

Geography of fear of crime: Examining intra-urban differentials in Sekondi-Takoradi Metropolis, Ghana

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Abstract

Fear of crime continues to be a concern for state security agencies, city planners, and residents living in urban areas. While significant strides have been made by way of research to understand the correlates of fear of crime, which include mainly socio-spatial characteristics of the environment, few of these studies have focused on the intra-urban differentials of fear of crime and its correlates, most especially in a developing country context. Therefore, drawing on a sample population of 544 respondents across three different socio-economic neighbourhoods and with the use of multivariate statistical techniques, the study examines the geography of fear of crime in Sekondi-Takoradi, an emerging city in Ghana. The findings reveal a spatial variation of neighbourhood effect on fear of crime across the three socio-economic neighbourhoods selected. On this basis, we propose a context-specific solution to address fear of crime and also recommend stronger social cohesion, community effort in crime prevention, and building of confidence in the police as measures for reducing crime and fear of crime.

Keywords: fear of crime; collective efficacy; social cohesion; property victimization; Sekondi-Takoradi

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Introduction

The need to promote adequate security and safety through the reduction of fear of crime in an increasingly urbanizing society has become a major issue to grapple with among city authorities and security agencies in most countries (UN-HABITAT, 2007; Owusu et al., 2015). While studies have indicated the increased prevalence of property and violent crimes across cities (Muggah, 2012), the impact of this on neighbourhood safety and fear of crime has also become a subject that has gained significant attention within the fear of crime discourse (UN-HABITAT, 2007). In addition to the link between crime, especially violent crime, and fear of crime, studies have also revealed that the persistence of fear of crime is unequally distributed among populations and among neighbourhoods of various levels of (dis)advantage, thus suggesting the situated nature of fear of crime (Mellgren, 2011). Therefore, fear of crime has significant impact on, and is also impacted by, the urban environment through ecological influences and spatial reconfiguration (Smith, 1987).

There is much evidence to suggest that there is a geographical dimension to the fear of crime in terms of ecology, which includes the influence of the socio-spatial environment (Foster et al., 2010) and its variation across space (Adigun, 2013; Swatt et al., 2013). Regarding the ecology of the fear of crime, some studies have shown a strong relationship with the built environment (Newman, 1972, 1996; Schweitzer et al., 1999; Loukaitou-Sideris, 2012), while other studies have also established such linkages between individual- and community-level socio-demographic characteristics and the fear of crime (Will & McGrath 1995; Ferraro, 1996; Adu-Mireku, 2002). Yet other studies have also shown that community social organization, particularly social cohesion, significantly reduces fear of crime (Gibson et al., 2002; Swatt et al., 2013).

Despite the enormous number of studies on the fear of crime and its geography, most of these studies reflect the experiences of developed countries, particularly Europe and North America, and only recently has there been renewed interest in research into the fear of crime in Africa. Even for Africa, most fear of crime studies have been conducted in Nigeria (see Agbola, 1997; Alemika & Chukwuma, 2005; Adigun, 2013) and South Africa (see Spinks, 2001; Lemanski, 2004). Moreover, even though some of these studies have looked at fear of crime in residential areas in African cities (Adu-Mireku, 2002; Adigun, 2013), these residential areas were not distinguished based on socio-economic status so as to ascertain the influence of differential ecological factors on fear of crime. Therefore, the current study seeks to complement the literature on fear of crime in Africa—and in Ghana in particular. More specifically, the study intends to advance our understanding of ecological influences on fear of crime in different socio-economic urban residential areas, using the Sekondi-Takoradi metropolis as a case study.

In addition to its contribution to the literature, especially through the testing of ecological theories and concepts within the Ghanaian context, the current study also has significant policy implications. For instance, despite significant physical expansion and demographic increase in urban areas in Ghana, planning has failed to factor in conditions that will reduce fear of crime and concerns for safety. Therefore, by examining the relationship between ecological factors

and fear of crime, the study provides an opportunity to examine the appropriateness of place-based crime prevention theories and strategies in the Ghanaian context. Again, the non-linear relationship between crime and fear of crime, as studies have shown (Cordner, 2010), makes a compelling case for policies and strategies that may be somewhat different from normative crime prevention measures.

The paper is structured as follows: after this introduction, the next section discusses the theoretical and empirical literature regarding the operational definition and correlates of fear of crime. This is followed by details of the study site and the methods adopted. Results and discussion of univariate, bivariate, and multivariate analysis are next discussed, and the last section contains the conclusion and policy implications of the study.

Theoretical and conceptual overview

Two main issues are discussed in this section. The first is a brief discussion of how fear of crime is conceptualized and measured. The second part deals with the correlates of the fear of crime, which fall within the larger ecological perspective of fear of crime. From this perspective, fear of crime is viewed as a direct result of the influence of socio-spatial characteristics of the environment (Foster et al., 2010; Swatt et al., 2013). The second part of this review is structured in accordance with broader areas where fear of crime has received both theoretical and empirical attention. These include the victimization perspective, physical environmental perspective, and neighbourhood social organization.

Conceptualizing and operationalizing fear of crime

Fear of crime in urban neighbourhoods has been a subject of academic enquiry for the past 40 years, especially in developed countries, most notably North America (Lee, 2007; Henson, 2011). However, an important issue, and one which has confounded most researchers in this area of enquiry, has been how to conceptualize and operationalize fear of crime. In defining fear of crime, Henson (2011) indicates that fear of crime can be viewed in terms of any initial aversive stimulus that produces fear or reaction to a criminal event. Despite this definition, conceptualization of fear of crime has been diverse and thus so has its operationalization. However, to ensure standardization and consistency, Skogan (1999) notes that most studies have conceptualized fear of crime in four ways, falling under two main categories. The first involves cognitive assessment and includes concerns about crime, assessment of risk of victimization, and perceived safety. The second category involves behavioural responses and includes how people respond to crime. These measures resonate with views expressed by the United Nations Office on Drugs and Crime (UNODC). According to the UNODC, fear of crime can be measured through the use of proxies, such as feelings of safety, likelihood of victimization, and fear of specific crimes (UNODC, 2010).

Fear of crime and victimization

At the individual level, variations in fear of crime are explained using the direct and indirect victimization models. The direct victimization model posits that fear of crime is a derivative of past experiences of victimization (Skogan & Maxfield, 1981). Moreover, it is ‘an indicator of the effects of victimization on the individual and is seen as a direct consequence of crime exposure’ (Lewis, 1996: 102). While there has been some empirical support for this claim (see Skogan & Maxfield, 1981; Adu-Mireku, 2002; Austin et al., 2002), other studies have also found some inconsistencies with the victimization perspective. Thus, in some cases, studies have revealed that fear may not be related in any way to experiences of victimization (Bennett & Flavin, 1994; Delone, 2008); or even if it is, the relationship is rather weak (Baumer, 1985; McGarrell et al., 1997).

The indirect victimization model posits that perceived vulnerability is strongly linked to fear of crime. Relatedly, the model incorporates dimensions of social and physical vulnerability of would-be victims, which is believed to be a very important factor influencing fear of crime (Crank et al., 2003). In this regard, we concur with Gibson et al. (2002) and Covington and Taylor (1991), and we therefore include socio-demographic variables as indicators of indirect victimization, since they reflect the risk of victimization. In addition, there has been empirical support for the relationship between socio-demographic variables, such as age, sex, level of income, level of education, and fear of crime (Ramos & Andrade-Palos, 1993; Schafer et al., 2006).

Fear of crime and the built environment

Falling within the larger ecological perspective of fear of crime, the link between the built environment and fear of crime has been well researched (Newman, 1996; Schweitzer et al., 1999). However, despite falling within the purview of geographical studies, geography’s contribution to this debate has been small (Pain, 2000), with most of the theoretical development coming from environmental criminology, planning, and architecture. More importantly, earlier studies of fear of crime and the urban built environment can be traced from the work of Jane Jacobs. According to Jacobs (1961), urban land use diversification into different functions was critical for enhancing natural surveillance in urban public spaces. She was of the opinion that such planning measures encouraged the continual flow of people within these spaces and thus kept eyes watching such spaces at all times. Moreover, recent discussions of the built environment and fear of crime have focused on two important theoretical developments: Crime Prevention through Environmental Design (CPTED), originally developed by Jeffery (1971); and Defensible Space Theory (DST), developed by Newman (1972).

Despite originating from two different authors, the theory of CPTED has now come to represent all other similar ideas, including DST, since both theories share common assumptions (Geason & Wilson, 1989). Critical to these theories and also reflecting their key principles is the fact that communities should be restructured in ways that allow residents to have control over their

homes, while also restricting movement of intruders and strangers. Thus, the issues of territoriality and access control come into play (Newman, 1996; Owusu et al., 2015). From this perspective, Newman (1996) asserts that communities with building types that do not allow residents to have greater control of the spaces around them will experience higher crime levels and therefore increased fear of crime. The theory also lays stress on natural surveillance, which includes the use of mechanical lighting, closed-circuit television (CCTV), natural windows, windows closer to streets, and even police patrols as a means of reducing crime opportunities (Shaftoe & Read, 2005). Lastly, the theory emphasizes target hardening, which aims at improving building security standards. Target hardening involves measures such as the use of quality exterior doors and door frames and burglar-proofs (Owusu et al., 2015). This implies, therefore, that fear of crime will vary across neighbourhoods, since built environment manifestations also vary in this way (*ibid.*).

Despite its emphasis on reducing opportunities for crime and fear of crime, empirical studies of DST and CPTED show mixed results. While Newman's studies in New York indicate high crime and fear of crime levels in low-income public housing units (Newman, 1996), other studies have also shown that such a relationship between the built environment and fear of crime is low (Bottoms & Wiles, 1986; Weatherburn et al., 1999). Moreover, it has been found that a combination of social and physical factors facilitates fear of crime, and in most cases social factors account for a greater share of the influence on fear of crime (Newman, 1996; Schweitzer et al., 1999). An emerging issue with regard to the use of DST and CPTED as crime prevention measures in both developed and developing countries has been the development of fortified enclaves and social segregation, thus reducing social cohesion (Spinks, 2001; Owusu et al., 2015).

Fear of crime and neighbourhood social organization

Community social organization plays an important role in community safety and crime prevalence. In view of this, recent discussions have focused on collective efficacy and social cohesion as important factors in reducing fear of crime. According to Sampson et al. (1997), collective efficacy, defined as social cohesion found within a community, combined with the willingness to intervene for the common good, is contingent on the conditions of trust, solidarity, and bonding that exist in a community. Therefore, Sampson et al. (*ibid.*) suggest that neighbourhoods with high collective efficacy have a greater capacity to wield informal social control over the youth and delinquent behaviours. This point about informal social control has been the thrust of argument of earlier socio-ecological theories of crime, including social disorganization theory.

Taking the social disorganization theory in perspective, the theory states that crime rates are not evenly distributed across space and time; instead, crime tends to concentrate in areas characterized by high residential mobility, low socio-economic status, and ethnic heterogeneity (Shaw & McKay, 1942). More importantly, Kubrin (2009) has emphasized that the theory does not necessarily explicate a direct connection between a socially disorganized society and crime; rather, the emphasis is on the breakdown in community structure that ensures informal social

control, community solidarity in fighting against crime, and also a community's ability to maintain social norms. The broken windows theory, with its key emphasis on disorder as a facilitator of fear of crime, also posits that social incivilities such as drunkards, addicts, and panhandlers are signals that there is an absence of informal social control and community cohesion (Wilson & Kelling, 1982).

Therefore, while the link between fear of crime and collective efficacy is apparent and also supported by empirical studies (Gibson et al., 2002; Swatt et al., 2013), contextual differences in neighbourhood characteristics influence the extent of collective efficacy and thus the level of fear of crime (Swatt et al., 2013). According to Sampson et al. (1997), concentrated disadvantage inhibits high levels of collective efficacy since, notwithstanding levels of acquaintanceships, community members may lack the capacity to mobilize resources for a common goal. Nonetheless, other studies have also shown that poor neighbourhoods exhibit strong social cohesion, which is critical for addressing crime and other neighbourhood problems (JRF, 1999). An important point to also note is that while collective efficacy may not require much formal arrangement in addressing crime in a particular neighbourhood, it is suggested by others that such efficacy improves formal arrangements in crime and fear of crime control (Sampson & Graif, 2009).

Study site

Sekondi-Takoradi is the administrative capital of the Western Region, located in the south-western portion of Ghana. Currently, the city has a population of about 559,548 and is the third-largest city in Ghana after Accra and Kumasi (GSS, 2012). With its historical experience as a port city since 1928 (Mendelson et al., 2003) and its present status as an oil city following the discovery of offshore crude oil in its deep waters (Obeng-Odoom, 2012), there have been a number of physical and demographic changes in the city. The city has residential neighbourhoods differentiated on the basis of socio-economic status. While this may be contingent on historical factors, recent social and economic transformations have deepened such residential differentiations.

Based on reconnaissance visits and consultations with the city authorities and police, as well as on previous knowledge of the city of Sekondi-Takoradi by the authors, the study selected New Takoradi, Anaji, and Chapel Hill as low-, middle- and high-income neighbourhoods, in tandem with the official residential classification. Demographically, New Takoradi, Anaji, and Chapel Hill have populations of roughly 18,668, 12,771, and 8,368, respectively (STMA, 2010). New Takoradi is located close to the Takoradi harbour and is an old seafront residential neighbourhood which developed informally as a residential quarter for the lowly-paid workers of the harbour. However, the decline of the harbour as well as the lack of planning and investments in basic infrastructure and services by city authorities has resulted in its present status as a poor and heavily congested neighbourhood. On the other hand, Chapel Hill is located not far from the central business district and serves as the residential neighbourhood for most

civil servants and formal sector employees, while Anaji is a relatively mixed-income neighbourhood developing into peri-urban areas (STMA, 2010).

Sekondi-Takoradi is one of the four major cities in Ghana. The other three are Accra, Kumasi, and Tamale. These four cities account for about 40% of the total urban population and about 80% of major crimes recorded in the country (Owusu et al., 2015). By way of detail, according to records from the Ghana police, of about 1,172 armed robbery cases recorded in the country in 2010, 938 were in these four cities, with 25 of the cases in Sekondi-Takoradi. Of the 1,772 reported cases of defilement recorded in 2010, 676 were in these four cities, with Sekondi-Takoradi recording about 259 cases. Lastly, of the 225 murder cases recorded in these four cities in the year 2010, 42 were in Sekondi-Takoradi. While crime rates recorded in Sekondi-Takoradi may seem low relative to the aggregate crime rates of the four main cities, it is suggested that recent social changes and economic transformation will have a significant impact on routine activities and opportunities for crime, all of which has implications for neighbourhood security, social cohesion, crime, and fear of crime.

Materials and methods

Data collection

The current study is part of a larger national study entitled 'Exploring crime and poverty nexus in urban Ghana'. Similar to other cities where the study was conducted, in Sekondi-Takoradi a survey of 544 respondents was conducted in a multi-staged manner. The first stage involved a cluster sampling of neighbourhoods, based on peculiar ecological characteristics (Agyei-Mensah & Owusu, 2010) and official residential classification (STMA, 2010). This was followed by a systematic sampling, which was performed using an appropriate sampling frame. In this regard, the study used Enumeration Areas (EAs), which constitute the smallest well-defined units used for household survey in the country as the sampling frame (UNODC, 2010). The final stage was a simple random sampling of household heads, who were the main respondents for the study. In all, 36 EAs were used, representing the official number of EAs available for the three neighbourhoods in the city. A maximum of 15 respondents were sampled from each EA within the three neighbourhoods (although some were a little over-sampled).¹ Specifically, New Takoradi had 14 EAs (N=215), Anaji had 11 EAs (N=177), and Chapel Hill had 10 EAs (N=152).

Dependent variables

Two measures of fear of crime were used as dependent variables for the study, one measuring perceived neighbourhood safety and the other likelihood of property victimization. With regards to perceived neighbourhood safety, and consistent with other studies (see Covington & Taylor, 1991; Breetzke & Pearson, 2014), residents were asked how safe they were walking alone at night and during the day. These two variables were four Likert scale measures ranging from 'very safe' to 'very unsafe'. The two measures were combined with the mean score used

as a computed measure of fear of crime. This measure was internally consistent though not strong ($\alpha = .684$). Perceived likelihood of property victimization was a summation of two variables: likelihood of being a victim of burglary and likelihood of being a victim of personal theft, with both using a four Likert scale from 'very likely' to 'very unlikely', which was also internally consistent ($\alpha = .865$). The use of the two fear of crime measures is premised on the fact that fear of crime is conceptualized in different ways, and therefore the measures may moderately correlate with each other (Skogan, 1999).

Independent variables

Fifteen independent variables were used for the study. Seven of these were individual-level measures: age, sex, length of stay, marital status, income, level of education, and prior victimization. Age was a continuous variable; sex was a dummy variable (0=male, 1=female); length of stay in neighbourhood was a continuous variable; marital status was a dummy variable (0=married, 1=not married); income had two categories (0=1–1,500, 1=1,501 and above); level of education was a dummy variable (0=high school and below, 1=above high school). The last individual-level measure was prior victimization, which was also dummy (0=yes, 1=no).

A further eight contextual variables were used as independent variables. These variables were considered expedient based on their theoretical relevance. In the case of the built environment and based on some principles of CPTED, territoriality was measured using housing type: whether a dwelling was shared with other households² and occupancy status. All three variables were dummy: housing type (0=separate, 1=not separate);³ is dwelling shared with other household (0=yes, 1=no); occupancy status (0=owned, 1=not owned).⁴ Natural surveillance was measured with two variables, both being dummy: street light availability (0=yes, 1=no) and presence of police patrol (0=yes, 1=no).

The other three contextual variables focused on the social organization that influences fear of crime. These included perceived crime level over the past five years, perceived youth disorder, and collective efficacy. The inclusion of perceived crime level was based on the fact that perception of crime is an expression of broader social concern (Jackson, 2004). This variable had three categories (0=increased, 1=stayed same, 2=decreased). Perceived youth disorder was a question about whether youth hanging around at unauthorized places, vandalizing, or fighting were problems in the community. This was a dummy variable (0=not a problem, 1=a problem).

Collective efficacy variables were similar to those used by Sampson et al. (1997), which constitute combined measures of willingness to intervene on behalf of the community and social cohesion and trust. In this study, respondents were asked if they were willing to intervene in situations involving 'youth starting a fight in the community', 'youth showing disrespect to adults', 'youth idling about', and 'youth engaging in the use of drugs'. Social cohesion and trust included measures such as 'this is a close-knit community', 'people in this community can be trusted', 'people in this community generally do not get along with each other', and 'people in this community do not share the same values'. These variables were measured using

a four Likert scale, from 'strongly agree' to 'strongly disagree'. The variables were summed to create a total score where higher values indicate higher levels of collective efficacy. This measure was also internally consistent ($\alpha = .747$).

Analytical strategy

SPSS for Windows (v. 21.0) was used to compute all stages of the statistical analysis. First, the issue of missing values was addressed using the pairwise deletion option in *SPSS*. The advantage with using this option was that only missing values of cases were removed from the analysis, thus allowing all available data to be included in the analysis. Regarding the statistical analysis, the first was a descriptive statistics of all variables using their mean and standard deviation. This was followed by a bivariate analysis of all variables as a first stage in examining the strength, direction, and significance of relationship and also to test for multicollinearity, which in essence must not be more than 0.7 (Atindabila, 2013). The last was a multiple linear regression, and this was done hierarchically. First individual measures were entered consistent with other studies (see Covington and Taylor, 1991; Breetzke & Pearson, 2014), followed by contextual variables. However, data was split according to neighbourhoods, so that in each neighbourhood two models were generated: (1) a model with only individual-level measures as predictors; and (2) a model with both individual-level and contextual variables as predictors. This meant that separate model summaries were generated for each neighbourhood.

Results

Descriptive analysis

Table 1 shows a descriptive summary of variables used for the study. It can be seen from the table that, on the whole, residents' fear of crime in the neighbourhoods was low, with Chapel Hill being the safest (3.78), while at Anaji there was a much lower risk of becoming a victim of property victimization (7.82). The relatively low perception of fear of crime can be attributed to the low perception of crime over the past five years. For instance, at New Takoradi perception of crime over the past five years was 2.6, at Anaji it was 2.3, and at Chapel Hill 2.5. Regarding the distribution of sex, most respondents at New Takoradi and Anaji were females, and this was indicated by average values of .64 and .51, respectively. In the case of Chapel Hill, most respondents were male, as indicated by an average value of .49.

Again there were marked variations regarding income and level of education across the three neighbourhoods. For instance, in terms of income, Chapel Hill and Anaji were .59 and .44, respectively, while New Takoradi was .05, indicating that people earned higher income in both Chapel Hill and Anaji compared with New Takoradi. Therefore, the distribution of income levels reflects the residential differentiation of the neighbourhoods. Moreover, people seem to have stayed much longer at New Takoradi, with an average length of stay of about 25 years, which is much higher than Anaji and Chapel Hill, with their averages of 7.6 and 11.3 years, respectively. The results also show that more people stay in separate houses in Chapel Hill and

Anaji compared with New Takoradi, thus providing a vivid picture of the socio-economic status of the neighbourhoods. Lastly, collective efficacy seems to be high at New Takoradi (18.00) compared with Anaji (13.3) and Chapel Hill (12.8).

Table 1: Descriptive statistics of dependent and independent variables.

Variables	New Takoradi		Anaji		Chapel Hill	
	Mean	SD	Mean	SD	Mean	SD
Perceived safety	3.16	.74	3.04	.87	3.78	.79
Property victimization	7.04	3.22	7.82	3.78	6.14	2.50
Age	41.90	16.37	43.90	14.59	41.81	16.27
Sex	.64	.48	.51	.501	.49	.502
Length of stay	24.82	17.64	7.62	6.53	11.29	9.89
Marital status	.42	.49	.28	.45	.46	.50
Income	.05	.25	.44	.78	.59	.66
Level of education	.01	.12	.34	.48	.36	.47
Prior victimization	.57	.49	.57	.49	.58	.49
Housing type	.93	.25	.51	.48	.44	.49
Shared dwelling	.82	.47	.59	.49	.42	.47
Occupancy status	.83	.37	.57	.43	.48	.50
Street light availability	.17	.37	.25	.24	.06	.43
Police patrol	.20	.55	.14	.56	.21	.51
Perceived crime level	2.57	.95	2.32	.98	2.51	1.2
Perceived youth disorder	1.23	1.2	.19	.54	.17	.57
Collective efficacy	18.00	2.0	13.3	2.95	12.86	2.99

Source: Field survey, 2014

Bivariate analysis

Table 2 shows a bivariate analysis of all variables used for the study. It satisfies the condition of multicollinearity, which is important for regression analysis, and in this case all correlation coefficients were less than .7, with the highest being .573. Moreover, a significant relationship was found between the dependent variables and independent variables. For instance, sex and marital status were positively and significantly related to perceived neighbourhood safety, while length of stay, income, and prior victimization were inversely and significantly related to perceived neighbourhood safety. On the other hand, age and prior victimization were positively and significantly related to risk of property victimization, while marital status and income were negatively and significantly related to risk of property victimization.

However, there were variations in terms of the relationship between contextual variables and the fear of crime measures. For instance, with regard to the built environment measures, only housing type had a significant and inverse relationship with risk of property victimization; on the other hand, only shared dwelling had a significant and positive relationship with perceived

neighbourhood safety. Moreover, the relationship between collective efficacy and perceived neighbourhood safety was significant compared with risk of property victimization.

Multivariate analysis

As indicated earlier, separate models were generated for each neighbourhood, the first containing individual-level measures and the second containing both individual-level and contextual measures. In this regard, the first model for each neighbourhood is presented in Table 3, while the second model for each neighbourhood is presented in Table 4. Moreover, the standardized coefficient and level of significance were used for the analysis. The choice of the standardized coefficient together with level of significance was made to assess the contribution each predictor makes to the variation in fear of crime at the neighbourhood level. The p-value or level of significance is placed in parentheses in both Tables 3 and 4, while the one not in parentheses is the standardized coefficient.

The results in Table 3 show variation in the strength, direction, and significance of the relationship between various predictors and the fear of crime measures used. Age was found to be a significant predictor of perceived neighbourhood safety at New Takoradi and Anaji. However, in the case of New Takoradi, the relationship was positive, which means that individuals feel more unsafe when their age increases, while in the case of Anaji the relationship was inverse, meaning an increase in age corresponds with higher feelings of safety.

With regard to sex, only Chapel Hill had a positive and a significant relationship with perceived neighbourhood safety, which means that at Chapel Hill females feel very unsafe when walking alone at night or during the day. The result for income shows that it is not a significant predictor of perceived neighbourhood safety across the three neighbourhoods. On the other hand, education, an important social class measure just like income, was found to be positively and significantly related to perceived neighbourhood safety at Anaji and Chapel Hill. This means that residents with higher levels of education at Anaji and Chapel Hill felt unsafe when walking alone at night or during the day.

Furthermore, Table 3 shows that there were dissimilarities in terms of the relationship between the individual-level measures and perceived neighbourhood safety, on the one hand, and risk of property victimization, on the other. For instance, while income is not significantly related to perceived neighbourhood safety, it is significantly and inversely related to risk of property victimization at Anaji and Chapel Hill. The analogy we can draw from this result is that residents with higher incomes in these two neighbourhoods show considerable concern at becoming victims of property crime—and in this case, burglary and theft. Moreover, prior victimization seems to be a significant predictor of risk of property victimization across all neighbourhoods. Based on the direction, which is positive, it can be inferred that people who have not had any experience of victimization also consider themselves less likely to become victims of property crime.

Table 2: Bivariate relationship among variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Perceived safety	1																
Property victimization	-.149**	1															
Age	.000	.096**	1														
Sex	.130**	-.007	-.038*	1													
Length of stay	-.039*	-.014	.435**	-.065**	1												
Marital status	.061**	-.091**	.573**	.204**	.207**	1											
Income	-.062**	-.044*	-.019	-.085**	-.086**	-.079**	1										
Level of education	-.023	.024	-.078**	-.208**	-.093**	-.147**	.317**	1									
Prior victimization	-.084**	.152**	.009	.023	.019	-.003	-.020	-.007	1								
Housing type	.029	-.059**	-.072**	.041*	.122**	-.011	-.356**	-.246**	-.010	1							
Shared dwelling	.132**	-.009	.012	.007	-.002	-.068**	-.030	.048*	-.040	-.102**	1						
Occupancy status	.017	-.036	-.145**	-.046*	-.040*	-.067**	-.163**	-.028	.015	.156**	-.019	1					
Street light availability	-.011	.002	-.015	.006	-.093**	-.010	.071**	.052**	-.147**	.034	-.046*	-.046*	1				
Police patrol	-.111**	.115**	-.009	.028	-.047*	-.019	.001	-.003	.065**	-.003	-.083**	.034	.004	1			
Perceived crime level	-.191**	.173**	-.015	.033	-.048*	-.026	.039*	.017	.137**	-.085**	-.075*	.004	.002	.130**	1		
Perceived youth disorder	.156**	-.056**	-.039*	-.010	.114**	-.038*	-.138**	-.065**	-.062*	.199**	-.030	.022	-.048*	-.106**	-.161**	1	
Collective efficacy	.153**	.031	.029	.049*	-.078**	.054**	-.015*	.019	.033	-.063**	.018	-.019	.101**	-.010	.033	.037	1

Notes: *p < 0.05 **p < 0.01

Source: Field Survey

Table 3: Regression of fear of crime on individual-level predictors

Variables	Perceived neighbourhood safety			Risk of property victimization		
	New Takoradi	Anaji	Chapel Hill	New Takoradi	Anaji	Chapel Hill
Age	.120 (.054)	-.165 (.051)	-.044 (.716)	.178 (.049)	.126 (.103)	.040 (.543)
Sex	.083 (.286)	.076 (.387)	.248 (.006)	-.040 (.528)	-.033 (.607)	-.031 (.549)
Length of stay	-.157 (.053)	-.036 (.581)	.008 (.929)	-.065 (.317)	-.079 (.355)	-.009 (.925)
Marital status	.004 (.963)	-.031 (.711)	.040 (.723)	.166 (.040)	.031 (.755)	-.004 (.970)
Income	.019 (.778)	-.056 (.530)	-.079 (.291)	.019 (.797)	-.224 (.010)	-.140 (.051)
Level of education	.087 (.174)	.162 (.050)	.258 (.006)	.087 (.216)	-.032 (.712)	.042 (.641)
Prior victimization	-.066 (.268)	-.164 (.870)	-.150 (.053)	.152 (.034)	.229 (.006)	.341 (.000)
R ²	.035	.086	.125	.085	.126	.152

Note: (p-value)

Source: Field survey, 2014

Similar results are found in Table 4, in terms of the direction, strength, and significance of the relationship between individual-level characteristics and the fear of crime measures. However, in the case of Table 4, the R² values are larger, meaning that predictors in Table 4 better explain variations in fear of crime. When assessed at the neighbourhood level, Chapel Hill has the largest R² values. Moreover, with regard to the contextual measures, built environment variables are not significantly related to perceived neighbourhood safety across all neighbourhoods; rather, a significant relationship can be found between housing type and perceived risk of property victimization at New Takoradi and Chapel Hill. Based on the direction of the result, it can be interpreted that residents who do not reside in separate houses in these two neighbourhoods consider themselves less likely to become victims of property crime compared with those who reside in separate houses.

Table 4: Regression of fear of crime on individual- and contextual-level predictors

Variables	Perceived neighbourhood safety			Risk of property victimization		
	New Takoradi	Anaji	Chapel Hill	New Takoradi	Anaji	Chapel Hill
Age	.073 (.402)	-.136 (.175)	-.085 (.518)	.193 (.034)	.134 (.223)	.070 (.570)
Sex	.072 (.333)	.127 (.200)	.227 (.013)	-.086 (.267)	-.075 (.409)	-.056 (.511)
Length of stay	-.151 (.051)	-.062 (.506)	.005 (.959)	-.106 (.204)	-.028 (.753)	.007 (.944)
Marital status	.062 (.428)	-.065 (.540)	.060 (.631)	.134 (.103)	.015 (.886)	-.028 (.814)
Income	.112 (.132)	-.050 (.587)	-.072 (.445)	.029 (.705)	-.220 (.015)	-.166 (.051)
Level of education	.066 (.388)	.169 (.053)	.228 (.015)	.094 (.236)	-.046 (.606)	.055 (.527)
Prior victimization	-.175 (.046)	.173 (.051)	.014 (.783)	.120 (.053)	.218 (.016)	.279 (.002)
Housing type	-.115 (.124)	.028 (.766)	-.091 (.331)	.150 (.053)	.012 (.894)	.206 (.020)
Shared dwelling	.062 (.410)	.013 (.883)	-.084 (.371)	.176 (.025)	.113 (.186)	.146 (.098)
Occupancy status	.001 (.994)	.017 (.861)	.020 (.732)	.039 (.600)	.117 (.221)	.204 (.020)
Street light availability	-.008 (.919)	-.106 (.240)	.075 (.412)	.053 (.493)	-.168 (.051)	.009 (.917)
Police patrol	-.087 (.138)	-.101 (.249)	-.120 (.127)	.048 (.530)	.068 (.421)	.063 (.488)
Perceived crime level	-.246 (.034)	-.157 (.089)	-.199 (.052)	.152 (.051)	.034 (.701)	.131 (.148)
Perceived youth disorder	.237 (.002)	.203 (.049)	.118 (.114)	-.025 (.756)	-.076 (.412)	.079 (.349)
Collective efficacy	-.255 (.001)	-.198 (.054)	-.127 (.163)	-.032 (.672)	-.126 (.168)	-.114 (.181)
R ²	.217	.122	.204	.153	.182	.296

Note: (p-value)

Source: Field survey, 2014

Furthermore, results for shared dwellings show a positive and significant relationship with risk of property victimization, suggesting that at New Takoradi residents whose dwellings are shared with other households perceive a higher risk of property victimization. While this may seem in contradiction with the building type variable (especially where, in separate houses, a dwelling is

unlikely to be shared with other households), it also indicates that perceived risk of property victimization is a concern in both high- and low-income neighbourhoods; and in the case of low-income neighbourhoods such as New Takoradi, living with tenants especially in compound houses may also influence property victimization.

Contrary to the built environment, social organization measures have a significant relationship with perceived neighbourhood safety but not with risk of property victimization. More specifically, collective efficacy is inversely and significantly related to perceived neighbourhood safety at New Takoradi and Anaji, which means that as collective efficacy increases, people feel safer in these two communities. The results also show a positive and significant relationship between perceived neighbourhood safety and perceived youth disorder at New Takoradi and Anaji, which means that as residents perceive youth disorder as a major problem in their neighbourhood, they are likely to feel unsafe walking alone at night or during daytime. Lastly, there is a significant and inverse relationship between perceptions of crime over the last five years and perceived neighbourhood safety across all the neighbourhoods. This suggests that the more residents perceive crime to have decreased over the past five years, the more they feel safe walking alone at night.

Discussion

The results of the analyses show variations in terms of neighbourhood effect on fear of crime. One finds, on the one hand, that some of the relationships between correlates and fear of crime are consistent with extant theoretical positions and the empirical literature, while on the other hand, there are inconsistencies with these relationships. For instance, at New Takoradi, the relationship between age and perceived neighbourhood safety is consistent with the literature on ageing and fear of crime (see Ferraro & LaGrange, 1987; Scarborough et al., 2010). In the case of Anaji, where increase in age corresponds with high feelings of safety, the low level of perceived crime over the past five years as indicated in Table 1 may be a contributing factor.

Interestingly, sex, an important correlate of fear of crime, also exhibits variations in terms of relationship with perceived neighbourhood safety across the three socio-economic neighbourhoods. The result for Chapel Hill regarding sex corroborates the personal and social vulnerability perspective on gender and crime. According to this perspective, women tend to generalize across types of victimization experiences compared with men. In addition to this, their experiences with hidden victimizations in their everyday life may contribute to why they normally feel insecure, especially in areas where they perceive themselves to be in danger (Smith & Torstensson, 1997; Williams 2004). Results for Anaji and Chapel Hill regarding levels of education and perceived neighbourhood safety are inconsistent with other studies suggesting that people at low levels of the social ladder are likely to be more concerned about fear of crime (see Pantazis & Gordon, 1999; Muncie & Wilson, 2004). However, this finding also brings to the fore the issue of segregated fear, especially where the highly educated are in Chapel Hill and Anaji.

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Further studies, probably through qualitative methods, are suggested to provide further insight into this finding.

The results for income show heterogeneity of relationship across the three neighbourhoods and between the two fear of crime measures used for the study. In the case of Anaji and Chapel Hill, the result corroborates views expressed by Muggah (2012), who asserts that property crimes are more likely to be prevalent in high-income communities. Moreover, the result for prior victimization and risk of property victimization, which is consistent across all the neighbourhoods, affirms the direct victimization model. However, the result further suggests that whether or not prior victimization will relate significantly with fear of crime will depend on the kind of fear of crime measure one uses.

Regarding the built environment, the results show that residents in their attempts to deal with fear of crime have resorted to different building types. For instance, residents living in separate houses, particularly at Chapel Hill, perceive a much higher risk of becoming victims of property crimes. This result therefore resonates with the study by Owusu et al. (2015), which revealed that the high level of insecurity and fear of crime in high- and middle-income neighbourhoods in urban Ghana has increased the use of target hardening measures such as high walls, barbed wire, and burglar-proofs. In other words, the adoption of target hardening measures seems to be a major feature of recent housing design in high-income neighbourhoods. The fact that there seems to be some level of insecurity, especially among people living in separate houses, complicates Newman's (1996) claims of territoriality. This is because one would have expected that residents who have much control over their houses, especially those in separate houses, would feel secure; however, this is not the case, as indicated by the result.

The result for New Takoradi and Anaji regarding collective efficacy and perceived neighbourhood safety resonates with other studies (see Gibson et al., 2002; Scarborough et al., 2010; Swatt et al., 2013), and it further complicates the view that low-income neighbourhoods may be bereft of collective efficacy because they lack the means to mobilize resources and address common problems such as crime and fear of crime. However, in the case of Chapel Hill, the fact that collective efficacy may not be significantly related to perceived neighbourhood safety may be due to the housing characteristics in this neighbourhood. As suggested by Swatt et al. (2013: 9), in 'wealthy neighbourhoods, collective efficacy may be irrelevant as residents are paying for additional measures of social control (i.e. gated entrances, fences to restrict access, private security)'. This is also evidenced by the predominance of separate houses in the neighbourhood. Moreover, it has also been suggested that the adoption of defensible-space measures reduces collective efficacy and social cohesion (Spinks, 2001), and this may account for the insignificance of collective efficacy in reducing fear of crime at Chapel Hill.

Lastly, results for perceived neighbourhood safety and perceived youth disorder at New Takoradi and Anaji are consistent with other studies (see Gibson et al., 2002; Delone, 2008) and affirm the

position of the broken windows theory. However, a limitation of this study regarding perceived youth disorder was that it used just one variable or question regarding youth hanging around or starting a fight in the neighbourhood. This is contrary to studies that assessed disorder using a range of measures that encapsulate both social and physical incivilities (see Foster et al., 2010; Toet & van Schaik, 2012). Nonetheless, we are of the view that the variable we used adequately captures residents' perception of whether certain activities of the youth are of concern and may be a factor influencing fear of crime in the neighbourhood. Furthermore, the findings suggest that the presence of perceived youth disorder at New Takoradi in particular may be the result of structural issues such as unemployment and poverty.

Conclusion and policy implication

Addressing neighbourhood security, particularly fear of crime, has become a major issue on the sustainable urban development agenda. Therefore, in attempting to advance knowledge regarding the role of neighbourhood in individual fear of crime, the study sought to examine the influence of neighbourhood characteristics on fear of crime in Ghana, using three different socio-economic neighbourhoods in Sekondi-Takoradi as a case in point. The study proceeded on the premise that there have been limited testing and applicability of criminological theories such as CPTED and collective efficacy in the Ghanaian context and also of the extent to which these theories explain fear of crime in various socio-economic neighbourhoods in developing country cities.

Important insights gathered from the study include the fact that the neighbourhood effect on fear of crime varies depending on the socio-economic status of the neighbourhood. More importantly, the study also showed that the extent of this neighbourhood effect depends on the particular type of fear of crime measure being used. Specifically, the study revealed that perceived risk of property victimization is a problem among people living in separate houses and therefore, by implication, a source of worry for high-income neighbourhood dwellers. Moreover, the study also showed that reducing neighbourhood fear of crime through enhanced neighbourhood safety transcends just ensuring individual safety to the larger neighbourhood context. This corroborates the UNODC (2010) claim that feelings of safety may be a result of factors external to personal characteristics and might include neighbourhood conditions that increase vulnerability to crime. Interestingly, social cohesion and collective efficacy seem to be more effective in low- and middle-income neighbourhoods than in high-income neighbourhoods.

On the basis of the findings, the study recommends that addressing fear of crime in high-income neighbourhoods should include more engagement between the police and the public to ensure confidence in the police, since the problem is not necessarily about actual victimization but rather perceived risk. Moreover, the study also recommends the establishment of neighbourhood watchdog committees as an informal means of reducing fear of crime in high-income neighbourhoods. Regarding low- and middle-income neighbourhoods, the study recommends

stronger collective efficacy and social cohesion and also initiatives that will mobilize members of the community in crime prevention efforts. Lastly, the study recommends initiatives that will improve community viability in low-income neighbourhoods to provide employment for the youth.

Acknowledgement

This work was carried out with the financial support of the UK Government's Department for International Development (DFID) and the International Development Research Centre (IDRC), Ottawa, Canada. We also thank the anonymous reviewers for their insightful comments and suggestions. However, the views expressed in this paper are solely those of the authors.

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Notes

¹EAs used for the study had only boundaries and therefore necessitated that the researchers used an alternative method in locating houses—hence the systematic sampling technique. However, EAs varied in terms of the number of houses located within them, and thus the under-sampling and oversampling in the various EAs.

¹Shared dwelling used here connotes whether certain spaces within a building are shared by more than one family

¹ ‘Separate’ house includes both detached and semi-detached houses, while ‘not separate’ includes compound houses, flats, and other alternative housing.

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¹ 'Owned' means owner is an occupier while renting; 'rent free and perching' means not owned.
