THE FUNCTION OF SOCIAL STRUCTURE IN CONTROLLING

VIOLENT CRIME IN TURKEY

Idris Guclu, B.A., M.A.

Dissertation Prepared for the Degree of

DOCTOR OF PHILOSOPHY

UNIVERSITY OF NORTH TEXAS

December 2010

APPROVED:

David A. Williamson, Major Professor
Eric J. Fritsch, Minor Professor
Milan Zafirovski, Committee Member
Gabriel Ignatow, Committee Member
Sandra L. Terrell, Interim Chair of the
Department of Sociology
Thomas L. Evenson, Dean of the College
of Public Affairs and Community
Service
James D. Meernik, Acting Dean of the
Robert B. Toulouse School of
Graduate Studies

This dissertation examines the relationship between social structural factors and violent crime rates in Turkey. The relationship between social structural characteristics and violent crime is worth exploring in areas that have attracted little academic attention, such as violent crime in Turkey.

In order to understand and prevent the occurrence of crime, researchers have long investigated possible factors related to crime. Examining how crime varies across different regions can help us to understand underlying reasons for violent crime, which is considered one of the enduring problems in society. The findings of this research, to some extent, support the assumptions of social disorganization theory regarding the distribution of violent crime. Both the findings of multivariate and bivariate analysis indicated that poverty, unemployment, and family disruptions may have a positive effect on the distribution of violent crime in the cities of Turkey.

The analysis of the effects of the social structure variables through the mediating variables, such as religious institutions, libraries and voluntary associations on the number of violent crimes and violent criminals, to some extent, support the tenets of social disorganization theory. However, all mediating variables cannot mediate all the indirect effects of social structural covariates. In brief, none of their indirect impacts on the social structural variables on the outcome variable was significant via mediating variables.
I would like to say thanks to the numerous people who have not hesitated to contribute to and support the accomplishment of this valuable study. First, I am grateful to the Turkish National Police for providing their valuable support during my long educational time period. I also would like to say that I am proud of being a member of the Turkish National Police and my many colleagues there.

I want to express my warmest thanks to Dr. David Williamson who always encouraged me to finish and his valuable guidance toward that goal. I also am appreciative to my dissertation committee members, Dr. Milan Zafirovski, Dr. Eric Fritsch, and Dr. Gabriel Ignatow for allocating their valuable time and input.

Additionally, I would like to thank to my dearest colleague Dr. Murat Ozer and my old friend Thomas Youngblood for their valuable comments and helpful criticisms. I am indebted to Dr. Sherry Cooke, who always provided guidance, not only for my dissertation but also throughout each step of my doctoral program.

I especially would like to give my greatest and deepest appreciation to my beloved wife Beyza and my son Ibrahim Tarik (4). Their existence is my main source of inspiration in pursuing of my education and happiness. Without their encouragement and patience, it would have been impossible for me to have reached this point. I would like to give a special note of gratitude to my late father Bektas Guclu and late father-in-law Ibrahim Cingilli, they have never been forgotten and their spiritual support has ever been felt. Finally, thanks to all who believed in me.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>iii</td>
</tr>
<tr>
<td>vii</td>
</tr>
<tr>
<td>viii</td>
</tr>
</tbody>
</table>

## Chapters

1. **INTRODUCTION TO STUDY** ......................................................... 1
   - Introduction ........................................................................... 1
   - Statement of the Problem .................................................. 1
   - Significance of the Study .................................................. 3
   - Purpose ................................................................................ 4
   - Organizational Map of the Study ....................................... 5

2. **LITERATURE REVIEW** ............................................................ 6
   - Introduction ........................................................................... 6
   - Theoretical Background ..................................................... 6
     - Early Chicago School Approach and Social Disorganization Theory ................................................. 6
     - Shaw and McKay's (1942) Approach: Social Disorganization ......................................................... 9
     - Extension of Social Disorganization Theory ....................... 12
     - Social Institutions as Community Control ......................... 22
     - Summary ......................................................................... 24
   - Empirical Evidence ............................................................... 27
   - Conclusion ......................................................................... 47
   - Violent Crime in Turkey ..................................................... 49
   - Research Questions and Hypotheses ................................. 55

3. **METHODOLOGY** ..................................................................... 57
   - Introduction ....................................................................... 57
   - Data ................................................................................... 57
   - Conceptual Definitions ...................................................... 59
<table>
<thead>
<tr>
<th>Table Number</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>Summary of Variables</td>
<td>72</td>
</tr>
<tr>
<td>4.1</td>
<td>Descriptive Statistics (N = 81)</td>
<td>73</td>
</tr>
<tr>
<td>4.2</td>
<td>Bivariate Analysis</td>
<td>78</td>
</tr>
<tr>
<td>4.3</td>
<td>OLS Regression Results for the Number of Violent Crimes</td>
<td>84</td>
</tr>
<tr>
<td>4.4</td>
<td>OLS Regression Results for the Number of Violent Criminals</td>
<td>89</td>
</tr>
<tr>
<td>4.5</td>
<td>OLS Regression Results for the Number of Violent crimes and Criminals</td>
<td>92</td>
</tr>
<tr>
<td>4.6</td>
<td>Summary of Direct, Indirect, and Total Effects of Social Structure Variables Through the Non-Economical Social Institutions on the Number of Violent Crimes in Turkey</td>
<td>99</td>
</tr>
<tr>
<td>4.7</td>
<td>Direct, Indirect, and Total Effects of Social Structure Variables Through the Non-Economical Social Institutions on the Number Of Violent Criminals in Turkey</td>
<td>101</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>The basic systemic model of crime</td>
<td>17</td>
</tr>
<tr>
<td>2.2</td>
<td>Taylor et. al.’s (1984) model</td>
<td>44</td>
</tr>
<tr>
<td>2.3</td>
<td>Wilcox et al.’s (2004) model</td>
<td>47</td>
</tr>
<tr>
<td>2.4</td>
<td>Homicide conviction</td>
<td>51</td>
</tr>
<tr>
<td>2.5</td>
<td>Assault conviction</td>
<td>51</td>
</tr>
<tr>
<td>2.6</td>
<td>Robbery conviction</td>
<td>53</td>
</tr>
<tr>
<td>2.7</td>
<td>Rape conviction</td>
<td>53</td>
</tr>
<tr>
<td>2.8</td>
<td>Violent crime conviction</td>
<td>54</td>
</tr>
<tr>
<td>2.9</td>
<td>Causal model of extended version of Shaw and McKay</td>
<td>55</td>
</tr>
<tr>
<td>4.1</td>
<td>A statistical mediation model</td>
<td>95</td>
</tr>
<tr>
<td>4.2</td>
<td>Path diagram for determinants of violent crime</td>
<td>97</td>
</tr>
<tr>
<td>4.3</td>
<td>Path diagram for determinants of violent criminals</td>
<td>100</td>
</tr>
</tbody>
</table>
CHAPTER 1
INTRODUCTION TO STUDY

Introduction

Crime is one of the realities of our daily lives. The etiology of crime has been one of the top priorities of various academic groups and officials including sociologists, criminologists, police officials and researchers from different disciplines. There are various factors involved in the occurrence of crime. In order to understand and prevent the occurrence of this social phenomenon, researchers have been investigating possible factors related with crime for many years. Society is damaged economically, psychologically and socially by growth of crime rates. Violent crime in particular, is one of the most destructive forms of deviant behavior (Logan & Messner, 1987).

Statement of the Problem

Examining how crime varies across different regions can help us to understand underlying reasons for violent crime, which is considered one of the enduring problems in society. Even though violent crime is a rare occurrence in society, scholars give enormous attention to this problem because prevalence of violent crime accelerates the decay of a given community. Social scientists continuously explore the reasons for crime and criminality in order to ensure stability in the community. Existing research indicates that developing countries experience higher rates of violent crime. Rapid change (Ogburn, 1964), social disorganization (Shaw and McKay, 1942), transmission of different values to succeeding generations (Sutherland, 1947), and anomie (Merton, 1938) have been thought to be among the main reasons for violent crime in developing countries. These ideas generally originated in the United States, and their application
has remained limited to a relatively small number of cultures and countries. Given this context, this study attempts to extend the applicability of these theories and concepts by exploring the social characteristics that accompany violent crime in Turkey.

The Turkish police organization is vastly different from police departments in the United States. In Turkey, law enforcement consists of the Turkish National Police (TNP) and Turkish Gendarmerie. While the TNP is responsible for urban areas which include more than 75% of the population of Turkey, the Gendarmerie force is mainly responsible for rural areas (Bahar & Fert, 2008). The police organization in Turkey is nationalized. The structure of the Turkish police organization is also very centralized. The General Director of Security governs Turkish police organization forces under the auspices of the Ministry of the Interior. The TNP serves all 81 cities of Turkey, each of which has a police department and is governed by a first-degree major. In addition, each city also consists of subdivisions in towns, which are the lowest level of the Turkish police structure (Ozcan & Gultekin, 2000). Officers carry out their job for two main reasons: preventing criminal activities and establishing justice. In order to complete this mission, the Turkish National Police has more than 180,000 ranked and non-ranked police officers nationwide (Ozmen, 2008). Thus, Turkey, considered a developing country, enjoys an enormous police force, a lower official crime rate than developed countries such as Germany, France and Italy, yet Turkey has also seen an important increase in crime rates since 2004 (Atasoy, Baskan, & Ziyalar, 2006).

Even though some critics assume that the occurrence of violent crimes is so rare that they do not deserve much academic attention, the destructive effects of violent crime say otherwise, especially in developing countries such as Turkey. Not only has
violent crime threatened social stability, but also it has become a big obstacle to
development. In recent years, violent crime has been increasing in many countries
creating concern about its effects on stability and development (Fajnzylber, Lederman &
Loayza, 2002). Turkey is a country that shares this concern as it has experienced an
increase in crime of 28% from 2004 to 2005 (Bahar & Fert, 2008), and before that,
according to Yilmaz & Gunayergun (2006), violent crime had increased approximately
4% from 2001 to 2003.

Based on the theoretical foundation of social disorganization with different units
of analysis (e.g. neighborhoods, cities, and countries etc.), some sociological literature
has been devoted to the study of violent crime. Different versions of social
disorganization theory have been used to understand different types of violent crime,
including rural youth violence, homicide, crime related to religious fundamentalism, and
drug-related crimes. The literature shows that there are similarities in the causes of
violent crimes across different countries and cities; however, the scope of
comprehensive studies should include the social structural factors in different regions
and countries that may affect violent crime rates differently.

Significance of the Study

This dissertation is one of the first studies that examine the relationship between
social structure and violent crimes at the city level in Turkey and it produces a model
that may be utilized in future studies. This study will be an opportunity for the validation
of the theoretical foundation for violent crime in different environments. The relationship
between social structural characteristics and violent crime is worth exploring in areas that have attracted little academic attention such as Turkey.

In addition, this study will provide valuable insights and better understanding for future researchers and law enforcement officials about the structural factors that affect violent crimes. It will provide policy makers in Turkey an understanding of the factors that affect violent crime rates in the cities of Turkey so that these politicians will make better policies to reduce violent crime rates. In addition, it may help identify effective strategies for preventing crime. Therefore, based on the findings of this study, the current crime prevention policies used in police organizations can be modified.

Purpose

The purpose of this dissertation is to examine the relationship between social structural factors and violent crime rates in Turkey. This study tested social disorganization theory and explore the possible effects of social structural variables on violent crime rates. These factors include poverty, residential mobility, family disruption, and unemployment. In addition, this study investigated how social disorganization theory explains the geographical distribution of violent crimes throughout the cities in Turkey. This study also examined the effect of positive non-economical social institutions on violent crime. Overall, this study aims to provide a more accurate view of violent crimes at city level so that the effect of possible suggested strategies may be assessed.
Organizational Map of the Study

The dissertation consists of five chapters. The first chapter presents a statement of the problem, purpose and significance of the study. The second chapter provides a review of historical development of systematic social disorganization theory and its extension as well as a brief review of the literature on violent crime in Turkey. Chapter 2 also reviews the empirical literature related to social disorganization studies. This is followed with a section of research questions and hypotheses are used place in this chapter. Chapter 3 presents research methodology consisting of data sources, a tested model, unit of analysis, measurement of variables, and data analysis plan. Chapter 4 presents the findings of descriptive statistics, bivariate analysis and multivariate analysis. In this chapter, based on theoretical framework of this study, all outlined hypotheses are discussed in detail. Finally, Chapter 5 provides discussion on the results of the study, and theoretical and policy implications regarding mentioned in Chapter 4 as well as limitation of the study. In addition, future recommendations are taken place in this final chapter.
CHAPTER 2
LITERATURE REVIEW

Introduction

The effects of social-structural factors and crime have been studied for several years. There are various structural factors that affect crime; however, until recently, it was not possible to capture the social effects comprehensively. In addition, there are cultural, regional, and temporal differences that need continuous scrutiny and a wide-range of empirical effort. As a part of that effort, this study focuses on the variance of violent crime and criminals in terms of social factors that were emphasized by social structural theories, especially social disorganization theory. These factors are poverty, residential mobility, family disruption, and unemployment. The following review presents the emergence and expansion of social disorganization theory through its theoretical background and the empirical studies that examine the effects of various social factors on crime in empirical evidence section.

Theoretical Background

*Early Chicago School Approach and Social Disorganization Theory*

The Industrial Revolution brought great turmoil to individual lives, in turn, leading to some major changes in the structure of society. Individuals’ behavior patterns also were changing. As a result, during this period theories explaining the nature of crime began to emerge. Many classical sociologists, such as Karl Marx, Émile Durkheim, Max Weber and George Simmel, tried to explain these rapid social changes and in turn proposed several solutions.
Durkheim’s concept of anomie was a stepping stone in the creation of the social disorganization perspective. According to Durkheim (1951), the major cause of anomie in society is the breakdown of social systems. The concept of anomie “referred to a condition of relative normlessness in a society or group…” such that it “…referred to a property of the social and culture structure, not to a property of individuals confronting that structure” (Merton, 1957, p. 161). In other words, for Durkheim, anomie is the lack of societal regulation and integration. Thus, during times of rapid social change, social integration brings together conflicting norms and values that make it difficult for society to regulate its members. In addition, the concept of Thomas theorem is also considered as a sociological theory which may underpin the development of social disorganization theory. Social factors such as education, kinship, and family may be important tools to understand a social life (Thomas, 1951).

In this sense, in the early 1900s observers were watching the outcomes of industrialization, and in order to understand the negative outcomes of industrialization, one of the most influential studies was carried out by Thomas and Znaniecki (1918). They examined how Polish peasants responded to the effects of industrialization. Many scholars agree that the concept of social disorganization stemmed from the works of Thomas and Znaniecki (Lee, 2001; Bachman, 1991).

Similarly, Thomas and Znaniecki argued that the decreases in the impact of social norms on individuals bring about social disorganization. They identified the concept of social disorganization as “a decrease of the influence of existing social rules of behavior upon individual members of the group” (Thomas and Znaniecki, 1920, p.2).
That is, the social institutions and organizations that previously held society together now fail to hold the same influence and control over the behavior of its members.

Park and Burgess (1925) developed Thomas and Znaniecki’s (1920) social disorganization into a human ecological model. They categorized Chicago into five different zones indicating that different types of citizens had settled in each area. The business center (Zone I), was located in the center of the city. Zone II was considered the transition zone where immigrants generally resided during that time. The working classes generally resided in Zone III, and the middle class in Zone IV. Zone V was considered the suburban area. The living zones were based primarily on the socioeconomic levels of the people who lived there. Chicago was a rapidly evolving and growing city with a large immigrant population during the time. The first immigrants inhabited the transition zone, which was also the area closest to the industrial work places. The criminal activity in this zone remained high regardless of the racial/ethnic groups that lived there.

Park (1975) argued that “any form of change that brings any measurable alteration in the routine of social life tends to break up habits; and in breaking up the habits upon which the existing social organization rests, destroys that organization itself” (p.38). He pays attention to social change that shapes social structure and may result in its breakdown. In this sense, the failure of social institutions and the social values conducted as normative behavior causes the emergence of social disorganization. Therefore, for Park, the occurrence of crime is evidence of social disorganization. As noted, the contribution of Park to social disorganization was to add the concept of the breakdown of social control.
**Shaw and McKay’s (1942) Approach: Social Disorganization**

The work of Shaw and Mckay (1942) is mainly concerned with social disorganization theory; however, as mentioned before, the theory was built on the earlier works of Park and Burgess (1920). Burgess’ (1925) concentric zone theory in particular provided a broad perspective for the studies of Shaw and McKay. Social disorganization theory assumes that the property in the center of city was expensive owing to the density of transportation, since the lines of transportation usually passed through the center of city, thus making it desirable to locate businesses there, especially manufacturing (Bursik and Grasmick, 1993). Investors had these areas kept up well and patrolled often, keeping crime down. On the other hand, those areas surrounding the business center were not looked after by the investors. As a result, according to Bursik and Grasmick (1993), the residences in this area remained in bad condition, and their low rental values attracted people with a low economic status, generally immigrant ethnic groups (Bursik and Grasmick, 1993).

Shaw and McKay (1942) examined a spatial pattern which Park and Burgess proposed. They conducted a study of concentric zone theory in Chicago, Cincinnati, Boston, Birmingham, and Columbus, investigating the relationship between juvenile delinquency and the social structural factors within each area. In their study, Shaw and McKay (1942) utilized five additional variables: school truancy rates, infant mortality rates, tuberculosis rates, mental disorder rates, and young adult offender rates.

Shaw and McKay (1942) also examined the juvenile court records of the city. Throughout their study, Shaw and McKay (1942) recognized that the transition zone has high residential mobility where immigrants move out of the zone after they get better
opportunities and jobs. Other features of the transitional zone were residential mobility, heterogeneity, and bad economic conditions. Shaw and McKay (1942) even noticed that though there was constant change in the transition zone, crime rates remained the same and higher than in other zones. Like Durkheim, they were able to account for the effects of structural variables such as socioeconomic status, unemployment, and residential mobility on crime rates.

In terms of differential crime rates across neighborhoods, Shaw and McKay (1942) argued that disorganized environments were created by social structural conditions, especially residential mobility, in the zone of transition. And in turn, socially disorganized areas become places where informal local friendship ties are impaired, supervision of teenage peer groups fails, and the likelihood of local participation in formal voluntary organizations decreases. Moreover, the Shaw and McKay emphasized that weakened formal and informal social controls in the community result from a continuous transmission of differential systems of values leading to inconsistency in cultural norms.

In brief, Shaw and McKay argued that “low economic status, ethnic heterogeneity, and residential mobility led to the disruption of community social organization, which in turn accounted for variations in crime and delinquency rates” (Gabbidon & Greene, 2005, p.182). Shaw and McKay’s studies made an important contribution to criminological theory. However, there are many criticisms of Shaw and McKay’s social disorganization theory (Bursik, 1988; Lowenkamp, Cullen & Pratt, 2003).

Kornhauser (1978) found that while Shaw and McKay claimed that crime rates lead to more social disorganization and that more social disorganization lead to more
crime, the neither provided any kind of a model for how this would work or how it might be measured. Bursik and Grasmick (1993) highlighted the ambiguity of social disorganization theory, which does not make clear distinction between the result of disorganization and the disorganization itself. However, Bursik and Grasmick (1993) justified Shaw and McKay’s work in terms providing a theoretical framework. He stated that with the close relationship of rapid ecological changes with a social disorganization framework might best be studied by a control-theoretical perspective.

Kornhauser (1978) claims that Shaw and McKay built on the elements of strain, control theories, and cultural conflict, each of which is at times inconsistent. Kornhauser focused on the combining of cultural and control theoretical concepts (Snell, 2001). In this sense, Kornhauser emphasized social control theory regarding social bonds and structural conditions.

Kornhauser also found that Shaw and McKay’s social disorganization theory ignored the individual by focusing only on the community levels. According to the theory, the structure of society, such as economic conditions, has a determinate effect whether the individual commits a crime or not. The individual’s agency is not considered as part of the social environment in social disorganization theory. This framework does not account for the fact that juvenile delinquency occurs not only in disorganized areas but also in organized areas; therefore, social disorganization theory still does not explain why some people in one community do not participate in crimes.

A huge amount of the literature indicates that there are several definitions of social disorganization employed by criminologists. According to Faris (1948), social disorganization refers to “a disturbance in the patterns and mechanisms of human
relationships” (p.20). The regulative function of society is broken during this time. Elliott and Merrill (1950) claim that social disorganization is the outcome of social change. Under this circumstance, it is seen that the relationship among the members of society are weak and broken. Kornhauser’s (1978) definition, in comparison, is richer and more comprehensive for understanding the concept of social disorganization. She evaluated the condition as an inability to figure out social values. She saw social disorganization as attenuating cultural values due to lacking self-relevance or a direct link “or to a specified collectivity” (p.120). For cultural values to attenuate there will be evidence including distorted values, selective use of norms, and beliefs withering away. Bachman (1991) briefly describes the term social disorganization as the conditions that reduce the importance of social institutions to manage social behavior. Bursik (1999) defined social disorganization as the ability of a neighborhood that is inherent to its social structure to control and guide the resident’s affiliations, interactions, and communications with each other.

As noted, Shaw and McKay’s social disorganization has an important place in the criminological literature. Their studies provided an importation theoretical foundation for future works, such as Robert K. Merton’s (1938) anomie and strain theory, and Hirschi’s (1969) social control theory. Many theories stemming from Shaw and McKay’s social disorganization include individual aspects aside from the cultural level in order to better understand the full picture of crime.

Extension of Social Disorganization Theory

After Thomas and Znaniecki (1918) and Shaw and McKay, social disorganization
theory was further developed by criminologists. Social disorganization theory can be seen in Krohn (1986), Kornhauser (1978), Kasarda and Janowitz (1974), Bursik and Grasmick (1993), Sampson, Raudenbush, and Earls (1997), and Sampson and Raudenbush (1999). Each has made an important contribution to extending social disorganization theory.

As noted above, Kornhauser (1978) pointed out several shortcomings in Shaw and McKay’s (1942) social disorganization theory. To account for these shortcomings, Kornhauser (1978) emphasized the separation of cultural deviance from social control elements. According to Kornhauser (1978), social disorganization is the lack of well defined, uniform values within a culture, the social structures involved, and how individuals interact within both. She argues that it is social control that guides us toward or away from delinquency rather than the concept of cultural deviance; whereas Shaw and McKay (1942) attempted to combine both concepts for understanding delinquency.

Kornhauser (1978) stated that no perfectly organized society exists. Rather, some societies, to some extent, may be more organized or more disorganized compared to others. Thus, the rate of delinquency may lie in both malfunctioning social structures and cultural flaws. Kornhauser (1978) instead focuses on weak social control. Therefore, social disorganization brings about weak social control owing to insufficient internalized shared values and norms by members of society.

Before Kornhauser (1978), Kasarda and Janowitz (1974) developed a systemic model independent of factors such as urbanization and density. In the systemic model, “the local community is viewed as a complex system of friendship and kinship networks and formal and informal associational ties rooted in family life and ongoing socialization
processes” (Gabbidon & Greene, 2005, p.182). This is similar to Ferdinand Tönnies’ conception of “community” called Gemeinschaft, a German word for a society where social bonds are personal and direct, and there are strong shared values and beliefs. Gemeinschaft refers to the closeness of holistic social relationships in pre-modern communities (Tönnies, 2002). Like the systemic model, Gemeinschaft is also based on kinship, neighborhood, and friendship. The importance of Kasarda and Janowitz’s (1974) study is that it presents the association between macro and micro attachment.

Another extension of social disorganization theory can be seen in Krohn’s (1986) research relating network density to the level of direct associations between residents in a given community. He states that “the greater the network density, the greater the constraint on behavior within the purview of the social network” (p.84). In other words, increases in network density among residents add to the social control ability of the community and thus enhance the community’s ability to inhibit deviant behavior.

Bursik and Grasmick (1993) presented neighborhood control theory in order to take into consideration the dramatic changes that occurred in society the development of social disorganization theory. Bursik and Grasmick (1993) did not believe that Shaw and McKay were erroneous and even went so far as to say that their theoretical insights have depths that are still being explored today. Based on existing theoretical framework, Bursik and Grasmick (1993) focused on community dynamics. In this sense, they stated that “the most fully developed aspects of their model, which focused on the internal dynamics of local communities and the capacity of local residents to regulate the behavior of their fellow neighbors, continue to be significantly related to neighborhood variations in crime rates” (p.x).
Therefore, they criticized Shaw and McKay for several points. According to Bursik and Grasmick (1993), Shaw and McKay did not take into account sufficiently external relationships for controlling crime; that is, besides internal factors, the regulatory factor of one neighborhood might be also shaped by outside factors such as politics and economics, and so on. They claim that the ability of one neighborhood to regulate itself also needs strong external relationships providing additional support in controlling crime, such as through powerful external public commitments with the city, state, and nation. Bursik and Grasmick (1993) argued for the revitalization of social disorganization theory through establishing a systemic theory of community that “emphasizes how neighborhood life is shaped by the structure of formal and informal networks of association” (p. x). In order to establish a systemic theory of community, Bursik and Grasmick (1993) utilized the concept of the systematic model of attachment coined by Kasarda and Janowitz (1974). They employed this theory for understanding crime rates within a community.

According to Kasarda and Janowitz’s (1974) view, there is a system that exists in a neighborhood providing both informal and formal social controls. The neighborhood runs this system for controlling crime. That is, the degree of individual attachment to community is evident to the occurrence of crime within community. To be more concrete, if an individual has a strong attachment to the local community, he/she is less likely to get involved in crime since the values and norms of the community envelop the individual’s entire arena, and in turn, prevent violent activity. Shared values and norms are created out of individual attachment to community.
Previously, Kornhauser (1978) defined social disorganization as “the inability of a community structure to realize the common values of its residents and maintain effective social controls” (p. 120). Drawing on this definition and borrowing the definition of the three levels of social control from Hunter (1985), Bursik and Grasmick (1993) systematically merged prior works into the systemic model of social disorganization.

The authors draw particular attention to the regulatory capacity of communities by detailing three types of community level social bonds, including private, parochial and public. Private bonds refer to kinship and friendship ties in the neighborhood. Parochial bonds indicate the linkage among neighbors. According to Bursik and Grasmick (1993), parochial refers to “the effects of the broader local interpersonal networks and the interlocking of local institutions” (p.17). The last social bond is public, which can be considered as the residents’ outside ties. Finally, all three levels of social bonds for Bursik and Grasmick’s systemic social control model are cornerstones for the successful informal social control (Karstedt & LaFree, 2006). According to the authors, communities differ in their abilities to mobilize these three levels of social controls. For instance, a community can have an ability to mobilize private relationships (primary), such as families and intimate groups; however, the same community may not have enough capacity to mobilize public control (i.e., church, police) (Kubrin and Weitzer, 2003). On the other hand, Velez (2001) found that poor neighborhoods with strong ties to local government and good relations with the police force suffer less crime compared to other poor communities that have limited access to public social control mechanisms.

Based on this theoretical framework, Bursik and Grasmick (1993) proposed the basic systemic model of crime presented in Figure 2.1. Here there are three main
variables (socioeconomic, residential instability and racial/ethnic heterogeneity) that affect the relationships among individuals. This theory assumes that the socioeconomic status of a neighborhood might affect three layers of control (public control, private control, and parochial control) and the effectiveness of socialization through the variables residential mobility and racial heterogeneity. In this model, residential mobility and racial heterogeneity are mediating variables. The development of relationships among individuals also influences the three layers of control, besides effective socialization and in turn affects the crime rate.

Figure 2.1. The basic systemic model of crime (Bursik and Grasmick, 1993, p.39).

Sampson, Raudenbush, and Earls (1997) also further developed the original social disorganization theory proposed by Shaw and McKay (1942). Sampson et al. (1997) examined social disorganization theory at the level of the individual. They tried to find an answer for crime rate variation across neighborhoods, particularly looking at the effect of structural and demographic factors on crime rates. Besides their contribution to Shaw and McKay’s (1942) original social disorganization theory, they
built their approach on Bursik and Grasmick’s (1993) concept of informal controls regarding the mediating impacts. In the same fashion, Sampson et al. (1997) also focused on examining the neighborhood. According to Sampson and colleagues, collective efficacy merges the aspect of social cohesion and “shared expectations for the social control of public space” (Sampson & Raudenbush, 1999, p. 603). Sampson and Grove (1989) argue that informal social control stem from neighborhood interpersonal networks.

For Sampson et al. (1997), the interaction among residents in a neighborhood is key in to understanding the variation of crime across neighborhoods and the reasons for disorganization. They state that “[t]he capacity of residents to control group level processes and visible signs of social disorder is thus a key mechanism influencing opportunities for interpersonal crime in a neighborhood” (p.918); therefore, they underscore the importance of interaction.

Sampson et al. (1997) also consider collective efficacy as a determining factor in why one neighborhood has a higher crime rate than one with the same social structures. The term collective efficacy has attracted great attention for last two decades (Chen & Bliese, 2002). According to Sampson et al. (1997), collective efficacy refers to “social cohesion among neighbors combined with their willingness to intervene on behalf of the common good” (p.918). The ability for informal social control and social cohesion are the main indicators in collective efficacy (Sampson, Morenoff & Rowley, 2002). Sampson et al. (1997) state that mutual trust and working for the common good define a neighborhood’s collective efficacy. Sampson et al. (1997) consider collective efficacy as a provider of social control.
Collective efficacy simply indicates informal ties that bring members of groups together based on shared values to control crime, and it has a mediating effect in terms of social structural factors such as residential mobility, poverty, and unemployment. For example, according to Sampson et al (1997), there is a negative relationship between collective efficacy and residential mobility. If there is high residential mobility, then there will be less collective efficacy and consequently a higher crime rate. In this sense, collective efficacy takes place as a mediator.

Sampson, Raudenbush, and Earls (1997) proposed collective efficacy in order to resolve inconsistencies with the systemic model. That is, the studies that tested the systemic model resulted in inconsistent findings. For example, social ties as projected by systemic theory resulted in inconsistent findings in neighborhoods that were demographically, racially, and culturally different than each other. The collective efficacy model did take the motivation and mutual trust of residents into account to maintain informal social control. However, without mutual trust being voluntary, social ties made only limited contributions to the informal and formal social control of the community. Any action taken to control deviance in the community would be limited; therefore the collective efficacy model cannot be assumed to be superior to the systemic model. In this regard, Browning et al.'s (2004) study raised skepticism about collective efficacy because the results of the study indicated that it had little impact in neighborhoods in which both the offenders’ and residents’ social capital were supported.

Morenoff, Sampson and Raudenbush (2001) criticized the collective efficacy model in regard to spatial interdependence that, if not controlled, spatial autocorrelation
might seemingly increase or reduce the effect of collective efficacy. That is, for instance, a possible situation where crime rates increase in a neighborhood community might suggest a loss in the power of social control in the local community or vice versa.

According to Morenoff and colleagues, the theory of social capital verified the concept of social disorganization. Likewise, Bursik (1999) also concluded that there is a relationship between social capital and social disorganization.

Many scholars utilized the concept of social capital to examine the ability of the community to establish social order and social control, and to reach common, shared goals (Sampson et al, 1997; Sampson, Morenoff, & Earls, 1999; Roman & Moore, 2004), but the definition of social capital is a complex issue. There is no consistent definition of social capital. Several scholars define “social capital” based on different concepts from their fields and related perspectives and theories. Each definition applies a different meaning to the same term. Therefore, it is difficult to find a common definition of social capital among scholars (Durlauf, 2002; Portes, 1998).

American philosopher, Francis Fukuyama’s (1999) definition is as follows:

Social capital can be defined simply as an instantiated set of informal values or norms shared among members of a group that permits them to cooperate with one another. If members of the group come to expect that others will behave reliably and honestly, then they will come to trust one another. Trust acts like a lubricant that makes any group or organization run more efficiently. (p. 16)

Fukuyama’s definition seems to include a broad set of intuitions. Putnam (2000) defined social capital as “…connections among individuals – social networks and the norms of reciprocity and trustworthiness…” (p.19). Coleman (1990) focuses on two important characteristics of social capital: social structure and the interaction between the individual and this structure. Taking these definitions together, it is noted that there
is a combination of a functional notion and a causal notion corresponding with the concept of social capital.

Sampson (1995) emphasized the link between the concept of social capital and social disorganization. For this reason, he highlights Coleman’s (1990) approach to the theoretical framework of these concepts. Sampson (1995) states, using Coleman’s perspective of social capital, that a lack of social capital is a primary factor in the social disorganization of a community. For example, many researchers argue that social disorganization also indicates less social capital (Roman & Moore, 2004); therefore, social capital has an inverse association with social disorganization.

In sum, social disorganization theory moved towards the systemic model as a result of these theoretical and empirical studies by the early of 1990s. The systemic model, coined by Kasarda and Janowitz (1974), took the social fabric of community into account as well as structural characteristics and put emphasis on social ties in the community as independent of structural variables like low economic status. The theory has been criticized by Kornhauser (1978) for its diverse model, which includes strain, cultural deviance, control models. She extended social disorganization theory by merging the cultural dimension of social disorganization theory with social control. Krohn (1986) emphasized that increasing the density of social ties is necessary for increasing the capability of a society to control deviant behavior. In particular, Bursik and Grasmick’s (1993) concept of systematic theory and three forms of informal control and Sampson et al.’s (1997) intervening mechanism of collective efficacy underline the importance of parochial variables (voluntary associations, library, and religious institutions). As a final point, Bursik and Webb (1982) argued that the racial
composition of neighborhoods was significant in contrast to the assumptions of social disorganization theory.

**Social Institutions as Community Control**

The systemic social disorganization theory assumes that local organizations such as institutions may promote social control (Bursik & Grasmick 1993; Rose, 2000; Hunter, 1985; Sampson & Groves, 1989). The commitments among members of society can be increased through organizations that create effective interactions. For instance, schools, libraries, recreation centers, voluntary organizations, and religious institutions are the places where a neighborhood’s interactions involve mentor interaction and lead to the emergence of strong friendships; thus, parochial control is carried out through social institutions. Social disorganization theory considers the role of institutions as mechanisms to maintain and regulate social control. Likewise, Rose (2000) also examined parochial control factor leading to social disorganization. Sampson (2001) highlights the importance of social institutions for society through the following statement, “Neighborhood organizations reflect the structural embodiment of community cohesion, and thus the instability and isolation of local institutions are key factors underlying the structural dimension of social organization” (p.10).

A great number of studies examine the relationship between crime and the existence of institutions in society (e.g., Roncek and Meier, 1991). Social institutions have both negative and positive effects on crime. For instance, according to the results of Roncek and his colleagues' studies, bars and nightclubs, as non-stabilizing institutions, affect crime rate positively at the block-level (Roncek and Bell, 1981;
Roncek and Meier, 1991; Roncek and Pratiner, 1989). That is, more bars bring about more crime. In contrast to stabilizing institutions, non-stabilizing institutions fail to regulate and maintain social control; moreover, they may be important factors regarding causing social disorganization. Peterson, Krivo and Harris (2002) conclude that there is a negative relationship between recreation centers and violent crime. Peterson et al. (2002) also examined the effect of libraries, retail establishments, and bars on violent crime.

Putnam (1993, 2000) assesses voluntary associations as an important factor in creating an atmosphere of social trust and regulating social networks. The strength of social bonds is fostered by voluntary associations (Hunter 1985; Bursik and Grasmick 1993; Kubrin and Weitzer 2003). Rose (2000), in terms of function, believed religious institutions may also be considered as one type of voluntary association. Both voluntary associations and religious institutions are agents of social control.

Several studies examined the effect of religious institutions on crime (Elifson, Petersen, and Hadaway 1983; Burkett and Warren 1987; Hirschi and Stark 1969; Johnson, Jang, Larson, & Li 2001; Johnson, Larson, & McCullough 2000; Grasmick et al., 1991). As a parochial variable, religious institutions can be an important predictor for understanding of the degree of social organization. Rose (2000) states that “[r]eligious institutions function as mechanisms of parochial control in a number of ways. In addition to ministering to their congregants, they provide services to residents (members and non-members) of the communities in which they are located” (p.340). Similarly, Betten and Austin (1990) consider religious institutions as complementary
tools to the improvement and growth of social organizations such as schools, hospitals, and child care.

Besides the complementary characteristic, religious institutions have five additional characteristics that make them an important institution in society. According to Rose (2000), these characteristics are as follows: 1) religious institutions exist in any type of community; 2) religious institutions are well established owing to their strong connections with other organizations; 3) religious institutions foster solidarity; 4) religious institutions present a useful recipe for addressing problems; and 5) religious institutions create a bridge between individuals and society. Finally, in this study, libraries, religious institutions, and voluntary associations are utilized as parochial control variables. Based on the mentioned theoretical review, these variables are an indicator of the level of social organization, and indirectly influence the violent crime rates.

Summary

As noted, social disorganization theory has been moving on a winding path since it first appeared through the study of Thomas and Znaniecki. In the course of time, several scholars have made substantive contributions to furthering the development of the theoretical formulation of this concept. Thomas and Znaniecki's work has been an important catalyst for these studies. They continually used the term "social disorganization" when referring to the failure of social rules in influencing members of the group. Park and Burgess extended the theory by including the concept of social institutions. That is, the ability of social institutions to regulate and utilize social control
in preventing crime is decreased owing to social change resulting in social
disorganization.

The next important players in extending of social disorganization theory were
Shaw and McKay (1942). They are the steppingstone in the formulation of traditional
social disorganization theory. Shaw and McKay focused on social structural factors
such as ethnic heterogeneity, residential mobility, and poverty as influencing crime rates
within a community by using social control. Shaw and McKay proposed clean
distinctive social factors that are easily understandable and applicable to all community
level studies regarding the understanding of delinquency and crime rates. However,
social disorganization theory did not receive much attention until the early of 1980s.

Besides Shaw and McKay, Kasarda and Jonowitz (1974), Kornhauser (1978),
Krohn’s (1986) studies were valuable to expanding social disorganization theory until
the 1990s. Kasarda and Jonowitz (1974) presented a systemic model of social
disorganization theory. In particular, the similarities in their study with that of Ferdinand
Tonnies’ concept of “community” are noteworthy. Kornhauser (1978) discussed the
causal connection related to crime and disorganization. In contrast to Shaw and
McKay, Kornhauser (1978) articulated the separation of cultural deviance from social
control elements. Krohn’s (1986) network density study added another dimension to
social disorganization theory.

Sampson and Groves (1989) merged the approach of Kasarda and Jonowitz
(1974) with traditional social disorganization theory in the late 1980s. Bursik and
Grasmick (1993) took a further step to build a neighborhood control theory upon the
systemic theory of social disorganization. The contribution of Bursik and Grasmick
(1993) to extension of social disorganization was to add three levels of social controls proposed by Hunter (1985) to the version of Sampson and Groves’ systemic theory of social disorganization. Based on the existing theoretical literature, Bursik and Grasmick (1993) emphasized the regulatory capacity of communities by employing three levels of social controls.

Sampson, Raudenbush, and Earls (1997) also developed the traditional social disorganization theory. Sampson et al (1997) examined crime rate variation across neighborhoods and built their concept on Bursik and Grasmick’s (1993) approach related to the intervening effect of social disorganization. They developed the concept of collective efficacy for eliminating the inconsistencies within the systemic model.

Based on the theoretical framework of social disorganization, this study will bring a range of ideas together. As noted, the theoretical development of social disorganization fails to develop a model to cover all dimensions of social factors for understanding crime rates. This study combines systemic social disorganization theory with Bursik and Grasmick’s (1993) parochial level of control and Sampson and Groves’ (1989) concept of social institutions. Actually, it is difficult to make a distinction among the existing theoretical approaches to social disorganization. While some of them are complementary with each other or overlap, some carry some small distinction or are complementary and overlap. Consequently, the social structural variables: residential mobility, poverty, unemployment, and family disruption are mainly compiled from Shaw and McKay and their followers, and mediating variables are based on the concept of Bursik and Grasmick (1993) and Sampson and Groves (1989).
Empirical Evidence

One of the first adequate tests of social disorganization theory based on theoretical constructs was done by Sampson and Groves (1989). The researchers incorporated earlier modifications and criticisms into their study and recognized the resurgence of social disorganization theory. Their research attracted other social researchers' attention, and the researchers examined the various dimensions of the social disorganization theory using BCS data that comprised of 238 small and homogenous localities. Sampson and Groves (1989) emphasized urbanism and family disruption in addition to the structural variables of low economic status, heterogeneity, and residential mobility, as proposed by Shaw and McKay (1942). The researchers posited that formal and informal social controls were negatively affected by urbanization since it increased the anonymity in society; and the supervision of the children was impaired by family disruption, which resulted in increased delinquency (Sampson and Groves, 1989).

The researchers added three intervening variables of local friendship networks; organizational participation, and unsupervised peer groups; all consistent with social disorganization theory. The analysis of the interaction between intervening variables and structural variables revealed that social economic status was positively correlated with organizational participation while it was negatively correlated with unsupervised peer groups.

Then, the researchers employed the three intervening variables together with five structural variables to explain victimization and offending rates. As a result, all intervening variables and only two structural variables, namely family disruption and
urbanization, were found significantly related to total victimization rates. That is, when the effects of intervening variables were taken into account, the effects of the structural variables disappeared except for family disruption and urbanization.

The effects of structural and intervening variables on different crimes yielded different results, and they were not steady across the different types of victimization and crimes rates; however, unsupervised peer groups were found to have the highest influential predictor over several analyses. For example, ethnic heterogeneity and unsupervised peer groups were found to be significantly related to violence rates.

Despite some of the incoherent findings, Sampson and Groves’ research can be considered an adequate test of social disorganization theory at the same time it supports the systemic theory approach. The researchers emphasized the importance of ties embedded in family life and in a community, which is defined as a complex system comprised of kinship networks, friendships, and informal and formal links.

In this context, Lowenkamp, Cullen, and Pratt (2003) replicated Sampson and Groves’ (1989) study by using the same data set (1994 BCS data). In their study, the researchers examined total victimization rates as the dependent variable. Like Sampson and Groves, they utilized the following mediating variables; local friendship networks, organizational participation, and unsupervised teenage peer groups. Moreover, Lowenkamp, Cullen, and Pratt (2003) also used the same structural variables: socioeconomic status, urbanization, family disruption, residential stability, and ethnic heterogeneity. Besides these variables, models, and data, they also used the same statistical techniques for analyzing the data, weighted least squares (WLS) regression models. Similarly, they have found that the systemic model intervened the
impacts of structural variables except urbanization. The only difference from the earlier study was that organizational participation did not have a significant effect in their model.

Social disorganization theory has been revitalized due to Sampson and Groves’ research. The researchers found support for social disorganization while examining only structural variables. Warner and Pierce (1993) employed social disorganization’s structural variables by analyzing calls to the police in 60 Boston precincts as their dependent variable. They employed ordinary least squares (OLS) regression in order to see the impact of social disorganization, such as poverty and family disruption, on the type of crime (assault, burglary, and robbery). Warner and Pierce’s (1993) study revealed that racial heterogeneity, poverty, and residential mobility have a positive effect on assault, burglary, and robbery. Therefore, at the neighborhood level, in order to understand the distribution of crime rates, structural variables were important factors.

Likewise, by examining the traditional structural variables of social disorganization, Krivo and Peterson (1996) used 1990 census data for Columbus, Ohio. They revealed that regardless of racial composition, tremendously deprived neighborhoods had higher crime rates. Krivo and Peterson (1996) added that “the sources of crime are invariant across race and are rooted largely in the structural differences among communities” (p.642). In the same fashion, Baumer, Horney, Felson, and Lauritsen (2003) examined the structural variables on varying levels of disadvantaged neighborhoods. They draw data from the National Crime Victimization Survey (NCVS) and the 1990 census regarding the two types of crime: assaults ($n =$
3,327) and robberies \(n = 468\). Baumer et al. (2003) revealed that the model could predict different levels of violence.

Sampson (1985) was concerned with the impact of the structural characteristics of a neighborhood on rates of victimization such as robbery, rape, larceny, and assault. The data was obtained from National Crime Survey (NCS). Sampson (1985) argued that the existence literature focused on economic and racial variables, rather other aspect of social structure. He added additional variables to extend the theory. Sampson (1985) employed two dependent variables: personal theft and violent crime with five independent variables: family structure, unemployment, residential mobility, racial composition, income inequality, and structural density. He conducted an ANOVA statistic technique for analyzing the data. According to the findings, structural density, racial composition, and residential mobility have a significant association with victimization. On the other hand, there is no relationship between income inequality and victimization. Finally, he argued that his finding regarding residential mobility and structural density support traditional social disorganization theory.

Veysey and Messner (1999) retested Sampson and Groves’ (1989) “community structure and crime.” They used the data of the 238 areas in Wales, Great Britain driven from Sampson (1988). Like Sampson and Groves’ (1989) study, Veysey and his colleague employed all mediating and exogenous variables. In this study, victimization rate is the dependent variable. They argued that using advanced statistical techniques and covariance structural modeling (LISREL) provide a more detailed picture of Sampson and Groves’ (1989) study. Veysey and Messner (1999) revealed that the
The intervening impact of traditional social disorganization variables is not totally supported as Sampson and Groves (1989) argued. Veysey and Messner (1999) state that:

The magnitude of the indirect effects of reveals that a portion of the variance in crime accounted for by the exogenous variables can be attributed to the mediators [and that] the indicators of social disorganization do not mediate the effects of urbanization and family disruption, as demonstrated by the large direct effects of these variables on the crime rate. (p.170)

In terms of stabilizing the community, social disorganization is not a single construct, rather it is more like a mechanism for something else. Besides social disorganization theory, the introduced model may explain several theories regarding crime (Veysey & Messner, 1999).

Rountree, Land and Miethe (1994) examined the social characteristics of neighborhoods in order to see their impact on victimization. Through combining individual and structural effects, they emphasized the impact of social structural variables on victimization. In doing so, Rountree et al. (1994) utilized hierarchical linear regression model (HLM). They derived the data from Seattle based on an individual survey. The sample size of the study is 5,090. Rountree et al. (1994) used both macro (structural variables) such as population density, neighborhood incivilities, ethnic heterogeneity and micro level (individual) data such as gender, income, living alone, and age. In this study, neighborhood density is measured as “the values of a composite index of the number of places available for public activity within three blocks of each respondent's home (schools, convenience stores, bars, fast food restaurants, office buildings, parks or playgrounds, shopping malls, hotels, bus stops)” (p.397). They averaged density values for each neighborhood. For the next variable, Rountree et al. (1994) measured ethnic heterogeneity as the product of the percentage of nonwhite and
white residents. The neighborhood incivilities variable was measured as the average of the number of problems occurring within four blocks of each resident’s home. Those problems are: “(1) teenagers ‘hanging out’ on the street, (2) litter and garbage on the street, (3) abandoned houses and buildings, (4) poor street lighting, and (5) vandalism” (p.398).

Rountree et al. (1994) revealed several findings through the study: first, violent victimization and being burglarized vary by neighborhood; second, there is a significant relationship between the variables neighborhood incivilities and neighborhood density with violent victimization; third, some demographic variables relate to an individual’s level of risk. Altogether, Rountree et al.’s (1994) study supports former studies regarding the effect of routine activity risk on victimization; however, in addition to prior literature, they also underlined that neighborhood conditions may be an important indicator in determining the level of disorganization. Through their study, individual action within social context may be seen more clearly.

Doubts have been raised regarding mediating role of social ties and studies that incorporate the measures of the systematic model of social disorganization. By using data on 60 neighborhoods selected from New York, Florida and Missouri, Bellair (1997) examined the effect of frequent and infrequent of interactions among neighbors on the rates of three serious crimes: robbery, motor vehicle theft, and burglary. The unit of analysis for this study is neighborhood police beats. Probability sampling designs were employed in this study. According to the assumption of probability sampling, each subject in the targeted population has an equal probability of being selected for the sample (Babbie, 1984). It is important to determination whether a particular sample is
representative of the study population. The sample size of the study is 12,019 households. The findings of the study partly support social disorganization theory. Bellair (1997) revealed that the amount of interactions among neighbors is important to establish common values of community for controlling crime.

Warner and Rountree (1997) also draw attention to the nature of social ties in racially different communities. They tested the role of local social ties on 100 Seattle neighborhoods. They revealed that the role of social ties may vary in its effectiveness in different types of neighborhoods. The effect of social ties on assault rates was significant among white neighborhoods. That is, social ties had no significant effect on predominantly minority neighborhoods and mixed neighborhoods. They assumed that “the differences in the effects of social ties across neighborhoods may be because of the limited breadth of networks in nonwhite communities, the limited ties to external institutions in nonwhite communities, or the emergence of oppositional culture in disadvantaged nonwhite communities” (Rountree & Warner, 1999, p. 793).

Similar to Warner and Wilcox's study, Bursik and Webb (1982) tested social disorganization theory using Shaw and McKay's data. Besides that, Bursik and Webb (1982) also used the data set collected by the Chicago juvenile court in 1970, including data covering the periods of 1940-50, 1950-60, and 1960-70. This allowed them to see changes over time and take into account recent social changes for obtaining overall picture of the effects. The results were similar to Shaw and McKay's findings. In order to test Shaw and McKay's social disorganization theory, Bursik and Webb (1982) examined crime rate in various neighborhoods over time. Bursik and Webb (1982) stated that "it is important to emphasize that these areas were characterized by high
rates of delinquency, no matter which groups were moving into the area, just as the new communities serving as conduits for blacks since 1948 were” (p.40). Besides Shaw and McKay’s findings, they also found that racial composition might play an important role in the rate of crime in some certain neighborhoods.

Snell (2001) tested Bursik and Grasmick’s systemic theory. In doing so, he used the secondary data driven from Taylor’s (1998)' study in Baltimore. The data covers the years 1981-1982 and the year 1994 using both individual level and neighborhood level information. In this study, both HLM and OLS regression models were conducted to analyze the data. The findings of the study regarding crime rates supported Bursik and Grasmick’s systemic theory. At this point, Snell (2001) states that “when disorder becomes highly visible in a community, residents may feel demoralized, helpless, and angry at being crowded out of community life, resulting in deviant behavior” (p.134). However, in contrast to Bursik and Grasmick’s proposition for explaining fear of crime, Snell (2001) found that the system bringing about high rates of crime was not the same the one causing about fear of crime.

Pattillo (1998) used ethnographic data for exploring how residents handle the ecological context of one black middle class neighborhood in Chicago. The data used in this study came from the early 1990s. Pattillo (1998) utilized a qualitative research design for the collection of data, based on interviews and participant observation. According to the findings, black middle-class families are failing to establish stability and internalize shared values. Owing to a high rate of poverty and low-income residents, some residents turn to crime. Pattillo (1998) states that “dense social networks fostered by residential stability facilitate the informal supervision of neighborhood youth and
enhance the activities of formal organizations and institutions” (p.747). Pattillo (1998) found that the density of social networks and residential stability were not successful at controlling crime because some of the social networks, such as gangs and drug dealing organizations became institutions that promoted crime and deviant behavior in the neighborhood. In other words, the density of social networks may be an obstacle for Shaw & McKay's social organization theory.

In addition to racial composition, another study by Rountree and Warner (1999) argued that social ties are based on gender composition within neighborhoods. They revealed that female ties played a significant role in decreasing violent crime in neighborhoods. However, male ties do not. They also found that the proportion of female heads of households had a detrimental effect on crime rates. While the proportion of female heads of households is high, the effect of female ties is not significant.

Taken together, in contrast to the systemic model, density of networks and residential mobility do not always yield to social control (Bellair, 1997; Pattillo, 1998). Local social ties have different effects based on different characteristics between neighborhoods, such as racial composition and social demographics (Warner & Rountree, 1997; Rountree & Warner, 1999).

More recent criminological research has emphasized structural disorganization in social disorganization theory and has not taken into account of the role of cultural disorganization (Warner, 2003). Some studies revealed that subcultures within a neighborhood also bring about varying social controls (Stewart & Simons, 2006; Kubrin & Weitzer, 2003). This concept is generating a growing body of empirical studies.
Regarding social disorganization theories, cultural approaches are also studied by scholars. “This approach to culture places the role of values more centrally within a social control model, emphasizing the role of a weakened normative or conventional culture on informal social control” (Warner, 2003, p.75). Drawing on Kornhauser, Warner (2003) points out that the cultural disorganization model is an important subcategory of social disorganization and incorporates concepts from the systemic and cultural attenuation models. Warner (2003) argues that this can be seen from recent ethnographic studies of inner-city neighborhoods where the potential role of culture could help decrease community crime rates. There is more interest today in bringing culture back into contemporary community-level crime models.

Kornhauser (1978) argues that the strength of the normative culture cannot provide effective social control. “This approach to culture places the role of values more centrally within a social control model, emphasizing the role of a weakened normative or conventional culture on informal social control” (Warner, 2003, p.75). Warner (2003) stated, “the theoretical role of cultural disorganization in the contemporary social disorganization model, integrating aspects of both the systemic model and a cultural attenuation model” (p.73). Warner (2003) further argues that “recent ethnographic studies of inner-city neighborhoods have once again highlighted the potential role that culture may play in explaining community crime rates, and there are increasing calls for the re-introduction of culture into contemporary community-level crime models” (p.74).

Overall, the systemic model could not fully explain the mechanisms that facilitate informal social control because of the inconsistent findings over the decade (Morenoff et al. 200; Bursik, 1999). Warner (2003) posited that providing informal social control was
difficult for disadvantaged communities and high residential mobility because of partly weakened social bonds within the community.

Warner (2003) conducted a survey of the residents of 66 neighborhoods. The survey instrument included a set of questions to measure cultural construct and conventional values. The findings showed that social ties and cultural strength were significantly increased by conventional values and stability within a community; however, cross-cultural “social ties” indirectly affected the stability of cultural strength.

In another study, Kubrin and Weitzer (2003) examined socioeconomic variables and the ecological distribution of homicide in St. Louis, Missouri. They used quantitative data to investigate structural and cultural influences on a type of homicide that they called “retaliatory killings”. The researchers reported that retaliatory homicide was more common in some neighborhoods where the impacts of economic difficulty, problematic policing, and cultural responses to weakness in neighborhoods had combined together. In such communities, residents frequently responded to problems without the police since the cultural structures support this type of solution even if the solution calls for retaliatory killing.

Another explanation for cultural violence was Anderson's "code of the street" approach that merged cultural and structural factors to explicate the violence rates among African American youths. Anderson (1994) claimed that disadvantaged structural conditions supported the use of violence in neighborhoods, along with socio-demographic characteristics. Stewart and Simons’ (2006) study paid attention to “the code of the street” thesis. The researchers examined the influence of adoption of the street code by utilizing the data from 720 African American youth over 259
neighborhoods. In addition, mediating effects of the street code on violent delinquency in terms of neighborhood context, family characteristics, and racial discrimination were investigated in their study. The results supported Anderson's hypotheses that, structural variables of the neighborhood, living in a street family, and discrimination were significant in predicting adoption of the street code. Overall, the results indicated that the street code adoption was directly influenced by neighborhood context, family characteristics, and racial discrimination; and the street code indirectly influenced violent delinquency through discrimination, neighborhood and family characteristics.

Sampson and Bartusch (1998) studied legal cynicism at the neighborhood level; in particular, dissatisfaction with police and the intolerance for deviance. These researchers studied if structural characteristics of communities could explain the variations in crime rates. A multilevel study that allowed for separating the variance within and between 343 Chicago neighborhoods was used. Contrary to earlier assumptions, the findings indicated that African Americans and Latinos were not as tolerant of deviance as whites were.

Similarly, Carr et al. (2007) examined three high-crime neighborhoods in Philadelphia. The data was obtained from in-depth interviews and self-reports of 147 participants. The findings of these studies show that those who harbored negative feelings towards police had also experienced negative encounters with the law. In contrast, when asked what would reduce crime, most suggest better and tougher law enforcement.

Sampson and Raudenbush (1999) looked at the relationship between disorder and serious crimes. The researchers recruited trained observers to measure the
degree of disorder by focusing on robbery, burglary, and homicide and data was collected from 195 neighborhoods in Chicago. Researchers found while disorder had a direct effect on robbery, it had no effect on homicide or burglary. This indicates that disorder can lead to more crime and an increased fear of crime. In turn, disorder also can also lead to weaker social attachments, collective efficacy and a low capacity to control more serious crime.

Parallel with Skogan’s research, the relationships between burglary, disorder, cohesion, and fear of crime were studied by Markowitz et al. (2001) utilizing panel data that consisted of neighborhoods from the British Crime Survey. The researchers found that the effect of disorder on burglary had been mediated by fear and neighborhood cohesion. In addition, cohesion and disorder were negatively related. More detailed analyses also indicated that fear mediated a part of the impact of disorder on cohesion. Moreover, non-recursive burglary forms yielded similar results. In conclusion, the results implied a feedback loop such that when cohesion decreases in neighborhoods then crime and disorder are more likely to increase, as well as fear of crime; then in turn, cohesion is likely to decrease in that milieu.

Rose and Clear (1998) claimed that the systemic model was not perfect because it did not cover every related variable. The researchers claimed that the degree of formal social control was contrarily related with informal social control. That is, the power of community informal social control was argued to be weakened by some types of formal control. For example, the percentage of single parent families increases with the increase of incarceration, demonstrating that high incarceration rates negatively effects society.
Similarly, how going in and out of prison affects social disorganization of community was explored by Clear, Rose, Waring, and Scully (2003). The data for this study was taken from Florida Department of Corrections, Leon County, Tallahassee Police Department and 1996 census bureau statistics. The unit of analysis is neighborhoods in Tallahassee. Clear et al. (2003) employed the number of crimes as the dependent variable and coercive mobility, the number of releases and the number of offenders, as the independent variable. They also utilized three main variables of traditional social disorganization theory: residential mobility, ethnic heterogeneity, and poverty. In order to analyze the data, they used a generalized linear regression. Clear et al. (2003) found that higher incarceration rates in one year had no measurable effect on low level crime and a negative relationship with crime in general. They further stated that during the following year when the crime rate was comparatively low a higher incarceration rate removed more individuals from the community, the effect was to increase crime, not decrease it. On the other hand, releasing offenders has a significant effect on crime in the next year. Clear et al. (2003) summarized the findings as “the combined effects of coercive mobility, concentrated at high levels within certain neighborhoods, constitutes a potentially profound challenge to public safety” (p.56). The findings of the study are partially consistent with social disorganization theory.

Simply put, collective efficacy underlines a temporal order. According to this concept, collective efficacy brings about crime. Ignoring reciprocal effects will take researchers in wrong direction.

Smith and Jarhoura’s (1989) aim is to examine burglary victimization through combining the individual and aggregate levels. In order to test both macro and micro
factors regarding burglary victimization, they utilized the data collected in
neighborhoods of Rochester, New York, Tampa-St, Petersburg, Florida and St. Louis,
Missouri in 1977. The unit of analysis for this study is households. They used
probability sampling techniques for selecting the sample which is 9,006 households.
They found that combining the macro and micro perspectives explains factors affecting
victimization rate. According to the findings, at the individual level, income and single
parenting had a significant impact on burglary victimization, aside from the number of
residents. Likewise, Miethe and Meier (1994) examined the individual risk of
victimization considering both macro and micro factors. They found that, not
considering individual-factors, resident areas and SES have significant effects on the
risk of victimization.

By employing the theories of lifestyle and routine activity, Miethe and McDowall
(1993) examined the effect of social structure and individual attributes on victimization
(violent and burglary) by using a framework of multilevel modeling. Miethe and
McDowall (1993) also underline the importance of contextual analysis and multilevel
modeling in order to fill the gap between the individual and aggregate approaches. In
doing so, they employed violent and burglary victimization as dependent variable,
individual attributes (income, home unoccupied, dangerous activities, safety
precautions, expensive goods, etc.) and the social disorganization variables of
population density, ethnic heterogeneity and SES are used as independent variables.
According to Miethe and McDowall (1993), the important findings of their study were
that “lower levels of guardianship and higher target attractiveness strongly increased the
risks of burglary for residents of more affluent areas, whereas these factors had little net
impact on the burglary risks of residents of more socially disorganized areas” (p.741). They also concluded that among the contextual variables, the socioeconomic variable only have significant effect on both violent and burglary victimization.

Wilcox, Land, and Miethe (1994) developed Miethe and McDowall’s (1993) study utilizing a hierarchical linear model (HLM). They also used the same data and independent variables of Miethe and McDowall (1993). Wilcox et al. (1994) found support for the theory of crime opportunity. There was no significant relationship between the independent variables of living alone, income, and safety precautions with the dependent variable of violent victimization. Wilcox et al. (1994) stated that “higher levels of target attractiveness (higher family income, more expensive goods present) increase burglary risk; more guardianship (home unoccupied less frequently) decreases this likelihood” (p.410). They also revealed that social disorganization variables (ethnic heterogeneity, population density, and neighborhood incivilities) have a significant effect on burglary and violent victimization.

A huge amount of research has studied the relationship between disadvantage and crime on neighborhoods or blocks (Bursik & Grasmick 1993; Bursik & Webb 1982; Messner & Tardiff 1986; Patterson,1991; Roncek & Maier 1991; Warner & Pierce 1993). In the same fashion, Roncek and Maier (1991) study the effect of bars and other liquor on street blocks. Roncek and Maier (1991) collected the data in the time period between 1979-1981 in Cleveland. They revealed that these types of establishments have a positive relationship with crime. In another study, Roncek (1981) also tested social disorganization theory. He assumed that crime rates vary within a city based on its structural characteristics. In doing so, Roncek (1981) used the data derived from
Cleveland and San Diego in 1970. In this study, he employed two dependent variables: violent crime (rapes, aggravate assaults, robberies, and murders) and property crime (thefts and burglaries), and three independent variables: residential environment, vulnerability of blocks, and social composition. He also added population density, population potential, block population, and overcrowding. The unit of analysis is city blocks. In order to analyze the collected data, he utilized a multiple regression technique. Roncek (1981) concluded that family status and all control variables have a significant effect on both dependent variables. Taken together, he argued that his findings support social disorganization theory. Roncek (1981) also claims that traditional social disorganization theory may conduct to micro-level unit of analysis such as blocks.

Greenberg and Kessler's (1982) study was designed to predict the impact of clearance and SES variables on crime. Greenberg and Kessler (1982) conducted their study on 98 cities in the United States that a population of more than 25,000. They state that “our failure to find evidence for crime-prevention effects contrasts with the econometric studies based on cross-sectional or time – series data, which have found evidence consistent with a crime-prevention effect”(p.784). Finally, Greenberg and Kessler (1982) revealed that there is no evidence that the high arrest rates reduce crime rates.

Taylor, Gottfredson, and Brower (1984) examined why there is more crime or higher levels of fear for some city blocks compared to others. They developed a model combining “physical defensible space features, local social ties, and territorial functioning”(p.303) (see Figure 2.7). In order to collect data in Baltimore, they used a
multi stage – cluster sampling technique. The sample size of the study is 687.

*Figure 2.2.* Taylor et al.’s (1984) model (Taylor, Gottfredson, and Brower, 1984, p.306).

Taylor et al. (1984) found that defensible space features have a significant effect on crime and fear of level. Similarly, social bonds have a directly significant impact on crime and fear of level. Social structural variables not only affect territorial functioning, but also affect fear of level at block – level models.

Taylor’s (1997) study also tested disorder and fear of crime. Taylor (1997) developed the concept of the parochial level by drawing from Bursik and Grasmick’s (1993) study. He brought to the concept more clarification and added the concepts of psychological and environmental factors besides institutional and neighborhood factors. In other words, parochial control doesn’t exist only at the institutional and neighborhood level. For example, he proposed “street block” for where behavior patterns that differed from the neighborhood as a intervening construct. He said that street blocks create their own behavior settings. He used secondary data collected from a Minneapolis-St. Paul telephone survey. Taylor’s (1997) study revealed that people are more responsible regarding their territory than when away from their home. Commercial was a place where people felt less responsible. As population density increased, people’s feelings regarding their responsibility were reduced. Similarly, residents’ responsibility...
decreased when residential mobility increased. Therefore, Taylor’s (1997) findings support traditional social disorganization theory in terms of residential stability.

Donnelly and Kimble (1997) examine the impact of neighborhood response regarding the growth of incivility, such as crime in the community. The data was collected in the Five Oaks area of Dayton, Ohio. Two telephone surveys were conducted in 1992 and 1993. They found that a crime control plan has a negative significant effect on crime or incivility. Comparing the number of crimes for 1992 and 1993, there was a significant reduction in crime, such as considerable decreases in traffic offences, after the plan was put into effect. At this point, Donnelly and Kimble (1997) state that “the decrease in crime came after 35 streets were closed, resulting in a significant reduction in nonresident vehicular traffic” (p.509). Therefore, a crime control model is more effective than a model of informal control, which was supported by Donnelly and Kimble’s (1997) findings. In addition, the findings undermined Oscar Newman’s defensible space theory, which assumes that physical improvement had no significant impact on informal social control.

By using data collected from Philadelphia in 1991, Kurtz, Koons and Ralph (1998) examined the impact of land use, resident-based control, and disorder as they relate to street blocks. In this study, the unit of analysis is the street block. Kurtz et al. (1998) employed “calls for police” as the dependent variable. Land use, physical deterioration, resident-based control, and crime are the independent variables. According to the findings, land use has a significant effect on both physical deterioration and resident-based control. In addition, there was a significant relationship between physical deterioration and resident-based control. Kurtz et al. (1998) highlighted that all
variables in this study are related to police activity.

As noted above, a considerable amount of empirical work indicates a link between land use and crime. Among these, Wilcox, Quisenberry, Cabrera, and Jones’ (2004) study is noteworthy to mention. By drawing upon social disorganization theory and the theory of ecology, and the theory of urban geography, Wilcox et al. (2004) estimated the impacts of land use on violent and burglary crime at the community level. The data for study was taken from the Seattle police department, the 1990 Census, and a 1990 survey in Seattle. For the survey, a multi-stage – cluster sampling method was used. Wilcox et al. (2004) selected 18 individual block pairs for sample. They employed two dependent variables (violent, burglary rate) and seven independents variables (concentrated disadvantage, schools, playgrounds, commercial places, residential mobility, neighboring, and disorder).

Wilcox et al. (2004) proposed the model presented in Figure 2.8. According to this model, social and physical structures directly and indirectly affect the rates of violence and burglary. In this model, neighboring and disorder factors are taking place as mediating variables. Wilcox et al. (2004) found that schools had a direct impact on violence, but no impact on burglary. On the other hand, commercial place had a mediation effect on violence. Commercial places and playgrounds were more likely to be the sites of burglary. Finally, Wilcox et al. (2004) concluded that social and physical structures have effect on crime through the process of disorder and neighborhood.
Conclusion

The review of the literature consisted of three sections. The first section reviewed the emergence and development of social disorganization theory, and the second section presented the essential empirical studies related to social disorganization theory and structural factors on crime. The last section presented the situation of violent crime in Turkey.

These studies tested the systemic model and resulted in inconsistent findings. For example, social ties as projected by systemic theory were inconsistent in neighborhoods that varied racially, demographically, and culturally from each other. In order to resolve these inconsistencies, Sampson, Raudenbush, and Earls (1997) developed “collective efficacy” model. This model took the motivation and mutual trust of residents into account to maintain informal social control. However, because they varied with mutual trust and were voluntary, social ties only made a limited contribution to informal and formal social control of the community, and the action taken towards controlling deviance in the community would be limited. Moreover, it might be
unsupported to assume the collective efficacy model to be superior to the systemic model. In this regard, Browning et al.’s (2004) study raised skepticisms since the results of the study indicated that collective efficacy may not matter in neighborhoods where both residents’ and offenders’ social capital were supported.

In addition to inconsistencies, there were methodological concerns for these social disorganization studies. Bursik (1988) touched upon some of these problems, such as the main assumption of social disorganization theory that the structural conditions of communities affect local social ties over time and in turn foster differential value systems. Thus, in order to see the changes, a longitudinal data would be more preferable. However, especially for macro-level studies, using longitudinal data is difficult for researchers in terms of cost and time concerns. In addition, it is also difficult to observe structural factors in the course of time. Thus, as noted in empirical studies, many researchers have used cross-sectional data.

Existing studies of crime and crime prevention indicate a feedback loop between neighborhood social bonds, disorder and crime. Likewise, Skogan (1990) claimed that social disorder such as deteriorated housing, trash, disorderly teens, drinking in public or panhandling all contribute to more serious types of crime. Increased crime and an increase fear of crime tend to weaken social ties and encourage social mobility. Conversely, social ties discourage social mobility.

As noted, to date, several studies have been conducted in both rural (Sampson, Raudenbush, and Earls, 1997; Bursik & Webb, 1982; Heitgerd & Bursik, 1987) and urban areas (Laub, 1983; Weisheit, Falcone, and Wells, 1994; Bachman, 1992). In this sense, social disorganization has been developed as a general theory for understanding
crime in both urban and rural areas. It explains how aspects of social factors impact crime rates. As noted above, social disorganization theory generally has been tested for examining crime such as youth violence, domestic violence, property crime, robbery, aggravated assault, juvenile delinquency, homicide, and other type of crimes (Osgood & Chambers, 2000; Feyen, 1989; Shaw & McKay, 1942; Wiersema, Loftin & McDowall, 2000; Cohen, Felson & Land, 1980). To date, only a few studies have examined the impact of structural factors on violent crime at the city level. In addition, most studies have been regionally concentrated in the U.S.A., the U.K., and Canada.

Taken together, many studies paid attention to structural factors to estimate the variation of crime rates across neighborhoods. However, this study examines not only the effect of structural variables but also the role of social institutions as mediating variables on violent crime at city level. In addition, the literature review indicates that no study on the function of social structure in controlling crime in Turkey has been conducted up to now. This study, to some extent, will fill that gap in the literature.

Violent Crime in Turkey

Before getting into the specific discussion of this issue, we need to define the term violent crime since it is the essential factor in this study. The definition of violent crime in Turkey is similar as in the United States. Gupta, Zhang, Springston, Sharp, Curtis, Shalowitz, Shannon, and Weiss (2010) define violent crime as “criminal acts with a high risk of injury or death, including homicide (murder and no negligent manslaughter only), criminal sexual assault, robbery, and aggravated assault/battery” (p.301). Violent crime is described as an event consisting of four types of offences; homicide, rape,
assault, and robbery (Rand, Klaus, and Taylor, 1983; FBI’s Uniform Crime Reporting Program). Violent crimes are related to the act of force or threat. In this context, robbery is also considered as violent crime since “it involves the use or threat of force against a person” (Rand et al., 1983, p.2).

In the Turkish Penal Code (TCK), violent crime takes place under several articles. For example, regarding homicide, intentional killing (Article-81), qualified killing (Article-82), intentional killing by act of omission (Article-83), directing suicide (Article-84), and reckless killing (Article-85) are arranged under the title of “crime against life.” Intentional injury (Article-86), aggravated injury on account of its consequences (Article-87), intentional injury by omission (Article-88), and reckless injury (Article-89) are arranged under the title of “impairs person's health or ability to perceive” (İcli, Arslan, Baspınar, Bahtiyar, and Dinler, 2007).

Assault was the most recorded crime (42.2%) among the other types of violent crime in Turkey in the year 2003. It is followed by robbery, homicide, and rape. Homicide, assault, and threats consist of 51% of violent crime in Turkey. Comparing the years 2001 and 2003, it can be seen that there was a 4% increase in violent crime in Turkey during these years. In addition, threat was the most increased crime with 24% among other types of violent crime, and followed by homicide (see Figure 2.4.). Considering the geographical distribution of crime across the cities of Turkey, violent crime more often occurred in the cities of Bartin, Nigde, Burdur, Ardahan, and Kastamonu in 2003 (Yilmaz & Gunayergun, 2006).
Throughout the period from 1992 to 2004, homicide conviction rates were generally increasing in Turkey. In 2003, there was a small decrease compared to the last 10 years. It peaked in 1999. There was approximately a 6% increase between years 2003 and 2004.

Figure 2.4. Homicide conviction. (Source: Turkish Statistical Institute, 2010.)

Figure 2.5. Assault conviction. (Source: Turkish Statistical Institute, 2010.)
As noticed in Figure 2.5, there was a steady increase in the number of assaults between the years 1992 and 2004. Figure 2.3 indicated a 9% increase between 2002 and 2004, with the greatest increase seen in the year 2004. The rise in the number of crimes may be due to several reasons. It might be due to an amendment in the Turkish Penal Code. It might also be explained by putting into effect a more efficient process in the judicial system, or in law enforcement. On the other hand, rapid social changes and social structural factors could influence the rise of violent crimes. For example, Bahar and Fert (2008) emphasized another dimension for the rise in assault crime could be through changes in the methods for collecting official statistics. They state that “arguments between people or fights and ‘light’ wounding only began to be recorded for statistical purposes in 2005, which accounts for the almost 100% increase in certain crimes in two years” (p.99) in the United States. In unlawful killing, 72 % of perpetrators were arrested in 2005 while 75 % of perpetrators were arrested in 2006 (Bahar & Fert, 2008). This also indicates an improvement in the success rate of law enforcement over the previous year.

Figure 2.4 presents a dramatic rise in convictions for the violent crime of robbery. There was a steady increase till the year 2001. From year 2001 to year 2004, the table shows a huge increase in robbery convictions. For example, between 2003 and 2004, there was about a 9.5% increase in the rate of robbery convictions. According to Bahar and Fert (2008), 1% of perpetrators were arrested for robbery/fraud in the year 2005, whereas 0.9% of perpetrators were arrested in 2006 (Bahar & Fert, 2008).
As noticed in Figure 2.7, the rape conviction rate appears to fluctuate. However, it generally increases from year to year. The greatest increase in Turkey was in the year 2004. Figure 2.5 shows that there was a 5% increase between 2003 and 2004 in rape convictions.
Comparing the last three years of conviction rate of violent crimes, there were important increases for each type of violent crime (see Figure 2.8). Durusoy, Kose, and Karadeniz (2008) also indicate that the portion of convicted criminals in total has seen a 20.6% increase from the year 1995 to the year 2005.

A huge amount of literature indicates that geographical conditions, socioeconomic factors, residential mobility, poverty, unemployment, urbanization, unequal distribution of income, migration, and education level all seem to lie in rise of violent crime in Turkey (Kizmaz, 2006; Yildiz, 2004; Kumaz, 2001; Durusoy, Kose, and Karadeniz, 2008; Yilmaz & Gunayergun, 2006; Bahar & Fert, 2008). Besides those factors, the inability of informal social control and the lack of formal social support also contribute to the rise of violent crimes in Turkey.

Figure 2.8. Violent crime conviction. (Source: Turkish Statistical Institute, 2010.)
Research Questions and Hypotheses

There are three main research questions with eleven hypotheses for the study. The following model is proposed regarding the determination of direct and indirect effect of social structural variables on violent crime and violent criminals (see Figure 2.9).

**Figure 2.9.** Causal model of extended version of Shaw and McKay.

RQ: 1. To what extent is there a relationship between social structural factors and violent crime rates in Turkey?

*H1:* There is a positive relationship between poverty rates and the violent crime rates in the cities of Turkey.

*H2:* There is a positive relationship between the rate of residential mobility and the violent crime rates in the cities of Turkey.

*H3:* There is a positive relationship between unemployment rate and the violent crime rates in the cities of Turkey.

*H4:* There is a positive relationship between the rate of family disruption and the violent crime rates in the cities of Turkey.

RQ: 2. To what extent is there a relationship between social structural factors and the number of violent criminals in Turkey?
$H_5$: Poverty rates are positively related to the number of violent criminals in the cities of Turkey.

$H_6$: The rate of residential mobility is positively related to the number of violent criminals in the cities of Turkey.

$H_7$: Unemployment rate is positively related to the number of violent criminals in the cities of Turkey.

$H_8$: The rate of family disruption is positively related to the number of violent criminals in the cities of Turkey.

RQ: 3. To what extent is there a relationship between the number of positive non-economical social institutions and the violent crime rates in Turkey?

$H_9$: There is a negative relationship between the violent crime rates and the number of religious institutions in the cities of Turkey.

$H_{10}$: There is a negative relationship between the violent crime rates and the number of libraries in the cities of Turkey.

$H_{11}$: There is a negative relationship between the violent crime rates and the number of voluntary organizations in the cities of Turkey.
CHAPTER 3

METHODOLOGY

Introduction

This chapter describes the methods used to analyze the data used for this study. This quantitative study was a cross-sectional study, taking data from a specific point in time. Beginning with a detailed description of the data used for this research, conceptual terms are defined. There is a discussion of the independent variable and the dependent variables in more detail. Finally, an outline of analytical strategies employed for data analysis is presented.

Data

Violent crime data is reported from the Main Command and Control Center (AKKM) in the headquarters of the Turkish National Police. This center collects the data from police units, including police stations’ reports in each province. In this study, illegal actions responded to by law enforcement and are termed “crime” (Bodenhamer, 1972). On the other hand, the term "violent crimes" is defined as the crimes that are offenses against a person and include assault, homicide, rape, and robbery.

The data used in this study were compiled from different aggregated statistics including several government institutions in Turkey. The data mainly came from the following government agencies: Turkish Statistical Institute, the Presidency of Religious Affairs of the Republic of Turkey, the Ministry of Culture, the Department of Associations and General Directorate of Foundations, and the Ministry of Health.
In addition, data regarding the number of violent criminals was obtained from the Turkish Statistical Institute which compiles information from the Ministry of Justice’s reports. The number of violent criminals refers to convicts who went to prison by type of crime and province where the crime was committed. The next variables, family disruption and unemployment, are provided by the Turkish Statistical Institute (TUIK) based on the 2000 Census.

As a proxy for operationalizing poverty, data was obtained regarding the number of people holding “green cards” in Turkey, and the low income people are able to receive government assistance. One type of assistance is with medical expenses in the form of a government issued green card that covers medical expenses that the holder cannot afford otherwise. Because the income requirement for a green card is income below the Turkish government poverty level, the number of green card recipients can be used as a statistic for poverty. Historically, researchers in Turkey have used green card recipients to measure the poverty level (Koseli, 2006; Simsek, 2006 & Oguzhan, 2008); therefore, in order to obtain data of poverty in Turkey, it is important to measure the number of green card holders. This data is collected from the Ministry of Health.

The data regarding the positive non-economical social institutions include number of religious institutions, the number of libraries, and the number of voluntary associations. Data concerning the number of religious institutions comes from the Presidency of Religious Affairs of the Republic of Turkey, and cover mosques and religious schools. The data on the number of libraries are obtained from the Ministry of Culture. The number of libraries used for research consists of public, special, and children’s libraries in each province. The data regarding the number of volunteer
organizations come from the Department of Associations at Ministry of Internal Affairs of Turkey. Volunteer organizations are considered “[n]on-profit legal entities that were established by cooperation of knowledge and praxis of at least seven individual persons or institutions for the purpose of carrying out a common goal which is not prohibited by law” (Article 2, cited from Oguzhan, 2008, p.75).

Finally, in this study, the numbers of violent crimes and violent criminals are the dependent variables that cover 2006. In order to examine the causal relationship between dependent and independent variables, all of the independent variables cover the time prior to 2006. The independent variables are poverty, the number of voluntary organizations, the number of religious institutions and the number of libraries; these numbers are from 2005, thus, this shows a cause for the violent crimes committed. Unemployment, residential mobility, family disruption, and population change are dated in the 2000 Census.

Conceptual Definitions

The terms violent crime, parochial control institutions, the positive non-economic social institutions, and city (province) must be defined in order to understand conceptual framework of this study. They are the essential concepts that this study builds upon. The first term is violent crime. According to the FBI Uniform Crime Reporting (UCR), it refers to “the most serious violent offenses and includes murder, aggravated assault, robbery, and forcible rape” (Ryken, Bravo, Murrain, and Quach, 2004, p.11). Violent crime has also been defined as an offense against person through the use of violence (Gallo, 1973). However, for the purpose of this study,
violent crime only covers homicide, assault, rape, and robbery based on UCR index in this study. Violent crimes inflict a high degree of damage to the victims including injury and the possibility of death.

In this investigation, parochial agents of control institutions, driven from the theoretical foundation of social disorganization theory, refer to religious institutions, libraries, and voluntary associations. The positive non-economical social institution refers to associations such as families, religious organizations, and libraries, (not bars, and coffee shops). The structure of such an institution is not subjugated by the economy, but enhanced by social norms and values because it serves as a social control (Kim & Pridemore, 2005). The positive non-economical social institution also refers to religious institutions, libraries, and voluntary associations in this study. The terms city and province are used interchangeably in this study because they both refer to large municipalities. In this study, cities may include both rural and urban areas as determined by Turkish law. A city or a province is an administrative region in Turkey.

Unit of Analysis

The units of analysis used for this research are cities; particularly the sample is composed of all cities in Turkey. Besides non-existence of city level studies and the inappropriate data for testing social disorganization in rural areas, the city level is well representative of the social context for analyzing violent crime in Turkey. Turkey is currently subdivided into 81 cities for administrative purposes, and its establishment is based on law. The city populations vary from approximately the hundreds of thousands to several millions.
Measurement and Variables

The variables determined optimal for this research are used to offer a detailed picture of crime in Turkey. The following section details 7 independent variables; poverty, the number of voluntary organizations, the number of religious institutions, the number of libraries, unemployment rates, residential mobility, and family disruption. In addition, there are 2 dependent variables used for this research, the number of violent crimes and the number of violent criminals, and one control variable, education.

Dependent Variables

Number of Violent Crimes

In this study, the number of violent crimes consists of homicides, rapes, robberies and aggravated assaults in 81 cities of Turkey. Similarly, according to the FBI’s Uniform Crime Reporting (UCR) Program, there are four types of violent crimes: murder and non-negligent manslaughter, robbery, forcible rape, and aggravated assault (Crime in the United States, 2007). This statistic does not include some other violent crimes such as terrorism-related crimes.

Data about the number of violent crimes are obtained from the Turkish National Police (TNB) across 81 provinces in Turkey. The police units in those cities collected incident reports of violent crimes; therefore the accuracy of the police report is important for the reliability and validity of this study. As known among scholars, violent crime reports are more reliable than other types of crime reports because of the degree of seriousness of the crime (Sampson et al, 1997; Sampson & Wooldredge, 1987; Gove, Hughes & Geerken 1995). For instance, Sampson et al (1997) stated that “homicide is
one of the most reliably measured crimes by the police and does not suffer the reporting limitations associated with other violent crimes, such as assault and rape” (p.920).

Finally, in this study, in order to obtain crime rates within cities in Turkey, the total of each city’s number of violent crimes is divided by the city’s population and then multiplied by 10,000. Crime rates are based on cases per 10,000 for 2006. Formulated, the rates are calculated thusly: (City’s Number of Violent Crimes / City’s Population) X 10,000 = City’s Violent Crime Rate per 10,000.

Number of Violent Criminals

The number of violent criminals is the second dependent variable for this study. The data come from the Turkish Statistical Institute and is defined as people who have been convicted and imprisoned by the type of crime and the province where the crime was committed in 2006. The validity and reliability of data are very strong. Violent criminals who committed offenses of homicide, rape, robbery, and aggravated assault and were taken into prison. In order to obtain the exact number of violent criminals per 10,000 people, the number of violent criminals is divided by the population of the city and then multiplied by 10,000.

Independent Variables

Residential Mobility

In this study, in order to test social disorganization theory, poverty, residential mobility, family disruption, and unemployment were utilized. Residential mobility may weaken informal social control. Sampson et al. (1997) underscored the effect of
residential mobility as a factor in the destabilization of society. They state that “[a] high rate of residential mobility, especially in areas of decreasing population, fosters institutional disruption and weakened social controls over collective life” (p. 919). In the same fashion, Bursik and Grasmick (1993) argue that the less informal and formal social interactions in community result in higher residential instability which impair the ability of society in controlling crime. As a result of frequent residential mobility, strong commitments among residents in community are difficult to establish (Sampson & Groves, 1989); therefore, migration to or from the city changes the city’s population, and in turn, creates destabilization. This atmosphere of change reflects less integration and concentration of social norms among residents. In this study, the portion of residential mobility (migration in or out of city) is measured for the years 2000-2005.

A large amount of literature indicates that residential instability has significant effect on violent crime (Eitle, D’Alessio, and Stolzenberg, 2006; Bouffard & Muffic, 2006; Haynie & Armstrong, 2006; Li, 1995). Residential stability refers to the percentage of residents who lived in the same address for the past five years (Sampson, 1985; Morenoff et al., 2001). On the other hand, some researchers used a different span of time for measuring residential stability. For example, according to Haynie and South (2005), “residential mobility is measured by a dummy variable distinguishing adolescents who […] resided at their current address for fewer than two years from those who have lived there for two or more years” (p.364). Barnett and Mencken (2002) calculated residential mobility based population change in the time period between 1990 and 2000. Shaw and McKay (1942) and Faris and Dunham (1939) especially considered residential stability as a good indicator for social organization.
Lastly, immigration and emigration pattern of the Turkish cities included in this study is defined as residential mobility. These data cover the years 1995 to 2000 from census records. Residential mobility is calculated as: \((\text{City's immigration} + \text{City's emigration})/ \text{City Population} = \text{City's Residential Mobility}\).

**Poverty**

One of the social disorganization variables is poverty, a structural factor that may lead to crime (Hindelang, Gottfredson & Garafalo, 1978; Stark 1987; Kawachi, Kennedy & Wilkinson, 1999; Lafree, Bursik, Short & Taylor, 2000; Bursik 1988). That is, poor economic conditions decreased population stability, which led to social disorganization, and consequently increased rates of crime (Anselin, Cohen, Cook & Pridemore, 2000; Wilson, 1987).

In addition, Shaw and McKay highlighted the effect of poverty in increasing crime (Blau & Blau 1982). In other words, Shaw and McKay (1942) argued that social characteristics such as poverty brought about the disruption of social organization, and consequently affected variations in crime and delinquency rates. In addition, according to Wilson (1987), poverty not only increased residential stability, but also effected basic social institutions such as churches, schools, libraries, and voluntary organizations.

Social disorganization theory assumes that poverty is one of the important factors increasing crime rates. Several researchers argued that poverty has significant positive effect on violent crime rate at the level of cities, metropolitan statistical areas, and U.S. counties (Bouffard & Muftić, 2006, Osgood & Chambers, 2000; Bachman, 1991, Baller, Anselin, Messner, Deane, and Hawkins, 2001; Eitle et al., 2006).
Similarly, Koseli (2006) revealed that there is statically significant relationship between poverty and the frequency of terrorist incidents in the cities of Turkey. In analyzing human trafficking, Karakus (2008) found that poverty affects the variation of human trafficking in Turkey. As noted, besides violent crime, poverty, to some extent, also has effect on several types of crime.

Poverty broadly refers to members of society that have a low income level or those who are economically disadvantaged. Sociologists define poverty as the percentage of a population living below the poverty line (Warner & Rountree, 1997; Martinez, 1996; Lanier & Huff-Corzine; 2006). In this study poverty consists of the proportion of the city’s population with a low income level and not having access to other social services offered in Turkey. Unlike the U.S., Turkey has no governmental determined poverty level. From this point, in order to measure poverty in Turkey, the proportion of green card holders to non-green card holders is used since there is no other available measure of poverty in Turkey (Koseli, 2006; Simsek, 2006). In Turkey, the green card covers the medical expenses of those with low incomes, similar to the Medicaid program in the United States. Several researchers have utilized Medicaid as a measurement of poverty in the U.S. (Wissow, Gittelsohn, Szklo, Starfield, and Mussman, 1988; Rauh, Andrews, and Garfinkel, 2001; Sullivan, 1993), and, in this study having a green card will be used as a measure of poverty. The number of green card users per city is obtained from the Turkish Ministry of Health. (City’s Number of Green Card Holders / City’s Population) X 100 = City’s Poverty Percentage.
Family Disruption

As noted, family disruption is an important social factor for testing social disorganization (Hayes-Smith & Whaley, 2009; Byrne & Sampson, 1986; Blau & Blau, 1982; Sun, Triplett & Gainey, 2004). Family disruption may weaken informal social control (Sampson, 1987). According to Sun, Triplett, and Gainey (2004) and is an important obstacle to the successful socialization of children. Family disruption negatively affects social integration (Sampson, Raudenbush, and Earls, 1997) and causes less participation in voluntary organization (Sampson, 1986; 1987).

Many studies have found that family disruption affects crime (Pratt & Cullen, 2005; Sampson, 1987; Peterson & Krivo, 1993; Sampson & Wilson, 1990). For example, Shihadeh & Steffensmeier (1994) argue that family disruption is linked to violent crime. They state that “there is evidence that an aggregate-level relationship between family structure and violent crime exists. Areas with high rates of family disruption are likely to have fewer formal as well as informal networks that can be invoked for social control” (p. 733). Impairing collective capacity leads to violent crime. The higher family disruption is an indicator of high violent crime rate (Shihadeh & Steffensmeier, 1994).

According to Stucky (2005), family disruption can refer “to a breakup of a family unit through divorce” (p.9). Chamlin and Kennedy (1991) measured family disruption as the number of divorces per 1,000 marriages. This study will follow the Chamlin and Kennedy model and identify family disruptions according to the number of divorces per 1,000 marriages. These data will be collected from Turkey’s 2000 census information.
Unemployment

Unemployment is also one of the important predictors of crime. Messner, Raffalovich, and McMillan (2001) consider “unemployment” as a motivational factor to committing crime. Many scholars expect that there is a positive relationship between crime and unemployment rate (Andresen, 2006; Herzog, 2005; Land, McCall, and Cohen, 1990). Bouffard and Muftic (2006) revealed that unemployment has positive impact on crime. In the same fashion, Raphael and Ebmer (2001) also found that there is a positive relationship between crime and unemployment, that is, where there is more unemployment, there is a higher crime rate. Therefore, it is expected that unemployment has an effect on crime in terms of social disorganization theory.

Unemployment is determined by the percentage of people at or over the age of 16, who are not gainfully employed (Sampson, 1985; Ousey, 1999; Friedman & Lichter, 1998). This study will classify unemployment as anyone 15 or older who are not gainfully employed. The data regarding the unemployment rate is taken from the Turkish Statistical Institute, based on the 2000 Census.

Number of Religious Institutions

Data are drawn from 2005, from the Presidency of Religious Affairs of Turkey. A great number of studies examined the relationship between religion and crime (Burkett & Warren, 1987; Hirschi & Stark, 1969; Stark, Kent, & Doyle, 1982; Higgins & Albrecht, 1977). Religion is generally considered as a mechanism of social control. In other words, religion provides social organization so that it decreases social disorganization, in turn, also decreases the crime rate.
In this sense, Bursik and Grasmick (1993) claimed that religious institutions are agents of social control. According to Bursik and Grasmick (1993), besides private and public control, there is a level of parochial control within which religious institutions function. Rose (2000) also highlighted the importance of religious institutions. He sees religious institutions as “an important component of the local organizational base” and notes that “they often are found in communities devoid of other local institutions” (p. 341). Rose (2000) continues that “social disorganization theory, then, should be useful in explaining the availability of religious organization in communities across the city” (p. 341). Finally, Rose (2000) found that there is a positive relationship between religious institutions and social organizations.

Religious institutions for this study will include religious schools in addition to Mosques. The calculation of number of religious institution rate is as follows: (City’s Number of Religious Institutions / City’s Population) X 10,000 = City’s Religious Institution Rate per 10,000.

Number of Libraries

The library is one of the main social institutions and functions as parochial control. It has an important place in the organizational structure of cities. The number of libraries is obtained from the Ministry of Culture 2005 data. The number of libraries covers public, special, and children’s libraries in each province. In order to reduce the effect of population on the number of libraries, it is multiplied by 10,000 after it is divided by the population of the city.
**Number of Voluntary Associations**

Voluntary associations are considered as formal voluntary non-economic organizations. Voluntary association also may refer to the network density which provides social integration. Many scholars such as Sampson & Groves (1989), Rodrigues (2006) and Galea, Karpati and Kennedy (2002) also considered the number of voluntary organizations as a measure of social capital.

The data regarding the number of voluntary organizations comes from the General Directorate of Foundations of the Republic of Turkey. The study is interested in only non-economic voluntary organizations. Like the variable of the number of libraries, the number of voluntary organizations is multiplied by 10,000 after it is divided by the population of the city.

**Control Variables**

A huge amount of literature has indicated that education is considered an important control variable for testing social disorganization theories (Cancino, Varano, Schafer & Roger Enriquez, 2007). In this sense, education affects crime rate (Bjerregaard & Cochran, 2008; Maume & Lee, 2003; Lochner & Moretti, 2004). The data about education are obtained from the Ministry of National Education. The control variable of education is the sum of all elementary, secondary and high schools in Turkey, for the cities included in this study. This information is gathered from the 2000 Turkish census. Education is calculated as: (City’s Number of these schools / City’s Population) X 10,000 = City’s Education Rate per 10,000.
Data Analysis

This study focuses on the distribution of violent crime in selected cities of Turkey. In this study, two dependent variables (the number of violent crimes and the number of violent criminals), seven independent variables (poverty, the number of voluntary organizations, the number of religious institutions, the number of libraries, unemployment rates, residential mobility, and family disruption), and one control variable (education) are employed for testing social disorganization theory and exploring the possible effects of social structural variables on violent crime rates. In doing so, firstly the data regarding all variables are analyzed with quantitative statistics. The descriptive statistics initially provide an accurate picture of all aspects of the data set.

A bivariate correlation matrix is conducted for examining the linear relationships between the dependent and independent variables prior to multivariate analyses. The bivariate correlation matrix helps to find variables that might be multicollinear and thus mislead results in multivariate analyses. Before performing multivariate statistical analyses, all main assumptions of multivariates are examined. Lastly, the hypothesis for this study will be tested using multivariate analysis. Multivariate regression is appropriate because all variables used in this study are continuous.

Multivariate statistical analyses follow several steps. In the first step, regression analysis is performed to measure the impacts of independent variables of residential mobility, family disruption, poverty and unemployment on the dependent variables of violent crimes and violent criminals. In the second step, besides structural variables, regression analysis is performed to measure the effects of indicators of non-economic social institutions. This step examines the relationship between structural variables and
mediating variables. Ordinary least squares regression (OLS) is the most appropriate statistical technique since all variables in model are continuous. In the third step, the control variable of education is added to the model. In other words, regression analysis is performed to measure the effects of structural variables, mediating variables and control variable on the dependent variables of violent crimes and violent criminals.

In order to test the impact of the mediating variables upon the dependent variables, OLS regression is used comparing violent crime rates and the number of violent criminals with voluntary associations, the number of libraries and religious institutions. Once this is completed the control variable of education will be added to the model. The final model will afford the opportunity to compare each model in order to determine which variables best predictors addressing violent crime.

In addition, this study also investigates the effect of parochial control variables on the frequency of violent crime and violent criminal. In doing so, besides simple OLS regression analysis, path analysis is conducted in order to see how independent variables mediate, negate, or augment their respective effects on the violent crime rate and number of criminals.

Taken together, bivariate and multivariate statistical techniques are utilized for analyzing the data. For all steps, 17.0 version of Statistical Package for the Social Sciences (SPSS) software will be used. In this study, all tested hypotheses are directional so that one-tailed test is employed. In addition, many researchers in their studies set the alpha level at 0.10 to demonstrate statistical significance (Agresti & Finlay, 1999; Warner, 2008; Ritchey, 2000). Considering the sample size of this study (n=81), the alpha level chosen is 0.10.
**Table 3.1**

*Summary of Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Source of Data</th>
<th>Measurement Type</th>
<th>Expected Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Violent Crime</td>
<td>The numbers of violent crimes consists of: homicide, rape, robbery, aggravated assault crimes in eighty-one cities of Turkey.</td>
<td>Turkish National Police (TNP)</td>
<td>Interval/ Ratio</td>
<td></td>
</tr>
<tr>
<td>Number of Violent Criminals</td>
<td>Violent criminals who committed offenses of homicide, rape, robbery, and aggravated assault and were taken into prison.</td>
<td>Turkish Statistical Institute</td>
<td>Interval/ Ratio</td>
<td></td>
</tr>
<tr>
<td><strong>Independent variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential Mobility</td>
<td>The number of people who move in and move out to the city</td>
<td>Turkish Statistical Institute</td>
<td>Interval/ Ratio</td>
<td>+</td>
</tr>
<tr>
<td>Poverty</td>
<td>Poverty is measured as the proportion of the population living below the poverty threshold and the lack of other social security benefits.</td>
<td>Turkish Statistical Institute/ the Turkish Ministry of Health.</td>
<td>Interval/ Ratio</td>
<td>+</td>
</tr>
<tr>
<td>Family disruption</td>
<td>Family disruption is measured as the number of divorces per 1,000 marriages in the cities of Turkey.</td>
<td>Turkish Statistical Institute</td>
<td>Interval/ Ratio</td>
<td>+</td>
</tr>
<tr>
<td>Unemployment</td>
<td>Unemployment refers to the number of people having no job.</td>
<td>Turkish Statistical Institute</td>
<td>Interval/ Ratio</td>
<td>+</td>
</tr>
<tr>
<td>Number of Religious Institutions</td>
<td>The number of religious institutions cover number of religious schools and mosques in the cities if Turkey.</td>
<td>The Presidency of Religious Affairs of Turkey</td>
<td>Interval/ Ratio</td>
<td>-</td>
</tr>
<tr>
<td>Number of Libraries</td>
<td>The number of libraries covers public, handwriting, and children’s libraries in each province.</td>
<td>The Ministry of Culture</td>
<td>Interval/ Ratio</td>
<td>-</td>
</tr>
<tr>
<td>Number of Voluntary Associations</td>
<td>Voluntary association is considered as formal organizations. The study is interested in only non-economic voluntary organizations.</td>
<td>General Directorate of Foundations of the Republic of Turkey</td>
<td>Interval/ Ratio</td>
<td>-</td>
</tr>
<tr>
<td><strong>Control variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>Education variable covers total number of elementary, secondary and high schools in the cities of Turkey.</td>
<td>Ministry of National Education</td>
<td>Interval/ Ratio</td>
<td>-</td>
</tr>
</tbody>
</table>
CHAPTER 4
ANALYSIS AND FINDINGS

Introduction

This chapter presents the effect of structural factors and parochial institutions on the occurrence of violent crimes and violent criminals in Turkey. The results of descriptive, bivariate correlations and multivariate analysis are displayed in this section. In doing so, first, the descriptive statistics of the study are presented. Second, the findings of a correlation matrix of study variables are presented. Finally, results obtained from multivariate analyses are presented.

Descriptive Statistics

Table 4.1 presents descriptive statistics of the data gathered from 81 cities. In order to describe the main features of the data set, descriptive statistics are used. Based on the Turkish National Police’s (TNP) crime report, 33,0485 violent crimes incidents were recorded in the total of 81 cities in Turkey. The total of each city’s number of violent crimes divided by the city population then multiplied by 10,000 yielded the crime rates for the cities in Turkey. As shown in Table 4.1, the average number of violent crimes was 47.04 per 10,000 people. The number of violent crimes per city ranged from 10.25 to 89.51 per 10,000 people.

The number of violent criminals indicates the number of individuals convicted of any type of violent crime per 10,000 per city. The average number of Violent Criminals was 2.04 with a minimum number of 0.10 and a maximum number of 30.31 per 10,000.
Table 4.1

*Descriptive Statistics (N = 81)*

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Violent Crimes</td>
<td>81</td>
<td>47.04</td>
<td>18.60</td>
<td>10.25</td>
<td>89.51</td>
<td>0.02</td>
<td>-0.62</td>
</tr>
<tr>
<td>Violent Criminals</td>
<td>81</td>
<td>2.04</td>
<td>3.42</td>
<td>0.10</td>
<td>30.31</td>
<td>7.30</td>
<td>60.17</td>
</tr>
<tr>
<td>Violent Criminals (LOG</td>
<td>81</td>
<td>0.27</td>
<td>0.90</td>
<td>-2.27</td>
<td>3.41</td>
<td>-0.16</td>
<td>1.80</td>
</tr>
<tr>
<td>Transformed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Disruption</td>
<td>81</td>
<td>0.07</td>
<td>0.04</td>
<td>0.00</td>
<td>0.28</td>
<td>1.44</td>
<td>4.32</td>
</tr>
<tr>
<td>Family Disruption (LOG</td>
<td>81</td>
<td>-0.94</td>
<td>0.04</td>
<td>-1.00</td>
<td>-0.78</td>
<td>0.99</td>
<td>2.27</td>
</tr>
<tr>
<td>Transformed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poverty</td>
<td>81</td>
<td>0.24</td>
<td>0.17</td>
<td>0.06</td>
<td>0.66</td>
<td>1.13</td>
<td>0.38</td>
</tr>
<tr>
<td>Poverty (LOG Transformed)</td>
<td>81</td>
<td>1.27</td>
<td>0.21</td>
<td>0.77</td>
<td>1.64</td>
<td>-0.40</td>
<td>-0.81</td>
</tr>
<tr>
<td>Residential Mobility</td>
<td>81</td>
<td>0.15</td>
<td>0.04</td>
<td>0.09</td>
<td>0.37</td>
<td>1.95</td>
<td>7.17</td>
</tr>
<tr>
<td>Residential Mobility (LOG</td>
<td>81</td>
<td>-1.90</td>
<td>0.25</td>
<td>-2.44</td>
<td>-1.00</td>
<td>0.65</td>
<td>1.39</td>
</tr>
<tr>
<td>Transformed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td>81</td>
<td>7.85</td>
<td>3.11</td>
<td>3.60</td>
<td>17.40</td>
<td>0.85</td>
<td>0.15</td>
</tr>
<tr>
<td>Unemployment (LOG Transformed)</td>
<td>81</td>
<td>0.92</td>
<td>0.15</td>
<td>0.66</td>
<td>1.26</td>
<td>0.25</td>
<td>-0.81</td>
</tr>
<tr>
<td>Religious Institutions</td>
<td>81</td>
<td>17.98</td>
<td>10.12</td>
<td>3.31</td>
<td>67.38</td>
<td>2.15</td>
<td>6.95</td>
</tr>
<tr>
<td>Religious Institutions (LOG</td>
<td>81</td>
<td>1.23</td>
<td>0.20</td>
<td>0.63</td>
<td>1.83</td>
<td>0.18</td>
<td>0.81</td>
</tr>
<tr>
<td>Transformed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library</td>
<td>81</td>
<td>0.27</td>
<td>0.19</td>
<td>0.04</td>
<td>1.29</td>
<td>2.50</td>
<td>10.25</td>
</tr>
<tr>
<td>Library (LOG Transformed)</td>
<td>81</td>
<td>-1.50</td>
<td>0.60</td>
<td>-3.10</td>
<td>0.26</td>
<td>0.21</td>
<td>0.04</td>
</tr>
<tr>
<td>Voluntary Associations</td>
<td>81</td>
<td>10.34</td>
<td>4.54</td>
<td>2.21</td>
<td>21.77</td>
<td>0.36</td>
<td>-0.26</td>
</tr>
<tr>
<td>Education</td>
<td>81</td>
<td>55.04</td>
<td>10.87</td>
<td>29.39</td>
<td>69.67</td>
<td>-0.98</td>
<td>0.03</td>
</tr>
</tbody>
</table>
Family disruptions, poverty, residential mobility, and unemployment are used as the main indicators of total violent crime in Turkey. Based on social disorganization theory and its extensions (i.e., the systemic model of social disorganization theory), these are structural factors that play a crucial role on the occurrence of violent crimes. Family disruptions refer to the number of divorces per 1,000 marriages. As presented in Table 4.1, the average number of family disruptions was 0.07 and ranged from 0 to 0.28. Population turnover that occurred during the time period of 1995-2000 was employed as residential mobility. Therefore, residential mobility includes the sum of people who moved in and out of the city that time. Parallel to other variables, this outcome was standardized/divided by the city population and multiplied with 10,000 in order to get a variable that gives the rate of residential mobility per 10,000 people for each city. The mean score of residential mobility was 0.15 with a range of 0.09 to 0.37. The total number of green card users per 10,000 people in the city was utilized as an indicator of poverty. Poverty ranged from a minimum 0.06 to a maximum 0.66 score with a mean of 1.27. The last indicator of violent crime was unemployment. Unemployment was measured by the percentage of unemployed people aged 15 and over. The average unemployment was 7.85 with a range of 3.60 to 17.40.

As shown in Table 4.1, the mean score of religious institutions was 17.98. It ranged from a minimum 0.63 to a maximum 1.83 score. The number of libraries was measured per 10,000 people for each city. The average number of libraries was 0.27 with a range of 0.04 to 1.29. The mean score of voluntary associations was 10.34 ranging from 2.21 to 21.77, measured per 10,000 people. In this study, education is
employed as a control variable. It refers to the total number of schools per city per 10,000 people. Education ranged from 29.39 to 69.67 with an average score of 55.04.

Univariate distributions of the data were checked in order to analyze the data using more advanced techniques. The variables in this study are continuous variables and relatively normally distributed. The results presented in Table 4.1 also indicate that violent crimes, voluntary associations, and education variables do not show any abnormalities such as being skewed or kurtosis. However, the descriptive statistics of the variables in this study found that one dependent variable (violent criminals) and six independent variables (family disruptions, poverty, residential mobility, unemployment, religious institutions, and libraries) are positively skewed. For this reason, transformation methods were applied to meet the normality assumption of OLS regression. For the normalizing process, researchers have proposed several transformation methods such as the square root, logarithm, and inverse transformations (Agresti & Finlay, 1999; Mertler & Vannatta; 2005: Tabachnick & Fidell, 2007).

Given this context, “number of criminals” variable was transformed by using the log transformation. For family disruptions and unemployment, an inverse transformation was conducted. The logarithmic transformation method was employed for the transformation of the following variables: poverty, residential mobility, religious institutions, and libraries. After conducting the necessary transformation methods, the values of skewness and kurtosis indicated that the distribution of these variables became normal.
Bivariate Analysis

Before performing the multivariate analyses, a bivariate correlation matrix was created to present the levels of linear relationships (bivariate only) between the dependent and independent variables. The results of the bivariate correlation are presented in Table 4.2. The findings of bivariate correlation indicate that the hypotheses H1, H3, H4, H6, H7, and H8 were supported. Poverty is positively correlated with the violent crime rates in the cities of Turkey (H1) ($r = .490, p < .01$). The hypothesis H3 explores the relationship between unemployment and violent crimes. A city that has a high rate of unemployment indicates a high rate of violent crime ($r = .282, p < .01$).

The hypothesis H4 explores the relationship between the rate of family disruptions and the violent crime rates in the cities of Turkey. According to the findings, there was a statistically significant, positive, linear relationship between the rate of family disruptions and the frequency of violent crimes ($r = .478, p < .01$). That is, the crime rate was high in cities where divorce rate was high.

The hypotheses, H6, H7 and H8 also examine the relationship between structural factors and crime. First, there was a statistically significant, positive, linear relationship between residential mobility and the number of violent criminals ($r = .234, p < .05$). Thus, residential mobility has positive effect on the number of violent criminals. That is to say, as the number of convicted criminals in a city increase, residential mobility also increases, supporting H6. According to the findings, there was a statistically significant, positive, linear relationship between unemployment and the number of violent criminals ($r = .275, p < .05$).
Table 4.2

*Bivariate Analysis*

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency of Violent Crimes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency of Violent Criminals</td>
<td>.287**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential Mobility</td>
<td>.180</td>
<td>.234*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Disruptions</td>
<td>.478**</td>
<td>.187*</td>
<td>.104</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td>.282**</td>
<td>.275**</td>
<td>.325**</td>
<td>-.229</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poverty</td>
<td>.490**</td>
<td>.088</td>
<td>.005</td>
<td>.453**</td>
<td>.003</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>.630**</td>
<td>.280**</td>
<td>.318**</td>
<td>.664**</td>
<td>-.508**</td>
<td>-.618**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Libraries</td>
<td>.140</td>
<td>.253*</td>
<td>.326**</td>
<td>.191</td>
<td>-.584**</td>
<td>.244*</td>
<td>.304**</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious Institutions</td>
<td>-.008</td>
<td>.178</td>
<td>.267**</td>
<td>-.202</td>
<td>-.489**</td>
<td>.400**</td>
<td>-.018</td>
<td>.555**</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Voluntary Associations</td>
<td>.509**</td>
<td>.310**</td>
<td>.345**</td>
<td>.433**</td>
<td>-.458**</td>
<td>-.566**</td>
<td>.762**</td>
<td>.241*</td>
<td>.232</td>
<td>-</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (1-tailed).

*. Correlation is significant at the 0.05 level (1-tailed).
The next hypothesis, H8 examines the relationship between the rate of family disruptions and the number of violent criminals. There was a statistically significant, positive, linear relationship between the rate of family disruptions and the number of violent criminals ($r = .187, p < .05$). In other words, in the cities where the rate of family disruptions was high, the number of violent criminals was also high.

The hypotheses, H9, H10, and H11 examine the relationship between social institutions, the number of religious institutions, voluntary associations, and libraries with violent crime rates in Turkey. The results of the bivariate correlations do not support these hypotheses. Similarly, according to the correlation matrix results, the number of religious institutions, voluntary associations, and libraries has no negative significant relationship with the number of violent criminals. These results were very interesting and contrary to what the study expected.

Besides the parochial level control hypotheses, the results of the bivariate correlations also do not support the following hypotheses: H2, and H5. The outcomes of the bivariate correlations indicate that, in particular, poverty rates (H1), and unemployment (H3, H7) have, to some extent, an impact on the dependent variables. First, there was a statistically significant, positive relationship between poverty rates and the number of violent crimes ($r = .490, p < .01$). Second, there was a statistically significant, positive relationship between unemployment and the number of violent crimes ($r = .282, p < .01$). Finally, there was a statistically significant, positive relationship between unemployment and the number of violent criminals ($r = .275, p < .01$). These results were consistent with what was expected.
Table 4.2 also presents the relationship between independent variables and dependent variables. The results indicate that there was a statistically significant, positive relationship between unemployment and family disruptions ($r = .229, p < .01$). Similarly, there was a statistically significant, positive relationship between poverty and family disruptions ($r = .453, p < .01$). On the other hand, the relationship between the number of libraries and family disruptions ($r = .191, p < .05$), the number of voluntary associations and family disruptions ($r = .433, p < .01$), the number of religious institutions and residential mobility ($r = .267, p < .01$), the number of libraries and residential mobility ($r = .326, p < .01$), the number of religious institutions and poverty ($r = .400, p < .01$) each are statistically significant and positive.

According to the results of the bivariate correlations, there were several variables having negative relationships with other variables. First, there was a statistically significant, negative relationship between the number of religious institutions and poverty ($r = -.489, p < .01$); second, there was a statistically significant, negative relationship between the number of religious institutions and family disruptions ($r = -.202, p < .05$); third, there was a statistically significant, negative relationship between the number of voluntary associations and unemployment ($r = -.458, p < .01$); fourth, there was a statistically significant, negative relationship between the number of voluntary associations and poverty ($r = -.566, p < .01$), and finally, there was a statistically significant, negative relationship between the number of libraries and unemployment ($r = -.584, p < .01$).

The control variable education had a statistically significant relationship with all variables in this study except the number of libraries. The results presented in Table
4.2 indicate that there was a statistically significant, positive relationship between the frequency of violent crimes and education ($r = .630, p < .01$). That is to say, the frequency of violent crimes was more likely to be high in cities having more schools. Education also had a significant impact on the other dependent variable the number of violent criminals ($r = .280, p < .01$). Education also had a negative relationship with unemployment and with poverty (respectively $r = -.508, p < .01$ / $r = -.618, p < .01$).

Finally, besides examining the correlation matrix, the latent roots and the variance inflations factors (VIF’s) can detect multicollinearity, which refers high correlations between two or more independent variables (Mertler & Vannatta, 2005). The existence of multicollinearity shows increases in the standard error of estimate for regression coefficients (Agresti & Finlay, 1999; Mansfield & Helms, 1982). That is, multicollinearity decreases reliability of the study and in turn leads to misleading results. Some researchers argue that the multicollinearity problem emerges when the independent variables are highly correlated (Mertler & Vannatta, 2005). Berry and Feldman (1985) claim that correlation coefficient values are not a problem when it is less than 0.80. Therefore, as presented in Table 4.2, the values of the correlation coefficients for all independent variables were less than 0.80. Finally, to meet the assumption of multiple regression analysis, the tolerance and the variance-inflation factor (VIF) tests were conducted as an initial step.

**Multivariate Analysis**

**OLS Regression Results for the Number of Violent Crimes**

The assumptions of OLS were taken under consideration in order to make this
method more applicable for this study. In particular, the main assumptions of OLS, linearity, normality, multicollinearity and homoscedasticity were examined. These assumptions are tested by first, examining normal probability plots of residuals and scatter diagrams of residuals as compared to predicted residuals. These plots also allow a visual examination of the relationship between the dependent and independent variables.

So far as the independent variables of family disruptions, unemployment, poverty, and residential mobility, the points cluster in a band running from lower left to upper right. These results indicate that there was a positive relationship between the dependent variable, number of crimes and these four independent variables. The visual examination can also indicate the strength of the relationship. The closer the points mimic a straight line indicates a stronger relationship.

The assumption of linearity is tested by examining the scatterplots for randomize residuals. A visual examination of the data also supported the assumption of linearity. The results also indicate that none of the residual plots had a funnel pattern. A funnel pattern in the residual plot would indicate a heteroscedasticity problem. This pattern was not detected therefore, the heteroscedasticity assumption was not violated.

After the necessary data transformation methods, skewness and kurtosis values for variables were checked for the normality assumption. None of the variables were skewed or kurtotic. Therefore, normality assumption was not violated in this study (see Table 4.1). Finally the multicollinearity assumption was tested for each variable. The results were checked using a Variance Inflation Factor that indicated that the data did not have a multicollinearity problem since all values of variables regarding the VIF’s
scores were between 1 and 4. According to the widely adopted guideline of VIF, a score of \( VIF \geq 10 \) was problematic (Gujarati 2003; DeMaris, 2004; Lim, Bond, & Bond, 2005).

In the first model, regression analysis was performed to measure the impacts of independent variables, residential mobility, family disruptions, poverty and unemployment on the dependent variable violent crime. The equation of Model 1 was:

\[
E(Y_{violent\ crime}) = \alpha + \beta_1 X_{Residential\ Mobility} + \beta_2 X_{Family\ Disruptions} + \beta_3 X_{Poverty} + \beta_4 X_{Unemployment} + e
\]

The results of the regressions are presented in Table 4.3. According to the findings of Model 1, 37.6% of the variation in violent crime was explained by residential mobility, family disruptions, poverty and unemployment \( (R^2 = .376) \). As noted in the table, the result of the F test is evidence to suggest that at least one independent variable has a non-zero relationship with the dependent variable in Model 1 \( (F=11.452, p < .001) \). Each variable has a differential predictive value on the frequency of violent crimes. Table 4.3 indicates that the best predictor of the frequency of violent crimes was the poverty variable, which accounts for 14.06% of the variation in the dependent variable \( (\beta = .375) \). The second important predictor was family disruptions \( (\beta = .254) \).

Table 4.3 indicates support for hypotheses \( H_1, H_3, \) and \( H_4 \) and thus support the assumptions of social disorganization theory. That is, poverty has a significant positive effect on crime rate at the city level \( (B = .332, p < .001) \). In other words, controlling for predictor variables, a city with a higher level of poverty has higher violent crime rates \( (H_1) \). Unemployment has a positive, statistically significant effect on the frequency of violent crimes \( (B = .243, p < .05) \).
Table 4.3

*OLS Regression Results for the Number of Violent Crimes*

<table>
<thead>
<tr>
<th>Model</th>
<th>B (SE)</th>
<th>Beta (β)</th>
<th>B (SE)</th>
<th>Beta (β)</th>
<th>B (SE)</th>
<th>Beta (β)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
<td>Model 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Independent Variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Disruptions</td>
<td>1.223** (.506)</td>
<td>.254</td>
<td>1.221* (.567)</td>
<td>.254</td>
<td>.657 (.607)</td>
<td>.137</td>
</tr>
<tr>
<td>Unemployment</td>
<td>.243* (.125)</td>
<td>-.192</td>
<td>.121 (.160)</td>
<td>.095</td>
<td>.025 (.169)</td>
<td>.020</td>
</tr>
<tr>
<td>Poverty</td>
<td>.332*** (.091)</td>
<td>.375</td>
<td>.316* (.137)</td>
<td>.357</td>
<td>.209 (.141)</td>
<td>.236</td>
</tr>
<tr>
<td>Residential Mobility</td>
<td>.161 (.166)</td>
<td>.093</td>
<td>.094 (.178)</td>
<td>.054</td>
<td>.029 (.176)</td>
<td>.017</td>
</tr>
<tr>
<td>Voluntary Associations</td>
<td>.004 (.006)</td>
<td>.108</td>
<td>.010 (.007)</td>
<td>-.002</td>
<td>-.058</td>
<td></td>
</tr>
<tr>
<td>Libraries</td>
<td>.041 (.041)</td>
<td>.032</td>
<td>.032 (.041)</td>
<td>.085</td>
<td>.062 (.054)</td>
<td>.167</td>
</tr>
<tr>
<td>Religious Institutions</td>
<td>.032 (.054)</td>
<td>.085</td>
<td>.062 (.054)</td>
<td>.167</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td>.008* (.004)</td>
<td>.459</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model R²</td>
<td>.376</td>
<td>.391</td>
<td>.431</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model F</td>
<td>11.452***</td>
<td>6.699***</td>
<td>6.803***</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Violent Crime

* p<0.05,  ** p<0.01,  *** p<0.001

That is, the frequency of violent crimes was high in the cities where the unemployment rate was high when controlling for independent variables (H₃). In the first model, the structural factor family disruptions also had a significant effect on the frequency of
violent crimes at the city level ($B = 1.223$, $p < .01$). Cities with high a divorce rate have higher violent crime rates compared to cities with a lower divorce rate ($H_4$), controlling for predictor variables. These results were consistent with the assumption of social disorganization theory. The last social factor variable, residential mobility, had no significant effect on the frequency of violent crimes. Finally, hypotheses $H_2$ was not supported by the results of the regression analysis in the Model 1.

In the second model, regression analysis was performed to measure the impacts of non–economical social institution indicators: the number of libraries, religious institutions and voluntary organizations. In other words, three additional independent variables were added to Model 1 to create Model 2. The equation for Model 2 is as follows:

$$E (Y_{violent\ crime}) = \alpha + \beta_1 X_{Residential\ Mobility} + \beta_2 X_{Family\ Disruptions} + \beta_3 X_{Poverty} + \beta_4 X_{Unemployment} - \beta_5 X_{Libraries} - \beta_6 X_{Religious\ Institutions} - \beta_7 X_{Voluntary\ Organization} + e$$

There was a 39.1% variation in violent crime that was explained by the predictors in Model 2 ($R^2 = .391$). In other words, in addition to Model 1 explaining 37.6% of the variation in violent crime rates, Model 2 explains approximately 2% more variation than Model 1. According to this result, Model 2 was a better model than Model 1 in terms of explained variation. Based on the F value in Model 2, at least one independent variable has a non-zero relationship with the dependent variable ($F = 6.699$, $p < .001$).

Table 4.3 indicates that the best predictor of violent crime in Model 2 was poverty ($\beta = .357$), same as Model 1, and respectively followed by family disruptions ($\beta = .254$), voluntary associations ($\beta = .108$), unemployment ($\beta = -.095$), religious institutions ($\beta = .085$), residential mobility ($\beta = .054$), and libraries ($\beta = .032$). That is, regarding the
standardized coefficient of the poverty rate, one standard deviation increase in the poverty rate was associated with a change of about 35.7% of a standard deviation in the frequency of violent crimes.

After adding the parochial control variables, there was still a statistically significant relationship between the dependent variable and the independent variables of family disruptions and poverty. Therefore, hypotheses H₁ and H₄ were supported by the results of Model 2. On the other hand, unemployment had no significant effect on the frequency of violent crimes in Model 2, contrary to Model 1.

In addition, the results of Model 2 indicate that the non-economic, positive social institutions, voluntary associations, libraries, and religious institutions had no statistically significant impact on the frequency of violent crimes. Thus hypotheses H₉, H₁₀, and H₁₁ were not supported by the results of Model 2. The strongest predictor among the parochial control variables was voluntary associations (β = .108). Finally, like Model 1, Model 2 also had no multicollinearity problems because the highest VIF score was below the score of 10 (Mertler & Vannetta, 2005).

The control variable education was added to Model 3. Model 3 covers four structural and three parochial control variables. Therefore, regression analysis was performed to measure the effects of all variables on the frequency of violent crimes. The equation for Model 3 is:

\[
E (Y_{Violent\ crime}) = \alpha + \beta_1X_{Residential\ Mobility} + \beta_2X_{Family\ Disruptions} + \beta_3X_{Poverty} + \beta_4X_{Unemployment} - \beta_5X_{Libraries} - \beta_6X_{Religious\ Institutions} - \beta_7X_{Voluntary\ Organization} + e
\]

The findings of Model 3 indicate that education has a statistically significant effect on the frequency of violent crimes, controlling for other variables (B = -.008, p < .05). In
fact, education appears to explain fully the rate of violent crime since the rest of the independent and parochial variables no longer have a statistically significant impact on the frequency of violent crimes in Model 3. After adding the control variable, the effects of the poverty and family disruptions variables on the dependent variable frequency of violent crimes also declined.

However, Model 3 explains 43.1% of the variance in the frequency of violent crimes ($R^2=.431$). The overall F test indicates that there was sufficient evidence to reject the null hypothesizes. In other words, it suggests that at least one independent variable has a non-zero relationship with the frequency of violent crimes in the model 1 ($F =6.803, p <.001$).

In Model 3, each variable had a differential predictive value on the frequency of violent crimes. The strongest predictor of the frequency of violent crimes was the education variable. That is, the number of schools in a city accounts for 21.06% variation in the frequency of violent crimes ($\beta = .459$). The second important predictor of the frequency of violent crimes was poverty ($\beta = .236$).

**OLS Regression Results for the Number of Violent Criminals**

The following multivariate models examine the impact of traditional variables and non-economical positive social institution variables in social disorganization on the number of violent criminals. This analysis consists of three models presented in Table 4.4.

Before conducting OLS results for the second dependent variable of this study, the assumptions of OLS were checked. The first assumption of OLS was tested by
examining normal probability plots of residuals and scatter diagrams of residuals versus predicted residuals. This transaction was repeated through each variable. As noted, for each independent variable, the points clustered in a band running from the lower corner left to the upper right. The residual plots had a random scattering of points above and below a value of 0. Therefore, the findings indicate that the assumption of linearity was met. The results also indicated that the homoscedascity assumption was met since none of the residual plots had a funnel pattern. All values of VIF for the variables were lower than 10. As a result, the assumption of multicollinearity was also met. Finally, all assumptions of OLS were met.

Model 1 attempts to estimate the impacts of residential mobility, family disruptions, poverty and unemployment on the number of violent criminals. The equation of Model 1 was as follows:

\[ \text{E}(Y_{\text{Violent Criminal}}) = \alpha + \beta X_{\text{(Family Disruptions)}} + \beta X_{\text{(Residential Mobility)}} + \beta X_{\text{(Poverty)}} + \beta X_{\text{(Unemployment)}} + \epsilon \]

According to the findings of Model 1, 11.5% variation in the number of violent criminals was explained by residential mobility, family disruptions, poverty and unemployment \((R^2 = .115)\). The overall F statistic indicates that there was sufficient evidence to reject the null hypothesis \((F = 2.470, p < .05)\). In the model, the strongest predictor of the number of violent criminals was unemployment \((\beta = -.199)\) and followed by residential mobility \((\beta = .158)\).
Table 4.4

**OLS Regression Results for the Number of Violent Criminals**

<table>
<thead>
<tr>
<th>Model</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B (SE)</td>
<td>Beta (β)</td>
<td>B (SE)</td>
</tr>
<tr>
<td><strong>Independent Variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Disruptions</td>
<td>2.500 (2.932)</td>
<td>.107</td>
<td>1.701 (3.267)</td>
</tr>
<tr>
<td>Unemployment</td>
<td>1.223 (.722)</td>
<td>.199</td>
<td>.387 (.925)</td>
</tr>
<tr>
<td>Poverty</td>
<td>1.170* (.525)</td>
<td>.039</td>
<td>.081 (.788)</td>
</tr>
<tr>
<td>Residential Mobility</td>
<td>1.337* (.964)</td>
<td>.158</td>
<td>.820 (1.025)</td>
</tr>
<tr>
<td>Voluntary Associations</td>
<td>.039 (.037)</td>
<td>.196</td>
<td>.147 (.164)</td>
</tr>
<tr>
<td>Libraries</td>
<td>.154 (.235)</td>
<td>.102</td>
<td>.153 (.244)</td>
</tr>
<tr>
<td>Religious Institutions</td>
<td>-.053 (.309)</td>
<td>.029</td>
<td>.055 (.322)</td>
</tr>
<tr>
<td><strong>Control Variable</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>.0001 (.021)</td>
<td>.005</td>
<td></td>
</tr>
<tr>
<td>Model R²</td>
<td>.115</td>
<td>.144</td>
<td>.144</td>
</tr>
<tr>
<td>Model F</td>
<td>2.470*</td>
<td>1.751</td>
<td>1.511</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Violent Criminal

* p<0.05
The hypotheses H7, and H8, regarding the effect of structural variables on the number of violent criminals was not supported in the Model 1. In other words, the results of Table 4.4 indicate that the structural variables family disruptions and unemployment had no statistically significant effect on the number of violent criminals. In an expected direction, poverty had a statistically significant, positive effect on the number of violent criminals ($B =1.170$, $p < .05$). This result supports hypothesis H5. In addition, the results presented in Model 1 indicated that residential mobility had a statistically significant positive effect on the number of violent criminals, controlling for other variables ($B =1.337$, $p < .05$). Therefore, the findings of Model 1 support the hypothesis H6.

After adding the parochial control variables to Model 2, it appears that these variables do not improve the regression model and explain the effect of structural variables and non-economical positive social institutions on the number of violent criminals in Turkey. In contrast to Model 1, the significant impact of residential mobility and poverty on the number of violent criminals were disappeared in Model 2. The overall F test for Model 2 indicates that that there was no sufficient evidence to reject the null hypothesis ($F=1.751$). Finally, all variables in Model 2 had no significant impact on the number of violent criminals in Turkey.

In Model 3, the control variable education’s significant increase explained variations in Model 2. Similarly to Model 2, the findings of Model 3 also indicate that there was no statistically significant relationship between the dependent variable, the number of violent criminals, and the independent variables (residential mobility, family
disruptions, poverty and unemployment, and the number of libraries, religious institutions and education).

The Effects of Non-Economical Positive Social Institutions on the Frequency of Violent Crimes

Social institutions such as mosques and churches are considered an important component of social organization (Bursik & Grasmick, 1993; Rose, 2000). Based on the assumptions of social disorganization theory, the lack of social institutions should be an indicator of social disorganization, and in turn, may reflect a comparably higher volume of crime. In this context, regression analysis was performed to measure the effect that parochial control variables such as the number of voluntary associations, libraries and religious institutions have on the dependent variables violent crime rate and number of violent criminals.

The results of the regression regarding the effect of the parochial control variables on violent crime and the number of violent criminals are presented in Table 4.5 using four models. The first two models examine the impact of parochial control variables on violent crime. The last two models investigate the effect of the parochial control variables on the number of violent criminals. Model 1 shows that 28.5% of the variation in the number of violent crimes was explained by voluntary associations (number of libraries and religious institutions). The overall F statistic value suggests that at least one independent variable has a non-zero relationship with the dependent variable in the model 1 ($F = 10.248$, $p < .001$).
Table 4.5

*OLS Regression Results for the Number of Violent Crimes and Criminals*

<table>
<thead>
<tr>
<th>Model</th>
<th>The Frequency of Violent Crimes</th>
<th>Model 2</th>
<th>The Frequency of Violent Crimes</th>
<th>Model 3</th>
<th>The Number of Violent Criminals</th>
<th>Model 4</th>
<th>The Number of Violent Criminals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>B (SE) Beta</td>
<td>B (SE) Beta</td>
<td>B (SE) Beta</td>
<td>B (SE) Beta</td>
<td>B (SE) Beta</td>
<td>B (SE) Beta</td>
<td></td>
</tr>
<tr>
<td>Voluntary Associations</td>
<td>.021*** (.004) .523</td>
<td>.002 (.006) .046</td>
<td>.052* (.022) .263</td>
<td>.039 (.037) .196</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Libraries</td>
<td>.038 (.036) .124</td>
<td>-.025 (.037) -.082</td>
<td>.267 (.195) .178</td>
<td>.224 (.197) .149</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious Institutions</td>
<td>-.073* (.043) -.197</td>
<td>.015 (.046) .040</td>
<td>.038 (.232) .021</td>
<td>.098 (.269) .054</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>.011*** (.003) .620</td>
<td>.007 (.016) .087</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model R²</td>
<td>.285</td>
<td>.402</td>
<td>.130</td>
<td>.132</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model F</td>
<td>10.248***</td>
<td>12.799***</td>
<td>3.840*</td>
<td>2.900*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p<0.10, ** p<0.05, *** p<0.01

In addition, each variable had a differential predictive value on the frequency of violent crimes. In the model, the strongest indicator of the frequency of violent crimes was the voluntary associations variable, which accounts for 27.35% of the variation in the dependent variable ($\beta = .523$). The findings in Model 1 support hypothesis $H_9$. That is, the number of religious institutions had a statistically significant negative effect on the frequency of violent crimes ($B = -.073, p < .10$). In other words, there was less violent
crime in the cities where the number of religious institutions was higher. The findings do not support the hypotheses $H_{10}$ (libraries) and $H_{11}$ (voluntary associations). The number of libraries had no effect on the frequency of violent crimes ($B=-.038$). Contrary to assumptions, voluntary associations had a statistically significant impact that was positive, instead of negative, on the frequency of violent crimes ($B=.021$, $p < .01$).

In Model 2, the control variable education was taken into account to further investigate the effect of the parochial control variables on violent crime. There was 40.2% of variation in the number of violent crimes was explained by Model 2 ($R^2=.402$). The $F$ statistic value suggests that at least one independent variable has a non-zero relationship with the dependent variable in model 2 ($F=12.799$, $p < .001$). The standardized coefficient value (Beta value) of education was the strongest predictor in model 2 ($\beta = .620$). This was followed by the predictors from model 1: number of libraries ($\beta = -.082$), voluntary associations ($\beta = .046$), and religious institutions ($\beta = .040$). The impact of voluntary associations and religious institutions on the frequency of violent crimes disappeared after introducing the control variable education. In addition, the effect of number of libraries vanished after adding the education variable in to the model as a control variable. Finally, the control variable education was significantly associated with the dependent variable. That is, as the number of schools per 10,000 in a city in Turkey increases, violent crime also increases ($B = .011$, $p < .01$).

In Model 3, the number of violent criminals was regressed on voluntary associations (number of libraries and religious institutions). Model 3 explains 13% variation in the number of violent criminals ($R^2=.130$). $F$ test suggests that there was a sufficient evidence to reject the null hypothesis ($F=3.840$, $p<.05$). The best predictor of
the number of violent criminals was voluntary associations ($\beta = .263$). The second good predictor of Model 3 was the number of libraries ($\beta = .178$).

In Model 3, except for voluntary associations, the number of libraries and religious institutions had no significant effect on the number of violent criminals. Voluntary associations had a statistically significant impact on the number of violent criminals ($B = .052, p < .01$).

The last model in Table 4.5 was Model 4. According to F value in Model 4, at least one independent variable had a non-zero relationship with the dependent variable ($F = 2.900, p < .05$). There was 13.2% of variation in the number of violent criminals explained by voluntary associations (number of libraries and religious institutions) and education.

Table 4.5 indicates that the best predictor of the frequency of violent criminals in Model 4 was voluntary associations ($\beta = .196$) and respectively followed by the number of libraries ($\beta = .149$), education ($\beta = .087$), and religious institutions ($\beta = .054$). Compared to Model 3, the impact of voluntary associations on the number of violent criminals disappeared in Model 4. In addition, Table 4.5 presents that there was no statistically significant relationship between the dependent and independent variables.

*Direct and Indirect Effects of Community Control Variables on the Frequency of Violent Crimes*

The second purpose of this study was to examine the effect of the parochial control (mediating) variables on the frequency of violent crimes. To do so, path analysis was conducted in order to see how the independent variables mediated, negated, or augmented their respective effects on the dependent variables (violent crime rate and
number of criminals) (MacKinnon, Lockwood, & Williams, 2004). The variables selected were considered mediating variables and chosen in order to identify whether they mediate the effect of the structural covariates of social disorganization theory (Cheung & Lau, 2008). In this context,

![Diagram of statistical mediation model](image)

**Figure 4.1.** A statistical mediation model (MacKinnon et al., 2004, p.174).

In Figure 4.1, $\alpha$ refers to the strength of the relationship between the independent and the mediator variable, and $\beta$ refers to the strength of the relationship between the mediator and the dependent variable. The direct effect $\tau'$ represents the strength of the relation between the independent variable and the dependent variable. In this study, common effects of mediating variables will be analyzed in detail to figure out how mediating variables function (mediation or suppression) on structural covariates of social disorganization theory.

Tzelgov and Henik (1991) cited Conger’s definition of the suppressor variable. Accordingly, a suppressor variable can be defined “as one that increases the validity of another variable by its inclusion in a regression equation” (p.525). This describes the
condition of a third variable that increases the effect of an existing relationship between a dependent and an independent variable after it is included in the analysis (MacKinnon et al, 2004; Tzelgov & Henik, 1991). That is, a suppressor increases beta weight (Paulhus, Robins, Trzesniewski, & Tracy, 2004). In another study, Conger (1974) explains the suppressor as where a “prediction is increased by the addition of a variable which is totally uncorrelated with the criterion but which is related to another predictor (or set of predictors)” (p.36). This simply means that the existing relationship between the dependent and independent variable was suppressed by a mediating third variable.

In contrast to the suppression effect, the mediation effect occurs when the degree of the relationship between the dependent and independent variables declines. In the path analysis, two relationships can be found for the relationship between an independent variable and the dependent variable: one is the direct effect that refers to a direct link between the independent variable and the dependent variable. The other one is the indirect effect, which suggests that the independent variables have an impact on the dependent variable via/though another independent variable(s) (MacKinnon, Krull & Lockwood, 2000).

Figure 4.2 shows that the theoretical model of the direct impact of the social structural covariates (residential mobility, family disruptions, unemployment, and poverty) on the number of violent crimes, and additionally, indirect effects of social structural variables on the number of violent crimes through the mediating variables (religious institutions, libraries, and voluntary associations). As presented in Figure 4.2, the causal relationship flows in one direction. This is called non-recursive model. In
another words, it is assumed that there is reciprocal, mutual relationship between endogenous and exogenous variables.

Given this context, as seen on Figure 4.2, the structural covariates of social disorganization theory were placed on the far left of the path analysis. These structural covariates are the endogenous variables of the mediating variables (libraries, religious institutions, and voluntary associations) that were placed at the center of the path analysis. The dependent variable was placed at the far right, which means all precedent predictors estimate the dependent variable (violent crime).

Figure 4.2. Path diagram for determinants of violent crime.
According to the results, three structural covariates (family disruptions, unemployment, and poverty) directly and significantly predict the outcome variable (violent crime rates). On the other hand, no mediating variables (libraries, religious institutions, and voluntary associations) have a significant impact on violent crime rates. Nonetheless, the mediating variables (libraries, religious institutions, and voluntary associations) mediated the positive effect of unemployment on the outcome variable. As presented in Figure 4.2, all mediating variables negatively related to unemployment, which in turn suggests that the parochial variables (the mediating variables) reduce the positive relationship between unemployment and the outcome variable. Similarly, the religious institutions variable was negatively related to family disruptions; however, even though religious institutions decrease (mediate) the significant positive effect of family disruptions, it cannot completely negate its significant direct effect on the outcome. Likewise, voluntary associations largely mediated the effect of poverty on the outcome variable but could not erase its direct positive effect on the dependent variable (violent crime rates).

As presented in Table 4.6., family disruptions were positively and directly related to the distribution of violent crime in the cities of Turkey ($\beta = .254$, $p<0.05$). Unemployment had a direct, positive impact on violent crime ($\beta = .095$, $p<0.05$). Poverty had a positive direct effect on violent crime ($\beta = .357$, $p<0.05$). However, poverty had no significant indirect effect on violent crime. All direct effect social structural variables on violent crime disappeared when mediating variables were added to the model. In other words, the social structural variables had no indirect effect on the outcome.
variable. Similarly, it has not been seen the total effect of structural variables through the non-economical social institutions on violent crime.

Table 4.6

*Summary of Direct, Indirect, and Total Effects of Social Structure Variables through the Non-Economical Social Institutions on the Number of Violent Crimes in Turkey*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Direct</th>
<th>Indirect</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Disruptions</td>
<td>.254*</td>
<td>-.001</td>
<td>.253</td>
</tr>
<tr>
<td>Unemployment</td>
<td>.095*</td>
<td>.044</td>
<td>.139</td>
</tr>
<tr>
<td>Residential Mobility</td>
<td>.054</td>
<td>.088</td>
<td>.142</td>
</tr>
<tr>
<td>Poverty</td>
<td>.357*</td>
<td>.007</td>
<td>.364</td>
</tr>
</tbody>
</table>

* *p<0.05 (One-tailed test)*

In brief, mediating variables or parochial variables to some extent mediate the effect of structural covariates in social disorganization theory. However, those mediating variables cannot mediate the direct effects of three of the structural covariates: family disruptions, unemployment, and poverty. On the other hand, even though structural covariates were significantly associated with parochial variables (mediating variables), none of the indirect effects on the outcome variable was significant via mediating variables. Putting it another way, structural covariates had no indirect effect on the outcome variable through parochial variables (mediating variables).

Figure 4.3 presents the direct causal effect of the social structural variables on the number of violent criminals, and the indirect effect of the social structural variables on the number of violent criminals through mediating variables. It exist the causal
relationships following from right to the left. It was expected a mutual relationship between endogenous and exogenous variables.

![Path diagram for determinants of violent criminals.](image)

**Figure 4.3.** Path diagram for determinants of violent criminals.

The findings presented in Figure 4.3 indicate that the social structural variables had no significant direct or indirect effect on the number of violent criminals. Similar to Figure 4.2, the mediating variables (libraries, religious institutions, and voluntary associations) were negatively related to unemployment. However, the mediating variables decreased the negative effect of unemployment on the number of violent criminals. Similarly, there exists a significant relationship between the mediating variable religious institution and the social structure variable family disruptions. Conversely, the number of religious institutions reduces the positive effect of family disruptions, but does not completely cancel its direct effect on violent criminals. The
number of voluntary associations was significantly related to all social structure
variables. The existence of the direct relationships of the social structure variables on
the number of violent criminals were not suppressed by the mediating variable of
voluntary associations. Voluntary associations also increased the direct effect of
residential mobility, family disruptions, unemployment, and poverty on the number of
violent criminals. All social structural variables have no significant, direct impact on the
number of violent criminals. Even though there was a statistically significant
relationship between the social structural variables and the number of libraries
(mediating variable), except for residential mobility, these significant effects on the
mediating variable cannot transform to the number of violent criminals. Libraries
increase the direct effect of social structural variables.

Table 4.7

<table>
<thead>
<tr>
<th>Variable</th>
<th>Direct</th>
<th>Indirect</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Disruptions</td>
<td>.073</td>
<td>.051</td>
<td>0.124</td>
</tr>
<tr>
<td>Unemployment</td>
<td>.063</td>
<td>.070</td>
<td>.133</td>
</tr>
<tr>
<td>Residential Mobility</td>
<td>.097</td>
<td>.041</td>
<td>.138</td>
</tr>
<tr>
<td>Poverty</td>
<td>.019</td>
<td>.001</td>
<td>.002</td>
</tr>
</tbody>
</table>

The findings presented in Table 4.7 indicate that the direct, indirect, and total effects of
the structural variables through the non-economical social institutions on violent crime
was not seen.
The findings of this study, to some extent, support the three research questions regarding the distribution of violent crime. OLS models for the number of violent crimes indicated that poverty, unemployment, and family disruptions have a positive effect on the distribution of violent crime in the cities of Turkey, as expected. However, surprisingly, the final OLS regression model does not explain the effects of social structural variable on the number of violent crimes in the models. In addition, residential mobility had no significant effect on violent crime, contrary to expectation.

As expected, the outcomes of the first OLS regression model for the number of violent criminals presented that poverty and residential mobility had significant, positive effects on the number of violent criminals in the cities of Turkey. The results support the assumption that the number of violent criminals was higher in cities having a high rate of poverty. Similarly, residential instability was an indicator of high numbers of convicted criminals. On the other hand, family disruptions and unemployment had no significant impacts on the number of violent criminals.

OLS models for the effects of non-economic, cultural institutions such as religion on the frequency of violent crimes in the cities of Turkey showed that religious institutions had a significant, negative effect on the distribution of violent crime. However, the number of libraries was not related to the distribution of violent crime. The OLS models also provided an unexpected result for voluntary associations. That is, voluntary associations have a significant positive impact on the frequency of violent crimes. A city with a high number of voluntary associations has more violent crime. As
non-economical positive social institutions, the number of libraries has no significant
effect on the violent crime.

The findings related to the impacts of non-economical positive social institutions
on the frequency of violent criminals indicated that only voluntary associations had a
significant effect on the number of violent criminals. This result also validates the
results of the impact of voluntary associations on violent crime.

The analysis of the effects of the social structure variables through the mediating
variables on the number of violent crimes and violent criminals indicated that some
mediating variables, to some extent, mediate the effect of structural covariates in social
disorganization theory. However, all mediating variables cannot mediate all the indirect
effects of social structural covariates. Although, for the structural variables significantly
related to the mediating variables, none of their indirect impacts on the social structural
variables on the outcome variable was significant via mediating variables.

The following chapter provides discussion on the results of this study, theoretical
and policy implications, as well as the limitations of the study based on the chapter of
analysis and findings, and future recommendations.
CHAPTER 5
DISCUSSION AND CONCLUSION

Introduction

This chapter provides a substantial discussion of the findings presented in the previous chapter. Based on three major research questions, the study tested several hypotheses. The primary goal was to examine the relationship between social structural factors and the distribution of violent crime in Turkey. In addition, it examined the effect that positive, non-economical social institutions might have on violent crime. Regarding these objectives, this chapter discusses the results of the analysis and the implications of the study’s outcomes for social disorganization theory. Based on the study’s results, this chapter provides a discussion of policy implication, the study’s limitations and, then includes suggestions for future studies.

Discussion

One of the main purposes of the study is to test social disorganization theory. The theory mainly assumes that social disorganization factors influence social order and the ability of society to regulate itself. Additionally, social disorganization prevents establishing stability in society via social norms and values (Shaw and McKay 1942; Bursik and Grasmick, 1993; Hunter, 1985; Sampson and Groves, 1989). Thus, social disorganization factors lead to variations in the rates of crime and delinquency (Kornhauser, 1978; Shaun, Gabbidon & Greene, 2005; Berry & Kasarda, 1977).

Based on the assumptions of social disorganization theory, unemployment, family distribution, residential mobility, and poverty are hypothesized to affect the
variation in crime rates throughout the cities of Turkey. Another set of social structure
variables, parochial variables, in this case the number of religious institutions, voluntary
associations, and libraries are also taken into consideration as to whether they have a
significant effect on violent crime rates.

There were several important findings in the study that support social
disorganization theory’s assumptions. The statistical analysis indicated that family
disruption has a statistically significant, positive effect on variations in crime rates in the
cities of Turkey. Based on the first two models of multivariate and bivariate analyses,
this finding is consistent with existing research. As a source of social disorganization,
family disruption impacts crime rates since it involves diminishing the degree of social
control and enhancing the disruption of social integration and cohesion (Sampson et.
al., 1997; Veysey & Messner, 1999; Sampson & Groves, 1989). Thus, family disruption
reduces the effectiveness of formal and informal social control.

Prior research also found that there is a deleterious impact of family disruption on
the rates of crime (Blau & Blau 1982; Sampson, 1987; Shihadeh & Steffensmeier, 1994;
Reiss, 1986; Messner, 1983; Veysey & Messner, 1999; Messner & Sampson, 1991;
Liska & Bellair, 1995; Warner & Pierce, 1993; Williams & Flewelling, 1988). Similar to
the impact of family disruption on general types of crime, past research on criminology
also found a statistically significant, positive impact from family disruption on the
frequency of violent crimes (Gartner, 1990; Warner & Pierce, 1993; Lanier & Huff-
Corzine 2006). Examining the occurrence of violent crime is the main concern of this
study. The findings of this study are consistent with the findings in previous research
and support the hypothesis that there is a positive relationship between the rate of
family disruption and violent crime rates in the cities of Turkey (Hypothesis 4). That is, the city with a high rate of family disruption is more likely to have a high rate of violent crime activities.

Furthermore, while the results indicate that family disruption supports social disorganization theory in the expected direction regarding the distribution of violent crimes across the cities of Turkey, the findings did not produce support concerning the number of violent criminals. As noted in previous chapter, multivariate analysis of the number of violent criminals in Turkey found that family disruption has no statistically significant positive effect on the number of violent criminals. In addition, the result of bivariate analysis also does not indicate a significant relationship between family disruption and the number of violent criminals. Thus, the hypothesis examining the effect of family disruption on violent criminals was not supported (Hypothesis 8). This may have been related to the judicial system of Turkey. Data, the number of convicted violent criminals, may not stand for the real number of criminals. This may be related to several reasons; youth under the age of 18 years old are rarely detained, the trial process may take a long time between arrest and conviction, etc.

Like family disruption, unemployment is also accepted as an important indicator of social disorganization theory. Cities with a high rate of unemployment are more likely to have a high rate of crime owing to weakening community bonds (Peterson, Krivo, & Harris, 2000; Sampson & Groves, 1989). For example, Wilson (1996) explains the relationship between crime and unemployment through drug trafficking. In this case, people who have the fewer opportunities to get jobs are more likely to become involved in drug trafficking in the city. Unemployment is a source of motivation for some people
to become involved in criminal activities (Messner et. al., 2001; Kleck, 2002; Wilson, 1996; Herzog, 2005; Freeman, 1996). Unemployment is a key contributor to violent crime as well as crime in general.

Many scholars found unemployment to have a statistically positive effect of on crime overall (Raphael & Ebmer, 2001; Land et. al., 1990; Andresen, 2006; Kleck & Chiricos, 2002). That is to say, social disorganization theory predicts that higher unemployment rates contribute to higher crime rates. In the same vein, this study found that unemployment had a significant positive impact on the distribution of violent crime in the cities of Turkey during the time period of this study in the first model of multivariate analysis. That is, a city with a high unemployment rate had a higher crime rate. On the other hand, unemployment had no significant effect on the number of violent criminals. The results do support the related hypothesis 3, and therefore are consistent with the assumption of social disorganization theory.

In this study, the number of green card users was used to measure poverty. That poverty is expected to lead to violence and crime is based on an assumption of social disorganization theory since it may produce unlawful opportunity structures (Hypothesis 1). Poverty is a primary variable in social disorganization theory. As a characteristic of social structure, poverty brings about the weakening of social ties and the social network and less participation in social organizations, which in turn can cause a decrease in formal and informal social control on the behaviors of members of the community. Consequently, poverty gives rise to law breaking in society. Like other family disruption and unemployment, poverty is a key element that increases disorder by disrupting social integration and cohesion, and as a result may increase rates of
violent crime (Anselin et. al., 2000; Markowitz et al., 2001; Skogan, 1990; Wilson & Kelling, 1982; Xu, Fiedler, & Flaming, 2005). Previous research on the relationship between crime and poverty found that poverty has a significant positive effect on the variation of crime rates (Chamlin, 1989; Hartnagel & Lee, 1990; Land et. al., 1990; Loftin & Parker, 1985; Neuman & Berger, 1988; Kelly, 2000, Hindelang, Gottfredson & Garafalo, 1978; Stark 1987). That is, places with a high rate of poverty have a high rate of violent crime.

In the expected direction, results show that poverty had a significant, positive effect on the occurrence of violent crime in the cities of Turkey based on findings of the first two models of multivariate analysis. In addition, the result of bivariate analysis also indicated that poverty is highly correlated with the violent crime. Therefore, the findings support this one assumption of social disorganization. The cities with high poverty rate are more likely to have a high violent crime rate. Similarly, the effect of poverty on violent crime was supported by the multivariate analyses where poverty appeared to have a significant, positive impact on the number of violent criminals in a city.

A large amount of literature indicates that poverty is positively correlated to violent crime rates (Bouffard & Muftic, 2006; Osgood & Chambers, 2000; Bachman, 1991; Bailner et al., 2001; Baumer, 1994; Eitle et al., 2006, Sampson et al., 1997; Warner & Pierce, 1993; Yildiz, 2004; Kumcu, 2001; Durusoy, Kose, & Karadeniz, 2008; Lanier & Huff-Corzine, 2006). Besides violent crime, other crimes like terrorism, property crime, and human trafficking are positively affected by poverty (Koseli, 2006); consequently, the findings of this study regarding violent crime-poverty relationship are consistent with the findings of many previous researches.
Residential mobility is another primary social disorganization factor that creates a source of disorganization in the community. Residential mobility was used to measure the level of social disorganization in the society. Residential mobility not only decreases the level of social networks and kinship bonds but also deteriorates the social control exerted on members of the community (Sampson & Groves, 1989; Sampson et al., 1997; Shaw & McKay, 1942; Kasarda & Janowitz, 1974). Bursik and Grasmick (1993) argued that a high rate of residential mobility promotes crime. Social disorganization theory assumes that a high rate of people moving in and out of a community creates a failure to establish social norms and values that then envelops the whole community. It also prevents individuals from internalizing shared norms and values; consequently they become more vulnerable to crime. The effect residential mobility has on crime is seen in three ways: first by reducing collective action; second, by disbursing social cohesion; and third, by decreasing the social bonds of the community to society (Clear et al., 2003). Hypothesis 2 (violent crime) and Hypothesis 6 (violent criminals) were designed within this framework.

Contrary to expectations, the findings presented in the previous chapter indicate that residential mobility has no statistically significant effect on the distribution of violent crime in the cities of Turkey. The results found in this sample are not consistent with social disorganization theory in terms of the effect of residential mobility on the distribution of violent crime. Some prior studies produced similar results. For example, Haynie and South’s (2005) findings indicated that residential mobility was not significantly related to adolescent violence. In the same manner, residential mobility is not correlated with human trafficking in Turkey. The result of this study regarding the
impact of residential mobility on violent crime is therefore not completely at odds with the findings of previous studies.

On the other hand, the findings of this study for violent criminals in particular produced an expected result. Residential mobility had a statistically significant positive impact on the number of violent criminals regarding the result of model 1 presented in Table 4.4. The cities with a high rate of population mobility were also found to have a high number of violent criminals. This result partly agrees with the assumption of social disorganization theory. Regarding the number of violent criminals’ relationship with residential mobility, this result is consistent with several previous studies (Eitle et al., 2006; Bouffard & Muffic, 2006; Li, 1995, Bellair, 2000; Sun, Triplett, and Gainey, 2004; Yilmaz & Gunay ergun, 2006; Bahar & Fert, 2008).

Consequently, as noted in the result of the multivariate analysis, the findings of violent crime and violent criminals in Turkey do not overlap in the effect of residential mobility. While the result for the number of violent criminals supported the assumption of social disorganization theory and was consistent with former studies, violent crimes was not related to residential mobility, and did not give the expected result. Further studies need to be conducted.

In this study, education was used as a control variable. Education refers to the total number of elementary, secondary and high schools for each city in Turkey. In order to test social disorganization theory, several researchers consider education an important element such that less educational opportunity means higher crime rates (Cancino et al., 2007). The findings of this study indicated that education had no negative effect on the distribution of violent crime in Turkey. The results are not only
inconsistent with the concept of social disorganization, but also inconsistent with the previous research. Previous research on the effect of education agrees that education has a significant impact on the crime (Bjerregaard & Cochran, 2008; Gottfredson 1985; Hippel, 2002; Frey & Luechinger, 2002; Maume & Lee, 2003; Lochner, 1999; Lochner & Moretti, 2004, Kizmaz, 2006). However, some researchers found contradictory results related the effect of education (Maleckova, 2005; Berrebi, 2003; Russel & Miller, 1977). Similar to unemployment, the effect of education on crime is also a controversial issue among researchers. These statistical analyses indicated that education had no significant negative effect on the number of violent criminals, similar to the results of this study. This result does not support the findings of Lochner and Morret (2004). Lochner and his colleagues claim that education has negative effect on incarceration and arrest rates.

Another objective of this study was to examine whether the number of religious institutions, voluntary associations, and libraries in the cities of Turkey have an impact on violent crime and the number of violent criminals. These institutions, called parochial control variables, are accepted as important agents of social control (Bursik & Grasmick, 1983; Hunter, 1975; Rose, 2000). According to embedded theories such as collective efficacy, social capital, and informal social control, in the concept of social disorganization theory, parochial control has a significant, negative effect on crime (Sampson & Groves, 1989; Sampson et al. 1997, Putnam, 1993; Bursik, 1999). Religious institutions, voluntary associations, and the number of libraries are determined to be predictors of the level of social disorganization that can be found in a city. These
institutions were hypothesized to have statistically significant effects on the distribution of violent crime in this study (hypotheses 9, 10, and 11).

As a parochial control agency, religious institutions have been examined by many researchers in terms of the role of religion in controlling crime (Burkett & Warren, Elifson et al., 1983; Evans et al, 1995; Higgins & Albrecht, 1977; Hirschi & Stark, 1969; Stark et al., 1982). Based on the assumption of social disorganization theory, religious institutions provide effective and high social influence within the community. Religious institutions offer nonviolent methods for solving the conflicts that occur not only among individuals but also in society. Using this framework, researchers such as Jurgensmeyer (2004), Lee (2006), and Roman and Moore (2004) revealed that the number of religious institutions significantly and negatively correlates with violent crime. For example, Juergensmeyer (2004) argued that “…religion often plays a role in undergirding the moral authority of public life” (p.2). In addition, Juergensmeyer (2000, 2004) indicated that violent groups (terrorists) have been utilizing “religion” to establish their political views in the cosmic war.

The findings of this study, to some extent, are consistent with that research. That is, religious institutions had negative effect on the distribution of violent crime in the cities of Turkey (See Model 1 in Table 4.5). This single finding may partly support assumptions of social disorganization theory. However, in the second model of Table 4.5, after introducing the control variable education, the effect of religious institutions on the frequency of violent crimes disappeared. Consequently, there was not observed the statistically significant relationship between religious institutions and violent crime. Similarly, the same assumption regarding violent criminals and religious institutions did
not produce the expected result. That is, there was no evidence whether the prevalence of religious institutions is correlated with the number of violent criminals in the cities of Turkey.

Another mediating variable is voluntary association institutions as they promote both formal and informal social control and help maintain mutual commitments among the members as well as to the community (Putnam, 2000; Sampson & Groves, 1989; Curtis, Grabb, & Baer 1992; Rodrigues, 2006; Galea et al., 2002). The strength of social bonds is fostered by voluntary associations (Hunter 1985; Bursik and Grasmick 1993; Kubrin and Weitzer 2003). Voluntary associations, considered as an important agent of social control, are mediating variables indicating the level of organization, and consequently affect the distribution of crime in the cities of Turkey. Based on the theoretical framework of social disorganization, voluntary associations are hypothesized to have a negative effect on the distribution of violent crime (Hypothesis 11). The findings of this study indicated that voluntary associations are not negatively correlated with the distribution of violent crime. These results are not consistent with the existing literature review or with social disorganization theory’s assumptions. Similar to voluntary associations, the statistical analyses presented in chapter 4 suggested no evidence to support that the prevalence of libraries among the cities of Turkey was negatively correlated with the number of violent crimes. Previous research findings also state that prevalent social institutions are not always expected to provide strong social control (Rose, 2000).

This study also examined another aspect of parochial control variables. The direct and indirect effect of social structural variables (residential mobility, family
disruption, unemployment, and poverty) controlled by parochial variables (religious institutions, libraries, and voluntary associations) on the distribution of violent crime and the numbers of violent criminals. As a result of path analyses, only family disruption and poverty directly, positively, and significantly predicted the distribution of violent crime. Religious institutions, libraries, and voluntary associations partly mediated the effect of the structural variable. On the other hand, residential mobility, family disruption, unemployment, and poverty have no effect on violent crime or the amount of violent criminals through the parochial control variables religious institutions, libraries, and voluntary associations.

Policy Implication

The findings of this study have several implications for future studies and policies related to solving the violent crime problem within the cities of Turkey. Crime is very complex. Solving crime is equally complex, requiring a variety of alternative approaches and theoretical guidelines. Solving crime requires individuals, social organizations and businesses to work cooperatively. Eck and Spelman (1997) outline alternative approaches to combat crime effectively.

Therefore, another important part of this study is to make recommendations regarding how to solve existing problems faced by the cities of Turkey. Some effective and efficient policy implications can be suggested regarding these two approaches: policies on the deterrence of violent crime and policies on the causes of violent crime.

Policy regarding the deterrence of violent crime emphasizes the effectiveness of punishment as a deterrent. According to the main assumption of deterrence theory,
more sanction leads to less crime (Bar-Gill & Harel, 2001). Taking into account the seriousness of violent crime, punishment should be greater than for other types of crimes. For example, punishment of homicide should be greater than traffic violations or burglary. For this reason McCorkle and Miethe (2001) state that “when the certainty and severity of punishment are increased, novice offenders are thought to refrain from criminal activity” (p.246). A crime prevention program should be modified to make punishment certain, swift, and severe. The deterrence measure should correspond with the degree of the violent crime. Effective crime control strategies, to some extent, should cause individuals to refrain from committing crimes.

In addition, the effective use of technology, such as closed-circuit television (CCTV) cameras and increased street lighting (Danner, 2003) would seem to be helpful. However, additional research is needed to understand the effect of technology on crime control. Finally, this approach only covers one dimension of policies to combat crime.

Another dimension aims to prevent, or at least lessen, the existence of violent crime. As noted in previous chapters, social structural factors directly affect the crime rate. Equally important are the social factors regarding increasing violent crime rates making evident the need to modify and develop existing law enforcement policies. In this sense, the findings of this study create an important cornerstone for future law enforcement policy. The findings of the study also indicate that the social structure factors of poverty and family disruption are significantly correlated with the occurrence of violent crime. It is important to note that this study brings to light an important finding on how economic factors are an important aspect in the distribution of violent crime.

Rises in violent crime have been observed with increases in the poverty rate
among vulnerable populations. For example, Sherman (2003) argues that “substantial reductions in national rates of serious crime can only be achieved by prevention in areas of concentrated poverty, where the majority of all homicides in the nation occur, and where homicide rates are 20 times the national average” (p.3). Modern crime prevention programs have to address social issues such as providing opportunities for high quality education. These programs must also address social problems like poverty and re-establishing acceptable social norms and values. Policy makers should also focus on reducing income inequality as a method to reduce crime (Fajnzylber, Lederman, & Loayza, 2000; Wang & Arnold, 2008). A developed economic program is an effective way to reduce crime. The minimization of poverty not only decreases violent crime rates but also promotes democracy (Fajnzylber et al., 2000). In doing so, an economic program should consist of several strategies for reducing poverty.

Increased employment opportunities are one of the ways to reduce poverty. In studies by Wilson (1996) propose implementing job training programs. Establishing job training programs have a twofold benefit; it would increase vocational schools and creates a source of skilled workers. An improved policy regarding vocational schools in Turkey will be more effective for increasing employment and consequently decreasing poverty. In addition, many other programs can also be put into effect, such as Job Corps, JOBSTART, and Welfare to Work programs.

Family disruption is another important factor. Both the findings of OLS regression and bivariate analysis indicate that family disruptions positively significantly correlated with the distribution of violent crimes in the provinces of Turkey. Strengthening the family should be a primary agenda for policy makers. Family
disruption (e.g., divorce, single parent household) creates a breeding ground for violent crime via reducing informal social control (Sampson & Groves 1989; Messner & Sampson, 1991; Rose & Clear, 1998). High rates of divorce and separation are contributing force behind the destabilization of society. Family structure is the first and the primary institution to instill moral values. Families help to socialize children for integrating into society. Social policies should strengthen the family via improving economic deprivation and the labor-market. Family policies should address the severe difficulties that working women and their children face. The improved family policies may alleviate family disruption, in turn, reducing crime rates (Sampson, 1987).

By the same token, religious institutions function as social control agents. Religion can enhance social solidarity among the community and provide guidance for normative behavior (Rose, 2000). In the same vein, the Presidency of Religious Affairs in Turkey enumerates the following; first, it says, “…to embrace the whole society, to play a reconciliatory and integrative role among the members of the society…”; and it goes on to say “…to give service in protecting and strengthening the social stability and peace, and the national unity and solidarity, and to warn them against negative activities of various destructive, harmful and sectarian movements” (cited in the first Article of Law 633). The laws also state that “to guide and enlighten our nation about dangerous, harmful and unethical behavior and habits which weaken them materially and spiritually, and which lead to social instability” (cited the first article of law 633). Considering these objectives of the Presidency of Religious Affairs, religious institutions are an important source of social control. Consequently, based on the reasons mentioned above, the
designated policies should assign more roles to the Presidency of Religious Affairs in Turkey regarding how religious institutions might help with the control of violent crime.

Religious institutions fall under the level of parochial control. However, for effective control of violent crime, the other two additional levels of social control process (private and public level social control) should be added to violent crime prevention strategy. For instance, interpersonal networks (parochial control), friendship ties (private social control), and the residents’ outside ties (public social control) come together for successful, informal social control. In other words, considering the complexity of violent crime illness, multidimensional treatments are inevitable.

A variety of remedies has been proposed here for decreasing violent crime in the face of the recent dramatic increases in violent crime in Turkey. Among them are the hiring additional police officers, increased severity of punishment legislation and increase gun control (Fields & Johnson, 1999). Aside from these suggestions, considering the findings of this study, it is evident that combating violent crime will require more than police work alone. Also, individuals, social institutions, social factors, organizations, businesses, and community resources should be considered when designing policies for combating crime. Policy makers should use programs such as the Problem-Oriented Policing (POP) program as a guideline for designing encompassing crime prevention programs.

Limitations and Future Research

The goal of this study is to test social disorganization theory at the city-level in different contexts. Because it is the first to examine the relationship between social
structure and violent crimes at the city-level in Turkey, it is expected that there are limitations. It is an untapped area that is difficult to create a theoretical background for. As well, several fundamental limitations should also be noted. First, the most important limitation of this study is the level of data. The used data aggregation is at city level so that it only covers eighty-one cities in Turkey. Data gathered on crime at the level of large social institutions such as states, cities or counties is not a good indicator for crime in smaller communities. (Kawachi, Kennedy, and Wilkinson, 1999). Therefore, large level units of analysis do not provide a good, overall picture of crime variation at the community level. Similarly, Sampson and Groves (1989) stated that there is a need for more accurate measures of friendship networks, particularly among street gangs. Studies using traditional social disorganization theory in the United States also employed community level data to explain variations in crime (Shaw & McKay, 1942; Bursik & Grasmick, 1993; Sampson, 2002). Hence, using the findings and theoretical background of this study, future studies in Turkey may emphasize the relationship at neighborhood levels pertaining to the impact of social disorganization variables that gangs and friendship networks have on the distribution of violent crime in Turkey.

Second, this study is a cross-sectional design representing a single point in time. It does not allow the researcher to compare and see changes over multiple points in time. In addition, a causal relationship may not be noticed (Singleton and Straits 2005). Cross-sectional studies does not render sufficient evidence to draw the correlation between social structures and violent crime. Thus, through cross-sectional analyses, it is difficult to capture causal feedback between the dependent and independent
variables. Suggested future research should be to employ longitudinal data since it may clarify and provide more detailed information that a cross-sectional does not.

Third, the research area of study is limited to violent crime in Turkey. Considering the geographical location, small sample size and the focused type of violent crime, the conclusions and findings of this study are specific to the cities in Turkey. However, it may be helpful to researchers regarding its methodological approaches. Fourth, the study employed primary social disorganization variables. However, ethnic heterogeneity, one of the important variables of social disorganization, was not utilized owing to the fact that there was not a viable way to measure it in this study. If more appropriate variables and data had been utilized, a more precise picture might have emerged. For example, the education variable refers to the total number of elementary, secondary and high schools in the cities instead of the highest average levels of education obtained within a city.

The data come from official agencies such as the Turkish National Police (TNP), the Presidency of Religious Affairs of Turkey, and the General Directorate of Foundations of the Republic of Turkey. The data’s reliability and validity is limited to the accuracy of these agencies. Future studies should seek out different sources of data.

Notwithstanding these limitations, this study offers valuable understanding of the factors contributing to the occurrence of violent crime. This study is a cornerstone for researchers seeking the effects of social structures (poverty, unemployment rates, residential mobility, and family disruption) and mediating variables (the number of voluntary organizations, the number of religious institutions, and the number of libraries) on the occurrence of violent crimes in the cities of Turkey.
REFERENCES


Hunter, Albert. 1985. Private, parochial, and public social orders: The problem of crime and incivility in urban communities. in G. D. Suttles and M. N. Zald (Eds.), The


Ozmen, A. (2008). *An analytical study of the impact of the perception of leadership styles on job satisfaction within the Turkish National Police based on the*
multifactor leadership questionnaire. Unpublished doctoral dissertation, Sam Houston State University, Huntsville, TX.


