Victimization and Involvement in Social Control:

Effects of Neighborhood Conditions

by

Ji Hyon Kang

A dissertation submitted to the Graduate Faculty in Criminal Justice in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

2009

This manuscript has been read and accepted for the
Graduate Faculty in Criminal Justice in satisfaction of the
dissertation requirement for the degree of Doctor of Philosophy.

James P. Lynch, Ph. D.

Date	Chair of Examining Committee

Karen Terry, Ph. D.

Date	Executive Officer

Todd Clear, Ph. D.

Ellen Scrivener, Ph. D.
Supervision Committee

THE CITY UNIVERSITY OF NEW YORK

Abstract

Victimization and Involvement in Social Control:

Effects of Neighborhood Conditions

by

Ji Hyon Kang

Advisor: Professor James P. Lynch, Ph. D.

Abstract:

This study disentangles the interrelationship between victimization and involvement in social control via participation in voluntary associations for crime prevention. There is a great deal of research on the effects of community organization on crime and relatively little on the effects of crime on community organization, despite the acknowledgement of the impact of crime on social capital in communities. The current study addresses this issue. In particular, this research sets out to contribute to the emerging literature in contextual analyses of victimization effects, social control, and community organization, first by examining the impact of crime on individuals' decisions on their involvement in neighborhood crime prevention organizations (NWGs); second by revealing different change models for individuals who join, leave, and stay in these organizations; and finally by comparing how crime impacts individuals' household-protective behaviors and community-protective behaviors. Specifically, I consider different types of crime at both individual and neighborhood levels and individuals' perception of neighborhood safety.

Multiple sources of data, including a telephone survey of over 5,000 individuals from a 1990 Seattle study conducted by Miethe (1991), 1989-1991 crime statistics from the Seattle Police Department, and the 1990 Census, provide the best available information to examine the proposed research questions. The data are unique in that they include a longitudinal survey of individuals with retrospective questions, offer extensive information on individuals' decisions about community protection and household protection, and make it possible to construct the changes of each individual's status with neighborhood crime prevention associations. To develop various measures of neighborhood conditions including crime problems, data are extracted from the 1990 census and the Seattle Police Department. Building from the nature of the research questions and the availability of data, multilevel modeling techniques are used.

The findings highlight the importance of crime on individuals' involvement in NWGs. In particular, the results show that models of involvement are different from models of change in involvement status. Crime differentiates individuals' decisions to change their membership with NWGs and those who maintain their membership. Negative perceptions of neighborhood safety and a higher residential burglary rate in communities motivate individuals to join NWGs, while individuals' actual property crime victimization makes them leave NWGs. Crime also positively affects individuals' household-protective behaviors. The impact of individuals' NWG involvement on their household-protective behaviors, however, is only significant for the joiners. Joiners in crime prevention associations are more likely to engage in household-protective behaviors as well.

Acknowledgements

I would like to thank my advisor, Dr. James Lynch, for his thoughtful advice, dedication, support, patience, confidence, guidance, and encouragement. Dr. Lynch shared with me his in-depth knowledge and encouraged me throughout my graduate studies. Without him, this project would not be completed, and I cannot even say how grateful I am for the extraordinary support that I have received from him. I am very fortunate to have worked with Dr. Lynch throughout my graduate work and dissertation. I must also express my gratitude to other members of my dissertation committee, Dr. Todd Clear, Dr. Ellen Scrivner, Dr. Hung-en Sung, and Dr. Janet Lauritsen. Their comments and suggestions on earlier drafts of this dissertation greatly improved the quality of this work. I would also like to extend my thanks to Dr. Karen Terry, Dr. Jeff Mellow, and Dr. Justin Ready for their support and help throughout my graduate education.

In addition, I would like to thank Judy Bickart for helping me to edit this document. I also thank my colleagues, Min C. Kim, Kristin Englander, Misha Lars, Odessa Simms, Zainab Latif, Sally Lam, Kideste Wilder, Steve Wood, and Yoko Takagi for their friendly encouragement. I also thank Taeeun Song, Sora Lee, Hyeyoon Kim, Eunae Choi, Soyoung Chung, and Chang Kim. They have endured my journey on the roller coaster between excitement and frustration over the years of graduate studies. I want to thank my family in Korea, Mom who is so special to me, Grandma, my brother Jaehyuk, my aunts and uncles. Their love, support, and encouragement have been part of my life. This dissertation is dedicated to my father who is an angel in heaven and with me and my family in our hearts. Dad, I love you, and I miss you so much.

Table of Contents

Table of Tables and Figures

Chapter 1. Introduction

Social disorganization theory (Shaw & McKay, 1942) is influential in the ecological explanation of crime. Other than the three ecological predictors of poverty, ethnic heterogeneity, and mobility, a number of neighborhood characteristics that promote crime through social disorganization are revealed: a single parent house, structural density, urbanization, and high concentration of incarceration (Bursik, 1988; Bursik & Grasmick, 1993; Clear, Ross, Waring, & Scully, 2003; Sampson, 1985; Sampson & Grove, 1989). Many scholars insist on re-framing Shaw and McKay's theory with the concept of "concentrated disadvantage" (Clear et al., 2003; Sampson & Grove, 1989; Morenoff, Sampson & Raudenbush, 2001), but social disorganization scholars firmly believe community organizations are the key to reducing violence because these organizations encourage community control (Bursik & Grasmick, 1993). Even with developments in the explanation of crime and social ills within the neighborhood, there is a lack of attention paid to the efforts to fight against these social ills in the communities, especially those geared toward crime prevention. This project will fill the gap in the current literature. It will examine what makes individuals initiate or even discontinue their efforts to prevent repeat and serious victimization in the community. Its goal is to provide new insight into the study of reducing community violence through citizens' activities.

This study examines the effect of criminal victimization on an individual's decision to participate in or leave a crime prevention association, in particular, Neighborhood Watch Groups. The literature on social disorganization and collective efficacy emphasizes voluntary associations as venues for interaction among

neighborhood members. Motivations for the activities of the voluntary organizations (those for crime prevention in particular) are rarely tested in previous studies. In addition, studies show contradictory findings regarding the impact of crime victimization experience on neighborhood interaction. There is a perception that reducing crime will encourage interaction and networking within a neighborhood, and programs such as "Weed and Seed" are based on this assumption (Dunworth & Mills, 1999). Some studies at the neighborhood level, however, find a positive relationship between crime and participation in neighborhood organizations, and there is a need for a closer look at this issue.

The literature on voluntary association suggests that the decision to join voluntary organizations for communities is a function of education and socioeconomic status. Other than these individual level background variables, however, very little attention has been paid to the role of neighborhood problems such as crime. Without consideration of the impact of neighborhood problems, the claim can be made that neighborhood organizations, especially those dealing with crime prevention, can only succeed where the community is robust and has few problems with crime; Neighborhood Watch will flourish where it is not needed. In addition, individuals' decisions regarding neighborhood enhancement may be closely related to the conditions of their neighborhoods. People possibly will decide to invest their time and effort in the communities that are considered worthy of contributing.

Dissertation Overview

To summarize, this study argues that the decision of individuals' to be involved in informal social control for their communities, as evidenced by membership status

changes in Neighborhood Watch Groups (NWGs) cannot be understood apart from the experience with crime against these individuals and the environment of the surrounding communities. Despite the fact that previous studies have documented the extent of geographic distribution of different degrees of informal social control and the impact of informal social control on crimes in the communities, none have addressed the connection between each individual's crime victimization and the changes in involvement in community crime prevention activities in the longitudinal setting. In addition, comparison between determinants of individual and household protection and those of participation in crime prevention in communities is provided. Such information is important for making informed policy decisions and for theory development as well.

Multiple sources of data, including a telephone survey from a 1990 Seattle study conducted by Miethe (1991), crime statistics from the Seattle Police Department, and the 1990 Census, provide the best available information to examine the proposed research questions. More importantly, the data can be used to study change in individuals' decisions regarding their membership status with NWGs when it is constructed as a longitudinal survey of individuals. Retrospective questions in the telephone survey from a 1990 Seattle study (Miethe, 1991) make it possible to construct the changes of each individual's status with NWGs with consideration of the crime victimization experience in the time frame of two years.

The approach I take in the dissertation is to break down the broad issue into several stages of research, and each of the pieces adds unique information to the project. The dissertation research is presented in the following manner: Chapter 2 provides the theoretical framework of the dissertation research, and Chapter 3 focuses on the

statement of research questions. Chapter 4 deals with methodological aspects of the study. It provides an overview of the steps in building multilevel data, measures of membership status change with NWGs and crime victimization, a summary of the dependent and independent variables, and the analytical methods.

The results are presented in three parts. Chapter 5 provides the results of the participation model in NWGs with the individual- as well as neighborhood-related factors. The second set of results is presented in Chapter 6, focusing on the examination of membership status change with NWGs over time. The third part of the results, Chapter 7, tests the model of self- and household-protective behavior considering the impact of the crime victimization experience within individual and neighborhood contexts. The contextual impacts of crime victimization are also tested for the models of membership status change with NWGs and self- and household-protective behaviors. Chapter 8 summarizes the main hypotheses, findings, and implications and puts them in a broader theoretical perspective. It also identifies the contributions and limitations of the current work. The directions for future research and plans are presented in this section as well.

Chapter 2. Theoretical Framework – Literature Review

1. Crime and Social Organization of Communities

Effects of Community Organization on Crime: Systemic Model

Long ago, scholars began to examine the reasons for the uneven distribution of crime in cities. Park (1925) examined the association between higher crime rates and other forms of social disorganization in communities such as the condition that the authority and the system of social control is undermined or destroyed, and urban research similarly stresses the role of weak, anonymous social connections in socially disorganized communities. Shaw and McKay (1942) also found a strong pattern in which crime rates increase toward the inner city but decrease on the outside edge. In addition, inner city high crime areas also possess other types of social ills. It is understood that social disorganization causes high and stable crime rates in communities, and it is also confirmed that macro-level social processes affect crime independent of the characteristics of individuals in disadvantaged communities.

Shaw and McKay (1942) were also interested in the causes of social disorganization in communities; specifically, they focused on poverty, mobility, and racial/ethnic heterogeneity. Although they do not directly cause high crime rates, these factors destroy the informal social control networks necessary for community action. For instance, poverty is related to a lack of resources and power to defend collective interest in communities, and poor neighborhoods are more likely to have unsupervised teenagers and lower participation in community organizations. Mobility and racial/ethnic

heterogeneity interrupt the ability of the community to establish a stable and effective social network and to understand the residents in the community (Bursik & Grasmick, 1993).

In addition to the relationship between neighborhood characteristics and crime rates, studies have also examined the mediating factors for the correlation between structural characteristics and neighborhood crime rates. Concepts such as collective efficacy, neighboring, and monitoring are examined for their ability to differentiate the role of structural characteristics in determining neighborhood crime (Bellair, 2000; Bursik & Grasmick, 1993; Sampson & Groves, 1989; Sampson, Raudenbush, & Earls, 1997; Warner & Rountree, 1997). For instance, collective efficacy, defined by Sampson and Raudenbush (1999) as cohesion among residents combined with shared expectations for social control is understood as a key component of community social capital that mediates the relationship between crime and ecological conditions (Morenoff et al., 2001; Sampson et al., 1997).

The concepts of mediating factors between the association of structural characteristics of communities and their crime rates have several different names including neighboring, monitoring, and collective efficacy, and there is no consensus on their definitions or meanings (Bellair, 2000; Bursik & Grasmick, 1993; Sampson & Groves, 1989; Sampson, Raudenbush, & Earls, 1997; Warner & Rountree, 1997). However, they are all similar to a certain degree in that they have a role as mediating factors between characteristics of communities and their crime rates, but they are treated differently with different measures. Even though there is no scholarly agreement on the concise definition and measures for the concepts, these factors are understood to be

important. In particular, scholars have understood that they are responsible for the differentiation of the impact of structural features of communities on crime rates, and this confirms the need to include these concepts in the model for the explanation of community crimes (Putnam, 2000; Rosenfeld, Messner, & Baumer, 2001; Sampson et al., 1997).

To date, however, there have been few studies focusing on the characteristics of the social networks. One of the earliest studies to focus on the characteristics of the social networks in neighborhoods was conducted by Kasarda and Janowitz (1974). They introduced the "systemic" model of community social dynamics, hypothesizing that extensive friendships and kinship bonds rooted in residential stability strengthen neighborhood attachment. Here, network density and the frequency of social interaction promote social control in the neighborhood (see also, Bursik & Grasmick, 1993). In the systemic model, neighborhood composition is responsible for the development of social networks. In other words, interconnected and active family, friendship, and associational networks increase the likelihood that residents will participate actively in communities' activities for control. Street crime will be expected to be low in these well-monitored and networked communities.

Even though there is a perception that social networks are the key mediating mechanisms in the association between structural factors of communities and crime and play a significant role in neighborhood crimes, few studies have been conducted on this topic and the findings are contradictory (Warner & Rountree, 1997). Some studies have found that social networks play a role in neighborhood crime and victimization rates (Bursik & Grasmick, 1993; Sampson & Groves, 1989; Sampson et al., 1997; Veysey &

Messner, 1999; Velez, 2001). For instance, Sampson and Grove (1989) reveal that community social disorganization (characterized by sparse friendship networks, unsupervised teenager peer groups, and low participation in organizations) explains a higher rate of crime and delinquency in communities. Variations in the levels of community social organization also mediate the effects of community structural variables such as low socioeconomic status, residential mobility, ethnic heterogeneity, and family disruption. Other studies, however, show no relationship between social networks and neighborhood crime, or show that the relationship varies for different types of crime and neighborhoods (Simcha-Fagan & Schwartz, 1986; Warner & Rountree, 1997).

Although there is no consensus on the association between social networks and crime rates in communities, we cannot ignore the connection between social networks and crime. It is understood that social networks are related to the determination of the social capital of individuals, and the connection between social capital and crime is emphasized by several scholars. The relationship between social capital and crime is more complex given that the two variables may be reciprocally related; social control affects crime, and vice versa (Bursik & Grasmick, 1993). In other words, high crime rates in the community itself can produce a decline in community social capital (Kawachi, Kennedy, & Wilkinson, 1999). Skogan (1986, 1990) identified a number of factors that contribute to declining social capital in the community: fear of crime, for instance, can cause physical and psychological departure from community life, thus resulting in fewer opportunities for local networks. In sum, there is a great deal of research on the effects of community organization on crime and relatively little on the effects of the crime on

community organization, despite the acknowledgement of the impact of crime on social capital in communities.

Communities and Crime: Impact of Crime and Victimization

In previous research studies and theoretical frameworks including the systemic model, the relationship between crime and communities' functionality in regard to control and social regulation is extensively discussed. However, most studies focus on the impact of communities' functionality on crime; in particular, they discuss the positive impact of community function on crime. Although previous studies disproportionately focus on how communities differentiate their functioning related to the control of crime, the opposite direction of the relationship, the impact of crime on the neighborhood functioning, is also acknowledged in some previous theoretical discussions and research. For instance, the systemic model allows for a feedback loop showing that crime also affects the social organizations of communities (Bursik and Grasmick, 1993, p. 57-59). In addition, several scholars admit this feedback loop or reciprocal relationship between crime and social organizations (Rose & Clear, 1998; Skogan, 1986, 1990; Wilson, 1996).

The impact of crime on communities is also related to the discussion of the fear of crime. For example, Skogan (1986) argued that the level of crime in a community has an impact on the residents' fear of crime in that area, and this high level of fear, in turn, is connected to the neighborhood's decline:

> Regardless of its source, fear of crime may stimulate and accelerate neighborhood decline. Increasing fear of crime may cause individuals to withdraw physically and psychologically from community life. This weakens informal processes of

> social control that inhibit crime and disorder, and it produces a decline in the organizational life and the mobilization capacity of a neighborhood. Fear may also contribute to the deterioration of business conditions. The importation and local production of delinquency and deviance may also be influenced by perception of neighborhood crime rates. Changes in the composition of the resident population may be stimulated by the cumulative effects of fear. (Skogan, 1986, p. 203)

The reciprocal relationship between crime and community is also emphasized in the association between crime and informal social control, and the non-recursive relationship between informal control and crime has received attention from several scholars (Bellair, 2000; Bursik, 1988; Liska & Warner, 1991). Theoretically, Bursik (1988) points out the non-recursive aspect of the social disorganization model in his criticism of social disorganization and new extensions of the theory. In addition, empirical studies support the reciprocal relationship between crime and informal social control (Bellair, 2000; Liska & Warner, 1991). Bellair (2000), for instance, shows the reciprocal relationship between crime and informal surveillance, using data from the Seattle telephone survey in addition to crime rate statistics and the 1990 census.

Crime has traditionally been considered as a dependent variable or outcome measures, even though scholars understand the need to consider the consequences of crime (Liska & Bellair, 1995). Crime can be understood as one tool of mobilization of communities in response to the threats to the commonwealth of community residents and their belongings (Dugan, 1999; Xie, 2007). Communities are stages where different interests are mobilized and joined in an aggregated process to change and strengthen

common interests, and one of the major concerns of the community is safety (Janowitz & Suttles, 1978). In order to accomplish community action, it is important to reconcile diverse interests inside the community and provide tools for a voluntary social order, and communities mobilize in response to external threats (Janowitz & Suttles, 1978; Suttles, 1968).

Scholars are also interested in the impact of crime on a number of different aspects of neighborhood change. High crime rates, especially high rates of burglary in the communities, explain population movement out of the communities (Skogan, 1990). Sampson and Woodredge (1986) describe population declining from 1970 to 1980 in 55 major U.S. cities, especially the loss of non-White population with high crime rates. Liska and Bellair (1995) also observed that the impact of violent crime rates on racial composition was significant. In their study, the reciprocal relationship between violent crime and racial composition of communities was also examined, and racial composition had a significant impact on crime only in the 1980s while the reversed relationship is significant for over four decades from the 1950s to 1990s. Additionally, the impact of crime on neighborhood change has been tested at the household or individual level. For instance, Dugan (1999) examined the impact of crime victimization on the decision of moving and found a strong positive impact of recent nearby property crime and previous nearby crime on the moving decision of households. This study was not conducted in the contextual level, and Xie (2007) confirms the impact of crime victimization on household moving with consideration of ecological factors in the model as well.

There is a general scholarly agreement on the impact of crime and victimization on individuals' or neighborhoods' changes, and the impact of crime on social capital was

another interest of several scholars. There is a perception that crime generates fear of strangers and general alienation from participation in the community (Liska & Warner, 1991; Skogan, 1986, 1991). This relationship between crime and social capital does not exist in a vacuum and level of attachment to community influences it. In addition, characteristics of communities also mediate the impact of crime on social capital in the neighborhoods.

There is a difference in the level of attachment among residents of a given neighborhood, and neighborhoods also differ in terms of how their residents react to problems within the community. Regarding the impact of community context on social organization, scholars insist that complexity associated with concentrated poverty brings about distrust within the neighborhood and withdrawal from various forms of community activity including collective efficacy and local voluntary associations (Bursik, 1988; Bursik & Grasmick, 1993; Sampson 1985; Sampson & Grove, 1989). In spite of the coherence of this argument, empirical research shows inconsistent results. There is a counter-argument that the demand for community organizations, especially those related to crime prevention may be greater in poor, disadvantaged communities, and this might amplify involvement in neighborhood organizations in low-income areas (Swaroop & Morenoff, 2006). The theoretical frameworks of this argument and to empirical evaluations have not yet been tested thoroughly (Swaroop & Morenoff, 2006).

Several scholars have studied the correlation between crime and community characteristics, and there is a consensus regarding the relationship between crime and neighborhood conditions such as lower socioeconomic status and residential instability (Bursik & Grasmick, 1993; Sampson et al., 1997; Skogan & Maxfield, 1981; Taylor,

1999). In addition, the relationship between neighborhood characteristics and the level of crime do not depend solely on the aggregated characteristics of individual demographics within the neighborhood (Sampson et al., 1997). The importance of informal social control in the explanation of crime is emphasized by a number of scholars (Lynch, Sabol, Planty, & Shelly, 2002; Sampson et al., 1997), but the relationship between crime and social organization is not static.

There is a common perception that crime and disorder in the community interfere with residents' efforts to maintain order in the community (Skogan, 1990; Skogan & Maxfield, 1981; Taylor, 2002). Skogan (1990) found that an increased level of disorder resulted in decreased participation in organized groups, and put a constraint on community cooperation. However, studies show contradictory findings regarding the impact on community organization of crime itself as opposed to the fear of crime (Perkins, Klaus, Bastian, & Cohen, 1996; Saegert & Winkel, 2004; Sampson, 1991; Taylor, 1996, 1997). Under some conditions, crime or social problems in the community actually enhance participation in organized groups. Taylor (1996), for instance, found that people living in neighborhoods with higher crime rates were more involved in neighborhood activities after controlling for residential stability and education. These studies confirm that crime and community organization participation are not always correlated either positively or negatively (Taylor, 1995). One of the reasons why studies on crime and community organization participation are inconclusive is the methodological concern of previous studies. Most studies on this topic have been conducted in a cross-sectional design. Consequently, these studies could not examine the

impact of the changing of a household's experience in subsequent decisions regarding community organization participation.

2. Involvement in Social Organization and Neighborhood Watch Groups

The Role of Voluntary Associations in Community Social Organization

The importance of local voluntary organizations has been discussed for their role in promoting community interaction for crime prevention within communities (Rosenbaum, 1988). In addition, voluntary associations are a key component of the social organization of communities because they offer residents of communities an opportunity to interact and foster attachments to neighborhoods, which are the two crucial components of social capital and collective efficacy. Data from the Chicago study also suggest that informal social control – voluntary association, kin/friend network, and local organization – can be the source of greater collective efficacy, which will result in the reduction of crime in communities (Morenoff et al., 2001). A study by Sampson, Raudenbush, and Earls (1997) emphasized the importance of establishing effective community organizations for collective efficacy in urban social networks. They argue that the prevalence and density of kinship, friendship, and acquaintanceship networks as well as the level of participation in community organizations promote the appearance of collective efficacy or social cohesion among residents who share expectations of action related to social control.

Resident-based informal social controls are also expanded according to their levels of practices by the systemic model of Bursik and Grasmick (1993) with consideration of the work by Hunter (1985). Informal social control is differentiated on

three different levels: private, parochial, and public. The private sphere of social control is defined in terms of interaction among primary group members (e.g., families), and public control links neighborhoods to outside actors. Parochial control, which falls between private and public control, stems from social interactions within voluntary associations such as religious groups or other community-based organizations. These groups can lead to direct and indirect social control since involvement in voluntary associations increases engagement in collective efficacy (Sabol, Coulton, & Korbin, 2004).

Previous studies have focused on the voluntary programs of crime prevention via residents' collective actions, and some studies confirm the importance of these programs' role in strengthening informal social control. In addition, factors found to promote social cohesion and informal social control include physical proximity to one another (Festinger, Schachter, & Back, 1963) and the frequency of social control (Shaw, 1981). A study by Fischer, Jackson, Stueve, Gerson, and Jones (1977) also confirms the importance of social interaction as a prediction of informal social control in the study of social networks. In addition, membership of voluntary organizations is often considered as interesting phenomena for both collective social control and individual social capital theories (Bekkers, Völker, Van der Gaag, & Flap, 2008). Scholars view participation in voluntary associations and other forms of engagement such as volunteering and voting either as indicators of the collection of social capital (Paxton, 1999; Putnam, 2000) or a means to achieve individual goals (Lin, 2001).

In sum, voluntary organizations provide neighbors with opportunities to enhance the physical proximity between residents and social interaction between them. The

improved social interaction also leads to increased familiarity, a higher chance of exchange of information, and a stronger feeling of interaction, which will eventually be connected to the enhanced community sense (DuBow & Podolefsky, 1981; Greenberg, Rohe, & William, 1982; Rosenbaum, 1987; Skogan, 1990). In other words, involvement or participation in these voluntary associations in the community has been considered as one of the major mechanisms for local control (e.g., Bursik & Grasmick, 1993).

Even though the importance of involvement in voluntary associations is emphasized in the previous studies, as Taylor (2002) pointed out, there is a scholarly disagreement about the role of voluntary associations for social control in the community. Previous studies exclude voluntary associations in the measure of collective efficacy but consider them in the discussion of informal social control (Gibson, Zhao, Lovrich, & Gaffney, 2002; Morenoff et al., 2001; Sampson et al., 1997). For the measurement of collective efficacy, Sampson and his colleagues (1997) exclude organizational participation. Collective efficacy is operationalized through perceived willingness to intervene, local political control, a sense of community, and instrumental helping. A study by Gibson, Zhao, Lovrich, & Gaffney (2002) also excludes organization participation as a component of social integration.

In contrast, there is a study that emphasizes the role of organizational participation in informal social control. Morenoff et al. (2001) assess informal social control through information about voluntary associations, kin networks, and local organizations, and they reveal that informal social control can promote collective efficacy that also contributes to crime reduction. Consequently, voluntary organizations are

important in crime prevention because the decision to join means that there is a willingness to engage in collective efficacy in the community.

It is understood that there is a need to examine whether participation in voluntary organizations can be considered as one aspect of social control, and to examine what motivates individuals to join voluntary organizations. The current study is planned to resolve this question. In addition, the discussion of the impact of crime on the changes of membership status in voluntary organizations will expand our understanding of the relationship between crime and motivation for social organization, as measured by involvement in voluntary organizations.

The Importance of NWGs as Community Organizations

The current study will examine the impact of households' victimization on their membership status decisions related to Neighborhood Watch Groups. There is a need to differentiate general organizational involvement in the community from participation in crime prevention, particularly with regard to the impact of crime. Most neighborhood organizations are designed to deal with a number of different issues, only some of which are related to crime (DuBow & Podolefsky, 1979). In addition, crime is not always the first issue on an organization's agenda. This requires us to focus on crime-prevention organizations in the current study to examine the impact of crime specifically on the informal social control for crime prevention.

Explanation of NWGs

The current study is focusing on the most popular organizations for crime prevention, Neighborhood Watch Groups (NWGs). The Neighborhood Watch Group,

also known as Block Watch, Apartment Watch, Home Watch, Citizen Alert and Community Watch, first became popular in the United States and England in the late 1960s to promote citizens' involvement in crime prevention activities in the community (Bennett, Holloway, & Farrington, 2006). NWGs are the most widespread programs for crime prevention in communities, and they are one of the "Big Three" for community crime prevention along with Operation ID (engraving property) and home security surveys (Feins, 1983). NWGs, in general, run with support from jurisdictional agencies such as the police or sheriffs' departments and consist of similarly organized block-level or neighborhood-level groups of residents (Garofalo & McLeod, 1989).

There is diversity in the role of police departments or similar jurisdiction-wide agencies, but almost all of the NWG programs are implemented with assistance from those agencies when they first startup or in the course of their activities. A Neighborhood Watch Group is one of the most popular community crime prevention organizations in the United States as well as in the United Kingdom. Over 25% of the UK population lives in areas covered by crime prevention groups (e.g., NWGs) or similar organizations (Bennett, Holloway, & Farrington, 2006). According to the National Crime Prevention Survey in the year 2000 (National Crime Prevention Council, 2001, p. 39), 41% of the U.S. population lives in an area covered by a Neighborhood Watch, making these groups the largest civilian organization for local crime prevention in the nation.

The original purpose of NWGs is to provide an organized framework for citizen involvement in crime prevention activities in their communities, mainly through the surveillance of residents (Garofalo & McLeod, 1989). Surveillance is performed through observing ordinary daily activities rather than through organized patrol. In other words,

the organization encourages citizens to implement some level of social control in their own place of residence, and residents' willingness to participate and report is a key element in the functioning of Neighborhood Watch Groups (Garofalo & McLeod, 1989). By encouraging social interaction (mainly from the beginning with local meetings), the NWG is one of the most important mechanisms available to community residents who are willing to participate in an informal social control process or create a sense of community (Rosenbaum, 1987 & 1988). There are variations in the implementation of Neighborhood Watch Groups in the United States, but these main themes of NWGs are common across communities.

Effectiveness of NWGs

Despite the popularity of the NWGs throughout the country, findings regarding Neighborhood Watch Groups' effectiveness for crime reduction, in particular, are inconclusive. Some studies are negative about the NWGs' effectiveness. A study by Sherman and Eck (2002) concludes that NWGs were ineffective to reduce crime, and another study also insists that there is little evidence that NWGs are working (Husain, 1990). An evaluation study conducted in Chicago (Rosenbaum et al., 1986) also shows negative outcome of NWGs. In contrast, Titus (1984) specifies the effectiveness of the programs, and a study by Lindsay and McGillis (1986) also reveals positive outcome of NWGs in the evaluation conducted in Seattle.

The inconsistency of the evaluation of the NWGs is partially due to methodological concerns, and the studies acknowledge that. A study conducted by Titus (1984) also cautions that the research methods used to judge effectiveness are not strong. In addition, Rosenbaum (1988) states that the more articulate the evaluation, the less

likely the study is to prove the effectiveness of the program. A narrative review and meta-analysis by Bennett, Holloway, and Farrington (2006), which is considered as superior compared to other evaluation studies, reveal that one-half of those the studies evaluated show that NWGs are effective in reducing crime.

Importance of NWGs

Even though the effectiveness of Neighborhood Watch Groups and other similar organizations on crime reduction is uncertain, the impact of NWGs on crime and community should not be minimized. There are two possible effects of NWGs on local crime, which can be divided into direct and indirect outcomes (Garofalo & McLeod, 1989; Rosenbaum, 1988). By educating residents about possible crime prevention methods and encouraging them to participate in those activities, NWGs seek to solve the community's crime problem directly. In other words, Neighborhood Watch plays a role in crime reduction directly through the "*observe and report*" principle.

In addition, the indirect impact of NWGs is shown by its role of promoting the social interaction and friendship networks that serve as an important basis of informal social control (Rosenbaum, 1988). Members in the local voluntary associations are expected to show a higher level of informal social interaction compared to non-participants, which may be related to a lower level of crime or fear of crime in communities. Consistent with these expectations, studies find that participation in community organizations is associated with high levels of social interaction (Ahlbrandt & Cunningham, 1979; Kasarda & Janowitz, 1974). In addition to implementing the collective function of mutual watchfulness, the NWGs serve as a vehicle of dissemination

information about individual and household security measures (Garofalo & McLeod, 1989).

To some extent, the NWGs represent a revival of some measure of traditional and informal social control (Garofalo & McLeod, 1989), and the theme of NWGs is consistent with the main theoretical backgrounds behind crime prevention today, informal social control and opportunity reduction. Participation itself, independent from the discussion of effectiveness of NWGs, implies a great deal. In particular, increasing the amount of social interaction rather than aggregating assets in isolation is an important factor strengthening a community (Sabol, Coulton, & Korbin, 2004). Participation in Neighborhood Watch Groups represents connectedness and bonding between community members, and this bonding improves interaction within the community and contributes to the level of informal social control. Each individual's decision to participate in the Neighborhood Watch represents the willingness of an individual for social control, and initiating membership represents active participation in social control in the community.

The impact of NWGs in communities also can be seen in the effects on the community as whole, especially in promoting a sense of community. Neighborhood Watch Groups provide opportunities for residents to be closer by encouraging them to talk to each other and watch out for each other (Garofalo & McLeod, 1989). Involvement in NWGs can also play a role in alleviating prejudices and hostilities toward outsiders by giving people comfort that they are contributing to their communities to reduce crime and other social ills (Garofalo & McLeod, 1989). In particular, the link between informal social control and NWGs is also developed. It is believed that the sense of community is strengthened through organizations such as Neighborhood Watch Groups.

In addition, there is an argument that the program of Neighborhood Watch will help to shape the perception of residents toward police in a more positive way. The theoretical argument to support this expectation is that the NWGs programs will provide a channel for social interaction and social contact, which plays a critical role in strengthening informal social control bonds and also is connected to the development of community social cohesion (DuBow & Emmons, 1981; Greenberg, Rohe, and Williams, 1985; Silloway, McPherson, 1985; Yin, 1979). This collective process is expected to reduce fear of crime and enhance the residents' friendship and kinship, which in turn will promote the function of the groups to prevent crime in communities (Rosenbaum, 1987).

Decision to Join Voluntary Organizations, NWGs

The importance of participation in community organizations for voluntary activities of crime prevention is emphasized, and participation can have positive consequences for the individual and the communities as well (Portes, 1998). In general, there is a consensus among scholars on the differences between participants and non-participants in community organizations for crime prevention, and there are two prominent and contrasting explanations for these differences (Bennett, 1989). First, the Durkheim view is that communities will respond to the threat of crime, and fear of crime with collective actions plays a role in defining acceptable behavior in the community and promoting intervention to eliminate it. In contrast, there is a view that crime and fear of crime contribute to the collapse of community, including the weakening of social control. In other words, crime and fear of crime destroy the community's ability to effectively regulate proper actions (Bennett, 1989). There is a need to examine whether the

differences between participants and non-participants are explained by either of the theoretical explanations. Examination of the reasons for participation in voluntary associations might be helpful to study the two theoretical viewpoints.

In general, studies discuss two types of reasons for individuals' decisions to join a voluntary organization: altruism and personal reasons. It is revealed that the altruistic reasons (e.g., a sense of solidarity or helping disadvantaged people have hope and dignity) are important for the motivation of volunteering (Hwang, Grabb, & Curtis, 2005; Knoke, 1986). A study by Clary, Snyder, and Stukas (1996) also confirms that altruistic reasons are ranked as the most important reasons for the voluntary activity of citizens, above self-oriented motivations such as personal development, social rewards, and learning or career enhancement.

In addition to these two theoretical motivations, previous studies also focus on the different characteristics of participants in voluntary organizations compared to non-participants. Several scholars, particularly in sociology and community psychology, have studied the examination of predictors for the participation in general voluntary organizations. They have found that being older, married, highly educated, and of higher socioeconomic status are positively related to voluntary participation in general associations (Bussell & Forbes, 2002; Curtis, 1971).

Findings on the impact of gender in voluntary participation, however, is not clear; being female is an encouraging factor of participation in one study (Bussell & Forbes, 2002) but a discouraging factor in the study by Curtis (1971). The greater tendency for voluntary participation in the United States as compared to other countries is also an issue of interest. The reputation of the U.S. as a joiners' country is examined in comparison to

other countries, and a study of international comparison of affiliation for general organizations in 33 countries find that the following characteristics are closely related to voluntarism: multi-denominational Christian or predominantly Protestant religious compositions, prolonged and continuous experience with democratic institutions, social democratic or liberal democratic political systems, and high level of economic development (Curtis, Baer & Grabb, 2001). Differences between participants and non-participants in voluntary organizations have been examined narrowly in associations for crime prevention as well. Participants in neighborhood associations for crime prevention are more likely to be women, under 50 in age, high in their education level (attended college), and non-White (Lavrakas & Herz, 1982; Sampson & Grove, 1989).

More specifically, factors differentiating participants in NWGs from those non-participants are also discussed (Ren, Zhao, Lovrich & Gaffney, 2006; Whitaker, 1986). These show the attributes of participation from individual demographic characteristics; compared to non-participants, participants are more likely to be better-off, homeowners, and more educated (Greenberg, Rohe, & Williams, 1985; Whitaker, 1986). In addition, females are more likely to participate and those who have a bad attitude toward government are also more likely to participate in police work and neighborhood/block watch groups (Ren et al., 2006). Other studies reveal that long term residents of their community who are married, have children, and plan to stay in their neighborhoods are more likely to participate in NWGs (Greenbeg et al., 1985; Ren et al., 2006).

In the study of the motivation to join neighborhood organizations, background variables of individuals or households are often examined, but the impact of unstable, time-varying, or situation-varying conditions were rarely tested compared to background

variables of individuals or households. Age, gender, race, family structure, and income are examples of background variables, and these contributors do not rapidly change over time. In contrast, perceptions of neighborhood safety or welfare, crime, and community disorder are unfixed, time-varying or situational factors. Much research, however, is confined to an analysis of the relationship between involvement in associations and background variables such as age, education, income, marital status, community size, gender, and race (Cutler, 1976; Hanks, 1981; Hanks & Eckland, 1978; Klobus-Edwards, Edwards, & Klemmack, 1978; Knote & Thompson, 1977).

Even though the researchers mentioned above place more emphasis on the background variables than situation-varying conditions, work in this field has yet to arrive at a comprehensive explanation of the relationship between background information and involvement. Crime victimization experience is one of the time-varying, situational attributes, which should be differentiated from fixed attributes. More importantly, crime is also related to neighborhood conditions, which are rarely examined in the study of decisions to contribute to social control. In particular, the associations of time-varying, situational attributes of crime victimization with the residents' willingness to contribute to the community's effort to combat those social ills need to be examined.

The link between crime victimization and general organizational participation is examined (Marschall, 2004; Sampson, 1988; Sampson & Grove, 1989). Memberships in general associations are negatively associated with crime victimization such as personal violence, burglary (Sampson & Grove, 1989) or auto theft (Sampson, 1988). A study by Sampson (1988) also reveals that organization and committee meetings at the community- level are predictors of lower victimization rate in communities. Marschall

(2004) also specifies determinants of public-safety related participation of citizens – talking to friends, contacting officials, and attending meetings – from neighborhood context and individual characteristics with the data from 1989 Detroit Area Study, a large-scale survey of individuals residing in the tri-county (Macomb, Oakland, and Wayne) of Detroit metropolitan area (Marschall, 2004). Individuals' victimization experience only predicts contacting officials, not the other two measures of public-safety related participation. In other words, victims are more likely to contact officials about local crime. However, association membership is positively related to all of the three measures. Individuals affiliated to associations are more likely to talk to friends, contact officials, and to attend meetings (Marschall, 2004).

It is reasonable to believe that the reasons for participation in community organizations for crime prevention might be parallel to those of general voluntary organizations in communities. However, at the same time, the magnitude of the impact of crime victimization experience might be greater on the crime prevention associations compared to general voluntary associations. Previous studies on voluntary associations particularly those for crime prevention, however, did not pay much attention to the motivation of participants.

The importance of considering the impact of crime on the motivation of participation is discussed in the previous literature, and there are two opposing arguments for the impact of crime on participation (Berkowitz, 2000; Wandersman & Florin, 2000; Perkins, Hughey & Speer, 2002). Scholars expect that the crime experience of residents can either motivate (Berkowitz, 2000; Wandersman & Florin, 2000) or discourage engagement with community organizations (Saegert & Winkel, 2004). One study

conducted by Saegert and Winkel (2004) reveals the chilling effect of crime on participation at the building level. In addition, this study demonstrates that the impact of both (1) individual reports of building crime and (2) building crime have negative impacts on individual participation and informal participation.

Decision to Join, Leave, and Stay in Voluntary Organizations, NWGs

There is a need for replication research to see if residents' previous experiences of victimization have an impact on their decision to join crime prevention organizations. In addition to the motivations of joining voluntary associations, in particular those of crime preventions, what makes individuals leave or stay in the organization also need to be examined for a better understanding of the dynamics of residents' involvement in organizations for crime prevention in neighborhoods. Furthermore, since previous evaluations express their concerns about difficulties of maintaining participation levels in community crime prevention programs (Bennett & Lavrakas, 1988; Garofalo & McLeod, 1986; Rosenbaum, 1987), research examining all membership status changes – initiation, renewal, and termination – is required.

Studies have confirmed that crime and fear are sufficient to stimulate initial participation for some residents but not to keep them as participants (Rosenbaum, 1988), and the lack of mechanisms for continuous participation in neighborhood enhancement impairs the function of community-based organizations for crime prevention. Studies have proposed several approaches for successful maintenance of organizations, including a continuous group structure, strong leadership, links to outside resources, a full agenda including social activities and even non-crime issues, decentralized planning, and efforts

to communicate and even reward participants (Bennett & Lavraska, 1988; Garofalo & McLeod, 1986).

There is a need to differentiate the impact of individuals' experiences of crime and victimization from the concern and perception of crime problems in communities. Lavrakas and Herz (1982) differentiate the two and conclude that perception of crime and fear is not a motivation to participate in crime prevention associations in the community, but concern about crime as a neighborhood social problem is related to participation (Lavrakas & Herz, 1982). Other than the individual experience of crime or victimization, several scholars have also studied the impact of neighborhood crime, and there is no consistent result. Most literature shows that local and related schemas can function as a vehicle for mobilization (Lewis, Grant & Rosenbaum, 1988), and can strengthen social ties (Taylor, 1996), or create more participation opportunities for civic-minded citizens (Lavrakas & Herz, 1982). In addition, the positive impact of crime on community social involvement is revealed at both the street block level (Perkins et al., 1990) and at the neighborhood level (Taylor, 1996).

In contrast, some studies show evidence of nullification of this positive relationship of crime victimization to participation. A study by Woldoff (2002) insists that experience and perception of crime and victimization do not affect individuals' attitudes toward the neighborhood or differentiate their efforts for the development of communities. Geis and Ross (1998) also specify that residents of urban areas with high-poverty rates report more neighborhood disorder, and this neighborhood disorder affects the perceived powerlessness of residents. Other studies reveal that the impact of crime and victimization on a community is dependent on the types of crimes. Bellair (2000)

used the victimization data from Seattle (Miethe, 1991) and examined two other types of instrumental helping – watching a neighbor's house or having a neighbor watch your home – which he termed as informal surveillance. He examined the impact of crime and victimization on this informal surveillance and concluded that it depends on the types of crime. Violent crime depresses residents' informal surveillance, while burglary encourages it. This complex, contingent relationship is emphasized by several studies with different methodological orientations such as ethnographic (Pattillo, 1998; Simon & Burns, 1997), qualitative (Podolefsky, 1983; Taylor, 2001), and even quantitative (Browning, Feinberg, & Dietz, 2004).

Impact of Neighborhood Conditions: Importance of Community/Neighborhoods

Other than the individual determinants, the importance of environmental factors or neighborhood-related factors in participation in general community associations has been emphasized. Haeberle (1987) examined the impact of both individual- and neighborhood-related factors on the individual's decision to participate in neighborhood programs, and found that the neighborhood context shaped individuals' participation decisions. Even though individual characteristics such as education and socioeconomic status correlate positively with neighborhood activities, participation in organizations is more thoroughly explained by the combination of individual predictors and environmental factors (Curtis, 1971; Haeberle, 1987; Rose, 2000). In particular, smaller population size and older housing stocks are more likely to be related to residents' participation. Community size, however, does not show a consistent impact on participation (Curtis, 1971). Also, local mobility and racial heterogeneity of the community are connected to less religious organizations (Rose, 2000). In particular, the

relationship between poverty and prevalence of religious organizations is curvilinear (Rose, 2000). Contextual effects of the community are also extended to associations for neighborhood crime prevention. Marschall (2004) examined the impact of crime problems in the neighborhood on public-safety related participation, and crime problems in the community encourage talking to friends and contacting officials.

Different predictors of involvement between high and low risk neighborhoods have been revealed (Pattavina, Byrne, & Garcia, 2006). In both high and low risk neighborhoods, minority racial status, the feeling of being part of community, and police perception of that they know residents encourage individuals' involvement in crime prevention. However, a higher level of perception of disorder and prior victimization only predict involvement in low risk neighborhoods. In addition, renters are less likely to participate in crime prevention in low risk neighborhoods, and this was not a significant predictor in high-risk neighborhoods (Pattavina, Byrne, & Garcia, 2006).

Discussion of the Importance of Change in Status in NWGs

Studies on membership in community organizations have rarely considered the changes of each individual's membership over time. One study by McPherson and Lockwood (1980) conducted a longitudinal study to find differences in membership rates across social categories. They revealed that differences in membership rates are mainly due to differences in joining rather than leaving the associations. Except for this study, previous studies rarely examined membership changes over time in voluntary associations, neither have most studies considered any promoting or discouraging attributes of initiation or termination of membership in NWGs.

Considering the impact of time-varying, situational variables, the similarities and differences between joining and leaving neighborhood organizations will be analyzed in this study compared to stable membership status – keeping membership status or keeping non-membership. Personal experience with criminal victimization contributes to one's assessment of future risk (Ferraro, 1995). The individual's assessment of future risk of re-victimization also shapes one's behavior regarding crime prevention, including involvement in community organization for crime prevention. This issue is rarely tested in previous literature. In addition, many studies have failed to take into account situations in which an individual's perception of crime was developed. The literature on fear of crime has noticed a large discrepancy between subjective perception of crime and objective measures of crime and victimization (see Warr, 2000). The different impacts of objective measures of crime victimization and subjective perception of crime have not been thoroughly explained in the previous studies and will be examined in the current study.

3. Self- and Household-Protective vs. Community-Protective Behaviors

When residents are suspicious of formal means for controlling crime, community-based crime prevention strategies have been a major alternative to the criminal justice system (Lavrakas, 1985; Rosenbaum, 1988). In general, reactions to crime can be differentiated as personal protection behaviors, household protection behaviors, and collective actions for community protection (Rosenbaum, 1988). For each category of protective behaviors, there are many different ways of classification as well (Rosenbaum, 1988). Even though it is possible to categorize these protective actions differently

according to their characteristics, there is a common theme, which distinguishes collective actions for community prevention from other types of crime prevention activities. Participation in collective anti-crime activities or organizations is less prevalent than participation in either self-protective or household-protective activities (Rosenbaum, 1988). In addition, participants in collective community anti-crime activities are frequently motivated by "civic mindedness" rather than by fear of crime victimization, and this motivation differentiate from those of self protection and even household protection in residents' minds (Lavraska, 1985). Social interaction is important in developing informal social control. Local voluntary organizations have been thought to promote community interaction for crime prevention in communities (Rosenbaum, 1988).

Researchers also differentiate responses to disorder as collective vs. individual and cognitive vs. behavioral (DuBow, McCabe, & Kaplan, 1979). Collective responses include shared expectations about the speedy and aggressive reaction to disorder, while individual responses imply restriction of activities for the purposes of ensuring safety and avoiding dangerous places. In addition, scholars classify community-level responses to disorder in terms of accommodation and resistance (Taylor, 1996). At the individual level, studies verify the "victimization effect," explaining why persons frequently take protective actions as a result of crime victimization experiences (Mayhew, 1984; Miethe, 1991). However, these studies consider protective actions as efforts to avoid further victimization, and whether individuals or household victims take any protective actions on behalf of the community has not been discussed.

Previous studies have examined the relationships among crime victimization, fear of crime, and precautionary behavior or restricted routine activity patterns of victims, and

have been found that victimization increases the fear of crime, which may result in defensive behavior against further victimization (see Bursik & Gramsmick, 1993, p. 90-111). However, most studies focus solely on either individual-level predictors of fear of crime and precautionary measures (Baumer, 1985; Clarke & Lewis, 1982; Garofalo, 1979; Stafford & Galle, 1984) or community-level factors, but ignoring the moderating impact of individual factors on the community context (Skogan & Maxfield, 1981; Lewis & Maxfield, 1980).

One study by Rountree and Land (1996) examines the relationship between crime, fear of crime, and precautionary measures in the context of community. The authors revealed the impact of previous victimization experience on individuals' precautionary measures. In their study (Rountree & Land, 1996), the precautionary measure represents individuals' self-protection actions, which include locking doors, installing extra locks and window boards, leaving lights on when going out, and joining a crime prevention program as well. Differences between self- and household-protection actions such as locking doors and installing extra locks should be distinguished from the collective actions, such as the participation in neighborhood crime prevention programs. Collective actions are stimulated for the common good of communities as well as safety of participants themselves and their family members while self-protection rarely considers the commonwealth of communities. In addition, differences between self-/household-protection and collective actions will show the impact of neighborhood conditions as well. Residents will not contribute their time and energy to the communities where they cannot expect development.

Scholars agree the condition of communities have an effect on residents' participation in informal social control, but this issue has been rarely tested with particular attention paid to the impact of crime victimization. The functions of Neighborhood Watch Groups differ according to the types of community due to different social control issues (Garofalo & McLeod, 1989). In disadvantaged communities, the level of distrust between residents is much higher, and residents are more likely to blame one another than to blame outsiders for criminal activity (Greenberg & Rohe, 1986; Greenberg, Rohe, & Williams, 1982; Taylor, Gottfredson, & Brower, 1981). In other words, Neighborhood Watch Groups function better in communities where residents trust each other.

The degree of participation in organized activities is characterized by the availability and functionality of formed associations, and this availability and functionality is closely related to community conditions as well (Skogan, 1990). The positive impact of participation in Neighborhood Watch, however, is important regardless of what the effects of Neighborhood Watch on crime are, and regardless of the likelihood of inactivity of the programs (Garofalo & McLeod, 1989). Participation represents individuals' belief in the effectiveness of the program (Garofalo & McLeod, 1989). Neighborhood Watch Group functions as planned in communities characterized by economic security and social stability (Garofalo & McLeod, 1989). In other words, socially homogenous and stable communities are conducive to the success of Neighborhood Watch. In contrast, high crime neighborhoods characterized by social instability and insecure economic status will not provide an optimal environment for the functioning of Neighborhood Watch Groups.

The importance of victimization in neighborhood change has been discussed in previous studies, but rarely in a multilevel or contextual framework with consideration of ecological characteristics. Aggregated studies of victimization are not satisfactory for understanding each individual's behavior due to the potential problem of ecological fallacy (Robinson, 1950). In aggregated data of participation in social control, the individuals participating in community organizations may not be the ones affected by crime. As Xie (2007) specified, focusing only on individuals or housing ignores the clustering nature of crime and excludes victimization in near areas. There are a few studies that test the impact of victimization on neighborhood change and confirm the social cost of crime to individuals as well as communities. Xie (2007) tested the impact of property crime victimization on decisions to move, with special attention paid to the differences among racial groups. Xie (2007) found that crime victimization influences the victim's decision to move, and also tends to result in the departure of residents from dwelling units adjacent to the victim. In addition, she examined the exchange of housing units between Blacks and Whites. It was found that Blacks are able to move after a recent victimization, but their displaced houses are more likely to be in areas with a higher risk of victimization. This study supports my expectation that the effects of individual experience on self- and household-protective decisions are affected by community context.

Different community conditions will have a different impact on a victim's decision regarding self- and household-protective actions and collective efficacy. In a community with unstable residents and higher crime rates, there is less opportunity for collective efficacy and fewer channels for participation. In these communities,

participation in collective efficacy will be much more difficult, if not impossible. The distinction between self-/household-protective actions and collective actions as functions of crime victims' reaction to victimization will be considered in this study with particular attention to community characteristics.

Chapter 3. Research Questions

Statement of Research Questions

The current study has three issues to be explored: the impact of crime on social organization, factors affecting individuals' decisions to change involvement in social control, and the relationship between household-protective and community-protective activities.

First, the impact of crime victimization on the social organization of neighborhoods will be examined. Scholars assume a reciprocal link between crime and social organization, but the impact of crime on the social organization of neighborhoods has been rarely examined in previous literature. The majority of studies have focused on the role of social organization in the explanation of crime. The impact of individuals' crime victimization on the decision for social organization will be examined in the current study, and the impact of individuals' experience with crime and crime problems in the neighborhood will be differentiated. In addition, neighborhood characteristics, which include crime problems and different conditions of neighborhoods, will be examined.

The study of the impact of crime on social organization is important because it assists the understanding of the dynamics of neighborhood changes. In particular, changes of each individual's decision over time with social control activities, such as involvement in crime prevention organization, NWGs, will be analyzed in the current study. Whether victimization of individuals stimulates or hinders their participation in informal social control in neighborhoods will be examined, and the longitudinal

component of data makes it possible. In particular, it is possible to see the time order and causal inferences between crime victimization and its impact on changes in their membership in NWGs.

Second, the question of what makes individuals change their involvement with crime prevention associations in neighborhoods will be examined. Previous studies paid attention to the difference between participants and non-participants in neighborhood crime prevention organizations. Individuals' decisions to change their engagement in these organizations, however, are rarely considered. This study is proposed to examine what makes individuals change their engagement in neighborhood crime prevention activities. In particular, different types of changes in involvement in neighborhood protection will be analyzed to see whether or not there are dissimilar patterns for individuals who join, leave, and stay in NWGs. Neighborhood Watch Groups are the most popular programs for crime prevention in neighborhoods, and participation in NWGs is crucial in regard to offering an opportunity to interact and to foster attachments within neighborhoods. What motivates the changes of each individual's decisions regarding membership status in NWGs will be revealed in the current study, with particular attention paid to the role of crime.

The impact of crime, in particular, on these membership changes will be assessed.

The different impact of objective measures of victimization and subjective perception of crime on changes of membership status with NWGs will be analyzed with attention to the role of crime victimization of each individual as well as neighborhood conditions. NWGs are the most popular and widespread crime prevention associations for neighborhoods, and the perception of neighborhood crime problems, independent of their

actual crime victimization experience, might have an impact on residents' decisions to be involved in the organizations. A study revealed that there is a considerable discrepancy between actual crime rates and perception of neighborhood safety, even though they are correlated (Taub, Taylor, & Dunham, 1984). Studies also confirmed that perception of safety is not only influenced by reality (McPherson & Lockwood, 1980) but also affected by disorderly or uncivil conduct and visible signs of neighborhood housing deterioration. In the data, there is a question that measures the perception of safety within the neighborhood: "Is this neighborhood safe from crime?" In order to differentiate the impact of actual crime victimization and perceived crime problems, this question will be included in the model.

In addition to the measures of individual-level crime experience, neighborhood-level crime problems will be considered for their impact on individuals' decisions to change their participation in NWGs. Neighborhood conditions, including crime problems in the area, will also be considered to distinguish the effects of individuals and communities on the decision to change participation in NWGs. The 1990 census will provide information on neighborhood conditions, and neighborhood crime rates will be incorporated from the crime statistics of the Seattle Police Department.

Lastly, the study will compare household-protective actions and community-protective actions as a response to crime. Household-protective actions are aimed to protect property, including homes and loved ones, against unlawful entry. Both physical protective measures (e.g., installation of locks and alarms) and psychological barriers (e.g., leaving lights on when away) are included in household-protective measures, and target hardening is one of the primary strategies of household protection (Rosenbaum,

1988). In other words, household-protective actions are for the protection of individual families and houses. However, collective actions for community are aimed at preventing crime, disorder, and other social ills in geographically defined communities, neighborhoods, and residential areas (Rosenbaum, 1988). In other words, collective actions are for community protection as whole as well as a protective mechanism for individual households.

Differences between household-protective actions and collective actions for communities are well documented, but the comparison between them is rarely tested. The impact of crime, in particular, is rarely examined in the analysis of household protection vs. community protection. Community-protective actions can also be considered as individuals' decision to contribute to the commonwealth of their residential areas, and different conditions of neighborhoods will affect the decision to contribute. Whether or not neighborhood conditions and each individual's experience with crime victimization will contribute differently to the individuals' choices for self-/household-protective actions and community-protective actions will be examined (Sampson & Raudenbush, 1999; Skogan, 1990; Taub et al., 1984). Thus, the role of crime and community-protective actions on individuals' household-protective behaviors will be analyzed.

Chapter 4. Data and Analytical Models

Multilevel Data File with Longitudinal Component

This project will utilize data from a large study of crime in Seattle, Washington (Miethe, 1991). The original study was designed to test theories of criminality and victimization, and a complex sampling method was used to select data from neighborhoods and city blocks. The original data by Miethe (1991) includes two types of records: (1) census tract data for tracts that had not changed their physical boundaries since 1960 and police reports for different kinds of crime rates, and (2) data from a telephone survey of Seattle residents in 1990 regarding crime victimization, neighborhood types, security measures, and household socioeconomic conditions. Only one adult was interviewed as a representative for each household, and the unit of analysis in the data is the individual representing each household.

Out of the 121 Seattle census tracts that had not changed their physical borders since 1960 in Seattle, 100 tracts were randomly selected. Then, 600 city blocks inside the 100 census tracts were used for sampling. This stratified sampling by census tracts and city blocks inside the census tracts was applied to guarantee an adequate number of respondents within each aggregate unit (Miethe, 1991). Initially, up to 18 households were selected per block for the survey, but replacement sampling was applied for the sampling frame where there were a number of disconnections or wrong addresses. Around 5,300 (N = 5,302) individuals finished their interviews and were used as a final sample for the analysis in the original study by Miethe (1991). The interviews were conducted from February to May in 1990 and the telephone survey was a part of a larger

study funded by the National Science Foundation, which was studying crime in Seattle over the previous three decades (1960-1990). The three major research questions for the original study were (1) the testing of major components of criminal opportunity theories of victimization (e.g., proximity, guardianship, exposure, etc.) for the explanation of violent and property crimes, (2) the relationship between social changes of geographical areas and their crime rate changes over time, and (3) the impact of 'target hardening' efforts of individuals and neighbors on individuals' risk of victimization (Miethe & Meier, 1994).

In the original data from Miethe (1991), census tract level data from 1960 to 1980 were available. Considering that the telephone survey was conducted in 1990, census tract data from 1990 are used in the current study. In addition, since one of the most important contextual variables for residents' decisions to participate in informal social control in neighborhoods is the crime problem in neighborhoods, official crime rates reported to the police department are included in the analysis. In sum, three sources of data are utilized for the current study: the 1990 Seattle telephone survey data from the study by Miethe (1991), the 1990 census, and the 1990 crime data from the Seattle Police Department. The data for the analysis have a structure that is uniquely suitable for the current study. First, by repeatedly asking individuals the same questions over two years, the survey observed a great deal of protective actions for individual, their households' characteristics, and neighborhoods as well. As a consequence, the present study has the distinct advantage of being able to examine different patterns of activities for crime prevention within the individual representing sampled housing and how their experience with crime victimization could change residents' reactions to further victimization.

A second advantage of the data is the multilevel design. Focusing on victimization at individual units, the analysis includes a higher level of geography – census tract – as a proxy for neighborhoods. Previous contextual models of victimization are often limited by their cross-sectional design and small samples of regional data. In contrast, with repeated observations of individuals within sampled housing units provided by Miethe's (1991) data, the study is able to model within unit changes while controlling for the unobserved, persistent dangerousness of places that may mask the relationship between the probability of involvement in NWGs and the observed characteristics of individuals.

The unit of analysis for the current study is an individual, which represents each housing unit. For the geographical unit of neighborhood, the current study uses a census tract as a proxy unit. There is an understanding among researchers that smaller units are better for the geographical units due to the heterogeneity of a larger spatial unit (Davies, 1984). Increasingly, smaller units of geographical periphery are stressed in the study of crime (Eck & Weisburd, 1995; Sampson & Grove, 1989; Taylor, 1997). Taylor (1997) specified that smaller geographic units function as compact behavior settings, and residents' local social contracts and behavior patterns are developed within that unit. These smaller units are better to perceive neighborhood effects. In addition, local residents as well as potential offenders recognized the physical and social structure of micro places (Beavon, Brantingham, & Brantingham, 1994). Smaller units of a neighborhood would be desirable, but the census tract will be utilized in the current study according to availability.

Data Capability

Miethe's (1991) study is one of the few that makes use of a nested structure of individual data grouped by neighborhoods, and this makes it possible to conduct the proposed study. However, the original data by Miethe (1991) have some restrictions. First, the sampling frame of the original study by Miethe (1991) may be slightly biased. The use of a telephone directory was problematic because it excluded those people who are unlisted. Miethe (1991) found that about 28% of Seattle households were excluded due to the sampling frame. The sampling method also excluded those who had just moved into the neighborhood and had not installed a telephone yet (Miethe, 1991). In addition, the sampling frame only included "stable" census tracts, which have not changed their physical boundaries since 1960. This is the reason why a much smaller percentage of sample residents compared to the general population had moved from their addresses in the previous year. Only 7.3% of the sample residents had moved, compared to the national average of 18% (Miethe, 1991). Miethe (1991) intentionally over-sampled 300 city blocks with reported burglaries in order to compare immediate neighbors and adjoining blocks, a test of criminality and victimization that included displacement and free-riding effects. Second, different levels of participation are not distinguished in the data, and participation is defined as a dichotomous variable (member or non-member). Among members of NWGs, levels of involvement may be different. However, the current study does not propose to reveal the differences between levels of involvement; it is designed to examine only the decision to join, leave, or stay in the Neighborhood Watch Groups compared to those who remain members or non-members.

The fact that the data are not from a random, representative sampling of the citizens raises a concern for researchers. Other than the deliberate over-sampling of 300 city blocks with known burglaries, the comparison between Seattle data respondents and 1989 National Crime Survey (NCS) respondents show the different characteristics of Seattle respondents. Respondents in the Seattle sample are older, more educated, less transient (higher percentage of homeowners and less frequent in number of moves), and more evenly distributed in their gender composition (Miethe & Meier, 1994). Given these differences between respondents in the Seattle data, it can be problematic to apply the findings of this study to other cities. However, the current study is planned to investigate how different characteristics of individuals and neighborhoods may predict individuals' decisions about the involvement in social control. Considering this, the characteristics of respondents in the Seattle data would be less problematic for the purpose of the current dissertation project. In addition, the multilevel data structure (city blocks, pairs of city blocks, and census tracts) with field observation for physical proximity of residents on city blocks within census tracts provides unique validation of suitability of the data for the current study (Miethe & Meier, 1994).

Measuring Participation Change in Social Control, Membership Change in NWGs

Previous literatures are mainly focused on the prediction of participation in social control and rarely considered the changes of individuals' decisions on participation over time. The first analysis is a replication of the prediction model of participation in social control, the NWGs in the current study (see Chapter 5). In addition to the individual- and household-related variables, neighborhood-level predictors are also examined for their

impacts. This model of participation is compared with the model of changes in membership status with NWGs over time, and the change model is presented in Chapter 6. The main dependent variable in the current study, changes in membership status in the Neighborhood Watch Groups, is defined by two questions in the data. The two questions, whether the individual participates in a Neighborhood Watch Groups in the community and whether the individual participated two years ago, will produce four subsets of dependent variable attributes:

(1) Currently a member of Neighborhood Watch Groups and also a member two years ago
(2) Currently a member of Neighborhood Watch Groups and not a member two years ago
(3) Not currently a member of Neighborhood Watch Groups and a member two years ago
(4) Not currently a member of Neighborhood Watch Groups and also not a member two years ago

Differences between these attributes will be considered for the analysis of determinants of membership change with NWGs. Difference in determinants of membership status changes will be analyzed with multinomial logistic regression in Chapter 6. Lastly, the models for individual- and household-protective actions with the impact of crime victimization and participation status change in NWGs are analyzed in Chapter 7. In addition to considering the impact of individual's crime victimization, participation status change in NWGs, and neighborhood conditions, protective actions in the previous years are controlled.

Measuring the Impact of Crime

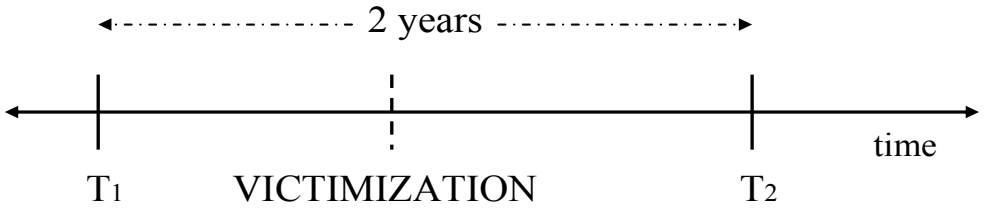
Regarding the type of crime victimization that an individual experiences, both crimes against residential property and personal crimes are considered in the analysis. Property crime victimization of burglary, household larceny, and motor vehicle theft within four blocks of the household[1] are included, and personal crimes of assault and mugging are considered. These property crimes are more likely to be understood as a threat to the household within the neighborhood, and the opportunity structure of household property crime differs from the structure of violent crime (Xie, 2007). Scholars suggest that a crime specific approach will improve a model's explanatory power (Cornish & Clark, 1987; Lynch & Cantor, 1992), and the property crime victimization and personal victimization are differentiated in the analysis model of the current study.

For individuals who were victims of property crime, the data showed whether they lived in the same household when the incident happened. In addition, the survey asked whether the crime victimization happened within the last two years. For the measurement of property victimization, the current study will not count incidents that occurred at the individual's previous dwelling. In addition, the measurement of victimization will only include crime victimization that happened within the last two years, with consideration of the causal order of the relationship between victimization and participation in social control (see Figure 1). For the experience of motor vehicle theft, victimization within four blocks of the household will only be considered, due to the confinement of victimization in neighborhood for the current study. This procedure

[1] Due to the nature of the research question, the examination of the impact of crime victimization within neighborhoods on residents' decisions to engage neighborhood crime prevention, mobile vehicle thefts only within individuals' neighborhoods are included.

reduced possible measurement error resulting from respondent telescoping of events. In addition, perception of neighborhood safety is included to differentiate the objective measure of victimization and subjective perception of neighborhood safety.

Figure 1. Timing of Victimization



Operationalization of Neighborhood – Census Tract

There is no agreement in the previous studies on the appropriate unit for macro level measurement for neighborhood effects. The most important criterion is whether the administrative or geographical boundaries for a neighborhood correspond to residents' perception of the neighborhood. However, this is not always feasible. Researchers define neighborhoods as community areas, election wards, polling districts, police precincts, police beats, or census tracts (Bellair, 2000; Sampson, Morenoff & Gannon-Rowley, 2002). The two terms of neighborhoods and communities will not be differentiated in the current study, and the operationalization of neighborhood will be a census tract in the current study. This is due to the fact that census tracts are the best local units for which data are available (Bellair, 2000). In addition, utilization of a census tract makes findings comparable with other studies, which also use a census tract as a local unit. Census tracts are small, relatively permanent statistical subdivisions of a country or statistically equivalent entity. Each census tract has generally between 1,500 and 8,000 people, with an optimum size of 4,000 people.

Contextual Model of Individuals' Decisions Regarding NWGs

(1) Individual- and Household-Related Characteristics

Crime Perpetrated against the Individual: It is understood that strong social networks reduce crime by reproducing informal control. There is a lack of understanding of the role each individual plays in social networks with regard to the crime victimization experience. It is expected that the membership of NWGs is changing, and it might be related to changes in the lives of respondents. For instance, it is expected that crime affects the motivation of local residents' to strengthen community ties. Membership in NWGs is related to capability and willingness to contribute to the communities, and individuals' experience, in particular crime-related experiences, will have an impact on the capability to participate in collective action.

There is a common perception that victimization of the individuals will encourage the involvement in crime prevention associations, due to the effects of victimization. However, literature on the impact of crime on individuals' participation in strengthening community (e.g., participation in crime prevention associations) is inconclusive. A study by DuBow and Podolefsky (1979) shows the opposite of our expectation on the role of crime in the changes of membership in NWGs. They found that perceptions and thoughts on crime are not major factors for either involvement in neighborhood associations or participation in crime prevention organizations. However, this study was conducted on a cross-sectional level without consideration of the interaction between individual and community characteristics.

It has been also expected that perceived and actual crime problems are correlated, but one study found a substantial variation in the perception of neighborhood safety controlling for official crime rates (Taub, Taylor, & Dunham, 1984). Taub et al. (1984) found that the perception of crime rather than actual crime rates is more strongly related to residents' decisions to move out of the community. In addition, studies reveal that perception of crime is not only influenced by reality (McPherson & Lockwood, 1980) but also affected by disorderly or uncivil conduct and visible signs of neighborhood housing deterioration (Sampson & Raudenbush, 1999; Skogan, 1990; Taub et al., 1984). To examine the possible different impacts of perception of crime and actual crime problem, this study considers both measures in the analysis model. In the data, there is a question of measurement of the perception of crime within the neighborhood: "Is this neighborhood safe from crime?" This question will be included in the model to differentiate the impact of actual crime victimization from perceived crime problems.

There is no community that is entirely free from crime, and a small amount of crime is not always bad for a community, because the few incidents that occur will generate efforts to prevent further crimes. Hope (1988) found that support for Neighborhood Watch requires a certain level of fear arousal, which is measured by the frequency of burglaries in the neighborhood. Despite the common understanding that community ties develop in safe and orderly places, some studies suggest that there is a curvilinear relationship between local problems (e.g., crime) and the development of a sense of community (Skogan, 1990). It is expected that a minimal level of perceived crime problems in the community is necessary to motivate residents to prevent further crimes, and a moderate level of crime (or perception of crime problems) in the

community will encourage the activity of community crime prevention. The relationship between neighborhood crime and participation in social control is assessed in the current study.

There are several other control variables that are considered in the model of determinants of household participation in NWGs:

Homeownership and Residential Duration: There is a perception that home ownership and residential stability are the most significant predictors of residential mobility due to the greater degree of investment of homeowners and long-term residents in their communities (Dugan, 1999; Lee, Oropesa, & Kanan, 1994; South & Deane, 1993). In other words, homeowners have reason to contribute to the community, and longer-term residents are more likely to contribute to the common good. Based on this logic, it is expected that homeowners and long-term residents are the most likely to participate in NWGs.

Socioeconomic Status of the Individuals: Individuals with a higher socioeconomic status are more likely to participate in NWGs, due to higher social investment. Indicators of socioeconomic status of the household, such as family income, and years of education completed by respondents, are included in the present study.

Demographics and Family Structure: Studies show the impact of individual- and household-related characteristics on individuals' willingness to volunteer for a crime prevention organization. Regarding individual characteristics, studies show that participants tend to be middle-aged, married, and well educated (Bennett, 1989; Skogan & Maxfield, 1981), and participants in NWGs are also expected to be middle-aged, married, and well educated. It is also expected that participants are likely to be from

larger households that include more adults. In order to participate in community crime prevention, time, financial resources, and cooperation between adult family members are required. Based on the same expectation, it is expected that individuals living in households without young children will be more likely to contribute to the community crime prevention.

(2) Neighborhood Characteristics – Census Tracts Characteristics:

Characteristics of neighborhoods also affect victims' willingness to contribute to their own neighborhoods. In disadvantaged neighborhoods, victims will be less likely to initiate or keep their membership in NWGs, while victims are more likely to initiate or keep their membership in NWGs in robust neighborhoods.

Neighborhood Crime Problems: There is a common perception that street crime reduces informal social control. For instance, Wilson (1996) illustrated that:

> As possession of firearm and drug use increase, the residents of troubled neighborhoods become more fearful of leaving the safety of their homes. Such fear decreases their involvement in voluntary associations and informal social control networks essential to maintain the social organization of the neighborhood. (p. 61)

In general, neighborhoods with higher crime rates will have less participation in NWGs. Studies illustrate that joining voluntary organizations in the U.S. might be related to altruistic attitudes, and it is expected that if individuals experience personal loss or threats, the motivation to prevent both further personal victimization and further crime in the neighborhood will be amplified (Hwang et al., 2005). Changes in membership status will also depend on the characteristics of the neighborhood. Initiation of membership will

be more common in robust neighborhoods, while termination of membership will be more common in disadvantaged areas. In reality, the crime problems in a neighborhood are unstable. Accordingly, motivation to treat crime problems is also dynamic; it comes and goes in cycles according to the severity of crime and residents' perception of the crime problem within their neighborhoods (Garofalo & McLeod, 1989).

To capture neighborhood crime problems, official data is obtained from the Seattle Police Department. Crime rates of assaults and residential burglaries are included in the model to see the impact of crime problems in the neighborhoods. For both assaults and residential burglaries, average of crime rates between 1989 and 1991 are calculated and included in the analysis models. Official crime rates for burglaries, for example, will be calculated by averaging the number of residential burglaries known to the police in each tract between 1989 and 1991, dividing by the 1990 population, and then multiplying by 1,000. Using an average of the crime rates between 1989 and 1991 is methodologically superior, and this is one way to minimize the impact of random fluctuation. It also provides more reliable measures than the use of one year, the 1990, crime rates (Bellair, 2000).

Concentrated Disadvantage: Neighborhoods of poor are more likely to share other characteristics of disadvantages such as lower incomes, higher rates of unemployment, and financial dependence (Hagan & Peterson, 1995; Land, McCall, & Cohen, 1990; Wilson, 1987). Previous studies consider this concentration of ecological disadvantages in communities with the concept of concentrated disadvantage (Bellair, 2000; Morenoff, Sampson, & Raudenbush, 2001; Sampson, Raudenbush, & Earls, 1997). This understanding of ecological concentration of disadvantage is also connected to its

role in the crime and neighborhoods' ability to control social control. For instance, the systemic model predicts that concentrated disadvantage affects crime indirectly through its impact on informal control, and concentrated advantage is expected to be connected to the creation of social context where informal surveillance will be reduced (Sampson et al., 1997).

There are several ways to measure concentrated disadvantage (Sampson & Grove, 1989; Sampson & Raudenbush, 1999; Morenoff et al., 2001), and this study follows the strategy of Morenoff et al. (2001). It is combined z-scores of the percentage of persons below the poverty line, percentage of persons receiving public assistance, percentage of individuals who are unemployed, percentage of female-headed households with children, and percentage of residents who are Blacks. Other things being equal, residents should be willing to contribute in advantaged neighborhoods because these neighborhoods are better maintained and provide better schools, police protection, and other social services (Lee et al., 1994). In other words, the tendency to maintain robust community characteristics and the willingness to contribute to the common good might be stronger in advantaged communities.

Residential Stability: Previous studies have found a positive relationship between residential stability and citizens' involvement in informal social control and participation in neighborhood organizations. Sampson et al. (1997) found that 70 percent of neighborhood variation in collective efficacy is explained by residential stability with two other neighborhood stratification variables. In other words, neighborhoods with stable and homogeneous groups will promote citizens' willingness to contribute to the neighborhood. Along the same line, it is expected that residents living in stable

neighborhoods are more likely to participate in crime prevention associations. Residential stability is measured with z-scores of percentage of residents who have lived in the community longer than five years and the percentage of owner-occupied housing units.

Immigration Concentration: It is expected that individuals' exposure to distrust, fear of strangers, and uncertainty contribute to the decline from the collective actions (Woolcock, 1998). In addition, communities with a number of immigrant groups are more difficult to communicate due to linguistic barriers and cultural isolation (Sampson et al., 1999). Thus, it is expected that communities with concentrated immigrants' population would face a number of barriers for generating collective actions for crime prevention in communities. Immigration concentration is measured from z-scores of percentages of Hispanics and foreign-born residents.

(3) Measurement of Self- and Household-Protective Behaviors

One of the main research questions is to see the impact of crime victimization on individuals' decisions regarding self- and household-protective action considering their involvement with crime prevention associations, NWGs. Nine items measuring self- and house-protection are available in the data and are included in the model as dependent variables – (1) lock doors, (2) leave lights on, (3) install extra-locks, (4) carry a weapon, (5) have a weapon in home, (6) have a burglary alarm, (7) own a dog at home, (8) increase safety precautions over the last two years, and (9) change outside activities over the last two years. The factor analysis of these variables is conducted prior to the analysis of the models to detect structure in the relationships between these variables (see Chapter 7 for the result). To scrutinize the changes in self- and household-protection behavior over the last two years, seven items for precaution measures of two years ago are

included in the model as a control variable – (1) locked doors two years ago, (2) left lights on two years ago, (3) installed extra-locks two years ago, (4) carried a weapon two years ago, (5) had a weapon at home two years ago, (6) had burglary alarm two years ago, (7) owned a dog at home two years ago. Appendix 1 provides the explanation of concepts and measures for the data.

Assessing the Need for Multilevel Models and Analysis Plan

Before building multilevel models for hypothesis testing, it is required to decide whether multilevel models are even needed. In general, there are three types of justifications for multilevel models – empirical, statistical, and theoretical (Luke, 2004). For empirical reasons, the structure of the level-1 data set, individual-level data, shows that there is considerable variability between census tracts on the magnitude of membership changes with NWGs. In the cross table between changes of memberships and census tract number, there is considerable variance between census tracts. On average, 10.3% of 5271 individuals change their current membership with NWGs compared with their status two years ago, 3.3 % (N = 172 individuals) discontinue their membership with NWGs, and 7% (N = 370 individuals) initiate their membership with NWGs. However, there is a substantial difference in the changes in membership status in NWGs between census tracts. For instance, for the initiation of membership with NWGs, some census tracts show no initiation of membership (e.g., census tract number 1) while others show a substantially higher percentage of membership initiation (e.g., census tract number 109, with 26.4%). Additionally, for the discontinuation of membership, census tracts show diversity (e.g., census tract number 87, which has over 10% of

discontinuation). The Intraclass Correlation Coefficient (ICC) provides a more formal piece of empirical evidence. The ICC measures the proportion of variance in the dependent variable that is accounted for by groups (census tracts in the current study): The theoretical formula for the ICC is $\sigma^2(b) / [\sigma^2(b) + \sigma^2 (w)]$, where $\sigma^2 (w)$ is the pooled variance within subjects, and $\sigma^2(b)$ is the variance of the trait between subjects.

In other words, the ICC measures the proportion of the total variance in the individual characteristics that can be attributed to differences between the census tracts. Thus, the ICC will be closer to 0 if individuals within the same tracts are not more likely to have similar characteristics than individuals in different census tracts. In contrast, the higher the ICC, the more the variation in individual characteristics reflects differences across census tracts rather than dissimilarities among individuals within the same census tracts. The ICC is tested in the first model of analysis for each of the research questions and reported in the first section of the result part in each Chapter.

Statistically, for single-level ordinary least square (OLS) models, it is assumed that the observations (and the error terms as well) are independent from one another. However, in a nested structure data, it is hard to think that this assumption of independence is met. Considering the clustered nature of our data, it is reasonable to assume that census tract characteristics can shape residents' crime prevention behavior as much as other individual factors, such as demographics and recent crime victimization experience. Multilevel modeling relaxes this independence assumption, and allows for correlated error structures. If OLS is used inappropriately for clustered data with correlated errors, the resulting standard errors are smaller than they should be, resulting

in a greater chance of committing Type I errors. Multilevel models, on the other hand, will estimate the appropriate, unbiased, errors.

Lastly, theoretically, it is expected that characteristics of the neighborhood where an individual resides may influence his or her behavior related to crime prevention activities. Specifically, main hypotheses that will be tested are crime victims' further reactions regarding crime prevention activities being closely related to the characteristics where they live. In sum, the current study requires the use of multilevel modeling. The empirical justification comes from seeing that membership status change in NWGs (level-1) varies strongly by census tracts (level-2). The statistical justification comes from recognizing that the cases in our study are not independent, are clustered by neighborhood units, census tracts, and are likely to exhibit correlated errors. Finally, the theoretical justification comes from our interest in a multilevel model that will examine how census tract-level characteristics influence individual behavioral changes with crime prevention associations, NWGs.

Analysis Plan

For the analysis, three different models will be estimated with HLM 6.06 software (Raudenbush, Bryk, & Congdon, 2008). A null model will be examined at first for each of these three analysis models. This unconditional model that contains no explanatory variables at either individual or census tract level is used to determine whether the overall differences between census tracts are significant or not. The analysis is divided into three parts. The first analysis model will predict the individual's initial membership in NWGs using individual characteristics first, then neighborhood and individual characteristics

(Chapter 5). This model shows the differences between participants and non-participants and provides a replication of prior studies on the differences between participations and non-participants in NWGs. Secondly, an individual's membership status change with NWGs is examined with individual characteristics first, then neighborhood and individual characteristics simultaneously (Chapter 6). In particular, this model shows the impact of crime victimization on the decision to *change* each individual's participation status in NWGs. Lastly, changes in self- and household-protection behaviors due to crime victimization are examined, first with individual characteristics and then neighborhood and individual characteristics (Chapter 7). This model, in particular, includes the membership status change with NWGs as an independent variable to compare the similarities and differences between determinants of self- and household-protection and those for involvement in social control in the community.

For the purpose of the discussion, I will focus on a total sample of

i = 1, 2, 3, ……..., i individuals within a set of j = 1, 2, 3, ……..., j residential neighborhood, census tract in the current study. With n_{ij}, the number of sample observations within j_{th} neighborhood will be represented.

(1) The Model of Participation in NWGs

The data provide a measure of initial membership status in NWGs for each individual, where binary response of Y_{ij} is whether individual i from census tract j was initially a member of NWGs or not. In other words, the dichotomous response of participation is:

Y_{ij} = 1 for sample individual joined NWGs

Y_{ij} = 0 for sample individual not joined NWGs.

The probability that individuals say yes for their initial membership with NWGs is defined as P_{ij}. The within community, level-1, micro model is,

$$Y_{ij} \sim binomial(P_{ij}, 1), \ \text{var}(Y_{ij} \mid P_{ij}) = P_{ij}(1 - P_{ij}),$$
$$\log\left(\frac{P_{ij}}{1 - P_{ij}}\right) = \beta_{0j} + \beta_{1j}X_{1ij} + \beta_{2j}X_{2ij} + \beta_{3j}X_{3ij} + \ldots\ldots\ldots + \beta_{kj}X_{kij} + \varepsilon_{ij} \quad (1)$$

where the *X*s represent individual-level variables, the β_{kj} s denote the constant (intercept as in the case of β_{0j}) and regression coefficients of the explanatory variables, *i* individuals within a set of *j* residential neighborhood, census tract. ε_{ij} is a level-1 error term assumed to be distributed binomially. In brief, equation (1) corresponds to the estimation of individual-level logistic regression models for participation in NWGs.

Further specification is required. Simply using a standard logistic regression to analyze membership status with the assumption that the data were a sample of independent observation would lead to misspecification of the model. As already discussed, individuals in the same community, census tract, share space and common experiences, and this dependence among individuals located within the same census tract should be considered in the analysis model. The treating of neighborhood impact, between-neighborhood, level-2, or macro model represents the variability in the level-1 intercept β_{0j} and/or β_{kj}, according to the result of model assessment whether β_{0j} and β_{kj} have enough variation to be modeled.

$$\beta_{kj} = \Theta_{k0} + \Theta_{k1}W_{1j} + \Theta_{k2}W_{2j} + \Theta_{k3.}W_{3j} + \ldots\ldots + \Theta_{kq}W_{qj} + u_{kj} \quad (2)$$

In the equation (2), *W*s represent neighborhood-level variables, the Θ_{qjs} are regression coefficients (or intercept) for neighborhood-level variables to be estimated, and u_{kj} is a normally distributed error term.

(2) The Model of Membership Status Change with NWGs

It will be assumed that

$$\text{Prob}(R_{ij} = \text{c}) = \phi_{ij}, \tag{3}$$

where the probability that individual *i* in neighborhood *j* lands in category *c* is ϕ_{ij}, for categories *c*= 1, 2, 3, 4. There are here being four possible categories for membership status change with NWGs: (1) currently a member of Neighborhood Watch Groups and also was a member two years ago, (2) currently a member of Neighborhood Watch Groups and was not a member two years ago, (3) not currently a member of Neighborhood Watch Groups and was a member two years ago, and (4) not currently a member of Neighborhood Watch Groups and also not a member two years ago. This leads to a definition of the probabilities as Prob (Y_{cij} =1) = ϕ_{cij} . Here, for *c* = 4,

$$\begin{aligned}
&\text{Prob}\,(Y_{1ij} = 1) = \phi_{1ij} \\
&\text{Prob}\,(Y_{2ij} = 1) = \phi_{2ij} \\
&\text{Prob}\,(Y_{3ij} = 1) = \phi_{3ij} \\
&\text{Prob}\,(Y_{4ij} = 1) = \phi_{4ij} = 1 - \phi_{1ij} - \phi_{2ij} - \phi_{3ij}
\end{aligned} \tag{4}$$

Here, we will define η_{cij} as the log odds of being *c*-th category of relative to the C-th category, which is also known as the "reference category[2]."

[2] The "not currently a member of NWGs and also not a member two years ago" is treated as a reference category.

$$\eta_{cij} = \log\left(\frac{\phi_{cij}}{1-\phi_{Cij}}\right)$$
$$\phi_{Cij} = 1 - \sum_{c=1}^{C-1} \phi_{cij} \quad (5)$$

Multinomial logistic regression will be applied to examine similarities and differences between four categories of membership status change with NWGs and produces *c-1* number of probability models (here, three models) for level-1.

$$\eta_{cij} = \beta_{0j(c)} + \beta_{1j(c)}X_{1ij} + \beta_{2j(c)}X_{2ij} + \ldots\ldots\ldots + \beta_{kj(c)}X_{kij} + \varepsilon_{ij(c)} \quad (6)$$

where (c) represents number of outcome categories minus 1,3 in the current study.

X represent individual-level variables, and $\beta_{kj(c)}$ s denotes the constant (intercept as in the case of $\beta_{0j(c)}$) and regression coefficients of the explanatory variables for each category, (c). $\varepsilon_{ij(c)}$ is level-1 error term assumed to be distributed binomially for each equation for each category of dependent variable.

For the level-2, macro level equation, equation (7), the same logic of equation (2) will be applied. The difference between equation (7) and equation (2) is that the equation for the multinomial logistic regression considers the different categories of response, which is represented *c* (1 to 3).

$$\beta_{kj(c)} = \Theta_{k0(c)} + \Theta_{k1(c)}W_{1j} + \Theta_{k2(c)}W_{2j} + \Theta_{k3(c)}W_{3j} + \ldots\ldots + \Theta_{kq(c)}W_{qj} + u_{kj(c)} \quad (7)$$

W represents neighborhood-level variables. The $\Theta_{qj(c)}$ are regression coefficients (or intercepts) to be estimated for each category *c*, and $u_{kj(c)}$ is a normally distributed error term for each category *c* as well.

(3) The Model for Self- and Household-Protective Behaviors

In the prediction of the changes in the self- and household- protection behaviors, nine dichotomous items of current protective behaviors of T_2 (see figure 1 for the clarification) will be used for dependent variables. To detect the structure in the relationships between variables and classify, factor analysis will be applied prior to examining models. The factor analysis is helpful to reduce the number of dependent variables as well. It is expected that the factor analysis will produce one or more variables and they will be used as dependent variables. To see changes in these self- and household- protection behaviors, the current protective behavior of T_2 will be predicted with several independent variables including protection behavior in T_1 and crime victimization experience between T_1 and T_2. In addition, individuals' membership change with NWGs will be included in the model as independent variables. This will be helpful to see the impact of individuals' decision about community protection on self- and household-protective behaviors. The protection behavior measure for individual *i* within *j* neighborhood will be represented,

$$Y_{ij} = \beta_{0j} + \beta_{1j} X_{1ij} + \beta_{2j} X_{2ij} + \beta_{3j} X_{3ij} + ... + \beta_{kj} X_{kij} + \varepsilon_{ij}, \quad (8)$$

where β_{kj} (k = 0, 1, 2, …. *K*) are level-1 coefficients for individual-level characteristics; X_{kij} is the level-1 predictor *k* for individual *i* in neighborhood *j*; and ε_{ij} is the level-1 random effects. It is assumed the random term of $\varepsilon_{ij} \sim N(0, \sigma^2)$ where σ^2 is the variance of ε_{ij}.

As we expect to see community effects on the individuals' self- and household-protection behavior, individuals in the same neighborhood, census tract, share space and

common experiences, and this dependence among individuals should be considered in the analysis model. Each of the level-1 coefficients, β_{kj} defined in the level-1 model will become an outcome variable in the level-2 model:

$$\beta_{kj} = \gamma_{k0} + \gamma_{k1}W_{1j} + \gamma_{k2}W_{2j} + \Theta_{k3.}W_{3j} + ... + \gamma_{k}s_{k}Ws_{kj} + u_{kj} \quad (9)$$

where γ_{kq} (q = 1,2,…….. s_k) are level-2 coefficients; W_{S_j} is a level-2 predictor; and u_{kj} is a level-2 random effect. u_{kj} is assumed to be distributed as multivariate normal, with each element of u_{kj} having a mean of zero and variance of τ_{kk} .

The three analysis models are discussed and presented above, and results of these analysis models are presented in the following three Chapters. The result of the replication of the analysis of participation in NWGs is presented in Chapter 5. The impact of victimization on the status change of each individual's membership with NWGs is examined in Chapter 6, and this analysis shows the differences between dissimilar membership status changes and the different role of victimization and perception of the crime problem in communities. Chapter 7 focuses on the residents' changing behavior for the protection of their own households with consideration of victimization experiences as well as the membership status change with NWGs. It examines the similar or different role of crime victimization on both household-protective actions and community-protective actions.

Chapter 5. Participation in Social Control, NWGs

Introduction

Differences between participants and non-participants in voluntary organizations have garnered considerable attention from scholars, and there is a consensus on the distinctiveness of participants in voluntary organizations. These studies document that those who are older, married, better educated, and better situated in their socioeconomic status are more likely to participate in voluntary organizations (Bussell & Forbes, 2002; Curtis, 1971). A number of studies have also confirmed the differences between participants and non-participants in voluntary organizations, particularly those for crime prevention such as Neighborhood Watch Groups (NWGs). Participants in neighborhood crime prevention associations are more likely to be women, under 50 in their ages, higher in education levels, and non-Whites. They have also been long-term residents and are homeowners who are married with children (Greenberg, Rohe, & Williams, 1985; Lavrakas & Herz, 1982; Ren, Zhao, Lovrich & Gaffney, 2006; Sampson & Grove, 1989; Whitaker, 1986).

Previous studies confirm the differences between participants and non-participants in NWGs. Overall, however, studies exclusively focused on the individual-level predictors of participation. Recent research on social control, however, has moved in another direction, focusing on whether the level of social control varies across communities and the contextual factors that affect residents' social control (Sampson, Morenoff, & Earls, 1997; Sampson & Raudenbush, 1999; Veysey & Messner, 1999). These studies have examined the influence of community characteristics such as racial or

ethnic composition, unemployment, and residential stability on social control of communities. Collectively, this body of work suggests that some characteristics of social context have an effect on the level of social control.

One approach of research that needs particular attention is the examination of the impact of characteristics of social context on an individual's decision to participate in organizations for crime prevention in his or her own community. Several questions and issues remain unresolved. First, there is the specific question of whether characteristics of social context differentiate participants from non-participants in community crime prevention organizations. In addition to characteristics of social context of communities such as ethnic composition, unemployment, and residential stability, the impact of crime in the community needs to be considered in order to analyze participation in crime prevention associations.

Second, there is a question as to whether previous studies on predictors of participation in crime prevention associations provide an adequate test for the influence of individual-level predictors. In particular, the question to be answered is whether individual-related characteristics show similar impact on participation when community social context is in considered. I will begin by presenting the theoretical background and discussing the hypotheses to be tested to examine the impact of social context on participation in community organizations for crime prevention. I, then, discuss the data used to test these hypotheses and the results of the analyses. The study's implications for theory, research, and policy are then stated in the conclusion.

Theoretical Background – Literature Review

The current study focuses on the analysis of participation in crime prevention associations; in particular, it analyzes participation in Neighborhood Watch Groups (NWGs). Most neighborhood organizations or voluntary associations are designed to deal with a number of different issues, and crime is not always the number one agenda for them (DuBow & Podolefsky, 1979). This requires us to focus on crime prevention organizations in the current study to examine what makes individuals participate specially in social control for crime prevention. Neighborhood Watch Groups (NWGs) are the most widespread, well-known organizations for crime prevention in communities, along with Operation ID and home security survey (Feins, 1983). In 2000, about 41% of the U.S. population lived in an area covered by a Neighborhood Watch, making these groups the largest civilian organization for local crime prevention in the nation (National Crime Prevention Council, 2001).

Studies on NWGs as well as crime prevention associations in general are centered on their effectiveness for crime reduction, but findings are not conclusive. Several studies indicate that the evaluations were unclear about the NWGs' effectiveness (Husain, 1990; Sherman & Eck, 2002; Titus, 1984). Other studies conclude that the NWGs were ineffective to reduce crime (Sherman & Eck, 2002) or insist that there is little evidence that NWGs are working (Husain, 1990). In contrast, Titus (1984) specifies the effectiveness of the programs, and positive outcome of NWGs is supported by studies of the Seattle evaluation by Lindsay and McGillis (1986) as well. A narrative review and meta-analysis by Bennett, Holloway, and Farrington (2006), which is considered as superior compared to other evaluation studies, revealed that one-half of those NWGs

evaluated were effective in reducing crime. Partially, this inconsistent result for the effectiveness of NWGs is due to methodological concerns, which are specified by several scholars (Rosenbaum, 1988; Titus, 1984). For instance, Rosenbaum (1988) stated that the more articulate the evaluation design, the less likely the study was to prove the effectiveness of the program.

Even though the effectiveness of NWGs and crime prevention organizations are uncertain, the importance of NWGs on crime and community should not be minimized. The NWGs provide a channel to support the directive "observe and report" for crime prevention, as well as to promote the social interaction and friendship networks that serve as informal social control. In addition, residents' participation implies available resources and vehicles of information on individual and household security measures (Ahlbrandt & Cunningham, 1979; Garofalo & McLeod, 1989; Kasarda & Janowitz, 1974). Previous studies on NWGs are centered on their responsibility for crime prevention or crime reduction, and participation in them has been less noticed.

The current study focuses on the analysis of the differences between participants and non-participants in voluntary associations for crime prevention. Studies have been conducted on the differences between volunteers and non-volunteers for community organizations and the reasons of participation in voluntary associations. Previous literature reveals that participants are different. Participants are more stable, longer resident, and attached residents with better socioeconomic status (Greenberg, Rohe, & Williams, 1985; Lavrakas & Herz, 1982; Ren, Zhao, Lovrich & Gaffney, 2006; Sampson & Grove, 1989; Whitaker, 1986). These previous studies, however, mainly focus on the

individual-related features and rarely consider the ecological impact of the neighborhood where individuals reside.

A few studies do consider the impact of neighborhood factors on participation in neighborhood organizations especially for crime prevention. According to Skogan (1988), a study by Bennett, Fisher and Lavrakas (1988) considered both individual- and neighborhood-level factors and found that program awareness and participation are higher in racially homogeneous, higher-status areas, controlling for individual-level factors. In addition, there is a difference in the level of attachment among residents of a given neighborhood, and neighborhoods also differ in terms of how their residents react to problems within the neighborhood. Regarding the impact of neighborhood context on social organization, scholars insist that complexity associated with concentrated poverty brings about distrust within the neighborhood and withdrawal from various forms of community activity including collective efficacy and local voluntary associations (Bursik, 1988; Bursik & Grasmick, 1993; Sampson 1985; Sampson & Grove, 1989). In spite of the coherence of this argument, empirical research shows inconsistent results. There is a counter-argument that the demand for community organizations, especially those related to crime prevention may be greater in poor, disadvantaged communities, and this might amplify involvement in neighborhood organizations in low-income areas (Swaroop & Morenoff, 2006). The theoretical framework of this argument and empirical evaluations has not yet been tested thoroughly (Swaroop & Morenoff, 2006).

In sum, previous studies did not successfully examine the impact of neighborhood context on participation in voluntary organizations for crime prevention. Studies often only focused on individual-related characteristics, and did not incorporate neighborhood-

related factors in the analysis of individuals' decisions about participation (Greenberg, Rohe, & Williams, 1985; Lavrakas & Herz, 1982; Ren, Zhao, Lovrich & Gaffney, 2006; Sampson & Grove, 1989; Whitaker, 1986). A few studies on this topic consider neighborhood-related factors; however, they show the overall participation rate differences across neighborhoods without considering whether individuals residing in those neighborhoods with different conditions show dissimilar patterns of participation (Bennett & Lavrakas, 1988; Skogan, 1988).

Statement of Research Hypotheses

Using data from the 1990 telephone survey in Seattle and other data sources, the current study is proposed to test two hypotheses pertaining to the predictors of participation in crime prevention associations in neighborhoods. It is expected that participants and non-participants are different. The two hypotheses to be tested are how individual-related as well as community-related characteristics differentiate participants from non-participants of neighborhood crime prevention associations, NWGs.

> *Hypothesis 5.1*: Differences between members and non-members of NWGs will be explained by attachment and stability of an individual to the neighborhood. I hypothesize that the initial membership with NWGs will be associated with individual- and household-related factors (level-1 predictors) such as being older, having lived in a bigger house, being a homeowner, being female, receiving more than a high school education, being White, being married, currently being employed, and/or having a higher income.

Hypothesis 5.2: It is expected to show that a "contextual effect" at level-2 such as living in areas of lower assault and residential burglary rates will predict a membership with NWGs. In addition, the better the neighborhoods, in other words, the lower concentrated disadvantage scale is; the higher residential stability is; and/or the lower immigration concentration scale is; the initial membership status in NWGs is expected to be higher.

Collectively, tests of these hypotheses contribute to a body of work aimed at furthering our understanding of the individual and contextual effects on participation in crime prevention organizations, NWGs. In doing so, the current study responds to the demand of scholars for the understanding of predictors of participation in crime prevention associations, particularly with the consideration of social context, which was rarely considered in previous studies.

Data and Measures

To assess the effects of social contexts and individual-level predictors of participation in voluntary organizations for crime prevention, data were used from three independent sources. Data sources include: (1) the telephone survey in 1990 Seattle, Washington with community identification by census tract numbers (Miethe, 1991), (2) the 1990 census data, and (3) official crime statistics from the Seattle Police Department. (Further explanation for the data is available in Chapter 4.) The 1990 telephone survey data is nested within 100 census tracts, which have not changed their physical boundaries since 1960s. Table 5.1 provides the summary statistics of the number of individuals by census tract, which ranges from 45 to 57. As shown in Table 5.1, each census tract has 53

individuals, on average, so for the 100 census tracts the total number of the sample is 5,302 individuals. Only one individual was interviewed per household, and respondents in the sample represent their households.

Table 5.1. Number of Individuals in Census Tracts

Number of Individuals	Frequency	Valid Percent	Cumulative Percent
45	1	1.0	1.0
46	0	0.0	1.0
47	1	1.0	2.0
48	0	0.0	2.0
49	2	2.0	4.0
50	5	5.0	9.0
51	7	7.0	16.0
52	17	17.0	33.0
53	24	24.0	57.0
54	23	23.0	80.0
55	15	15.0	95.0
56	3	3.0	98.0
57	2	2.0	100.0
Total		**100**	**100.0**
	Mean = 53.02, S.D. = 1.92		

The descriptive statistics for the variables used in the examination of the initial membership in NWGs are provided in Table 5.2. The survey of residents was originally conducted in 1990. There are several questions about situations that occurred "two years ago," which enable the analysis to effectively consider the experience of non-recent crime victimization as well as to describe the changes of the individuals' behavior regarding safety. To examine the predictors of individuals' initial membership status with NWGs without considering the impact of crime, retrospective questions about membership in NWGs "two years ago" are used. Of interest is the probability that an individual was an initial member of NWGs in the community (Member = 1, if "yes" on the question on the initial (two years ago) membership status with NWGs; Member = 0, if "no"). Note that 21% of the sample individuals were initially members of NWGs.

The socioeconomic status of individuals is measured by household income, homeownership, and education level. Overall, it is observed that the sample is of good socioeconomic status and mostly White (85%). Over 60 percent (65%) of the respondents are homeowners, and 71% of them have received some college level education. In addition, about 19% of them have a household income over $ 50,000 (compared to the 1989 Washington State median income of $31,183, census 1990). For their household composition and life-style measures, the age, gender, and marital status of respondents, the total number of people living in the household, and whether there are children who are under the age of 6 are considered. The average respondents' age is in the 40s, and the sample is well balanced in gender composition. About 55% of them are either married or cohabiting, and the average number of persons who live in the household is about 2.4. Not many households (13%) have a child who is younger than 6.

Table 5.2. Descriptive Statistics

Variable	Description	Mean	S.D.	Range
Individual-Level Variables				
Respondents in the telephone survey				
N = 5,302 individuals				
Initial membership in NWGs				
(Membership status 2 yrs ago)	1 = yes, 0 = no	.21	.41	0 - 1
Household SES				
High income (>$50,000)	1 = yes, 0 = no	.19	.39	0 - 1
Homeowner	1 = yes, 0 = no	.65	.48	0 - 1
College education	1 = yes, 0 = no	.71	.46	0 - 1
Household Composition/Lifestyles				
Age	Ordinal 1 = 17-19 2 = 20-29 3 = 30-39 4 = 40-49 5 = 50-59 6 = 60-69 7 = 70 +	4.36	1.72	1 - 7
Gender	1 = male, 0 = female	.50	.50	0 - 1
Marital status	1 = married/cohabiting, 0 = single	.55	.50	0 - 1
Household size	Number of people currently living in home	2.35	1.71	1 - 5

Variable	Description	Mean	S.D.	Range
	(5 = 5+)			
Presence of young children	1 = yes, 0 = no	.13	.34	0 - 1
Race				
White	1 = yes, 0 = no	.85	.36	0 - 1
Neighborhood Crime Problems				
The Seattle Police Department				
N = 100 census tracts				
Assault rate 1990	Official assault rates per 1,000 in census tract	9.56	11.40	0 - 61.97
Residential burglary rate 1990	Official residential burglary rates per 1,000 in census tract	15.57	8.52	1.34 - 42.31
Neighborhood Conditions				
The 1990 census				
N = 100 census tracts				
Concentrated disadvantage	z-score loadings from percentages of person below poverty, who receive public assistance, female headed households with children, individuals who are unemployed, and persons of Blacks	0	1	-1.02-3.43
Immigration concentration	z-score loadings from percentages of Hispanics and foreign-born	0	1	-1.33-4.18
Residential stability	z-score loadings for percentages of residents who have lived in the community longer than 5 years and of homeowners-occupied housing units	0	1	-3.45-1.87

In regards to the level-2 variables, neighborhood-related features in census tract, five predictors are considered. Two variables for the crime statistics of neighborhoods are included: the official 1990 crime rates of assault and residential burglary per 1,000 in census tract. To gauge the crime rates of personal and property victimization, I chose two crime, assaults and residential burglaries. Official crime rates for them are obtained from the Seattle Police Department. To calculate official burglary rates, the number of residential burglaries known to the police in each census tract between 1989 and 1991 are averaged and divided by 1990 population, and then multiplied by 1,000. This method of averaging the number of burglary crimes between 1989 and 1991 to detect 1990 crimes is

applied to minimize the impact of random fluctuation of crime rates and to produce a more reliable measure (Bellair, 2000). The same method is applied for the calculation of assault rates in each census tract. The average rate of assaults per 1,000 residents in community is 9.56, and the rate of residential burglaries is 15.57.

To indicate neighborhood conditions, three variables are created: concentrated disadvantage, residential stability, and immigration concentration. The outcome of factor loading patterns for these three variables is presented in Table 5.3. All of these variables are from the 1990 census. The z-scores for the percentage of persons below the poverty line, persons who receive public assistance, female-headed households with children, individuals who are unemployed, and persons of Black are averaged to create a concentrated disadvantage index (Cronbach's alpha = 0.909). Residential stability is measured from the averaged z-scores of the percentage of residents who live longer than five years in the community and the percentage of owner-occupied housing units (Cronbach's alpha = 0.487). The z-scores for the percentage of Hispanics and those of foreign-born residents are averaged to create an immigration concentration index (Cronbach's alpha = .931).

Table 5.3. Factor Loading Patterns for Variables of Neighborhood Conditions

Concentrated Disadvantage	
Eigenvalue	3.697
% Variance	73.934
Cronbach's alpha	*0.909*
Loadings (Z score for):	
Percentage of persons below poverty	0.833
Percentage of persons who receive public assistance	0.920
Percentage of female headed households with children	0.852
Percentage of individuals who are unemployed	0.896
Percentage of persons of Blacks	0.791
Residential Stability	
Eigenvalue	1.872
% Variance	93.577
Cronbach's alpha	*0.487*
Loadings (Z scores for):	
Percentage of residents who have lived in the community longer than 5 years	0.967
Percentage of owner-occupied housing units	0.967
Immigration Concentration	
Eigenvalue	1.322
% Variance	66.077
Cronbach's alpha	*0.931*
Loadings (Z scores for):	
Percentage of Hispanics	0.813
Percentage of foreign-born persons	0.813

In the prediction of the initial membership of individuals in NWGs at the time point of T_1[3], it is reasonable to expect that the characteristics of individuals and households as well as the condition of a neighborhood at the same time period (T_1) will differentiate one's membership status at that point of time. However, the characteristics of the telephone survey data in the current study, a survey at the time of T_2 with a retrospective approach to measure some of the variables for T_1, do not allow us to run a conceptually separated model for the initial membership status with those characteristics of individuals and households at that time period, T_1. Instead, all of the predictive measures for the characteristics of individuals and households are available for the time point of T_2.

[3] See Figure 1 for the clarification.

Even though the time frame of the survey does not allow the examination of the initial membership status with NWGs with variables measured at the same time period, this analysis is worth assessing. The prediction of the initial membership status with NWGs without consideration of crime victimization provides a replication of the previous studies for individual-level predictors as well as neighborhood-level social context on the topic of participation in neighborhood organizations, particularly for crime prevention. In addition, comparison between this prediction model of initial membership status with NWGs and the model for the changes of that membership status is helpful to understand the impact of crime victimization on different types of changes of membership status with NWGs.

For the examination of individuals' initial membership in NWGs, the predictors of the initial membership status with NWGs at the time point of T_1 are utilized from the questionnaire, which is conducted at the T_2 time point. For instance, features of individual demographics such as age, gender, race, education level, and marital status as well as characteristics of households, such as household income and household size, are used. Some of these characteristics of individuals and households are not changed over time; for instance, one's gender and race are not changed over time, and the age of an individual are changed on the exact same pattern for everyone, so these are not concerns for this model. In contrast, household income, marital status, and homeownership can be changeable within a time frame of two years, and the residents' telephone survey does not incorporate these changes. However, these variables are rarely changed. An individual's income usually is not significantly changed within two years, and individuals tend to keep their houses. Since it is rare individuals lost their homes, treating both non-

homeowners and homeowners consistently homeowners at T_1 may occasionally underestimate the true impact of homeownership, so this conservative perspective is acceptable.

The justification to utilize variables measured at T_2 for the prediction of the T_1 membership status with NWGs is that the magnitude of change within a relatively short time frame of two years might not be significant. The benefit of the exploration of the initial membership status model, however, is great, and it is believed to prevail over the limitations of the data. In addition to these household- and individual-related factors, the characteristics of the neighborhood and crime problems of neighborhoods are also examined for the impact of differentiation on the participation in NWGs among residents. Neighborhood conditions and crime problems might be less problematic in their time orders. The crime problem of communities is measured from 1989 and 1991 and will reflect the time of T_1. The census of 1990 for the measure of neighborhood conditions will not be significantly different between 1988 and 1990, which leads us to use 1990 figures as proxy for neighborhood conditions at the time of T_1.

Analytic Strategy

Due to the multilevel nature of the data and the use of dichotomy outcome variable, I used Hierarchical Generalized Linear Modeling (HGLM) logistic regression, which incorporates a unique random effect into the statistical model for each community and produces more robust standard errors than non-hierarchical models allow (Raudenbush & Bryk, 2002). The HGLM logistic regression with no predictors, the unconditional model, is examined first and indicated that the variation of between

neighborhoods is significant ($p < 0.001$, Table 5.5). This leads us to examine the determinant factors of the initial membership status with NWGs from household and individual-related factors to ecological factors such as neighborhood conditions including crime problems. All the predictors are centered on their grand means.

Results

A series of bivariate correlations are estimated prior to the analysis of logistic regression models, and correlations between membership with NWGs and individual-level predictors are presented in Table 5.4. The results indicate that multicollinearity is not a problem considering the moderate Pearson's correlation values. The highest correlation is observed between household size and the presence of young children in the household (0.493). OLS regression diagnostics with a linear dependent variable (not reported in the paper) provides additional support that multicollinearity does not show, demonstrating that no VIF above 1.523 and no tolerance below .657[4]. The correlation matrix for selected neighborhood variables is also reported in Table 5.4. At the neighborhood level, multicollinearity is also checked with the residential burglary rate, concentrated disadvantage, stability, or immigration concentration. No VIFs are above 3.356, and no tolerance values are below 0.3.

In the original data file of crime statistics from the Seattle Police Department, much information is available regarding homicide, rape, robbery, and auto theft. Some of

[4] A commonly used measure to identify collinear variable is to compute the variance inflation factor (VIF) of each variable (Myers, 1986). VIF indicates the extent to which the variance of the regression coefficient estimate is inflated due to the presence of multicollinearity. As a rule of thumb, if the VIF exceeds 10 (or tolerance is smaller than 0.10), the variable is considered to be highly collinear and it can be treated as a candidate for exclusion from the regression model (Kleinbaum, Kupper, & Miller, 1988).

the measures for the crime rates in neighborhoods, however, are highly correlated to each other. For instance, the Pearson's correlation for coefficients between official robbery rate and official assault rates per 1,000 residents is 0.903. In addition, official larceny rates and official auto theft are also highly correlated (Pearson's r = 0.838). These highly correlated neighborhood-level predictors restrain use of them all in the same model. As a result, assault rates and residential burglary rates are chosen as measures of the crime problem in the neighborhood. These two crime statistics are popularly used in previous studies to reflect the crime problems in the neighborhood, and they represent one property crime (residential burglary) and one personal crime (assault).

Table 5.4. Bivariate Correlations between Variables

Correlation between level-1 measures

	(1) NWGs member	(2) Age	(3) House size	(4) Young children	(5) Home owner	(6) Gender	(7) Educated	(8) White	(9) Married	(10) Employed	(11) High income
(1)	1.000										
(2)	0.168**	1.000									
(3)	0.069**	- 0.279**	1.000								
(4)	- 0.001	- 0.248**	0.493**	1.000							
(5)	0.261**	0.343**	0.144**	0.058**	1.000						
(6)	- 0.002	- 0.077**	0.025	- 0.020	- 0.013	1.000					
(7)	- 0.012	- 0.162**	0.052**	0.041**	0.004	0.038**	1.000				
(8)	0.001	0.005	- 0.028*	- 0.032*	0.026	0.009	0.241**	1.000			
(9)	0.062**	- 0.018	0.294**	0.109**	0.172**	0.024	0.147**	0.109**	1.000		
(10)	- 0.069**	- 0.267**	0.070**	0.026	- 0.082**	0.070**	0.180**	0.106**	0.278**	1.000	
(11)	0.056**	0.106**	0.004	- 0.022	0.135**	- 0.038**	0.086**	0.105**	0.196**	0.101**	1.000

Correlation between level-2 measures

	(1) Assault rate[a]	(2) Residential burglary rate[a]	(3) Concentrated Disadvantage	(4) Residential Stability	(5) Immigration concentration
(1)	1.000				
(2)	0.729**	1.000			
(3)	0.767**	0.710**	1.000		
(4)	- 0.485**	- 0.455**	- 0.334**	1.000	
(5)	0.352**	0.314**	0.525**	- 0.222*	1.000

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).
[a] All of the crime rates are calculated with rates per 1,000.

The first step of HGLM logistic regression analysis is provided to detect the magnitude of variation among census tracts with regard to initial membership in NWGs

by estimating an unconditional model (one that contains no predictors at either level-1 or level-2). The reliability estimate for the level-1 coefficient is 0.862, which means an overall or average reliability for each level-1 coefficient across the set of level-2 units (census tracts). The result of the unconditional model, also known as null model, for the initial membership status with NWGs, is reported in Table 5.5.

Table 5.5 Unconditional Model of Initial Membership in NWGs

Fixed effects	coefficient	se	t ratio	odds ratio	p-value
Intercept, β_0	-1.578	0.114	-13.826	0.206	< 0.001
Random effects	**variance components**	**df**	**x^2**	**p-value**	
Intercept, τ00	1.100	96	884.185	< 0.001	

The maximum number of level-1 units: 5147
The maximum number of level-2 units: 97[5]

The Intraclass Coefficient Correlation (ICC), the ratio of level-2 variance to the total variation, is a useful index when we have a standard two-level hierarchical linear model and is calculated using the one-way ANOVA random effect model of $Y_{ij} = \gamma_{00} + \mu_{0j} + \varepsilon_{ij}$ [6]. However, this ICC measure is less useful in the case of the nonlinear model. This is due to the fact that the level-1 variance is heteroscedastic in nonlinear models (Raudenbush & Bryk, 2002). An alternative conception of the ICC for the binary outcomes derives from re-conceptualization of the level-1 model with a latent variable. Here, the level-1 random effect is assumed to have a standardized logistic

[5] Originally, the number of level-2 unit, census tract, is 100. However, three census tracts (#40, 68, and 69) are excluded in the analysis since the tract numbers are changed in the 1990 census. The original survey data used 1980 census tract numbers, and these three census tracts with changed numbers in 1990 are excluded in the analysis. This makes the level-2 units 97 instead of 100.

[6] Under this one-way ANOVA random effect model with total variable of the outcome as $Var(Y_{ij}) = Var(\mu_{0j} + \varepsilon_{ij}) = \tau_{00} + \sigma_e^2$, the ICC is calculated $\rho = \tau_{00} / (\tau_{00} + \sigma_e^2)$ (Raudenbush & Bryk, 2002, p.)

distribution with a mean of 0 and variance of $\pi * \pi /3$ (Raudenbush & Bryk, 2002). Using this model, the intraclass correlation can be computed as $\rho = \tau_{00}/(\tau_{00} + \pi^2/3)$. The ICC measure, with the assumption of the level-1 random effect of standardized logistic distribution, produces 0.251. Since the ICC measures the proportion of total variance in the level-1 characteristic that can be attributed to differences between the level-2 units, census tracts, it will be 0 if individuals within the same census tracts are no more likely to have similar characteristics than individuals in different census tracts. The higher ICC measure implies that more variation in individual characteristics reflects differences between census tracts rather than homogeneous characteristics of individuals within the same census tracts. The intraclass correlations for the membership status of individuals with NWGs (0.251), suggesting that individuals within census tracts share a "slight agreement" on the probability of being a member of NWGs[7].

Further analysis with predictors is conducted and reported in Table 5.6. Inspection of the participation model confirms the differences between participants and non-participants in crime prevention organizations, NWGs. The first model (model 1 in Table 5.6) includes level-1 predictors only, and there are five significant predictors to expect the individual's initial memberships with NWGs. Findings indicate that individuals who are older, living with larger families without young children, are homeowners, and have high incomes of more than $50,000 are more likely to be members of NWGs. The result shows that, as expected in Hypothesis 5.1, the probability of being members of NWGs, implying individuals' willingness to participate in community social control, is explained by stability and resources, even though not all of the predictors show their significance.

[7] An ICC < .20 is considered "slight agreement;" .21-.40 "fair agreement;" .41-.60 "moderate agreement;" .61-.80 "substantial agreement;" and > .80 "almost perfect agreement" (Landis and Koch, 1977).

The impact of homeownership, in particular, is a very strong positive, implying that homeowners are more likely to contribute to the community safety. This can be explained by resources and attachment of homeowners to the community. Unexpectedly, however, employment of an individual shows a negative predictor to membership in NWGs. This might be explained by the lack of time for employed individuals to volunteer due to their role in their professions.

The Chi-square test indicates that the variation between neighborhoods (census tracts) in terms of the membership status of the individual is significant, and model 2 in Table 5.6 introduces neighborhood-related measures and provides a test of Hypothesis 5.2[8]. The impact of individual predictors remains the same when we control the census tract covariates except for the effect of income. The positive impact of high income on an individual's membership with NWGs is diminished when we include neighborhood-related variables. Review of model 2 in Table 5.6 shows the contextual effect on individuals' participation in NWGs, and most of the contextual effects are in their expected ways in Hypothesis 5.2. The impact of crime problems of the neighborhood on individuals' participation in NWGs, including higher assault rates in the neighborhood, is a discouraging factor, as expected (only at the 0.10 level). The rate of residential burglary, however, does not show a significant impact on participation. Residential stability is also a factor of encouragement for the participation of NWGs. The more stable the neighborhoods are the more likely individuals are to be involved in crime prevention organizations like NWGs.

---

[8] In model 1 of Table 5.6, variance components for the slopes of every level-1 predictor across level-2 unit (census tract) are tested and none of the variance components for slopes are significant except the variance components of intercepts (u_0) between level-2 units. Thus, 2-level random intercept model is assessed for model 2 of Table 5.6.

Unexpectedly, however, concentrated disadvantage is an encouraging factor for participation in NWGs, implying that the disadvantaged neighborhood residents are more likely to participate in NWGs. It can be understood that residents of disadvantaged neighborhoods are more likely to be involved. This is an important finding considering the two opposite argument of scholars. Regarding the impact of neighborhood context on social organization, scholars insist that complexity associated with concentrated poverty brings about distrust within the neighborhood and withdrawal from various forms of community activity including collective efficacy and local voluntary associations (Bursik, 1988; Bursik & Grasmick, 1993; Sampson 1985; Sampson & Grove, 1989). However, there is a counter argument that the demand for neighborhood organizations, especially those related to crime prevention may be greater in poor, disadvantaged neighborhoods, and this might amplify involvement in neighborhood organizations in low-income areas (Swaroop & Morenoff, 2006).

The finding of this Chapter that disadvantaged neighborhood residents are more likely to participate in NWGs can be considered as a support for the perspective that the demand for neighborhood organizations amplify involvement in neighborhood organizations (Swaroop & Morenoff, 2006). Further discussion on this matter, however, will be postponed. Whether this positive association between neighborhood disadvantages and higher participation is consistent with the model of membership status change will be discussed after the analysis of membership status change model with NWGs in Chapter 6.

Table 5.6. Conditional Model of Initial Membership in NWGs

		Model 1			Model 2		
		b	(se)	odd ratio	b	(se)	odd ratio
Level 1							
	Intercept	-1.764	(0.100)	0.171**			
	Age	0.149	(0.040)	**1.160****	0.161	(0.034)	**1.175****
	House-size	0.131	(0.053)	**1.140****	0.111	(0.046)	**1.118****
	Children under 6	-0.131	(0.142)	0.877	-0.167	(0.140)	0.847
	Home-ownership	1.116	(0.140)	**3.052****	1.167	(0.130)	**3.211****
	Gender (being male)	0.013	(0.097)	1.014	0.031	(0.086)	1.031
	High-education	0.100	(0.110)	1.105	0.159	(0.102)	1.172
	Race (being White)	0.127	(0.146)	1.135	0.151	(0.135)	1.163
	Married	0.179	(0.109)	1.195	0.151	(0.102)	1.163
	Employed	-0.314	(0.110)	**0.730****	-0.254	(0.100)	**0.776****
	High-income	0.229	(0.115)	**1.257****	0.116	(0.109)	1.123
Level 2							
	Assault rate				-0.027	(0.016)	0.973*
	Residential burglary rate				0.009	(0.018)	1.009
	Concentrated disadvantage				0.608	(0.217)	**1.837****
	Residential stability				0.348	(0.129)	**1.416****
	Immigration concentration				-0.240	(0.138)	0.787*
	Constant				-1.769	(0.098)	0.170**
	Between variance (U_{0j})			0.795			0.673
	Chi for variance (U_{0j})			572.193**			464.942**
	Reliability estimate B0			0.795			0.763

** Significant at 0.05 level.
* Significant at 0.10 level.

Discussion and Conclusion

Studies examining participation in voluntary associations for crime prevention have made important contributions to our knowledge of the factors that affect neighborhood residents' decisions to contribute to their neighborhoods' safety. In addition, participation research has incorporated the contextual effect of neighborhood conditions. However, previous studies are limited because they do not consider the neighborhood's contextual impact on an individual's decision to participate. Building from this work and applying a methodologically superior type of multilevel framework, this paper contributes to the literature on participation research by applying a multilevel

framework and examining different dimensions of neighborhood contextual effects as well as individual-related factors on participation.

The emphasis on the neighborhood contextual effects stems from the fact that neighborhood contexts affect individuals' decision on their contribution to the neighborhoods' commonwealth. The test of individual-related factors stems from the inquiry to test whether the specified impact of individual-related characteristics is still the same in consideration of the contextual impact of the neighborhood. Stemming from prior studies, two hypotheses are developed: (1) participation on NWGs will be explained by showing how higher stability, attachment, and resources of individuals increase participation in NWGs; (2) contextual effects from the neighborhood will further explain the residents' participation with NWGs. These hypotheses are tested by analyzing the 1990 Seattle telephone survey data (Miethe, 1991) with census and crime statistics. In support of the first hypothesis, I found that individuals who are older, unemployed, with high income, are homeowners, and are living in bigger households are more likely to be members of NWGs.

An unexpected finding on the positive impact of unemployment on the membership in NWGs is revealed, and the lack of time for employees might be the reason for this. When the focus turns to neighborhood contextual effects, I found that individuals living in more residentially stable neighborhoods and having lower crime rates of assaults are more likely to participate. In contrast to the hypothesis, however, living in disadvantaged neighborhoods makes individuals more likely to join NWGs. It seems that living in disadvantaged neighborhoods makes individuals more likely to

participate, and this can be understood as residents' attempt to defend their own neighborhood.

By and large, the study's findings lend support for the neighborhood's contextual effects. In addition, at the individual level, most of the results are still in accord with the previous studies even with neighborhood-level predictors. The finding of concentrated disadvantage of communities is contrary to what I expected. What accounts for the opposite finding, regarding the contextual impact of neighborhood disadvantages, needs further consideration. The association between more serious concentrated disadvantage and individuals' participation in NWGs, however, is understood with the thought of individuals' efforts to defend their own neighborhoods when they reside in the disadvantaged neighborhoods.

In conclusion, this study suggests that separating the neighborhood's contextual impacts yields a more complete understanding of the effects of the neighborhood as well as individual characteristics on individuals' decisions to participate in crime prevention organizations like NWGs. In particular, the positive impacts of concentrated disadvantage on individuals' participation further our understanding on the process by which individuals' contribution to their neighborhood can result in the prevention of crime.

Chapter 6. Membership Status Change with NWGs

Introduction

Scholars have specified that there is a reciprocal relationship between crime and social control (Bursik & Grasmick, 1993), but previous studies focus exclusively on the impact of social control on crime problems of communities. High crime rates in the community itself can produce a decline in the community's social capital (Kawachi, Kennedy, & Wilkinson, 1999). Skogan (1986, 1990) also identified a number of factors that contribute to declining social capital in the community; fear of crime, for instance, can cause physical and psychological departure from community life, thus resulting in fewer opportunities for local networks. In sum, there is a great deal of research on the effects of community organization on crime and relatively little on the effects of the crime on community organization, despite the acknowledgement of the impact of crime on social capital in communities.

Previous studies on the impact of crime on community decline have made important contributions to understanding the role of crime on social control. Although important advances have been made, most studies examining links between social contexts and an individuals' participation in social control are cross-sectional, which cannot incorporate the theoretical arguments of "change;" that is, a change in an individual's participation in social control is held to produce significant implications for the neighborhood's ability to control problems including crime and other social ills. This gap in research is notable because the understanding that makes individuals change their

involvement in activities of social control in their neighborhoods is important to understand how to keep them participating with full effectiveness.

This study examines whether crime victimization and social context change an individual's decisions regarding involvement in social control. The study also examines different types of change in an individual's involvement in social control that have not been examined in previous research. Motivations to join crime prevention associations in neighborhoods, such as NWGs, will be different from reasons to leave those organizations. In addition, models that explain why individuals change their involvement with neighborhood organizations for social control might be different from those models that explain why they keep that involvement. This study examines whether or not there is any difference between models to predict dissimilar types of changes of membership status over time.

The appropriate method to test this is a multinomial logit model via Hierarchical Generalized Linear Models (HGLM; Raudenbush & Bryk, 2002, p. 325-333). The four possible outcomes of change of membership status with NWGs over time are: (1) was not a member and currently is not a member, (2) was not a member but currently has become a member, (3) was a member but currently is not a member, and (4) was a member and has current membership as well. Since the HGLM treats the highest score as the reference category for logistic contrasts, this variable was reversed in the analysis. So, the category of "was not a member and currently is not a member" becomes the reference category and provides the contrast for the three other types of membership status changes.

Theoretical Background – Literature Review

Research on the participation in voluntary organizations including NWGs has focused exclusively on the examination of motivations for participation with individual-level predictors. More recently, individuals' joining voluntary associations has been studied with the contextual impact of neighborhoods where they live, and this new direction is rooted in the perspective that different conditions of neighborhoods will affect the effectiveness of the voluntary associations within the neighborhoods. The expectation that the condition of neighborhoods also affects the individuals' decisions regarding involvement in voluntary organizations is practical, but this has been rarely tested. In addition, the challenge, to date, is to successfully identifying what contextual factors influence the effectiveness of the voluntary associations. It is assumed that the success of voluntary organizations is negatively impacted if the neighborhoods are disadvantaged (Bursik, 1988; Bursik & Grasmick, 1993; Sampson 1985; Sampson & Grove, 1989).

Regarding the impact of neighborhood context on social organization, scholars insist that complexity associated with concentrated poverty brings about distrust within the neighborhood and withdrawal from various forms of community activity including collective efficacy and local voluntary associations (Bursik, 1988; Bursik & Grasmick, 1993; Sampson 1985; Sampson & Grove, 1989). In spite of the coherence of this argument, empirical research shows inconsistent results. There is a counter-argument that the demand for community organizations, especially those related to crime prevention may be greater in poor, disadvantaged communities, and this might amplify involvement in neighborhood organizations in low-income areas (Swaroop & Morenoff, 2006). The

theoretical framework of this argument has not yet been tested thoroughly with empirical evaluations (Swaroop & Morenoff, 2006). These unresolved issues are examined in the current Chapter.

In general, studies discuss two types of reasons for individuals joining a voluntary organization: altruism and personal reasons. It is revealed that the altruistic reasons (e.g., a sense of solidarity or helping disadvantaged people to have hope and dignity) are important for the motivation of volunteering (Hwang, Grabb, & Curtis, 2005; Knoke, 1986). A study by Clary, Snyder, and Stukas (1996) also confirms that altruistic reasons are ranked as the most important reasons for why citizens engage in voluntary activities, above self-oriented motivations such as personal development, social rewards, and career enhancement, including learning.

In addition to these two theoretical motivations, previous studies also focus on the different characteristics of participants in voluntary organizations compared to non-participants. In the study of participation, background variables of households or individuals are often examined, and the impact of unstable, time-varying, or situation-varying conditions were rarely tested compared to background variables of households or individuals. Age, gender, race, income, and family structure are examples of background variables, and these contributions rarely or never change over time. The previous literature reveals that participants are more likely to be homeowners, highly educated, and better off in their socioeconomic status (Greenberg, Rohe, & Williams, 1985; Whitacker, 1986). In contrast, perceptions of neighborhood safety or welfare, crime, or community disorder are unfixed, time-varying or situational factors. Much research is confined to analysis of the relationship between involvement in organizations and

background variables such as age, education, income, marital status, gender, and race (Culter, 1976; Knote & Thompson, 1977; Hanks & Eckland, 1978; Klobus-Edwards, Edwards, & Klemmack, 1978; Hanks, 1981).

More recently, studies on this topic have turned to a focus on the link between crime victimization and organizational participation (Marschall, 2004; Sampson & Grove, 1989; Sampson, 1988). Participation in general organizations is negatively associated with crime victimization such as personal violence, burglary (Sampson & Grove, 1989) or auto theft (Sampson, 1988). A study by Sampson (1988) also found that organization and committee meetings at the community level predict lower victimization rates in communities. A study by Marschall (2004) also connected the reasons for citizens to participate in public-safety related activities – talking to friends, contacting officials, and attending meetings – with neighborhood conditions and individual characteristics. Data from the 1989 Detroit Area Study was used in a large-scale survey of individuals residing in the tri-county (Macomb, Oakland, and Wayne) Detroit metropolitan area. Marschall (2004) found that individuals' victimization experiences only predict contacting officials, but not the other two measures of public safety-related participation. In other words, victims are more likely to contact officials about local crime. One interesting finding of this study is the impact of association membership on the public safety-related activities. Association membership is positively related to all of the three measures. In other words, individuals affiliated with associations are more likely to talk to friends, contact officials, and attend meetings (Marschall, 2004).

It is reasonable to believe that the reasons for participation in neighborhood organizations for crime prevention might be parallel to those of general voluntary

organizations in neighborhoods. However, at the same time, the magnitude of impact of crime victimization experience might be greater on organizations specifically for crime prevention compared to that on general voluntary organizations. Previous studies on voluntary associations, particularly those for crime prevention, however, did not pay attention to the motivation of participants.

The importance of considering the impact of crime on participation is discussed in the previous literature, and there are two contrasting arguments for the impact of crime on participation (Berkowitz, 2000; Perkins, Hughey & Speer, 2002; Wandersman & Florin, 2000). Scholars expect that crime experience of residents can either motivate (Berkowitz, 2000; Wandersman & Florin, 2000) or discourage engagement with neighborhood organizations (Saegert & Winkel, 2004). A study conducted by Saegert and Winkel (2004) reveals the chilling effect of crime on participation at the building level. In particular, this study reveals that both (1) individual reports of building crimes and (2) building crimes have a negative impact on individuals' participation in informal social control.

Building from these previous studies, there is a need for replication research to examine the impact of the residents' victimization on their decision to join crime prevention organizations. In addition to the motivations of joining voluntary associations, in particular those for crime prevention, what makes individuals leave or stay in the organization also needs to be examined for a better understanding of the dynamics of residents' involvement in crime prevention. Furthermore, since previous evaluations express concerns about the difficulties of maintaining participation levels in neighborhood crime prevention programs (Bennett & Lavrakas, 1988; Garofalo &

McLeod, 1986; Rosenbaum, 1987), research examining all membership status changes – initiation, renewal, and termination – is required.

The impact of crime on an individual's decision to change his or her involvement with crime prevention associations, NWGs, is assessed in the current study. The impact of individual crime victimization experience of property and personal crime, one's perception of neighborhood safety, and the crime problems of neighborhoods will all be assessed for their impact on the involvement status change with NWGs. There is a need to differentiate the impact of individuals' experiences of crime and victimization from the concern and perception of crime problems in neighborhoods. Lavrakas and Herz (1982) differentiate the two and conclude that perception of crime and fear is not a motivation to participate in crime prevention associations; however, the concern of crime as a neighborhood social problem is related to their willingness to participate (Lavrakas & Herz, 1982).

In addition, the impact of neighborhood crime has also been studied by several scholars with no consistent results and will be tested in the current study. Most literature shows that local and related schemas can function as a vehicle for mobilization (Lewis, Grant & Rosenbaum, 1988), can strengthen social ties (Taylor, 1996), or can create more participation opportunities for civic-minded citizens (Lavrakas & Herz, 1982). This positive impact of crime on community social involvement is revealed at both the street block level (Perkins et al., 1996) and at the neighborhood level (Taylor, 1996). In contrast, however, some studies show evidence of nullification of this positive relationship of crime victimization to participation. For instance, Geis and Ross (1998) specified that residents of urban areas with high poverty rates report greater disorder in the

neighborhood, and this neighborhood disorder heightens the perceived powerlessness of residents.

Other studies reveal that the impact of crime and victimization on a community is dependent on the types of crimes. Bellair (2000) used the victimization data from Seattle (Miethe, 1991) and examined two other types of instrumental helping – watching a neighbor's house or having a neighbor watch your home – which he termed as informal surveillance. He examined the impact of crime and victimization on this informal surveillance and concluded that it depends on the types of crime. Violent crime depresses residents' informal surveillance, while burglary encourages it. This complex, contingent relationship is emphasized by several studies with different methodological orientations including ethnographic (Bourgois, 1996; Pattillo, 1998; Simon & Burns, 1997), qualitative (Podolefsky, 1983; Taylor, 2001) and even quantitative methodologies (Browning, Feinberg, & Dietz, 2004). With consideration of the effects of the different types of crime-related factors – individual experiences of crime victimization of both property and personal crime, individuals' perception of neighborhood safety, and crime problems of neighborhoods from the local police department data – the current study provides a better assessment on the impact of crime on individuals' involvement in neighborhood crime prevention associations, NWGs.

Statement of Research Hypotheses

The current study tests three sets of hypotheses pertaining to the predictors of changes in involvement in social control, in other words, membership status change in neighborhood crime prevention associations, NWGs. Data from the 1990 telephone

survey in Seattle, Washington (Miethe, 1991), the 1990 census, and the crime statistics from the Seattle Police Department are used. The four possible outcomes of changing involvement in social control are initiation, termination, keeping continuous membership, and keeping non-membership. It is expected that these different types of changes of involvement in social control will show distinctive models. The three sets of hypotheses will be tested using individual-related as well as neighborhood characteristics to show differences between dissimilar types of change in individuals' involvement in social control.

(1) Hypotheses for the Model of Continuous Membership with NWGs

The first set of hypotheses is developed to assess the model of constant involvement in neighborhood social control. The first hypothesis is developed to predict what makes individuals **keep their continuous memberships** with NWGs over time. Hypothesis 6.1, in particular, is suggested to test the impact of individual- and household-related factors, and Hypothesis 6.2 is intended to assess the impact of neighborhood conditions on individuals' constant involvement in neighborhood social control.

> *Hypothesis 6.1*: The individuals' decision to continue their engagement in NWGs will be explained by attachment and stability. I hypothesize that continuous membership with NWGs will be associated at individual- and household-related factors (level-1 predictors) such as being older; living in a bigger house; having young children in the house; being a homeowner; being female; receiving more than a high school education; being White; being married; being employed; having a high income; and/or having stayed in the community longer.

Hypothesis 6.2: Community conditions will also differentiate individuals' decisions to keep their membership with NWGs. Specifically, community conditions of less disadvantaged, smaller concentration of immigrants, and/or higher stability will be positively associated with residents' decision to keep their continuous membership with NWGs.

The next hypotheses are introduced to examine the impact of crime, and I expect that crime negatively affects individuals' decisions to keep their continuous memberships with NWGs. Crime victimization (Hypothesis 6.3) and individuals' perceptions of neighborhood safety (Hypothesis 6.4) are included as independent variables to examine how these two influence residents' decisions to keep their continuous involvement in NWGs. In addition to the impacts of individual-level related crime victimization, the impact of neighborhood-level crime problems will be tested (Hypothesis 6.5) for its role in residents' constant involvement with crime control activities within their neighborhoods, involving NWGs.

Hypothesis 6.3: Crime victimization experience, both personal and property crime, will be negatively associated with individuals' decisions to continue their involvement with NWGs over time. It is expected that victims of personal and property crime are less likely to stay in NWGs.

Hypothesis 6.4: Subjective perception of neighborhood safety will also be negatively associated with individuals' continuation of involvement in NWGs. The more individuals feel their neighborhood is unsafe, the less they are likely to stay in NWGs.

Hypothesis 6.5: Higher crime rates of neighborhoods will be negatively associated with individuals' decisions to continue their involvement with NWGs. The higher the crime rates, the less likely residents are to stay in NWGs.

(2) Hypotheses for the Model of Initiation of Membership with NWGs

The second set of hypotheses is developed to assess the individuals' decisions to **initiate** their involvement with NWGs. Hypothesis 6.6 is suggested to test the impact of individual- and household-related factors, and Hypothesis 6.7 is intended to test the impact of social context. Individuals' decisions to join NWGs will be governed by attachment and resources, similar to the model for individuals' decisions to keep their memberships with NWGs. It is expected that individuals' decisions to join NWGs are associated with the availability of resources and motivation to develop attachment to the neighborhood.

Hypothesis 6.6: Individuals' decisions to initiate their involvement with NWGs will be explained by resources and their attachment to the community. I hypothesize that joining NWGs will be associated at individual- and household-related factors (level-1 predictors) including being older; living in a bigger house; having young children in the house; being a homeowner; being female; receiving more than high school education; being White; being married; being employed; having a high income; and/or having stayed in the community longer.

Hypothesis 6.7: Neighborhood conditions will also differentiate individuals' decisions to join NWGs. Specifically, neighborhood conditions of less disadvantaged, less concentration of immigrants, and/or higher stability will be associated with residents' decisions to join with NWGs.

The next hypotheses are introduced to examine the impact of crime, and I expect that crime is negatively associated with individuals' decisions to initiate their involvement with organizations for neighborhood crime prevention. Individuals' experiences of crime victimization (Hypothesis 6.8) as well as their perception of neighborhood safety (Hypothesis 6.9) are expected to have a negative impact on joining NWGs. In addition to the impacts of individual-level related crime victimization, neighborhood-level crime problems (Hypothesis 6.10) affect residents' decisions to be involved with crime control activities within their neighborhoods.

Hypothesis 6.8: An individual's crime victimization experience will hinder one's initiation of membership with NWGs.

Hypothesis 6.9: Subjective perception of neighborhood safety will also be negatively associated with individuals' decisions to join NWGs.

Hypothesis 6.10: Higher neighborhood crime rates will be negatively associated with individuals' initiation of involvement with NWGs.

(3) Hypotheses for the Model of Termination of Membership with NWGs

The third set of hypotheses is developed to assess individuals' decisions to **leave** their involvement with NWGs. Hypothesis 6.11 is suggested to test the impact of individual- and household-related factors, and hypothesis 6.12 is intended to test the impact of social context. Individuals' decisions to leave NWGs will be governed by lack of attachment and resources as well as those individuals losing reasons to contribute to the common good of their neighborhoods.

Hypothesis 6.11: I hypothesize that leaving NWGs will be associated with individual- and household-related factors (level-1 predictors) including being

younger, living in a smaller house; having no young children in the house; living in a rented house; being male; receiving less than a high school education; being non-White; being single; unemployed; having a lower income; and/or having stayed less time in the community.

Hypothesis 6.12: Neighborhood conditions will differentiate individuals' decisions to leave NWGs. Specifically, neighborhood conditions of more disadvantaged, more concentration of immigrants, and/or less residential stability will be associated with residents' tendency to leave neighborhood crime prevention organizations, NWGs.

The following hypotheses are introduced to examine the impact of crime, and I hypothesize a positive impact of crime on individuals' decisions to leave NWGs. Individuals' experiences as victims of crime (Hypothesis 6.13) and their negative perception of neighborhood safety (Hypothesis 6.14) will have a positive impact to end residents' involvement in NWGs. In addition to the impacts of individual-level related crime victimization, community-level crime problems (Hypothesis 6.15) affect residents' decisions to stop their efforts for crime control activities within their communities, involving NWGs.

Hypothesis 6.13: An individual's crime victimization experience will support one's decision to leave NWGs.

Hypothesis 6.14: Subjective perception of neighborhood safety will be also positively associated with individuals' discontinuation of their involvement in NWGs.

Hypothesis 6.15: Higher neighborhood crime rates will be positively associated with individuals' decisions to stop their involvement with NWGs.

Data and Measures

To examine what makes individuals change their membership status with NWGs, information on 5,302 individuals nested within 100 census tracts is used. Only one person is interviewed per a household. The dependent variable is individuals' membership status changes with NWGs. The frequency distribution of individuals' membership status change is shown in the descriptive statistics of Table 6.1. Most individuals did not change their membership status; around 18% of individuals consistently keep their membership of NWGs, while over 70% of individuals have never been associated with NWGs. A total of 10.3% of individuals change their membership with NWGs within the two-year time frame. Termination of membership with NWGs is more popular than initiation of membership. Around three percent of current members in NWGs (3.3 %, N = 172) were not members of NWGs two years prior to the survey. In contrast, seven percent of the respondents (7 %, N = 370) terminated their membership with NWGs.

Table 6.1. Descriptive Statistics

Variable	Description	Mean	S.D.	Range
Individual-Level Variables				
Respondents in the telephone survey				
N = 5,302 individuals				
Membership status change with NWGs		(*f*)	(%)	
	1 = initiation	370	7.0	
	2 = termination	172	3.3	
	3 = keeping membership	942	17.9	
	4 = never a member	3780	71.8	
Victimization at the current address (window period: 2yrs)				
Personal victimization (assault & mugging)	1 = yes, 0 = no	.03	.16	0-1
Assault	1 = yes, 0 = no	.02	.15	0-1
Mugging	1 = yes, 0 = no	.01	.08	0-1

Variable	Description	Mean	S.D.	Range
Property victimization (burglary, larceny & auto theft)	1 = yes, 0 = no	.31	.46	0-1
Burglary	1 = yes, 0 = no	.13	.34	0-1
Household larceny	1 = yes, 0 = no	.08	.27	0-1
Motor vehicle theft within 4 blocks	1 = yes, 0 = no	.17	.38	0-1
Perception of neighborhood safety	1 = very safe 2 = somewhat safe 3 = somewhat unsafe 4 = very unsafe	2.10	.75	1 - 4
Household SES				
High income (>$50,000)	1 = yes, 0 = no	.19	.39	0 - 1
Homeowner	1 = yes, 0 = no	.65	.48	0 - 1
College education	1 = yes, 0 = no	.71	.46	0 - 1
Household Composition/Lifestyles				
Age	Ordinal 1 = 17-19 2 = 20-29 3 = 30-39 4 = 40-49 5 = 50-59 6 = 60-69 7 = 70 +	4.36	1.72	1 - 7
Gender	1 = male, 0 = female	.50	.50	0 - 1
Marital status	1 = married/cohabited 0 = single/divorced/widowed	.55	.50	0 - 1
Household size	Number of people currently living in home (5 = 5+)	2.35	1.71	1 - 5
Presence of young children	1 = yes, 0 = no	.13	.34	0 - 1
Race				
White	1 = yes, 0 = no	.85	.36	0 - 1
Residential duration	Length of residence in the current house in years (10 = 10+)	6.34	3.63	0.08 - 10
Neighborhood Crime Problems The Seattle Police Department N = 100 census tracts				
Assault rate 1990	Official assault rates per 1,000 in census tract	9.56	11.40	0 - 61.97
Residential burglary rate 1990	Official residential burglary rates per 1,000 in census tract	15.57	8.52	1.34 - 42.31
Neighborhood Conditions The 1990 census N = 100 census tracts				
Concentrated disadvantage	z-score loadings from percentages of person below poverty, who receive public assistance, female headed households with children, individuals who are unemployed, and persons of Blacks	0	1	-1.02 - 3.43
Immigration concentration	z-score loadings from percentages of Hispanics and foreign-born	0	1	-1.33 - 4.18

Variable	Description	Mean	S.D.	Range
Residential stability	z-score loadings for percentages of residents who have lived in the community longer than 5 years and of homeowners-occupied housing units	0	1	-3.45 - 1.87

Of interest is the impact of crime victimization on individuals' membership status that changes with NWGs. Of the two types of crime victimization experiences, property victimization is more common than personal crime victimization. Almost 30% of respondents experienced property victimization in the past two years, while about 3% of respondents experienced personal crime. Assault and mugging are included in personal victimization, and burglary, larceny, and auto theft within four blocks of their house are included in property victimization. In addition to these actual experiences with crimes, individuals' perceptions of neighborhood safety are also examined to determine their roles in the change of membership status within NWGs, as specified in the hypotheses. Residents' perception of neighborhood safety is measured as a likert scale (1 to 4, 1= very safe, 4= very unsafe), and the average is 2.10 (2= somewhat safe).

The socioeconomic status of individuals is measured by household income, homeownership, and the years of education of the respondents. Their socioeconomic status is generally good. About 65% of respondents are homeowners, and 71% have received some college level education. In addition, about 19% of individuals have a household income over $50,000[9]. Measures of household composition and life-style are also considered, such as age, gender, marital status, household size, and the presence in the household of a child older than the age of 6. The average age of the respondents is in

[9] The 1989 Washington State median income was $31,183 (census 1990).

their 40s, and the sample is well balanced in gender composition. About 55% are either married or cohabitating, and the average number of persons who live in the household is 2.4. Not many households (13%) have a child under 6. Most respondents are White (85%), and the average length of residence at their current addresses is about six years (6.34 years).

In regard to the level-2 variables, neighborhood conditions including crime problems are considered. For the crime problems of neighborhoods, assaults and residential burglaries are considered. The average rate of assaults per 1,000 residents in a community is 9.56, and the rate of residential burglary is 15.57[10]. To gauge the impact of social context, three variables are created from the 1990 census: concentrated disadvantage, residential stability, and immigration concentration. The outcome of factor loading patterns for these three variables is presented in Table 5.3. The z-scores for the percentage of persons below poverty, persons who receive public assistance, female headed households with children, individuals who are unemployed, and Black persons are averaged to create a measure of concentrated disadvantage. Residential stability is measured from the averaged z-scores of the percentage of residents who have lived longer than five years in the community and the percentage of owner-occupied housing units. The z-scores for the percentage of Hispanics and those of foreign-born residents are averaged to create a variable of immigration concentration.

[10] For both assaults and residential burglaries, averages of crime rates between 1989 and 1991 are calculated and included in the analysis models. Official crime rates for burglaries, for example, are calculated by averaging the number of residential burglaries known to the police in each tract between 1989 and 1991, dividing by the 1990 population, and then multiplying by 1,000. Using the averaged crime rates between 1989 and 1991 is methodologically superior to the use of one year, 1990, and this is one way to minimize the impact of random fluctuation and provide more reliable measures (Bellair, 2000).

Analytic Strategy

Due to the multilevel data structure and the use of a nominal outcome variable, I used Hierarchical Generalized Linear Modeling (HGLM), which incorporates a unique random effect into the statistical model for each community and produces more robust standard errors than non-hierarchical models (Raudenbush & Bryk, 2002). Treating the "never a member with NWGs" in the responses to the membership status change as the reference category, the multinomial logit model constructed three independent binary contrasts. In other words, three independent logit models are produced. The first examines the odds of "initiation" of membership with NWGs relative to "never involved in NWGs" (Contrast 1: initiation of membership with NWGs), the second examines the odds of "termination" of the membership with NWGs vs. "never involved in NWGs" (Contrast 2: termination of the membership), and the third examines "keeping" the membership with NWGs vs. "never involved in NWGs" (Contrast 3: keeping membership). HGLM reports a test of the ecological variation for each contrast to gauge whether the variations between neighborhoods are significant beyond what would be expected from sampling variation. The HGLM ANOVA model with no predictors indicated significant between-neighborhoods variations for the first and third contrasts, but not for the second contrast. As a result, no level-2 predictors were included in the model for the second contrast, the termination of the membership in NWGs[11].

[11] All the predictors are grand mean centered for the analysis.

Table 6.2. Unconditional Model of Membership Status Change with NWGs

Fixed effects	coefficient	se	t ratio	odds ratio	p-value
For contrast 1, Intercept, π_{00} (1)	-2.499	0.114	-21.955	0.082	< 0.001
For contrast 2, Intercept, π_{00} (2)	-3.101	0.095	-32.720	0.045	< 0.001
For contrast 3, Intercept, π_{00} (3)	-1.807	0.142	-12.715	0.164	< 0.001
Random effects	**variance components**	**df**	**x^2**	**p-value**	
For contrast 1, Intercept, u 0 (1)	0.821	96	317.843	< 0.001	
For contrast 2, Intercept, u 0 (2)	0.139	96	113.814	0.104	
For contrast 3, Intercept, u 0 (3)	1.667	96	898.615	< 0.001	
The maximum number of level-1 units: 5147					
The maximum number of level-2 units: 97[12]					

Results

Bivariate correlations between individuals' membership status change in NWGs and individual-level predictors are presented in Table 6.3. The results indicate that multicollinearity is not a concern because of the moderate Pearson's correlation values. The highest correlation is observed between household size and the presence of young children in the household (Pearson's r = 0.493). OLS regression diagnostics provide additional evidence that multicollinearity is not a problem. All of the tolerance statistics for independent variables are equal to or greater than .438, and all of the VIFs are equal

[12] Originally, the number of level-2 units, census tracts, is 100. However, three census tracts (census tracts number 40, 68, and 69) are excluded in the analysis because their tract numbers changed in the 1990 census. The original survey data used 1980 census tract numbers, and these three census tracts with changed numbers in 1990 are excluded in the analysis. This makes the level-2 units 97 instead of 100.

to or less than 2.285. Bivariate correlations also run with level-2 predictors (see Table 6.3 bottom), and the highest correlation is observed between assault rate and concentrated disadvantage (Pearson's r = 0.767). For the level-2 variables, multicollinearity is checked with several variables including assault rate, residential burglary rate, concentrated disadvantage, stability, and immigration concentration, and no VIF is above 1.4 and no tolerance is below 0.298.

Table 6.4 is provided for the examination of membership status change with NWGs. In the same way as the previous analysis of initial membership status with NWGs, the multinomial logit is run with only individual- and household-related factors excluding crime victimization (model 1 in Table 6.4). Then, the model with all individual- and household-related variables including crime victimization experience and perception of neighborhood safety is examined (model 2). Lastly, the model with all individual- and household-related factors as well as neighborhood-related variables is examined (model 3). Assessment of these models confirms the differences among models for initiation, termination, and keeping continuous involvement in NWGs. The hypotheses are tested, and the results are presented and discussed in the following section.

Table 6.3. Bivariate Correlations between Variables

Correlation between level-1 measures

	(1) Age	(2) House Size	(3) Young child	(4) Home owners	(5) Gender	(6) Educated	(7) Race	(8) Married	(9) Employed	(10) High Income	(11) Residence	(12) Neighborhood Safety	(13) Personal Victim	(14) Property Victim	(15) Previous Member	(16) Current Member
(1)	1.000															
(2)	-0.279**	1.000														
(3)	-0.248**	0.493**	1.000													
(4)	0.343**	0.144**	0.058**	1.000												
(5)	-0.077**	0.025	-0.020	-0.013	1.000											
(6)	-0.162**	0.052**	0.041**	0.004	0.038**	1.000										
(7)	0.046**	-0.133**	-0.042**	0.066**	-0.026	0.031*	1.000									
(8)	-0.018	0.444**	0.273**	0.296**	0.107**	0.064**	0.050**	1.000								
(9)	-0.481**	0.114**	0.081**	-0.142**	0.201**	0.138**	-0.025	0.053**	1.000							
(10)	-0.088**	0.176**	0.116**	0.225**	0.076**	0.148**	0.064**	0.288**	0.155**	1.000						
(11)	0.615**	-0.049**	-0.140**	0.477**	-0.089**	-0.096**	-0.001	0.069**	-0.326**	0.002	1.000					
(12)	-0.060**	-0.042**	0.000	-0.132**	-0.057**	-0.024	-0.031*	-0.059**	-0.007	-0.082**	-0.048**	1.000				
(13)	-0.036**	-0.032*	-0.014	-0.118**	0.015	-0.022	0.003	-0.067**	0.012	-0.044**	-0.051**	0.159**	1.000			
(14)	-0.171**	0.100**	0.083**	-0.009	0.042**	0.023	0.025	0.047**	0.139**	0.063**	-0.077**	0.184**	0.065**	1.000		
(15)	0.168**	0.069**	-0.001	0.261**	-0.002	-0.012	0.011	0.119**	-0.104**	0.084**	0.244**	-0.037**	-0.036**	-0.014	1.000	
(16)	0.137**	0.087**	0.045**	0.292**	0.004	0.006	0.029*	0.153**	-0.063**	0.098**	0.195**	-0.013	-0.033*	0.006	0.714**	1.000

Correlation between level-2 measures

	(1) Assault rate[a]	(2) Residential burglary rate[a]	(3) Concentrated Disadvantage	(4) Residential stability	(5) Immigration concentration
(1)	1.000				
(2)	.729**	1.000			
(3)	.767**	.710**	1.000		
(4)	-.485**	-.455**	-.334**	1.000	
(5)	.352**	.314**	.525**	-.222*	1.000

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

[a] All of the crime rates are calculated with rates per 1,000.

(1) Prediction of Continuous Membership with NWGs

The inspection of continuous membership in Contrast 3 of Table 6.4 confirms the expected impact of attachment and resources on individuals' decisions to keep their constant memberships with NWGs. Hypothesis 6.1 is partially supported, and most significant predictors show the anticipated impacts even though not all of the predictors

are significant. Findings indicate that stability explains the constant involvement with social control in the neighborhood. Married individuals and those who have stayed in the community longer are more likely to keep their continuous membership with NWGs. As expected, better socioeconomic status also shows a positive impact. Highly educated homeowners are more likely to keep their constant membership with NWGs. However, unexpectedly, unemployed individuals are more likely to keep their membership with NWGs. This might be explained by the fact that the retired or home-staying residents who have more free time than employed individuals are more likely to be steady members with NWGs. However, this positive impact of unemployment disappears when we consider the impact of neighborhoods (model 3).

Model 3 in Contrast 3 (see Table 6.4) introduces neighborhood-related measures and provides a test of the Hypothesis 6.2. Most of the impacts of individual predictors remain the same even after we control the tract covariates except for the employment status. The Chi-square test indicates that the between-neighborhoods variation in the constant membership status of individuals is significant. Review of Model 3 in Contrast 3 (Table 6.4) shows the contextual effect, and most of these contextual effects are as expected in Hypothesis 6.2. Neighborhood characteristics of less concentration of immigrants and higher stability are associated with residents keeping their membership with NWGs. However, concentrated disadvantage of the neighborhood has no impact on individuals' decisions to keep their memberships with NWGs.

Model 2 in Contrast 3 (Table 6.4) introduces crime victimization and perception of neighborhood safety to examine the impact of crime, and it provides the test of Hypothesis 6.3 and Hypothesis 6.4. The crime variables, crime victimization and

perception of neighborhood safety do not show a significant impact on individuals' decisions to keep their constant memberships with NWGs. In addition, neighborhood-level crime problems, assault rate and residential burglary rate have no impact on residents' decisions to keep their continuous memberships with NWGs (see Model 3 of Contrast 3 for the testing of Hypothesis 6.5). Crime problems at the individual level as well as the neighborhood level have no impact on residents' continuous membership with NWGs. In other words, crime at both the neighborhood level and the individual level has no impact on an individual's constant involvement in crime prevention organizations, NWGs.

(2) Prediction of Initiation of Membership with NWGs

The examination of individuals' decisions to initiate their memberships with NWGs is reported in Contrast 1 (Table 6.4). Model 1 in Contrast 1 shows the test of Hypothesis 6.6, the impact of individual- and household-related factors. The initiation of membership with NWGs is explained by resource and stability. Not all of the predictors show significant impact, but the result confirms our expectation in Hypothesis 6.6. Older individuals, homeowners, and the employed are more likely to join NWGs. In addition, the longer they reside in the neighborhood, the more likely they are to join NWGs. The impact of these individual- and household-related factors remains the same when we control the census tract covariates. The role of social context (in other words, the impact of neighborhood-related characteristics) is assessed in model 3.

Model 3 in Contrast 3 (Table 6.4) introduces neighborhood-related predictors and provides the test of Hypothesis 6.7. Residential stability is a significant predictor. Living in a more stable neighborhood is a positive factor for an individual's decision to join

NWGs, and this is expected in Hypothesis 6.7. Other characteristics of neighborhood context, immigration concentration and concentrated disadvantage, however, do not significantly differentiate an individual's decision to join NWGs. Model 2 in Contrast 3 (Table 6.4) introduces crime victimization and perception of neighborhood safety to examine the impact of crime specified in Hypothesis 6.8 and Hypothesis 6.9. Being a victim of crime does not affect an individual's decision to join NWGs, and neither property victimization nor personal victimization experience is significant.

Instead, residents' perception of neighborhood safety affects their decisions to join NWGs. The more individuals feel that their community is unsafe, the more likely they are to join NWGs. In addition to these individual- and household-related crime experiences, neighborhood-level crime also differentiates residents' decisions to join NWGs. In particular, living in a neighborhood with higher residential burglaries is positively associated with an individual's decision to join NWGs. These positive impacts of crime on residents' decisions to join NWGs, however, are not consistent with our expectation from Hypothesis 6.8, Hypothesis 6.9, and Hypothesis 6.10.

I expected that negative experience with crime, in other words, being a victim of crime or having a negative perception of neighborhood safety, would hinder residents' decisions to join NWGs. This expectation is not supported. Instead, individuals who see their neighborhoods are not safe from crime are more likely to join NWGs, even though being victims of crime (either property or personal crime) does not affect individuals' decision to join NWGs. In addition, this analysis of individuals' decisions to join NWGs reveals that living in a neighborhood with a higher residential burglary rate as well as a negative perception of neighborhood safety promotes one's decision to join NWGs.

(3) Prediction of Termination of Membership with NWGs

Inspection of individuals' decisions to leave NWGs is provided in Contrast 2 of Table 6.4. The analysis tests the impact of detachment, the lack of resources, and the loss of individuals' motivation to contribute to the safety of their neighborhoods. Hypothesis 6.11 is tested in Model 1 in Contrast 2 (Table 6.4), and none of the predictors are significant. The Chi-square test indicates that the differences between neighborhoods (census tracts in current study) are not significant. Thus, no neighborhood-level measures are introduced. Model 2 in Contrast 2 introduces the impact of crime and provides a test of Hypotheses 6.13 and Hypothesis 6.14. Individuals' experience of crime victimization, in particular being a victim of property crime, encourages their decisions to leave NWGs. This is exactly our expectation in Hypothesis 6.13. Personal crime victimization, however, does not differentiate individuals' decisions to leave NWGs, and perception of neighborhood safety does not show any impact on individuals' decisions to change their membership status with NWGs as well.

In sum, the analysis provided in Table 6.4 reveals the similarities and the differences between individuals' decisions to join, leave, and continue their involvement in crime prevention organizations, NWGs. Both individual- and household-related variables and neighborhood-related features affect individuals' decisions on involvement in Neighborhood Watch Groups. In particular, the analysis provides evidence of the differing impact of crime, including perception of neighborhood safety, community crime problems and individuals' actual victimization experience.

Table 6.4. Conditional Model of Membership Status Change with NWGs

		Contrast 1 (Initiation)						Contrast 2 (Termination)						Contrast 3 (Keeping constant membership)					
		Model 1		Model 2		Model 3		Model 1		Model 2		Model 3		Model 1		Model 2		Model 3	
	Variable	b (se)	odd ratio	b (se)	odd ratio	b (se)	odd ratio	b (se)	odd ratio	b (se)	odd ratio	b (se)	odd ratio	b (se)	odd ratio	b (se)	odd ratio	b (se)	odd ratio
Level 1	Intercept	-2.606	0.074**	-2.622	0.073**			-3.117	0.045**	-3.136	0.043**	-3.145	0.043**	-2.144	0.117**	-2.145	0.117**		
	Age	0.136 (0.059)	1.146**	0.158 (0.060)	1.171**	0.162 (0.060)	1.176**	0.004 (0.076)	1.021	0.026 (0.077)	1.026	0.025 (0.076)	1.026	0.050 (0.044)	1.052	0.052 (0.045)	1.053	0.054 (0.045)	1.056
	House size	0.081 (0.071)	1.084	0.085 (0.071)	1.088	0.081 (0.071)	1.084	0.095 (0.091)	1.060	0.090 (0.091)	1.095	0.102 (0.091)	1.107	0.069 (0.054)	1.071	0.070 (0.054)	1.072	0.062 (0.055)	1.064
	Young children	0.247 (0.192)	1.280	0.240 (0.192)	1.271	0.250 (0.193)	1.284	-0.295 (0.311)	0.814	-0.301 (0.311)	0.740	-0.308 (0.311)	0.735	0.103 (0.160)	1.109	0.100 (0.160)	1.105	0.109 (0.160)	1.115
	Home-ownership	0.999 (0.173)	2.717**	1.030 (0.175)	2.802**	0.998 (0.177)	2.712**	0.258 (0.220)	1.219	0.261 (0.221)	1.299	0.330 (0.223)	1.391	1.390 (0.169)	4.013**	1.384 (0.170)	3.991**	1.309 (0.170)	3.702**
	Gender (being male)	-0.207 (0.131)	0.813	-0.192 (0.131)	0.825	-0.197 (0.131)	0.821	-0.112 (0.179)	0.896	-0.115 (0.179)	0.892	-0.116 (0.179)	0.891	0.051 (0.099)	1.052	0.053 (0.099)	1.054	0.053 (0.099)	1.054
	High education	0.077 (0.159)	1.080	0.082 (0.160)	1.085	0.109 (0.161)	1.115	-0.203 (0.200)	0.822	-0.198 (0.201)	0.820	-0.192 (0.200)	0.826	0.271 (0.116)	1.311**	0.272 (0.116)	1.313**	0.275 (0.116)	1.317**
	Race (being White)	0.243 (0.204)	1.275	0.207 (0.204)	1.230	0.261 (0.210)	1.298	0.217 (0.261)	1.219	0.198 (0.262)	1.219	0.171 (0.263)	1.187	0.243 (0.155)	1.275	0.239 (0.156)	1.270	0.261 (0.158)	1.298*
	Married	0.236 (0.155)	1.266	0.223 (0.156)	1.250	0.230 (0.156)	1.259	-0.141 (0.206)	0.890	-0.154 (0.206)	0.858	-0.153 (0.206)	0.858	0.280 (0.117)	1.322**	0.276 (0.117)	1.317**	0.270 (0.117)	1.310**
	Employed	0.378 (0.155)	1.460**	0.379 (0.156)	1.460**	0.379 (0.156)	1.460**	-0.173 (0.203)	0.878	-0.197 (0.203)	0.821	-0.196 (0.203)	0.822	-0.192 (0.115)	0.825*	-0.194 (0.116)	0.824*	-0.189 (0.116)	0.828
	High income	-0.091 (0.170)	0.913	-0.083 (0.170)	0.921	-0.067 (0.171)	0.935	0.261 (0.237)	1.328	0.253 (0.238)	1.288	0.269 (0.238)	1.308	0.095 (0.123)	1.100	0.093 (0.123)	1.098	0.091 (0.123)	1.095
	Length of residence	-0.105 (0.024)	0.901**	-0.109 (0.024)	0.897**	-0.109 (0.024)	0.897**	-0.004 (0.033)	1.006	-0.008 (0.033)	0.992	-0.007 (0.033)	0.993	0.156 (0.019)	1.169**	0.156 (0.019)	1.169**	0.155 (0.019)	1.168**
	Perception of safety			0.215 (0.092)	1.239**	0.186 (0.095)	1.204*			0.040 (0.121)	1.041	0.026 (0.122)	1.027			0.007 (0.070)	1.007	0.021 (0.071)	1.021
	Personal victimization			0.416 (0.353)	1.516	0.407 (0.357)	1.503			-0.091 (0.532)	0.913	-0.141 (0.533)	0.869			-0.130 (0.396)	0.878	-0.062 (0.401)	0.940
	Property victimization			0.220 (0.137)	1.246	0.221 (0.137)	1.235			0.433 (0.185)	1.542**	0.425 (0.185)	1.530**			0.030 (0.108)	1.031	0.040 (0.108)	1.041
Level 2	Assault rate					-0.004 (0.016)	0.997											-0.009 (0.018)	0.991
	Residential burglary rate					0.051 (0.020)	1.053**											0.016 (0.021)	1.016
	Concentrate disadvantage					-0.112 (0.231)	0.894											0.408 (0.247)	1.504
	Residential stability					0.304 (0.147)	1.355**											0.501 (0.153)	1.651**
	Immigration concentrate					0.021 (0.147)	1.021											-0.422 (0.161)	0.656**
	Constant					-2.643	0.071**											-2.172	0.114**
Random Effect	Variance	0.704		0.676		0.627		0.156		0.151		0.155		1.247		1.248		1.038	
	Chi square	287.252**		277.293**		243.940**		111.456		109.233		109.681		643.306**		643.761**		513.041**	

** Significant at 0.05 level. * Significant at 0.10 level.

Discussion and Conclusion

The analysis of multinomial logistic regression in HGLM for individual membership changes within NWGs has several important implications. First, it confirms the role of neighborhood-related factors in the explanation of membership status changes within NWGs when we control the impact of individual- and household-related factors. In particular, the models to explain individuals' decisions to join NWGs and to continue membership in NWGs show significant decreases in Chi-square statistics in the third model of each of the two contrasts (the models including neighborhood-related predictors). This significant impact of community-level predictors, however, is not found in the model to explain individuals' decisions to leave NWGs.

Secondly, the analysis confirms the differences between individuals' decisions to change their involvement in neighborhood crime prevention organizations (NWGs in the current study) and to continue their involvement. In particular, the impact of crime is different between individuals' decisions to change their membership with NWGs and those to maintain their membership. Individuals' decisions to change their memberships with NWGs are explained by crime, while their consistent memberships are explained by solidity. Both individual and neighborhood-level crime encourage individuals' decisions to join NWGs. Individuals' negative perceptions of neighborhood safety encourages their decision to join NWGs. In addition, residents living in an area of higher residential burglary crime rate are more likely to join NWGs. When individuals are victims of property crime, however, they are more likely to leave NWGs.

The importance of considering the impact of crime on the motivation for participation is discussed in the previous literature, and there are two opposing arguments for the impact of crime on participation (Berkowitz, 2000; Perkins, Hughey & Speer, 2002; Wandersman & Florin, 2000). Scholars expect that the crime experience of residents can either motivate (Berkowitz, 2000; Wandersman & Florin, 2000) or discourage engagement with neighborhood organizations (Saegert & Winkel, 2004). With methodologically superior models, the findings of the current study provide better understanding of the impact of crime on individuals' engagement with crime prevention organizations in neighborhoods. This study considers individuals' changes in their involvement in crime prevention organizations with different types of crime, and it reveals that negative perception and neighborhood crime motivate individuals to participate in crime prevention organizations. When individuals are victims of crime, however, they tend to leave the crime prevention organizations.

In addition, this impact of crime has disappeared in the model to explain individuals' decisions to keep their constant membership with NWGs. Crime victimization does not affect an individual's decisions to stay in NWGs, and none of the crime-related measures (individuals' perceptions of neighborhood safety, property and personal victimization, and neighborhood crime rates of residential burglary and assault) significantly differentiate residents' decisions to keep their constant memberships with NWGs. The analysis also shows the opposite impact of the length of residence in communities on individuals who change (particularly initiate) memberships and those who keep their membership in NWGs. Joiners are more likely to be short time residents while constant members are more likely to be longer residents of communities.

Thirdly, the analysis confirms the dissimilarities among those who change their memberships. Joiners are different from those who leave NWGs. Joiners of NWGs are older, employed, and homeowners. In other words, attachment explains the joiners of NWGs, while this is not seen in the model for the decision to leave NWGs. The impact of crime also shows the difference between joiners and those who leave NWGs. Perceptions of community insecurity and a higher residential burglary rate in communities promote individuals to start membership with NWGs, while individuals' actual victimization of property crime makes them leave NWGs.

In sum, the analysis confirms the difference between individuals' decisions to change their membership with NWGs and those to keep their membership. In addition, analysis reveals dissimilarities among individuals who change their membership with NWGs (those who join and those who leave NWGs), especially obvious are those who base their decisions on the impact of crime.

Chapter 7. Victimization and Self- and Household-Protective Behaviors

Introduction

Individuals' self- and household-protective behaviors and the impact of crime on these behaviors have earned considerable attention from scholars, and there is some level of consensus on the impact of crime victimization on residents' protective behaviors. Previous studies have examined the relationships among victims of crime, fear of crime, and precautionary behavior or restricted routine activity patterns of victims and have found that victimization increases the fear of crime, which may result in defensive behavior against further victimization (for a review, see Bursik & Grasmick, 1993, p. 90-111). Overall, most studies focus solely on either individual-level predictors of fear of crime and precautionary measures (Baumer, 1985; Clarke & Lewis, 1982; Garofalo, 1979; Stafford & Galle, 1984) or aggregated neighborhood-level predictors (Boggs, 1971; Clotfelter, 1977; Garofalo, 1977). Individuals who live in high-crime areas (Boggs, 1971; Clotfelter, 1977) and who have been victimized by confrontational crimes (Garofalo, 1977) are more likely to show self- and household-protective behaviors. However, these previous studies ignore the connection between individual characteristics and neighborhood context (Lewis & Maxfield, 1980; Skogan & Maxfield, 1981).

One approach in the study of protective behavior that needs particular attention is the examination of the impact of social context as well as the individual crime victimization experience simultaneously. Several questions and issues remain to be resolved in this matter. First, there is the question of the nature of the individuals' protective behaviors for both themselves and their households. Previous studies consider

a number of protective actions, including leaving lights on when people are absent, installing extra locks, carrying weapons, and changing behaviors outside the home, to prevent future victimization. Understanding diverse forms of protective actions requires seeing the similarities and the differences between protective actions. Second, there is a question as to whether previous studies on predictors of self- and household-protective actions provide an adequate test for the influence of individual-level predictors. In particular, we need to examine whether victimization experience and other individual-related characteristics will show the same direction of impact when we consider the neighborhood context.

Third, the impact of crime needs to be assessed with a comparison between objective measure of victimization, subjective perception of neighborhood safety, and crime problems of neighborhoods. There is a considerable discrepancy between actual crime rates and perception of neighborhood safety, even though they are correlated (Taub, Taylor, & Dunham, 1984). Studies also confirm that perception of crime is not only influenced by reality (McPherson & Lockwood, 1980) but also affected by disorderly or uncivil conduct and visible signs of neighborhood housing deterioration (Sampson & Raudenbush, 1999; Skogan, 1990; Taub et al., 1984). The difference between the role of perception of neighborhood safety and victimization in residents' decisions to move out of the community is also specified. The perception of crime, rather than actual crime rates, is more strongly related to residents' decisions to move out of the community (Taub et al., 1984).

The difference between these two measures of individual experience of crime, however, is not thoroughly discussed in the study of individuals' protective behaviors.

The current study examines this issue. In the data, there is a question about the perception of crime within the neighborhood: “Is this neighborhood safe from crime?” In order to differentiate the impact of actual crime victimization and individuals’ perceived crime problems within the neighborhood, this question is included in the model as well. In addition, whether or not neighborhood crime has a distinctive impact on an individual’s decision on protective behaviors is assessed.

Lastly, and most importantly, the current study examines the relationship between household-protective actions and community-protective actions. Previous studies have analyzed aggregated effects of crime on different levels of community protective actions. Yet they have not thoroughly evaluated the effect of crime victimization on an individual’s decision to be involved in community protection; hence, a comparison between individuals’ activities for community protection and their own household protection will be meaningful to examine the similarities and differences between the two protective actions. In addition, different neighborhood conditions will affect individuals’ decisions regarding crime prevention for both the community and their own households. In the current study, a comparison between community-protective actions and household-protective actions is conducted with particular attention paid to the role of individuals’ victimization and neighborhood conditions. I begin by discussing the theoretical background and the hypotheses to be tested. Then, I discuss the data to be used to test these hypotheses and the results of analyses. Finally, the implication of the present study is discussed.

Theoretical Background – Literature Review

Traditionally, crime is understood as one of the reasons why individuals' change their behavior. As such, people often take protective behaviors to avoid victimization by crime. Personal protection is understood as a general form of crime prevention, and avoiding the situations with a high-risk of victimization is the most popular type. In addition to personal protective measures, individuals are also concerned about the protection of their families and physical property, including their house. A house is a private place, and crime against one's house can be considered a psychological violation in addition to a financial loss (Rosenbaum, 1988). Household-protective behaviors have a different nature, but they are also intended to entirely prevent victimization or to reduce the loss from victimization when it is not prevented completely (Rosenbaum, 1988). Preventive measures of households are also divided into the creation of (1) physical barriers to access to home (e.g., locks, alarms) and (2) psychological barriers (e.g., lighting). In particular, target-hardening strategies utilizing locks, alarms, window bars, and other devices have a long history of reducing the probability that a crime can be committed (Rosenbaum, 1988).

There is a study by Rountree and Land (1996) that examines the relationship between crime, fear of crime, and precautionary measures in the context of neighborhood. They revealed the impact of the experience of being a crime victim on an individual's precautionary measures. In their study, the precautionary measure represents individuals' self-protection actions which include locking doors, installing extra locks and window boards, leaving lights on when going out, and joining a crime prevention program. However, there is a need to differentiate self- and household-protection actions, such as

locking doors and installing extra locks, from the collective actions of participation in neighborhood crime prevention programs. The goal of collective actions is to promote the common good of communities as well as the safety of the participants themselves, while mere self-protection rarely considers the common good of communities. In addition, comparison between self-protection and community-protection will show the impact of neighborhood conditions on an individual's decisions regarding protective actions. Residents will not contribute their time and energy to protect their neighborhoods if they cannot expect improvement following their effort and contribution, so in disadvantaged neighborhoods, they might be more likely to be active in self- and household-protective behaviors instead.

Scholars agree that neighborhood conditions have an effect on residents' participation in informal social control, but this issue has been rarely tested with consideration of the impact of crime victimization. The function of Neighborhood Watch Groups differs according to the types of neighborhood due to different social control issues (Garofalo & McLeod, 1989). In disadvantaged neighborhoods, the level of distrust between residents is much higher, and residents are more likely to blame one another than to blame outsiders for criminal activity (Greenberg & Rohe, 1986; Greenberg, Rohe, & Williams, 1982; Taylor, Gottfredson, & Brower, 1981). In other words, Neighborhood Watch functions better in neighborhoods where residents trust each other.

The degree of participation in organized community activities is characterized by the availability and functionality of formed associations, and this availability and functionality is closely related to neighborhood conditions (Skogan, 1990). The positive impact of participation in Neighborhood Watch, however, is important regardless of what

the effects of Neighborhood Watch are on crime (Garofalo & McLeod, 1989). Participation represents individuals' belief in the effectiveness of the program (Garofalo & McLeod, 1989). Neighborhood Watch Groups function as planned in neighborhoods characterized by economic security and social stability (Garofalo & McLeod, 1989). In other words, socially homogenous and stable neighborhoods are conducive to the success of Neighborhood Watch. In contrast, high-crime neighborhoods characterized by social instability and insecure economic status will not provide an optimal environment for the functioning of Neighborhood Watch.

The importance of victimization in neighborhood change has been discussed in previous studies, but rarely in a multilevel or contextual framework with consideration of ecological characteristics. Aggregated studies of victimization are not satisfactory for understanding each household's behavior due to the potential problem of ecological fallacy (Robinson, 1950). In aggregated data of participation in social control, the individuals participating in neighborhood organizations may not be the ones affected by crime. As Xie (2007) specified, focusing only on individual or housing ignores the clustering nature of crime and excludes victimization in near areas. There are a few studies that test the impact of victimization on neighborhood change and confirm the social cost of crime to individuals as well as neighborhoods. Xie (2007) tested the impact of property crime victimization on decisions to move, with special attention paid to the differences among racial groups. Xie found that crime victimization influences the victim's decision to move, and also tends to result in the departure of residents from dwelling units adjacent to the victim. In addition, she examined the exchange of housing units between Blacks and Whites. It was found that Blacks are able to move after a recent

victimization, but their displaced houses are more likely to be in areas with a higher risk of victimization. This study supports my expectation that the effects of individual experience on self- and house-protective decisions are affected by neighborhood context.

Different neighborhood conditions will have a different impact on a victim's decision regarding self- and household-protective actions and collective actions for neighborhood protection. In a community with unstable residents and higher crime rates, there is less opportunity for collective efficacy and fewer channels for participation. In these neighborhoods, participation in collective efficacy will be much more difficult if not impossible. The distinction between self- and household-protective actions and collective actions as functions of crime victims' reaction to victimization is examined in this study with particular attention to neighborhood characteristics.

Statement of Research Hypotheses

The first hypothesis is developed to understand the nature of self- and household-protective behavior. Among the several questions available in the data for individuals' behavior related to self- and household-protective actions, I expect there are differences between several types of protective behaviors. For instance, there is self-protective behavior focusing on the protection of individuals only, household-protective behavior centering on the protection of household members and property, and a mixture of both. In addition, it is possible to distinguish between protective behavior with or without instruments, such as a weapon or a dog. Hypothesis 7.1 is planned to explore the nature of self- and household-protective behaviors.

Hypothesis 7.1: I hypothesize different types of self- and house-protective behaviors that vary according to different aspects such as behavioral changes, using instruments and tools (e.g., weapons and dogs), and changing environmental settings as leaving lights on and locking doors.

The next set of hypotheses examines the predictors of protective behaviors for individuals themselves and their households. Hypothesis 7.2, in particular, tests the impact of individual- and household-related factors, and Hypothesis 7.3 assesses the impact of social context (neighborhood-related factors). I also hypothesize the constancy of precautionary behaviors in Hypothesis 7.4; those who engage in precautionary behaviors tend to continue them.

Hypothesis 7.2: It is expected that fear of crime and value placement on their houses explain an individual's protective actions. I hypothesize that self- and household-protective behavior will be associated with individual- and household-related factors (level-1 predictors) of being older, living in a smaller house, having a young child in the house, being a homeowner, being female, receiving more than a high school education, being White, being married, being employed, having a high income, and/or having stayed in the community longer.

Hypothesis 7.3: Neighborhood conditions will also differentiate individuals' precautionary behaviors for themselves and their households. In particular, neighborhood conditions of more disadvantaged, more concentrated immigrants, and/or lower stability will be associated with residents' self- and household-protective behaviors.

Hypothesis 7.4: Individuals are trying to keep their patterns of protective behaviors over time, and I expect to see a consistency with self- and household-protective behaviors. Individuals' previous activity of self- and household-protective actions will predict their current protective behaviors. In other words, those who were active in precautionary behaviors will be more likely to enact self- and household-protective behaviors.

The following hypotheses are developed to assess the impact of crime on individuals' self- and household-protective behaviors. The idea of victimization effects will be tested to see whether victimization increases the fear of crime, resulting in defensive behavior against further victimization. As we differentiate the impact of objective victimization and subjective perception of neighborhood safety in the analysis of individuals' decisions on involvement in community social control, the same logic is applied here in the test of self- and household-protective behaviors. In addition, the different impact of individual- and neighborhood-level crime will be assessed.

Hypothesis 7.5: An individual's experience of being a victim of either property or personal crime will be positively associated with one's self- and household-protective actions.

Hypothesis 7.6: An individual's negative perception of neighborhood safety will also be associated with individuals' self- and household-protective actions. The more individuals feel that their neighborhoods are not safe from crime, the more they are likely to engage in self- and household-protective behaviors.

Hypothesis 7.7: Neighborhood crime problems will also promote individuals' self- and household-protective actions. Individuals living in areas with high crime rates (especially residential burglaries and assaults) will be more likely to perform protective actions for themselves and their households.

Lastly, we expect to see a relationship between individuals' social control activities for crime prevention in their own neighborhoods and their self- and household-protective behaviors. It is expected that individuals' involvement in social control is positively associated with their household-protective behaviors.

Hypothesis 7.8: Involvement in NWGs (both joiners and constant members of NWGs) will promote individuals' self- and household-protective behaviors. In addition, individuals leaving NWGs will be more likely to engage in household-protective behavior as well. This is due to expected replacement effects. Those who leave the NWGs might be those who are not satisfied with the function of the organizations (e.g., prevention of crimes in their own neighborhoods) thus turn to the application of self- and household-protective behaviors.

Data and Measures

To examine individuals' protective behaviors for themselves and their households, information on 5,302 residents representing their households is used. Of interest is the individuals' behavior regarding self- and household-protection. The frequency distribution of these protective behaviors is shown in the descriptive statistics in Table 7.1. Self- and household-protective behaviors are popular among individuals,

and most respondents adopt at least one type of protective action for themselves and their households. In particular, behaviors of locking doors or keeping the lights on are popular. Almost everyone in the sample locks their doors (99%) and leaves their lights on when they are absent (87%), and more than half of them have an extra lock (59%). Using a weapon or having a dog, compared to locking the doors or leaving lights on, is less popular; five percent of respondents carry a weapon, and around 20-25 percent of them has a dog or a weapon in their homes. Around 50% of individuals increase their safety precautionary activities, and 26% of respondents have changed their outside activities in the past two years.

Table 7.1. Descriptive Statistics

Variable	Description	Mean	S.D.	Range
Individual-Level Variables Respondents in the telephone survey N = 5,302 individuals				
Self- and Household-protective actions				
Composite variables of (1), (2), (3), (4)	sum of yes for 9 items	3.942	1.479	0 - 9
(1)Extra lock, alarm, behavior change		1.56	1.11	0 - 4
Have a extra lock	1 = yes, 0 = no	.59	.49	0 - 1
Have a burglary alarm	1 = yes, 0 = no	.21	.41	0 - 1
Increase safety precaution activity	1 = yes, 0 = no	.49	.50	0 - 1
Change outside activity	1 = yes, 0 = no	.26	.44	0 - 1
(2) Weapons and dogs		.53	.70	0 - 3
Carry a weapon	1 = yes, 0 = no	.05	.21	0 - 1
Have a dog	1 = yes, 0 = no	.23	.42	0 - 1
Have a weapon in home	1 = yes, 0 = no	.25	.43	0 - 1
(3) Lock doors	1 = yes, 0 = no	.99	.11	0 - 1
(4) Leave lights on	1 = yes, 0 = no	.87	.34	0 - 1
Protective actions 2 yrs ago	Number of previous protective actions	2.92	1.18	1 - 7
Lock doors	1 = yes, 0 = no	.95	.19	0 - 1
Leave lights on	1 = yes, 0 = no	.81	.39	0 - 1
Have a extra lock	1 = yes, 0 = no	.46	.50	0 - 1
Carry a weapon	1 = yes, 0 = no	.04	.20	0 - 1
Have a burglary alarm	1 = yes, 0 = no	.13	.34	0 - 1
Have a dog	1 = yes, 0 = no	.28	.45	0 - 1
Have a weapon in home	1 = yes, 0 = no	.25	.43	0 - 1

Variable	Description	Mean	S.D.	Range
Victimization at the current house (window period: 2yrs)				
Personal victimization (assault & mugging)	1 = yes, 0 = no	.03	.16	0 - 1
Assault	1 = yes, 0 = no	.02	.15	0 - 1
Mugging	1 = yes, 0 = no	.01	.08	0 - 1
Property victimization (burglary, larceny & auto theft)	1 = yes, 0 = no	.31	.46	0 - 1
Burglary	1 = yes, 0 = no	.13	.34	0 - 1
Household larceny	1 = yes, 0 = no	.08	.27	0 - 1
Motor vehicle theft within 4 blocks	1 = yes, 0 = no	.17	.38	0 - 1
Perception of neighborhood safety	1 = very safe 2 = somewhat safe 3 = somewhat unsafe 4 = very unsafe	2.10	.75	1 - 4
Household SES				
High income (>$50,000)	1 = yes, 0 = no	.19	.39	0 - 1
Homeowner	1 = yes, 0 = no	.65	.48	0 - 1
College education	1 = yes, 0 = no	.71	.46	0 - 1
Household Composition/Lifestyles				
Age	Ordinal 1 = 17-19 2 = 20-29 3 = 30-39 4 = 40-49 5 = 50-59 6 = 60-69 7 = 70 +	4.36	1.72	1 - 7
Gender	1 = male, 0 = female	.50	.50	0 - 1
Marital status	1 = married/cohabitating, 0 = single/divorced/widowed	.55	.50	0 - 1
Household size	Number of people currently living in home (5 = 5+)	2.35	1.71	1 - 5
Presence of a child under 6 yrs old	1 = yes, 0 = no	.13	.34	0 - 1
Race				
White	1 = yes, 0 = no	.85	.36	0 - 1
Residential duration	Length of residence in the current house in years (10 = 10+)	6.34	3.63	0.08 - 10
Membership with NWGs				
Initiation	1 = yes, 0 = no	0.698	0.255	0 - 1
Termination	1 = yes, 0 = no	0.324	0.177	0 - 1
Constant membership	1 = yes, 0 = no	0.178	0.382	0 - 1
Neighborhood Crime Problems The Seattle Police Department N = 100 census tracts				
Assault rate 1990	Official assault rates per 1,000 in census tract	9.56	11.40	0 - 61.97
Residential burglary rate 1990	Official residential burglary rates per 1,000 in census tract	15.57	8.52	1.34 - 42.31
Neighborhood Conditions The 1990 census N = 100 census tracts				

Variable	Description	Mean	S.D.	Range
Concentrated disadvantage	z-score loadings from percentages of person below poverty, who receive public assistance, female headed households with children, individuals who are unemployed, and persons of Blacks	0	1	-1.02 - 3.43
Immigration concentration	z-score loadings from percentages of Hispanics and foreign-born	0	1	-1.33 - 4.18
Residential stability	z-score loadings for percentages of residents longer than 5 years and of homeowner-occupied housing units	0	1	-3.45 - 1.87

One of the main research questions is the impact of crime on individuals' self- and household-protective behaviors. Of the two types of crime, property victimization is more frequent than personal crime victimization. About 3% of respondents experienced personal crime, while almost 30% experienced property crime victimization. Assaults and muggings are included as personal victimization, and burglaries, larcenies, and auto thefts within four blocks of their house are included as property victimization. In addition to these actual experiences of crime victimization, individuals' perception of neighborhood safety is also examined for its role in the behaviors, as specified in Hypothesis 7.6. Residents' perception of neighborhood safety is measured with a likert scale (1 to 4, 1= very safe, 4= very unsafe), and average is 2.10 (2= somewhat safe).

The socioeconomic status of individuals is measured from the household income, homeownership, and years of education of respondents. Overall, it is observed that the sample has a good standard of living. About 65% of them are homeowners, and 71% of them received some college level education. In addition, about 19% of them have a

household income over $ 50,000[13]. For the household composition and life-style measures, age, gender, marital status, household size, and the presence of a child under the age of 6 are considered. The average age of the respondents is in their 40s, and the sample is well-balanced in gender composition. About 55% of residents are either married or cohabiting, and the average number of persons living in the household is about 2.4. Not many households (13%) have a child younger than 6 years old. Most respondents are White (85%), and the average length of residence in their current house is about six years (6.34 years).

The level-2 variables assess crime problems in neighborhoods and neighborhood conditions. Two variables are included for the crime problems of neighborhoods, assault and residential burglary rates. The average rate of assaults per 1,000 residents in the census tract is 9.56, and the rate of residential burglary is 15.57[14]. To gauge the impact of neighborhood conditions, three variables are created from the 1990 census: concentrated disadvantage, residential stability, and concentration of immigrants. The z-scores for the percentage of persons below poverty, persons who receive public assistance, female headed households with children, individuals who are unemployed, and Blacks are averaged to create a measure of concentrated disadvantage. Residential stability is calculated from the averaged z-scores of the percentage of residents who live longer than five years in the neighborhood and the percentage of owner-occupied housing units. The

[13] The 1989 Washington State median income was $31,183 (census 1990).

[14] For both assaults and residential burglaries, averages of crime rates between 1989 and 1991 are calculated and included in the analysis models. Official crime rates for burglaries, for example, are calculated by averaging the number of residential burglaries known to the police in each tract between 1989 and 1991, dividing by the 1990 population, and then multiplying by 1,000. Using the averaged crime rates between 1989 and 1991 is methodologically superior to the use of one year, 1990, and this is one way to minimize the impact of random fluctuation and provide more reliable measures (Bellair, 2000).

z-scores for the percentage of Hispanics and those of foreign-born residents are averaged to create a measure of immigration concentration.

Analytic Strategy

To examine the nature of the household-protective behaviors, factor analysis and reliability tests are conducted first. Then, the analysis to predict household-protective behaviors is followed. Due to the multilevel data structure and the use of a continuous outcome variable, I use Hierarchical Linear Modeling (HLM), which incorporates a unique random effect into the statistical model for each neighborhood, and produces more robust standard errors than non-hierarchical models allow (Raudenbush & Bryk, 2002). Treating the composite measure of current household-protective behavior as a dependent variable, hierarchical linear models are constructed. Individuals' household-protective behavior models are estimated using HLM 6.06, following three-step analyses: the unconditional one-way ANOVA model, random coefficient model including only individual-level predictors, and the fixed effects full model including both individual- and neighborhood-level predictors simultaneously. All the predictors are grand mean centered for the analysis.

Results

(1) The Nature of Self- and Household-Protective Behaviors

To examine the nature of household-protective actions, factor analysis is conducted. In the original data set, there are nine questions asking individuals' current household-protective behaviors. Factor analysis and a reliability test are performed to

check whether we can consider these variables as one component or not, and the result is reported in Table 7.2. The factor analysis is intended to analyze interrelationships among the nine variables and to explain these nine variables in terms of their common underlying dimensions, or factors. The factor loading patterns (Table 7.2) show that the nine variables of household-protective actions can be grouped into four different latent constructs: (1) extra lock, alarm, and behavior change, (2) utilizing weapons and dogs, (3) keeping lights on, and (4) locking doors. All of these four variables show Eigenvalues higher than 1 and explain 11 to 17 percent of variance. Factor loadings ranged from .452 to .774. The Cronbach's alphas for the two composite variables of (1) extra lock, alarm, and behavior change and (2) weapons and dogs are examined and reported in Table 7.2.

Table 7.2 Factor Loading Patterns for Household-Protective Behaviors

Extra Lock, Alarm, and Behavior Change	
Eigenvalue	1.513
% variance	16.809 %
Cronbach's alpha	0.414
Loadings:	
Have an extra lock (Q116)	0.559
Have a burglary alarm (Q120)	0.464
Increase safety precaution (Q128)	0.617
Change outside activity (Q129)	0.452
Weapons and Dogs	
Eigenvalue	1.226
% variance	13.621 %
Loadings:	
Cronbach's alpha	0.245
Loadings:	
Carry a weapon (Q118)	0.466
Have a dog (Q122)	0.452
Have a weapon in home (Q126)	0.523
Keeping Lights on	
Eigenvalue	1.164
% variance	12.933 %
Loadings:	
Leave lights on (Q112)	0.507
Locking Doors	
Eigenvalue	1.020
% variance	11.330 %
Loadings:	
Lock doors (Q110)	0.774

The relatively low Cronbach's alpha for the factor-loaded variables leads us to the possibility of using one composite variable for all of the nine items measuring individuals' household-protective actions. Correlations between the one composite variable from all of the nine items and the four construct variables are examined and reported in Table 7.3. As expected, the one composite variable with the nine items is significantly correlated with all of the four factor-loaded constructs, and this supports the use of one composite variable for the analysis of protective behaviors.

Table 7.3 Bivariate Correlations for Household –Protection Measures

	(1) One composite measure for all of the nine items	(2) Extra lock, alarm, and behavior change	(3) Weapons and dogs	(4) Keeping lights on	(5) Locking door
(1)	1.000				
(2)	0.841**	1.000			
(3)	0.585**	0.122**	1.000		
(4)	0.366**	0.120**	0.095**	1.000	
(5)	0.119**	0.064**	-0.012	0.014	1.000

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Bivariate correlations between level-1 measures (individual-level predictors) and correlation between level-2 variables (neighborhood-level predictors) is reported in Table 7.4. The result indicates that the multicollinearity is not a problem, considering that none of the correlation coefficients are higher than 0.80. OLS regression diagnostics with level-1 predictors also confirm that multicollinearity is not a concern, demonstrating that the tolerance for each independent variable is equal or greater than 0.435, and there are no VIFs above 2.299. At the neighborhood-level, multicollinearity is also checked with residential burglary rate, assault rate, concentrated disadvantage, and residential stability, and there are no VIFs above 3, and no tolerance below 0.333.

Table 7.4 Bivariate Correlations between Variables

Correlation between level-1 measures

	(1) Age	(2) House size	(3) Young child	(4) Home Owner	(5) Gender	(6) College educated	(7) Race	(8) Married	(9) Employed	(10) High-Income	(11) Length of Residence	(12) Perception of Safety	(13) Personal Victim	(14) Property Victim	(15) Protective behavior 2yr ago	(16) Current Protective behavior	(17) Joining NWGs	(18) Leaving NWGs	(19) Staying NWGs
(1)	1.000																		
(2)	-.279**	1.000																	
(3)	-.248**	.493**	1.000																
(4)	.343**	.144**	.058**	1.000															
(5)	-.077**	.025	-.020	-.013	1.000														
(6)	-.283**	.072**	.085**	-.025	.049**	1.000													
(7)	.046**	-.133**	-.042**	.066**	-.026	.079**	1.000												
(8)	-.018	.444**	.273**	.296**	.107**	.066**	.050**	1.000											
(9)	-.481**	.114**	.081**	-.142**	.201**	.252**	-.025	.053**	1.000										
(10)	-.088**	.176**	.116**	.225**	.076**	.197**	.064**	.288**	.155**	1.000									
(11)	.615**	-.049**	-.140**	.477**	-.089**	-.208**	-0.001	.069**	-.326**	.002	1.000								
(12)	-.060**	-.042**	.000	-.132**	-.057**	-.017	-.031*	-.059**	-.007	-.082**	-.048**	1.000							
(13)	-.036**	-.032*	-.014	-.118**	.015	-.021	.003	-.067**	.012	-.044**	-.051**	.159**	1.000						
(14)	-.171**	.100**	.083**	-.009	.042**	.058**	.025	.047**	.139**	.063**	-.077**	.184**	.065**	1.000					
(15)	.105**	.117**	.032*	.263**	.038**	-.071**	-.030*	.163**	-.070**	.077**	.200**	.037**	-.036**	-.013	1.000				
(16)	-.032*	.129**	.063**	.196**	-.042**	-.012	-.037**	.142**	-.009	.081**	.072**	.178**	.041**	.138**	.585**	1.000			
(17)	-.029*	.042**	.069**	.083**	.000	.031*	.027*	.062**	.055**	.037*	-.063**	.040**	.004	.049**	-.003	.095**	1.000		
(18)	.013	.004	-.008	.007	-.018	-.021	-.009	-.016	-.012	.008	-.004	.002	.002	.025	.039**	.021	-.050**	1.000	
(19)	.169**	.072**	.005	.272**	.006	.008	.014	.132**	-.105**	.088**	.257**	-.041**	-.039**	-.026	.178**	.110**	-.127**	-.085**	1.000

Correlation between level-2 measures

	(1) Assault rate	(2) Residential burglary rate	(3) Concentrated Disadvantage	(4) Residential stability	(5) immigration concentration
(1)	1.000				
(2)	.729**	1.000			
(3)	.767**	.710**	1.000		
(4)	-.485**	-.455**	-.334**	1.000	
(5)	.352**	.314**	.525**	-.222*	1.000

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

(2) Analyses of Self- and Household-Protective Behaviors

Table 7.5 is presented as the result of an unconditional one-way ANOVA model, which partitions the variance of dependent variables into two variances, between-group variance and within-group variance (Raudenbush & Bryk, 2002). This unconditional model provides preliminary information about how much variation in individuals' household-protective actions lies within and between census tracts and if the reliability of each census tract's sample mean is reliable as an estimate of its true population mean. That is, the unconditional model provides reliability estimates for the outcome variable at the census tract level. In this one way ANOVA model, reliability is a function of sample size in each of the census tracts, and intraclass correlation is the proportion of the total variance between census tracts relative to the amount that is within census tracts (Raudenbush & Bryk, 2002).

The intraclass correlation coefficient (ICC) is 0.056, and about 6% of the variance in household-protective behaviors resides in between-group differences of census tracts. The Chi-square test indicates that this between-group variance is significant; that is, the intercept term significantly varies across groups. This small measure of between-group variation is acceptable considering previous studies that had small variance such as 5 to 10 percent between level-2 units (Hwang, 2006; Sampson, Morenoff, & Earls, 1999). The census tract level reliability (0.719) implies that the sample mean was a reliable measure of the true census mean for individuals' household-protective behaviors. This provides another reason to further a multilevel analysis.

Table 7.5. Unconditional Model of Household-Protective Behaviors

Fixed effects	coefficient	se	t-ratio	odds ratio	p-value
Intercept, π_{00}	3.938	0.042	93.817	96	< 0.001

Random effects	variance components	df	x^2	p-value
Intercept, τ00	0.123	96	341.721	< 0.001
σ²	2.080			

The maximum number of level-1 units: 5147
The maximum number of level-2 units: 97[15]

The second model of the analysis runs a random coefficient regression model with level-1 predictors only. This model examines the multivariate association between individual-level variables and protective behaviors, and it tests whether any of the individual-level variable slopes vary significantly across census tracts. The assessment of the random coefficient model is helpful to specify a slope to be fixed within level-2 units or to be random across level-2 units (census tracts). If an individual-level slope varies across census tracts, the slope can be estimated using tract-level predictors (Rountree, Land, & Miethe, 1994).

There is little individual-level slope variation between census tracts, and most slopes of level-1 variables are specified as fixed within census tract. However, the slope of property victimization remains random across different neighborhoods, and the results of analysis confirm that property victimization experience had effects that varied across

[15] Originally, the number of level-2 units, census tracts, is 100. However, three census tracts (census tracts number 40, 68, and 69) are excluded in the analysis because their tract numbers changed in the 1990 census. The original survey data used 1980 census tract numbers, and these three census tracts with changed numbers in 1990 are excluded in the analysis. This makes the level-2 units 97 instead of 100.

census tracts[16]. All of the variables are centered on their grand means, and the analysis is presented in Table 7.6.

---

[16] Level-1 Model is assessed:

$Y = \beta_{0j}$ + β_{1j} *(age) + β_{2j} *(household size) + β_{3j} *(presence of young children)
+ β_{4j} *(homeownership) + β_{5j} *(gender) + β_{6j} *(higher education) + β_{7j} *(race)
+ β_{8j} *(marital status) + β_{9j} *(employment status) + β_{10j} *(high income)
+ β_{11j} *(length of residence) + β_{12j} *(perception of neighborhood safety)
+ β_{13j} *(personal victimization) + β_{14j} *(property victimization)
+ β_{15j} *(household-protective behavior 2yrs ago) + β_{16j} *(joining NWGs)
+ β_{17j} *(leaving NWGs) + β_{18j} *(staying NWGs) + ε_{ij}

Level-2 Model is assessed:

$\beta_{0j} = \gamma_{0j}$ + γ_{1j} *(assault rate) + γ_{2j} *(residential burglary rate) + γ_{3j} *(concentrated disadvantage)
+ γ_{4j} *(residential stability) + γ_{5j} *(immigration concentration) + u_{0j}

$\beta_{1j} = \gamma_{10}$

$\beta_{2j} = \gamma_{20}$

$\beta_{3j} = \gamma_{30}$

$\beta_{4j} = \gamma_{40}$

$\beta_{5j} = \gamma_{50}$

$\beta_{6j} = \gamma_{60}$

$\beta_{7j} = \gamma_{70}$

$\beta_{8j} = \gamma_{80}$

$\beta_{9j} = \gamma_{90}$

$\beta_{10j} = \gamma_{100}$

$\beta_{11j} = \gamma_{110}$

$\beta_{12j} = \gamma_{120}$

$\beta_{13j} = \gamma_{130}$

$\beta_{14j} = \gamma_{140}$ + γ_{141} *(assault rate) + γ_{142} *(residential burglary rate) + u_{14j}

$\beta_{15j} = \gamma_{150}$

$\beta_{16j} = \gamma_{160}$

$\beta_{17j} = \gamma_{170}$

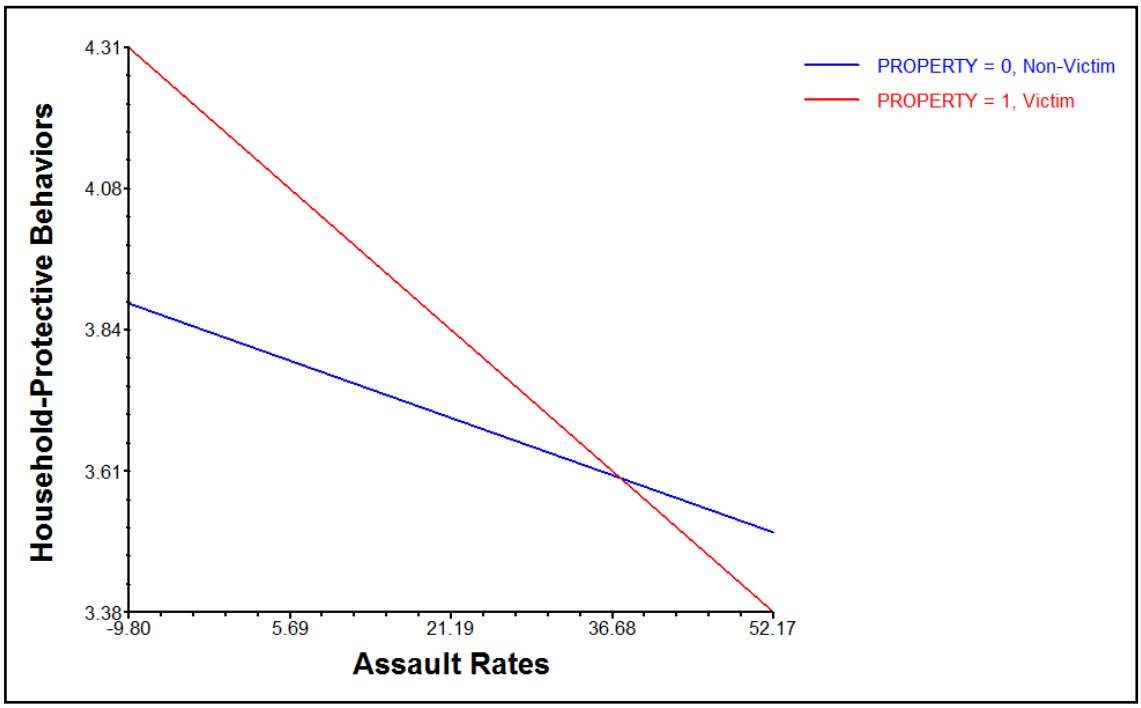
$\beta_{18j} = \gamma_{180}$

Table 7.6. Conditional Model of Household-Protective Behaviors

		Model I		Model 2		Model 3		Model 4	
	Variable	b	(se)	b	(se)	b	(se)	b	(se)
Level1	Intercept	-3.935**		-3.935**		-3.934**			
	Age	**-0.099****	(0.016)	**-0.074****	(0.016)	**-0.079****	(0.016)	**-0.077****	(0.016)
	House-size	0.005	(0.020)	0.005	(0.020)	0.003	(0.020)	-0.004	(0.022)
	Presence of young children	-0.035	(0.062)	-0.050	(0.061)	-0.061	(0.060)	-0.057	(0.068)
	Homeownership	**0.270****	(0.049)	**0.314****	(0.048)	**0.280****	(0.048)	**0.252****	(0.054)
	Gender (being male)	**-0.225****	(0.038)	**-0.210****	(0.037)	**-0.205****	(0.036)	**-0.201****	(0.037)
	High-education	-0.010	(0.044)	-0.003	(0.043)	-0.007	(0.043)	-0.008	(0.040)
	Race (being White)	**-0.153****	(0.055)	**-0.194****	(0.054)	**-0.198****	(0.053)	**-0.203****	(0.057)
	Married	0.085*	(0.044)	0.076*	(0.043)	0.069	(0.042)	0.063	(0.044)
	Employed	-0.051	(0.044)	-0.062	(0.042)	-0.071*	(0.042)	-0.070	(0.043)
	High-income	0.024	(0.052)	0.038	(0.050)	0.039	(0.050)	0.036	(0.050)
	Length of residence	-0.011	(0.007)	**-0.016****	(0.007)	**-0.013****	(0.007)	**-0.014****	(0.007)
	Previous Protective behavior	**0.710****	(0.016)	**0.699****	(0.016)	**0.698****	(0.016)	**0.693****	(0.018)
	Perception of safety			**0.267****	(0.026)	**0.261****	(0.026)	**0.274****	(0.025)
	Personal victimization			**0.489****	(0.106)	**0.478****	(0.106)	**0.525****	(0.118)
	Property victimization			**0.339****	(0.040)	**0.331****	(0.040)	**0.334****	(0.042)
	Joining NWGs					**0.461****	(0.073)	**0.453****	(0.078)
	Leaving NWGs					0.058	(0.101)	0.050	(0.093)
	Staying NWGs					0.083	(0.052)	0.074	(0.049)
Level 2	Assault rate							**-0.009****	(0.003)
	Residential burglary rate							0.007	(0.004)
	Concentrate disadvantages							0.012	(0.041)
	Residential stability							**0.061****	(0.031)
	Immigration concentrate							0.032	(0.028)
	Constant							3.936**	(0.023)
Cross-level Interactions	Property * Assault rate 90							**-0.009****	(0.004)
	Property * R. Burglary rate 90							0.006	(0.006)
Random Effect	Variance: Between, $\tau 00$	0.032		0.030		0.028		0.023	
	Chi square	191.759**		190.394**		184.865**		171.589**	
	Variance: Between,$\tau 14$							0.027	
	Chi square							122.861**	
	Variance: Within, σ^2	1.393		1.313		1.302		1.295	

** Significant at 0.05 level. * Significant at 0.10 level.

Figure 2. Cross-level Interaction Graph



The analysis is conducted with level-1 predictors only, and then it follows with both level-1 and level-2 predictors simultaneously. To see the impact of victimization and changes in participation within NWGs, the model with only level-1 predictors is also assessed with step-wise strategy. All the predictors excluding crime variables and individuals' changes in participation with NWGs are included at first (model 1 of Table 7.6). Then, level-1 predictors including crime variables are assessed for their impact on individuals' household-protective behaviors in model 2. In model 3, all of level-1 predictors, including both crime variables and individuals' membership change with NWGs, are included in the analysis. Finally, model 4 in Table 7.6 incorporates all of the level-1 and level-2 predictors simultaneously. The impact of crime variables and variables of membership status change with NWGs on the behavior of individuals to

protect their household is shown by the significant decrease in Chi-squares between model 1, 2, and 3.

The analysis model with only individual-level predictors shows the impact of individual characteristics. Individuals who are younger, homeowners, females, and non-Whites are more likely to be involved in household-protective behaviors. In addition, the longer individuals live in the community, the less likely they are to engage in protective actions for their households. As expected in Hypothesis 7.2, homeowners are more likely to engage in protective behaviors for their households, and individuals tend to keep their protective behaviors over time. In other words, those who practiced protective behaviors in the past are more likely to keep their behaviors. However, somewhat different from the expectation, household-protective behavior is associated with individual characteristics of being female, minority, and younger age.

Whether or not the neighborhood context differentiates individuals' protective behaviors is tested and reported in model 4 of Table 7.6. All of the significant individual-related factors remain the same when we consider the impact of neighborhood-related characteristics. Only one of the neighborhood condition variables is significant. Residential stability shows an impact, and individuals who are living in a more stable area are more likely to engage in protective actions for their households. Neighborhood conditions of concentrated disadvantage and immigration concentration, however, do not affect individuals' decisions on protective behaviors for themselves and their households.

Table 7.6 also presents the impact of crime on individuals' behavior of household protection. The analysis confirms our expectations on the role of crime that was specified in Hypotheses 7.5 and 7.6. An individual who is a victim of either property or personal

crime is more likely to engage in self- and household-protective actions (testing of Hypothesis 7.5). In addition, the more individuals feel their neighborhoods are not safe from crime, the more they take protective actions for their households (testing of Hypothesis 7.6). In addition to these impacts of individual-level crime, neighborhood crime problems also differentiate individuals' protective behaviors for their households. Between the two measures of crime problems, assault rate and residential burglary rate in the community, only assault rate is significant. Individuals living in a lower assault rate area are more likely to engage in protective actions for their households. This negative impact of assault rate is not consistent with our expectation in Hypothesis 7.7.

The current study proposed to examine the relationship between individuals' community-protective actions and household-protective actions, and the result is presented in Table 7.6. Individuals' involvement in community social control is included in the model to test the effects of neighborhood-protective actions on individuals' household-protective behaviors. The three types of membership status change with NWGs are dummy-coded and included in the analysis as independent variables. Among these three types of membership status change with NWGs, only one variable significantly differentiates an individuals' behavior on household protection.

Being a new member in NWGs has a positive impact on individuals' household-protective behavior. In other words, residents who start to join community-protective organizations are more likely to enact household-protective behaviors. This is consistent with our expectation of Hypothesis 7.8 even though not all of our hypotheses on the impact of membership change with NWGs are supported. Individuals who leave NWGs and those who keep their consistent memberships do not significantly differ in their

engagement in household protection. In sum, our expectation of consistency in both household-protective and community-protective behavior is supported. However, the replacement effect we anticipated is not supported. I presumed that individuals who depart from community-protective behaviors will be more likely to engage in household-protective behaviors to replace their reliance on the community protection, and this expectation is not met.

Discussion and Conclusion

The analysis of individuals' self- and household-protective behaviors shows several interesting findings. First, it confirms the impact of neighborhood-related factors in the behavior of individuals to protect their household when we controlled the impact of individual- and household-related factors. The significant decrease of Chi-square in model 4 confirms this. Three variables are considered for the neighborhood conditions, and they are concentrated disadvantage, residential stability, and immigration concentration. Only residential stability, however, shows a significant impact on individuals' behavior on household protection. The more stable the neighborhood individuals reside in, the more likely they are to engage in household-protective behavior.

Secondly, the analysis confirms the victimization effects. Consistent with previous literature, individuals' crime victimization experience, both property and personal victimization, is positively associated with household-protective behavior. In addition to these impacts of being a victim of crime, individuals' perception of neighborhood safety is also tested for its role. It found that individuals' negative perception of neighborhood safety encourages them to be involved in household-

protective actions. The crime problem in the neighborhood is also considered, and only the assault rate in the community significantly differentiates residents' behavior of house protection. Unexpectedly, however, the higher the assault rate in the neighborhood, the less likely residents are to engage in protective behaviors.

It is also assessed whether or not a change in participation with NWGs affects individuals' decisions on their own household-protective behaviors. The findings indicate there is consistency between individuals' involvement in community-protective behavior (joining membership with NWGs) and their engagement in household-protective actions. I expected a replacement impact, in which individuals are more likely to engage in household-protective actions when they depart from the community-protective behaviors, but this was not supported in the analysis.

Lastly, the analysis reveals cross-level interactions between individual's property victimization experience and community characteristics (see Figure 2). When individuals who reside in higher assault rate areas experience property victimization, they are less likely to engage in household protective behaviors, while being a victim of property crime by itself is an encouraging factor for household-protective behaviors. However, the interaction variable between property victimization in a higher residential burglary rate area is not a significant factor for individuals' protective behavior for their households.

Chapter 8. Conclusion

Summary of Findings

Substantial research exists on the effects of social organization, particularly collective efficacy, on crime. Much less is known about the effects of crime on the social organization of communities even though the reciprocal relationship between crime and social organization is acknowledged (Bursik & Grasmick, 1993). Previous studies exclusively focus on the impact of social control on crime problems of communities. High crime rates in the community itself, however, can produce a decline in the community's social capital (Kawachi, Kennedy, & Wilkinson, 1999). Skogan (1986, 1990) also identified a number of factors that contribute to declining social capital in the community; fear of crime, for instance, can cause physical and psychological departure from community life, thus resulting in fewer opportunities for local networks.

In sum, there is a great deal of research on the effects of community organization on crime and relatively little on the effects of the crime on community organization, despite the acknowledgement of the impact of crime on social capital in communities. The current study is proposed to address this issue. In particular, this dissertation set out to examine the following research questions: (1) Are there differences between participants and non-participants in neighborhood crime prevention associations, NWGs, with consideration of both individual- and neighborhood-related factors? (2) Does crime affect individuals' decisions to change their involvement in crime prevention associations, NWGs? (3) Are there differences between community-protective behaviors and household-protective behaviors as a reaction to crime?

The main perspective examined is the victimization effect on household-protective behaviors and collective actions. It is anticipated that individuals' experience with crime will affect their household-protective behaviors, and victims are more likely to engage in protective actions for themselves as well as their households. In addition, victimization effects are also expected in individuals' decisions on collective actions, specifically participation in crime prevention associations in neighborhoods. The impact of crime is assessed with the consideration of the different types of crimes (property and personal crimes) at both individual- and neighborhood-levels.

To test the impact of individual-level crimes, experience of being victims of crime and individuals' perception of neighborhood safety are differentiated. This is building from the previous research which demonstrates the impact of subjective perception vs. actual victimization experience (McPherson & Lockwood, 1980; Taub, Taylor, & Dunham, 1984). On the neighborhood level, crime rates are included. In the examination of these victimization effects, I also test several contextual measures of neighborhood conditions, including concentrated disadvantage, residential stability, and immigration concentration. Collectively, this dissertation contributes to the emerging literature in contextual analyses of victimization effects; by testing the changes of individuals' behaviors on collective actions as well as household-protective behaviors as an outcome of crime victimization; by differentiating dissimilar types of crime at both individual- and community-levels; and finally by comparing the collective actions for neighborhood safety and protective actions for individuals themselves and their households.

For the examination of proposed research questions, this study use three data sources; a 1990 telephone survey from Seattle, Washington, crime statistics from the

Seattle Police Department, and the 1990 census. Information on over 5,300 individuals across 100 census tracts is available. To see the impact of neighborhood conditions, three variables (concentrated disadvantage, residential stability, and immigration concentration) are created from the 1990 census. Crime problems in neighborhoods are considered with crime statistics by census tracts, and residential burglary and assault rates are included in the analysis. The individual-level telephone survey data are merged with neighborhood-level data for multilevel model analyses. Below, the findings from Chapters 5, 6, and 7 are briefly discussed.

Chapter 5 examines different characteristics between participants and non-participants in neighborhood crime prevention organizations (NWGs), and explores whether neighborhood context in addition to individual characteristics differentiate individuals' participation in NWGs. By and large, the findings confirm the differences between participants and non-participants in NWGs, and it confirms the contextual effects of neighborhoods. Specifically, individuals who are older, are unemployed, have higher incomes, are homeowners, and are living in bigger households are more likely to be members of NWGs. An unexpected finding on the positive impact of unemployment on the membership in NWGs is revealed, and the lack of time for the employed might be the reason for this. When the focus turns to neighborhood contextual effects, I find that residents living in neighborhoods that have lower assault rates and are more residentially stable are more likely to participate. In contrast to the hypothesis, however, living in disadvantaged neighborhoods makes individuals more likely to join NWGs. This can be understood as residents' efforts to defend their own neighborhood. The examination of different characteristics between participants and non-participants in NWGs shows that

separating the neighborhood's contextual impacts yields a more complete understanding of individuals' decision to participate in crime prevention associations.

Chapter 5 focuses on the examination of differences between participants and non-participants in NWGs, whereas Chapter 6 investigates how and to what extent individuals change their engagement in NWGs. A comparison between Chapter 5 and Chapter 6 confirms our expectation that models of membership are different from models of changes in membership. Specifically in Chapter 6, I test hypotheses relevant to the impact of crime on individuals' decisions to change their involvement in NWGs. I find the differences between individuals' decisions to change their involvement in neighborhood crime prevention organizations (NWGs in the current study) and to maintain their contribution.

Individuals' decisions to change their memberships with NWGs are explained by crime, while their consistent memberships are explained by solidity. The analysis also confirms dissimilarities among those who change their memberships. Joiners are different from leavers. Joiners of NWGs are older, employed, and homeowners. In other words, attachment explains the joiners of NWGs, while this is not seen in the model for the decision to leave NWGs. Another difference is seen in the impact of crime. Negative perception of neighborhood safety and higher residential burglary rates in neighborhoods promote individuals to start membership with NWGs, while individuals' actual property crime victimization makes them leave NWGs.

The focus turns to the relationship between community-protective behaviors and household-protective behaviors in Chapter 7. The analysis of individuals' self- and household-protective behaviors, considering individuals' experience with crime and their

changes in engagement in NWGs, confirms the victimization effects. All three measures of individual-level crime variables are significant. Individuals' experience of being victims of both property and personal crime and their negative perception of neighborhood safety makes them more likely to practice protective behavior for their households. Crime problems in the neighborhood are also considered, and only the assault rate in the neighborhood significantly differentiates residents' behavior regarding household protection. Unexpectedly, however, the higher the assault rate in the neighborhood, the less likely residents are to engage in protective behaviors.

Chapter 7 also assesses whether or not a change in participation in community protection affects individuals' decisions on their own household-protective behaviors. The findings indicate consistency between individuals' involvement in community protection (joining membership with NWGs) and their engagement in protective actions for their own households. I expected the replacement impact of individuals being more likely to engage in household-protective behaviors when they depart from community-protective behaviors, but this is not supported in the analysis. In addition, Chapter 7 reveals cross-level interactions between individuals' property victimization experience and neighborhood characteristics. When individuals who reside in higher assault rate areas experience property victimization, they are less likely to engage in household protective behaviors, while being victims of property crime by itself is an encouraging factor for household-protective behaviors.

Theoretical Contribution and Policy Implication

The study of the impact of crime victimization on crime prevention activities is important for criminological theory and public policy. At present, there is some debate concerning the relationship between crime and social organizations, including informal social control, collective efficacy, and community organizations for crime prevention. The primary research question of this project involves individual decisions regarding participation in Neighborhood Watch Groups (NWGs). This study advances the current understanding of social organization and crime victimization in several ways. It provides an empirical study testing the impact of social organization and crime on a sample of urban households and takes the research one step further by examining the reciprocal relationship between crime and informal social control. Each individual's decision regarding involvement in NWGs is examined with regard to individual, household, and neighborhood characteristics. The relationship between social capital and crime is more complex, given that the direction of the causal relationship is open to interpretation, and there is a need to further explore the view that crime can affect social capital. Previous research has generated inconsistent findings on this matter.

The analysis of participation change in NWGs is unique in several ways to enhance our understanding of the effects of crime on the social organization of communities. First, it includes data on different types of participation status changes, joining and leaving, while most studies only address either joining or participating. Studies have rarely examined reasons for leaving voluntary organizations. Second, due to the richness of the dataset, changes of individuals' decisions over time with consideration of the effects of neighborhood conditions are assessed. By testing the social organization

with more accurate data and hypothesizing a reverse direction for the causal relationship between social capital and crime, this study is also advance the current understanding of the impact of crime victimization on crime prevention efforts geared towards the individual, the household, and the neighborhood. Third, the data are multilevel, which will facilitate distinguishing the effects of individuals, their households, and neighborhoods on the decision to participate. Lastly, the analysis includes data on self- and household-protective actions so that we can understand the relationship between individual- and household-protective actions and collective community-protective actions and the different effects of neighborhood context on these behaviors.

This study contributes to research regarding the impact of crime victimization, especially victims' reactions to their victimization, on crime prevention efforts, and the social cost of crime in neighborhoods. Considering that the current criminal justice system focuses more on the passive impact of victimization on the individual, examining reactions to victimization provides an effective framework for understanding crime victims and their actions to prevent further crime in the neighborhood. Just as important are the study's broader implications for policy and practice. The goal of the study is to contribute meaningfully to the discussion of informal social control and its impact on crime prevention, and on the individual's decision to support community activity for crime control. The study provides insight into the motivation for participation in community organizations. Criminal justice literature mainly focuses on the impact of informal social control on the reduction of crime, and there is a consensus among scholars about the positive effectiveness of social control on crime. Few studies, however, have considered the motivation to participate in informal social control activities in the

community. The current study provides a first step towards that end. In addition, the current study's findings are applicable beyond the crime problem perspective; it will contribute to the understanding of the role of each household in the community in efforts to prevent or combat social problems, including disorder in the communities and juvenile delinquency.

Future Study Implication

The findings from the three sets of analyses presented in Chapters 5, 6, and 7 have several implications for research on participation in neighborhood organizations. The first is related to the importance of considering the differences in membership status change in NWGs. Previous studies have focused on characteristics of participants in neighborhood crime prevention associations without considering the reasons why individuals change their involvement. As Chapter 6 shows, individuals who change their engagement in crime prevention associations are different from those who keep their engagement in the associations. In particular, crime only affects individuals' decisions to change their involvement.

Secondly, as established by the findings in Chapter 7, it may be important to consider the connection between individuals' participation in community-protective behaviors and their household-protective behaviors. The effect of joining NWGs on individuals' engagement in household-protective behaviors is revealed. Unexpectedly, however, individuals' decisions to leave NWGs do not affect their practices for household protection. Considering that previous studies rarely compare community-

protective behavior and household-protective behaviors, this study suggests examining this topic further.

Thirdly, the distinctive impact of crimes is revealed in the current study. Crime at both individual and neighborhood levels is considered for its role in individuals' decisions on community protection and their own household protection. In addition, the impact of individual-level crime is differentiated by subjective perception of neighborhood safety and actual experience of being victims of either a property crime or a personal crime. The distinctive findings on these impacts of crime suggest separating these different types of crime for future research.

Lastly, this dissertation underscores the importance of using multilevel models when investigating individuals' behaviors for community protection and household protection. Future studies should continue to examine the effect of individual-, household-, and neighborhood-related predictors and crime on residents' decisions on community protection and household protection. In addition, the current study only considers the data from Seattle, Washington, which might raise a concern on the generalizability of its findings. We do not know whether the findings of the current study would produce different effects in different geographic areas. This remains unknown, and future research with data reflecting more neighborhoods and states would be beneficial.

Appendix I. Variable Measures in the Data

1990 Telephone Survey, Seattle, Washington (Miethe, 1991)	
Concepts	Measures
Membership Change in NWGs	Q114: Currently belong Neighborhood Watch? Q115: Belong Neighborhood Watch two years ago?
Victimization Experience	<u>Property victimization</u> Q13: Ever had home broken into? Q15: Break-in occurred at current home? Q16: Break-in happened in last two years? Q30: Ever had property stolen yard/porch? Q32: Property stolen at current home? Q33: Property stolen in last two years? Q61: Ever had car stolen? Q63: Car stolen in last two years? Q64: Car stolen within 4 blocks of home? <u>Personal Victimization</u> Q34: Ever physically assaulted by stranger? Q36: Physically assaulted last two years? Q48: Ever been mugged? Q50: Mugging in last two years?
Perception of Neighborhood Safety	Q77: Is neighborhood safe from crime?
Home Ownership	Q194: Own or rent current dwelling?
Residential Duration	YEARS: How long lived at current address?
SES of Household	Q215: Total family income before taxes in 1989? Q179: Highest grade formal education
Family Structure and Demographic	AGE: Age in years (respondent) Q180: Marital status of respondent Q175: Number of people currently living in home Q177: Number of People under 6 Q178: Race/Ethnic status
Current Self- /Household-Protection Measures	Q110: Currently lock doors Q112: Currently leave lights on Q116: Currently have extra locks Q118: Currently carry weapon Q120: Currently had burglar alarm Q122: Currently have dog Q126: Currently have weapon in home Q128: Increase safety precautions last 2 years Q129: Changed outside activities last 2 years
Previous Self-/Household-Protection Measures	Q111: Lock doors two years ago Q113: Leave lights on two years ago Q117: Had extra locks two years ago Q119: Carried weapon two years ago Q121: Had burglar alarm two years ago Q123: Had dog two years ago Q127: Had weapon in home two years ago

1990 Census	
Concepts	Measures
Concentrated Disadvantage	Percentage of persons below poverty Percentage of households receiving public assistance Percentage of individuals who are unemployed Percentage of female-headed households with children Percentage of residents who are black
Residential Stability	Percentage of residents who live longer than 5 years Percentage of owner-occupied housing units
Immigration Concentration	Percentage of Hispanics Percentage of foreign-born
Seattle Police Department Crime Statistics	
Concepts	Measures
Neighborhood Crime Problems in 1990 *	HOMRATE: Homicide rate in tract RAPRATE: Rape rate in tract ROBRATE: Robbery rate in tract ASSRATE: Assault rate in tract BURRATE: Burglary rate in tract CARRATE: Auto theft rate in tract

* To calculate official burglary rates, the number of crime known to police between 1989 and 1991 are averaged and divided by 1990 population, then multiplied by 1,000. For instance, Residential burglaries known to the police in each census tract between 1989 and 1991 are averaged and divided by 1990 population, and then multiplied by 1,000. This method of averaging the number of burglary crimes between 1989 and 1991 to detect 1990 crimes is applied to minimize the impact of random fluctuation of crime rates and to produce a more reliable measure (Bellair, 2000).

References

Ahlbrandt, J. S., & Cunningham, J. V. (1979). *A New Public Policy for Neighborhood Preservation*. New York: Preager.

Baumer, T. L. (1985). Testing a General Model of Fear of Crime: Data from a National Sample. *Journal of Research in Crime and Delinquency*, 22, 239-255.

Beavon, D., Brantingham, P., & Brantingham. P. (1994). *The influence of street networks on the patterning of property offenses*. In Ronald V. Clarke (Ed.), Crime Prevention Studies 2 (pp. 149-163). Monsey, NY: Criminal Justice Press.

Bekkers, R., Völker, B., Van der Gaag, M. & Flap, H.D. (2008). "Social Networks of Participants in Voluntary Associations". In: Lin, N. & B. Erickson (Eds.). *Social Capital: Advances in Research*. Oxford University Press.

Bellair, P. E. (2000). Informal Surveillance and Street Crime: A Complex Relationship. *Criminology*, 38 (*1*), 137-170.

Bennett, T. (1989). Factors Related to Participation in Neighborhood Watch Schemes. The *British Journal of Crime*, 29 (*3*), 207-218.

Bennett, T., Holloway, K., Farrington, D. P. (2006). Does Neighborhood Watch Reduce Crime? A Systematic Review and Meta-analysis. *Journal of Experimental Criminology*, 2, 437-458.

Bennett, S.F., & Lavrakas, P. J. (1988). *Evaluation of the Planning and Implementation of Neighborhood Program*. Final process report to the Eisenhower Foundation. Evanston, IL: Northwestern University, Center for Urban Affairs and Policy Research.

Berkowitz, B. (2000). Community and neighborhood organization. In J. Rappaport & E. Seidman (Eds.), Handbook of community psychology (pp. 331–358). New York: Plenum.

Boggs, S. (1971). Formal and Informal Crime Control: An Exploratory Study of Urban, Suburban, and Rural Orientations. *Sociological Quarterly*, 12, 319-327.

Bourgois, P. (1996). *In search of respect.* Cambridge: Cambridge University Press.

Browning, C. R., Feinberg, S. L., & Dietz, R. D. (2004). The paradox of social organization: Networks, collective efficacy, and violent crime in urban neighborhoods. *Social Forces, 83* (2), 503–534.

Bursik, R. J., Jr. (1988). Social disorganization and theories of crime and delinquency: Problems and perspectives. *Criminology*, 26,519-551.

Bursik, R. J., Jr., & Grasmick, H. G. (1993). *Neighborhoods and Crime: The dimensions of effective community control*. New York, Lexington Books.

Bussell, H., & Forbes, D. (2002). Understanding the Volunteer Market: the What, Where, Who and Why of Volunteering. *International Journal of Nonprofit and Voluntary Sector Marketing*, 7(*3*), 244-257.

Clarke, A. H., & Lewis, M. J. (1982). Fear of Crime Among the Elderly. *British Journal of Criminology*, 22, 49-62.

Clay, E. G., Snyder, M., & Stukas, A. (1996). Volunteers' motivations: Findings from a national survey. *Nonprofit and Voluntary Action Quarterly*, 25, 485-505.

Clear, T. R., Rose, D. R., Waring, E., & Scully, K. (2003). Coercive mobility and crime: A preliminary explanation of concentrated incarceration and social disorganization. *Justice Quarterly*, 20(*1*), 33-64.

Clotfelter, C. T. (1977). Urban Crime and Household Protective Measures. *Review of Economics and Statistics*, 59, 499-503.

Cornish, D. & Clarke, R.V. (1987). Understanding Crime Displacement: An Application of Rational Choice Theory. In Stuart Henry and Werner Einstader (Eds.), *The Criminology Theory Reader* (pp. 45-56). New York: New York University Press.

Curtis, J. (1971). Voluntary Association Joining: A Cross-National Comparative Note. *American Sociological Review*, 36, 872-80.

Curtis, J. E., Baer, D.E., & Grabb, E.G. (2001). Nations of Joiners: Explaining Voluntary Association Membership in Democratic Societies. *American Sociological Review*, 66,783-805.

Cutler, S. T. (1976). Age differences in voluntary organization membership. *Social Force*, 55, 43-58.

Davies, W. K. (1984). *Factorial Ecology*. Aldershot, England: Gower.

DuBow, F., & Emmons, D. (1981). The Community Hypothesis. In Reactions to Crime, edited by Dan A. Lewis. (pp. 167-181) Beverly Hills, CA: Sage.

DuBow, F., McCabe, E., & Kaplan, G. (1979). R*eactions to Crime: A Critical Review of the Literature*. Washington, DC: U.S. Department of Justice, National Institute of Justice.

DuBow, F., & Podolefsky, A. (1979). *Citizen Participation in Collective Responses to Crime*. Evanston, ILL: Center for Urban Affairs.

Dugan, L. (1999). The effect of criminal victimization on a household's moving decision. *Criminology*, 37(*4*), 903-930.

Dunworth, T., & Mills, G. (1999). *National Evaluation of Weed and Seed*. NCJ Research Report. National Institute of Justice, June 1999.

Eck, J. E., & Weisburd, D. (1995). Crime places in crime theory. In Eck and Weisburd (Eds.), *Crime and Place: Crime Prevention Studies 4* (pp. 1-33). Monsey, NY: Willow Tree Press.

Feins, J. D. (1983). *Partnerships for Neighborhood Crime Prevention*. Washington, D.C.: U.S. Government Printing Office.

Ferraro, K. F. (1995). *Fear of Crime: Interpreting Victimization Risk*. Albany, NY: State University of New York Press.

Festinger, L., Schachter, S., & Back, K. (1963). *Social pressures in informal groups; a study of human factors in housing*. Stanford, CA: Stanford University Press.

Fischer, C. S., Jackson, R. M., Stuever, C. A., Gerson, K., & Jones, L. M. (1977). *Networks and Places*. New\brk: Free Press.

Garofalo, J. (1977). *Public Opinion about Crime: The Attitudes of Victims and Non-victims in Selected Cities*. Washington, DC: U. S. Government Printing Office.

Garofalo, J. (1979). Victimization and the Fear of Crime. *Journal of Research in Crime and Delinquency*, 16, 80-97.

Garofalo, J. & McLeod, M. (1989). The Structure and Operations of Neighborhood Watch Programs in the United States, *Crime & Delinquency*, 35 (*3*), 326-344.

Geis, K. J., & Ross, C.E. (1998). A New Look at Urban Alienation: The Effect of Neighborhood Disorder on Perceived Powerless, *Social Psychology Quarterly*, 6(*3*), 232-246.

Gibson, C., Zhao, J., Lovrich, N., & Gaffney, M. (2002). Social Integration, Individual Perceptions of Collective Efficacy, and Fear of Crime in Three Cities. *Justice Quarterly*, 19 (*3*), 537-564.

Greenberg, S. W., & Rohe, W. M. (1986). Informal Social Control and Crime Prevention in Modern Urban Neighborhoods. Pp. 79-118 in *Urban Neighborhoods*, edited by Ralph B. Taylor. New York: Praeger.

Greenberg, S. W., Rohe, W. M., Williams, J. R. (1982). *Safe and Secure Neighborhoods: Physical Characteristics and Informal Territorial Control in High and Low Crime Neighborhoods.* U.S. Department of Justice. National Institute of Justice, Washington, D.C.

Greenberg, S. W., Rohe, W. M. and Williams, J. R. (1985). Informal Citizen Action and Crime Prevention at the Neighborhood level. Washington DC: US Dept of Justice, National Institute of Justice.

Haeberle, S. H. (1987). Neighborhood Identity and Citizen Participation. *Administration & Society*, 19(2), 178-196.

Hagan, J., & Peterson, R. D. (1995). Criminal Inequality in America: Patterns and Consequences. In *Crime and Inequality*, edited by Hagan, J., & Peterson, R. D., Stanford, CA: Stanford University Press. pp. 1-29.

Hanks, M., & Eckland, B. K. (1978). Adult voluntary associations and adolescent socialization. *The Sociological Quarterly,* 19, 481-490.

Hanks, M. (1981). Youth, voluntary associations, and political socialization. *Social Force*, 60, 211-223.

Hope, T. (1988). Support for Neighborhood Watch: A British Crime Survey Analysis. In Hope, T. & Shaw, M., Eds. Communities and Crime Reduction, 146-161. London: HMSO.

Hunter, A. (1985), "Private, parochial and public social orders: the problem of crime and incivility in urban communities", in Suttles, G., Zald, M. (Eds),*The Challenge of Social Control*, Ablex Publishers, Norwood, NJ, pp.230-42.

Husain, S. (1990). *Neighborhood watch and crime: An assessment of impact*. London: Police Foundation.

Hwang, E. G. (2006). *A multilevel Test of Fear of Crime: The Effects of Social Conditions, Perceived Community Policing Activities, and Perceived Risks of Victimization*. Doctoral Dissertation, Michigan State University.

Hwang, M., Grabb, E., & Curtis, J. (2005). Why get involved? Reasons for voluntary-association activity among Americans and Canadians. *Nonprofit and Voluntary Sector Quarterly*, 34, 387-403.

Janowitz, M. & Suttles, G. D. (1978) "The social ecology of citizenship," in R. Sarri and Y. Hasenfeld (eds.) *Management of Human Services*. New York: Columbia Univ. Press.

Karsarda, J. M., & Janowitz, M. (1974). Community attachment in mass society. *American Sociological Review*, *39*, 328-339.

Kawachi, I., Kennedy, B.P., & Wilkinson, R. G. (1999). Crime: social disorganization and relative deprivation, *Social Science & Medicine*, 48, 719-731.

Knoke, D. (1986). Associations and interest groups. *Annual Review of Sociology*, 12, 1-21.

Kleinbaum, D.G., Kupper, L. L., & Miller, K. (1988). *Applied Regression Analysis and Other Multivariate Methods*, PWS-Kent, Boston, MA.

Klobus-Edwards, P., Edwards, J. N., Klemmack, D. L. (1978). Differences in social participation: Blacks and Whites. *Social Force*, 56, 1035-1052.

Knoke, D., & Thompson, R. (1977). Voluntary association membership trends and the family life cycle. *Social Force*, 56, 48-65.

Land, K. C., McCall, P. L., & Cohen, L. E. (1990). Structure Covariates of Homicide Rates: Are There Any Invariances across Time and Social Space? *American Journal of S Sociology*, 95, 922-963.

Landis, J. Richard and Gary G. Koch. (1977). The measurement of observer agreement for categorical data. *Biometrics, 33,* 159-174.

Lavrakas, P. J. (1985). Citizen Self-Help and Neighborhood Crime Prevention Policy. In L.A. Curtis (ed.), *American Violence and Public Policy*. New Haven, CT: Yale University Press, pp. 87-115.

Lavrakas, P. J., & Herz, E. J. (1982). Citizen Participation in Neighborhood Crime Prevention, *Criminology*, 20(*3/4*), 479-498.

Lee, B.A., Oropesa, R.S., & Kanan, J.W. (1994). Neighborhood context and residential mobility. *Demography, 31,* 249-270.

Lewis, D. A., Grant, J. A., & Rosenbaum, D. P. (1985). *The Social Construction of Reform: Crime Prevention and Community Organizations*. Evanston, Ill.: Northwestern University, Center for Urban Affairs and Policy Research.

Lewis, D. A., & Maxfield, M. G. (1980). Fear in the Neighborhoods: An Investigation of the Impact of Crime. *Journal of Research in Crime and Delinquency*, 17, 160-189.

Lin, N. (2001). *Social Capital: a Theory of Structure and Action*. London/New York: Cambridge University Press.

Lindsay, B., & McGillis, D. (1986). "Citywide Community Crime Prevention: An Assessment of the Seattle Program." In Community Crime Prevention: Does it Work? edited by D. P. Rausenbaum. Beverly Hills, CA: Sage.

Liska, A. E., & Bellair, P. E. (1995). Violent Crime Rates and Racial Composition: Convergence Over Time, *American Journal of Sociology*, 101, 578-610.

Liska, A. E., & Warner, B. D. (1991). Functions of Crime: A Paradoxical Process, *American Journal of Sociology*, 96, 1441-1463.

Luke, D. A. (2004). Multilevel Modeling (Quantitative Applications in the Social Sciences), Sage Publications.

Lynch, J. P. & Cantor, D. (1992). Ecological and behavioral influences on property victimization at home: Implications for opportunity theory. *Journal of Research in Crime and Delinquency, 29,* 335-362.

Lynch, J. P., Sabol, W. J., Planty, M., & Shelly, M. (2002). *Crime, Coercion and Community: The Effects of Arrest and Incarceration Policies on Informal Social Control in Neighborhoods*. U.S. Department of Justice.

Marschall, M. J. (2004). Citizen Participation and the Neighborhood Context: A New Look at the Coproduction of Local Public goods, *Political Research Quarterly*, 57, 231-244.

Mayhew, P. (1984). Target hardening: How much of an answer? In Clarke, R., & Hope, T. (eds.) *Coping with Burglary*. Boston: Kluwer-Nijhoff Publishing.

McPherson, J. M., & Lockwood, W. (1980). The dynamics of voluntary affiliation: A multivariate analysis. *Journal of Voluntary Action Research*, 9, 74-84.

Miethe, T. D. (1991). Citizen-Based Crime Control Activity and Victimization Risks: An Examination of Displacement and Free-Rider Effects. *Criminology*, 29 (*3*), 419 439.

Miethe, T. D. & Meier, R.F. (1994). *Crime and Its Social Context: Toward an Integrated Theory of Offenders, Victims, and Situations*. Albany: State University of New York Press.

Morenoff, J. D., Sampson, R. J., & Raudenbush, S. W. (2001). Neighborhood Inequality, Collective Efficacy and the Spatial Dynamics of Urban Violence. *Criminology*, 39 (*3*), 517-559.

Myers, R.H. (1986). *Classical and Modern Regression with Applications*. Boston: Duxbury Press.

National Crime Prevention Council (2000). Are we Safe? The 2000 Crime Prevention Survey, Washington DC.

Park, R. E. (1925). "The City: Suggestions for the Investigation of Human Behavior in the Urban Environment." In *The City*, Edited by Park, R. E., Burgess, E. W., & McKenzie, R. University of Chicago Press. pp. 1-45.

Pattavina, A., Byrne, J., & Garcia, L. (2006). An Examination of Citizen Involvement in Crime Prevention in High –Risk Versus Low to Moderate Risk Neighborhoods" *Crime and Delinquency* 52(2) :203-231.

Pattillo, M. E. (1998). Sweet Mothers and Gangbangers: Managing Crime in Black Middle-Class Neighborhood, *Social Forces*, 76(*3*), 747-774.

Paxton, P. (1999). Is Social Capital Declining in the United States? A Multiple Indicator Assessment. *American Journal of Sociology*, 105, 88-127.

Perkins, D. D., Hughey, J., & Speer, P. W. (2002). Community Psychology Perspectives on Social Capital Theory and Community Development Practice, *Journal of the Community Development Society*, 33(1), 33-52.

Perkins, C. A., Klaus, P. A., Bastian, L. D., & Cohen, R. L. (1996). Criminal victimization in the United States, 1993. A National Crime Victimization Survey Report. Washington D.C.: Department of Justice.

Podolefsky, A. (1983). *Case studies in community crime prevention.* Springfield, IL: Charles C. Thomas.

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

Putnam, R. D. (2000). *Bowling Alone: the Collapse and Revival of American Community*. New York: Simon & Schuster.

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical Linear Models: Applications and Data Analysis Methods* (2nd ed.). Thousand Oaks: Sage Publications.

Raudenbush, S. W., Bryk, A. S., & Congdon, Jr, R. T. *HLM for Windows Version 6.06*. Lincolnwood, IL: Scientific Software International.

Ren, L., Zhao, J. S., Lovrich, N. P., & Gaffney, M. J. (2006). Participation Community Crime Prevention: Who Volunteers for Police Work? *An International Journal of Police Strategies & Management*, 29, 464-481

Robinson, W.S. (1950). Ecological correlations and the behavior of individuals. *American Sociological Review, 15,* 351-357.

Rose, D. (2000). Social Disorganization and Parochial Control: Religious Institutions and Their Communities, *Sociological Forum, 15(2),* 339-358.

Rose, D., & Clear, T. (1998). Incarceration, Social Capital, and Crime: Implications for Social Disorganization Theory, *Criminology*, 36 (*3*), 667-703.

Rosenbaum, D. P. (1987). The Theory and Research Behind Neighborhood Watch: Is It a Sound Fear and Crime Reduction Strategy? *Crime and Delinquency*, 33 (*1*), 103-134.

Rosenbaum, D. P. (1988). Community Crime Prevention: A Review and Synthesis of the Literature. *Justice Quarterly,* 5 (*3*), 323-395.

Rosenfeld, R., Messner, S., & Baumer, E. (2001). Social Capital and Homicide. *Social Forces*, 80, 283-309.

Rountree, P., & Land, K. (1996). Perceived Risk versus Fear of Crime: Empirical Evidence of Conceptually Distinct Reactions in Survey Data. *Social Forces* 74:1353–76.

Rountree, P.W., Land, K.C., Miethe, T.D. (1994), Macro-micro integration in the study of victimization: a hierarchical logistical model analysis across Seattle neighborhoods. *Criminology*, Vol. 32 pp.387-414.

Sabol, W. C., Coulton, C. J., & Korbin, J. E. (2004). Building Community Capacity for Violence Prevention. *Journal of Interpersonal Violence*, 19 (3), 322-340.

Saegert, S., & Winkel, G. (2004). Crime, Social Capital, and Community Participation. *American Journal of Community Psychology*, 34 (3/4), 219-233.

Sampson, R. J. (1985). Neighborhood and crime: The structural determinant of personal victimization. *Journal of Research in Crime and Delinquency*, 22, 7-40.

Sampson, R. J. (1991). Linking the micro- and macro-level dimensions of community social organization, *Social Forces*, *70*, 43-64.

Sampson, R. J. (1988). Local Friendship Ties and Community Attachment in Mass Society: A Multilevel Systemic Model. *American Sociological Review*, 5(3), 766-779.

Sampson, R. J., & Groves, W. B. (1989). Community structure and crime: Testing social disorganization theory. *American Journal of Criminology Sociology*, 94, 774-802.

Sampson, R. J., Raudenbush, S. W. (1999). Systematic Social Observation of Public Spaces: A New Look at Disorder in Urban Neighborhoods. *American Journal of Sociology*, 105, 603-651.

Sampson, R. J., Raudenbush, S. W., & Earls, F. (1997). Neighborhood and Violent Crime: A Multiple Level Study of Collective Efficacy. *Science*, 277 (*15*), 918-924.

Sampson, R. J., Morenoff, J. D., & Gannon-Rowley, T. (2002). Assessing "Neighborhood Effects": Social Processes and New Directions in Research, *Annual Review of Sociology*, 28, 443-478.

Sampson, R. J., & Woodredge, J. D. (1986). Evidence that High Crime Rates Encourage Migration Away from Central Cities, *Social Science Quarterly*, 70, 310-314.

Shaw, M. E. (1981). *Group Dynamics: The Psychology of Small Group Behavior*. New York: McGraw-Hill.

Shaw, C., & McKay, H. D. (1942). *Juvenile Delinquency and Urban Areas.* Chicago: University of Chicago Press.

Sherman, L. W.. & Eck., J. (2002). "Policing for Crime Prevention." In *Evidence-Based Crime Prevention*, Edited by Sherman, et al. London: Routledge, pp. 295-329.

Silloway, G. and M. McPherson. 1985. "The limits to citizen participation in a government-sponsored community crime prevention program." Presented at annual meeting of the American Society of Criminology, San Diego.

Simcha-Fagan, O., & Schwartz, J. E. (1986). Neighborhood and Delinquency: An assessment of Contextual Effects. *Criminology*, 24, 667-703.

Simon, D., & Burns, E. (1997). The corner: A year in the life of an inner-city neighborhood. New York: Broadway Books.

Skogan, W. G. (1986). Fear of Crime and Neighborhood Change. *Crime and Justice*, 8, 203-229.

Skogan, W. G. (1990). *Disorder and Decline: Crime and the Spiral Decay in American Neighborhoods.* New York: Free Press.

Skogan, W. G., & Maxfield, M. G. (1981). *Coping with Crime: Individual and Neighborhood Reactions.* Beverly Hills, Calif.: Sage.

South, S. J. & Deane, G. D. (1993). Race and residential mobility: Individual determinants and structural constraints. *Social Forces, 72,* 147-167.

Stafford, M. C., & Galle, O. R. (1984). Victimization Rates, Exposure to Risk, and Fear of Crime. Criminology, 22, 173-185.

Suttles, G. D. (1968). *The Social Order of the Slum*. University of Chicago Press.

Swaroop, S., & Morenoff, J. D. (2006). Building community: the neighborhood context of social organization. *Social Forces*, 84(*3*), 1665-1695.

Taub, R. D., Taylor, G., & Dunham, J. D. (1984). *Paths of Neighborhood Change: Race and Crime in Urban America*. Chicago: The University of Chicago Press.

Taylor, R. B. (1995). The Impact of Crime on Community. *The ANNALS of the American Academy of Political and Social Science*, *539*, 28-45.

Taylor, R. B. (1996). Neighborhood Responses to Disorder and Local Attachment: The Systemic Model of Attachment, Social Disorganization, and Neighborhood Use Value. *Sociological Forum*, 11 (*1*), 41-74.

Taylor, R. B. (1997). Social Order and Disorder of Street Blocks and Neighborhoods: Ecology, Microecology, and the Systemic Model of Social Organization. *Journal of Research in Crime and Delinquency*, 34 (*1*), 113-155.

Taylor, R. B. (1999). Crime, Grime, Fear and Decline: A Longitudinal Look. Washington D.C.: U.S. Department of Justice.

Taylor, R. B. (2001). *Breaking away from broken windows: Evidence from Baltimore neighborhoods and the nationwide fight against crime, grime, fear and decline.* Boulder, CO: Westview Press.

Taylor, R. B. (2002). Exchange – Fear of Crime, Social Ties, and Collective Efficacy: Maybe Masquerading Measurement, Maybe déjà vu All Over Again. *Justice Quarterly*, 19 (*4*), 773-792.

Taylor, R. B., Gottfredson, S. D., & Brower, S. (1981). *Informal control in the urban residential environment*. Final report to the National Institute of Justice. Baltimore: Johns Hopkins University, Center for Metropolitan Planning and Research. In Taylor, R. B. (1986), Urban Neighborhoods. New York: Praeger.

Titus, R. (1984). Residential burglary and the community response. In Clark & T. Hope (Eds.), Coping with burglary (pp. 97-130). Boston: Kluwer-Nijhoff.

Velez, M. B. (2001). "The Role of Public Social Control in Urban Neighborhoods: A Multi-Level Analysis of Victimization Risk." *Criminology* 39:837-64.

Veysey, B. M. & Messner, S.F. (1999). "Further Testing of Social Disorganization Theory: An Elaboration of Sampson and Groves' 'Community Structure and Crime'." *Journal of Research in Crime and Delinquency* 36:156-74.

Wandersman, A., & Florin, P. (2000). Citizen participation. In J. Rappaport & E. Seidman (Eds.), Handbook of community psychology (pp. 247–272). New York: Plenum.

Warr, M. (2000). Fear of crime in the United States: avenues for research and policy. *Criminal Justice* 2000*: Volume 4: Measurement and Analysis of Crime and Justice* (pp. 451-489). Washington, D.C.: National Institute of Justice.

Warner, B. D., & Rountree, P. W. (1997). Local Social Ties in a Community and Crime Model: Questioning the Systematic Nature of Informal Social Control. *Social Problem*, 44, 520-536.

Whitaker, C. J. (1986). *Crime Prevention Measures*. Bureau of Justice Statistics Special Report. Washington, D.C.: U.S. Department of Justice.

Wilson, W. J. (1987). *The Truly Disadvantaged.* Chicago: University of Chicago Press.

Wilson, W. J. (1996). *When Work Disappears: The World of the New Urban Poor.* New York: Alfred A. Knopf. Wilson, J. Q. & Kelling, G. (1982). Broken Windows: The Police and Neighborhood Safety." *Atlantic Monthly*, 249, 29-38.

Woldoff, R. A. (2002). The Effects of Local Stressors on Neighborhood Attachment. *Social Forces*, 81(*1*): 87-116.

Woolcock, M. (1998). Social Capital and Economic Development: Toward a Theoretical Synthesis and Policy Framework. *Theory and Society*, 27, 151-208.

Xie, M. (2007). *Residential Mobility and Household Victimization: Housing as a Vital \ Environment for Living*. Doctoral Dissertation, Albany, State University of New York.

Yin, R. K. 1979. "What is Citizen Crime Prevention?" In How Well Does It Work? Washington, DC: Government Printing Office.