors, evidence of vitality through the arrangement of furniture, surveillance, signs of disorder and vegetation were the strongest determinant of women's perceived security. These findings indicate the need to address the perceived security/insecurity of women in residential neighborhoods as the most important policy for improving the sustainability framework, and leading to the creation of sustainable neighborhoods in Santiago, Chile.

1. Introduction

1.1. Sustainability and its relationship to crime and the fear of crime

Sustainable development is defined as meeting the needs of current and future generations through a combination of environmental protection, social development, and economic prosperity, which leads to an improvement in the quality of human life (Berke & Conroy, 2000; Cozens, 2002; Cozens, Hillier, & Prescott, 1999; Du Plessis, 1999; Knights, Pascoe, & Henchley, 2002). So far, several subjects such as connectivity, inclusivity, prudence, equity, participation and security, have frequently been considered as essential criteria for sustainability (Black, 2004; Gladwin, Kennelly, & Krause, 1995). Among different sustainability criteria, security is one of the major human needs (Maslow, 1970), and it is known to be one of the main components of a

* Corresponding author.

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sustainability framework (Armitage & Gamman, 2009; Black, 2004; Cozens, 2007, 2008). Many countries have invested large sum of money in decreasing the rate of insecurity all over the world, but the crime rate has not been reduced as was expected. The relationship between criminal activities and sustainability has gained increasing attention recently, and it has commonly been measured using the two indicators of crime and the cost of crime per capita through recorded crime data taken from police databases and the related institutions involved (Cozens, 2002, 2007; Du Plessis, 1999; Hens & De Wit, 2003; Vanderschueren, 1998).

According to Jefferson, Rowe, and Brebbia (2001) physical or environmental measurements of sustainability will be of no value if people are too afraid to go out on the streets. Similarly, Du Plessis (1999) stated that no city is sustainable, unless the residents of that city feel personally safe and secure in their living areas. Indeed, the fear of crime or the perception of insecurity is one of the most significant problems in our cities (Valera & Guàrdia, 2014). In addition, the absence of a fear of crime is one of the main components of a sustainable community (Cozens, Saville, & Hillier, 2005; Schneider & Kitchen, 2002). An "unsustainable" community is usually depicted by perceptions of poverty, antisocial behavior, homelessness, high levels of crime, and fear of crime (Cozens, 2008). Therefore, beside the crime rate, fear of crime is also one of the issues that make the place problematic for people and it should be more stressed in sustainability frameworks (Schneider & Kitchen, 2007). The other issue that emphasizes the contribution of perceived insecurity to a current sustainability framework depends on the relationship between perceived insecurity and walkability. Walking is an activity that almost everyone engages in. It is a sustainable mode of transport and contributes to decreasing the air pollution and improving physical activity and public health among the residents of cities (Ewing & Cervero, 2010; Southworth, 2005). In addition, improving walkability would contribute to enhancing the social sustainability through reinforcing the social capital among the neighborhoods (Rogers, Gardner, & Carlson, 2013). Therefore, improving walkability is one of the main approaches for achieving a sustainable urban environment and social sustainability in the cities as well. Moreover, people walk less when they feel less secure and perceived insecurity contributes greatly to a reduction in the number of pedestrians, especially in cities with low crime rates (Alfonzo, 2005; Pain, 1997; Wang, Chau, Ng, & Leung, 2016; Weinstein, Feigley, Pullen, Mann, & Redman, 1996). Based on the verified relationship between walkability and sustainability, the relationships between perceived insecurity and walkability emphasize the importance of considering the fear of crime and perceived insecurity in the current sustainability framework.

Furthermore, the relationship between the fear of crime and the rate of crime is not well supported (Cossman & Rader, 2011). Indeed, the perception of insecurity does not necessarily correspond with actual insecurity (Figueroa & Forray, 2013; Greene & Greene, 2003). Barcelona is a city with very low-crime rates; it has urban public places with well-known qualities. Nonetheless, for many years the citizens of Barcelona have perceived the fear of crime as being one of their city's three most important problems (Valera & Guàrdia, 2014). Greene and Greene (2003), who studied urban security in the residential areas of Santiago de Chile, found that areas identified as insecure by the respondents have little relationship to the places where crime is concentrated. So, in the cities with low crime rates, different situations may exist that contribute to an increase in the fear of crime, as well as perceived insecurity. Therefore, it is concluded that in regard to sustainability, studying the fear of crime and perceived insecurity seems to be more important than considering actual urban insecurity and its aspects, especially, in cities with low crime rates.

Despite the abovementioned dimensions, the fear of crime, as well as perceived insecurity, has not been considered to any meaningful extent in current sustainability frameworks (Coaffee & Bosher, 2008; Cozens, 2008; Du Plessis, 1999). According to Cozens (2008), one of the weaknesses of integrating the sustainability framework with the crime prevention approach is finding standard measures for the fear of crime, and people's perceptions of crime at the local level. Indeed, the sustainability frameworks lack the applicable indicators needed to measure and operationalize the fear of crime, as well as the perceived insecurity. In order to identify appropriate indicators for the fear of crime and perceived insecurity, different but related aspects of the fear of crime and the perceived insecurity of residents are to be explored.

1.2. Components of the fear of crime and perceived insecurity

No univariate or unidimensional investigations of perceived insecurity have been conducted (Vilalta, 2011), and most of the existing studies examined different correlations carried out at both the community and the individual level. Indeed, different individual, social, and environmental factors were identified in regard to the fear of crime and perceived insecurity in the urban setting. Most of these factors were derived from certain theories. Table A (Appendix 1) illustrates these theories and their inclusive factors with regard to the fear of crime and perceived insecurity.

Victimization theory is one of the important theories about fear of crime and perceived insecurity. This theory predicts that victims will experience higher level of fear of crime than those without such an experience (Hale, 1996; Skogan, 1987). The theory of physical vulnerability states that fear of crime will be more among those with lack of physical ability since they cannot protect themselves well in case of criminal attack (Bissler, 2003; Pantazis, 2000). Age and gender have been two usual factors in regards to this theory. More rates of fear of crime have been found among the older people and women (Chadee & Ditton, 2003; Gilchrist, Bannister, Ditton, & Farral, 1998; Rader, May, & Goodrum, 2007; Scott, 2003). Vulnerability may have social basis as well. Theory of social vulnerability states that one who belongs to an especial social group such as low income neighborhoods, will perceive the security less than the people in other groups because of high possibility in confronting a criminal attack and lack of financial ability to restore from negative effects of such an experience (Bissler, 2003). Evidence of this theory has been found in the studies which reported that sources of vulnerability and different levels of fear of crime and perceived insecurity appeared in the social groups, differentiated by specific/certain levels of education, income, occupation, and unemployment (Covington & Taylor, 1991; Will & McGrath, 1995).

Social network theory focuses on information flows between persons (Bissler, 2003; Hale, 1996). This theory forecasts that communities with high rates of social interaction are able to respond together and efficiently against crime and the fear of crime as the result of having stronger social cohesion. In addition, certain factors are found as being related to one's subjective perception of insecurity. These factors such as residential satisfaction and place attachment (place-identity) can form a new category regarding the fear of crime and perceived insecurity (Table A, Appendix 1). Finally, the role of the built environment and the influence of its design on decreasing the fear of crime and perceived insecurity have been demonstrated in previous studies. Theories on the fear of crime and perceived insecurities that relate to the built environment are reviewed in the next section.

1.3. Design of the built environment in regard to the fear of crime and perceived insecurity

As stated earlier, perceived insecurity is influenced by a variety of factors that include individual, social, and environmental elements (Newman, 1972). Among these factors, environmental factors play a special role in decreasing people's perceived insecurity. The spatial design of the built environment and the design of spaces provides different opportunities for people's interactions and affect people's behaviors, the opportunities for crime, and the extent of their fear of crime (Brantingham & Brantingham, 1998; Clarke, 1997; Coleman, 1998;