Analyzing Patterns of Juvenile Delinquency in Turkey: A Multilevel Approach

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Dedication

This dissertation is dedicated to my mother Fatma and my father Ismail, my wife, my daughter and son, my sisters and brothers, and to all persons, regardless of their religious and ethnicity, who serve for the peace and wellbeing of humanity.

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I have dreamed of becoming a researcher for a long time. Now that I have accomplished my dream, I would like to thank the following special people who helped me reach that goal and complete my doctoral degree.

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Table of Contents

List of Tables

List of Figures

Abstract

ANALYZING PATTERNS OF DELINQUENCY IN TURKEY: A MULTILEVEL APPROACH

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Understanding patterns of delinquency and mapping out the individual and environmental level factors that cause delinquency is the key in developing appropriate policies to reduce crime. Some of these factors that have been found in prior empirical studies include delinquent peers, divorce, migration, violent environment, poverty, and inequality. However, most of these studies were conducted in Western countries. Thus, the first intention of this dissertation was to discover whether these variables can explain variances in delinquency in Turkey that has a different culture. Second, Turkish policymakers, the media, and the public have focused chiefly on crimes that have been committed by children who live on the streets or "street children" rather than criminal behaviors of all juveniles who commit crimes. Therefore, my study was designed to test whether or not this approach is granted. Third, Turkish policymakers make their preventive policies mostly by using city level variables. Therefore, my interest in this

dissertation was testing explanatory power of city level variables to explain delinquency. Finally, my interest in conducting this dissertation was to understand the general patterns of delinquency in Turkey in order to develop appropriate policy recommendations. To accomplish these goals, I collected secondary data on the characteristics of 27 Turkish cities (city level legal and illegal opportunities) and characteristics of 84,639 suspected juveniles (individual level) who were contacted by the police in 2005 and 2006. Because both city level and individual level variables were used in some analyses, the hierarchical linear model (HLM) was used when appropriate in order to avoid ecological fallacy. My results revealed that patterns of juvenile delinquency in Turkey have both similarities and differences from other Western countries. Moreover, some of the factors that were found to be causes of delinquency in the United States had the opposite effect in Turkey. Thus, I concluded that researchers should not assume that all juvenile crime causation factors are universal, but rather, cultural differences should be given much more attention to these factors. In addition, crime theories should be tested in different cultures to clarify their explanatory power. Secondly, the results of my study found that most of Turkey's juvenile delinquents come from intact families which did not support the general tendency of Turkish policymakers, the media, and the public. Therefore, I recommended that all juveniles should be considered rather than focusing only on street kids when crime prevention policies are being developed. Finally, my results showed that using city level variables was appropriate to explain the variance in juvenile group crimes; however, their explanatory power was weak to explain most of the crime types. Thus, I concluded that Turkish officials should use neighborhood level data to develop appropriate policies.

Chapter 1: Introduction

In my study, the patterns of juvenile crimes were examined in 27 Turkish cities that are made up of various opportunities, both legal and illegal, and different characteristics, namely poverty, unemployment, divorce, crime levels, and availability of schools and job training centers. The primary goal was to focus on the possible reasons that affect juvenile delinquency rates between the city level legal and illegal opportunities. Juvenile criminality has been explained through theories such as strain and social disorganization that have tested different variables including, for example, lack of legal opportunities for both juveniles and their families (i.e., education and jobs), peer effect, family conflicts, illegal opportunities to engage in crime, and immigration to metropolitan cities (Agnew, 2003; Anderson, 1999; Shaw & McKay, 2003). These variables served as the framework for developing the statistical models that were conducted in my study.

1.1 Problem Statement

According to the well-known and empirically established age-crime curve, juveniles commit more crimes than any other age groups (Moffitt, 2003; Vold, Bernard, & Snipes, 2002). For example, Greenberg (2003) claimed that an "extraordinary amount

of crime in American society is the accomplishment of young people" and "in recent years, more than half of those criminals arrested for the seven FBI index offenses have been youths" (p. 358). The age-crime curve not only shows that juveniles commit all types of crimes, but also reveals that "a larger group of persons fill out the age crime curve" even though most of the "adolescence-limited" juveniles have "crime careers of shorter duration" (Moffitt, 2003, p. 451).

As in the United States, a significant number of juveniles commit crimes in Turkey. For instance, official statistics in 2005 and 2006 revealed that more than 80,000 delinquency cases were recorded by law enforcement agencies in only 27 out of 81 Turkish cities thus representing a broad range of crime (TUIK Report, 2006).

This high rate of juvenile criminality has been explained by several factors, such as strain caused by the lack of legal opportunities (e.g., education and jobs) for both juveniles and their families, peer effect, family conflicts, illegal opportunities to engage in crime, and immigration to metropolitan cities (Agnew, 2003; Anderson, 1999; Shaw & McKay, 2003). For example, strain theorists claimed that the lack of legal opportunities for people cause strain which in turn leads to crime involvement (Cohen, 1955; Merton 1938).

Therefore, policy makers should consider these factors and their effects on juvenile criminality in order to prevent or at least reduce juvenile delinquency. However, the lack of national and local policies based on empirical studies that have examined the causes of juvenile criminality as well as other related juvenile problems reduces the effectiveness level of delinquency prevention efforts by law enforcement.

Although juvenile criminality is high in Turkey, crimes committed by "ordinary juveniles" have been generally ignored by the media and the general public. This is primarily because they tend to focus mainly on crimes of children who live on the streets, namely "street children." Their crimes have attracted disproportionate media attention, especially after the killing of an army major in 2006 (Turkish Media: Sabah, 2006). This also occurs in American media depictions, such as the Horton case and an exaggerated focus on dangerous Black juveniles (Anderson, 1995). The Turkish media have depicted street children as dangerous and repeatedly committing violent and property crimes (Turkish Media: Sabah, 2006). Because of the large media focus, these street kids have attracted the most attention by policy makers and the general public (Turkish Media: Sabah, 2006). However, thousands of other juveniles commit crimes each year. Therefore, more attention and prevention policies based on empirical studies that involve all juvenile criminality within Turkey are critical.

Furthermore, preventing juvenile criminality and drug use is important not only because of its contribution to the level of crime in a city but also because of its effects on the future of the juveniles involved. Preventing and reducing delinquency during the *early stages* is important for the development of a successful adult life, as empirical studies have found that early engagement in crime and illegal substance use negatively affects adult outcomes (Brook et al., 2002; Kandel & Yamaguchi, 1992; Hawkins et al., 1992; Brook et al., 1995; Anthony & Petronis, 1995; Gfroerer et al., 2002; Kandel & Logan, 1984; Waters, 2003).

For instance, self-report studies have consistently found that most juveniles engage in some type of crime. However, most of these youths cease criminal activities

after a certain age, while only those juveniles who are exposed to a crimonegenic environment during their early years develop "continuous lifelong antisocial" behaviors and become "life-course-persistent" criminals (Moffitt, 2003, p. 451).

The age at initiation of any drug and level of drug use are also important determinants of a person's drug history. For instance, researchers have claimed that early initiation and level of drug use are very significant indicators of later drug use (Kandel & Yamaguchi, 1992). Similarly, Hawkins et al. (1992) also claimed that use of alcohol or other illegal drugs at an early age is an indicator of future alcohol or drug problems. Anthony and Petronis (1995) supported this idea and claimed that people who begin drug use earlier (e.g., under age 15) will have "higher lifetime prevalence of drug use problems" than other drug users who started in mid-adolescence (between 15 and 17 years of age). They also claimed that youths who "delay substance use until age 21 almost never develop substance use problems" (p. 10).

Similarly, Gfroerer et al. (2002) mentioned that "alcohol and cigarette use" increases the chance of using marijuana and marijuana use increases the probability of starting the use of other illicit drugs (p. 62). In addition to these problems, Brook et al. (2002) argued that early initiation of illegal substances causes psychological problems for youths. Early adolescence drug use is "associated with psychological distress (depression, anxiety, and phobic anxiety) in the late adolescence period" (Brook et al., 2002, p. 1039) which are causes of delinquency according to strain theorists such as Agnew (2003).

Moreover, Waters (2003) claimed that early onset of any illegal substance damages the normal and healthy development of children. In addition to physical harms, early use of any illegal drug harms the "progress of cognitive development" of children

because adults have "cognitive thinking ability, children can only think in concrete terms"; thus, children cannot "think abstractly, in multiple dimensions, or in relative terms" (Waters, 2003, p. 2). The adolescence period is very vital to develop this capacity, and any substance use can damage this process that is strongly related to improved memory and the ability to pay attention; thus, marijuana, alcohol, and many other drugs weaken the development of these abilities. Therefore, Waters claimed that "in general, early onset of substance use increases a young person's vulnerability to any and all of the harmful effects of that substance" (p. 2).

Additionally, early onset of drugs reduces the success and attachment level to the schools for those kids because "drug use at this age also interferes with normal opportunities to practice new reasoning skills in school"; therefore, "middle school level students who become drug involved are far more likely to skip classes, fail to turn in assignments and, eventually, to drop out of school" (Waters, 2003, p. 2).

As a result, although the age-crime curve anticipates that most of the juveniles stop committing crimes after a certain age (Moffitt, 2003; Vold, et al., 2002), this result should not lead us to ignore juvenile criminality for two reasons: First, juveniles commit a significant number of crimes, and second, the early onset of criminality and illegal substance use causes a lifetime of juvenile deficiencies (Brook et al., 2002; Waters, 2003). However, Turkish officials do not have comprehensive and focused policies to reduce juvenile crimes, especially those committed during the early ages. Moreover, we do not have city level and national level comprehensive policies to reduce the underlying causes of delinquency. These deficiencies are not only important for lowering the crime level but also for a healthy society that can be harmed by spoiling its future generations.

5

1.2 Importance of the study

In my study, I strived to determine whether juvenile characteristics and environments affect their criminality, and therefore make appropriate policy recommendations for the prevention of delinquency. To accomplish these goals, I examined 27 Turkish cities that are comprised of different characteristics in terms of their effects on juvenile crime rates.

Moreover, I compared the results of my study with the findings of strain, social disorganization, and Elliot et al.'s integrated theory. Since these theories typically used data from the American population, my research was an indirect comparative study between Turkish and American juveniles as well as their cultures and societies. Thus, although comparative studies generally evoke direct national comparisons, I claim that this indirect comparison also made contributions to the literature. Moreover, comparing results of my study with the findings of those theories tested the validity and generalizability of their hypotheses (Nowak, 1989). Karstedt (2001) claimed that "crime and social control are social and cultural phenomena, and therefore, comparing cultures and comparing crime will offer new insights, fresh theories, and chances of innovative perspectives" (p. 285).

Furthermore, comparative studies of crime and criminal justice systems have both practical and theoretical implications for policy makers and criminologists according to Bennett (2004) because these implications "expand our intellectual horizons and deepen our understanding of how systems of crime and justice operate" (p. 8).

Parallel to Bennett's arguments, Karstedt (2001) mentioned three major goals of comparative criminology: (a) *"transportation of criminological theories to other cultures and test of their limits and potential of generalization;* (b) *exploration and discovery of variations of crime and forms of social control;* and (c) *integration and widening of the database for the development of a universal criminology"* (p. 288).

While explaining the benefits of comparative research, Kohn (1987) focused on two major results: *differences* and *similarities.* He claimed that although explaining and interpreting these two findings is very difficult, these findings direct researchers to new understandings. For example, finding differences warns us about the accuracy of the generalization of non-comparative study results.

Thus, I believe that my study has provided useful results that will help researchers to understand whether characteristics of juveniles and their immediate environment affect delinquency rates. Furthermore, I believe that my study has important policy implications for law enforcement agencies and policy makers to prevent and reduce crime involvement at early stages which is crucial for preventing lifetime deviant behaviors. Finally, I believe that my study has contributed to the understanding of cultural differences. Moreover, these contributions are not only valuable to Turkey but to other nations and general delinquency research as well.

Chapter 2: Literature Review

To conduct this research, I used both macro and micro level variables that have been used in several theories to explain delinquency, namely strain, social disorganization, differential association, and social learning. Therefore, I reviewed how these theories linked those variables with delinquency. However, since my aim was not to test any specific theory, I did not review all aspects of these theories. Rather, I examined them only in terms of "related variables." In other words, I followed the approach of integrated theories. As Bernard and Snipes suggested (1996), I focused "on variables and the relationships among variables, rather than on theories themselves" (Vold et al., 2002, p. 313) because there should be enough emphasis "on the observable variables and the observable relations among them" (Bernard & Snipes, 1996, 322). For example, Vold et al., claimed that focusing on variables and combining them from different theories "will be more powerful in the sense that they can explain more of the variation in crime" rather than following a single theory (2002, p. 301).

Moreover, Bernard and Snipes (1996) claimed that the aim of researchers should be on explaining the "scientific process," because "the failure to accomplish this is one reason why criminology research has tended toward a million modest little studies" (p. 302). Thus, I examined related variables rather than "falsifying or validating any theory" because this "risk-factor approach" allows researchers to determine the "location of

independent variation and direction of causation" which enables them to make clear and solid "policy implications." Conversely, researchers who follow the classic approach ("falsifying or validating any theory") make "unclear policy implications" as Bernard and Snipes claimed (Vold et al., 2002, pp. 314-315).

During the first part of this literature review, I did not test any specific theory but rather relied mainly on the following three: (a) strain theory, (b) social disorganization theory, and (c) Elliot et al.'s integrated theory. This was done because they gave excellent explanations of how society and individual level factors affect delinquency (Cullen & Agnew, 2003).

In the second part of the literature review, I focused directly on the variables and their effect on delinquency and then summarized the findings of related theories and empirical studies. In other words, I determined which variables were found to be effective in increasing or reducing the delinquency level of cities. For example, I examined the empirical evidence for the effect of migration rates, crime rates, and divorce rates on delinquency.

2.1 Part 1: Related Theories

2.1.1 Strain Theories

Strain theories examine the effect of social structure, and attempt to determine which forces drive people to commit crime (Vold et al, 2002; John Laub, personal communication, 2005).

According to Dr. Laub, strain theories are divided into three major parts:

1- Classic Strain Theories

      a. Merton (1938),

      b. Cohen (1950s),

      c. Cloward and Ohlin (1960s).

2- Institutional Anomie Theory (Messner and Rosenfeld, 1990s).

3- General Strain Theory (Agnew, 1990s).

2.1.1.1 Classic Strain Theories

2.1.1.1.1 Merton's Anomie (1938)

Merton (1938) claimed that "certain phases of social structure generate the circumstances" for anomie (p. 672). Anomie is "a breakdown in the ability of society to regulate the natural appetites of individuals" according to Durkheim (Vold et al., 2002, p. 135). However, unlike Durkheim, Merton (1938) argued that "some of these cultural aspirations are related to the original drives of man, but they are not determined by them"; rather, they are caused by the American culture (p. 672). Although following strain theorists, Agnew (2003) focused on micro level (individual) variables, whereas Merton (1938) defined anomie at a macro level and implied that macro level factors cause anomie. Thus, a severe strain on the cultural values arises because:

(1) the culture places a disproportionate emphasis on the achievement *of the goal of accumulated wealth and maintains that this goal is applicable to all persons, and*

(2)   the social structure effectively limits the possibilities of individuals within these

groups to achieve this goal through the use of institutionalized means.

This contradiction between the culture and the social structure of society is what Merton

defined as *anomie"* (Vold et al., 2002, p. 137).

Therefore, Merton (1938) argued that "the extreme emphasis upon the accumulation

of wealth as a symbol of success in our own society militates against the completely

effective control of institutionally regulated modes of acquiring a fortune" (p. 675). Thus,

the crime level increases because criminal "behavior becomes increasingly common

when the emphasis on the culturally induced success-goal becomes divorced from a

coordinated institutional emphasis" (p. 676). The term "social structural strain" was used

to describe those social conditions, so that the theories which followed Merton's lead

have come to be known as "strain theories" (Vold et al., 2002, p. 135).

According to Merton (1938), a basic assumption of strain theories is the

consensus that exists on values among the vast majority of the public because "goals,

purposes, and interests" are "culturally defined and they are two important parts among

the elements of social and cultural structure" (p. 672). Thus, individuals are culturally

motivated to achieve those goals according to Merton.

For example, Vold et al. (2002) claimed that the American culture

overemphasizes economic success over other goals and motivates individuals to gain

prosperity. Even worse, "accumulated wealth is generally equated with personal value

and worth and is associated with a high degree of prestige and social status. Those

without money may be degraded even if they have personal characteristics that other

cultures may value…In addition, whereas Durkheim said that culture functioned to limit

11

these aspirations in individuals,….Merton argued that American culture specifically encourages all individuals to seek the greatest amount of wealth" (pg. 136).

However, although there is a huge cultural pressure and motivation for gaining wealth, Merton (1938) claimed that there is "cultural emphasis on success without equally internalizing the morally prescribed norms governing means for its attainment" (p. 679). Thus, Merton suggested that not the means but the ends are most valued in the American culture. Moreover, an individual who follows those legal means "receives little social reward for it unless he or she also achieves at least a moderate degree of wealth as a result. But the person, who achieves wealth, even if this wealth is not attained by the approved means, still receives the social rewards of prestige and social status". This reality reduces the desirability "of the institutionalized means, particularly for those who cannot achieve wealth" (Vold et al., 2002; pg. 137).

What Merton (1938) argues above is that there is a "cultural imbalance" in American culture between "culturally defined goals" and "appropriate modes of attaining these goals" (pg. 673). In other words, cultural imbalance indicates "the imbalance between the strong cultural forces that valued the goal of monetary success and the much weaker cultural forces that valued the institutional means of hard work, honesty, and education" (Vold et al., 2002; pg. 138).

Vold et al. (2002) mentioned that Merton used "cultural imbalance" to explain the high crime level of all classes in the United States namely higher, middle, and lower classes because not only lower class, but also working middle class and upper class give more importance to the ends than legal means. Therefore, all classes commit crime

regardless of their status because following legitimate means is not valued as much as ends (Merton, 1838).

However, Vold et al. (2002) excellently stated that this "cultural imbalance" cannot "explain why the lower classes in America have higher crime rates than the upper classes. Merton therefore used social structure, not culture, to explain why lower-class people in America have higher crime rates than upper-class people" (pg. 138). For example, Merton (1938) claimed that "the extreme emphasis on pecuniary success" is not enough "to understand the social sources of antisocial behavior" (pg.680). Moreover, he claimed that high crime rates were not caused by only a "lack of opportunity" (Merton, 1938; pg. 680). Instead, Merton (1938) claimed that "antisocial behavior ensues on a considerable scale only when a system of cultural values extols, virtually above all else, certain common symbols of success for the population at large while its social structure rigorously restricts or completely eliminates access to approved modes of acquiring these symbols for a considerable part of the same population" (pg. 680). In other words, Merton (1938) asserted that a combination of "the extreme emphasis on pecuniary success", "competing groups and individuals", and existence of "class differentials in the accessibility of these common success-symbols" (pg. 680) were needed for high amount of crime. As a result, "the distribution of criminal behavior is said to be a sort of mirror image of the distribution of legitimate opportunities, being relatively concentrated in the lower classes" (Vold et al., 2002; pg. 138) because they suffer from the combination of the above-mentioned situations (Merton, 1938).

To clearly explain the reasons for high crime rates of lower-class people, Merton's (1938) model has the following components:

13

a- common success-symbols for all (pg. 680)

b- the-end-justifies-the-mean (pg. 681)

c- class differences in the accessibility (pg. 680)

Merton (1938) implied by these three components that these macro level variables negatively affect disadvantaged people, and increase their strain which cause crime and delinquency as shown in Figure 2. 1 (Source; Dr. Laub's class, Spring 2005, UMCP).

a

b ⟶ cause **strain** ⟶ causes **crime and delinquency**

c
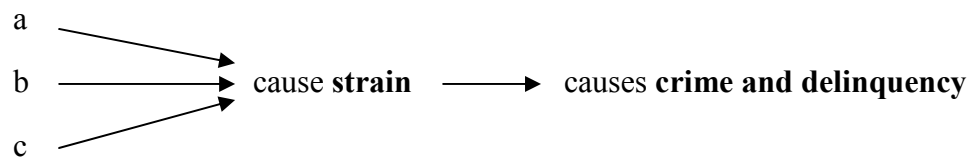
Figure 2.1: Crime Causation Model of Merton

Moreover, unlike the assumptions of Lombroso (2003) who claimed that criminality is a "personal trait", Merton's (1938) model implies that people are in fact good, but they are forced by social structure to commit crime, and they commit crime when they are under pressure (Merton, 1938).

However, crime and delinquency is not the absolute outcome of Merton's model but only one of many possible outcomes such as "conformity, innovation, ritualism, retreatism, and rebellion. According to Merton (1938), these categories refer to role adjustments in specific situations, not the personality" (p. 676).

Two of these outcomes—conformity and ritualism—contribute to law-abiding behaviors and "stability and continuity of a society" (Merton, 1938, p. 677). According to

Merton, conformity is the acceptance of "both the culture goals and means" and "is the most common and widely diffused" behavior within a society (p. 677). On the other hand, ritualists follow the means, but reject Merton's goals.

Therefore, since these two groups follow the approved means, we can imply from Merton's (1938) theory that crime and delinquency will be less in stable societies. Thus, while examining delinquency in 27 cities of Turkey, I focused on measuring the stability level of those cities by looking at related indicators, namely migration rates, unemployment rates, family breakdowns, and poverty.

On the other hand, adaptation of innovation, retreatism, and rebellion roles contribute to criminal behaviors (Merton, 1938). For example, unlike conformity in which persons use only legitimate means, Merton claimed that some people use alternative means. In other words, they use illegitimate means such as "cheating stealing, gambling, drug dealing, and prostitution" (Vold et al., 2002, p.139) while they are trying to gain those goals if they do not have adequate opportunities. Merton defined these behaviors as "innovation" and claimed that these innovative behaviors cause most of the criminal behaviors. Thus, I believe that "innovation" is the most important part of Merton's theory to understand crime and delinquency in any society, especially criminality among the poor.

Pursuing "wealth and monetary success" (Vold et al., 2002, p. 136) is not valued only by the American culture but also by the Turkish culture as well. Although it may not be to the same extent, Turkish people, especially young generations also value economic gains. Therefore, I assume that criminality and delinquency is high among those Turkish people and youths who pursue wealth but do not have enough legitimate opportunities.

Fourth, Merton (1938) claimed that some people become rebellious "due to frustration" and start to live in "a new social order" (p. 678). Although Merton did not clearly explain the consequences of adapting this rebellion role, Vold et al. (2002) stated that rebellions are no longer a "member of the existing society," and they "might involve in violent revolution" (p. 139).

Merton's (1938) last definition, "retreatism," is also strongly related to delinquency and anti-social behaviors of juveniles. Merton claimed that this group rejects both goals and means because those people see "no real opportunity of achieving success" (Vold et al., 2002, p. 139). Thus, they become "dropouts, outcasts, vagabonds, chronic drunkards, and drug addicts" (Merton, 1938, p. 677).

Therefore, I assumed that Merton's (1938) retreatism can be one possible explanation for the juvenile problem behaviors such as using drugs and other illegal substances, living on the streets, and running away from their parents in those 27 cities of Turkey. The reason for this assumption is that some of these cities do not provide adequate legitimate means for those youths; thus, they reject goals and means. I examined the level of retreatism and the underlying city level factors that increase or decrease it.

In sum, I believe that anomie which is caused by "lack of opportunities" while people, especially youths are under cultural pressure to gain "common goals" (Merton, 1938, p. 680), is strongly relevant to explain differences among delinquency levels in those 27 Turkish cities since each one provides a different level of legitimate opportunities.

However, researchers should always consider the reality while examining and interpreting results regarding the relationship between anomie and delinquency that Merton's anomie theory can only explain some portion of delinquency (Vold et al., 2002).

2.1.1.1.2 Cohen

 Cohen (1955) expanded on Merton's theory and applied it to explain juvenile gangs because he believed that there was a "delinquent subculture in the delinquency neighborhoods" (pp. 11, 13). For example, Cohen claimed that even though delinquent juveniles 'grow up', "the delinquent tradition is kept alive by the age-groups that succeed them" (p. 13).

Unlike Merton, Cohen asserted that juveniles develop such delinquent subcultures as a "way of dealing with the problems of adjustment" which are "chiefly status problems" (Cohen, 1955, p. 121). Since these youths "cannot meet the criteria of the respectable status system," they develop their criteria according to "the delinquent subculture" (p. 121).

Cohen included two important points in his theory which are crucial for my current research. His first contribution was in distinguishing the differences between adult crime and youth crime. Assuming that "crime is crime" and "child and adult criminals are practitioners of the same trade" is a false generalization according to Cohen because juveniles commit "non-utilitarion, malicious, and negativistic" crimes (1955, p. 25). For example, Cohen claimed that juveniles do not steal for "rational" and

"utilitarian" purposes, such as "to eat them, wear them, or otherwise use them" (p.125). In other words, "this type of delinquency, in contrast to most adult crime, seemed to serve no useful purpose" because "juvenile gangs stole things they did not want or need, vandalized, and maliciously destroyed property" (Vold et al., 2002, p.142).

Cohen's second contribution of was to focus on whether juveniles commit crimes in groups or individually. Cohen (1955) claimed that because of the effect of "delinquent subculture," juveniles commit crimes "in groups rather than independently" (p. 43) because the real reason is not "utilitarian" purposes but gaining "status" among members of "the delinquent subculture" (p. 121).

As a result, Cohen's theory has two important points in understanding juvenile crimes in Turkey. First is whether juveniles commit crimes individually or in groups. Second is whether juveniles commit crimes to gain valuable goals as Merton (1938) claimed or simply to look for status as Cohen (1955) claimed. I assume that by examining the types of crimes and whether they were committed alone or in groups will guide us to understand the underlying reasons for delinquency in those 27 Turkish cities.

2.1.1.1.3 Cloward and Ohlin

Cloward and Ohlin (2003) also focused on gang delinquency based on Merton's (1938) anomie theory as Cohen (1955) did. They agreed with Cohen, and accepted that some juveniles commit crimes for gaining status (Cloward and Ohlin, 2003). However, according to Cloward and Ohlin, these juveniles make up only one part of delinquents because they believed that

there are three more or less distinctive kinds of delinquent subculture.

One is what we call the "criminal subculture"- a type of gang which is

devoted to theft, extortion, and other illegal means of securing income.

A second is the "conflict subculture" – a type of gang in which the

manipulation of violence predominates as a way of gaining status. The

third is the "retreatist subculture" – a type of gang in which the

consumption of drugs is stressed (pg. 191-192).

Cloward and Ohlin (2003) argued that all three responses are possible, however, they claimed that lower class juveniles gather in gangs to gain common goals via committing crimes because these youths also pursue "conventional goals", but "social-class differences" make "intense pressure for the use of illegitimate alternatives" (pg.193).

Cloward and Ohlin (2003) claimed that in addition to "lack of legitimate means", the presence of "illegitimate opportunities" motivate juveniles to "form criminal gangs" (Vold et al., 2002; pg.144). Dr. Laub (Personal Communication, 2005) defined this idea as "no legitimate means at macro level, and presence of illegitimate means at micro level". For example, Cloward and Ohlin (2003) asserted that "having decided that he "can't make it legitimately" does not mean that he will use "illegitimate means" because "access to illegitimate means" is required for criminal activities (pg. 195). Thus, they claimed that "connection with delinquent subculture" increase probability of "access to illegitimate means" (Cloward and Ohlin, 2003; pg. 195).

Moreover, Cloward and Ohlin (2003) argued that type of "the delinquent response" is determined "according to the availability of various illegitimate means" (pg. 195). For example, they claimed that "criminal subculture" ("utilitarian crimes") emerge if "low-class youths" have desire for "conventional goals" and "illegitimate means". However, in the absence of "illegitimate means", "conflict subculture" ("status crimes") emerges (Cloward and Ohlin, 2003; pg. 196).

Ideas and claims of strain theorists were widely accepted by politicians and scholars in the United States "during the 1960s" and "had great impact on federal policy toward crime and delinquency" (Vold et al., 2002, p.144). For example, "Attorney General Robert Kennedy initiated the Juvenile Delinquency Prevention and Control Act of 1961 developed by Cloward and Ohlin. The program included improving education, creating work opportunities, organizing lower-class communities, and providing services to individuals, gangs, and families." Moreover, the famous "War on Poverty" policy which "includes all lower class people" was also based on the aforementioned ideas of Cloward and Ohlin (Vold et al., 2002, p.145). Unfortunately, these policies were unable to change the level of criminal behaviors and reduce crime and delinquency. Although there were other political reasons, these programs were thus canceled (Vold et al., 2002; pg.151).

However, although it seems on the face that policies based on strain and anomie theories did not work to reduce delinquency and crime, in reality this claim was not true because assumptions of these theories were not problematic (Vold et al., 2002). The deficiency was not with the theoretical bases but was caused by the program's implementation failure because assumptions of the theory and the program's original

intention implied that "the solution to the problems of crime and poverty requires social structural change" was not followed during the implementation stage (Vold et al., 2002, p.145). In other words, Dr. Laub claimed that macro level changes were required (personal communication, 2005). However, Rose claimed that real implementation of the programs deviated from their original intention and focused "to change individual poor people, and very few were designed to change social structural arrangements" (Vold et al., 2002, p.145).

I believe that Cloward and Ohlin's theory, and above mentioned two policies, and more importantly the real reasons for failures, can guide Turkish policy makers to understand and prevent juvenile delinquency in the 27 Turkish cities. For example, during policy development, and especially during the implementation stage, the aforementioned lessons and experiences can guide them not to make similar mistakes.

Thus, Cloward and Ohlin's theory will be helpful for three reasons. First, the same as Merton (1938) and Cohen (1955), Cloward and Ohlin (2003) mentioned the importance of "lack of legitimate avenues" (p. 193) which I examined at the city level to determine their relations with the juvenile delinquency level.

Second, Cloward and Ohlin (2003) claimed that "the nature of delinquent response" was determined by the "availability of various illegitimate means" (p.195). Therefore, I believe that by examining the relationships between crime types and presence of legal and illegal opportunities in the 27 Turkish cities, we can understand juvenile delinquency more clearly and develop appropriate policies to reduce the problem.

Finally, the above lessons show that before developing and implementing any policy, we should correctly understand and implement the assumptions of any theory (Vold et al., 2002). Otherwise, as Mears (1998) and Mastrofski (2004) asserted, we can make "false assumptions," develop inaccurate and "unrealistic expectations," and "incorrectly interpret" the results of our research. Thus, I focused on macro level changes for macro level variables in my policy section rather than focusing on policies that aim to change individuals.

2.1.1.2 Institutional Anomie Theory (Rosenfeld and Messner)

Rosenfeld and Messner (2003) argued that "the American dream" created tremendous pressure to pursue the "goal of material success by everyone in society…at the same time, the American Dream does not strongly prohibit people from using more efficient illegal means to achieve monetary success" (Vold et al., 2002; pg. 150).. In fact, Vold et al., (2002) claimed that Rosenfeld and Messner (2003) developed and put Merton's anomie theory on solid bases at a "societal level", such as explaining the role and effect of "material goals" clearly because they plainly mentioned "the overwhelming influence of economic institutions in American society, and argued that other institutions, such as families, schools, and even politics, tend to be subservient to the economy" (Vold et al., 2002; pg. 150).

Rosenfeld and Messner (2003) claimed that since "noneconomic institutions are relatively devalued", they cannot perform their main "functions effectively", such as providing protection, and helping their children to grow as healthy, psychologically

satisfied, and law abiding persons (pg. 206). As a result, Rosenfeld and Messner (2003) advised that American society needs a "fundamental social transformation" for a "significant reductions in crime", otherwise, "social" and "criminal justice reforms" will have only limited effects (pg. 206). In other words, they proposed a change at the "cultural level" (Vold et al., 2002; pg. 150).

Moreover, unlike the claims of Merton, Cohen, Cloward and Ohlin, Rosenfeld and Messner (2003) argued that increasing the availability of "legitimate opportunities" will not reduce use of illegal means because "monetary success is an inherently open-ended and elusive", thus, not only low-class people with limited resources, but also upper-class people look for "illegal means" "no matter how much money" they make, "in the pursuit of the ultimate goal", namely "open-ended" "monetary success" (Rosenfeld and Messner, 2003; pg. 206).

For example, we can infer from their claims that the War on Poverty policy that was implemented to fight crime committed by poor people cannot reduce crime; actually, it increases criminal behaviors because although we increase poor people's legal opportunities, "there will still be losers" among them; therefore, unless we change the aim of people from material success to other goals, these losers will feel "even more pressure on them to commit crime (i.e., achieving monetary success through illegitimate means)" (Vold et al., 2002, p. 150).

Therefore, unlike other strain theorists previously mentioned, Rosenfeld and Messner (2003) argued that not poverty but rather "the American dream contributes to high levels of crime" (p. 205) because they claimed that "*exaggerated* emphasis on monetary success" and "*devaluation* of noneconomic institutions" (pp. 202-203) weaken

23

the "strength of noneconomic institutions such as family, church, and state" (Vold et al., 2002, p. 151). In other words, whereas Cloward and Ohlin (2003) claimed that mutual existence of few "legal means" and "*availability* of illegal alternatives" (p. 195) are required for criminal behaviors of disadvantaged people, Rosenfeld and Messner (2003) argued that mutual existence of "*exaggerated* emphasis on monetary success" and "*devaluation* of noneconomic institutions" (pp. 202-203) are required for crime and delinquency. Thus, I inferred from Rosenfeld and Messner's theory that poverty (or "lack of legitimate opportunities") is not sufficient to look for illegitimate means; instead, lack of "noneconomic institutions" which motivate persons, especially juveniles to pursue "other values than material success" is required for criminal behaviors (Vold et al., 2002, p.151).

Chamblin and Cochran (1995) tested this theory by examining the relationships between property crimes and "weak controls from noneconomic social institutions", and found that "capacity of noneconomic institutions" determine the level of "criminogenic impact of economic deprivation" (pg. 411),

To test their own theory, Messner and Rosenfeld (1997) examined the effect of "levels and patterns of welfare expenditures" on murder rates of 40 countries by using "multivariate cross-national" (p. 1393) governmental policies "as an indicator of the strength of the state as a noneconomic institution─ i.e., the extent to which the state does not solely serve the needs of the economy" (Vold et al., 2002, p. 152). Their results were consistent with assumptions of "the institutional-anomie" theory that homicide rates were "lower in capitalist societies that have decommodified labor by reducing dependence on the market for personal well-being" (Messner & Rosenfeld, 1997, p. 1407).

Similarly, Savolainen (2000) found "critical support for institutional anomie theory" by analyzing "cross-national data" (p. 1021) in which the "effect of economic inequality on lethal violence appears to be limited … by welfare spending" (p. 1036). Dr. Gallagher (personal communication, 2006) argued that if people are provided with vital government needs, they do not have to commit crimes to acquire them.

As a result, Rosenfeld and Messner's theory is very helpful in examining the effect of macro level governmental policies and societal level priorities on that society's crime level. Therefore, borrowing these variables (e.g., divorce rates and welfare spending) from this theory and applying them to 27 Turkish cities helped me to examine the effect of presence or non-presence of those governmental policies on delinquency rates.

2.1.1.3 General Strain Theory (Agnew)

While Rosenfeld and Messner (2003) developed Merton's theory by focusing on macro level variables, general strain theory focused on "individual level" variables, or in other words, personal "relationships with others", and "argues that these negative relationships generate negative emotions in the person, and the negative emotions then cause crime" (Vold et al., 2002; pg.148).

Unlike preceding strain theorists who mentioned only one reason ("preventing people from reaching their valued goals") for emergence of strain, Agnew (2003) mentioned three reasons;

(*1) Blockage to achieve positively valued goals*

(2) Removal of positively valued stimuli

(3)Events involving the presentation of noxious or negative stimuli, such as emotional use (pg. 209).

Agnew (2003) claimed that the above situations lead to crime, however, "anger occupies a special place in the general strain theory" because anger "affects the individual in several ways that are conductive to delinquency" (pg. 214). The reason for crime causation due to strain and anger is that kids' "logical development is not completed, and they cannot look at the negative and disturbing incidents as tolerable as adults"; thus, they either commit crime to reflect their anger to others "for retaliation/revenge", or they hide behind using drugs if they consider crime as morally wrong (Waters, 2003; pg. 2; Agnew, 2003; pg. 214; Vold et al., 2002). For example, Agnew claimed that "those negative emotions include disappointment, depression, fear and anger. Anger, however, is the most critical emotional reaction" because "it increases the individual's level of felt injury, creates a desire for retaliation/revenge, energizes the individuals for action, and lowers inhibitions, in part because individuals believe that others will feel their aggression is justified" (2003; pg. 214-215).

Moreover, based on Agnew's (2003) arguments, Vold et al., (2002) excellently stated why strain causes more criminality for juveniles than adults. They claimed that the presence of any of these reasons, especially "noxious or negative stimuli" affects juveniles more than adults because they are captives at school and their homes (they are dependent to their families and must go to school) (pg. 148), thus, since they cannot leave these negative and harmful situations, they either commit crime or use drugs "to cope

26

with and manage strain of these negative emotions" (pg. 148). For example, juveniles commit crimes for "achieving their valued goals …or removing themselves from the negative relationships…or for retaliating against those who are the source of the negative relationships" (Vold et al., 2002; pg. 148).

Although Agnew (2003) asserted that the main reason for delinquency was the individual level of "negative relationships," he later stated that crime rates can also be affected by macro-level variables, such as society level "goals/values/identities" and "subculture of violence" (p. 216). Agnew argued that certain macro-level variables increase the chances of selecting delinquency as a "coping strategy for strain" (p. 215). For example, he claimed that juveniles who live in disadvantaged areas face "(1) strong economic/status demands; (2) people around them stress the importance of money/status on a regular basis; and (3) few alternative goals are given cultural support" (p. 216). Similar to Cloward and Ohlin (2003), Agnew agreed that these macro level cultural variables lead juveniles to commit crime.

However, Agnew (2003) argued that presence of strain is not enough to engage in crime because all juveniles experience it more or less. He claimed that besides strain, lack of adequate "coping mechanisms, skills, opportunities and sources" are necessary to commit crime (pg. 214-216).

For example, Agnew (2003) emphasized that juvenile coping skills are very important in determining whether they choose to commit crimes or use other means to overcome their feelings of strain. He stated that "intelligence, creativity, problem-solving skills, interpersonal skills, self-efficiency, and self-esteem … affect the selection of coping strategies … Data, for example, suggest that individuals with high self-esteem are

27

more resistant to stress" (p. 215). Therefore, Agnew acknowledged that juveniles with adequate "coping skills" are less likely to commit crimes even though they experience the same strain as other delinquent juveniles. "Conventional social support," (e.g., family support), is very crucial for developing those skills and not engaging in delinquency under the pressure of strain (Agnew, 2003; Cullen & Agnew, 2003).

Moreover, Agnew (2003) claimed that juveniles prefer committing crime while they are under the pressure of strain if they are imposed to a "subculture of violence" (p. 216). Borrowing from Wolfgang and Ferracuti's (2003) thesis, Agnew stated that living in a "subculture of violence" teaches and forces juveniles to solve their problems and cope with their strains via delinquency as do "poor black ghetto juveniles" (p. 216). For example, Wolfgang and Ferracuti argued that the level of criminal activities committed by both youths and adults can be an indicator of such a subculture. Thus, Cullen and Agnew (2003) asserted that "Wolfgang and Ferracuti's subculture of violence thesis has not only been used to explain the higher rate of violence among young, lower-class males, but also has been used to explain the higher rate of homicide in the South" (p. 155). Hence, a high level of violence is an indicator of that subculture.

In sum, four points of Agnew's theory (2003) are very important in understanding why strain that is experienced by all juveniles lead to delinquency only for some and result in criminal behaviors. First is the presence of inadequate "coping mechanisms, skills, opportunities and sources" caused by family conflict, not having both parents and living in single-parent homes that have economic difficulties (pp. 215-216).

The second point is the lack of "conventional support" such as "informational support, instrumental support, and emotional support." Agnew (2003) stated that

"juveniles who were backed with conventional support preferred non-delinquent manners to overcome their strains" (p. 216).

Third, "it has been argued that adolescents who associate with delinquent peers are more likely to be exposed to delinquent models and beliefs and to receive reinforcement for delinquency" (Agnew, 2003, p. 217). Agnew's fourth and final point is the presence of "macro level variables" (societal level) that encourage juveniles to commit crime, such as the "subculture of violence" (p. 216).

I believe that focusing on these indicators of delinquency helped me to understand juvenile crimes that have occurred in 27 Turkish cities. For example, I examined the effect of "low coping skills" (Agnew, 2003, p. 215) operationalized by family conflict on the delinquency level of Turkish cities. Moreover, I also observed the presence of total crime rates (both violent and property crimes committed by adults and juveniles) and the number of crimes committed by "juvenile groups" to determine the level of crime and "violent subculture" that those youths were imposed. As Wolfgang and Ferracuti (2003) argued, crimes *committed in groups* are indicators of "peer effect" and presence of that subculture.

2.1.2 Social Disorganization Theory

Social disorganization theory focuses on macro level variables, such as groups, communities, and community structures and "minimizes individual differences, such as psychological and biological" traits (Laub, personal communication, 2005). In other words, theorists focused on "large ecological environments as units of analysis, such as

cities, states, and countries" to understand group level deviations. The reason for this approach was they believed that the cause of crime is external, because social forces affect a person's engagement in crime (Laub, personal communication, 2005).

Dr. Laub defined these social forces as;

- *social structure of society*

- *social class*

- *communities (how life organized, work, family, and leisure)*

- *division of labor and size of group*

Dr. Laub claimed that these community features are very important to "understand the patterns of human relations and how they are organized." Understanding these patterns and social organizations is the key for sociological theorists, especially for social disorganization theorists because they argued that "patterns of human relations and organization of community" is crucial to understand crime in a particular community (Laub, personal communication, 2005).

In my study, I examined city level variables in order to understand the reasons for differences in delinquency levels among 27 Turkish cities. In this regard, there are two social disorganization theories relevant to my research. First is Shaw and McKay's (2003) theory which hypothesized that features of urban areas have a tremendous effect on high delinquency rates in these locations. Second is the "collective efficacy theory" of Sampson, Raudenbush, and Earls (2003) which hypothesized that the lack of "informal social control" increases the level of crime. I believe that these two theories are most helpful in examining juvenile crimes in Turkish cities.

2.1.2.1 Juvenile Delinquency and Urban Areas (Shaw and McKay)

Unlike theorists who claimed that "traits of individuals" cause criminality, theorists from the Chicago School argued that "traits of neighborhoods" are "the key to understanding crime" (Cullen & Agnew, 2003, p. 96). For example, as a result of their study in Chicago, Shaw and McKay (2003) found that "over time, rates of crime by *area* remained relatively the same regardless of which ethnic group resided there" (Cullen & Agnew, 2003, p. 96). Thus, Shaw and McKay (2003) asserted that traits of locations determine the level of criminal incidents.

Shaw and McKay (2003) defined these areas as "socially disorganized" and claimed that "rates of delinquency" were high in these socially disorganized areas because of the "wide diversity in norms and standards of behaviors" (p. 106). In other words, social disorganization in these areas was caused by "persistent poverty, rapid population growth, heterogeneity, and transiency" (Cullen & Agnew, 2003, p. 96). Thus, juveniles who are "exposed to a variety of contradictory standards and norms" learn criminal behaviors, not the conventional norms (Shaw & McKay, 2003, p. 106). Moreover, they argued that because of "the presence of a large number of adult criminals" (p. 107), juveniles are raised in a "system of criminal activities" (p. 106). Thus, "delinquency would be higher in these communities and would be lower in neighborhoods that are more affluent and stable (i.e., organized)" (Cullen & Agnew, 2003, p. 96). Delinquency is high because informal control –"symbolized by family church, and other institutions"– would be less, but the effect and influence of other delinquents and adults would be high (Shaw & McKay, 2003, p. 106). For example,

31

"families would be disrupted, schools would be marked by disorder, churches would be poorly attended, and political groups would be ineffectual" (Cullen & Agnew, 2003, p. 97). These two points ("ineffective unit of control and many organized delinquent and criminal gangs") are the key to understanding delinquency because they "not only tolerate but actually foster delinquent and criminal practices" (Cullen & Agnew, 2003, pp. 96-97).

We should be aware of one important point at this stage: these theorists tried to explain delinquency with a "macro-level approach" by examining "how crime rates vary by *ecological units,* such as neighborhoods, cities, counties, states, or nations" (Cullen & Agnew, 2003, p. 98). Therefore, theorists studied the "characteristics of places" rather than "characteristics of individuals" because they claimed that besides "traits of individuals," "traits of neighborhoods" also have the capacity to "influence crime rates" (Cullen & Agnew, 2003, p. 98).

For example, as a result of their research in "125 largest American metropolitan areas", Blau and Blau (1982) found that "economic inequality generally, increases rates of criminal violence" (pg. 114). "Urban areas marked by socio-economic inequality" (Cullen and Agnew, 2003; pg. 98) have more crimes (Blau and Blau, 1982).

Furthermore, Sampson and Groves (1989) also found that "low economic status, ethnic heterogeneity, residential mobility, family disruption lead to community social disorganization, which, in turn" affected "crime and delinquency rates (Sampson and Groves, 1989; pg. 774). Thus, they claimed that "social-disorganization theory has vitality and renewed relevance for explaining macro-level variations in the crime rates. In particular, the fact that Shaw and McKay's model explains crime and delinquency rates

in a culture other than the United States is testimony to its power and generalizability"
(Sampson and Groves, 1989; pg. 799).

Consistency of the results and their replication by many researchers have
convinced scholars that social disorganization has a negative effect on crime, more
especially delinquency. Thus, there is "persuasive evidence that the social disorganization
perspective had a measure of validity and warranted further empirical and theoretical
investigation" (Cullen and Agnew, 2003; pg. 99).

In sum, Shaw and McKay (2003) claimed that individuals are "exposed to either
the system of conventional activities or the system of criminal activities, or both" (p. 106)
because they are "enmeshed in a web of social relations" and each one is subject to great
influence of their immediate environment (Cullen & Agnew, 2003, p. 101). According to
Shaw and McKay, to prevent or at least reduce delinquency, policy makers and law
enforcement should thus consider community level factors.

Shaw and McKay (2003) stated two important characteristics of juvenile crimes.
First, disorganized communities have a disproportionate rate of delinquency; as such, the
traits of these disorganized communities have been argued to cause a higher rate of
delinquency than organized communities. For example, communities with a high rate of
delinquency provide "fewer opportunities for securing training, education, and contacts
which facilitate advancement in the fields of business, industry, and the professions" (p.
105).

Second, Shaw and McKay (2003) claimed that "group delinquency" is common
among juveniles. This point is very important in understanding the effect of
environmental culture, presence of criminal activities, and criminal peers, because these

factors give an opportunity that motivates juveniles to engage in criminal acts (Cullen &

Agnew, 2003). Thus, while studying delinquency, we should examine the level of "group

delinquency" in order to understand the effect of a culture's environment.

2.1.2.2 Collective Efficacy and Crime (Sampson, Raudenbush, and Earls)

Although Shaw and McKay (2003) hypothesized that "characteristics of places" is

the key for the level of criminal activities, a rival hypothesis claimed that "crime is higher

in certain neighborhoods not because of some feature of the neighborhood, but because

people who are prone to commit crime have moved into and now reside in the

neighborhood. This is called a "compositional effect"; crime is high because individuals

with criminal traits 'compose' the area's population" (Cullen and Agnew, 2003; pg. 118).

Sampson et al. (1997) examined these two hypothesizes by using a survey data

comprised of 8,782 Chicagoans. The effect of "individual traits" ("compositional effect")

and "features of the neighborhoods" ("contextual effects") (Cullen and Agnew, 2003; pg.

118) on crime level was compared by using multilevel analyses and "by controlling

individual-level characteristics, measurement error, and prior violence" (Sampson et al.,

1997; pg. 918). In their analysis, they found that contextual factors and community

characteristics had an effect on level of crime even after holding "individual traits"

constant (Cullen and Agnew, 2003; pg. 118-119). For example, "concentrated

disadvantage, immigration concentration, and residential stability explained 70% of the

neighborhood variation in collective efficacy" (Sampson et al., 1997; pg. 923).

Sampson et al. (1997) actually explained how and why "contextual factors" affect crime rates. This was their major contribution to the literature because they explained how and why "concentrated disadvantage" increase crime rates by focusing on two different community level variables; "informal social control (the willingness of neighbors to intervene if they saw wrongdoing going on)" and "social cohesion and trust (how closely people in an area were tied to and supported each other)" (Sampson et al., 1977; pg. 918-919; Cullen and Agnew, 2003; pg. 118). These two variables are very important because they are "intercorrelated" and they are "not separate conditions but part of some broader underlying constructs" (Cullen and Agnew, 2003; pg. 119).

Sampson et al. (1977) named these "underlying constructs" as "*collective efficacy*" "*defined as social cohesion among neighbors combined with their willingness to intervene on behalf of the common good*" (Sampson et al., 1977; pg. 918).

Restating and formulizing Sampson et al.'s (1997) hypothesis in accordance with the advice of Mears (1998) and Mastrofski (2004) regarding how and why social disorganization causes a high level of crime, it can be said that social disorganization (measured by "concentrated disadvantage [i.e., poverty, disrupted families], residential stability, and large population of immigrants") (Cullen & Agnew, 2003, p. 119) reduces the level of "social cohesion among neighbors," which in turn reduces "informal social control" (or in their words reduces the "willingness to intervene" of each member of that society "on behalf of the common good" (Sampson et al., 1997, p. 918). As a result, lack of collective efficacy allows high rates of criminal activities (Sampson et al., 1997).

In sum, Sampson et al. (1997) claimed that macro-level community features do have an effect on crime rates because these features affect the level of collective efficacy ─"cohesion and trust among neighbors" and "informal control"─ (pp. 918-919).

2.1.2.3 Relevancy to my Research

Although the previously discussed theories examined the differences between organized and disorganized/disadvantaged neighborhoods "within" cities (Sampson et al., 1997; Shaw & McKay, 2003), I did not look at these differences in my research. I am fully aware of the differences within cities; however, I examined whether the cumulative effect of these city level variables affect the rates and types of delinquency for three reasons. First, my datasets consisted of city level variables since Turkish officials usually collect city level data. Second, I wanted to test the explanatory power of city level variables because Turkish officials generally base their policies on these types of data. Third, by analyzing city level variables, I examined whether policies could be developed in order to remove or reduce the presence of those variables as well as the level of delinquency.

In addition, because my data include the individual characteristics of each juvenile delinquent, I analyzed the link between their characteristics and traits of their cities by using multi-level statistical tools to ascertain whether juveniles with certain characteristics are more prone to the criminogenic environment of cities than other juveniles. For example, I examined the number of juveniles who did not live with both of their parents and their level of crime engagement and then linked these data to the 27 cities' crime and divorce rates.

Therefore, I assumed that the four common variables used to measure social disorganization—(a) poverty/concentrated disadvantages, (b) heterogeneity, (c) residential transiency/stability/immigration concentration, and (d) family disruption (Sampson et al., 1997; Shaw & McKay, 2003)—would be very useful in understanding the delinquency level in each of the 27 Turkish cities.

For example, as Shaw and McKay (2003) stated, cities that take immigrants can be classified as disorganized because incoming migrants cause "rapid population growth, heterogeneity, and transiency" (Cullen & Agnew, 2003, p. 96). Similarly, looking at the average income level and rate of divorce in each city, I examined the effect that social disorganization had on the delinquency level of each city.

Parallel to strain theorists, we can also infer from social disorganization theorists that studying the level of legitimate opportunities (e.g., the number of job training centers, schools, and job opportunities) are crucial to understanding delinquency (Cullen & Agnew, 2003; Sampson et al., 1997; Shaw & McKay, 2003) Thus, I examined the relationship between the level of these opportunities with the level of delinquency for each city.

2.1.3 Integrated Theory of Elliot et al.

In my review of current theories, this section represents the most relevant part related to my research, because I used the same approach that Elliot et al. (1979) followed and combined the variables discussed in strain and social disorganization theories as well as other related variables.

Elliot et al. (1979) used an excellent approach to integrate the strain and social disorganization theories by combining variables across theories. They also examined the "inter-correlation" and "interactions" among the theories as Sampson et al. (1997) did when constructing their collective efficacy theory (Cullen & Agnew, 2003). For example, Sampson et al. not only examined how strain, social disorganization, and their cumulative effect increase the level of delinquency, but they also examined the effect of disorganization on strain. Similarly, Elliot et al. (1979) stated that relationships among the variables are not "unidirectional," but rather "multidirectional." For example, they claimed that "the actual relationships between initial socialization, bonding/attenuation processes, normative orientations of groups, and behavior are often reciprocal and reinforcing" (p. 11). However, I did not examine the effect of variables on other variables ("inter-correlation" and "interactions" among them) but only considered this important point during the interpretation of the results found in my research.

Besides using social disorganization and labeling theories to explain delinquency, Elliot et al. (1979) provided "a conceptual framework in which traditional strain, social-learning, and social control perspectives are integrated into a single explanatory paradigm which avoids the class bias inherent in traditional perspectives and which accounts for multiple etiologies of (multiple causal paths to) sustained patterns of delinquent behavior" (pg. 4).

The fundamental assumption of strain theories is that "man is basically a conforming being who violates normative expectations only as a result of external social pressures or socially induced stress" (Elliot et al., 1979, p. 5). Whereas early versions of strain theories focused primarily on lower class juveniles and attempted to explain the

38

results of being in disadvantaged situations, Elliot et al.'s integrated theory modified this approach and claimed that all juveniles face strain regardless of their economic well-being (Cullen & Agnew, 2003). Elliot et al. argued that "the motivational stimulus for delinquent behavior in the form of aspiration-opportunity discrepancies or goal failure is viewed as logically independent of social class" (p. 6). Thus, Cullen and Agnew claimed that this extended approach made strain theories more powerful in explaining further variance in delinquency because it included all youths.

Although this modification increased the explanatory power of strain theories, Elliot et al. (1979) claimed that even this extended version could explain the limited variance of delinquency because the basic assumption of strain theory—"aspiration-opportunity discrepancy variables"—has a "weak predictive power" (p. 7). For example, Elliot et al. (1979) mentioned that two studies (Brennan & Huizinga, 1975; Elliot & Voss, 1974) were conducted in order to examine the effect of these variables and found that "anticipated failure to achieve occupational or educational goals" (p. 7) was unable to explain variances in juvenile criminal involvement. These researchers also found that many juveniles who did not have "aspiration-opportunity discrepancy" problems also committed crimes (Elliot et al., 1979, p. 7).

Therefore, since strain theories can only explain a small portion of delinquency, Elliot et al. (1979) integrated them with "social-learning and social control perspectives" (pg. 4). They applied these assumptions to delinquency, and found that "limited opportunity for achieving conventional goals is the motivational stimulus for delinquent behavior. The specific form and pattern of delinquent behavior are acquired through normal learning processes within delinquent groups. Experiences of limited or blocked

opportunities (a result of structural limitations on success) thus lead to alienation (perceived anomie) and an active seeking out of alternative groups and settings in which particular patterns of delinquent behavior are acquired and reinforced (social learning)" (Elliot et al., 1979; pg. 7).

Bond was the key point that Elliot et al. (1979) focused on while combining these theories. Control theorists claimed that juveniles do not commit crime if they have strong bonds with their immediate environment, namely family (Hirschi, 2003). By accepting this basic assumption, Elliot et al. examined how strain affects an individual's bonds by combining these theories. For example, they stated that "failure to achieve conventional goals on subsequent delinquency is related to the strength of one's initial bonds" (Elliot et al., 1979; pg. 9).

Moreover, Elliot et al. (1979) examined how social disorganization affects delinquency through a juvenile's weakening social bonds. They concluded that "effects of social disorganization or crisis in the home (divorce, parental strife and discord, death of a parent) and/or community (high rates of mobility, economic depression, unemployment) attenuate or break one's ties to society" (pg. 9).

Furthermore, Elliot et al. (1979) used the assumptions of labeling theorists and claimed that juveniles who were arrested and also "labeled as delinquent" would have weak social bonds because they would have "limited conventional social roles and status … and relationships." Eventually, these juveniles would have only one choice, "assuming a delinquent role" (p. 9). Braithwaite (2003) also made similar arguments in his re-integrative shaming theory which is also an integrated theory because stigmatization or shaming, based on the assumptions of labeling theory, weakens one's social bonds, and

increases the chance of participating "in a deviant subculture, and is thus more likely to commit crime" (Vold et al., 2002, p. 306). In his defiance theory, Sherman (1993) also claimed that the type of shaming will either increase or decrease one's "social bonds to the agent or community" (p. 448). Elliot et al. (1979) mapped out how a combination of these variables/theories affects delinquency and claimed that these factors negatively affect all juveniles regardless of whether their bonds are strong or weak:

> *failure to achieve valued goals, negative labeling experiences, and*
> *social disorganization at home and in the community are all*
> *experiences which may attenuate one's ties to the conventional*
> *social order and may thus be causal factors in the development*
> *sequence leading to delinquent behavior for those whose early*
> *socialization experiences produced strong bonds to society. For*
> *those whose attachments to the conventional social order are*
> *already weak, such factors may further weaken ties to society* (Elliot
> et al., 1979; pg. 11).

"Bonds to society" is the central idea of the above summary. This concept is also the basic assumption of control theorists who affirmed that "strength of socialization is necessary to explain crime and delinquency (i.e., weak socialization leads to deviance)" (Vold et al., 2003, p. 303). In other words, control theorists focused only on positive bonds such as "ties to the conventional social order" *(*Elliot et al., 1979, p. 11) and ignore "strong bonds within deviant groups" (Vold et al., 2003, p. 303). However, Elliot et al. found this approach by control theorists to be a weakness in accurately explaining

41

delinquency and argued that not all juveniles with weak bonds commit crime. Thus, they

believed that weak bonds are not sufficient enough to explain the process implicitly

through which some juveniles select criminal paths to "delinquency, drug use, and

various unconventional subcultures, while others maintain an essentially conforming

pattern of behavior" (Elliot et al., 1979, p. 13; Vold et al., 2003).

Vold et al., (2003) claimed that during this second stage of integration, Elliot et al.

"modified control theory" and argued that those juveniles who select criminal paths have

"strong bonds to deviant social groups" (pg. 303). This modification was based on the

basic assumption of social learning theorists who argue that "delinquent behavior, like

conforming behavior, presupposes a pattern of social relationships through which

motives, rationalizations, techniques, and rewards can be learned and maintained" (Elliot

et al., 1979; pg. 13). In other words, "socialization can favor either deviance or

conformity, and that individuals can form strong bonds to deviant social groups" (Vold et

al., 2003; pg. 303).

Elliot et al. (1985) formalized a summary of their theory as shown in Figure 1.2.

They claimed that "bonding to deviant groups or subcultures facilitates and sustains

delinquent behavior (pp15-16). Moreover, they argued that relationships and being in

contact with these "deviant social groups" badly affect even the juveniles "with initially

strong bonds", and "increase the likelihood of sustained delinquent behavior" of them

(Elliot et al., 1979; pg. 15).

Furthermore, as a result of their path analysis, they also found that "bonding to

delinquent groups and delinquent behavior are mutually reinforcing" (Elliot et al., 1985;

pg 87). In other words, as labeling theorists would argue, delinquent juveniles are trapped

in a vicious cycle of crime and criminal environment because they are rejected (or at least their feelings will be in this way) by decent juveniles and people, and as a result, a juvenile who experiences either one would be forced to join delinquent groups (Braithwaite, 2003). For example, prior delinquency and/or drug use increase the chance of "bonding to delinquent groups" (Elliot et al., 1985; pg 87). I strongly believe that this point of labeling theorist is an excellent starting point to develop policies for rescuing juveniles from this vicious cycle.

On the other hand, Elliot et al. (1985) did not find any direct effect of "weak conventional bonds" and strain on delinquency and drug use. For example, they found that these variables "accounted for no more than 1 percent of the variances" (p. 139). However, they found that these variables indirectly cause delinquent engagements. For instance, they found that "weak conventional bonds" increase the probability of "strong delinquent bonds." Their path analysis showed that "weak conventional bonds" can explain up to "23 percent of the variation in deviant bonding" (p. 142).

Opposite to strain theorists, Elliot et al.'s (1985) study clearly showed that strain does not have a direct effect on delinquency. Moreover, they found that strain does not even have a direct effect on undesired attachment to other juveniles who commit crime; rather, strain negatively affects the juvenile's bond by reducing a desired attachment through which strain has an indirect effect on undesired attachment to other delinquents, and delinquency. Therefore, unlike strain theorists, Elliot et al. claimed that strain has only an indirect effect on delinquency. Moreover, unlike Merton's causal process,
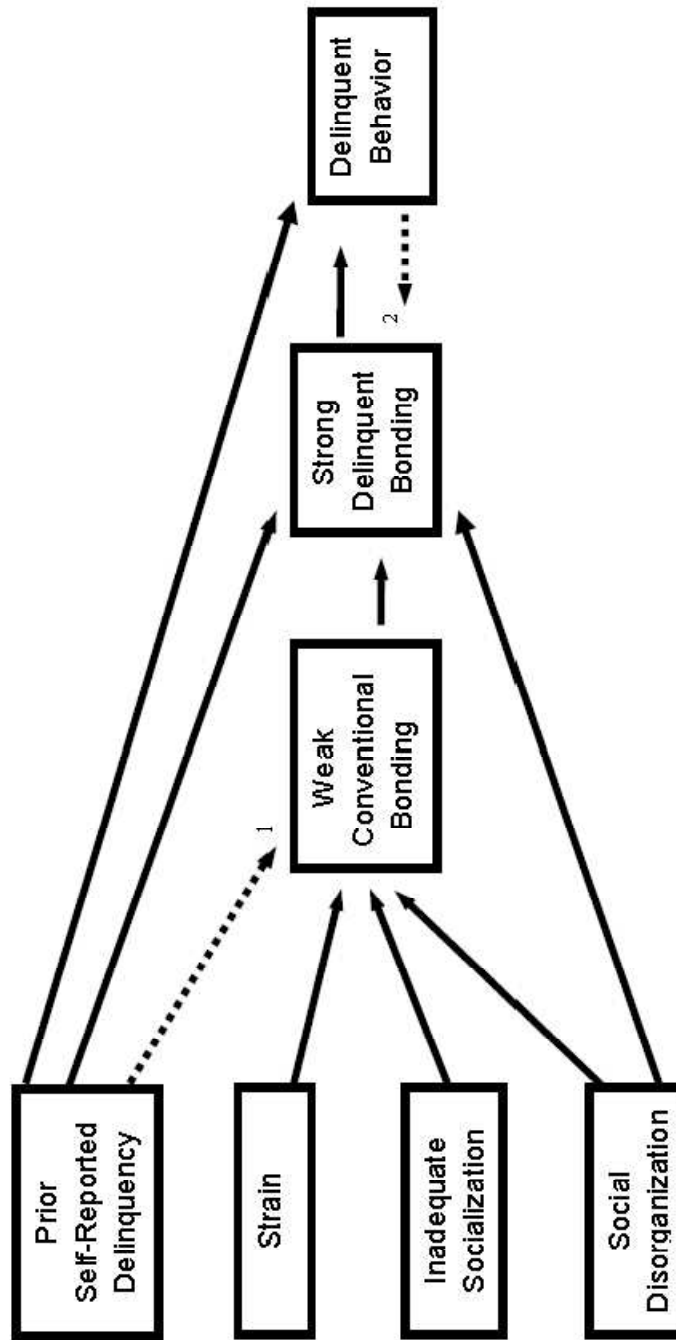
Figure 2.2. (Elliot et al., 1985; p. 146): Integrated Model of Elliot et al.

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[1] Added later based on the assumptions of Braithwaite (2003) and Sherman (2003).

[2] Not showed in the original figure of Elliot et al., but added later based on their findings.

(cf., Figure 1.1) Elliot et al. (1985) clarified how strain leads to delinquency by implicitly explaining the process as Bernard and Snipes (1996), Mastrofski (2004), and Mears (1998) advised.

In sum, Elliot et al.'s study (1985) revealed four important points. First, they found that "bonding to delinquent peers is a "necessary cause" of delinquency and drug use." In addition, they argued that crime involvement "increased involvement with delinquent peers" (pp.145, 147).

Second, they found that strain and "weak conventional bonds to society" have no "direct effect on delinquency," (p. 139) and clearly showed the process through which they have an indirect effect.

Third, their analysis revealed that "socially disorganized areas" have an important effect on decreasing *conventional bonds* and increasing *delinquent bonds* because these neighborhoods are "poorly integrated, unstable, and ineffective" in controlling juveniles (p. 147).

Fourth, and finally, although Elliot et al. (1985) considered "bonding to delinquent peers" as being the most important factor and *necessary cause* for delinquent activities, Figure 2.2 reveals the central role of "weak conventional bonding" (p. 145). This variable is very important because other variables mainly reflect negative effects through bonding. Moreover, Elliot et al. claimed that "strong conventional bonds decrease the likelihood that one will become involved with delinquent peers" (p. 145).

2.1.3.1 Importance of this Theory

Results of Elliot et al.'s (1985) study are very significant and relevant to my research for two reasons. First, their analysis showed the well-known importance and influence of peers. A Turkish epigram also points to the same idea: "If you tell me your friend, I will tell who you are." Therefore, I focused on the effect and influence of peers within my research by examining those crimes that were especially committed by other juveniles.

Second, Elliot et al. (1985) found that "strong conventional bonds decrease the likelihood that one will become involved with delinquent peers" (p. 145). This result directed two analyses in my research. First, I analyzed whether juveniles who lived with both of their parents differed from juveniles who lived with only single parent or no parents in terms of crime involvement. Second, I examined whether first group juveniles with strong bonds differed from other juveniles in terms of engaging in group crimes. In other words, I inferred from Elliot et al.'s study that "juveniles with weak bonds" will usually commit group crimes whereas "juveniles with strong bonds" will generally commit crimes alone because they will be protected against the bad effects of criminal peers through their "strong conventional bonds" (p. 145).

However, one counter argument may question why those strong bonds do not prevent crime in any way. Moreover, the owner of this claim can argue an opposite idea and state that "juveniles with strong bonds will commit more group crimes than alone because their bonds prevent them from committing crimes, but other peers' negative effects will reduce the preventive wall effect of strong bonds." I examined both

arguments by comparing the features of Turkish juveniles and patterns of crime in 27 cities to determine the level of bond effects on crime types.

2.2 Part 2: Discussion on Related Variables

The second part of this literature review summarizes the hypotheses of the aforementioned theories by focusing on their major variables and then summarizing the results of empirical studies regarding each variable.

2.2.1 Economic Inequality/Poverty

2.2.1.1 Summaries of Theories

Based on Merton's (1938) ideas, economic inequality and poverty can be defined simply as being in a situation of "class differentials in the accessibility of these common success-symbols" (p. 680). This situation can be at both an individual level and a city level, such as lack of legal job opportunities, schools, and government support.

The above strain and social disorganization theories clearly showed that economic inequality and poverty is an important variable for understanding juvenile delinquency, because these community level situations are "associated with higher rates of crime in the lower social classes" (Vold et al., 2002, pp. 135-138). However, Rosenfeld and Messner (2003) claimed the opposite as a result of their study and argued that not poverty but a weak focus on "non-economic institutions" (i.e., family, church) causes criminal activities (p. 206). Thus, they advised a macro level "fundamental social transformation"

for a "significant reduction in crime"; otherwise, "social" and "criminal justice reforms" will have only limited effects (p. 206).

Until now, I used the term "crime and delinquency" in terms of utilitarian and non-utilitarian approach. In other words, I relied on strain theorists' core ideas that poverty causes inequality, strain, and anger and as a result, juveniles commit crime to gain money or to harm people (Agnew, 2003; Merton, 1938). Yet, Merton's (1938) "retreatism" warns us to be aware of another juvenile problem caused by poverty and strain. He claimed that poverty and strain might also exhaust the hopes of juveniles, and push them into alienation as well. As a result, juveniles may become "dropouts, outcasts, vagabonds, chronic drunkards, and drug addicts" (Merton, 1938, p. 677).

In sum, the above theories clearly reveal that poverty causes tremendous strain in current societies. In addition, strain has lead people to commit crimes and use illegal substances whether directly or indirectly (Agnew, 2003; Elliot et al., 1985; Vold et al., 2002). Therefore, a city's poverty level or "lack of legal opportunities" (Vold et al., 2002, p. 137) have the capacity to affect the delinquency level of those cities according to above mentioned theories.

2.1.1.2 Support from Empirical Studies

Patterson (1996) analyzed whether poverty or economic conditions had any relationship with crime rates "in 57 small residential areas" (p. 142) by interviewing "11,419 randomly selected households" (p. 145). He measured poverty by using a $5,000 annual household income as a benchmark and examined the relationship between

percentages of households that had less than this amount with burglary and violent crime rates. The results showed that poverty was "associated with burglary rates in the expected direction" (p. 145) and had a significant relationship to violent crimes. In sum, "material disadvantage (absolute poverty)" decreased the "social control and self-regulatory" power of these types of neighborhoods (p. 146).

Blau and Blau (1982) examined the effect of "inequality in socioeconomic conditions" at "125 largest American metropolitan areas" (pg. 114). As a result of their research, they found that "economic inequality generally, increases rates of criminal violence" (pg. 114) and "urban areas marked by socio-economic inequality" (Cullen and Agnew, 2003; pg. 98) had more crimes than other neighborhoods (Blau and Blau, 1982). However, Blau and Blau found that poverty itself was not sufficient to affect crime rates, because when "economic inequalities are controlled poverty no longer influences these rates" (p. 114). I believe that this result directly supports strain theorists who argue that inequality causes strain (Cloward & Ohlin, 2003; Merton, 1938). Further, Blau and Blau claimed that inequality breaches the general principle "that all men are created equal" since "economic inequalities rooted in ascribed positions violate the spirit of democracy and are likely to create alienation, despair, and conflict" (pg. 126).

Savolainen (2000) also examined the "effect of economic inequality on the level of lethal violence" and tested the assumptions of "institutional anomie theory" (p. 1021). His research was conducted by comparing homicide statistics of 45 nations from two datasets that were "obtained from the World Health Organization" and from Esping-Andersen's (1990) dataset that included "18 advanced welfare states" (pp. 1027-1028). Savolainen found that economic inequality did, in fact, affect homicide rates. However,

the "high-level of welfare spending" reduced the negative effect of inequalities (p. 1036). Therefore, Savolainen concluded that strong support was found for the institutional anomie theory assumption that "economic inequality is a strong determinant of the national homicide rates in societies characterized by weak institutions of social protection" but was not a "salient predictor among the more collectivist nations" (p. 1036). Moreover, "the size of the population living significantly below the normative standard of economic well-being may be the critical characteristics explaining the inequality effect in cross-national criminology" (p. 1037).

Hannon and Defronzo (1998) also examined the effect of governmental policies to reduce inequalities within societies by using aggregated data from "a sample of large metropolitan counties in 1990 ($N = 406$)" (pg. 383). Similar to above mentioned studies, they also found that "higher levels of welfare assistance reduce the strength of the positive relationship between the size of the disadvantaged population and crime rates", thus, they argued that "the findings are consistent with the notion derived from traditional anomie/strain theory that welfare allows recipients to legally obtain culturally defined goals, thus reducing criminogenic frustration. …Moreover, our analyses are consistent with Cullen's (1994) emphasis on the potential of social support as a multi-faceted approach to crime reduction" (Hannon and Defronzo, 1998; pg. 389). Therefore, based on their findings, they advised that reducing *economic distress* is a "viable strategy for reducing serious crime" (Hannon and Defronzo, 1998; pg. 383).

Hansmann and Quigley (1982) analyzed the effect of "economic, cultural, and social heterogeneity" (p. 211) on homicide rates of several nations by gathering related data from 58 nations and measuring economic heterogeneity by comparing the incomes

of subgroups within those nations. Their results revealed that homicide rates increase if the level of income inequality increases. Thus, they claimed that "the positive correlation between income and inequality and homicide is consistent with the conventional belief that economic frustration and relative poverty tend to breed crime. The inverse relationship "between homicide and per capita GNP suggests that absolute poverty is also conductive to crime" (p. 219). I believe that "relative poverty" is their term that matches exactly the assumptions of strain theorists. For example, Merton (1938) claimed that culture motivates poor people to look for the same material success as the rich people; thus, people compare themselves with others.

Finally, Sampson and Groves (1989) used a British crime survey to test the assumptions of Shaw and McKay's theory by using two different sample groups: "10,905 persons from 238 locations in 1982, and 11,030 individuals from 300 areas in 1984" (p. 774). Their study replicated the above findings and found that "low economic status, ethnic heterogeneity, residential mobility, and family disruption lead to community social disorganization, which, in turn" affect "crime and delinquency rates" (p. 774).

2.2.1 Residential Mobility/Migration

2.2.1.1 Summaries of Theories

The core idea of social disorganization theorists such as Shaw and McKay (2003) indicates that "homogenous communities" that are characterized as "affluent, stable, and organized" will have lower delinquency than "heterogeneous communities" that are

associated with "rapid population growth, heterogeneity, and transiency" (Cullen &
Agnew, 2003, pp. 96-97).

There are two reasons for this argument. First, Shaw and McKay (2003) claimed
that characteristics of heterogeneous communities cause a lack of informal control
because "social institutions" such as "families, schools and churches" cannot perform
their duties as in homogenous communities (Cullen & Agnew, 2003, pp. 96-97). At this
point, Sampson et al.'s (1977) arguments were helpful in defining the process regarding
why and how "heterogeneity lessens informal control." They claimed that social
disorganization (measured by "concentrated disadvantage [i.e., poverty, disrupted
families], residential stability, and large population of immigrants" (Cullen & Agnew,
2003, p. 119) reduces the level of "social cohesion among neighbors," and this low level
of cohesion reduces "informal social control" (or reduces the "willingness to intervene"
by each member of that society "on behalf of the common good"); as a result, lack of
collective efficacy allows high rates of criminal activities (Sampson et al., 1977, p. 918).

Second, besides "lack of informal control," there is a high level of "delinquent
subculture" in these "delinquency neighborhoods" (Cohen, 1955, pp. 11, 13). As Elliot et
al.'s (1985) integrated theory clearly showed, the presence of these delinquent groups
will increase delinquency because a low level of informal control will increase the
chances of *association* with them and *learning* of delinquency as differential association
and social learning theorists claim (Akers, 2003; Sutherland & Cressey, 2003). Thus,
heterogeneity and population turnover "not only tolerate but actually foster delinquent
and criminal practices" (Cullen & Agnew, 2003, p. 97).

2.2.1.2 Support from Empirical Studies

Patterson (1996) analyzed the effect of residential instability and racial heterogeneity on crime rates "in 57 small residential areas" (p. 142) by measuring instability "as the percentage of households that have been in the area for less than three years" and found that "higher rates of violent crime are associated with residential instability" (p. 145). In conclusion, Patterson stated that *transient populations* decrease the level of "personal networks of common interests" (p. 146).

Avison and Loring (1986) examined the effect of heterogeneity on homicide rates. Moreover, they also examined the interactions between economic inequality and population heterogeneity. Their dataset includes statistics from 32 different nations. Homicide rates were obtained from World Health Organization, data on economic inequality were taken from The World Bank Compilation of Data on Personal Income Distribution, and heterogeneity information was obtained from The World Handbook of Political and Social Indicators (Avison and Loring, 1986). They found that heterogeneity had a positive correlation with homicide rates, and increased heterogeneity "exacerbates the impact of income inequality on homicide rates" (p. 733). Therefore, we can infer from their results that alienation and conflict within these heterogeneous communities make them intolerable to income inequalities.

Simcha-Fagan and Schwartz (1986) analyzed the effect of neighborhood factors on delinquency rates by using both "self-reported and officially recorded delinquency" rates obtained "from a sample ($N = 553$) of urban adolescent males ages 11.5 to 17.5 years" (p. 673). They found that residential stability had a significant effect on

organizational participation and concluded that this result was important because the "level of self-reported delinquency was significantly negatively associated with level of organizational participation" (p. 683). In other words, I inferred from their results that residential mobility decreases integration with the community and reduces juveniles' attachments (Simcha-Fagan & Schwartz, 1986).

Hansmann and Quigley (1982) analyzed whether a "high degree of social heterogeneity is conducive to a high rate of crime" (p. 206) by comparing 58 nations. However, unlike most researchers, they argued that treating heterogeneity as "a unitary phenomenon" is an *implicit assumption* because it has several dimensions and "it is not obvious that each of these types of heterogeneity should bear the same relationship to levels of criminal activity" (p. 209). They mentioned four measures to evaluate "the economic, cultural and social heterogeneity of societies: income, language, ethnicity, and religion" (p. 211). In their study, they found that "population heterogeneity is a significant causal factor in homicide" (p. 220). However, as noted previously, not all four dimensions caused the same outcome. For example, "homicides rates are *positively* related to ethnic" and income "heterogeneity but *negatively* related to linguistic (and, to a lesser degree, religious) heterogeneity" (p. 217). For the negative effect of language and religious heterogeneity, Hansmann and Quigley asserted that language and religion made those subgroups more closed within heterogeneous communities; thus, they had fewer interactions with other groups and therefore commit low rates of crimes.

However, ethnic heterogeneity does not cause such a barrier although they have different cultures and norms (Hansmann and Quigley, 1982). Thus, they claim that "the significant underlying factor" (pg. 221) for the effect of ethnic heterogeneity is contacts

and interactions among individuals and groups who have different culture and conduct norms. As they stated, "different groups will have different norms and, perhaps more importantly, differing ideas about such institutions as marriage, the family, schools, and the criminal justice system"; thus, conflict among them will be high (Hansmann and Quigley, 1982; pg. 218).

Sampson et al. (1997) also examined the effect of "residential instability" and "immigration concentration" on "collective efficacy" (p. 921) by surveying 8,782 Chicagoans from 343 different neighborhoods. They found that "immigrant concentration was significantly negatively associated with collective efficacy, whereas residential stability was significantly positively associated with collective efficacy" (p. 921). Therefore, they suggested that "concentrated disadvantage, immigration concentration, and residential stability explained 70% of the neighborhood variation in collective efficacy" (p. 923). According to Sampson et al. (1997), the effect of immigration and residential instability on collective efficacy is very important because the level of collective efficacy is a "robust predictor of lower rates of violence" (p. 923).

2.2.3 Family Conflict / Divorce

2.2.3.1 Summaries of Theories

The negative effect of family conflict on delinquency has been suggested by theories including strain, social disorganization, control, and Elliot et al.'s integrated theory. For example, Rosenfeld and Messner (2003) suggested that strong families are important for determining delinquent behaviors. I infer from their arguments that juvenile

crime is high because parents often ignore their core *parenting* duties and tend to focus

on material success. Thus, Rosenfeld and Messner (2003) held that family conflict is one

of the main reasons behind juvenile delinquency.

Similarly, Gottfredson and Hirschi (2003), control theorists, claimed that quality

parenting is essential in developing "self-control" that is the core variable in determining

delinquency. For example, Cullen and Agnew (2003) superbly stated that "self-control,

not opportunities, will be the primary determinant of people's involvement in crime

across their life course" (p. 240). Gottfredson and Hirschi also concurred that the strength

of quality parenting will determine the level of "self-control" because "the major "cause"

of low self-control is ineffective child-rearing" (p. 249), and a major determinant of

effective parenting is direct supervision (Cullen & Agnew, 2003).

In addition, the effect of families cannot be limited by "quality of parenting."

There is one more important situation that has a negative effect on juveniles: *divorce*.

Studies have shown that divorce increases the chances of juvenile crime involvement

because single parents often cannot adequately supervise their children or provide them

with legitimate opportunities; thus, the children may be forced to reside in disadvantaged

areas due to the lack of financial support (Cullen & Agnew, 2003).

We can deduce from the arguments of social disorganization theorists that one

feature of disorganized places is having many homes "headed by single parents" (Cullen

& Agnew, 2003, p. 97). A combination of these two situations doubles criminogenic

effects because family conflicts reduce parental supervision that is vital according to

Gottfredson and Hirschi (2003) and Farrington (2004) while disorganized households

increase the negative effect of criminal juvenile delinquents.

Second, Agnew (2003) claimed that all youths face strain, but among them only the juveniles "without adequate coping mechanisms to overcome strain" select delinquency because they are unable to improve their *coping skills* due to a "lack of conventional social support" (p. 215). At this point, Agnew (2003) indicated the importance of families by arguing that family conflict is one of the major reasons of "undeveloped coping skills" because "conventional social support" or "emotional support" is vital to improve coping skills (Agnew, 2003, p. 216).

In sum, the above theories reveal that divorce and family conflicts have a significant capacity to begin a cumulative chain effect on all of these negative situations for the initiation of delinquency.

2.2.3.2 Support from Empirical Studies

Wells and Rankin (1991) conducted a meta-analysis study to determine the effect of broken homes on delinquency by containing 50 studies in their analysis. They claimed that their study provided "a systematic, cumulative, and empirically grounded evaluation of … available research" (p. 87). In their analysis, they found that a "broken home (or family structure) has a consistent and reliable association with juvenile delinquency" (p. 79), and this association between family structure and "juvenile delinquency appears stable" (p. 87). In addition, they found that "families broken by divorce are more harmful than families broken by the death of a parent, since the former are attended by much more hostility, resentment, and conflict" (p. 84).

Rankin and Kern (1994) analyzed the effect of parental attachments on delinquency by analyzing the 1972 National Survey of Youth. As a result of their research, they found the importance of having two parents. For example, "the number of attachments" is important because "strong attachments to both parents are associated with lower probability of committing delinquency than a strong attachment to only one parent" (p. 510). In contrast to Hirschi who claimed that there was "no relation between single-parent homes and delinquency when the child is strongly attached to the custodial parent," Rankin and Kern found that "delinquency is lower in intact families" for certain crimes (p. 511).

Similarly, Wadsworth (1979) examined 5,362 juveniles' data taken from the National Survey of Health and Development and found that 28.6% of the boys and 7.9% of the girls whose parents were separated or divorced by the age of 4 engaged in delinquency by the age of 21 whereas only 14.1 percent of the boys and no more than 1.6 percent of the girls from intact homes experienced same situations. Wadsworth also found that 9.5% of the boys and 20.6% of the girls who experienced divorce by the age of 4 had other problems such as "divorce, psychiatric illness, illegitimate children, and stomach ulcers" (p. 119) by the age of 26 whereas only 4.5% of the boys and 8.6% of the girls from unbroken homes experienced these problems.

Similarly, Chamblin and Cochran (1995) examined the effects of divorce and strength of family by testing Messner and Rosenfeld' (2003) hypothesis and found that the "ratio of divorces" is "positively related to the property crime rates" (p. 420).

Elliot et al. (1985) found as a result of their path analysis that "family and school bonding" accounted for almost "80% of the explained variance" in "conventional

59

bonding" (1985, p. 141). Elliot et al. (1979) also stated that "failure to achieve valued goals" (p. 11) and "crisis in the home (divorce, parental strife and discord)" (p. 9) cause strain which reduces *conventional bonds*, and the cumulative effect of these variables becomes a "causal factor in the development sequence leading to delinquent behavior" (p. 11). Moreover, Hawkins et al. (1992) claimed that "low bonding to family" increases the chance of "initiation of drug use" whereas strong "involvement and attachment" to family "discourages a youth's initiation into drug use" (p. 83).

Similarly, Farrington (2004) claimed that among "all of these child-rearing methods, poor parental supervision is usually the strongest and most replicable predictor of offending" (p. 136). For example, "large family size" reduces "parental supervision," and as a result of his 1993 study, Farrington found that "58% of boys from large families had been convicted at age 32" (p. 137).

2.2.4 Delinquent Peers and Violent Environment

2.2.4.1 Summaries of Theories

Cohen (1958), Cloward and Ohlin (2003), and especially Elliot et al. (1985) stated that the presence of other delinquent juveniles have a tremendous negative effect on juveniles. For example, Cohen (1958) claimed that disadvantaged juveniles form gangs, and these juvenile groups motivate them to commit crimes, because the gang subculture gives the impression that these youths can be valuable and gain status only if they commit crimes. Similarly, Cloward and Ohlin (2003) argued that juveniles gather in gangs to commit crimes. Moreover, the core ideas of differential association theorists

60

such as Wolfgang and Ferracuti (2003) supported the above assumptions by claiming that the "subculture of violence" increases the probability of youths' criminal engagements in disadvantaged areas.

Similar to the above arguments, Shaw and McKay's (2003) research also revealed that disorganized areas increase the peer effect. They based their conclusion on the presence of "illegitimate opportunities" or as Cloward and Ohlin (2003) argued, on "strain" as theorists have claimed and on Wolfgang and Ferracuti's (2003) "subculture of violence." According to my observations, their core idea of "social disorganization" covers all of these theories. For example, Shaw and McKay found that the majority of crimes committed by juveniles are "group delinquency" within "disorganized communities." They explained that the number of "organized delinquents and criminal gangs" are high in these areas, and since most of the juveniles are free from adequate "informal control" as a result of social disorganization, they associate with these delinquents within "a web of social relations" and learn illegal activities from them (Cullen and Agnew, 2003; pg. 97, 101; Sutherland and Cressey, 2003, and Agnew, 2003).

Reasons for these arguments are also supported by many other theories even though they do not directly mention these associations. For example, this violent-tolerant environment is badly affected by "absence of a capable guardian" as routine activities theorists would claim (Cohen and Felson, 2003; pg. 292), it is inter-correlated with social disorganization and "lack of informal social control" as a result of "breakdown of the social institutions" within these locations (Cullen and Agnew, 2003; pg. 96-97), it is increased by lack of collective efficacy, and at the same time it reduces collective efficacy, as Sampson et al. (2003) would argue. This "subculture of violence" also

teaches and forces juveniles to solve their problems, and cope with their strains via delinquency as learning and differential association, and general strain theories claim (Sutherland and Cressey, 2003; Akers, 2003; Wolfgang and Ferracuti, 2003; Agnew, 2003).

More importantly, I infer from Elliot et al.'s (1985) arguments that this violent environment provides opportunities for "strong bonds to delinquent groups" (pg. 87). Elliot et al. (1985) claim that peer effect, or in their words, "bonds to deviant social groups" has direct effect, and it is the most powerful variable to explain juvenile delinquency (pg. 87). According to their findings, neither strain and social disorganization nor "weak conventional bonds" caused by strain and disorganization have a direct effect on delinquency and *cause delinquency*. Instead, they claimed that the most powerful *direct cause* and *sufficient condition* that made juveniles engage in illegal activities was peer effect (Elliot et al., 1985).

Therefore, I can confidently conclude that by linking the core ideas of all the above theories, criminal peers and violent culture (or violent environment) that emerge in any neighborhood or city are two of the major sources of delinquency because traits of these communities increase "subculture of violence" and eventually delinquency because "gangs, adult criminals, and ongoing illegal enterprises" (Cullen and Agnew, 2003; pg. 104) are high "in the delinquency neighborhoods" due to "delinquent subculture" (Cohen, 1955; pg. 11-13).

2.2.4.2 Support from Empirical Studies

Lipsey and Derzon "used the techniques of systematic research synthesis (meta-analysis) to sort out and summarize the complex research literature on the predictive risk factors for adolescents and early adult violent or serious delinquent behavior" (1998; pg. 87). Samples were taken "mostly from the United States, England, and Scandinavian countries' (pg. 88). Their study found that "interpersonal relations, that is, lack of social ties and involvement with antisocial peers" was the strongest risk factor for the juveniles who were between the ages of 12 and 14 (Lipsey and Derzon, 1998; pg. 98).

Warr and Stafford (1996) examined the effect of delinquent peers on juvenile delinquency by utilizing the National Youth Survey of 1976, a "five-year panel study of a national probability sample of 1,726 persons aged 11-17" (p. 220). One advantage of this survey is that it measured the "attitudes and behaviors" of juveniles and the effect of their "specific and concrete friends" through questions asked directly by the researchers regarding the effect of specific friends (p. 220). Their analysis showed that both "attitudes and behaviors of friends" influence juveniles' attitudes and behaviors; however, they found that a friend's behavior had a "2.5 to 5.0 times greater" influence than attitudes (Warr & Stafford, 1996, p. 221). Moreover, Warr and Stafford argued that Sutherland's theory was deficient because it claimed that shaping the attitudes of juveniles was a priority for delinquency. However, their path analysis found that "quite apart from the attitudes of adolescents and those of their friends, the behavior of friends has a strong, independent effect on adolescents' behavior" (Warr & Stafford, 1996, p.

225). Therefore, they concluded that illegal behavior of friends had a significant negative effect on juveniles that motivates them to commit crimes (Warr & Stafford, 1996).

Esbensen and Huizinga (1996) examined the effect of being a gang member on delinquency and the 'temporal ordering' by "using longitudinal data from Denver Youth Survey" between 1988 and 1991 (p. 229). They found that juveniles who are members of a gang significantly commit "all types of crimes" more than non-gang juveniles. In addition, they found that membership in a gang increased the level of those illegal activities after entering the gang (pg. 238).

Matsueda and Heimer (1987) also examined the peer effect by using "data from the Richmond Youth Project". In their analyses, they found that juveniles who associated with criminal friends were more likely to commit crimes. Moreover, they claimed that "learning of definitions of delinquency" is so powerful to effect behaviors of juveniles because even "bonds to parents was mediated" by its effect (p. 826). Therefore, Matsueda and Heimer concluded that differential association theory has more explanatory power than social control theory.

Simcha-Fagan and Schwartz (1986) analyzed the effect of contextual factors on delinquency by testing the assumptions of "social disorganization, subculture and labeling" theories (pg. 667). Their data "were collected from a stratified random sample of adolescent males drawn from 12 New York City neighborhoods" (pg. 667). They found that level of "social disorder-criminal subculture" had effect on delinquency rates (pg. 695). Moreover, they found that these contextual factors had a direct effect on the attitudes of law enforcement towards arresting juveniles.

Finally, Smith and Brame (1994) examined the effect of social disorganization and criminogenic subculture on delinquency by using data from the National Youth Survey "collected over a four-year period beginning in 1976" from "a national probability sample of youths from ages 11 to 17" (p. 614). They found that living in an urban area which suffers from disorganization, criminal peers, and subculture is related with the "decision to initiate delinquency" (p. 624). They also claimed that juveniles who live in rural areas are not free from negative peer effect and illegitimate opportunities; however, these youths commit less crime due to the "normative context of the community" (p. 625). In other words, we can deduce from Smith and Brame's results that the cumulative effect of negative circumstances in urban areas increase delinquency.

2.3 Summary of Literature Review

Results of the aforementioned theories and empirical studies have revealed that city level and micro level variables affect delinquency rates (e.g., economic inequality/poverty, residential mobility/migration, family conflict/divorce, and delinquent peers/violent environment). I will use these empirically validated independent variables to explain the nature of delinquency in Turkey. Chapter 3 will describe the data and methodology that I used.

Chapter 3: Methodology

This chapter is comprised of five purposes: First, the research questions that are analyzed will be addressed; second, the nature of my data and how they were collected are described; third, how my research questions were operationalized and the procedures I followed while organizing and categorizing my variables are discussed; fourth, the statistical method I used and the reasons for selecting a particular method are presented; and fifth, the limitations of my data are presented.

3.1 Research Questions

The following research questions were measured in order to understand the patterns and possible reasons for juvenile delinquency in Turkey and to help develop appropriate policies. In questions 1, 2 and 3, only micro level data were used, while both individual-level and city-level data were used in question 4.

1- *What are the characteristics of the juveniles who were in contact with law enforcement forces for any reason?*

2- *Do family status (living with one, both, step, or none of the parents), with whom juveniles live, and where they live have a correlation with juvenile substance use problems and method of crime commitment?*

3- Does committing crime alone or in groups affect crime types?

4- Do characteristics of cities affect the method of committing crime, living on the street,

type of juvenile problem such as crime type and type of substance?

3.2 Dataset and Sample

My data consisted of two major components: (a) an individual level that contained information on juveniles, and (b) macro level data that contained city characteristics. Both datasets were collected by Turkish officials and are thus considered to be secondary data

3.2.1 Individual Level Data

These data contained records for the years 2005 and 2006 that were collected from 27 different Turkish cities that included information on 84,639 juveniles who had come into contact with Turkish law enforcement officials. The following cities were selected from different regions through cooperation with the Turkish Statistical Institute, Ministry of Interior, and Ministry of Justice: Adana, Ankara, Antalya, Bursa, Corum, Denizli, Diyarbakir, Elazig, Erzurum, Gaziantep, Isparta, Mersin, Istanbul, Izmir, Kars, Kayseri, Kocaeli, Konya, Malatya, Manisa, Mugla, Sakarya, Samsun, Tekirdag, Trabzon, Sanliurfa, and Zonguldak (TUIK, 2006).

The datasets contained only those juveniles who were defined by Turkish laws as a person who is "younger than 19 years of age" (TUIK, 2006, p. VIII). Therefore, the sample group consisted of only youths who had not yet finished their 18th year of age.

This dataset was based on a form submitted to all security units in the 27 cities of Turkey that was prepared through coordination of the State Planning Department and with the participation of authorities from the Turkish Statistical Institute, Ministry of Interior, and Ministry of Justice. After security unit personnel filled out the forms that contained information regarding all juveniles who had previous contact with law enforcement agencies and whether or not they had been sent to court, the completed forms were sent to the Turkish Statistical Institute.

Because Turkey has a national centralized police force, reliability of the recording process completed by law enforcement agencies was extremely high. Since all major policies are determined and strictly controlled by central headquarters, Turkish law enforcement agencies have a very low level of organizational cultural differences. Therefore, the chance of local differences during the recording process was very low.

This dataset contained characteristics of juveniles (age, education, gender), where and with whom they live, whether they use any type or a combination of illegal substances, crime-committing styles (in groups or alone, with or without planning, with or without encouragement), and crime types. The dataset also included the city in which the juvenile had contact with the police.

This dataset is based on a form filled by all security units of Turkey in those 27 cities. This formed was prepared "by the coordination of the State Planning Department" and "with the participation of the authorities from the Turkish Statistical Institute, Ministry of Interior, and Ministry of Justice". This form was filled out and sent to the Turkish Statistical Institute by those security units. They filled those forms for all

juveniles who had contacted with law enforcement agencies whether they were sent to the court or not (TUIK, 2006; pg. VII).

Reliability of recording process done by law enforcement agencies is very high because Turkey has a national centralized police force. Since all major policies are determined and strictly controlled by central headquarter, Turkish law enforcement agencies have very low level of organizational cultural differences. Therefore, the chance of local differences during the recording process is very low.

This dataset contains characteristics of juveniles (age, education, gender), where and with whom they live, whether they use any types or combination of illegal substance, crime-committing style (in group or alones, with planning or without planning, with encouragement or not), and crime types. It also includes in which city did the juvenile contact with police.

3.2.2 City Level Data

To determine the effect of macro level variables and to make comparisons among cities, I gathered data relating to the characteristics of the 27 cities including *poverty level, unemployment rates, average household size, divorce rates, migration rates, violent and property crime level, suicide rates, and educational capacities (i.e., number of schools, number of training centers for getting a job, et cetera).*

These city level datasets were collected and prepared by officials of the Turkish Statistical Institute from each city of Turkey upon which the Institute then disseminates them for use by interested researchers.

3.3 Hierarchical Linear Model (HLM)

In my research, a dataset was used that included both individual and city level variables. Since I used both levels of variables simultaneously, I used the "Hierarchical Linear Model" (HLM). This was done because using multilevel variables requires applying HLM which can overcome several methodological and conceptual difficulties that can be caused by failing to consider the differences between city level and individual level data. For example, Raudenbush and Bryk claimed that "misestimated standard errors occur with multilevel data when we fail to take into account" the nature of our dataset. In other words, the reason for these errors is ignoring the differences between levels of datasets, and treating them as if they are at the same level (Johnson, 2006, p. 277). Similarly, Ulmer and Johnson (2004) also claimed that failing to consider the differences among these levels cause "aggregation bias" because other methods, such as ordinary least square (OLS), aggregate them to one level. In other words, city level variables are treated as if they are individual level variables, or vise verse.

Moreover, HLM also allows researchers to examine the effect of the same or similar individual level variables among different cities (Ulmer & Johnson, 2004). For example, this model is appropriate to examine the effect that living on the streets has on illegal substance use for each city. In other words, this model empowers a researcher to examine whether living on the streets has different or similar effects on juveniles among those cities in terms of illegal substance use. Examining these differences or similarities is very important because knowing them allows us to develop tailor-made local policies

rather than making national policies based on the false assumption which claims that the effect of each variable is the same for all cities.

Therefore, this model was appropriate in measuring the differences among juveniles within the same city, differences among juveniles in different cities, and differences among these cities as well.

3.4 Operationalization of Measurement Variables

Because these datasets consisted of both individual level and city level variables, I used some of the variables as they were presented in the datasets and also established new variables by combining some. The following section explains each variable.

3.4.1 Individual level variables (personal characteristics)

(Note: Most of the names of the variables were taken literally from the TUIK Report (2006); however, so as not to cause confusion, I did not cite references and page numbers separately for each variable).

 Age: 0   through 18.

Gender: Male   Female

Person/ Place lived:

These variables provided information regarding the places where children were living as well as the persons with whom these children were residing with when they became in contact with the police.

Persons:

With biological parents and siblings

With biological mother, step father and siblings

With biological father, step mother, and siblings

Biological mother and siblings

Biological father and siblings

Only with siblings

With relatives

With spouse and kids

With friends

With acquaintance

Alone

Place:

At children's home

At a boarding school (dormitory)

On street

At working place

Drug use:

Yes or no

Method of committing crime:

Alone

With more than one person by planning

With more than one person by not planning

Sent to Court:

Yes or No

Number of prior contacts with police:

None   One time   More than one

3.4.2 Recoded individual level variables

Some of the independent and dependent variables were recoded, and the procedures that I used for recoding follow.

Age: I will use all ages: 1 through 18

Person/ Place lived:

Since I examined the effect of with whom juveniles lived (i.e., not living with both parents at the same time) and the place where they lived (i.e., living on the streets), this research question was measured by examining the following 12 groups.

1- With biological parents and siblings

2- With biological mother, step father and siblings
   With biological father, step mother, and siblings

   These two groups are combined and recoded as; living with a biological and a step parent

3- Biological mother and siblings
   Biological father and siblings

   These two groups are combined and recoded as; living with a single parent
4- Only with siblings

5- With relatives

6- With spouse and kids

7- With friends
   With acquaintance

   These two groups are combined and recoded as; living with friends/acquaintance

8- Alone

9- On the street

10- At working place
11- At children's shelter
    At a boarding school (dormitory)

    These two groups are combined and recoded as; Living with at children's shelter/dormitory

12- Other

Crime Type: My dataset contained the following crime types: Homicide; Assault; Kidnapping (to marry); Rape and Molestation; Prostitution; Sodomy; Theft; Auto theft; Theft from auto; Robbery; Fraud; Pickpocketing; Bribery; Extortion; Forgery; Defamation; Cursing; Violation of devilling immunity; Insult and battery of officials; Threat; Inflicting damage to property; Attempt to commit suicide; Terrorism; Illegal riots; Smuggling, use, sale or purchase of illegal drugs; Traffic offenses; and Other.

These crime types were computed into five categories: (a) violent, (b) property, (c) sex crimes, (d) drugs, and (e) terrorism.

Violent crimes: Homicide, Assault (Causing injury), Attempt to suicide, Insult and battery of officials,   Threat,

Property crimes: Theft, Auto theft, Theft from auto, Robbery, Fraud, Pick-pocketing, Bribery, Extortion, Forgery, Inflicting damage to property

Sex crimes: Rape and Molestation, Prostitution, Sodomy

Drug crimes: Smuggling, Use, Sale or Purchase illegal drugs

Terrorism: Terrorism, Illegal riots

Other: Defamation, Cursing, Violation of devilling immunity, Kidnapping (to Marry), Traffic offenses, Violation of Article 526, Illegal presence of gun and knifes, Violation of Article 5682, Causing fire, and Other.

Type of substance:

1. Sniffing glue

2. Pill

3. Alcohol

4. Marijuana

5. Sniffing glue - pill

6. Sniffing glue - alcohol

7. Sniffing glue - marijuana

8. Alcohol - Pill

9. Alcohol - marijuana

10. Pill - Marijuana

11. More than two types of substance

I used 1 through 4, and 11 as they were, but computed 5 through 10 into one category because I believe that those juveniles who use two illegal substances simultaneously are very similar. This variable was reduced into two groups because I believe that the last two groups are very similar in terms of peer effect.

1. Sniffing glue,

2. Pill,

3. Alcohol,

 4. Marijuana

 5. Two types of drugs (Sniffing glue – pill, Sniffing glue – alcohol, Sniffing glue-marijuana, Alcohol – Pill, Alcohol – marijuana, Pill – Marijuana)

 6. More than two types of substance

Method of committing crime:

 1- Alone

 2- With more than one person by planning

 3- With more than one person by not planning

I will reduce this variable into two groups because I believe that last two groups are very similar in terms of peer effect:

Alone: committed crime alone.

In group: With more than one person by planning and with more than one person without planning.

3.4.3 City Level Variables

The following city level variables were used: poverty level, unemployment rates, average household size, divorce rates, migration rates, violent and property crime rates, suicide rates, educational capacities (such as number of schools, number of training centers for getting a job).

3.4.4 Recoded City Level Variables

Rates were used (1 per 100,000) for each city since I had the population information and numbers of the following variables: *unemployment rates, divorce rates, migration rates, violent and property crime rates, suicide rates, educational capacities (such as number of schools, number of training centers for getting a job).*
The following variables were recoded and are explained below:

Poverty: The number of people who receive health benefits from the government entailed poverty in my study. Similar to Medicaid in the United States, the Turkish government also helps indigent people pay for their health expenses and gives them "Yesil Kart" (Green Card). Their eligibilities are examined by local executives, by police investigators, and approval of social services. Therefore, their number as an indicator of poverty was reliable.

I used the number of people who held "Yesil Kart" and took its rates (1/100,000) for each city by using city population as a denominator.

3.5 Statistical Analyze for each Research Question

1- *What are the characteristics of the juveniles who were in contact with law enforcement forces for any reason?*

The intention of this research question was to understand the features of the juveniles who comprised the study sample. The current dataset contained the following variables that described those juveniles: name of the city, age, gender, with whom and where they live, substance use, type of illegal drugs, crime type, method of crime engagement (alone or in groups), number of prior police contact, and whether or not they were sent to court. Thus, a descriptive analysis was performed for this research question.

2- *Do family status (living with one, both, step, or none of the parents), with whom juveniles live, and where they live have a correlation with juvenile substance use problems and method of crime commitment?*

I hypothesized that juveniles who do not live with both parents have more substance use problems due to lack of supervision, support, and budgetary problems than other juveniles who live under the supervision and care of both parents.

Finally, two rival hypotheses were analyzed for the last part of this RQ. First, I anticipated that weak social bonds will increase the chance of group crimes, and second, I assumed that strong social bonds will increase the chance of group crimes. This research question was measured by using the above mentioned 12 groups as independent variables and using *substance use* and *method of crime committed* as dependent variables. Chi-

Square was used to examine RQ 2 because both independent and dependent variables are categorical (Agresti & Finlay, 1999).

3- *Does committing crime alone or in groups affect crime type?*

In regard to RQ 3, I predicted that most juvenile delinquents commit their crimes in groups rather than alone, and a high level of group crimes are associated with high delinquency rates. In addition, I anticipated that group crimes are mostly nonutilitarian whereas crimes committed alone are utilitarian. Finally, I anticipated that juveniles who commit crimes in groups will have more contacts with the police than juveniles who commit crimes alone.

To measure this RQ, I first conducted a descriptive analysis to determine whether or not juveniles are more likely to commit crimes in groups or alone. For the second and third part of the question, I used method of committing crime (in groups or alone) as independent variables and crime types as dependent variables. To determine the descriptive part, I simply compared the proportion of group crimes committed with crimes committed alone to establish whether juveniles are more likely to commit crimes in groups or alone. I hypothesized that they commit crimes most frequently in groups.

For the second part of this RQ, I used a discrete independent (explanatory) variable consisting of two categories (group crime vs. alone) and a qualitative response (dependent) variable consisting of five categories: (a) violent crimes, (b) property crimes, (c) sex crimes, (d) drug crimes, and (e) terrorism). Since I have two categories for the independent variable and five categories for the dependent variables, the chi-square test was appropriate (Agresti & Finlay, 1999).

4- *Do characteristics of cities affect method of committing crime, living on the street,*

   and type of juvenile problem such as crime type and type of substance?

I anticipated that disadvantaged cities would have more group crimes and more juveniles living on the streets. In addition, the characteristics of cities would result in similar juvenile problems. For example, I anticipated that the property crime level of cities would increase the level of juvenile property crimes in all cities. In order to answer RQ 4, both individual level and city level variables were used. Finally, HLM was employed because I had both city level and individual level variables (committing in groups vs. alone) at the same time (Johnson, 2006).

3.6 Limitations

This study includes two limitations. First, data used were derived from official records and were thus prone to official dataset limitations such as not covering all criminal juveniles (Mosher et al., 2002), and second, the characteristics of non-delinquent juveniles, (i.e., victims, for example) were not included.

Third, I did not have neighborhood level data. I used aggregated city level independent variables. If I had data on small geographical areas, my analyses would be more powerful.

Chapter 4: Findings

This chapter presents a summary of my findings which follows the order of my research questions. First, descriptive statistics of the juveniles and characteristics of the 27 Turkish cities are reported. Second, the results of my research questions that analyzed the effect of micro level (individual level) variables on juvenile problems are discussed. Finally, the findings regarding the effect of macro level (city level) variables on delinquency are revealed.

4.1 Descriptive Analyses (RQ 1)

My study consisted of 84,639 juveniles from 27 different Turkish cities who were suspects of committing any crime. In 2005, 41,207 (48.7%) of those juveniles had contact with law enforcement while 43,432 (51.3%) had contact in 2006. Of those juveniles, 98.1% ($N = 83,037$) lived in urban areas, and 1.9% ($N = 1,602$) resided in rural areas. This result was interesting because almost 35% of the Turkish population live in rural areas according to TUIK. I proposed three possible explanations for this disproportion in delinquency rates. First, people from urban areas of Turkey might have reported less. Second, informal social control might still be strong in the rural parts of Turkey due to the "normative context of" these communities as Smith and Brame claimed (1994; p. 625). Finally, juveniles after certain ages might have moved to cities

for educational reasons or in search of jobs. Further researchers should therefore examine the reasons for this important difference between Turkey's urban and rural delinquency rates.

4.1.1 Characteristics of Delinquents (Individual Level)

4.1.1.1 Gender

Most of the juveniles in my dataset for both 2005 and 2006 were males who consisted of 91.2% ($N = 77,157$) of my sample, while only 8.8% ($N = 7,482$) were female juveniles who had contact with law enforcement in 2005 and 2006.

4.1.1.2 Age

Ages of juveniles in my dataset ranged from 4 to 18. However, most of the male and female juveniles who came into contact with law enforcement were between the ages of 16 and 17. For males, 16- and 17-year-olds accounted for 51.2% ($N = 31,222$) of all juveniles, and there was a sharp increase of crime rates for these ages. This age group consisted of 33.4% ($N = 2,499$) of all female delinquents. Unlike males, females began committing crimes at earlier ages. Therefore, there was a steady increase after the age of 12 as shown in Figure 4.2.

One interesting point found for both genders was they tended to come into contact more with law enforcement as suspects at the ages of 16 and 17 rather than when they turned 18. Moreover, female juveniles became suspects more at ages 13, 14, and 15 than when they turned 18 according to my results.
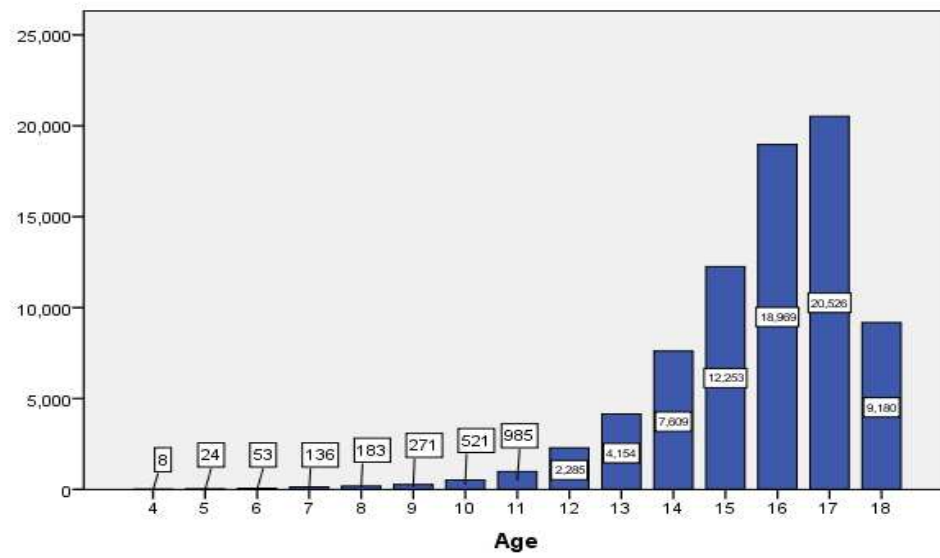
Figure 4.1: Age distribution of male juveniles
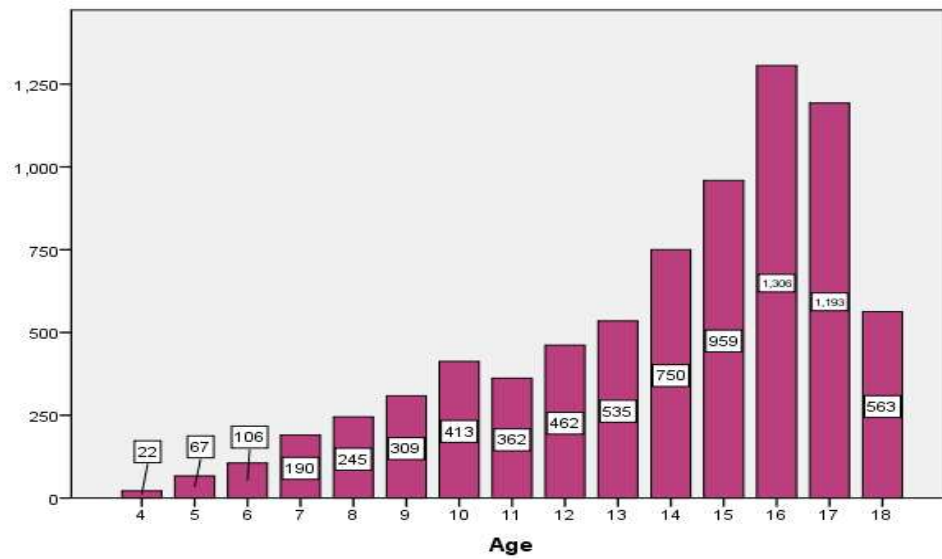
Figure 4.2: Age distribution of female juveniles

4.1.1.3 Places where juveniles reside and persons with whom they live

Most of the juvenile suspects from the 27 Turkish cities lived with their biological father and mother at the time of their contact with law enforcement as shown in Table 4.1. This distribution was similar for both males (86.7%) and females (77.4%). In contrast to the tremendous attention that "street children" get from the media and politicians, juveniles who lived on the streets consisted of only 1% of those who were suspected of committing crimes. A second important point regarding family structure was 4.7% ($N = 3,613$) of the boys and 6.1% of the girls who lived with only a single parent became a crime suspect in 2005 and 2006. Unlike the boys, 7.2% of the girls who lived at a children's shelter or dormitory became crime suspects.

Table 4.1: Persons and places that juveniles live

	Frequency			Percent		
Living place/person	Total	Male	Female	Total	Male	Female
Living with both parents	73417	67625	5792	86.7	87.6	77.4
With a biological and a step parent	1526	1382	144	1.8	1.8	1.9
With a single parent	4070	3613	457	4.8	4.7	6.1
Only with siblings	722	650	72	0.9	0.8	1.0
With relatives	1355	1091	264	1.6	1.4	3.5
With spouse and kids	199	89	110	0.2	0.1	1.5
With friend	611	568	43	0.7	0.7	0.6
Living alone	211	199	12	0.2	0.3	0.2

Table 4.1: Persons and places that juveniles live (continued)

At children shelter/dormitory	1388	851	537	1.6	1.1	7.2
On the street	839	819	20	1.0	1.1	0.3
At working place	97	94	3	0.1	0.1	0.0
Other	204	176	28	0.2	0.2	0.4
Total	84639	77157	7482	100	100	100

4.1.1.4 Number of prior police contact

Most of the juveniles (73.2%) were first timers in terms of contact with law enforcement. Only 6.6% had one prior contact; however, one-fifth of these juveniles were repeat offenders. Interestingly and contrary to my expectations, the percentages of males (20.3%) and females (19.8%) were approximately the same.

Table 4.2: Number of prior police contact by Gender

Number of prior police contact	Frequency			Percent		
	Total	Male	Female	Total	Male	Female
None	61934	56246	5688	73.2	72.9	76.0
One time	5566	5256	310	6.6	6.8	4.1
More than one time	17139	15655	1484	20.2	20.3	19.8
Total	84639	77157	7482	100	100	100

4.1.1.5 Reasons for police contacts (crime types)

As shown in Table 4.3, two major reasons for police contact were property and violent crimes. As expected, the percentage of girls (57.2%) being suspected of property crimes was higher than the percentage of boys (46.5%). In contrast to property crimes, a higher percentage of boys (46.5%) than girls (32.3%) were suspected of committing violent crimes.

Other known crimes (i.e., sex, drug, and terrorism related) consisted of only 5.3% of the reasons for juvenile contacts with law enforcement.

Table 4.3: Crime Types by Gender

Types of Crimes	Frequency			Percent		
	Total	Male	Female	Total	Male	Female
Violent crimes	28630	26213	2417	33.8	34.0	32.3
Property crimes	40160	35882	4278	47.4	46.5	57.2
Sex crimes	1214	1170	44	1.4	1.5	0.6
Drug crimes	2642	2561	81	3.1	3.3	1.1
Terrorism	686	635	51	0.8	0.8	0.7
Other	11307	10696	611	13.4	13.9	8.2
Total	84639	77157	7482	100	100	100

4.1.1.6 Method of committing crimes

Most of the juveniles (55.7%) suspected of the above mentioned crimes conducted

illegal activities with others. This tendency of committing crimes in groups was very

similar for both boys (55.4%) and girls (58.6%).

Table 4.4: Method of committing crime by Gender

Method	Frequency			Percent		
	Total	Male	Female	Total	Male	Female
Alone	37505	34411	3094	44.3	44.6	41.4
Group crime	47134	42746	4388	55.7	55.4	58.6
Total	84639	77157	7482	100	100	100

4.1.1.7 Substance Use

As shown in Table 4.5, most of the juveniles (91%) who were suspected of any

criminal activities did not use any type of illegal substances. However, a higher

percentage of boys (9.7%) used illegal substances when compared to girls (1.7%).

This result revealed that using any type of illegal substance was not a widespread

problem among those juveniles. This is fortunate; however, because these responses were

based on the juveniles' replies to questions asked by law enforcement officers pertaining

to whether or not they used any illegal substance (TUIK Report, 2006) and not on any objective measure (e.g., a urine test), we must be cautious when interpreting these results.

Table 4.5: Substance Use by Gender

	Frequency			Percent		
Use of Substance	Total	Male	Female	Total	Male	Female
No	77008	69650	7358	91.2	90.5	98.4
Yes	7631	7507	124	8.8	9.5	1.6
Total	84639	77157	7482	100	100	100

4.1.1.8 Type of illegal substances

As shown in Table 4.6, alcohol was the most commonly used illegal substance for juveniles (39.3%) who were suspected of using any type of illegal substances. This was the most common problem in the use of an illegal substance among both girls (37.3%) and boys (39.3%). The second most common drug use problem among boys was sniffing glue (24.3%), whereas only 5.1% of the girls used glue as an illegal substance. On the other hand, 17.8% of the girls used illegal pills when compared to only 7.7% of the boys.

Marijuana use was also high among both girls and boys. Contrary to my expectations, a higher percentage of girls (16.1%) used marijuana than boys (12.3%). Moreover, 11.6% of those juveniles who used any type of illegal substances used two

types of drugs simultaneously. Again, this percentage was higher for girls (15.3%) than for boys (11.5%).

4.1.1.9 Results of contact with law enforcement

Most of the juveniles (96.4%) who came into contact with law enforcement for being suspects of any crime were sent to court for prosecution. Almost all of the boys (97.1%) and approximately 90% of all the girls were sent to the prosecutor's office by law enforcement.

Table 4.6: Used Substance Types by Gender

Type of substances	Frequency			Percent		
	Total	Male	Female	Total	Male	Female
Sniffing Glue	1792	1786	6	24.0	24.3	5.1
Pill	576	555	21	7.7	7.6	17.8
Alcohol	2927	2883	44	39.3	39.3	37.3
Marijuana	924	905	19	12.4	12.3	16.1
Two types of substances	862	844	18	11.6	11.5	15.3
More than two types of substances	194	190	4	2.6	2.6	3.4
Other	99	96	3	1.3	1.3	2.5
Unknown	80	77	3	1.1	1.0	2.5

4.1.2 Characteristics of Cities (Macro Level)

The purpose of this descriptive part was to understand the features of cities from which my individual level dataset was derived. Therefore, in addition to the above mentioned individual level characteristics, the effect that city characteristics had on juvenile problems were examined by using the rates of these variables (1/100,000) in my analyses. However, I used the actual number for the two variables of net migration and household size.

To provide a clear understanding relating to the cities' features, they were categorized into two groups. This was done because I believed that determining one variable as a benchmark for this categorization and explaining the results regarding other variables would be more meaningful and guiding.

Migration was used as my benchmark because giving or taking migration is related with illegal and legal opportunities (Shaw & McKay, 2003), and Turkish cities that attract more migrants are relatively more developed. Therefore, cities that took migrants (with positive values) and cities that gave migrants (with negative values) determined the two groups. I calculated these numbers by examining in and out migration numbers and trends between the years of 1975 and 2000 (TUIK Report, 2000). During this descriptive part, these cities represent my comparison group.

4.1.2.1 Migration

Thirteen out of the 27 sample cities shown in Table 4.7 (marked by bold and italics) took more migrants than they gave between 1975 and 2000. Common characteristics included that the cities are located in the western and southern part of Turkey. I categorized these regions as relatively more developed and having more of a Western lifestyle than other cities.

Fourteen out of the 27 cities gave more migration than they took between 1975 and 2000. These cities are located primarily in the eastern, northern, and middle part of Turkey except for Isparta which is located in the southwestern part of Turkey and is almost a neutral city (in and out difference is only 566 persons).

4.1.2.2 Poverty

As expected, I observed that almost all cities that gave migration had higher poverty level rates than migration taker cities (average rates: 17,974 vs. 6,700 per 100,000) (cf., Table 4.7). We also should notice that those cities that gave high numbers of migrants, such as Kars ($N = 244,654$), Sanliurfa ($N = 125,874$), Diyarbakir ($N = 108,621$), and Erzurum ($N = 229,627$) had the highest poverty rates; Sanliurfa (34,580), Diyarbakir (33,159), Erzurum (27,370), and Kars (26,673).

4.1.2.3 Household size

Distributions of household sizes also had similar patterns pertaining to migration and poverty. For example, cities categorized as migration givers had 5.3 persons per

household on average whereas other groups of cities had 4.0 persons. In other words, cities that gave the highest rates of migrants had the largest household sizes. On average, cities located in the eastern or southeastern part of Turkey included Diyarbakir with 6.73 persons, Sanliurfa with 6.93, Kars with 6.00, and Erzurum with 5.73 persons per household.

4.1.2.4 Capacities of job training centers and schools

In order to understand the legal abilities of my sample cities, I examined the capacities of their job training centers and schools as shown in Table 4.7. Rather than examining the number of centers and schools, I took the number of classrooms since they were more appropriate indicators for capacities of training centers and schools. Later, I used the number of classrooms to calculate city level rates (i.e., number of classrooms per 100,000).

Descriptive analyses revealed that cities which took more migrants had more training centers than other cities that gave more migrants (average rates: 125 vs. 96) such as Bursa ($N = 119$) and Ankara ($N = 170$). Bursa and Ankara are more developed relative to other cities with low rates of training centers. There could be two possible reasons for this result. First, since the first group of cities has more migrants who search for jobs, they have more job training centers. Another explanation could be that since these cities are relatively more developed and have more job opportunities such as factories, they are in need of these kinds of centers. Unlike job training centers, results regarding school capacities were opposite to my assumptions. This was because most of those cities that

Table 4.7: Characteristics of cities

	City	Migration	Poverty	Household size	Job training centers	Classroom
Migrant takers	*Istanbul*	1650376	2528	3.85	109	1432
	Izmir	468652	4384	3.58	132	2038
	Bursa	275120	3282	3.91	119	1832
	Ankara	246525	3397	3.82	170	1939
	Antalya	215675	6258	3.98	130	1861
	Mersin	183012	15595	4.51	123	2027
	Kocaeli	178400	3682	4.16	122	1882
	Tekirdag	77529	5319	3.79	98	1880
	Mugla	63636	4430	3.47	119	2308
	Manisa	40112	10885	3.85	122	2228
	Denizli	24830	4626	3.85	134	2165
	Adana	11085	14975	4.67	131	1799
	Sakarya	1798	7742	4.51	111	1995
Migrant givers	Isparta	-566	8979	4.44	103	2588
	Gaziantep	-2494	16053	5.23	89	1529
	Kayseri	-13759	7403	4.64	106	2045
	Konya	-45172	10674	4.97	106	1951
	Elazig	-64576	17275	5.21	106	2455
	Zonguldak	-83249	4640	4.55	114	2388
	Malatya	-88157	18885	5.40	121	2578
	Trabzon	-104111	12058	5.23	120	2509
	Samsun	-107719	15125	4.81	119	2643
	Corum	-108384	18758	4.67	107	2780
	Diyarbakir	-108621	33159	6.76	73	1650
	Sanliurfa	-125874	34580	6.93	47	1597
	Erzurum	-229627	27370	5.73	82	2804
	Kars	-244654	26673	6.00	58	2566

Notes: *Cities formatted by bold and italic took more migrants between 1975 and 2000. Other cities gave more migrants than they took. **: Net migration numbers are real numbers. ***: Rate of poverty is calculated by (Medicaid holders/ city total population)*100,000. ****: Rate of classrooms is calculated by (numbers of classrooms/city total juvenile population)*100,000. *****: Rate of job training centers is calculated by (numbers of classrooms of job training centers /city total population)*100,000.

gave more migrants and were categorized as less developed had higher school capacities than other relatively more developed cities (average: 2,292 vs. 1,953). For example, Erzurum and Kars were two cities that gave the highest number of migrants with the lowest rate of job training capacities. However, their school capacities were at the highest level, 2,804 and 2,566 respectively.

4.1.2.5 Unemployment rates

As depicted in Table 4.8, results regarding city unemployment rates were very similar for both groups of cities (average: 4,676, migration taker cities; 4,764, migration givers) and did not have the similar distribution patterns as did migration rates. Moreover, I found variations within both groups of cities as reported in Table 4.8. In other words, some cities that gave more migrants and some that took more migrants had similar rates of unemployment. For example, Sanliurfa and Diyarbakir that reported the highest number of migrants had high rates of unemployment, 7,918 and 7,500, respectively. Similarly, Istanbul, Izmir and Mersin with highest rates of incoming migrants had the highest unemployment rates, 6,388, 5,644, and 5,615 correspondingly. On the other hand, Kars and Corum that had high rates of migration interestingly had very low unemployment rates, 3,938 and 3,106, respectively.

Table 4.8: Unemployment, divorce, and suicide rates of cities

	City	Unemployment	Divorce	Total suicide	Juvenile suicide
Migrant takers	*Istanbul*	6388	178	3	0.9
	Izmir	5644	238	5	2.2
	Bursa	5001	103	4	1.7
	Ankara	5278	190	5	2.7
	Antalya	4724	181	3	0.5
	Mersin	5615	160	2	0.6
	Kocaeli	4841	137	3	1.1
	Tekirdag	3978	149	4	2.0
	Mugla	3009	199	24	17.8
	Manisa	2693	130	3	0.2
	Denizli	2665	221	4	2.3
	Adana	6919	129	3	1.4
	Sakarya	4031	127	1	0.0
Migrant givers	Isparta	3666	133	4	1.6
	Gaziantep	5389	115	4	2.2
	Kayseri	4240	144	2	0.9
	Konya	3849	136	2	1.1
	Elazig	5398	108	3	2.1
	Zonguldak	3122	179	2	0.9
	Malatya	4762	80	1	0.8
	Trabzon	4843	70	2	0.8
	Samsun	3897	117	2	0.6
	Corum	3106	129	2	2.5
	Diyarbakir	7500	36	4	2.3
	Sanliurfa	7918	52	2	1.1
	Erzurum	4787	38	1	0.5
	Kars	3938	62	9	4.6

Notes: All values are rates and calculated at 1/100,000.

4.1.2.6 Divorce rates.

As expected, cities located mostly in the west, south, and coasts of Turkey with relatively more Western lifestyles and relatively more development levels had higher rates of divorce than other cities (average: 165 vs. 100) (cf., Table 4.8). For example, Izmir and Mugla had high rates of divorce, 238 and 199, respectively. On the other hand, cities that gave more migrants and are located primarily in the eastern part of Turkey had low divorce rates, namely Kars ($N = 68$) and Erzurum ($N = 38$).

4.1.2.7 Suicide rates

I examined both total and juvenile suicide rates for each city (cf., Table 4.8) and found that most developed cities had relatively more total suicides than did less developed cities (average: 4.9 vs. 2.8). Results for juvenile suicide rates showed similar patterns (average: 2.6 vs. 1.6).

As expected, cities with a high level of total suicide rates also had a high level of juvenile suicide rates. For example, two outlier cities, Mugla ($N = 24$) and Kars ($N = 9$), had the highest total suicide and juvenile suicide rates, 17.8 and 4.6 respectively.

4.1.2.8 Violent crime rates

As expected, I found that cities which took more migrants had slightly more violent crimes than other cities (average: 902 vs. 769), namely Mugla ($N = 1,929$), Antalya ($N = 1,219$), and Mersin ($N = 1,033$). However, the distribution of violent crime rates was not homogenous within migration taker cities.

Table 4. 9: Crime rates of cities

		Violent crimes	Property crimes	Juvenile substance use	Delinquency
Migrant takers	*Istanbul*	429	1337	57	386
	Izmir	659	1450	13	209
	Bursa	679	973	35	269
	Ankara	457	912	9	199
	Antalya	1219	2805	19	286
	Mersin	1033	1651	49	314
	Kocaeli	1030	1558	7	283
	Tekirdag	647	543	44	261
	Mugla	1929	1623	23	172
	Manisa	780	642	14	321
	Denizli	1360	1767	78	301
	Adana	607	1319	28	370
	Sakarya	894	837	15	209
Migrant givers	Isparta	731	394	24	336
	Gaziantep	593	874	26	229
	Kayseri	899	1095	10	260
	Konya	582	338	14	256
	Elazig	773	469	49	413
	Zonguldak	1912	843	22	202
	Malatya	798	503	16	319
	Trabzon	495	383	21	156
	Samsun	1202	833	30	255
	Corum	946	519	32	369
	Diyarbakir	429	647	7	358
	Sanliurfa	190	84	2	57
	Erzurum	552	445	13	357
	Kars	669	339	43	435

Notes: All values are rates and calculated at 1/100,000.

For example, Istanbul and Ankara which were two of the cities that took a high number of migrants had a low level of violent crime rates, 429 and 459, respectively. Similarly, when I examined the distribution of violent crime rates within migration giver cities, I found uneven distributions among them as well. For example, Diyarbakir ($N = 429$) and Sanliurfa ($N = 190$) had very low violent crime rates whereas Zonguldak ($N = 1,912$) and Samsun ($N = 1,202$) had very high violent crime rates.

One interesting point was the city of Mugla that had the highest level of suicide rates ($N = 24$) also had the highest level of violent crime rates. However, similar patterns were not present for other cities with high suicide rates.

4.1.2.9 Property crime rates.

Opposite to violent crime rates, property crimes were clustered primarily at relatively more developed cities that took high rates of migrants (average: 1,340 vs. 554). For example, eight cities having the highest property crime rates were relatively developed cities, whereas nine cities with the lowest property crimes rates were those that had the highest out migration rates.

4.1.2.10 Juvenile substance use and delinquency rates

In contrast to my assumptions, relatively more developed cities such as Istanbul and Mersin located in the western and southern parts of Turkey had only slightly higher (average: 30 vs. 22) levels of juvenile substance use rates than other cities except for Denizli, an outlier city with a rate of 78 (see Table 4.9). One possible explanation for this

low level of difference might be that the actual levels of juvenile substance use rates were unknown in these cities since the above mentioned rates were based only on officially known juveniles and their self-reports.

Average delinquency rates at migration taker and migration giver cities were very similar, 285 vs. 275, respectively. As expected, the city of Sanliurfa with a low level of violent and property crimes also had the lowest delinquency rates ($N = 57$). Contrary to my expectations, however, Mugla and Zonguldak with the highest violent and property crime rates had very low delinquency rates, 172 and 202 respectively.

4.2 Effects of family status and living place (RQ-2)

Research question 2 analyzed the effects with whom and where juveniles live in order to determine whether or not there was any relationship among those living conditions, the juvenile substance use problem, and method of crime commitment.

Analyses revealed that most of the suspected juveniles (86.7%, $N = 73,417$) who were contacted by law enforcement in 2005 and 2006 from 27 Turkish cities lived with both of their biological parents, whereas 4.8% ($N = 4,070$) lived with a single parent and only 1.8% ($N = 1526$) lived with a step parent and a biological parent (cf., Table 4.1). In addition, the percentage who lived on the streets represented only 1% ($N = 839$), and juveniles who lived either with his or her spouse and kids ($N = 199$), with friends ($N = 611$), or at their workplace ($N = 97$) were even smaller, 0.2%, 0.7%, and 0.1%, respectively.

4.2.1 Association with juvenile substance use

Although all of the juveniles included in my study were crime suspects, only a small number (8.8%), hopefully, used illegal substances. However, percentages of juveniles who used substances differed according to where and with whom they lived. In my analyses, I found that where and with whom juveniles lived had a significant association with the level of juvenile substance use rates (see Table 4.10). Moreover, except for juveniles who lived on the streets, the strength of association was very high. For example, living with biological parents or the juvenile's spouse and kids had the lowest substance use rates (7.9% and 6%, respectively). These two living conditions were the only situations which had negative residuals (cf., Table 4.10). In other words, these two variables had a value below that which would be expected if there were no family relationships.

Moreover, when the adjusted residuals were examined, I noticed that living with both parents had the highest effect in reducing substance use in this equation (Adjusted residual = -29.1).

On the other hand, while living with both parents or the juveniles' own family (spouse and kids) reduced the chance of illegal drug use, all other situations increased the chance of drug use more than expected (e.g., see Table 4.10 in the residual column for the positive value). For example, living on the streets imposes a real danger for juveniles regarding the use of illegal substances because almost half (45.1%) used any type. Moreover, living on the streets had the highest effect on increasing a juvenile's chance of substance use.

Table 4.10: Association of living status and substance use*

Living status	Count		Residual		Percentage		Strength of association*
	No	Yes	No	Yes	No	Yes	
Living with both parents	67621	5796	823.2	-823.2	92.1%	7.9%	0.84
Living with a biological and step parent	1263	263	-125.4	125.4	82.8%	17.2%	0.66
Living with a single parent	3477	593	-226.1	226.1	85.4%	14.6%	0.71
Living only with siblings	632	90	-24.9	24.9	87.5%	12.5%	0.75
Living with relatives	1186	169	-46.8	46.8	87.5%	12.5%	0.75
Living with spouse and kids	187	12	5.9	-5.9	94.0%	6.0%	0.88
Living with friend/acquaintance	513	98	-42.9	42.9	84.0%	16.0%	0.68
Living alone	177	34	-15	15	83.9%	16.1%	0.68
Living at children shelter/dormitory	1246	142	-16.9	16.9	89.8%	10.2%	0.80
Living on the street	461	378	-302.4	302.4	54.9%	45.1%	0.10
Living at working place	81	16	-7.3	7.3	83.5%	16.5%	0.68
Other	164	40	-21.6	21.6	80.4%	19.6%	0.61

Notes: χ^2 = 1838.629, df =11, P < .0005.

*: Strength of association (0 is the weakest and 1 is the perfect) for each raw was calculated separately as follows: (No/Total Count)-(Yes/Total Count) (Agresti and Finlay, 1999; pg. 267).

Interestingly, my results revealed that juveniles who lived with a single parent had lower levels of drug use rates (14.6%) than juveniles who lived with a step parent and a biological parent (17.2%). Likewise, juveniles who either lived alone, with friends, or at their workplace had almost same level (16%) of illegal drug use rates. However, these levels decreased if they lived with their siblings or with relatives (12.5%).

Similarly, juveniles who lived at a shelter or dormitory had one of the lowest substance use rates (10.2%). I believe that this result is very important for policymakers to consider in reducing juvenile substance use rates, because protecting these juveniles at shelters rather than leaving them alone or with friends can help them to overcome the use of any illegal drugs.

4.2.2 Association with methods of crime commitments

The aforementioned descriptive analyses (cf., Table 4.4) showed that 44.3% of the juveniles mentioned that they committed a crime alone while 55.7% stated that they committed crimes in groups. With this research question, I examined whether there was a relationship between the living status of juveniles and committing crimes alone or in groups.

Overall, the results of my chi-square analysis showed that there was a significant association between where and with whom juveniles lived and the method(s) they used to commit a crime (see Table 4.11). With the exception of juveniles who lived with either their spouses and kids or alone, all others typically committed crimes with other juveniles. More especially, juveniles who shared more time with their peers had the

highest levels of group crimes. For example, 62% who lived with their friends, 57% who

lived at a children's shelter or dormitory, and 56.4% of the juveniles who lived on the

streets committed their crimes in groups (cf., Table 4.11).

Similarly, juveniles who lived with their parents also committed their crimes

primarily in groups. For example, 56% who lived with both of their parents, and

approximately 54% who lived with either a single parent or with a step and a biological

parent committed their crimes in groups.

However, when we look at the linear-by-linear association, all of the results were

not significant thus indicating that an association between some of the living status

categories and method(s) used to commit crimes were not significant. Regarding the

results of using a chi-square test, Agresti and Finlay (1999) warned researchers that even

if the test results are statistically significant, the strength of association can be "weak and

unimportant in practical terms" (p. 266) because "large x^2 values can occur with weak

associations if the sample size is large" (p. 267). Therefore, they suggested that

researchers should examine the strength of the associations even if the test results are

significant.

In accordance with Agresti and Finlay (1999) advice, the last column in Table

4.11 shows the separate strength of association between the two methods of crime

commitment (alone vs. group) for each living condition. All values revealed that the

strength of association for the status of living and methods used to commit crime were

very weak except for the juveniles who lived with their friends or alone. Therefore, I

considered them as having a moderate association because both had a value greater than

.20.

Table 4.11: Association of living status and method of committing crime

	Method of committing crime				
	Count		Percentage		Strength of association *
Living status	Alone	Group	Alone	Group	
Living with both parents	32380	41037	44.1%	55.9%	0.12
Living with a biological and step parent	703	823	46.1%	53.9%	0.08
Living with a single parent	1861	2209	45.7%	54.3%	0.09
Living only with siblings	340	382	47.1%	52.9%	0.06
Living with relatives	670	685	49.4%	50.6%	0.01
Living with spouse and kids	104	95	52.3%	47.7%	0.05
Living with friend/acquaintance	231	380	37.8%	62.2%	0.24
Living alone	130	81	61.6%	38.4%	0.23
Living at children shelter/dormitory	595	793	42.9%	57.1%	0.14
Living on the street	366	473	43.6%	56.4%	0.13
Living at working place	46	51	47.4%	52.6%	0.05
Other	79	125	38.7%	61.3%	0.23

Notes: x^2 = 68.679, df =11, P < .0005.

* Strength of association (0 is the weakest and 1 is the strongest) for each raw was calculated   separately as follows: (Alone/Total Number)-(Group/Total Number) (Agresti and Finlay, 1999; pg. 267).

4.3 Effects of method of committing crime on crime types (RQ-3)

Referring to Table 4.4, juveniles typically commit their crimes in groups (55.7%) rather than alone (44.3%) which represented a significant result. Therefore, I examined whether committing crimes alone or with other juveniles had an association with crime types.

As shown in Table 4.12, the chi-square statistical test results showed that there was a significant relationship between method(s) of committing a crime and crime types, a result that was valid for all crimes. For example, juveniles committed property crimes (62.1%) and violent crimes (56.7%) primarily with other juveniles. On the other hand, they usually preferred being alone when committing sex crimes (55.4%) and drug related crimes (59.5%).

Table 4.12: Association of method of committing crime and crime types

	Method of committing crime				Strength of association
	Count		Percentage		
Crime types	Alone	Group	Alone	Group	
Violent crimes	12372	16258	43.2%	56.8%	0.14
Property crimes	15215	24945	37.9%	62.1%	0.23
Sex crimes	672	542	55.4%	44.6%	0.11
Drug crimes	1572	1070	59.5%	40.5%	0.19
Terrorism	277	409	40.4%	59.6%	0.20
Other	7397	3910	65.4%	34.6%	0.31

Note: x^2 = 3038.799, df =5, P < .0005.

However, when we look at the strength of these associations, most were weak. Only property crimes (.23), drug crimes (.19), and terrorism (.20) had moderate relationships.

4.4 Effects of city level features on juvenile problems (RQ-4)

Research question 4 measured whether or not there was a relationship between city characteristics (e.g., crime level, unemployment level, and poverty level) and juvenile behaviors, namely living on the streets and crimes committed. I assumed that features of cities would affect these outcomes based on strain, social disorganization, and social learning theories. For example, Cloward and Ohlin (2003) claimed that juveniles who are poor tend to commit more property crimes. Similarly, social learning and differential association theorists claimed that juveniles learn how to commit crimes from their environment (Akers, 2003; Sutherland & Cressey, 2003). For example, if a city is known to have a high violent crime rate, the rate of violent crimes committed by juveniles would be higher than the current level.

To measure these hypotheses, hierarchical linear modeling (HLM) was employed because I used two different levels of variables (individual and city). All dichotomous dependent variables were coded at the individual level such as living on the streets, methods of committing crime (group vs. alone), crime types (violent, property, sex and drug crimes), and substance types (sniffing glue, pills, alcohol, marijuana, two types of illicit substances, and more than two types of drug use at the same time). City level variables were used (rates: 1/100,000) as my independent variables (poverty rate,

unemployment rate, average household size, divorce rate, migration rate, violent and

property crime levels, city level total and juvenile suicide rates, educational capacities

and rate of classrooms and training centers for getting a job). Descriptive statistics of my

dependent and independent variables are presented in Table 4.13 and Table 4.14.

I calculated the z-scores of my city level independent variables in order to have

semi-standardized regression coefficients. This standardization facilitated a meaningful

comparison of the regression coefficients across independent variables. As a result, I

used z-scores of my independent variables rather than their rates in my analyses. The

semi-standardized regression coefficients, odds ratios, and confidence intervals

mentioned below were calculated by using z-scores of the city level IVs.

Table 4.13: Description of individual level dependent variables

Individual level dependent variables	Frequency			Percentage	
	Total	Yes	No	Yes	No
Living on the street	84639	839	83800	1.0%	99.0%
Group crime	84639	47134	37505	55.7%	44.3%
Violent crime	84639	28630	56009	33.8%	66.2%
Property crime	84639	40160	44479	47.4%	52.6%
Sex crime	84639	1214	83425	1.4%	98.6%
Drug crime	84639	2642	81997	3.1%	96.9%
Sniffing glue	84639	1792	82847	2.1%	97.9%
Pill	84639	576	84063	0.7%	99.3%
Alcohol	84639	2927	81712	3.5%	96.5%
Marijuana	84639	924	83715	1.1%	98.9%
Two types of drugs	84639	862	83777	1.0%	99.0%
More than two types of drugs	84639	194	84445	0.2%	99.8%

Table 4.14: Descriptive statistics on city-level independent variables

City level independent variables	Total Observations	Mean	Standard Deviation	Minimum	Maximum
Divorce	84639	149.1	54.8	35.7	237.9
Suicide	84639	3.5	2.3	0.9	24.1
Juvenile Suicide	84639	1.6	1.7	0.0	17.8
Migration	84639	420880.4	655702.2	-244654.0	1650376.0
Household size	84639	4.5	0.9	3.5	6.9
Unemployment	84639	5415.0	1263.3	2664.7	7918.2
Classroom	84639	1900.2	371.0	1432.2	2804.0
Job training centers	84639	115.3	23.4	46.8	170.3
Violent crimes	84639	680.0	301.3	190.2	1929.0
Property crimes	84639	1114.5	527.1	84.0	2805.3
Poverty	84639	10206.2	9096.2	2528.1	34579.6

Notes: Migration and household size were real numbers; other IVs were rates (1/100,000)

4.4.1 Multicollinearity

Before examining the effect of city level independent variables, I examined the correlations for multicollinearity (see Appendix A, Table A.1) and found that total city level suicide rates and juvenile suicide rates had a high correlation (.95) since juvenile suicide was embedded into the total rates. Therefore, I dropped total city level suicide rates and kept the city level juvenile suicide rates since this study is related to juvenile delinquency. After dropping the IV total suicide, I reexamined multicollinearity among the IVs and found that city level household size and poverty had multicollinearity (see

Appendix A, Table A.2) according to "a rule of thumb" that defines "a tolerance of 0.1 or less (equivalently VIF of 10>) is a cause for concern" (UCLA, 2009).

Removing the IV household size vanished multicollinearity from my model (see Appendix A, Table A.3). Therefore, I preferred removing this highly correlated independent variable rather than combining it into a latent factor as a solution to multicollinearity in my model. In essence, I would have had difficulty in interpreting the effects of each variable if I had combined this highly correlated variable. As such, I dropped household size as an IV from my model.

4.4.2 Association with living on the street

To determine which city features had an association between juveniles living on the streets, I analyzed the associations of all city level variables with behaviors of living on the street and found that only city level poverty and unemployment rates had statistically significant associations (see Table 4.15). As hypothesized, city level poverty had a positive association with the juveniles' decisions to live on the streets, and the strength of this association was strong (odds ratio = 1.75). Stated another way, the odds of my dependent variable (juveniles living on the street) increased 1.75 times with a one standard deviation change in the independent variable (city level poverty).

However, the relationship between city level unemployment rates and living on the streets was contrary to my assumptions because my results showed a negative relationship (coefficient = -.440). In other words, the odds of juveniles who lived on the

streets decreased .36 (odds ratio = .64; therefore, 1-.64 = .36) with a one standard

deviation change in unemployment city rates.

Table 4.15: Association of characteristics of cities with juvenile living on the street

City level IVs	Semi-Standardized Regression Coefficient	Std. Error	P value	Odds ratio	95% Confidence Interval	
Divorce	-0.0005	0.226	0.998	1.00	0.642	1.555
Juvenile Suicide	-0.070	0.121	0.538	0.93	0.731	1.177
Migration	0.190	0.157	0.227	1.21	0.889	1.644
Unemployment	-0.440	0.221	0.046*	0.64	0.418	0.993
Classroom	-0.250	0.191	0.182	0.78	0.534	1.126
Job training centers	0.340	0.207	0.102	1.40	0.935	2.108
Violent crimes	-0.030	0.204	0.877	0.97	0.649	1.447
Property crimes	0.020	0.179	0.911	1.02	0.717	1.451
Poverty	0.560	0.283	0.046*	1.75	1.009	3.059
(Constant)	-4.740	0.103	<0.005			

Notes: N = 84,639;   Wald x^2 = 6.25, df = 9, p = 0.72, rho = .06
Including control variables (age, gender, living with both parents, and living with a step parent) did not change significance level of associations.

Although these features had a significant association, the model's overall results

were not statistically significant (Wald x^2 = 6.25, df = 9, p = 0.72). Based on these results,

I concluded that other than poverty and unemployment rates, city level independent

variables were not powerful indicators of juvenile decisions to live on the streets.

4.4.3 Association with juvenile group crime

The association between city characteristics and decisions of juveniles to commit group crimes were analyzed in which city level divorce rates and classroom capacities were found to have statistically significant positive associations with juvenile group crime while juvenile suicide, capacity of job training centers, poverty, and total property crime rates had a significant negative association. Further, overall test results showed that this model had power to explain the variances within cities in terms of juvenile group crime (Wald x^2 = 343.56, df = 9, p = 0.000, rho = .19).

As shown in Table 4.16, city level divorce and classroom capacities had a significant positive relationship with juvenile group crime. In other words, if the level of these variables increased, the level of juveniles who committed group crimes also increased. For example, the odds of juvenile group crime increased 1.88 times with a one standard deviation (*SD* hereafter) change in level of city level divorce keeping all else constant (Rabe-Hesketh & Everitt, 2004).

However, availability of job training centers, city level property crime, poverty, and juvenile suicide had a statistically significant negative relationship with juvenile group crimes. Stated differently, juveniles committed less group crimes in those cities where rates of property crime, poverty, juvenile suicide, and availability of job training centers were high. For instance, odds of juvenile group crime had decreased .53 times (1-.47) with one *SD* change in the capacity of job training centers.

111

Table 4.16: Association of characteristics of cities with juvenile group crime

City level IVs	Semi-Standardized Regression Coefficient	Std. Error	P value	Odds ratio	95% Confidence Interval	
Divorce	0.632	0.088	0.000*	1.88	1.583	2.235
Juvenile Suicide	-0.248	0.101	0.014*	0.78	0.641	0.951
Migration	0.149	0.246	0.546	1.16	0.716	1.880
Unemployment	0.175	0.207	0.399	1.19	0.793	1.787
Classroom	0.376	0.187	0.044*	1.46	1.010	2.102
Job training centers	-0.752	0.199	0.000*	0.47	0.319	0.697
Violent crimes	0.248	0.150	0.099	1.28	0.955	1.719
Property crimes	-0.682	0.159	0.000*	0.51	0.370	0.691
Poverty	-0.589	0.217	0.007*	0.56	0.363	0.849
(Constant)	0.298	0.087	0.001			

Notes: N = 84,639; Wald x^2 = 343.56, df = 9, p = 0.000, rho = .19
Including control variables (age, gender, living with both parents, and living with a step parent) did not change significance level of associations.

4.4.4 Association with juvenile violent crime

When I examined the association of city level variables with juvenile violent crimes, city level unemployment, poverty, and divorce rates, significant relationships were found. As shown in Table 4.17, city level juvenile violent crime and unemployment rates had positive relationships. In other words, if city level unemployment rates increased, juvenile violent crime levels also increased. For example, the odds of juvenile violent crime had increased 1.50 times with one *SD* change in city level unemployment.

On the other hand, city level poverty and divorce rates had negative significant relationships with juvenile violent crimes. In other words, if poverty and divorce levels of

cities increased, juveniles from those cities committed less violent crimes. These results were opposite to my hypothesis because I assumed that high city level poverty and divorce rates would increase juvenile violent crime rates.

Table 4.17: Association of characteristics of cities with juvenile violent crime

IVs	Semi-Standardized Regression Coefficient	Std. Error	P value	Odds ratio	95% Confidence Interval	
Divorce	-0.242	0.101	0.016*	0.78	0.643	0.955
Juvenile Suicide	0.144	0.092	0.118	1.15	0.963	1.386
Migration	-0.046	0.079	0.559	1.04	0.896	1.223
Unemployment	0.363	0.162	0.025*	1.43	1.046	1.978
Classroom	0.114	0.116	0.323	1.12	0.893	1.407
Job training	0.154	0.133	0.248	1.16	0.898	1.516
Violent crimes	0.168	0.134	0.213	1.18	0.908	1.541
Property crimes	-0.245	0.142	0.085	0.78	0.591	1.034
Poverty	-0.450	0.188	0.017*	0.63	0.440	0.921
Age	0.172	0.004	0.000	1.18	1.177	1.199
Gender	0.184	0.027	0.000	1.20	1.139	1.270
Both Parents	0.533	0.025	0.000	1.70	1.620	1.792
Step Parent	0.095	0.064	0.139	1.10	0.969	1.248
(Constant)	-4.154	0.112	0.000			

Note: N = 84,639;   Wald x^2 = 1920.69,   df = 13, p = 0.0000, rho = .06

4.4.5 Association with juvenile property crime

My analysis regarding the association of city characteristics with juvenile property crimes found that none of the city level independent variables had a significant relationship with juvenile property crimes. Interestingly, and opposite to my hypothesis,

even the city level poverty and property crime level did not have any association with juvenile property crime levels.

Therefore, as Wald x^2 showed, this model did not help explain the juvenile property crime level in the 27 Turkish cities (Wald $x^2 = 11.90$, $df = 9$, $p = 0.22$, rho = 0.08).

Table 4.18: Association of characteristics of cities with juvenile property crime

City level IVs	Semi-Standardized Regression Coefficient	Std. Error	P value	Odds ratio	95% Confidence Interval	
Divorce	0.138	0.128	0.282	1.15	0.893	1.475
Juvenile Suicide	-0.158	0.102	0.120	0.85	0.699	1.042
Migration	0.081	0.086	0.351	1.08	0.915	1.284
Unemployment	-0.303	0.184	0.100	0.74	0.515	1.060
Classroom	-0.022	0.155	0.888	0.98	0.722	1.326
Job training centers	0.130	0.170	0.444	1.14	0.816	1.589
Violent crimes	-0.104	0.162	0.522	0.90	0.655	1.239
Property crimes	0.062	0.177	0.725	1.06	0.752	1.507
Poverty	0.372	0.233	0.111	1.45	0.919	2.293
(Constant)	-0.078	0.088	0.377			

Notes: N = 84,639; Wald $x^2 = 11.90$, df = 9, p = 0.22, rho = .08
    Including control variables (age, gender, living with both parents, and living with a step parent) did not change significance level of associations.

4.4.6 Association with juvenile sex crime

As shown in Table 4.19, when the association of juvenile sex crimes was examined with city level features, my analysis found that unfortunately none of the city level variables had a significant relationship with this type of juvenile crime.

114

Table 4.19: Association of characteristics of cities with juvenile sex crimes

City level IVs	Semi-Standardized Regression Coefficient	Std. Error	P value	Odds ratio	95% Confidence Interval	
Divorce	0.068	0.224	0.760	1.07	0.691	1.660
Juvenile Suicide	-0.115	0.127	0.365	0.89	0.694	1.144
Migration	-0.116	0.164	0.479	0.89	0.646	1.227
Unemployment	0.322	0.227	0.157	1.38	0.883	2.154
Classroom	0.053	0.193	0.784	1.05	0.723	1.538
Job training centers	-0.052	0.207	0.803	0.95	0.633	1.425
Violent crimes	0.093	0.201	0.643	1.10	0.740	1.628
Property crimes	-0.060	0.188	0.751	0.94	0.652	1.361
Poverty	-0.315	0.283	0.266	0.73	0.419	1.271
(Constant)	-4.343	0.105	0.000			

Notes: N = 84,639;   Wald x^2 = 4.52,   df = 9, p = 0.87, rho = .07
    Including control variables (age, gender, living with both parents, and living with a step parent) did not change significance level of associations.

4.4.7 Association with juvenile drug related crimes

As depicted in Table 4.20, juvenile drug crime was related to only two city level variables: (a) juvenile suicide rates and (b) property crime rates. As expected, juvenile drug crimes had a significant and positive association with juvenile suicide rates. In other words, juveniles would commit more drug related crimes in cities where juvenile suicide rates were high as hypothesized. Similarly, juvenile drug crime had a significant positive association with city level property crime rates. For example, the odds of juvenile drug crimes had increased 1.56 times with one *SD* change in property crime rates. On the other hand, I also hypothesized that juvenile drug crimes would have significant negative

relationships with poverty, capacities of schools and job training centers, and a significant

positive association with divorce. However, none of these city level variables were

predictors of juvenile drug crime.

Table 4.20: Association of characteristics of cities with juvenile drug crimes

City level IVs	Semi-Standardized Regression Coefficient	Std. Error	P value	Odds ratio	95% Confidence Interval	
Divorce	0.034	0.198	0.864	1.03	0.702	1.524
Juvenile Suicide	0.382	0.120	0.001*	1.47	1.159	1.854
Migration	0.077	0.149	0.607	1.08	0.806	1.447
Unemployment	0.106	0.242	0.661	1.11	0.692	1.787
Classroom	-0.195	0.168	0.246	0.82	0.592	1.144
Job training	-0.192	0.229	0.402	0.83	0.527	1.293
Violent crimes	-0.053	0.206	0.798	0.95	0.634	1.420
Property crimes	0.442	0.196	0.024*	1.56	1.060	2.286
Poverty	0.356	0.344	0.301	1.43	0.727	2.800
(Constant)	-3.878	0.116	0.000			

Notes: N = 84,639;   Wald x^2 = 77.57,   df = 9, p = 0.000, rho = .12
Including control variables (age, gender, living with both parents, and living with a step parent) did not change significance level of associations.

4.4.7.1 Association with juvenile sniffing glue

I hypothesized that city features might possibly have an association with types of

illegal drugs that were used by juveniles. Thus, I first analyzed the association between

city characteristics and glue sniffing by juveniles. In my analysis, sniffing of glue by

juveniles was found to have a significant negative association only with city level

unemployment rates (see Table 4.21). In other words, sniffing glue rates decreased if

unemployment rates increased. Unfortunately, none of the other city level variables had a significant association between sniffing of glue among juveniles.

Finally, overall results of this model were not statistically significant (Wald $x^2 = 15.52$, $df = 9$, $p = 0.078$). Therefore, I concluded that city level independent variables used in this model were not powerful enough to explain sniffing of glue by juveniles. However, we should be cautious in making this conclusion because the number of juveniles who used this type of substance was too small; thus, my analysis might not detect the association.

Table 4.21: Association of characteristics of cities with juvenile sniffing glue

City level IVs	Semi-Standardized Regression Coefficient	Std. Error	P value	Odds ratio	95% Confidence Interval	
Divorce	-0.027	0.165	0.872	0.97	0.705	1.345
Juvenile Suicide	-0.154	0.242	0.087	0.86	0.718	1.023
Migration	0.023	0.116	0.846	1.02	0.815	1.284
Unemployment	-0.365	0.161	0.023*	0.69	0.507	0.951
Classroom	-0.270	0.139	0.052	0.76	0.581	1.003
Job training	0.165	0.153	0.279	1.18	0.875	1.592
Violent crimes	-0.045	0.150	0.765	0.96	0.713	1.282
Property crimes	-0.195	0.136	0.151	0.82	0.631	1.074
Poverty	0.212	0.202	0.294	1.24	0.832	1.835
(Constant)	-3.798	0.074	0.000			

Notes: N = 84,639;   Wald x^2 = 15.52,   df = 9, p = 0.078, rho = .03
Including control variables (age, gender, living with both parents, and living with a step parent) did not change significance level of associations.

4.4.7.2 Association with more than two types of drug use

City level poverty rates were found to have a positive and significant relationship between juveniles who used more than two types of drugs as shown in Table 4.22. Although this association was very strong (odds ratio = 2.41), city level unemployment had a negative association which was contradictory to my assumptions.

Table 4.22: Association of characteristics of cities with using several illegal drugs

IVs	Semi-Standardized Regression Coefficient	Std. Error	P value	Odds ratio	95% Confidence Interval	
Divorce	0.379	0.277	0.171	1.46	0.848	2.518
Juvenile Suicide	-0.112	0.155	0.47	0.89	0.659	1.211
Migration	0.112	0.184	0.541	1.11	0.779	1.607
Unemployment	-0.578	0.257	0.024*	0.56	0.338	0.928
Classroom	-0.346	0.232	0.135	0.71	0.448	1.114
Job training	0.208	0.267	0.437	1.23	0.728	2.079
Violent crimes	0.163	0.251	0.516	1.17	0.719	1.927
Property crimes	-0.118	0.231	0.610	0.88	0.564	1.399
Poverty	0.88	0.353	0.013*	2.41	1.205	4.827
Age	0.254	0.056	0.000	1.29	1.154	1.442
Gender	-1.292	0.507	0.011	0.27	0.101	0.741
Both Parents	-0.717	0.181	0.000	0.48	0.341	0.695
Step Parent	-0.053	0.44	0.903	0.94	0.399	2.247
(Constant)	-8.245	1.114	0.000			

Note: $N = 84,639$; Wald $x^2 = 58.01$ df = 13, p = 0.000, rho = .06

4.4.7.3 Association with two types of drug use

My results showed that most of the city level variables did not have a significant association with juvenile decisions to use two types of drugs simultaneously. Contrary to my hypothesis, only capacities of job training centers had a significant and positive association.

Table 4.23: Association of characteristics of cities with using two-type drugs

IVs	Semi-Standardized Regression Coefficient	Std. Error	P value	Odds ratio	95% Confidence Interval	
Divorce	-0.144	0.201	0.473	0.87	0.584	1.283
Juvenile Suicide	-0.024	0.112	0.829	0.98	0.783	1.216
Migration	0.113	0.143	0.435	1.12	0.845	1.479
Unemployment	-0.345	0.194	0.076	0.71	0.484	1.036
Classroom	-0.201	0.173	0.245	0.82	0.583	1.148
Job training	0.413	0.191	0.031*	1.51	1.039	2.196
Violent crimes	0.066	0.179	0.712	1.06	0.752	1.517
Property crimes	-0.202	0.166	0.224	0.82	0.59	1.131
Poverty	0.161	0.248	0.516	1.18	0.722	1.912
Age	0.268	0.027	0.000	1.31	1.241	1.377
Gender	-1.372	0.239	0.000	0.25	0.158	0.406
Both Parents	-1.133	0.079	0.000	0.32	0.276	0.376
Step Parent	0.162	0.192	0.398	0.85	0.584	1.238
(Constant)	-6.549	0.529	0.000			

Note: N = 84,639;   Wald x^2 = 367.02,   df = 13, p = 0.000, rho = 0.05

4.4.7.4 Association with alcohol, pill, and marijuana use

Although I hypothesized that city level variables would have an association between juvenile use of illegal pills, alcohol, and marijuana, my analysis showed that none of the city level independent variables had a significant association with these types of illegal drugs used by juveniles (cf., Appendix B, Tables B.1 through B.3). When I examined the Wald chi square results of these tables, I found that with the exception of alcohol use, none of the models were significant (cf., Table B.2 = Wald x^2 = 24.17, df = 9, p = 0.004). However, none of the independent city level variables had a significant association even in this model. Therefore, I concluded that my city level independent variables were not powerful predictors of the use of illegal pills, alcohol, and marijuana among juveniles suspected of criminal offenses.

Chapter 5: Discussion

Results regarding the effects of both individual and city level variables on delinquency were examined. In this chapter, the results are discussed and compared to hypotheses of related theories by focusing on three effects: (a) with whom and where did juveniles on substance use live and did they commit crimes alone or in groups; (b) method(s) juveniles used to commit crime by crime types, and (c) city level variables on juvenile decisions to live on the street, to commit crimes in groups, juvenile crime types and substance types. Finally, policy recommendations are offered after each subsection.

5.1 Effect of family status and living place

5.1.1 Effect on juvenile substance use

The effect of with whom and where juveniles live on juvenile substance use was hypothesized by several theories, such as strain, social control, social disorganization, differential association, and the integrated theory of Elliot et al. For example, Agnew (2003) claimed that losing one or two parents causes strain that pushes juveniles into alienation which increases their chances of becoming "dropouts, outcasts, vagabonds, chronic drunkards, and drug addicts" (Merton, 1938, p. 677). Similarly, Shaw and McKay (2003) claimed that living with only one parent causes budgetary problems, reduces legal opportunities, and increases interactions with other delinquents. Therefore,

I hypothesized that juveniles who did not reside with both parents, lived with other juveniles, or lived on the street used illegal substances more often than other juveniles who lived under the supervision and care of both parents.

In support of this hypothesis, I found that living conditions (with whom and where) of juveniles had a significant association with the level of juvenile substance use. For example, juveniles who lived with their biological parents (7.9%) or with their spouse and children (6%) had the lowest level of drug use that only slightly increased if they resided at either a shelter or dormitory (10.2%) or lived with their siblings or relatives (12.5%). These results were consistent with social control, social bond, and strain theories which hypothesized that close supervision of juveniles, attachment to their environment, and having strong social ties protect them from using illegal drugs[1] (Elliot et al., 1985). Moreover, my results supported the hypothesis of Rankin and Kern (1994) who claimed that "the number of attachments" is important because "strong attachments to both parents are associated with lower probability of committing delinquency than strong attachment to only one parent" (p. 510). Although only 7.9% of the juveniles who lived with both parents used illegal drugs, this low percentage should not mislead policymakers, because the number of these juveniles was large. For example, this number was 15 times more than the number of juveniles who lived on the streets, 22 times more than the number of juveniles who lived with a step parent, and 59 times more than the number of juveniles who lived with friends. Therefore, focusing on juveniles living on

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[1]Although this study is not a qualitative one that examined the quality of parenting and attachment, based on quantitative analyses the results showed the importance of families and other social ties beyond doubt according to my results.

the streets, with a step parent, or with friends is unlikely to have a large effect on the overall level of crime.

The percentage of juveniles who used illegal drugs increased if they lived with a single parent (14.6%) or with a step parent (17.2%). Consistent with the hypotheses of social control, social disorganization, differential association, and strain theorists, the effect of single parents on drug use can be explained by having difficulty in providing close supervision, strain caused by losing a parent, low income, and living in crime prone neighborhoods due to low income (Agnew, 2003; Merton, 1938; Shaw and McKay, 2003). The actual reason for juvenile drug use could be attributed to any one of these reasons or a combination of two or more.

Interestingly, my results showed that second to "street children," a higher percentage of juveniles who lived with a step parent used illegal drugs even though they were less likely to suffer from less supervision and low income than juveniles who lived with only a single parent. Thus, my results partially supported Hirschi who hypothesized that there is "no relation between single-parent homes and delinquency when the child is strongly attached to the custodial parent" (Rankin & Kern, 1994, p. 511). The reason I said partially is because if we compare juveniles who lived with a single parent to those from intact families, we notice that my results did not support Hirschi's hypothesis. Unfortunately, my data did not allow me to explain the process of why juveniles who lived with a step parent had higher substance use rates than juveniles who lived with only a single parent. Additionally, juveniles who lived with their relatives and those who resided at a dormitory or shelter had lower rates of drug use even though they had no parents.

However, we should be very careful when interpreting my results regarding the effects of living with a step parent. I concluded that living with a step parent did have a significant association with drug use among juveniles since my test results were significant. However, did I really measure the effect that drug use had on juveniles who lived with a single parent? In fact, the answer is no because my sample represented juvenile delinquents, not all juveniles. Thus, I should not generalize my results to all juveniles and should clarify that this result applied only to juvenile delinquents. Therefore, to discover the real effects that drug use has on juveniles who reside with a single parent, researchers should conduct surveys and qualitative studies in order to compare delinquent and non-delinquent juveniles who live under the same situations.

Finally, the high level of drug use among juveniles who either lived with their friends, their workplace, or on the streets supported the hypotheses of differential association, social disorganization, social control, and the integrated theory of Elliot et al. and showed the importance of peer effects, attachment, and parental supervision (Agnew, 2003; Elliot et al., 1985; Gottfredson & Hirschi, 2003). For example, 45% of the juveniles who lived on the streets used illegal drugs, a high percentage that needs attention from policymakers. On the other hand, the percentage of street kids who did not use illegal drugs was promising because Turkish people generally believe that almost all street kids use illegal drugs. However, my results showed that more than half did not use illegal drugs although this percentage is likely to be underestimated.[2] In addition to the percentage, we should look at the actual number of those street kids who used drugs.

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[2]Because the dataset was based only on statements made by the juveniles, I have concern regarding the reliability of this percentage.

Across the entire sample of 27 cities, only 378 street kids used drugs. Although it is important to address the needs of this critical group of juveniles, they represent only a small portion of Turkey's juvenile delinquency problem.

5.1.1.1 Policy implications

First, I found in my analysis that most of the juveniles who had contact with the police did not use illegal drugs. Although this is fortunate for both families and policymakers, these results were based on the juveniles' responses to questions asked by police officers. Therefore, the actual level of substance use among these juveniles might be higher than the results that my study revealed. In order to know the actual level of juvenile substance use rates, I recommend three solutions. First, Turkish officials should administer surveys concerning juvenile drug use to schools and homes on a regular basis similar to those used in the U.S (Mosher et al., 2002). Second, juvenile police departments should seek help during their interrogations from professionals (besides lawyers and prosecutors) to determine whether each juvenile–both suspect and victim– has used any type of illegal drug as outlined in the Turkish protection of children laws. One important contribution of these professionals would be distinguishing drug use from drug addiction (Taxman, personal communication, 2009). In addition to knowing the drug use level, these professionals may also provide information on the real causes of delinquency and victimization.[3] Finally, police may use either urine or other drug tests;

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[3]After writing this second recommendation, I contacted the Diyarbakir Juvenile Police Department to conduct another project and mentioned this recommendation. I was informed that Turkish laws regarding the protection of juveniles require the presence of such professionals and, if in fact, they have psychologists at their department who interview kids.

however, drug tests for juveniles may raise ethical issues, such as labeling of juveniles and not taking consents of parents.

Second, my results revealed that juveniles who resided with both parents generally did not use any illegal drugs. Thus, if we want to reduce juvenile drug use, policymakers should develop educational programs to maintain families that can begin as early as high school. However, policymakers should realize that almost two-thirds of the juveniles who use illegal drugs generally live with both of their biological parents. Therefore, preventive policies should not focus only on street children.

Third, results of this study found the prevalence of substance use among those juveniles who lived with a single parent or with a step parent were higher than other juveniles who lived with both parents. Thus, since we cannot stop divorce totally in any society,[4] policymakers should pay special attention to those juveniles after divorce. Juveniles and their parents should be given special training programs, and parents and government officials should closely monitor these juveniles after divorce.

Fourth, my results showed that only a small percentage of juveniles who lived at a dormitory or shelter used illegal drugs whereas almost half of the juveniles who lived on the streets used illegal drugs. Therefore, policymakers should first return these juveniles back to their families or relatives. If this is impossible, officials should accommodate those juveniles at shelters. Moreover, they should focus on drug use problems at shelters as well.

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[4] 93,486 couples were divorced in Turkey in 2006 for a divorce rate of 14.7%.

5.1.2 Effect on method of crime commitment (group vs. alone)

Based on the results of several theories, I hypothesized that the living status of

juveniles (with whom and where) affect the level of group crimes committed by juveniles

due to association with delinquent peers and low parental supervision (Shaw & McKay,

2003). For example, Elliot et al. (1985) claimed that association with other delinquents

has a direct negative effect on juveniles, and weak parental supervision (e.g., living with

a single parent) increases association with other criminal juveniles. Similarly, Shaw and

McKay (2003) claimed that single parents are forced to live in socially disorganized areas

where juveniles form gangs and commit group crimes (Cloward & Ohlin, 2003; Cohen,

1955; Merton, 1938). Matsueda and Heimer (1987) found that the effect of peers was

powerful "for learning definitions of delinquency" and "mediating" the effects of "bonds

to parents' (p. 826). Therefore, I hypothesized that weak conventional bonds, inadequate

supervision, and spending more time with other juveniles increase juvenile group crimes.

In fact, this research question indirectly measured the effects of peer association.

Unfortunately, my results did not support this hypothesis. Although results were

statistically significant and most of the juveniles committed crimes in groups, based on

Agresti and Finlay's (1999) advice, I concluded that these significant results were due to

the large sample size, and the actual strength of associations between living status and

juvenile group crime were weak. Only living with a friend(s) had a positive moderate

relationship, and living alone had a negative moderate relationship (0.20).

Moreover, my results showed no difference among family types and where

juveniles live. For example, living with biological parents, a step parent, or single parent

127

did not make a difference because juveniles preferred committing crimes in groups in all situations (except living alone or with spouse and kids). Therefore, if juveniles' strain level, legal opportunities, parental supervision, attachment level, and imposition to negative effects of criminogenic environment and peers are supposedly different as hypothesized by strain, social disorganization, social control, and differential association theorists, then, why did juveniles commit almost the same level of group crimes? According to these theories, juveniles who live with their biological parents should have had less group crimes, but they did not according to my results. I propose three possible explanations for this result.

First, the living with both parents variable might mislead researchers because we assume that if a juvenile lives with both parents, he or she will have a high level of care, attachment, and supervision (Agnew, 2003; Gottfredson & Hirschi, 2003). This simplification may prove to be false, because researchers cannot merely assume that those families are perfect; therefore, we should focus on the quality of parenting rather than whether or not juveniles live with their biological parents (Gottfredson and Hirschi, 2003).

Second, this result might show the power of peer effect as Elliot et al. (1985) and Matsueda and Heimer (1987) found. In other words, strong family bonds might deter juveniles from committing crimes alone (Gottfredson & Hirschi, 2003); however, the negative influence of other juveniles might drive them into crimes (Matsueda & Heimer, 1987).

Finally, juveniles who live with a step or single parent might hide the reality that they were with other juveniles while committing crimes, because the percentage of

128

crimes committed alone was higher than Wolfgang and Ferracuti's (2003) results that found juveniles to commit crimes primarily in groups.[5] This possibility is high because not revealing the name of friends in case of arrest is very important in the Turkish culture, especially among juveniles. Therefore, police officers who recorded these data as well as researchers who used these datasets should be very careful regarding their reliability since they are based on the juveniles' self-reports.

5.1.2.1 Policy implications

Researchers sometimes fail to question the assumptions of generally accepted variables (Mastrofski, 2004; Mears 1998). For example, some researchers assume that if a juvenile lives with both biological parents, he or she is in good hands. Similarly, if juveniles live with a step parent or with relatives, it is assumed that those juveniles will have strain and low attachment, a generalization that can be misleading. Thus, researchers should focus on the real situations in which juveniles live. Unfortunately, relying only on quantitative studies cannot provide this vital information. Thus, I recommend that researchers should use quantitative and qualitative methods in order to produce more reliable results.

Secondly, results of my study found that slightly more than half of the juveniles who lived with both parents committed crimes in groups. This can be caused either by parenting deficiencies or the negative influence of friends, or both (Gottfredson & Hirschi, 2003; Matsueda & Heimer, 1987). Therefore, policymakers should educate

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[5]A possible fourth explanation can be that these high rates of juvenile crimes committed alone might reflect the real juvenile crime patterns in Turkey due to cultural reasons because even though leading scholars found that juveniles commit crimes mostly in groups, my findings were contrary to their results (i.e., almost half of the juveniles committed crimes alone). Thus, results of my study should be tested with further research.

parents regarding the adequate supervision of knowing who their child(ren)'s friends are and establish and maintain attachment and strong bonds with their children (Agnew, 2003; Gottfredson & Hirschi, 2003). Although I am aware of such parental educational programs in Turkey, they are not, however, systematic and widespread. For example, Mastrofski (1998) claimed that community policing meetings are generally made with law abiding citizens as opposed to the people who need these meetings. Similarly, I hypothesized that most parents who attend those programs already had good parenting habits. On the other hand, most parents who need these programs do not attend. Therefore, I recommend that government officials should require families to attend compulsory parenting educational programs if their children commit any type of crime.

Finally, my results revealed that juveniles who were arrested in Turkey as crime suspects did not commit crimes primarily in groups; rather they committed approximately the same level of crimes while alone. First, reliability of this result should be clarified with further studies. Second, if results of my study are validated by other researchers, policymakers should focus on the reasons why a majority of juveniles in Turkey commit crimes alone contrary to American juveniles. Since my results did not validate this general acceptance, related policies should be developed to prevent delinquency rather than focusing on the effects of negative peer influences as is generally accepted.

5.2 Association between method of committing crime and crime types

Cohen (1955) claimed that juveniles commit crimes in groups mainly for non-utilitarian purposes because their goal is to seek for status in society especially among

low-class friends. However, Cloward and Ohlin (2003) did not agree with Cohen and claimed that juveniles commit crimes mainly for utilitarian purposes. Thus, juveniles might prefer to commit crimes either alone or in groups depending on the type of crime. Whereas examining the purpose of juvenile crimes (utilitarian vs. non-utilitarian) is vital in understanding the root causes of delinquency, I believe that knowing the association between crime type and method of commitment has a practical contribution to law enforcement officials (e.g., looking for possible suspects depending on the crime type). Thus, I examined whether there is a relationship between crime type and method of crime commitment. I hypothesized that the decisions of juveniles to commit crimes in a group or alone depends on the crime type; thus, we can predict whether juveniles committed a crime alone or with others by looking at the crime type.

Results of my analyses found that there was a statistically significant relationship between crime type and method of crime commitment. Terrorism related crimes, drug related crimes, and property crimes had moderate significant relationships whereas strength of associations between violent and sex crimes and method of crime commitment were weak (0.14 and 0.11, respectively).

As expected, juveniles committed terrorism related crimes primarily in groups (60%) which showed that they were mainly influenced by other juveniles. This result was consistent with strain theories which hypothesized that juveniles who do not belong to main society come together and become rebellious (Merton, 1938). However, this moderate significant association was not satisfying because terrorism related types of crime in nature (terrorist activities and/or illegal riots) require being in groups. I expected a higher level of group crimes for these types of crime. Again, I suspect that

juveniles under arrest hide information during interrogations which is a very common practice in Turkey.

My results revealed that juveniles most often committed drug related crimes alone (60%). This result is consistent with strain theorists who hypothesized that strain and lack of hope for success cause drug use and alienation (Merton, 1938). However, we should be very careful while interpreting this result for two reasons. First, the crime type variable is not only about drug use which was mostly suggested by strain theorists (Merton, 1938). Rather, drug related crimes in my dataset consisted of drug use, selling, smuggling, and purchasing of illegal drugs. Drug use and purchasing illegal drugs could be performed alone, but I claim that the business of selling and smuggling illegal drugs alone is less likely in Turkey based on my experiences. Unfortunately, these four different types of drug crimes were recorded as if they were one and the same. Should they be recorded separately, percentages of illegal drug use and purchasing of illegal drugs committed alone and level of smuggling and selling illegal drugs committed in groups would be different.

Second, before concluding that juveniles typically commit drug related crimes alone, we should consider that drug use is a process rather than a single action. Unfortunately, recording officials and some researchers pay attention only to the time that drug use was performed which I believe is misleading. For example, Garner and Maxwell (1999) claimed that we should look at the "continuum of force" (p. 37) while measuring police use of force rather than the end action of police officers or civilians, because either party might trigger the use of force. Similarly, a juvenile might use illegal drugs alone (I even ignore the fact that he or she might hide his or her accomplices).

132

However, if we conclude that juveniles use drug crimes mostly alone, just by looking at this last stage the possible peer effects at initiation and continuation of drug use will be ignored. Thus, I suggest that officials should develop their recording producers not only for drug crimes but for all crimes.[6] The reason for this is that intervention and prevention officials should look into the possible peer effect for all juvenile crimes since Elliot et al. (1985) claimed that peers have a direct negative effect on delinquency.

My results also showed that juveniles committed property crimes mainly in groups (62%). This result supported the hypothesis of Cloward and Ohlin (2003) who claimed that juveniles compose groups to commit utilitarian crimes rather than non-utilitarian crimes as Cohen (1955) claimed because property crimes, such as auto theft, theft from auto, robbery, and pick-pocketing are generally done for utilitarian purposes in Turkey.

On the other hand, strength of associations between violent and sex crimes and method of crime commitment were weak (0.14 and 0.11, respectively). Thus, I concluded that statistical significance was due to the large sample size for these two types of crime (Agresti & Finlay, 1999), and these two crime types were not strong predictors of whether juveniles committed crimes alone or with other peers.

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[6]For example, rather than only asking whether juveniles were alone or with others during drug use, they might be asked three-stage questions: (1) What was the effect of other juveniles at the initiation stage? (2) Did juveniles use drugs with their friend(s) in the last year? (The aim is to clarify the motivational effect of other juveniles on continuing drug use). (3) Were juveniles alone or with others when they were arrested?

5.2.1 Policy implications

The above results showed that relying only on self-reports of juveniles to determine whether they committed crimes in a group or alone was problematic. Thus, recording officials and researchers should be very careful on the reliability of juvenile statements. To avoid reliability and construct validity problems, Turkish officials should increase the quality of the data collection process via implementing following two major policies. First, Turkish officials should clarify the conceptualization of the terms (Taxman, personal communication). For example, for a standardization of data recording process across Turkey, recording officials should clearly know and understand the same meaning from each term. To achieve this standardization, Turkish officials should train data recording officials and provide handouts on the classification of crime types as the FBI did. Furthermore, accuracy and quality of data recording processes and procedures should be continuously examined by experts comprised of high ranking officials–preferably with academic backgrounds–and academicians.

Moreover, rather than focusing and recording only the last stage of crimes, recording procedures should be developed. Similar to NIBRS in the U.S., Turkish law enforcement officials should also develop crime recording procedures for the purpose of scholarly analyses (Mosher et al., 2002).

My results showed that type of crime is a predictor of whether juveniles commit crimes alone or in groups except for violent crimes even though there were possible recording deficiencies for drug and sex crimes. Therefore, policymakers and law enforcement officials should develop preventive and intervention tactics based on crime

types. For example, while developing policies against property crimes, officials should always consider the peer effect at the initiation stage and their motivational effects on current delinquent acts.

5.3 Effect of characteristics of cities

5.3.1 Ecological Fallacy

I used city level variables to explain individual level behaviors in this section. Using two different units of analysis may cause "faulty reasoning" if a researcher does not "be aware of ecological fallacy" while "doing research and drawing conclusions from the results … The ecological fallacy is the assumption that something learned about an ecological unit says something about the individuals making up that unit" (Babbie, 2001, p. 100). For example, my results showed that juvenile group crime was low in some of my sample cities where capacities of job training centers were high. Based on this result, I cannot conclude that juveniles who went to job training centers committed less group crimes. Doing so would be an example of ecological fallacy because my unit of analysis was not the juveniles who were at the job training centers. Rather, my unit of analysis was city level variables, such as juvenile group crime rates and capacities of job training centers. Thus, I will make my conclusions by "recognizing and noting the risk of an ecological fallacy" (Babbie, 2001, p. 100).

5.3.2 Effect on juvenile decisions to live on the streets

Merton (1938) claimed that some juveniles reject both goals and means because they see "no real opportunity of achieving success" (Vold et al., 2002, p. 139). Thus, they become "dropouts, outcasts, vagabonds, chronic drunkards, and drug addicts" (Merton, 1938, p. 677). Based on Merton's theory, I hypothesized that city characteristics (i.e., divorce, migration, unemployment, and poverty level) have an association with juveniles' decisions to live on the streets.

My results showed that only city level poverty and unemployment had a significant association with juveniles' decisions to live on the streets. Contrary to my hypothesis, unemployment had a negative association with the behavior of juveniles living on the streets. In other words, the number of juveniles decreased if unemployment rates increased. This result was interesting because I hypothesized that strain of the juveniles as well as their families would be increased by reduced legal opportunities caused by unemployment (Merton, 1938). On the other hand, consistent with the hypotheses of strain theories (Merton, 1938), poverty had a positive association. In other words, a higher number of juveniles lived on the streets in cities that had a high percentage of poor people. Importantly, we should clarify at this point why and how did poverty and unemployment affect the decisions of juveniles (Mears, 1998; Mastrofski, 2004). Unfortunately, my data did not allow me to clarify those processes through which variables were linked to juveniles' decisions to live on the streets. As Mears (1998) and (Mastrofski (2004) advised, researchers need comprehensive research designs to clarify this process.

On the other hand, I was expecting that the remaining city level variables, especially divorce, migration, juvenile suicide, and job training centers would have significant relationships with juveniles' decisions to live on the streets, because I hypothesized that these conditions were directly related to strain. I have two possible explanations for these insignificant results. First, only 1% of juveniles live on the streets. This low frequency might mask the effect of independent variables. Second, using variables from the neighborhood level or even street segments may be more appropriate for analyzing crime patterns as Weisburd et al. (2004) claimed. Focusing on the immediate environments of juveniles, their family structure, and personality may provide a more accurate assessment of these relationships.

5.3.3 Effect on juvenile group crime

Based on strain, social disorganization, differential association, and social control theories, I hypothesized that city characteristics (legal and illegal opportunities) would increase or decrease juvenile group crimes. For example, I hypothesized that high divorce rates would increase the negative peer effect and decrease parental control and legal opportunities (Shaw & McKay, 2003); thus, juvenile group crimes would be high in those cities.

Results of my analyses found that juveniles committed a high level of group crimes in those cities where the level of divorce and classroom capacities were high. This result regarding city level divorce was consistent with the results of the above mentioned theories which hypothesized that divorce increases negative peer effect and strain and

decreases parental supervision (Wadsworth, 1979; Wells & Rankin, 1991). Availability of classrooms also increased juvenile group crime since juveniles had more contact with other juveniles and learned crime from them (Akers, 2003). Thus, even though this variable was an indicator of legal opportunities in cities, it increased the negative effect of peers as expected.

On the other hand, juveniles committed less group crimes in those cities where the capacities of job training centers (another indicator of legal opportunities) were high. So, why did schools associate with high group crimes while job training centers associated with less group crimes even though both were indicators of legal opportunities? I can explain this difference by claiming that the goals and motivations of juveniles at schools and at job training centers were different. Juveniles at job training centers most probably looked for a legal job.[7] Moreover, not only juveniles but also adults attend these job training centers. Thus, I claim that the presence of these training centers in a city reduced the motivations of both juveniles and their families to seek illegal opportunities; therefore, juveniles were less likely to be affected by other juveniles and their environment. This result is very important in reducing a negative peer effect. In other words, we can reduce juvenile group crime and also total juvenile crime level if we can manage to send more juveniles to these job training centers.

My results also showed that city level juvenile suicide rates had a negative association with juvenile group crimes. This result shows that socialization of juveniles is very important in reducing juvenile suicide. Moreover, even being a member of a

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[7] I did not compare juveniles who were at these training centers with juveniles who were not. Thus, there is a "risk of ecological fallacy" (Babbie, 2001, p. 100).

criminal gang may reduce juvenile suicide since those juveniles will feel that they are members of a group (Cloward & Ohlin, 2003; Cohen, 1955). In fact, this explanation is consistent with the explanation of strain theorists. I deduced from their conclusions that frustrated juveniles compose groups and commit crimes in order to discharge their strain (Cloward & Ohlin, 2003; Cohen, 1955). Thus, juveniles will commit fewer suicides if they have friends or even if they belong to a criminal group. However, we need further well-designed quantitative and qualitative studies to explain the process and underlying reasons for the relationship between juvenile suicide and group crimes.

Contrary to my hypotheses, my analysis found that juvenile group crimes had significant negative associations with city level poverty and property crimes (cf., Table 4.16). Based on strain, social disorganization, and differential association theories, I was expecting that both poverty and property crimes would increase juvenile group crimes since they found that negative peer effect was high in poor places (Cloward & Ohlin, 2003; Cohen, 1955). However, I found opposite results. I have three possible explanations why juvenile group crimes decreased with increased poverty level of cities. First, Cohen (1955) claimed that juveniles compose groups to commit non-utilitarian crimes to gain status, for example. Cloward and Ohlin (2003) also claimed that juveniles commit crimes mainly in groups for both nonutilitarian and utilitarian purposes due to "lack of legal opportunities." However, I found that juveniles in Turkey committed crimes alone if the poverty level increased. Thus, unlike Cohen, I claim that poor Turkish juveniles commit crimes primarily for utilitarian purposes, and unlike Cloward and Ohlin, my results indicate that Turkish juveniles prefer committing utilitarian crimes alone if they face the strain of poverty.

Second, rate of city level poverty, my independent variable, was calculated by using the number of people who take health aid from the government. Thus, this variable might reduce delinquency contrary to my assumptions.

Finally, since I used city level poverty data rather than neighborhood level data, this result does not represent the actual effect of poverty and is thus misleading.

Similarly, I was also surprised by the negative association between juvenile group crime and city level property crimes, because my previous analysis found that most of the juveniles (62%) committed property crimes in groups as was shown in Table 4.12. Cloward and Ohlin (2003) claimed that disadvantaged juveniles commit crimes primarily in groups for both utilitarian and nonutilitarian purposes. This result explains why 62% of my sample of juveniles committed property crimes in groups. However, if juveniles committed most of the property crimes in groups, why did juvenile group crimes decrease with increased city level property crimes? This was an unexpected result can be explained with further research.

5.3.4 Effect on crime types

I hypothesized that characteristics of cities and availability of legal and illegal opportunities at those cities would affect juvenile crime types (violent, property, drug, and sex crimes). For example, based on the results of social learning theories (Akers, 2003), I claimed that juvenile violent crimes would be high in those cities with high levels of violent crime. Similarly, I assumed that juvenile property crimes would increase with increased city level poverty based on strain theories (Cohen, 1955).

140

Unfortunately, my results did not fully support those hypotheses, because I found that only city level unemployment, divorce, and poverty had a significant association with juvenile violent crimes and city level juvenile suicide rates, and property crimes had a significant relationship with juvenile drug crimes. Thus, I conclude that most of the city level variables did not have an association with crime types. Moreover, my analyses showed that none of the city level variables had an association with property and sex crimes.

My results showed that city level unemployment rates had a positive association with juvenile violent crimes. For Turkey, this result was logical because unemployed people usually go to cafés (kahvehane) and spend time with others. I claim that this emptiness is one main cause of violent crimes in Turkey.

I also found that city level divorce and poverty had a negative association with juvenile violent crimes opposite to my hypothesis and results of empirical studies. For example, Blau and Blau (1982) examined the effect of "inequality in socioeconomic conditions in "125 largest American metropolitan areas" and found that "economic inequality generally increases rates of criminal violence" (p. 114). I also hypothesized that city level poverty would increase juvenile violent crimes similar to unemployment. If there was no association between poverty and violent crime, I could explain this with Rosenfeld and Messner's (2003) hypothesis by claiming that strong families reduce the negative effect of poverty in Turkey. However, how can I interpret this significant negative association? Once again, city level poverty, the independent variable, was also an indicator of welfare spending by the Turkish government. Savolainen (2000) found that "effect of economic inequality on the level of lethal violence" was reduced with

"high-level of welfare spending" (pp. 1021, 1036). Thus, I claim that welfare spending at those cities had a negative association with juvenile violent crimes. Unfortunately, my dataset did not allow for further detailed analyses regarding the process and underlying reasons for this unexpected result.

Similar to violent crimes, only two out of nine city level variables had a significant association with juvenile drug crimes. First, city level juvenile suicide rates had a positive association with juvenile drug crimes. This result was consistent with strain theories because strain increases alienation of juveniles and they may become "dropouts, outcasts, vagabonds, chronic drunkards, and drug addicts" (Merton, 1938, p. 677). Juvenile drug crimes also had a positive association with city level property crimes. As is obvious, I speculate that criminals might commit property crimes to buy illegal drugs. However, this conclusion includes a high risk of ecological fallacy thus requiring individual level data.

5.3.5 Effect on type of illegal substances

I examined whether city characteristics had an effect on types of illegal drugs used by juveniles (sniffing glue, alcohol, pills, marijuana, two or more than two types of drugs). For example, I hypothesized that juveniles will usually use alcohol in those cities where the divorce level was high because parental supervision would be low, association with other peers at disorganized neighborhoods would be high based on the assumptions of strain, social control, and social disorganization theories (Gottfredson & Hirschi, 2003;

Merton, 1938; Shaw & McKay, 2003). Unfortunately, I found that none of the city level variables had an association with juvenile use of alcohol, pills, and marijuana.

My results showed that sniffing glue by juveniles had a negative association with city level unemployment which indicates that juveniles' use of glue was lower in those cities where the unemployment rate was high. This result was inconsistent with my hypothesis which assumed that unemployment would reduce income and legal opportunities and increase strain (Merton, 1938). Thus, juveniles from those families would prefer using glue since acquiring it is very easy and inexpensive in Turkey.

On the other hand, juvenile sniffing of glue did not have a significant association with other city level independent variables contrary to my hypotheses. For example, I hypothesized that juvenile sniffing of glue would have a significant positive relationship with juvenile suicide rates, divorce, poverty, and migration rates and a significant negative association with school capacities and job training centers. However, none of the IVs had a statistically significant association with juvenile sniffing of glue.

My analysis also found that juvenile use of several drugs at the time of arrest had a positive association with city level poverty but a negative association with unemployment. Association with city level poverty was very strong (odds ratio = 2.41) even though the percentage of juveniles who used several drugs was only 0.2% (194 out of 84,639 juveniles). I tried to explain this strong association by hypothesizing that most of those 194 juveniles lived on the streets since my analyses found that poverty had a significant association with living on the streets (cf., Table 4.15). Thus, I hypothesized an indirect effect of poverty on juveniles' decisions to use more than two types of drugs at the same time: poverty led juveniles to live on the streets, and living on the streets and

association with other street kids caused using several drugs since more than half of those street kids used drugs. However, I found that only 13 out of 194 juveniles lived on the streets. Unfortunately, my data did not allow me to analyze the nature of this association.

As a result, my analyses showed that this model (using city level IVs) was not appropriate to explain why juveniles use certain types of drugs. This could possibly be for three reasons. First, I might not have included the correct city level variables. Second, using city level variables to explain why juveniles use certain drugs might not be appropriate by any means. Using neighborhood level or even a smaller unit of analyses such as street level data (Weisburd et al., 2004) might have had more explanatory power. Finally, these insignificant results could have been due to the low number of juveniles who used drugs. For example, only 2.1% of my sample used glue, 0.2% used several drugs, and 1.1% used marijuana (cf., Table 4.13).

5.4 Evaluation of explanatory powers of city level IVs

I used city level independent variables to explain the causes of delinquency and to develop appropriate policy recommendations to prevent the problem. The proceeding discussions mention their effect on delinquency. In this part, I will separately evaluate the appropriateness of using these variables. Table 5.1 summarizes the effect of each city level variable on delinquency types.

As shown in Table 5.1, many of the city level variables did not have a significant association with delinquency types which might have been due to the "limited utility" of city level variables in explaining delinquency. On the other hand, my analyses might not

have detected the actual relationships due to the small sample size. For example, only 1.4% of my samples arrested for committing sex crimes and 2.1% of these juveniles were arrested for sniffing glue.

5.4.1 Migration

I included the migration level of cities in my models because I hypothesized that it would explain the variations in delinquency rates of cities since strain, social disorganization, social control, social learning, and differential association theories claimed that migration affects delinquency rates. For example, it was claimed that migration increases "rapid population growth, heterogeneity, and transiency" and reduces "informal control" (Cullen & Agnew, 2003, pp. 96-97) and increases "delinquent subculture" in these neighborhoods (Cohen, 1955, pp. 11, 13) through association with other delinquents (Akers, 2003; Sutherland & Cressey, 2003). Contrary to my hypotheses, however, the migration level of cities did not have any association with delinquency. I have four possible explanations for this unexpected result. During my analyses, I did not separate the cities that took more migrants than they gave from the cities that gave more migrants. If I had separated these two different groups of cities and only included the cities that took more migrants than they gave, I might have found an association between migration and delinquency. Second, migrants usually concentrate in certain locations of Turkish cities. Since I used city level data rather than neighborhood level data, my data might have masked the actual effect of migration. Third, my results may possibly reflect the reality that there might not be any relationship between

migration and delinquency since people migrate for jobs. Finally, as mentioned above, migrants from a city usually concentrate in certain locations within a city. This concentration might cause "homogenous communities" where "informal control" is high (Shaw & McKay, 2003). However, I used the migration variable in my analyses as if it was equal to "residential instability" which reduces informal control. In Turkey, this might be a misclassification of migration. Moreover, Hansmann and Quigley (1982) claimed that treating heterogeneity as "a unitary phenomenon" is an "implicit assumption" since it has four dimensions: income, language, ethnicity, and religion" (pp. 209, 211). For example, the researchers found that "homicide rates are *negatively* related to linguistic heterogeneity" (p. 217) because language and religion make those subgroups more closed and have fewer interactions with other groups. In other words, there are "homogeneous subgroups" within "heterogeneous societies" (Hansmann & Quigley, 1982). Based on their perspective, we can add a fifth dimension to the characteristics of Turkish migrants: coming from a city with similar cultures and concentrating on certain neighborhoods that cause homogeneity and informal control.[8] Thus, contrary to the hypothesis of social disorganization theorists Shaw and McKay (2003) and unlike the results of Sampson et al. (1997) who found that "immigrant concentration was significantly negatively associated with collective efficacy" (p. 921) in 343 Chicago neighborhoods, my results raised the possibility that the nature of migration in Turkey might have increased collective efficacy and reduced delinquency. This point needs clarification through further studies that examine the level of "collective efficacy" and

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[8]I thought of this idea and made this claim but I did not have the opportunity to support this idea with the literature and studies conducted in Turkey. It is highly likely that many Turkish researchers found the same results and wrote them in their papers. This is a limitation of my study; therefore, further studies should cover both Turkish and international literature.

"social cohesion among neighbors" at these Turkish communities (Sampson et al., 1977, p. 918).

5.4.2 Poverty - Unemployment

Based on the results of strain and social disorganization theories, I hypothesized that economic inequality caused by poverty and unemployment would affect juvenile delinquency since those theories found that these community level situations are "associated with higher rates of crime in the lower social classes" (Vold et al., 2002, pp. 135-138). Similarly, Savolainen (2000) found that economic inequality had an effect on homicide rates. However, my results showed that city level unemployment had a positive association only with juvenile violent crimes and sniffing glue, and city level poverty had a positive association only with juvenile use of several drugs.

Moreover, unlike my hypotheses, poverty had a negative association with juvenile violent and group crimes, and unemployment had a negative association with living on the streets and using several drugs simultaneously. There are three possible reasons for these results. First, I used city level independent variables rather than neighborhood level variables. City level data might mask the real effect of unemployment and poverty. For example, Patterson (1996) analyzed whether poverty or "economic conditions" had any relationship with crime rates "in 57 small residential areas" (p. 142) by interviewing "11,419 randomly selected households" (p. 145) and found that poverty was "associated with burglary rates in the expected direction," and significant relations with violent crimes (p. 145). Thus, if I had used neighborhood level data, I might have found the

Table 5.1: Limited utility of city level independent variables to explain delinquency types

City level IVs	Juvenile level dependent variables									
	living on the street	group crime	violent crime	property crime	sex crime	drug related crimes	sniffing glue	several drugs	two-type drugs	alcohol & marijuana
Divorce	(+)		(-)							
Juvenile Suicide		(-)				(+)				
Migration										
Unemployment	(-)		(-)				(+)	(-)		
Classroom		(+)								
Job training centers		(-)							(+)	
Violent crimes										
Property crimes	(-)	(-)								
Poverty	(-)	(-)	(-)			(+)		(+)		

Notes: (+) shows positive significant association and (-) shows negative significant association

effect of unemployment and poverty on delinquency types. Second, Rosenfeld and

Messner (2003) claimed that not poverty but a weak focus on "non-economic

institutions" (i.e. family, church) causes criminal activities. Based on their hypotheses, I

might explain the weak association between poverty and unemployment and types of

delinquency with strong "non-economic institutions" in Turkey (Rosenfeld & Messner,

2003). In other words, strong families and/or culture might mediate the "criminogenic

effect" of "economic inequalities" in Turkey (Merton, 1938).[9] Finally, I calculated the

rate of city level poverty by using the number of people who took health aid (Yesil Kart)

from the government. Using their numbers to calculate the rates of indigent people was

appropriate since only these people can take that aid. However, that number was not the

only indicator of the rate of indigent people but was also the indicator of welfare aid

levels conducted by the government. Researchers found that "higher levels of welfare

assistance" (Hannon & Defronzo, 1998, p. 389) and "high-level of welfare spending"

(Savolainen, 2000, p. 1036) reduced the negative effects of inequalities and were

associated with reduced crime rates. Contrary to my assumptions, the city level poverty

variable might reduce delinquency.

5.4.3 Divorce

I was expecting that city level divorce rates would have a strong association with

delinquency since several empirical studies found a significant association between

divorce rates. For example, Chamblin and Cochran (1995) found that the "ratio of

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[9]Further comprehensive information can be found in studies that have been conducted to examine Turkey's family structure. I did not have a chance to examine that literature.

divorces" is "positively related to the property crime rates" (p. 420). Hawkins et al. (1992) also found that "low bonding to family" increased the chance of "initiation of drug use" whereas strong "involvement and attachment" to family "discourages youth's initiation into drug use" (p. 83). Moreover, my analyses also found that family status had an effect on the level of juvenile illegal substance use (cf., Table 4.10). For example, by analyzing individual level data, I found that juveniles who lived with both parents had a lower level of drug use than juveniles who lived with a step parent or a single parent. However, when I used city level divorce rates as my independent variable, I did not find a significant association with any types of delinquency other than group crimes and violent crimes. Even city level divorce rates did not have a significant association with illegal drug use. Therefore, I concluded that using city level divorce rates was not appropriate to explain variations in most types of delinquency. Using individual level divorce rates might be more useful.

5.4.4 Violent environment: property and violent crime rates

Based on the results of social disorganization, social learning, differential association theories, and the integrated theory of Elliot et al., I hypothesized that city level property and violent crime rates could explain variations in types of delinquency (Agnew, 2003; Cullen & Agnew, 2003; Elliot et al., 1985; Shaw & McKay, 2003; Sutherland and Cressey, 2003). I found that city level property crime rate had a significant positive association with juvenile drug related crimes and a negative association with living on the streets and group crimes. Interestingly, city level property

150

crime rates did not have a significant association with juvenile property crime rates. Contrary to my hypotheses, city level violent crime rates did not have a significant association with any types of delinquency including juvenile violent crimes.

5.4.5 Legal opportunities: capacities of schools and job training centers

Merton (1938) claimed that a lack of legal opportunities increases criminal behaviors. Thus, I examined whether classroom capacities and job training centers had an association with types of delinquency. I hypothesized that availability of classrooms would reduce strain and thus would have a negative association with most types of delinquency. Unfortunately, city level capacities of schools and job training centers were not strong predictors of types of delinquency except for juvenile group crimes. As expected, classroom capacities had a positive significant association and capacities of job training centers had a negative significant association with juvenile group crime. On the other hand, city level capacities of job training centers had a positive association with using two types of drugs simultaneously which was contrary to my assumptions.

5.4.6 Juvenile suicide

Based on the results of strain theorists such as Merton (1938), I hypothesized that city level juvenile suicide rates would have an association with certain types of delinquency, namely drug use. My results supported this hypothesis since I found that city level juvenile suicide rates had a significant negative association with juvenile group crimes and a significant positive association with juvenile drug related crimes. However,

even though city level juvenile suicide rates had a significant association with juvenile

drug related crimes, it did not have a significant association with any specific illegal drug.

5.5 Explanatory powers of crime theories in a different culture

My study used the hypotheses of strain, social disorganization, and integrated

theory of Elliot et al. to analyze the patterns of delinquency in Turkey that were

consistent with some of their hypotheses. On the other hand, however, my results showed

that these theories were not able to explain certain patterns of delinquency in Turkey

since some of my findings were opposite to their assumptions.

Strain theories hypothesized that being exposed to strain, anger, and loss of hope

caused by the enormous focus on monetary goals, economic and social inequalities, loss

of a valued stimulus (e.g., a parent), and weak noneconomic institutions increase the

change of delinquency (Merton, 1938; Cohen, 1958; Cloward & Ohlin, 2003; Agnew,

2003). Moreover, strain theorists claimed that juveniles who decide to commit crime in

order to relief their strain typically compose groups and commit their crimes in groups

either for utilitarian or nonutilitarian purposes (Cloward & Ohlin, 2003). Most of these

hypotheses supported my results. For example, I found that juveniles who were living

with a step parent or with a single parent used illegal substances more than juveniles who

lived with both parents. On the other hand, my results supported the hypotheses of

Rosenfeld and Messner (2003) who claimed that families and other "noneconomic

institutions are relatively devalued" and cannot carry out their most important "functions

effectively" (p. 206). I found that 86.7% of the juveniles who were suspected a crime

were living with both parents. Based on Hirschi's (2003) hypothesis, my results revealed possible problems with the parenting quality of Turkish families.

My results showed that most of the juveniles who were suspected a crime committed their crimes in groups. However, unlike the assumptions of strain theorists (Cohen, 1958), I found that 44.3% of these suspected juveniles committed their crimes alone. This high percentage of committing crimes alone could either be due to cultural reasons or to the deficiencies of official data recording procedures.

Opposite to the hypotheses of strain theorists, poverty did not have a significant association with delinquency in Turkey. Moreover, I found that poverty had a negative association with juvenile group and violent crimes. This unexpected but important result could be due to cultural reasons. For example, in the Turkish culture, being patient and submissive to fate is highly valued. Therefore, this characteristic might mediate the strain of poverty and inequality in the Turkish culture.

Social disorganization theorists hypothesized that features of communities, namely "concentrated disadvantage, immigration concentration, family disruption, and prevalence of crime and delinquency in these criminogenic environments" decrease collective efficacy and increase delinquency (Shaw and McKay, 2003). Moreover, Sampson and Groves (1989) claimed that "social-disorganization theory has vitality and renewed relevance for explaining macro-level variations in . . . crime and delinquency rates in a culture other than the United States" (p. 799).

Contrary to their hypotheses, I found that city migration, poverty,[10] divorce,

juvenile suicide, and crime rates (violent and property) did not have any positive

association with juvenile violent, property, sex and drug related crimes; however, poverty

and juvenile suicide rates had a positive association only with juvenile drug related

crimes. On the other hand, my results showed that city level unemployment had a

positive association with juvenile violent crimes.

Finally, in their integrated theory, Elliot et al. (1985) hypothesized that delinquent

peers have the most powerful and direct effect on delinquency. Moreover, Elliot et al.

found that "strong conventional bonds decrease the likelihood that one will become

involved with delinquent peers" (p. 145). My results supported this hypothesis since I

found that more than half of the juveniles who lived with friends and on the streets used

more illegal substances than juveniles who lived with their parents or relatives. However,

unlike the assumptions of Elliot et al., my results showed that 86.7% of suspected

juveniles were living with both of their parents and more than half of these juveniles

committed their crimes in groups of other peers. This unexpected result could either be

caused by weak bonds between these juveniles and their parents or for cultural reasons.

The aforementioned discussions have shown that strain, social disorganization,

and the integrated theory of Elliot et al. were able to explain only a small portion of the

delinquency variances in Turkey. This unexpected result can be explained by two

reasons. First, since city level data were used, I might not have been able to detect the

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[10]An explanation of possible reasons why poverty did not have the expected significant associations was mentioned above.

relationships, because I generally found support for the hypotheses of these theories when individual level data were used.

Second, my findings might not support the hypotheses of the above mentioned theories due to cultural reasons. For example, my results showed that almost half of the suspected Turkish juveniles were alone while committing their crimes unlike American delinquents. Moreover, my results showed that migration and poverty did not have any significant positive association with delinquency in Turkey while the effect of these two variables on delinquency is almost robust in the American culture. Thus, further studies need to clarify the effect that culture plays on delinquency in order to test the "validity and generalizability" of crime theories since they typically used data from the American population (Nowak, 1989).

Conducting comparative studies in different cultures is vital. According to Karstedt (2001), "crime and social control are social and cultural phenomena, and therefore, comparing cultures and comparing crime will offer new insights, fresh theories, and chances of innovative perspectives" (p. 285). Furthermore, comparative studies of crime and criminal justice systems have both practical and theoretical implications for policymakers and criminologists. For example, Bennett (2004) claimed that these implications "expand our intellectual horizons and deepen our understanding of how systems of crime and justice operate" (p. 8). While explaining the benefits of comparative research, Kohn (1987) also focused on the major results of differences and similarities in research. Kohn argued that these findings direct researchers to new understandings and warn us about the accuracy of the generalization of non-comparative study results.

5.6 Policy Implications

My analyses showed that using city level variables was effective in explaining some juvenile criminal behaviors and patterns. Although my data had limitations, analyses revealed four important results relevant to policies. First, there was a significant relationship between juvenile suicide rates, drug use, and loneliness. In other words, juveniles who do not have friends may be more likely to commit suicide. Therefore, families or shelter officials should closely monitor these at-risk juveniles and develop socialization programs for those who have no friends, even criminal acquaintances.

Second, I found that divorce and schools had a significant positive effect on juvenile group crimes (i.e., peer effect) while job training centers had a negative effect. Third, I found that violent crime among juveniles was greater in cities where the unemployment rate was high. These two results showed that providing job opportunities may reduce violent crimes and negative peer effects (group crimes). Thus, I recommend that government officials should increase the number of job training centers and job opportunities in an effort to reduce delinquency.

Finally, I indirectly found that the level of welfare spending of government (IV poverty) had a significant negative association with juvenile violent and group crimes. Thus, to reduce these types of crimes and negative effect of inequalities, policymakers should increase the government's help to disadvantage people via increasing "level of welfare spending" (Savolainen, 2000; p. 1036).

Chapter 6: Implications and Conclusion

6.1 Implications for future studies

My results revealed that approximately two-thirds of the juveniles who used illegal drugs lived with both biological parents. Drug use among juveniles who lived with a single or step parent can be explained by the strain that they face due to losing one parent, lack of supervision, or economic difficulties (Agnew, 2003; Merton, 1938; Shaw & McKay, 2003). Unfortunately, my data did not allow me to analyze the underlying reasons why Turkish juveniles who lived with both of their parents used illegal drugs. In addition, most of the juveniles who had contact with the Turkish police for other delinquent behaviors were also from intact families. Thus, future researchers should target these juveniles who live with both parents in an effort to clarify the underlying reasons for delinquency.

I found that the prevalence of illegal drug use was lower among juveniles who lived at a dormitory or shelter than juveniles who lived on the streets or with friends. Thus, future research should focus on evaluating the effect of juveniles who reside at dormitories or shelters. Likewise, if these shelters provide programs directed toward prevention of drug use, for example, future research should be designed to evaluate these programs according to education, capacity, and worker motivation.

My results showed that using city level variables can explain some of the individual behavioral levels of juveniles. However, I was unable to find any significant associations among most of the city level independent variables and delinquent behaviors while other researchers found negative or positive associations by using neighborhood level independent variables (Patterson, 1996; Sampson et al., 1997). Moreover, using city level variables has been criticized by scholars. For example, Weisburd et al. (2004) criticized using even precinct level data and suggested that researchers should focus on "street segments." Thus, the question becomes, why then did I use city level variables? In reply, I used them for two reasons. First, determining the city level variables was relatively easier than obtaining neighborhood level data in Turkey because not only police agencies, but even the Turkish Statistical Institute prepares city level data. Second, since Turkish policymakers generally rely on city level data to prepare their crime reduction and prevention policies, I wanted to test the explanatory powers of city level variables. My results showed that using city level variables were able to explain only some variability in delinquent behaviors.

Additionally, using city level independent variables raised an ecological fallacy problem that leads to a misinterpretation of statistically significant associations (Babbie, 2001). Thus, I recommend that future researchers as well as future policies should be based on neighborhood and individual level data rather than city level aggregated data.

On the other hand, the aforementioned weak explanatory power of city level independent variables might be caused by cultural reasons rather than weaknesses of city level aggregate data. Stated differently, hypotheses of strain and social disorganization theories might not be appropriate to explain delinquency in Turkey due to cultural

158

differences. For example, based on Merton (1938) and Messner and Rosenfeld's (1997) hypotheses, I claimed that poverty would have a significant association with delinquency since Turkish people place priority on monetary success while they give inadequate importance to noneconomic institutions similar to the American people. However, I did not find the hypothesized effect of poverty. This might have been due to the presence of Turkey's strong noneconomic institutions. Thus, further researchers should analyze the effect of Turkey's current culture on juvenile crime and attempt to clarify the reasons why poverty did not have a significant association with delinquency.

My results showed that using both city and individual level data that were officially collected has limitations in understanding and explaining the nature of the relationships in some cases. Although we might possibly find the association by using such data, we need more detailed and carefully collected quantitative and qualitative data in order to explain the nature and process of the association and to determine how and why independent variables had an effect on delinquency (Elliot et al., 1985; Mastrofski, 2004; Mears, 1998; Volt et al., 2002;). Similar to NIBRS developed in the United States (Mosher et al., 2002), Turkish officials and researchers should gather data that have a strong explanatory power in order to determine crime causation and develop useful policies to reduce juvenile crime.

Two of my independent variables, migration and poverty, raised the problem of construct validity because I did not measure the *construct itself* that I theoretically "intended to measure" (Bayens & Roberson, 2000, pp. 103, 105). For example, migration was used to describe heterogeneity and the low level of informal control by Shaw and McKay (2003), and I included this variable into my analyses with this

meaning. However, migration might have increased homogeneity and informal control in certain places of Turkey for cultural reasons. Thus, researchers should carefully criticize and evaluate their variables and alternative meanings under different cultures before including them into their models. Otherwise, inaccurate conclusions may result.

5.2 Conclusion

This study was designed to understand the patterns of juvenile delinquency in Turkey and to develop appropriate and practical policy recommendations. To achieve these goals, I borrowed variables from related theories rather than relying on one theory and testing its hypotheses. My results showed the appropriateness of this approach, because I found that variances in delinquency cannot be adequately explained if variables are limited to one theory. As my results revealed, juvenile delinquency is caused by several variables; therefore, we should integrate as many as possible in our research.

The second conclusion that I want to draw from my results is that policymakers and researchers should not accept the results of crime theories and empirical studies conducted in different cultures without questioning their appropriateness to their national culture. More especially, researchers should be very careful on construct validity risks while borrowing variables from studies performed in different cultures (i.e., the migration example presented above). Doing so may reduce the reliability of such variables. Furthermore, using these variables without considering the possibility that one variable may have a different nature in different cultures may cause faulty results and fallacious policy recommendations.

Third, policymakers should understand and know in detail the patterns and nature of delinquency if they want to reduce delinquency through tailor-made policies. Therefore, Turkish policymakers should change their current attitudes while developing crime prevention policies and follow the results of empirical studies. For example, unlike the general acceptance of the public and policymakers, my results revealed that most juvenile delinquents (86.7%) live with their biological parents. Although I found that living with both parents had mediating effects on delinquency, ignoring this future of delinquency in Turkey and focusing only on street kids or children who live with a single parent will damage the policies that aim to reduce delinquency.

Finally, a full understanding of juvenile delinquency patterns requires reliable and appropriate data. To increase the reliability of data, the Turkish Statistical Institute (TUIK) and Turkish law enforcement should improve the quality of data collection by developing guidelines, educating line officers who record data, and randomly controlling the accuracy of data entries. To increase the appropriateness of crime data, officials should collect both quantitative and qualitative data. Moreover, rather than collecting city level aggregated data, neighborhood level data should be collected. Most important, TUIK and other agencies should disseminate these data to researchers without hesitation.

Appendix A: Correlation Matrix

Table: A.1: Correlation Matrix of City Level Independent Variables (IVs)

City Level IVs	Divorce	Total Suicide	Juvenile Suicide	Migration	Household Size	Unemployment	Classroom	Job Training	Violent Crime	Property Crime	Poverty
Divorce	1.0000										
Total Suicide	0.3151	1.0000									
Juvenile Suicide	0.1117	0.9459	1.0000								
Migration	0.4760	-0.0213	-0.1718	1.0000							
Household	-0.8704	-0.2589	-0.0454	-0.5292	1.0000						
Unemployment	-0.1206	-0.0886	-0.1165	0.3979	0.2523	1.0000					
Classroom	-0.1734	0.0479	0.1248	-0.6696	0.1398	-0.6581	1.0000				
Job Training	0.6612	0.1991	0.0723	0.0395	-0.7098	-0.2379	0.1462	1.0000			
Violent Crime	0.1525	0.2204	0.2576	-0.4086	-0.1578	-0.6480	0.5302	0.2156	1.0000		
Property Crime	0.6114	0.1580	-0.0126	0.3597	-0.5684	0.1186	-0.2982	0.4182	0.3604	1.0000	
Poverty	-0.8158	-0.1853	0.0048	-0.5915	0.9471	0.2327	0.2600	-0.6342	-0.0963	-0.4970	1.0000

Observations = 84639

162

Table A.2: Testing multicollinearity among independent variables

City level IVs	VIF	SQRT VIF	Tolerance	R-Squared
Divorce	5.04	2.24	0.1985	0.8015
Juvenile Suicide	1.60	1.27	0.6241	0.3759
Migration	2.90	1.70	0.3452	0.6548
Household size	15.45	3.93	0.0647	0.9353
Unemployment	5.84	2.42	0.1712	0.8288
Classroom	3.48	1.86	0.2876	0.7124
Job training centers	4.36	2.09	0.2294	0.7706
Violent crimes	4.48	2.12	0.2231	0.7769
Property crimes	3.57	1.89	0.2798	0.7202
Poverty	10.90	3.30	0.0917	0.9083
Mean VIF	5.76			

Table A.3: Solved multicollinearity problem among independent variables

City level IVs	VIF	SQRT VIF	Tolerance	R-Squared
Divorce	4.58	2.14	0.2181	0.7819
Juvenile Suicide	1.37	1.17	0.7310	0.2690
Migration	2.67	1.63	0.3745	0.6255
Unemployment	4.74	2.18	0.2112	0.7888
Classroom	3.44	1.86	0.2905	0.7095
Job training centers	3.97	1.99	0.2516	0.7484
Violent crimes	3.81	1.95	0.2626	0.7374
Property crimes	3.11	1.76	0.3210	0.6790
Poverty	7.30	2.70	0.1370	0.8630
Mean VIF	3.89			

Appendix B: Association between Characteristics of Cities and Substance Types

Table B.1: Association of characteristics of cities with using pills

City level IVs	Semi-Standardized Regression Coefficient	Std. Error	P>|z|	Odds ratio	95% Confidence Interval	
Divorce	0.185	0.210	0.379	1.20	0.797	1.816
Juvenile Suicide	0.084	0.157	0.592	1.09	0.800	1.480
Migration	0.024	0.193	0.900	1.02	0.701	1.496
Unemployment	0.101	0.258	0.696	1.11	0.668	1.832
Classroom	0.291	0.207	0.159	1.34	0.892	2.006
Job training	-0.111	0.241	0.647	0.90	0.558	1.437
Violent crimes	-0.288	0.241	0.233	0.75	0.467	1.203
Property crimes	0.314	0.223	0.160	1.37	0.883	2.121
Poverty	0.179	0.348	0.607	1.20	0.605	2.365
(Constant)	-5.168	0.159	0.000			

Note: N = 84,639; Wald x^2 = 11.10, df = 9, p = 0.2687, rho = .09
Including control variables (age, gender, living with both parents, and living with a step parent) did not change significance level of associations.

Table B.2: Association of characteristics of cities with juvenile alcohol use

City level IVs	Semi-Standardized Regression Coefficient	Std. Error	P value	Odds ratio	95% Confidence Interval	
Divorce	0.25	0.180	0.174	1.28	0.90	1.82
Juvenile Suicide	-0.03	0.091	0.729	0.97	0.81	1.16
Migration	-0.05	0.131	0.687	0.95	0.73	1.23
Unemployment	-0.07	0.175	0.675	0.93	0.66	1.31
Classroom	0.12	0.150	0.439	1.12	0.84	1.51
Job training centers	-0.19	0.164	0.244	0.83	0.60	1.14
Violent crimes	0.22	0.149	0.140	1.25	0.93	1.67
Property crimes	-0.17	0.143	0.248	0.85	0.64	1.12
Poverty	0.01	0.218	0.979	1.01	0.66	1.54
(Constant)	-3.16	0.080	0.000			

Note: N = 84,639;   Wald x² = 24.17,   df = 9, p = 0.004, rho = .05
Including control variables (age, gender, living with both parents, and living with a step parent) did not change significance level of associations.

Table B.3: Association of characteristics of cities with juvenile marijuana use

City level IVs	Semi-Standardized Regression Coefficient	Std. Error	p value	Odds ratio	95% Confidence Interval	
Divorce	0.177	0.192	0.356	1.19	0.820	1.738
Juvenile Suicide	0.150	0.136	0.272	1.16	0.889	1.518
Migration	-0.068	0.180	0.704	0.93	0.656	1.329
Unemployment	0.156	0.233	0.503	1.17	0.740	1.846
Classroom	-0.164	0.199	0.412	0.85	0.575	1.255
Job training centers	-0.074	0.228	0.744	0.93	0.594	1.451
Violent crimes	0.021	0.218	0.923	1.02	0.667	1.565
Property crimes	0.136	0.208	0.514	1.15	0.762	1.723
Poverty	0.216	0.327	0.510	1.24	0.653	2.356
(Constant)	-4.750	0.118	0.000			

Note: N = 84,639;   Wald x² = 12.83,   df = 9, p = 0.17, rho = .08
Including control variables (age, gender, living with both parents, and living with a step parent) did not change significance level of associations.

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Curriculum Vitae

Ahmet Eker was born in Akdam, Adana/Turkey on August 28, 1973. He received his Bachelor of Science degree from the Turkish Police Academy in 1995 and served seven years as a police manager with the Turkish National Police. He worked almost two years for the United Nations in Bosnia and Herzegovina in the process of developing Bosnian law enforcement. He received his Master of Art degree from the University of Maryland at College Park in 2005. His research interests include delinquency, crime prevention policies, innovations in policing, police management and discretion control, and program evaluations. Upon completing his Doctoral degree from George Mason University, he will continue to serve with the Turkish National Police.