Poverty, Inequality & Terrorism Relationship in Turkey

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Poverty, Inequality & Terrorism Relationship in Turkey.

A Dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University

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Abstract

POVERTY, INEQUALITY & TERRORISM RELATIONSHIP IN TURKEY.

Mutlu Koseli Ph. D.

A Dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University

Virginia Commonwealth University, 2006

Dissertation Chair: Blue Wooldridge, Associate Professor
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Using empirical evidence criminological studies have identified a relationship between poverty and crime and many studies have concluded that a high crime rate is associated with a higher poverty rate. Other studies indicate that inequalities are a better determinant of crime than absolute poverty. Social disorganization theory, anomie strain theory and Marxist theory have been used to explain the phenomenon. Guided by the aforementioned theories and previous literature on crime, this study looks at the terrorism issue and explores whether a relationship exists between poverty, inequality and terrorist incidents. The main hypothesis of this study indicates that higher poverty and higher inequalities are related to higher number of terrorist incidents.

This study examines Turkey’s terrorism problem in depth and identifies some factors that are related to the formation of terrorism. It is believed that this may assist
help policy makers to develop new policies that can eliminate fertile ground where terrorism easily finds support.

The researcher uses secondary data analysis; data for number of terrorist incidents are derived from the Turkish National Police’s database, and other demographic and economic variable data are derived from Turkish Statistical Institute, and Government Planning Office. A multiple regression analysis technique is used to identify the effect of independent variables on the dependent variable, number of terrorist incidents. The results of the statistical analysis show that there is a statistically significant relationship between the percentage of population living below the poverty line, unequal distribution of some government resources, such as unequal distribution of education services, and unequal distribution of public investment. Findings also show that higher populated provinces may experience greater terrorist incidents. Additionally, the percentage of young in the population is also found to be related to the number of terrorist incidents.
CHAPTER 1 - Introduction

This study answers the research question, “Are poverty level, income inequalities, unequal distribution of resources, education attainment, population, percentage of youth in the population and unemployment levels related to terrorist incidents in the provinces of Turkey?” This paper argues that poverty and inequalities are related to number of terrorist incidents in the country. Through the guidance of researches from the criminal justice field focused on poverty, inequality relationship to crime, this study builds a path to examine terrorism issues. This study combines social disorganization theory (Shaw & McKay, 1942), anomie theory (Merton, 1938) and Marxist theory of crime (Bonger, 1916) all of which have been used as a basis for explaining poverty, inequality and crimes relationship. This empirical study uses secondary data analysis. The data for the variables of socioeconomic indicators were gathered from the databases of Turkish Statistical Institute (Turkstat). The terrorism incidents data was gathered from databases of Turkish National Police. A Multiple regression analysis was utilized as a statistical method for this study in order to examine the relationship of poverty level, income inequalities, unequal distribution of sources, education attainment, and unemployment to the number of terrorist incidents.

Terrorism poses an increasingly dangerous and difficult threat to the world. Over the last three decades, terrorist organizations have become more dangerous with the availability of new and destructive weapons. Recent years have also witnessed a change in the identity of the terrorists and their motives (US Army, August, 2005). Prior to September 11, 2001 most terrorist acts had depended on predictable actions. Recently, terrorist incidents have shown
that a number of groups have been looking to achieve far worse effects through mass attacks (Jenkins, 2002). The technological infrastructure of modern society represents an extremely important and vulnerable target for weapons that are increasingly sophisticated and available. Modern industrial societies have vulnerabilities that terrorists or criminals can successfully exploit (Anderson, 2002, Slovic, 2002, Garrick, 2002). In many examples, a small number of determined, knowledgeable individuals can carry out attacks that could have far reaching costs (Velter & Perlstein, 1991). With the regrettable incident of September 11, 2001, USA and western countries were made aware of terrorism as they had never been before, while other parts of the world had been struggling with terrorism for a long time. Countries such as England, Spain, Italy, Mexico and Turkey had been coping with terrorist attacks for years (Coady & O’Keefe, 2003).

“One man’s terrorist is another man’s freedom fighter” (Velter & Perlstein, 1991; Lodge, 1982; Crenshaw, 2001). This statement clearly shows why terrorism does not have a common definition. This is one of the major problems in studying and developing policies to respond to terrorism. Many analyses of terrorism, along with the recommendation for dealing with it, emphasize its political, social, ideological, and economic aspects. Although important, these factors are usually given less emphasis than security factors in policy formation (Gold, 2004).

Differences in perception of who is a terrorist and who is not show that there are virtually no agreed upon definitions of terrorism either among scholars or those operationally involved in combating terrorist threats. This includes politicians, criminal investigators, diplomats, prosecutors, intelligence officers, public security officers, industrial security
experts, and journalists. Each has a different professional definition that may or may not be compatible with other valid viewpoints (Long, 1990). Another issue that makes it difficult to formulate a single definition to account for all terrorism is the many different motives that drive terrorist activity (Wardlaw, 1989). A universal definition of terrorism must go beyond behavioral descriptions to include individual motivation, social environment factors and political purpose.

Although there are numerous definitions of terrorism, the U.S. Department of State’s definition of terrorism seems to capture the core meaning of many of them; “The term terrorism means premeditated, politically motivated violence perpetrated against noncombatant targets by subnational groups or clandestine agents, usually intended to influence an audience.” (Awareness and Prevention, 2003). It is also explained that the term "noncombatant," is referred to in addition to civilians, military personnel (whether or not armed or on duty) who are not deployed in a war zone or a war-like setting.” (Awareness and Prevention, 2003). Turkish law accepts a similar definition but puts more emphasis on the aim by stating the any act of terrorism which is “aiming to change regime to anything else other than a republic, acting to destroy the government or trying to make government fail by using force, destroying people’s fundamental rights, creating anarchy inside the country, threat to public order, threat to public health, by using force” all are considered as acts of terrorism (Terorle mücadele kanunu, 1991). Enacted in 1991 Turkey has used the same anti-terrorism act since then.
Crime and Terrorism Similarities and Differences

Terrorism doesn’t have a single objective definition (Crenshaw, 2001; Lodge, 1982; Velter & Pelstein, 1991). In some cases people may have difficulties distinguishing what is a crime and what is terrorism. Complicating that, terrorism often involves many different kinds of crime such as kidnapping, murder, arson, conspiracy, and others as their operational tactics (Schmalleger, 2003). This makes the distinction between terrorism and crime often hard to comprehend. The similarities and difference between crime and terrorism will be discussed below in order to draw a clearer distinction between the two.

The main similarities between crime and terrorism include the type of activities, actions, and tactics used. In all of terrorist cases, terrorists achieve their goals through the use or threat of violence (Livingstone, 1982).

The differences between crime and terrorism can be found in their separate motivation and goals. Many agree that terrorism uses violence as a strategy to achieve certain goals. Violence can be used by those who oppose existing governments, or it can be used by people who want to maintain existing power. Terrorism is a means of insurrection that can be used by people of different political convictions to gain political goals (Wardlaw, 1989). Attaining a political goal is a significant and consistent concept used for defining terrorism. These political goals set terrorist acts apart from criminal acts (Crenshaw., 2001, Lodge, 1982; Wardlaw, 1989). Politically motivated terrorism involves a deeply held sense of grievance over some form of social or economic injustice. Modern terrorist organizations justify their actions not only with stated political aims but also by appeals to some higher universal truth and the demand for political transformation (Simonsen, & Spindlove, 2000).
To able to achieve this, the immediate objective of the terrorist group is to create terror. Conversely, they are not intent on causing destruction or harm to the targeted victim(s) (Moran, 2002). Terrorism is a tactic that insurgents or revolutionaries can employ as well as a strategy that can be employed by the state. This tactic is utilized in order to create unreasonable fears and political alienation such that these activities generate among the public enough pressure to intimidate governments into making political concessions in line with the terrorists' political goals. Obviously, in order to achieve these objectives, terrorist activities must be public (Lodge, 1982).

To be able to fight these groups or at least minimize their activities requires very detailed knowledge about how they were born, how they have grown and how they have become a threat to the world.

One of the important actions in fighting terrorism is the tracking of the factors that are related to formation of terrorism in order to determine the kinds of conditions that make it possible for terrorist to operate and find support for their groups. This is just one of many useful areas that academic studies can contribute by helping to develop new policies aimed at stopping terrorism.

It is stated by many people that terrorism and poverty is strongly associated. Nobel Peace Prize laureates, South Africa’s Desmond Tutu and South Korea’s Kim Dae Jong explain that poverty is a main reason for terrorism. Desmond Tutu states that “poverty and a sense of grievance and injustice can fill people with resentment and despair to the point of desperation” (Christian Science Monitor, 10 December 2001, p. 7).
Purpose of the Study

The purpose of this empirical study is to make a contribution towards a better understanding of some socioeconomic conditions that are related to terrorism specifically poverty, and inequality. Toward this end, Turkey has been examined.

People’s motivation to join terrorist groups can be classified into numerous groups (Borum, 2004), Crenshaw (2001) explains what motivates people to join a terrorist organization. She also explores what effect people to engage in terrorism across different types of groups, and also within groups. There are also a number of other issues related to terrorism that may be identified as fertile ground for terrorism. They are as follows: perception of injustice (Borum, 2004, Hacker, 1976), individual’s search for identity (Crenshaw, 1986), individual’s need for belonging to a group (Luckabaugh, 1997). In addition to these, ideology is also defined as a factor that is related to terrorism. All that said, the purpose of this study is to look for the relationships between socio-economic factors such as poverty, inequality, unemployment, education level and terrorism.

This study focuses on Turkey because Turkey has been suffering from terrorism for almost thirty years, and terrorist incidents in Turkey come from numerous sources such as extremist on the left and right and separatist groups acting to satisfy their terrorist aims (Bal & Laciner, 2001; Cline, 2004). PKK-Kadek as a separatist group, Dev-Sol as a left wing Marxist group, Hizbullah, Ibda-C as religion oriented groups are just a few examples of active groups that are well known terrorists all over the world. These issues make Turkey a valuable case for studying terrorism. In Turkey, currently twelve terrorist groups are recognized by the Turkish National Police’s anti terrorism department as in active status
(Eminyet Genel Mudurlugu, 2005). Compared to the other countries living with terrorist problems, Turkey may be considered the only one that has terrorism problem from all these multiple sources.

Since there are so many different terrorist groups with differing cultures and ideological backgrounds operating in Turkey, it is useful to examine in the social conditions that are stimulating all these different groups (Blau & Blau, 1982).

Most of the empirical studies on the causes of terrorism have been from the international perspective and have tried to find an answer to the question of, why some countries produce more terrorist than others. However, there are few studies that have examined the factors that are related to terrorism within a country (Andrew, 2004; Reinares, 2004). By looking at the poverty-inequality and their relationship to terrorism, this study is attempting to fill that gap. Since there haven’t been many empirical studies conducted on the relationship between poverty-inequality and terrorism, this study will first examine the poverty-inequality literature and the related crime issues (Sampson, & Groves, 1989; Wacquant, & Wilson, 1989).

**Research Question**

Are poverty level, income inequalities, unequal distribution of resources, education attainment, and unemployment level related to terrorist incidents in provinces of Turkey?”
Background/ Statement of the Problem and Theoretical Framework

Because there are not many research studies on poverty, inequality and related terrorism this study will look for the evidence in studies that have focused on poverty, inequality and crime (Becker & Posner, 2005, Krueger & Maleckova 2002, Shelley, & Picarelli, 2002). For this purpose this study will first examine the criminal justice literature and will use poverty, inequality and crime as indicators of the relationship between poverty, inequality and terrorism. Secondly, the study will examine theories that explain the relationship between poverty, inequalities and crime or delinquency. The contributions of different disciplines such as sociologists, economists and public health specialists, have provided various arguments concerning the uneven sharing of economic welfare. Ultimately, there is good evidence that lack of economic welfare might be related with the occurrence of crime. The main argument is that the criminals are more likely to come from the bottom end of the wage distribution (Machin & Meghir, 2004).

Poverty, Inequality and Crime Relationship

A number of theorists have suggested that, for the powerless, crime and delinquency are desperate efforts to claim control over their lives. The evidence does show that people in the lower-class experience a greater subjective feeling of powerlessness. Those who feel powerless are more likely then others to engage in delinquency (Akers, 2000; Blau, & Blau, 1982; Braithwaite, 1979, Machin, & Meghir, 2004; Merton, 1938, Messner and Golden, 1992; Quillian, 1998; Sambanis, 2004; Sampton &Grove, 1989; Shaw and McKay’s, 1942).
As this study does not see poverty alone as a strong enough single factor to explain the crime, it also uses inequality to help explain the relationship to crime.

In some studies poverty is seen as a reason for black and white middle class, as well as industry and business, to migrate out of the large cities and into suburban communities (Quillian, 1998). This has resulted in deprivation, decay and other conditions of social disorganization within the urban centers. These conditions explain the reason for a high rate of crime, because this trend to move out has left an urban population of disadvantaged underclass people (Akers, 2000; Messner and Golden, 1992; Shaw & McKay, 1942). By Blau & Blau (1982) this explanation is accepted as a beautiful illustration of the roots of crime in the social structure, independent of the individuals involved. Researches show that convictions, arrests, incarcerations and other measures of official rates of crime and delinquency are high among the residents in underclass neighborhoods (Blau, & Blau, 1982; Machin, S.& Meghir, 2004).

There are many researches that support the concept that crime rates are related to poverty and similar negative external conditions that result in perceived inequalities (Berrebi, 2003). Researchers found that the expected level of crime will be greater in communities with higher levels inequality (Bourguignon, 2001, Chiu and Madden, 1998; Demombaynes & Ozler, 2002, Ehrlich, 1973, Lederman et al., 2001, Wilson & Daly, 1997). This relationship is explained in detail in the theoretical framework of this paper. The following theories are useful in helping to explain poverty and inequality and their relationship to crime rates.

Theories that explain the relationship between inequality, poverty, and crime have been studied in criminological researches for a long time. Well known theories includes
social disorganization (Shaw and McKay, 1942), anomie theory (Merton, 1938), Marxist theory of crime (Bonger, 1916). According to Fowles and Merva (1996), the most common element in these explanations is the hypothesized positive relationship between poor economic conditions and crime. This study believes that these theories can help to explain the link between inequality, poverty and terrorism.

**Social Disorganization Theory**

This theory explains the observed relationship between inequality and crime. The early hypothesis attempted to explain the connection between inequality, and social disorganization through a failure of social formation and normlessness. This theory first developed by Clifford Shaw and Henry McKay in 1942, tried to explain urban crime and deviance. The most significant finding of their study was that the rate of delinquency in the lower class neighborhoods was highest near the inner city and decreased as you moved toward the more affluent areas (Akers, 2000; Messner and Golden, 1992). It has been concluded that communities lacking in social capital are less effective in applying social control to reduce violence as compared to communities with higher levels of social capital (Sampson and Wilson, 1995).

Social Disorganization Theory explains that low economic status; high levels of racial/ethnic heterogeneity and residential mobility affect the community’s level of social disorganization (Shaw & MacKay, 1942). The areas in which Shaw & McKay (1942) found high delinquent rates are characterized by poor housing, physical decay, incomplete and broken families, high rates of illegitimate births, and an unstable population. Comparing low
and high socioeconomic communities they found low socioeconomic status communities suffer from a weaker organizational base than higher status communities. Therefore these communities have less ability to engage in both social control and the appropriate socialization of their residents (Sampson & Grove, 1989). Akers (2000, p.139) states “the theory proposes that social order, stability, and integration are conductive to conformity, while disorder, and alliteration are conductive to crime and deviance.” Shaw & McKay’s study on the residents at the bottom end of the socio-economic scale with low income, low education level, and high rate of unemployment found high rates of delinquency, adult crime, drug addiction, alcoholism, prostitution, and mental illness. These are all understood to be the products of social disorganization within the studied areas. Shaw & McKay concluded that the residents in this area were not biologically or psychologically abnormal; rather their crime and deviance were the normal responses of normal people to undesirable social conditions. In other words, it is the conditions that effect antisocial, iconoclastic criminal and delinquent traditions to be culturally transmitted from one generation to the next (Akers, 2000). They suggest that social disorganization is the result of these characteristics which undermine informal social controls within the community and are directly related to high crime rates as opposed to urban ecology, depressed economic conditions, or rapid social changes (Bursik, 1988).

**Anomie Strain Theory**

Anomie theory owes much to Emile Durkheim who first used the term “anomie” to refer to a lack of social regulation that promotes higher rates of suicide (Akers, 2000). By
identifying inequality as a causal factor in crime, Merton (1938) made the first significant contribution to the inequality literature. His hypothesis states that “crime is a symptom of specific sort of social disorganization: the unequal distribution of means of success in society necessary to achieve “the American dream”. He explains that inequality of opportunity creates situations in which certain individuals engage in crime, in order to achieve culturally defined success. Anomie is the form that societal maladjustment takes when individuals seek levels of success that are not consistent with socially available means. In such conditions individuals may experience strain. This strain creates pressure as people attempt to succeed in an environment with limited opportunities. This lack of socially acceptable opportunities may push those individuals towards crime. Merton uses the concept of the American dream to help explain his theory. He states that the American dream promotes the idea that equal opportunity and therefore success is available to all. However, the reality is quite different as equal opportunity to achieve success is not available to all. For example, disadvantaged minority groups and the lower class do not have the same access to such legitimate opportunities (Akers, 2000). As Merton points out, disadvantaged groups are often far removed from the conventional educational and occupational opportunities needed to realize those objectives. The social structure effectively limits certain groups from achieving their goals through the standard institutionalized means available to others.

Following Merton’s ideas later studies showed that effects of poverty is not limited to property crime alone; it is also related to violence crime (Messeschmidt, 1993; 1997, Hagan, 1994). Additionally, absolute deprivation and the lack of opportunity may have its effect on
the psychological well being of those affected and can result in violent behavior (Lynch and Groves, 1989).

Merton (1938) identified five types of adaptation to strain. He described “Conformity” or an attempt to strive for success within the restricted conventional means available. He named the most common deviant response, “Innovation”. In this form of behavior one maintains a commitment to success goals but takes advantage of illegitimate means to attain them. A third response, “Rebellion” rejects the system altogether, both means and ends, and tries to replace it with a new one. Finally, “Retreat” result when one gives up on both the success goals and the effort to achieve them. In “Ritualism” one gives up the struggle to get ahead and concentrates only on retaining what little has been gained. This is accomplished in part by adhering strongly and zealously to the norms. This response is often produced by the disjuncture between society’s promise of equality and success and the actual inequalities in the distribution of opportunities. This inequality is most severe for members of the lower class, the disadvantaged, and minority groups.

**Marxist Theory**

Marxist theory tends to refer more to the control by the system than to the behavior (Akers, 2000, p. 195). The first systematic application of Marxism to the crime discourse was introduced by Dutch criminologist Willem Bonger (1897-1940) who hypothesized that crime is produced by the “capitalist organization of society”. Marxist theory hypothesizes that both the number and types of crime in a society are produced by the fundamental conditions of capitalism. With the maximization of profit as its central goal, capitalism
promotes competition and individualism to the detriment of cooperation and is harmful to the community (Bohm, 1985; Messner and Rosenfeld, 1994). According to Bohm (1985), self-interest and competition are not limited to the working classes but can influence all members of a capitalist society and thus set up conditions conducive to criminal behavior among all classes.

According to Marxist theory, capitalism has a ruling class that dominates the proletariat. The latter has the majority of members but nothing to sell except their labor. But the ruling class, on the other hand, has the political power because the capitalists’ monopoly gives them that power. This power allows them to manipulate the legal and the criminal justice system to promote their interests and to maintain power. The masses of workers have no power to help establish their domination. Their only choice is to bring down the government and destroy the capitalist economy (Akers, 2000).

**Terrorism Poverty and Inequality Relationship**

Many previous studies concerning terrorism have looked at the effect of poverty on terrorism. However, research into crime has shown that the effect of inequality is also an important factor to consider (Sampson, & Wilson, 1995, Richmond, 2003, Burdette, et. al, 2003). This study states that poverty alone cannot explain terrorist incidents so the effects of inequality on terrorism incidents should also be examined. Using the evidence that is derived from the studies concerning the relationship between crime, poverty, and inequality it can be extrapolated a relationship between crime, poverty and terrorist incidents (Becker & Posner, 2005, Krueger & Maleckova 2003, Shelley, and Picarelli, 2002). The debate centers on the
question of whether poverty and/or inequality is related to terrorism, or whether terrorism is unrelated to economic factors. By examining the limited literature concerning terrorism, this study infers that a relationship exists between poverty, inequality and terrorism.

The President of USA George W. Bush (2002) believes that such a relationship exists. He said “We fight poverty because hope is the answer to terror... We will challenge the poverty and hopelessness and lack of education and failed governments that too often allow conditions that terrorists can seize”. Eli Berman (2003) points out that the actual terrorists are drawn from a large pool of volunteers who tend to be from the poorest part of their societies. As Jessica Stern (2000) found out in her study, most of the people who join terrorist groups are from the poorest classes. Among those groups those who are selected for missions are likely to be the most committed and also the most capable. A report named Nations Hospitable to Organized Crime and Terrorism released by Library of Congress, on October 2003 lists poverty as a major factor in terrorist activities in Africa. The report also states that many are joining the growing coco trafficking and their armed groups as a result of poverty and the high unemployment rate in Colombia. This is in part due to the fact that Colombia recently estimated that 55% of its total population lives below the poverty line.

Contrary to accepting poverty as a motivating factor, Atran (2005) claims that suicides occurring in Middle East are related to neither economic conditions nor educational levels. Bourge (2002) also states that it is not accurate to describe poverty in underdeveloped countries as a catalyst for terrorism. But neither of these studies considers the effects of economic inequality on the creation of terrorism. While the literature advises that it is an important issue and should be considered as a good basis for violence and terrorism
(Gutiérrez, 2002). This conclusion can be observed in those regions in which political and economic inequalities are most wide spread (Richmond, 2003). Addison, Le Billon, and Murshed (2001) and Indra de Soysa (2001) argue that a grievance is just as an important a contributor to conflict. In poverty stricken areas extremists find it easy to garner support from the people (Gutiérrez, 2002). Poverty, the lack of employment opportunities and other forms of inequality assist terrorist recruitment and retention. Poverty makes the life of terrorist cadres seem to be a relatively attractive option (Addison, Le Billon, & Murshed, 2002). Inequality not only compounds a sense of grievance by those who live in intense deprivation it also heightens the ethnic and collective tensions. In discussing terrorism as a weapon Donnelly, (2004) and Brian Croizer (1960) argued that violence and terrorism grow under conditions of injustice and inequality. Young (2003) states that, people with a serious grievance in order to get political powers use terrorism when they don’t have any other resort. For Young (2003) the logic lies in the perception of inequality, and he describes terrorism as a weapon of weak.

There are also many other factors that are related to terrorism other then poverty, such as; the perception of inequality resulting from low income, poor education and limited social services. The terrorists often feel deprived of some rights. In most cases, “the terrorist believes that he or she is serving a greater cause that is just” (Nassar, 2005, p. 35). Terrorism as a response to desperation can be generally labeled a short-term natural feeling that if frustrated over time may contribute to aggressive behavior that will give rise to violence and/or revolution.
As Anne Philips (1999) stated; through much of the twentieth century, inequality was understood as a largely class phenomenon, something associated with the distribution of income and wealth and the negative effects of private property. Inequities between male and female, between white and black, or between one country and another also generated important political movements. During last a few decades the conflict between capitalism and socialism centered on inequality and was conceived as essentially an economic affair (Bohm, 1985, Messner and Rosenfeld, 1994). In the past social classes were bound to economic issues such as unemployment, poverty, or low pay which have helped shape political movements. Today inequality is also considered to be a matter of culture and/or politics as much as one of the distribution of economic resources (Philips, 1999 p.22).

Inequality may be a motivating factor for people to become involved in terrorist activities (Borum, 2004, Hacker, 1976). Driven by a feeling of injustice, a group that is convinced that what they do is meaningful can justify their use of violence. If income inequality exists, the people at the economic bottom feel little loyalty to the political system and they may feel completely justified in their use of violence, including terrorism. Thus it can be said that terrorism is often driven by a sense of injustice and helplessness rather than just economic poverty (O’Neill, 2002). O’Neill (2002, p.22) also states that “The new international global system with its growing institutions, trade and technological capacities, can exacerbate real and perceived inequities, creating greater inequalities between and within states. Terrorists can exploit these gaps, using modern communications and jet travel to preach their ideologies, raise funds, recruit and hide.”
As discussed above, there is some controversy as to the role of poverty and economic failures in breeding terrorism. “Not all poverty-stricken societies breed terrorists, and not all terrorists are poor or suffer from a lack of public goods, an absence of individual opportunities, or the absence of civil liberties. Indeed, terrorism may more resemble crime, which is never fully eradicated even in wealthy societies, than it does war, in that a successful fight will reduce but not eliminate terrorism, so inequalities should be examined as a cause to terrorism” (Gold, 2004, p.13). Thompson (1992, p. 30) argues that agents who are not directed and controlled by an effective political authority unavoidably fall into a state of war.

This chapter started with an explanation of the relationship between poverty and crime then explored the literature concerning the relationship between perceived inequities and crime. Later it examined the relationship between poverty, inequalities and terrorism. Since a well developed theory can help us to understand this issue better, this study will look for theories that explain poverty and inequities relation to crime. It will then look for similar relationships between poverty, inequality and terrorism.

**Significance of the Study**

Many agree that terrorism involves using violence as a strategy to achieve certain goals. This violence can be used by those who oppose existing governments, or it can be used by people who want to maintain existing power. Historically, terrorist activities have always included violence to achieve their goals (Wardlaw, 1989). It is impossible to stop terrorist activities all over the world, but knowing the factors that are related to terrorism may help to
produce valid policies that reduce the terrorism to a minimum level. As David Mepham (2002) said it is almost certain military responses to terrorism will fail, and that effective action against it requires a well developed policy response. This study will contribute to identifying some of the factors that are related to terrorism, and will help policy makers build more effective policies that will be able to reduce terrorism.

O’Neill (2002) points that most of the well known terrorist organizations share a similar profile. At the leadership level are the educated and relatively privileged people. They utilize the existent grinding poverty and inequity as a tool to recruit among the poor without expectation of a decent life. O’Neill (2002, p. 8) explains “This is typical: modern terrorist organizations require management and technological skills found in the upper and middle classes yet they also need foot soldiers that overwhelmingly hale from the poor and down-trodden.”

Little attempt has been made to understand the motivation for terrorist action. Limited attempts have been made to see it as part of long term strategy, or indeed to investigate the political context. This paper intends to reveal some of these factors by examining the relationships between poverty, education attainment, unemployment, and terrorism through the lens of inequality (Mepham, December, 2002).

Previous studies on the issue are limited to a select group of terrorist. Their organizations are primarily in Europe and in the Middle East. The leaders and many of their followers are not poor and have received respectable educations. Also previous studies have ignored terrorist organizations that have significantly different economic and social profiles in Africa, Central and South Asia and Latin America (O’Neill, 2002). For instance, the
members of the RUF in Sierra Leone, the Lord’s Resistance Army in Uganda, and the Abbu Sayyaf group in the Philippines all come from very poor milieus and have almost no education. In this sense this study attempts to fill in one of the gaps in terrorism studies, by studying the issue in another geographical area under different conditions (O’Neill, 2002).

**Definition of the Terms**

**Crime**: A violation of law

**Terrorist incident**: An attack or action that is done for the sake of terrorist ideas or a terrorist group.

**Theory**: A theory is a systematic and formalized expression of all previous observations made that is predictive, logical, testable, and has never been falsified. (Wikipedia).

**Poverty**: Poverty is the state of being without the necessities of daily living, often associated with need, hardship and lack of resources across a wide range of circumstances. The principal uses of the term include, descriptions of material need, including deprivation of essential goods and services, multiple deprivation, and patterns of deprivation over time. Economic circumstances, describing a lack of wealth (usually understood as capital, money, material goods, or resources, especially natural resources.

**Income Inequality**: Lack of equality between the incomes of two.

**Grievance**: A grievance is a formal statement of complaint, generally against an authority figure.
**Province:** In Turkey structure of cities are different than those in USA, geographically they also consist rural areas such as towns, villages besides urban areas. To be able to be province population of a place should be more than 20,000, including its sub-areas such as, counties, towns, and villages.

**Overview of the Remaining Chapters**

The remaining chapter of this paper will be organized in the following way:

Chapter II provides a general overview of the literature on poverty-crime, inequality-crime, poverty-terrorism, inequality-terrorism relationship. In this chapter previous research will be examined concerning these issues, including literature about related theories. Also, hypotheses will be presented that are derived from the literature review.

Chapter III will include the methodology for addressing the research question and the testing hypothesis. Additionally, research design, data collection and statistical analysis will also be discussed.

Chapter IV will include the results of a statistical analysis.

Chapter V will present analysis of the results that are derived from the statistical analysis.
CHAPTER 2 - Review of the Literature

Introduction

This chapter provides a general overview of literature concerning poverty, inequality and their relationship to terrorism in four sections. In the first section, introductory information about terrorism and its history will be presented. In the second section theories that explain poverty, inequalities, and delinquency’s relationship to crime’s and terrorism are examined. In the third section previous studies that related poverty, inequality relationship to crime, terrorism and conflict are examined in detail. Finally, the last section of this chapter presents the poverty and inequity in Turkey, with a set of hypotheses derived for each construct.

1. Definition and History of Terrorism

Definition of Terrorism

Defining terrorism is a problematic issue. Who is identified as a terrorist differs according to who is defining terrorism. One person can be described as a terrorist by one person and then described as a freedom fighter by somebody else (Crenshaw, 2001; Lodge, 1982; Velter & Perlstein, 1991). This dilemma helps explain why terrorism does not have a single definition. This is a major problem in defining terrorism, and effects in the ongoing study and development of policies needed to respond to terrorism. Many analyses of terrorism have emphasized its political, social, ideological, and economic aspects. Many of these factors are usually given less emphasis than security factors in
policy formation (Gold, 2004). Besides this, those issues mentioned above are the result of many different motivational factors. This also makes it hard to define the phenomena (Wardlaw, 1989). A universal definition of terrorism must go beyond behavioral descriptions to include individual motivation, social environment and political purpose. This study will present some definitions from some respectable agencies, however even these definitions may not be accepted by some individuals or groups.

France defines terrorism as “an act by an individual or group that uses intimidation or terror to disrupt public order” (FAS, 2000). Germany’s terrorism definition is “an enduringly conducted struggle for political goals, which are intended to be achieved by means of assaults on the life and property of other persons, especially by means of severe crimes” (G. Martin, 2003). British Anti-Terrorism Act (1989) states, "terrorism is the use of violence for political ends (including) any use of violence for the purpose of putting the public, or any section of the public in fear" (British Prevention of Terrorism Act 1989).

The FBI defines terrorism as “the unlawful use of force or violence against persons, or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives” (FBI, 1999). US department of state’s definition of terrorism seems to capture many of these definition; “The term terrorism means premeditated, politically motivated violence perpetrated against noncombatant targets by sub-national groups or clandestine agents, usually intended to influence an audience.” (www.state.gov). "Noncombatant," as used above is
in reference to civilians, “military personnel (whether or not armed or on duty) who are not deployed in a war zone or a war-like setting.” (Department of State, 2005).

The Turkish Anti-Terrorism Act (April 12th, 1991) defines terrorism as follows: "Terror is all kinds of activities attempted by a member or members of an organization for the purpose of changing the characteristics of the Republic which is stated in the constitution, and the political, jurisdictional, social, secular, economic system, destroying the territorial integrity of the state and the government and its people, weakening or ruining or invading the authority of the government, demolishing the rights and freedom, jeopardizing the existence of Turkish government and Republic, destroying the public order or peace and security” ("Anti terrorism act of Turkey," 1991).

As can be seen from all these definitions, every government, even specific agencies of same government have their own definitions. Despite this there are also some common elements of these definitions such the element of “violence” which always has a dominant role. Alex P. Schmid and Albert Jongman’s (1988) study shows that 108 out of 120 definitions use the words “violence” and “use of force” as their most common elements. Following violence, ideological or political aims appears in 65%. Following that, definitions and concepts such as fear, threat, or psychological impact are most commonly used. It can be concluded that a broad definition of terrorism needs to include a reference to violence. Therefore, prior to defining a group as a terrorist group violence activity by that group should be present (Schmid & Jongman, 1988). Some of the following examples of terrorism from the past are defined as terrorist group according to a different criteria depend on time they existed, actions they took, and according to who
they targeted. It is of course possible to find some people who do not define one or more of these groups as not terrorist, however, the majority of sources identify groups with these characteristics as terrorists.

**Early History of Terrorism**

Terror and terrorism has been in existence since it was discovered that people can be influenced by pressure and intimidation. The main idea of terrorism is the desire for retaliation against perceived wrongdoers. Retaliation is another face of terrorism such as blood feuds that result in a victim’s entire family taking revenge on the offenders of another family or clan (Simonsen & Spindlove, 2000). “Kill one and frighten thousand”, this technique of intimidation has been used successfully by governments to discipline their people and also by radicals to weaken and overthrow established authority since the early history of human nature (Clutterbuck, 1994). Early history of terrorism shows that terrorism was used to maintain power or to overthrow those in power.

**Zealots**

Zealots, a Jewish group, is an example of an early terrorist organizations that was active during the Roman occupation of Middle East in the first century (www.cdi.org). Their name came from the short dagger which they used to commit their murders, mostly against other Jews who were deemed traitors. The assassins were named Sicari’s (dagger men) by Romans (www.terrorism-research.com). They struck down Roman occupation forces, and rich Jewish collaborators in the cities who opposed violent overthrow of the Roman overlords (Livingstone, 1982). In the first century A.D. the zealots, conducted a fierce and unrelenting terror campaign against the Roman and Greek occupants of the
eastern Mediterranean. The groups committed their murders in the daylight in front of witnesses. Their aim was to send a clear message of terror to the Roman authorities and Jews who cooperated with victims (Laqueur, 1999).

Assassins

Another example of political extremist groups who used violence during the early terrorism of history is the *Assassins*. They emerged in the 11th century in the Middle East (Hurwood, 1970). These individuals gained a reputation for being murderers who carried out their lethal missions under the influence of hashish (Long, 1990). Hashish was given to them without their knowledge. The aim was to make them forget their conscience. They were a cult based in the mountains of Northern Iran. Their leaders were Hassam-i Sabbah. He established his own terror network to terrorize the region and dominate his enemies. Their targets were politicians or clerics because Hasan-i Sabah believed that power was most quickly attained by murdering those who stood in his way. His main targets were the surrounding powers such as the Seljukee Turks. This may be one of the earliest examples of terrorism by suicide as their tactic was to send assassins alone to kill an important enemy leader often at the price of his own life (Hurwood, 1970; Laqueur, 1999).

French revolution

Roots of contemporary terrorism can be traced back to late eighteenth century when thousands of French were victimized during the French revolution (Velter & Perlstein, 1991). The French government was trying to implement its new radical order. The word "terrorism" started to be used in 1795 in reference to the Reign of Terror
initiated by the Revolutionary government (Combs, 1997). During that time the French regime was trying to protect itself from subversive movements. They alleged that the fight was for justice. French revolutionaries declared terror as the official policy of French state (Combs, 1997). Through this justification, they killed more than 40,000 people by guillotine (www.cdi.org). This was combined with about 500,000 of the 25 million French citizens being jailed as political suspects (Carter, 1982). This was also one of the examples that shows that terrorism is often much bloodiest when used by despotic governments on its own citizens (www.bbc.co.uk). The cruel killings were justified as an attempt to eliminate the revolutionary government’s opponents and as a way to instill fear in others trying to overthrow the existing government. The terror created by the French revolutionaries was successful and became a prototype for the future terrorists (Carter, 1982).

After the French Revolution, through the end of the 18th century, anarchism became the new terrorism for the world. The anarchists terrorized many states demanding no authority at all. They sought the solution to all problems through the destruction of all governments. This mental picture led to political assassinations, bombings, and other violent acts which provoked swift retribution in more or less every country in Europe and the US (Laqueur, 1999).

Guerilla warfare

During the Spain’s war of independence, the French invaded Portugal and Spain. The strategy for the war was determined by the characteristics of the Iberian Peninsula which do not allow the movement of large armies. This resulted in the creation of smaller
armies able to resist the invasion, and thus the term “guerilla” meaning little war emerged (Combs, 1997). Since then examples of guerilla warfare have been seen in different parts of the world. Guerilla warfare reached its highest level after the second World War with the collapse of European empires (Laqueur, 1999). Guerilla warfare is basically different than terrorism but, some insurgent groups using guerilla warfare are also described as terrorists. This applies to insurgent groups in Kenya, Malaysia, and Palestine (Hoffman, 1988). Terrorism has also been used as a strategy by rebels during civil wars such as those in Srilanka Tamils, the Africa National Congress in South Africa, and the IRA in Northern Ireland (Sambanis, 2004).

Guerilla warfare has also been used by the colonies of the European countries across the Middle East, Asia, and Africa in an attempt to resist European efforts to restart colonial businesses. Rejecting terrorism, most of these nationalist anti-colonial groups utilized guerilla warfare because they could have larger bodies of groups along more military lines than terrorist groups, and because guerilla groups operate in a more defined geographical area over which they have control (Combs, 1997). Terrorism also is a strategy used to influence policy whereas guerilla warfare is a strategy of control and revolution (Sambanis, 2004).

Terrorism and guerilla warfare also differ by the damage done to the state, civilians killed, terrorist killed, and the power unevenness between the parties. The terrorist is also a part of a smaller group then those they are fighting. The targets and purpose of the violence also is differs between the two strategies. (Sambanis, 2004). Although these differences exist between guerilla and terrorist groups, some of the
insurgent groups that are defined as terrorist also used guerilla warfare. They also publicized their violent acts meant to intimidate an audience far beyond the immediate geographical location of their violence (Hoffman, 1988).

**Late 19th century**

The most important formation of terrorist groups happened in the late 19th century. This was the formation of small groups used to attack nation-states. The radical political theories shaped the ideologies of many of these groups and the improvements in weapon’s technology helped make attacks by these groups easier (www.terrorism-research.com). One example of a group from this era is the Russian revolutionary group 'Narodnaya Volya' (the people's will) acting between 1878-81. This group was trying to create propaganda through their quick attacks against the current regime. This group has become one of the models for contemporary terrorist organizations (www.terrorism-research.com). The ideas that they developed were, unique and were to become the characteristics of later terrorism in many countries. In their attacks their main target was the leaders of the oppression. They used different contemporary weapons such as bombs, pistols, etc (www.bbc.co.uk). It is seen that many of the characteristics of present day terrorist groups derived from this group. Characteristics such as underground, cellular organizations; impatience and an inability to organize the constituents they claim to represent; and the use of violence as a means of force on the group they want to defeat (www.terrorism-research.com).

**Effect of Soviet Union**
Another important effect on the history of terrorism was the Soviet Union’s assistance to revolutionary movements throughout the Cold War. The Soviets supplied free training and weapon to such groups (Goren, 1984). Also an ideological basis for terrorism was exported through Marxist-Leninist ideology. Marxist-Leninist theory supports class warfare by arguing that it is an ideological basis for political terrorism which creates a dynamic sense of disorder aimed at changing the existing order. (Atkins, 1992). Many of revolutionary groups all over the world utilize terrorism in support of their political and military objectives. By exporting these ideological theories, the Soviet Union supported revolutionary struggles all over the world in their effort to export revolution to non-communist countries. This strategy resulted in considerable violence and terror around the world (Atkins, 1992).

Late 20th century

In the late 1960s dramatic growth in terrorism began (Goren, 1984). Through the 1960s and 1970s, organizations motivated by ethnic and ideological considerations such as the Palestinian Liberation Organization (and its many affiliates), the Basque ETA, and the Provisional Irish Republican Army (PIRA) appeared in the terrorist arena besides nationalists (Goren, 1984; Laqueur, 1999). They adopted methods that would publicize their goals and accomplishments. In 1968 the Liberation of Palestine (PFLP) hijacked an Israel airline end route from Tel Aviv to Rome (www.terrorism-research.com). This was a significant event for many reasons. It is significant because the terrorists used the symbolic value of the air carrier (Israeli) for a specific operational aim. It was also the first time that the deliberate use of the passengers as hostages was used to make demands
on the Israeli government. This event gained significant media attention all over the world. This attention was greater than what media previously paid to the battles with Israeli soldiers in previous operations (Hoffman, 1988).

There were many other terrorist movements that appeared in different parts of the world during that time which are not mentioned here. Our aim was to introduce a brief history of terrorism to the reader. Many of these organizations have declined over time while others still exist, such as the Palestinian, Northern Irish and Spanish Basque groups. In addition to that some of these terrorist groups have chosen to act within the political arena rather than continuing to use terrorist tactics (www.cdi.org).

**Terrorism in Turkey**

Turkey is a country that is verily affected by terrorism during the 1970s. Starting in the 1960s, Turkey was affected by mainly leftist groups, which was in part due to the result of resurgence of terrorism in Europe (Laqueur, 1999). After the dramatic failure of the Socialist Turkish Labor Party in the election of 1969 many extremist left-wing ideologists began to regard terrorism as a legitimate method of achieving their objectives.

During 1950s, Turkey’s democracy could not satisfy many of the public’s desires. This resulted in public disorder and strikes. The government was unable to prevent the disorder in the country and lost control. In 1960 the armed forces took control. Military power ruled the government for an eighteen month period and civil rule was restored in 1961 (Bal & Laciner, 2001). Laqueuer (1999, p. 31) explains that the root
causes of Turkish terrorism was due to the rapid urbanization and the resulting unequal distribution of economic sources.

There was a growing socialist movement headed during the 1960s which resulted in significant migration from rural areas to urban areas during that time. The development of educational opportunities and mass communication systems resulted in a noticeable rise in economic and social expectations among the public. This made it more difficult for the traditional political leaders to preserve control over the new more politicized working groups. During this time, the Turkish university students became more active and involved in political life (Bal & Laciner, 2001). Several emerging organizations were willing to use force and/or violence to achieve their goals. As a back-lash to the left wing terrorism, extreme right groups became involved in the political battle and that increased the terrorist problems for Turkey (Laqueur, 1999).

The Turkish leftists received support from such places as Bulgaria and the eastern block countries. The left operated mainly in the universities, which served as a base that the police could not enter. The right used religious institutions for the same purpose. The government could not handle the situation and martial law was imposed in 1971. By 1974 law and order was back to normal and a general amnesty was declared. Unfortunately, this resulted in many resuming terrorist activities. During 1978 and 1979, 2400 political murders had been committed. The military took the power again in 1980 to restore order to the country (Laqueur, 1999).

One of the most active of these terrorist groups was the revolutionary left (Dev-Sol). Dev-Sol was a left wing Marxist group that had its origins in the Turkish Peoples
Liberation Army from which it split in the late 1970s. The goal of this group was to encourage a revolution or popular national insurgency among the Turkish working classes. They were strongly anti-American and anti-NATO. The group was financed primarily through criminal activities carried out in Turkey. This included armed robberies and extortion from businesses. The group killed many police and military officers, engaged in robbery, kidnapping, bombings as well as several attacks on United States military personnel. Although the efforts by Turkish Security Forces slowed the activities of this group, they remain a threat to both Turkey and the United States.

Turkish terrorism became weaker in the 1970s up until another face of terrorism demanding separation of south east of Turkey is appeared using Kurdish population of Turkey. This was mainly in the non urban areas (Laqueur, 1999). The Kurdish Workers Party (PKK) was a militant, separatist organization that aimed to create an independent Kurdish state in the southeastern part of Anatolia (Button, 1995). The group was founded by Abdullah Ocalan, a student at Ankara University. The PKK’s insurgent activities have been supported from Iran, Syria, Iraq, and from the Europeans such as Greeks (Button, 1995; Rodoplu, Arnold, & Ersoy, April, 2003; White, 1998). PKK’s specific objective is to liberate the Kurds, and they have followed the Marxist ideology (White, 1998). Under Ocalan’s leadership, the group has performed brutal terrorist acts. It is believed that PKK killed more that 30,000 Turkish citizens between 1984-2000 (Rodoplu et al., April, 2003). Their terrorist activities have also resulted ruin of as many as 3,000 villages, and the removal of numerous people from their homes (Gunter, October, 2000,).
Although Turkish authorities have argued that there is no Kurdish problem in Turkey, Kurds have vigorously demanded more cultural, linguistic, and political rights. However, the reality shows that citizens of Kurdish ethnic heritage enjoy full rights as Turkish citizens.

The separatist terrorist movement has resulted in two important impacts on Turkey. The first one is a slowing down of the implementation of democratic and human rights reforms and the second has been that government was forced to finance counter terrorism measures which have resulted in harm to the economy. A third indirect effect of the separatist terrorism movement on Turkey has been its relations to European Union (EU) which Turkey has been trying to join for a long time. The Western European countries have used the terrorism issue as pressure when it comes to negotiating foreign policy (Gunter, 2000, October).

During the early 1990s, PKK began to intensify its terrorist activities; however they quickly became over extended and the Turkish military was then able to marginalize the military threat of the PKK. By the end in 1998 Turkey threatened to go to war with Syria because the leader of the terrorist group had been living there for a long time. Turkey demanded that Ocalan to be expelled from his long-time shelter in Syria (Gunter, 2000, October). Ocalan tried to find another guardian country and first flew to Russia and then later to Italy in November 1998 but, they all rejected him and labeled him a terrorist undeserving of political refuge status. The chase for Ocalan ended on February 16, 1999 in Nairobi, Kenya where he was captured. The immediate response of the PKK supporters was violence throughout Turkey and Europe. The PKK’S sixth congress
authorized its military arm, the Peoples Liberation Army of Kurdistan. (ARGK) to make
attacks against all levels of the government. A number of attacks occurred all over
Europe (Lyon & Ucarer, 2001). Upon the terrorist leader Ocalan’s detention, PKK
activities entered a new phase. They slowed their terrorist attacks up until recently
(Gunter, 2000, October). In April 2002, the PKK changed its name to the Kurdistan
Freedom and Democracy Congress (KADEK), and is continuing its terrorist activities
(Rodoplu et al., April, 2003).

Terrorist acts have also been committed by extreme religiously purported groups.
They have been trying to change the secular Kemalist reforms and replace the secular,
constitutional Turkish state with an Islamic Sharia based state following the Iranian
model (Laqueur, 1999). Their strategy includes three major steps. First, the message
(tebliq) which means a call to all people to adopt a religion and then establish a religious
administration and live in accordance with its religious rules. Secondly, establishing the
community (cemaat) which means restructuring the communities in accordance with the
requirements of the first stage, and third, is to fight back (jihad), in order to keep up the
religious way of life (Rodoplu et al., April, 2003). They see violence as an acceptable
way to achieve their goals of establishing a religious based system.

Recent Changes in Terrorist Activities and Threats

Over the last three decades, terrorist organizations have become more dangerous
with the availability of new and destructive weapons. Recent years have also witnessed a
change in the identity of the terrorists, their motives, and their financiers (Atkins, 1992;
Gilbert, 2003; Laqueur, 1999; White, 1998). Many countries that once excused terrorism now express disapproval of it. Also, many terrorist organizations simply could not survive because of the fall of the Soviet bloc, which once provided support but longer exists.

Societies that are the most vulnerable to terrorism today are those that are open, and possess a high degree of personal mobility as well as widespread personal freedoms (Livingstone, 1982). The developing technologies make the infrastructures of modern societies vulnerable targets for weapons that are increasingly sophisticated and available. In many instances, a small band of determined, knowledgeable individuals can carry out actions that could have far reaching consequences. Today’s vulnerabilities include water supply systems, transportation systems, energy systems, communication systems, computerized management and information systems (Velter & Perlstein, 1991). Urbanization also increases the accessible of victims. Urbanization can also push potential rebels to adopt different tactics of terrorism (Sambanis, 2004). Thus, economic developments and urbanization have caused a shift in the violent tactics used by rebels.

Political assassinations of high-ranking officials have been used by these organizations. Some groups are already involved in drug trafficking to finance their activities. Terrorist organizations increasingly use the internet as an effective means of communications and as an avenue for cyber attacks (National Commission on terrorism, 2002). Many terrorist organizations use conventional weapons while others are interested in weapons which allow for mass casualties such as chemical, biological, or nuclear weapons. Transnational terrorist organizations pose a unique threat in that their activities
are difficult to predict, track, and penetrate. They receive financial and logistical support from a number of different sources including front organization such as legitimate businesses and nongovernmental organizations.

Although terrorist organizations of the 1970s and 1980s had clear political objectives terrorist’s actions have become more lethal. Earlier terrorist attacks were calculated to kill just enough people to get attention for their cause. The more recent attacks have resulted in less public support because a growing percentage of terrorist attacks are designed to kill as many people as possible. During 1990s, as indicated in the National Commission on Terrorism in 2002, terrorist incident are almost 20 percent more likely to result in death or injury than those that occurred two decades ago. Terrorism influences the lives of millions of people, not only throughout victimization, but also throughout fear (Long, 1990). There is virtually no place in the world that is safe from terrorism. In the one form or another, terrorism is a disease of the last several decades that has been moving back the freedoms of all people (Laqueur, 1999; Liston, 1977).

Today’s terrorism is different from the earliest example of terrorism such as Zealots, Assassins, and French revolutionaries. In the earlier years terrorism was used mostly as means to maintain power by either governments against their own citizens or by opponent groups to overthrow the existing government. Today it emerges through smaller groups but their attacks are now big enough to scare millions of people. They reach their goal by publicizing their activities to billions of people with the help of modern communication devices (Laqueur, 1999). These small groups describe their aim as “ensuring justice”. “National oppression and social inequalities are frequently
mentioned as the root causes of terrorism, and it is, of course, true that happy, contented, groups of people seldom, throw bombs” (Laqueur, 1999, p. 36). Whatever the motive is, today’s terrorists may be crueler than their ancestor (Combs, 1997).

**Factors that are related to Terrorism**

Next, a brief explanation about the factors that are related to formation of terrorism will be provided prior to moving onto the literature concerning poverty and inequality. In the literature many writer examined the issue under the title of root causes of terrorism. This is hoped to help the reader to understand the concept better. As it is presented in the brief history of terrorism it can be understood that terrorism has always had rationale or moral beliefs supporting it. Most cases show that terrorism and violence are utilized by people who are not happy with some important part of their life. These issues are then used to support the moral acceptance of terrorism and/or violence.

An explanation of the factors that are related to formation of terrorism is difficult. William G. O’Neill (2002) agrees that this is difficult because the factors that are related to formation of terrorism differ from country to country and from group to group. It is true that some terrorist groups operate in wealthy, economically vibrant and well-governed democracies such as France, Italy, Germany, US, Japan, Spain. But, on the other hand there are also many poor countries that do not experience terrorism. Combined with that apparent contradiction, most of the leaders of these groups are relatively wealthy and well educated although they operate in poor countries. To begin to
understand this complex issue different factors that are related to formation of terrorism should be examined (O’Neill, 26 October, 2002).

The factors that are related to terrorism can be classified into numerous groups according to different criteria. Borum (2004) describes three factors that are related to terrorism or motivational themes of terrorism: 1) identity, and 2) belonging, 3) injustice. An individual’s search for identity may draw him or her to extremist or terrorist organizations in a variety of ways. Some extremist ideologies may be striking to those who feel besieged by the difficulty and stress of navigating a complex world. Individuals can define their identity simply through group membership, and then no sense of (or need for) individuality or uniqueness is required (Crenshaw, 2001). Another factor that is related to terrorism or motivational factor is explained by Luckabaugh Edward, Fuqua, Joseph Cangemi, Casimir Kowalski (1997) as the great need for belonging.” For these alienated individuals from the margins of society, joining a terrorist group represented the first real sense of belonging after a lifetime of rejection, and the terrorist group becomes the family they never had” (Post, 1984). Among terrorists, injustice is stated as the basic motivation for their joining terrorist groups (Baregu, 2002; Gutiérrez, 2002; Kučan, 2004; O’Neill, 26 October, 2002). Injustice can be divided into different sub groups such as revenge, perception of inequality, grievance. A desire for revenge is seen as a common response to remediate a wrong imposed on another (Hacker, 1976). Revenge can be a powerful motive for violence toward others, especially people thought to be responsible for injustice (Crenshaw, 2001). Similar to that Ross (1993, p. 326) describes grievances as the most important cause of terrorism, and he argues that grievances may be economic,
ethnic, racial, legal, political, religious, or social. Also, they may be targeted at individuals, groups, institutions or categories of people. As Coiller & Hoeffler, (2001) mentioned, economic inequalities are an objective measure of grievances, income inequality and poverty can be examined under this group.

These main factors that are related to formation of terrorism will respond to robust policies. Sambanist, (2004, p.171) explains that “terrorism will be constrained when there is considerable government legitimacy or when the economic opportunity costs of violence are too high, or both”. If external constraints exist, terrorist groups may not be able to mount a massive rebellion. According to Sambanis (2004) only highly committed individuals will join a terrorist organization particularly if a country shows evidence of a strong and legitimate government able to satisfy its citizens. This may explain why terrorism occurs more often in democracies than in autocracies. Democracies are more likely than autocracies to shape their policy in response to public opinion. This is seen as a good reason to terrorize the public which emerges to formulate government policy. In poor countries it is more possible to develop an insurgency than in richer ones because, there are more bases for terrorist action (Collier & Hoeffler, 2001; Sambanis, 2004). Social problems are also a good platform from which terrorist can manipulate and promote their propaganda as they protest violence, protest poverty, inequity, and lack of freedom. Their emphasize on problematic issues becomes the justification for later violent acts (Teymur, 2003).
Social disorganization theory, Strain theory of crime and Marxist theory of crime explains successfully occurrence of crime in socially problematic societies. In the next coming part of the second chapter these theories will be examined.

2. Theories Explaining Link between Poverty Inequality and Crime

Social Disorganization Theory

Faris (1955) describes social organizations as a necessity for an individual’s survival, needs, and luxuries. He states that a society with social disorganization may lose its unity and stop being a unit. Although members of this society live in it and continue their activities in it, they are far from being a part of it. Similarly, some degree of social disorganization can result partial breakdown and a failure to achieve the functions of the organization. Bloch (1957) categorized indices of sociological break down into two groups 1) sociological and 2) ideological. He used an analogy to explain these indices. They are symptoms similar to the symptoms observed by the physician in detecting the break down of the individual’s physical health through factors such as fever, increase in heart rate, etc. These are not disorders but a signs of possible disorder. Similarly, Bloch (1957) sees indices of social break down as signs rather than causes of the social disorder. One of these indices is a change in economic conditions of the individuals. Crime may occur as a result of these conditions especially when the economic conditions become severe and poverty become unavoidable.

Theories that explain the observed relationship between poverty and crime were constructed on Shaw and McKay’s (1942). Their early hypothesis explained that
inequality, and the concentration of deprived economic conditions can lead to social disorganization through a failure of social formation and normlessness. This theory was first developed, to explain urban crime and deviance. The most significant finding of their study was that the rate of delinquency in the lower class neighborhoods was highest near the inner city and decreased as they moved toward the more affluent areas (Akers, 2000, Messner & Golden, 1992). Communities lacking in social capital are less effective in applying informal means of social control through the establishment and maintenance of norms that reduce violence when compared to communities with higher levels of social capital (Sampson & Wilson, 1995).

Unavoidable social change, as a cause of social disorganization, is one of the most important factors. Change can alter the structure of a group which results some members of the groups losing their position in the group while others enhance their position (Bloch, 1957; Faris, 1955). It is stated that change may result in deprivation for many people. Bloch explained that (1957, p. 27) “These deprivation includes the categories of socially structured interests, basic value satisfactions, and status determined physical comforts categories which are of key importance to social man.” Frustration as a result of this deprivation may make individuals begin to search for remedies. In a well-organized society an individual may solve their deprivation in the courts, or solve them by approved procedures according to the law and customs. If there is a suppression of functioning social forces and an individual cannot find appropriate solutions this may cause a strain within the entire system. This could lead to further disorder resulting in anti-social anger and possible violent emotional outbursts against any convenient target.
Considering the issues of social disorganization, other researchers have developed “social disorganization theory” to explain urban delinquency. Social Disorganization Theory states that the low economic status; high levels of racial/ethnic heterogeneity and residential mobility affect the community’s level of social disorganization (Shaw & MacKay, 1942). Shaw & McKay’s study (1942) found that high delinquency rates are characterized by poor housing, physical decay, incomplete and broken families, high rates of illegitimate births, and an unstable population. Comparing low and high socioeconomic communities they found low socioeconomic status communities suffer from a weaker organizational base than higher status communities, therefore these communities have less ability to engage in both social control and the appropriate socialization of residents (Sampson & Groves, 1989). Akers (2000, p. 139) states “the theory propose that social order, stability, and integration are conductive to conformity, while disorder, and alliteration are conductive to crime and deviance.” Shaw & McKay conclude that the residents in this area were not biologically or psychologically abnormal; rather their crime and deviance were the normal responses of normal people to undesirable social conditions. In other words it is conditions in which antisocial iconoclastic criminal and delinquent traditions were developed and culturally transmitted from one generation to the next (Akers, 2000). They suggest social disorganization as the result of these characteristics, undermines informal social controls within the community and neighborhood that are directly related to high crime rates rather than proposing urban ecology, depressed economic conditions of urban neighborhoods, and rapid social changes as the direct reasons for these crimes (Bursik, 1988).
Anomie Strain Theory

Schafer, (1969, p.246) explained the anomie condition as “lack of rules, absence of norms, lawlessness, or weakened norms that may lead to deviant behavior.” Anomie theory leans deeply on Emile Durkheim who first used the term anomie to refer state of normlessness or lack of social regulation that promotes a higher rate of suicide (Akers, 2000) anomie states that in times of fast economic change, people may find that it is partionally in their best interest to violate law because they are less in control during a time of anomie (Bernard, 1995). Society’s members can find themselves in anomie and they feel pressured to achieve through deviant actions. When anomic exists high rates of deviation and high suicide are to be expected (Schafer, 1969, Passas, 1995).

Merton (1938) identified inequality as a causal factor in crime. He hypothesizes that “crime is a symptom of specific sort of social disorganization: the unequal distribution of means of success in society necessary to achieve “the American dream”. He explained that in order to achieve culturally defined success certain individuals engage in crime. This happens when individuals strive toward levels of success that are not consistent with socially available means. In such conditions individuals may experience strain. Since avenues to success are limited, individuals may feel pressure and that can lead to crime. Merton explains that equal opportunity for success does not exists for everyone because disadvantaged minority groups and the lower class do not have the same access to such legitimate opportunities such as conventional educational and occupational opportunities (Akers, 2000). The social structure effectively limits the possibilities of individuals within certain groups to achieve
their goals through the use of accepted means. Merton’s ideas were later expanded to
different crime types and studies found that violence crime is also related to inequalities
besides property crime (Messeschmidt, 1993; 1997, Hagan, 1994). Additionally, absolute
deprivation may have its effect on the psychological well being of those affected and can
create disturbing situations which can evolve into violence (Lynch and Groves, 1989).

Merton (1938) identified five types of adaptation to strain. He describes
“Conformity” as an attempt to continue to struggle for achievement within the restricted
usual means available. He named the most widespread deviant response as “Innovation”
in which one maintains commitment to successful goals but takes advantage of
illegitimate means to attain them. The third, “Rebellion” rejects the system, altogether,
both means and ends, and try to replaces it with a new one. The forth, “Retreatism” refers
to giving up on both the goals and the efforts to achieve them. The last one “Ritualism”
gives up the struggle to get ahead and concentrates on retaining what little has been
 gained, by sticking tightly and zealously to the norms. This strain is produced by the
conflict between society’s promise of equality and success for all and the actual
inequality in the distribution of opportunities within society. This inequality is most
severe for members of the lower class, the disadvantaged, and minority groups. Based on
the ideas of Durckheim and Merton many scholars have built new hypothesis, this paper
will examine some of these in the next section of this chapter.

**Marxist Theory**

Marxist theory does not directly address the crime problem. Marx and Engels
placed the basis of their theoretical attacks against the capital economic system. Marxist
theory tends to refer more to the control by the system than to behavior (Akers, 2000, p. 195). This theory sees the capitalist economic structure as responsible for crime problems. The main argument of Marx is that people are guided by the economic positions so every person has a deterministic economic foundation (Schafer, 1969).

Engels contributed more directly to the crime problem in his paper *The Condition of the working Class in England 1944*. He compared the increased criminality in England with the 1844 economic crisis. He concluded that the crime rate among agricultural workers was higher than those in industrial jobs, and this showed that “*crime depends on the anomic and blocked position of working class which carries all the disadvantage of the social order without enjoying its advantage*” (Schafer, 1969, p. 265).

The first systematic application of Marxism to the crime discourse was introduced by Dutch criminologist Willem Bonger (1987-1940) who hypothesized that crime was formed by the “*capitalist organization of society*”. Marxist theory hypothesizes that both the number and types of crime in a society are a product of the basic conditions of capitalism. With the maximization of profit as its central goal, capitalism promotes competition and individualism to the detriment of the community (Bohm, 1985; Messner and Rosenfeld, 1994). According to Bohm (1985), self-interest and competition are not limited to the working classes but can influence all members of a capitalist society and thus set up conditions conducive to criminal behavior among all classes.

According to Marxist theory, capitalism has a ruling class and a proletariat class. The latter has the majority but nothing to sell except for their labor. The ruling class has the political power because the capitalists’ monopoly gives them the power. This power
allows them to manipulate the legal and criminal justice system to promote their interest and maintain power. The masses of workers have no power to overcome their domination. Their only choice is to bring down the government and to take the power, and destroy the capitalist economy (Akers, 2000).

The table below demonstrates the theories that are examined in his section of the chapter.

<table>
<thead>
<tr>
<th>Theory</th>
<th>Explains</th>
<th>By</th>
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<tbody>
<tr>
<td>Social Disorganization Theory</td>
<td>Poverty-crime relationship,(urban crime and deviance): Rate of delinquency in the lower class neighborhoods were highest near the inner city and decreased externally toward the more affluent areas</td>
<td>Shaw and McKay’s (1942) Messner and Golden, (1992)</td>
</tr>
<tr>
<td>Anomie Strain Theory</td>
<td>Inequality crime relationship.. The social structure effectively limits the possibilities of individuals within certain groups to achieve their goal through the use of institutionalized means. For example lower class do not have the same access to such legitimate opportunities as others does such as conventional educational and occupational opportunities and this may cause strain.</td>
<td>Emile Durkheim, Merton (1938), Messeschmidt, 1993; 1997, Hagan, 1994</td>
</tr>
<tr>
<td>Marxist Theory of crime</td>
<td>Inequality crime relationship. Both the number and types of crime in a society are produced by the fundamental conditions of capitalism.</td>
<td>Marx and Engels, Willem Bonger (1887-1940) Bohm, (1985)</td>
</tr>
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In this section of the chapter three main theories that are explaining poverty, inequality crime relationship is explained. In the following section of this chapter the research that is guided mostly by these mentioned theories will be examined. These studies are conducted on broadly defined injustices including poverty, inequality, unemployment, education, as the independent variables and crime, terrorism, or inter group conflict as the dependent variables. Examination of the literature shows that researchers use social disorganization theory as a pathway to explain poverty and its relationship to crime; however Anomie, Strain Theory and Marxist theory of crime are mostly used as pathways to explain inequality and crime.

3. Previous Studies

Previous works generally study predictor variables in three major groups which includes some socioeconomic variables; economic, demographic, and deterrence variables. In this study economic and demographic variables will be examined as the data is available for Turkey. The economic variable consists of income levels, distribution, , unemployment and labor force participation rates. The variables to measure inequality are GINI coefficient, and three variables to measure equality of distribution resources by government are as follows: public investment to each province; population per medical doctor in each province; and number of students per teacher in each province. The demographic variables comprise, population size, education level.
Poverty, Crime and Terrorism

The high crime rates in urban areas with physical decay, poor housing, and heterogeneous population where the residents are from the bottom of the socioeconomic scale with low incomes, low education levels, have taken the attention of researchers (Shaw & McKay’s, 1942, Ehrlich, 1973, Machin & Meghir 2004, Bourguignon, Jairo Nuñez & Sanchez, 2003, Kennedy, Kawachi, Prothrow-Stith, Lochner & Gupta, 1998, Blau, & Blau, 1982, Lederman, Loayza, and Menéndez, 2000, Gould, Weinberg, Mustard 1998, Mccabe, 1999, Lin Corzine et al,1991, Krivo, &Peterson, 1996, Hojma, 2002). Most significantly Shaw and McKay’s (1942) study revealed the fact that the rates of deviant behavior in the lower-class environs peak near the inner city and decreased on the outskirts toward the more wealthy regions. These forms of deviance and lawlessness were interpreted as the outcome of social disorganization within these inner city neighborhoods. Shaw & McKay (1942) conclude that undesirable social conditions results in a high rate of criminal behavior. The socioeconomic conditions help to develop antisocial iconoclastic criminal and delinquent traditions and these are transmitted from one generation to the next (Bursik, 1988, Akers, 2000). Following their study many researchers focused on disadvantaged minority groups and crime rates. They considered the relationship between poor living conditions and crime. Studies showed that the poverty crime relationship is not limited to property acquisition alone; violence crime is also related to these (Messeschmidt, 1993; 1997, Hagan, 1994). Research of Sampson and Grove (1989) brought some other contribution to the issue. They studied the external factor effecting social disorganization such as social class, residential mobility and family
disorder. The results of their study showed that social disorganization was a good predictor of rates of crime victimization. Similarly Lin Huff-Corzine et al (1991) examined the role of poverty on the deadly violence rate and the suicide-homicide rate for blacks and whites. Their findings show that high rates of poverty are absolutely connected with lethal-violence. Krivo, & Peterson’s (1996) study also evaluated the disadvantaged groups and relationship to crime. They allege that extremely disadvantaged neighborhoods have higher rates of crime. Using 1990 US census data their findings supported the hypothesis. (Danziger & Wheeler, 1975) conducted both time series analysis and cross sectional analysis. The result of time series analysis found that absolute and relative poverty is significantly related to crime but their cross sectional analysis shows insignificant and negative relationship between crime and poverty.

Besides these studies which concluded that there is a relationship between poverty and crime, findings of some studies showed that the economic circumstances of an area is not related to crime. Bechdolt, (1975) studied both violent and property crime rates by comparing Los Angeles data to Chicago. Findings of the study for both cities showed that median family income was not related to either property or violent crime.

Jefferson, & Pryor (1999) classified hate groups like the Klu Klux Klan, neo-Nazi, skin-heads in to six groups using the Southern Poverty Center’s data of a total 474 hate groups in USA in 1997. Their aim was to see whether special economic conditions were related to the location of these groups. They used logistic regression to look at the likelihood of being a member of a hate group based on the characteristics of counties. Their findings show that the existence of hate groups was unconnected to the divorce
rate, percent black, or the gap in per capita income between whites and blacks in the county. They inferred that “economic or sociological explanations for the existence of hate groups in an area are far less important than adventitious circumstances due to history and particular conditions.”

Using Jefferson and Pryor’s (1999) findings as evidence Krueger, & Maleckova (May 2002) explored the relationship between poverty and participation in political violence or terrorist activities. Their hypothesis states that there is no relationship between economic level, education level and political violence. They looked at the determinants of hate crimes, which they stated were very closely related to terrorism. They started investigating the literature on hate crime because it is commonly defined as crimes against members of religious, racial or ethnic groups due to their group membership, rather than their characteristics or actions as individuals, and they see it similar to terrorism.

Their statistical analysis was on determinants of the participation in Hezbollah militant activities in the late 1980s and early 1990s. They analyzed the data from public opinion polls conducted in the West Bank and Gaza Strip in December 2001. This data was examining support for attacks against Israeli targets. Another section of this study also implements a statistical analysis of the determinants of involvement in Hezbollah in Lebanon. They used a sample of data that combined 129 members of Hezbollah’s who were killed during paramilitary actions in the late 1980s and early 1990s and compared it to similar aged individuals in Lebanon. Another section of the study included an analysis of the backgrounds of 27 Israeli Jews who were involved in terrorist activities in the early
1980s. Findings of that study indicated that these individuals, who planted bombs and tried to assassinate Palestinian mayors, were surprisingly well educated and come from well paying occupations. In another section of this study they implemented an analysis of the incidence of major terrorist acts over time in Israel. They related the number of terrorist acts each year to the rate of economic growth. Krueger, & Maleckova (May 2002) state that there is no relationship between violence and the poverty level of perpetrators.

Following Krueger, & Maleckova, Claude Berrebi’s study (2003) examines the link between economic desperation, and participation in terrorist activity using secondary data analysis which was collected from Hamas and the Palestinian Islamic Jihad (PIJ) group members. He specifically aimed to discover the determinants of becoming a suicide bomber. He used the following variables: size of the Israeli and Palestinian populations; the total area controlled by Israel at the time of the attacks; GDP; average wage; age; marital status; place of residence; and status. For their time series analysis the data was gathered from the Israeli Foreign Ministry, National Insurance Institute of Israel and Israeli Defense Forces (IDF). From this information a data set for every deadly terrorist attack from 1949 to 2003 was constructed. Data from the ICBS (Israeli Central Bureau of Statistics), the PCBS (Palestinian Central Bureau of Statistics), and the CIA World Fact book was used to obtain the size of the Israeli and Palestinian populations, the total area controlled by Israel at the time of the attacks, and some economic variables about the Palestinian population such as GDP and average wage. They gathered the information for suicide bombers versus the general population to be able to find the
difference between them. Using this data they performed a Chi square test. Findings showed no significant link between terrorism and poverty. They concluded that suicide bombers are more likely to be of higher economic status than their counterparts in the population. Suicide bombers, however, come from lower socioeconomic groups when compared to other, non-suicidal, terrorists.

It can be seen that both Krueger & Maleckova and Berberi’s studies have the same conclusion. However, these studies have some drawbacks. They cannot be generalized to all regions and all times because they are specifically focused on one terrorist group. Also their studies looked at just the terrorism, poverty and education but they didn’t consider the role of inequality. By examining the effect of inequality this study may close that gap.

Another variable that can explain poverty is GDP. Daniel Lederman, Norman Loayza, and Ana María Menéndez’s study (2000) concluded that per capita GDP growth rate is one of the strong determinants of the incidence of violent crime rates. But Claude Berrebi’s study (2003) looked for the effect of GDP on terrorism on West Bank and Gazza and he found that GDP per capita growth yielded insignificant results under all the specifications. Since GDP is an indicator of poverty level this study also look for the effect of the GDP of geographical regions on terrorist incidents rate (Dansuk, 1997).

**Inequality, Crime and Terrorism**

In most studies the inequalities examined were by income inequalities, however Martin (2004), Anderson, (2005) stated that there are many kind of indicators of inequalities which have been previously used to examine inequalities between race,
This part of the study will examine inequalities and its relationship to crime, terrorism, and conflict. Many studies have used income inequality as the only indicator of inequality but this study believes that other inequalities besides income inequality also important to examine in terms of their possible effect on terrorism. Thus more indicators of inequalities such as the inequality of distribution of government resources, and health inequalities will be used as the data is available.

Martin, (2004) states the meaning of inequality as a “disparity or variability between different groups.” These disparities may be between race, gender, and/or geographical areas. Anderson (2005) categorized inequalities into two groups. One of them was short term and the other one was longer-term inequality. The second one is often referred to as ‘chronic inequality’. The first one indicates inequalities which do not continue over a long phase of time; however the second one refers to the inequalities that continue for individuals from their youth, and last for long periods of time. This is accepted as more unjust and sometimes as an indication of discrimination and thus has become more subject of policy consideration (Anderson, 2005).

Inequalities in political, economic, and the social arena increases the likelihood of terrorism, because terrorism occurs as a response to injustice (Laqueur, 1999). Previous studies showed that lower-class people experience greater subjective feelings of powerlessness, and those who feel powerless are more likely then others to engage in delinquency (Braithwaite, 1979; Messner & Golden, 1992; Shaw & McKay, 1942) while some studies found no relationship (Berrebi, 2003; Krueger & Maleckova, May 2002; Sampson & Groves, 1989). Researchers found out that the expected level of crime will be
higher in a community with increased inequality (Chiu & Madden, 1998; Bourguignon, 2001; Demombaynes & Ozler, November, 2002; Ehrlich, 1973; Lederman et al., 2000; Wilson & Daly, 1997). Chester (1976) argues that poverty is not the only important issue that should be studied, but rather “perceived relative deprivation” should also be focused on. Danziger and Wheler (1975: 119) supposes that “the potential criminal is concerned not only with his own income, but with how this income is compares to that of his reference group, and the relative distribution of income.”

Inequality has been understood as primarily a class phenomenon, something that is associated with the distribution of income and wealth and private property. Equality is now thought to be a matter of politics, especially in recent decades where inequities between male and female, whites and blacks and between one country and another have generated important political movements and problems that have focused on unemployment, poverty, and low pay. These differences have begun to displace inequality as the dominant concern of progressive politics (Jefferson & Pryor., 1999). Absolute deprivation may have its effects on the psychological well being of those affected and can result in a rise in violence (Sampson & Groves, 1989).

Hojma, (2002) tried to prove this in his study concerning the crime rates of Buenos Aires. He designed a multiple regression model which included the variables, unemployment, inequity (GINI coefficient), inflation, and structural change of the economy. His findings showed that both inequality and the structural change contributed more to crime in Buenos Aires Argentina, than did unemployment and the poverty rate.
Kennedy, Kawachi, Stith, Lochner and Gupta’s study (1998) hypothesized that poverty and income are powerful predictors of homicide and violent crime and that the gap between poor and rich contribution to that. According to them income inequality and poverty, play important roles in determining the incidence of violent crime but that this issue has been increasingly neglected in the current policy debate. They also measured the level of social trust as measured by the proportion of residents in each state who believed that `most people would take advantage of you if they got the chance." They also used the per capita density of membership in voluntary groups in each state derived from U.S. General Social Survey. They collected the crime rate data between 1987 and 1994 for each of the 50 U.S. states. Social capital was measured by the weighted responses to two items from the U.S. General Social Survey, poverty and household income. The data for each state was obtained from the 1990 U.S. Census data. They used Pearson's correlation and ordinary least squares (OLS) regression. Finding of this study showed that there is a strong correlation between violent crime and income inequality. Also per capita group membership and lack of social trust were found to strongly relate to the violent crime rate. State-level variations in income inequality were strongly connected with a lack of social trust. States with a high inequality also had more respondents who agreed that “most people would try to take advantage of you if they got a chance.” These findings are important because these may be the factors that have indirect effect of inequalities. They infer that as income inequality increases level of social mistrust also increase and this in turn is associated with increases in homicide rates.
Demombynes & Ozler (November, 2002) examined the effects of local inequalities on inequalities and violent crime in South Africa. They related the inequalities to crime and they used sociological theories that implied inequality leads the crime. The authors did not find evidence that inequality between racial groups promoted interpersonal conflict at the local level. They hypothesized that inequality and social welfare in general may have effects on crime through other channels. They explained the reason for inequity was a lack of social capital, lack of upward mobility or social disorganization. They concluded that all of these may result higher levels of crime. Further more, economic inequities between groups may produce conflict in society by consolidating and reinforcing ethnic and class differences. They used secondary data to measure the effect of welfare measures on different kind of crime. Results showed that while there is a strong relationship between property crime and inequality a weaker relation is existed for violent crime. Also their findings indicated that inequality in racial groups is correlated with all types of crime.

Isaac Ehrlich’s (1973) research indicated the existence of a strong positive correlation between income inequality and crimes. He saw crime as a choice between legal and illegal activities. He used economic theory as a basis for his study which explained that in a given period if two activities were mutually exclusive, one would be chosen between them by comparing the expected utility associated with each alone. Offenders are free to combine a number of legitimate and illegitimate activities. He implemented an ordinary least square regression and used the crime rate as a dependent variable. The independent variable were the average time served by offenders in prison,
median income of families, percentage of families below one half of median income, percentage of nonwhites in population, percentage all males between 14 to 24 and 35 to 39, labor force participation rate, mean number of years of schooling of population, per capita expenditure on police. This study found a significant relationship between the crime rate and the share of the population below half the median income across the US states.

Eric Naumayer, (2004) studied the link between income inequality and violent crime. He argued that inequality causes a higher rate of homicide and robbery/violent theft. He used the number of robberies and violent thefts per one million inhabitants as dependent variables and GINI coefficient, the gross domestic product (GDP), growth rate, the unemployment rate, the urbanization rate, the female labor force participation rate and the share of males in the age group 15 to 64 as control variables. He utilized a multiple regression model to be able to reveal the relationship of multiple variables on violent crime rate. The study utilized the following two main sources of cross-national data on robbery/violent theft: the United Nations (UN) and the International Criminal Police Organization (Interpol). The unit of analysis was the country. However the results of this study suggested that inequality was not a statistically significant determinant of violent crime.

Blau & Blau, (1982) examined the rates of urban criminal violence and racial inequality in socioeconomic conditions, and looked at whether urban poverty or economic inequality was the major source of criminal violence. Their hypothesis stated that “variations in rates of urban criminal violence largely result from differences in
racial inequality in socioeconomic conditions. The three central concepts that they focused on were heterogeneity of groups such as racial heterogeneity, income inequality, correlation between two or more dimensions of social differences and consolidate status distinctions. For example, how strongly race was related to education and income. In this study they used data from 125 of the largest American metropolitan areas. They used rates of major violent crime; murder, forcible rape, robbery, and aggravated assault- known to the police, as dependent variables and various independent variables such as Gini coefficient, population size, percent black, percent poor, geographical region, income inequality, percent divorced, and racial socioeconomic inequality. Their findings showed that criminal violence was positively related to location (South). It was also positively related to the proportion of blacks, and it was positively related to poverty. Blau & Blau interpreted these results as the emphasis on culture of poverty. They concluded that socioeconomic inequality between races, as well as economic inequality generally increases the rates of criminal violence. Significantly, in this study once the economic inequalities were controlled for poverty no longer influenced these rates. So, if there was a culture of violence, one should be able to look at the economic inequalities to identify its roots.

*Grievance* becomes an important factor where inequalities exist. A grievance is a formal statement of complaint, generally against an authority figure. As Marxist theory explains economic inequality causes industrial working class people to rebel because they have nothing to lose except their chains. Consistent with this basis, continual inequality reinforces the demand for political change because it leads to growing degradation and
despair (Murshed & Gates, 2003). Considering this, Sambanis (2004) states that poverty by itself does not cause delinquency or conflict, but group inequality does because it increases grievances. He states that “the highest risk of violent conflict occurs in societies where there is an overlap between poverty (class cleavages) and ethno religious cleavages, that is, in countries with so-called ranked social systems”.

S. Mansoob Murshed and Scott Gates (2003) examined inequality and its relationship to the Maoist insurgency in Nepal. According to them grievance rather than greed was the main motivating force of the insurgency. Horizontal or inter group inequality which represent the ethnic and cast dimension are highly relevant in explaining the Nepalese civil war. Their main hypothesis was that inner group inequality and landlessness played a central role in motivating and sustaining the conflict in Nepal. In addition to the income inequalities, they stated that the different kind of inequalities such as asset inequalities and land distribution inequalities, unequal access to public employment, unequal access to public services and over taxation, economic mismanagement, and institutional failure in Nepal all played a roll in the conflict in Nepal. These inequalities assisted Maoist recruitment and retention, because they made the insurgent’s life with the Maoist group an attractive option. In their study they used the intensity of the conflict, measured by number of deaths as dependent variable and human development indicators, life expectancy, years of schooling, education, landlessness, road density, and the extent of the mountain terrain. They used human development indicators and district wide data on landlessness as well as geographic characteristics data as a source of secondary data. They used Poisson regression analysis technique, which
described the probability that an event might occur. They found that intensity of conflict across the district of Nepal was significantly explained by inequality indicators. They stated that well defined grievances were required for ethnically based conflicts. Indicators of inequality play a notably strong role in increasing civil conflict. They found that the greater the degree of inequality the greater the intensity of conflict. Resource rich districts were likely to experience fewer deaths due to civil conflict than resource poor districts. They also concluded that other forms of horizontal inequality assist Maoist recruitment and retention making life in Maoist cadres a relatively attractive option.

Similar to Mansoob Murshed and Scott Gates (2003) study Nicholas Sambanis’s (2004) study looked at the relationship between poverty, inequality and political violence. He argued that “one of the significant conditions that are necessary for some type of political violence such as civil war or coups is poverty and inequality.” He states that economic inequality may have a direct or indirect effect on the risk of political violence. His dependent variable was civil war onset. He used the control variables population size, income per capita, oil exportation. As Fearon and Laitin (2003), who view terrain as part of the technology of insurgency which provides hideouts for rebels, Sambanis also used terrain feature as a independent variable. Results of multiple regression statistical method showed that income per capita, population size and instability were significant factors. He concluded that higher income and educational accomplishments should reduce the risk of political violence by encouraging political participation and channeling conflict through institutional pathways rather than through violence. He inferred that people with the lowest economic opportunity and least education level will be those who do the most
fighting. According to the results of the analysis GDP per capita was one of the strongest variables explaining conflict. Sambanis stated that rich, industrialized countries are apparently free of civil war risk where as middle-income countries have low and declining risks.

From the findings of the aforementioned studies this study infers that if conditions of extreme poverty and inequalities prevail, then terrorists can find supporters for their activities and the number of terrorist incident will increase. Most of the previous studies used Gini coefficient as a measurement of income inequality, however there are other variables that can be accepted as inequality indicators.

Inequalities other than Income

Although it is possible to examine inequality in relation to many diverse parts of life, as can be seen from the examination of the literature, most studies used only income inequalities to refer to inequality. There are many other ways in which inequality can be measured, depending on the issue that best fits the population (Martin, 2005, Anderson, 2005). Amartya Sen (1998) explained that different forms of inequality become important according to different circumstances. According to their priority they are considered in policy agendas. Policy makers mainly focus on inequalities which appear most damaging or most objectionable to the common notion of justice. These inequalities may be the status of particular groups, lack of access to particular goods and services, such as education, health or justice, or just an unequal income distribution (Tanzi, 1998). In recent times the focus of justice has focused on distribution of resources (Solomon & Murphy, 2000).
Government Role in Inequalities

Many factors are addressed as reason for inequalities. Tanzi (1998) describes systematic factors as “social norms or institutions, broad economic changes, and the role of government.” Each of these factors has a role as a determinant of inequality, as they shape income and wealth such as “the fundamental economic, social, and political process that causes levels of inequality to differ over time and/or across countries” (Anderson, 2005, p. 5). Among these factors government’s role as redistribution of resources is important because major structural policies on redistribution of resources carry out an important role in the government’s policy agenda which affects inequality, and income and wealth sharing of people (Martin, 2004; Ríos-Rull, 2001; Tanzi, 1998).

Anderson (2005) indicates universal “public provision” (e.g. health care, education, water and sanitation) as solving problem of disparities. Many government policies aim to provide equal opportunities between members of social groups. These groups may be defined by gender, ethnicity, disabilities, and geographical regions. Policies that aim to reduce inequalities between these groups’ focused on different issues such as educational attainment, health outcomes and negative characteristics of areas (J. Martin, 2004). However Stratuss (1998p. 51) focused on the differences between the equality of opportunity and the equality of results explaining that “government’s role is to ensure that everyone starts off from the same location not that everyone ends up in the same condition. Redistribution of resources constitutes a significant number of efforts in public policy (Rios-Rull, 2001). Gunatilaka. & Chotikapanich’s study (2005) showed evidence from Sri Lanka as to how important the government’s policies are on
distribution of resources. In this study it was seen that high economic development and low unemployment levels are not enough to ensure public order. Related to distribution issues there were continuing social conflicts and greater political instability in Sri Lanka. As seen in this example, unequal distribution of resources may result in conflict. The government can have an effect on the distribution of income and wealth by its policies. However, the implemented policies may not produce desired effects if they don’t supply equal opportunities (Tanzi, 1998).

Tanzi’s (1998, p. 16) explanation how inequalities between groups emerge or increase give us a very good understanding of the issue;

“Political pressures often push spending away from the intended or the desirable targets and redirect it towards the general population or toward less desirable destinations. For example; spending may be diverted toward tertiary or secondary education and away from primary education; too much health expenditure may go for modern hospitals in big cities and not enough for basic health care especially in poorer areas; too much money may go for new projects and not enough for operation and maintenance expenditure, especially in less developed or poorer areas. It is a common observation that roads in poorer areas are less well maintained than roads in richer areas.”

**Educational Attainment Crime and Terrorism**

Collier and Hoeffler (2001) stated that “higher educational attainment should reduce the risk of political violence by encouraging political participation and channeling conflict through institutional pathways rather than violence” Bloch (1957) stated that the responsibilities of schools with respect to delinquency are over estimated because fundamental patterns of a person’s behavior are already formed when he/she reached school age.
It is suggested that education should be representative of earnings potential, and that this should be related to the crime rate (Crutchfield & Pitchford, 1997; Gould, Weinberg, & Mustard, 1998; Sambanis, 2004). There is no consensus on the effects of education on delinquency. Robert D. Crutchfield; Susan R. Pitchford’s study (1997) point out that education is inversely related with general criminal involvement and violent crime, but does not effect property crime. Involvement in criminal activities is less when youth are participating in school because their involvement in education makes them less likely to engage in crime. Similarly, many other study’s findings show significant and positive relationship with delinquency and education level (Allison, 1972; Mcpheters, 1976; Pogue, 975). However some studies found education attainment and crime rates insignificant contrary to the expectations but Elhrich (1973) came up with different proposition for this insignificant, inconsistent, and frequently positive relationship between crime and educational attainment. First of all, the effect of education on unreported crime rate should be considered and secondly, that the unequal distribution of schooling and training is more important than mean level of education which appears strongly related to the crime rate. Merton (1938) pointed out that education plays an important role. He believes this because the lack of education hinders occupational opportunities. This results in limiting the possibilities of individuals within certain groups. They cannot achieve their goal through the use of institutionalized means, and this results other inequalities. However most critiques agree that the relationship between political violence and education level is that leaders of terrorist groups being more educated than followers (O’Neill, 26 October, 2002). The reason for this was explained
by Sambanis, (2004, p. 170), as; “Leaders must take more risks, have a higher capacity to fulfill their missions, and be able to motivate others to fight”.

Jefferson and Pryor’s study (1999) of 474 hate groups in USA in 1997 looked for whether special economic conditions were related to the location of these groups. The findings of the study showed that the existence of hate groups was unconnected to all the economic variables. But they did find that there was a statistically significant positive result with education level. They concluded that the education level of people in a location is directly related to likelihood of being residence to a hate group.

Although Krueger, & Maleckova (May 2002) explored the relationship between education and participation in political violence or terrorist activities, after Jefferson and Pryor’s (1999) findings, they reached a different result. They could not find any relationship as between education level and political violence. One of the variable that they included in the statistical analysis as a determinant of the participation in Hezbollah militant activities in the late 1980s and early 1990s was education. Krueger, & Maleckova (May 2002) stated that there was no relationship between violence and poverty levels for the perpetrators and also no relationship between education level. But Christina Paxson (2002) criticized their findings as with an unusual conclusion “increasing schooling in Lebanon could actually increase the supply of suicide bomber.”

Another interesting finding of Kruger and Maleckova was that although results showed more educated people are likely to support attacks, also more educated people are just as likely to oppose those attacks. According to Paxson (2002) a key question of “whether more education and affluence at some point in the past could have prevented the current
situation from emerging” was not examined. Richard Rose’s study (1968) is a good example of the role that education plays in supporting political violence. He surveyed 1200 individuals from both side of the conflict, and asked whether they supported violent importations against the opposite side and their findings showed that the more educated people from both sides were more likely to disagree. The higher the educational level, the more were the views according to the study’s results. Inferring from the results of other studies Krueger and Maleckova’s results cannot be generalized to the other regions other than Gaza Strip and West Bank (Paxson, 2002).

Nicholas Sambanis’s (2004) study looked at the effect of education on political violence although his study’s mainly focused on poverty, inequality and political violence. Results of multiple regression statistical method showed that the educational level was related to political violence. His explanation to this was that education encourages political participation and directs people to solve their problems through institutional pathways rather than violence.

**Unemployment, Crime and Terrorism**

Another economic variable which has an effect on crime levels is unemployment. Bloch, (1957) mentioned the psychological cost of unemployment. He explained that the loss of a job lower the threshold of social inhibition, and this may make individuals more prone to be criminals. Areas with a high proportion of unemployment will experience more crime than areas with an overall low proportion of unemployment, as Ellis’ study (1991) proved. He implemented a time series analysis and unemployment was found as a significant effect on crime rates in Jamaica. Poor area residents have limited or no decent
job networks. Most well paying jobs had moved to other areas and available jobs were beyond the skill level of disadvantaged neighborhood residents (Sullivan, 1973; Wacquant & Wilson, 1989). Studies of Land et al. (1990) Yamada et al. (1991), Freeman (1995) al indicated that unemployment was positively related to crime. They found that increasing the unemployment rate increases the crime rate.

The study of Gould, et. al (1998) looked at the relationship between crime and labor market conditions. They looked at the unemployment rates and estimates of the impact of changing labor market opportunities for the young, unskilled workers on crime rates. This study used violent crime as dependent variable and used percentage of workers employed in high wage industries, average wage of a non college man, age distribution, sex, poverty level, income per capita, income per retail worker, household income, and unemployment rate. They found that economic conditions are important determinants of violent crime. They ran a county level regression analysis. They obtained the crime data from FBI’s Uniform Crime Report and the rest of the data was obtained from US census. They first examined year to year variation by performing a panel regression using annual data from 1979-1995. This Study was trying to find significant relationship between yearly changes in wage and yearly changes in crime. Then they performed “a ten-year difference (1979-1989) regression at the county level in order to exploit the low frequency variation in the data”. Results of the study indicated that economic conditions are important determinants of crime. Regression results showed that the wage declines of unskilled men have contributed significant amount of increase in burglary, larceny, aggravated assault, and robbery. Although the unemployment rate was
found to be a significant factor, the average increase in unemployment was very small. Therefore, the “predicted” increase in most crimes due to the increase in unemployment is in the 1 to 2 percent range.

Stephen Machin, Costas Meghir (2004) explored the role of economic incentives, particularly wage distribution in crime rates. They hypothesized that in a simple economic model declining labor market opportunities are likely to increase illegitimate (criminal) activities while participation in legitimate (labor market) activity is decreasing. They used data from the police forces in the areas of England and Wales between 1975 and 1996. Time duration was chosen for this study. They found a higher increase in the crime rate in England than rest of the Europe which made the problem an important public policy issue. They used logistic regression to be able to predict probabilities of involvement in crime. One of the data sources they used was the New Earnings Survey (NES) enclosed area-level codes, largely at the county level which also matched to the police force areas. From the available data sets they were able to observe a sample of wages in each police force area. Crime data for each studied area of England and Wales were also collected. They also used the following variables as control variables; real hourly wage, share of people aged 15-24 in population, conviction rate, average sentence length, crime rate, area unemployment rates. Their finding showed a relationship between low wage labor markets and crime. Between the mid-1970s and mid-1990s, areas where wage growth was at the bottom of the wage distribution experienced faster rising crime rates. In this study all studied variables reflecting incentives for committing crimes, were found significant and they had large impacts on crime.
François Bourguignon, Nuñez, & Sanchez’s (2003) study hypothesized that inequality should influence crime positively. They used a time series analysis model, using panel data from seven of the largest Colombian cities over a fifteen-year period from 1986 to 1998. They used income distribution data from previously collected data from the survey of the "Encuestas de hogares" by another researcher Septpeber. Household income per capita, with households being weighted by size, represented the income distribution. From the same survey labor market related variables were extracted. They proposed a structural model which allowed detecting number of people living under a certain income level to have increased crime rates in that area. They used the annual rate of property crime per 100,000 as a dependent variable and for the independent variables they used Gini coefficient, homicide detection rate, guerilla and drug activity, year and city dummies, crime rate. Their findings showed that the crime rate is effected by the part of the population whose welfare lies below 80 percent of the mean of the total population. Additionally to that, the effect of inequality on crime was seen as strongly significant. Unemployment of the young population also was a positive and significant factor, which has affected the crime rate. Wages were not found to have a statistically significant relationship to the crime rate.

S. Mansoob Murshed and Scott Gates’s study (2003) about the Maoist insurgency in Nepal concluded that the lack of employment opportunities is an important factor that assists Maoist recruitment and retention, making life in Maoist cadres a relatively attractive option.
Some studies are less supportive of the link between crime and unemployment.

Holzman’s (1982) study examined 29,474 men who had at least two convictions resulting in incarceration for robbery, burglary, or both. This data was drawn from the 1974 Survey of Inmates of State Correctional Facilities. Results of the study showed that labor force participation of the target population was high. They concluded that the recidivist in robbery and burglary are highly likely to have a job while they are committing their criminal acts.

Jefferson and Pryor’s study (1999) on hate groups could not find any connection between unemployment and likelihood of belonging to a hate group. For them, existence of hate groups was unconnected to unemployment rate.

Hojma, (2002) look for the effect of structure of labor in census tracks to violent crime rates, but he could not find any relationship between unemployment and high crime rates. Rather he found a robust relationship to inequity and crime rates in Buenos Aires Argentina.

Krueger, & Maleckova (May 2002) also looked at the effect of unemployment on political violence in their study. Findings of their study indicated that these individuals, who planted bombs and tried to assassinate Palestinian mayors, were surprisingly coming from well paying occupations.

Following Krueger, & Maleckova (May 2002), Claude Berrebi’s study (September 2003) examined the link between economic desperation, schooling and participation in terrorist activity. His secondary data analysis showed that employment status was not statistically significant.
In conclusion, although findings of the studies show a discrepancy it is understood that the effect of unemployment to crime rate is an important issue, and this study also will include this variable to the analysis to be able to see whether unemployment has any effect on number of terrorist incidents in the provinces of Turkey.

**Size of Population**

A high population size increases the rates of crime (Messner, 1980; Mooris, 1971). Results of Arthur’s study (1991) showed that population size was positively associated with both violent and non-violent crimes. Kau and Rubin’s (1975) ordinary least square regression analysis results indicated that the size of an area’s population is related to property and violent crime rates. Swimmer’s study utilized ordinary least square regression analysis’s results and showed a positive relationship between population size, murder, rape, aggravated assault, robbery, burglary, and larceny. Blau & Blau’s study (February, 1982) examined the rates of urban criminal violence and racial inequality in socioeconomic conditions, and they included population size in their analysis. Their findings showed that criminal violence is positively related to population size.

Contrary to these studies other some studies findings show no relation between crime and population size (Allison, 1972; Huff & Stahura, 1980). However the literature overwhelmingly confirms a positive relationship between population size and the crime rates.
**Age/Percent Young**

One of the demographic variables that was found to be associated with crime was age (OJJDP, 1996). Many studies used percent of young male (population age 15-24) as a control variable to see its possible effect on crime. They stated that young people are more prone to be involved in crime. Furthermore, it is likely that different proportions of young in a city’s population contribute to crime rates (Baron & Straus, 1988; Cohen & Land, 1987; Land et al., 1990; Messner & Tardiff, 1986; Patterson, 1991). Nagin and Land’s study (1993) alleged that during certain age periods, an individual’s possibility of being involved in criminal activities increases. Additionally, these age groups are also more likely to be victimized than the others (Cohen & Land, 1987; Gould et al., 1998). In their study Gould et al. (1998) looked at the effect of age on the crime rate and they found age was significantly related to crime.

Ellis’s (1991) study also found age structure of a population the most important single factor in criminal violence. Jackson’s (1991) study of multivariate regression analysis of United States cities between 1970 and 1980 found significant effects on both violent and property crime. Also he concluded that this age group had the most participation in gangs.

Fernando Reinares’s study (2004) on ETA terrorist organization offered an empirical assessment of ETA. The study examined militants’ social and demographic characteristics from data which was derived from oral interviews with militants. The results of the paper showed that most of them were recruited between their late teens and
early twenties. It can be inferred that a percentage of the age group between 15-24 might have related to terrorist incidents in a geographic area.

Table 2 Table for previous studies

<p>| Poverty                     | Shaw, and McKay, (1942) (√) |
|                            | Messeschmidt, (1993), (√), &amp; (1997) (√) |
|                            | Hagan, (1994) (√) |
|                            | Sampson, and Grove, (1989) (√) |
|                            | Krivo, &amp; Peterson’s study (1996) (√) |
|                            | Danziger and Wheeler (1975) : cross sectional analysis of study (X), time series analysis (√) |
|                            | Bechdolt (1976) (X) |
|                            | Krueger, &amp; Maleckova (May 2002) (X) * |
|                            | Claude Berrebi (2003) (X)* |
|                            | Claude Berrebi (2003) (X)* |
| Income inequality          | Hojma, (2002), (√) |
|                            | Kennedy, et. al (1998) (√) |
|                            | Demombynes &amp; Ozler (2002) (√) |
|                            | Isaac Ehrlich (1973) (√) |
|                            | Eric Naumayer, (August 2004) (X) |
|                            | Blau &amp; Blau, (February, 1982) (√) |
|                            | Mansoob Murshed and Scott Gates (2003) (√)*** |
|                            | Nicholas Sambanis (2004) (√) *** |
| Unequal distribution of resources | Tanzi (1998) (√) ** |
|                            | S. Mansoob Murshed and Scott Gates (2003)*** |
|                            | Anderson, (2005)** |
|                            | Gunatilaka.&amp; Chotikapanich, (2005) (√) |
| Infant mortality rate      | Arnartya Sen (1998)** |
|                            | Tanzi (1998) (√) ** |
|                            | S. Mansoob Murshed and Scott Gates (2003)*** |
|                            | Anderson, (2005) |
|                            | Gunatilaka. &amp; Chotikapanich, (2005) (√)*** |
|                            | Murray, et. al., 1999 |
| Unemployment               | Elli (1991),( √) |
|                            | Gould, et. al (July 6, 1998) (√) |
|                            | François Bourguignon, et. al. (April, 2003) (√) |
|                            | Jefferson and Pryor (1999) (X) |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>School attainment</strong></td>
<td>Collier and Hoeffler (2001) (✓)</td>
</tr>
<tr>
<td></td>
<td>Crutchfield; &amp; Pitchford, (1997) (✓),</td>
</tr>
<tr>
<td></td>
<td>Robert D. Crutchfield; Susan R. Pitchford (1997) (✓)</td>
</tr>
<tr>
<td></td>
<td>Allison, 1972, (✓)</td>
</tr>
<tr>
<td></td>
<td>Pogue, (1975) (✓),</td>
</tr>
<tr>
<td></td>
<td>Elhrich (1975) (✗)</td>
</tr>
<tr>
<td></td>
<td>Krueger, &amp; Maleckova (May 2002) (✗)*</td>
</tr>
<tr>
<td></td>
<td>Nicholas Sambanis’s (2004) (✗)*</td>
</tr>
<tr>
<td><strong>Population size</strong></td>
<td>Messner, 1980 (✓)</td>
</tr>
<tr>
<td></td>
<td>Mooris, &amp; Tweeten 1971 (✓)</td>
</tr>
<tr>
<td></td>
<td>Kau and Rubin (1975) (✓)</td>
</tr>
<tr>
<td></td>
<td>Blau &amp; Blau (February:, 1982) (✓)</td>
</tr>
<tr>
<td></td>
<td>Allison, (1972), (✗)</td>
</tr>
<tr>
<td></td>
<td>Huff and Strahura, (1980) (✗)</td>
</tr>
<tr>
<td><strong>Percent Young</strong> (14-24)</td>
<td>OJJDP, (1996) (✓)</td>
</tr>
<tr>
<td></td>
<td>Land et al., 1990 (✓)</td>
</tr>
<tr>
<td></td>
<td>Patterson, (1991) (✓)</td>
</tr>
<tr>
<td></td>
<td>Messner and Tardiff, (1986) (✓)</td>
</tr>
<tr>
<td></td>
<td>Baron and Straus, (1988) (✓)</td>
</tr>
<tr>
<td></td>
<td>Cohen &amp; Land, (1987) (✓)</td>
</tr>
<tr>
<td></td>
<td>Nagin and Land’s study (1993) (✓)</td>
</tr>
</tbody>
</table>

(✓) studies that found relationship  
(✗) studies that could not found relationship  
* Studies on terrorism.  
** Studies that are not empirical studies but providing a good explanation of the issue.  
*** Studies on regional conflicts.
4. Poverty and Inequalities in Turkey

Poverty in Turkey

In general meaning poverty is associated with the words “lack” and “deprivation”. It is the absolute minimum standard of survival (Uzun, 2001). In the literature there are various definitions of poverty that use not only income as the variable to determine poverty level (DPT, 2001). For example, the World Bank defines a term “absolute poverty” on the basis of incomes to satisfy the “most compelling of human desires”. Absolute poverty explained as “per capita income of $1 a day in Asia and Africa, and $2 a day in Latin America and the Caribbean” (Raghavan 2002) and for developed countries it is $ 14.40. In 1996 this was 1.7 for Turkey according to Erdogan (1996). Besides this definition of poverty, another popular definition explains that the expenses of basic needs such as housing, education, health and similar cultural needs should be included when poverty is calculating and not just the required nutrition expenses (DPT, 2001; UNDP, 2001). UNDP (1997) explains that “poverty is more complex than to be reduced to a single dimensions of a human life” so other dimensions should be included. UNCHS (United Nations Human Settlements Programme) uses the term “working poor” which implies people who are employable rather than the people actually employed. "Within an enabling environment the “working poor” will be able to make a living, house themselves and obtain some services for which they can pay. The ‘working poor’ includes different groups, for instance people who work long hours for very low pay or who are engaged in low remunerative business. They have recently been joined by workers in the lower grades of government and private sector employment. A large category of the
working poor are women who are heads of households. They have typically low levels of education and lack marketable skills and easy access to credit” (UNCHS, 1996.). UNDP (1997, p. 15) looks poverty on human development perspective and it explains poverty as “opportunities and choices most basic to human development are denied to lead a long, healthy, creative life and to enjoy a decent standard of living, freedom, dignity, self respect of others”.

In Turkey poverty studies generally used household surveys. Most common calculations aim to find out the minimum level for a person to be able to satisfy the most compelling of human desires. This necessity differs according to a person’s age, sex or geographical area, or size of a household (DPT, 2001; TUSIAD, 2000).

According to Government Planning Institution of Turkey (DPT) (2001) poverty is measured by inequality between the members of a society rather than the total product of the whole society. So the important issue in improving a society’s poverty level is solving the inequality problem (DPT, 2001). Poverty by gender and race is another controversial issue that has significantly attracted attention as a result of the unequal opportunities provided to these groups (TUSIAD, 2005).

Erdogan (1996) calculated the percentage living below poverty according to the geographical regions of Turkey. He derived the necessary data from government statistical institution of Turkey. His study showed different calculations according to different criteria. His first calculation was based on the minimum expenditure on food which shows the percentage who could not afford the minimum level of food expenditure. In his second model he calculated the percentage of expenditure of food to
total expenditure to be able to find the percentage who could not earn enough to afford minimum food for their household. The third model consisted not only of food as a required spending but also housing, clothes, and household goods to determine the percentage who could not afford these. According to his study 55% of Turkey is not getting enough nutrition, and among these 11 percent consisted of a very poor group. Also he is drawing attentions that there is explicit difference between the geographical regions.

Another study about poverty level of Turkey was Dumanli’s study (1996). He examined dimensions of poverty in Turkey during a series of time. He aim was to fill the gap of well established studies on Turkey’s poverty problem, and find productive solutions to poverty problem of Turkey. He used the data from the Government Statistics agency’s Household consumer survey from 1987. He defined the poverty level as having the income to be able to purchase daily necessary calorie limits for a person of 2450 calorie. According to this measurement the table below shows daily, monthly, and yearly poverty levels.

Table 3 Poverty limit for Turkey 1987-1994

<table>
<thead>
<tr>
<th>Years</th>
<th>Daily</th>
<th>Monthly</th>
<th>Yearly</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987</td>
<td>0.91</td>
<td>27.3</td>
<td>332.2</td>
</tr>
<tr>
<td>1988</td>
<td>0.91</td>
<td>27.3</td>
<td>332.2</td>
</tr>
<tr>
<td>1989</td>
<td>1.00</td>
<td>30.0</td>
<td>365.0</td>
</tr>
<tr>
<td>1990</td>
<td>1.46</td>
<td>43.76</td>
<td>532.4</td>
</tr>
<tr>
<td>1991</td>
<td>1.41</td>
<td>42.2</td>
<td>513.4</td>
</tr>
<tr>
<td>1992</td>
<td>1.52</td>
<td>45.71</td>
<td>556.2</td>
</tr>
<tr>
<td>1993</td>
<td>1.6</td>
<td>48.13</td>
<td>585.6</td>
</tr>
<tr>
<td>1994</td>
<td>1.48</td>
<td>44.5</td>
<td>541.4</td>
</tr>
</tbody>
</table>
Dansuk (1997) studied existing poverty problems of Turkey and their relationship to the social indicators. He examined social bases of poverty by accepting consumer expenditure as an indicator of it. According to this calculation of the poverty level, since 1987 the southeastern region of Turkey has had the lowest average income rate among all seven geographical regions. Its level is 29.950 which is accepted as the poverty level.

This information is demonstrated in the table below.

**Table 5 Income distribution according to regions**

<table>
<thead>
<tr>
<th>Regions</th>
<th>In Regions</th>
<th>Between regions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Household</td>
<td>Individual</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Household</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Individual</td>
</tr>
<tr>
<td>Ege-Marmara (West and North)</td>
<td>6.53</td>
<td>5.11</td>
</tr>
<tr>
<td>Meditermian (South)</td>
<td>32.4</td>
<td>28.61</td>
</tr>
<tr>
<td>Mid Anatolia (Mid)</td>
<td>32.51</td>
<td>27.62</td>
</tr>
<tr>
<td>Black sea (North)</td>
<td>28370</td>
<td>22.59</td>
</tr>
<tr>
<td>East &amp; South East</td>
<td>53.23</td>
<td>47.59</td>
</tr>
<tr>
<td>Urban</td>
<td>17.73</td>
<td>17.75</td>
</tr>
<tr>
<td>Rural</td>
<td>34.19</td>
<td>30.07</td>
</tr>
<tr>
<td>Turkey (General)</td>
<td>25.54</td>
<td>24.36</td>
</tr>
</tbody>
</table>

According to a public survey implemented by Institution of Turkish Government’s Social Support and Solidarity Fund (2004), the poverty profile of Turkey
indicates that people of Turkey believe that the southeastern region has a higher number of people living below poverty line. But that the Eastern Anatolia region has the highest poverty rate. These two regions are also regions that suffered from terrorism between 1980 and 2000 more than the other regions. According to the survey results, implemented by Institution of Turkish Government’s Social Support and Solidarity Fund (2004) a) 77.7% of the sample population strongly believed that the increasing poverty level also exacerbated the problems of social disorganization b) 50.2% of surveyed population believed that high poverty results decrease the trust to government c) 79.3% of the population believed that increasing poverty is a factor that increases crime against property and life.

These studies shows that poverty conditions are improving but still need the attention of policy makers. These existing problems may trigger some other problems. From the previous studies on crime, terrorism, and conflict current study accept that poverty has an effect on Turkey’s terrorism problems. Thus following hypothesis can be suggested; H1a: “Provinces of Turkey with higher poverty rates have higher numbers of terrorist incidents.” H1b: “Provinces of Turkey with lower levels of GDP per capita have more terrorist incidents.”

Income distribution can represent income inequality between social and economic institutions, income gaps between rich and poor, and distribution of resources (Doganoglu & Gulcu, 2001; TUSIAD, 2000). Distribution of income can be examined under two main groups. The first is functional income distribution which shows the distribution of income obtained from production between socio economic groups and
manufacturing factors. The second is *individual income distribution* which represents the distribution of total income among individuals, families and groups within society. This study will attempt to find the inequalities between households (DPT, 2001).

Since 1974 Turkey reached $3000 GDP per capita up from $1000 (DPT, 2001) which is a very good indicator of Turkey’s development. But, the important point here is how this development has affected the individuals. In Turkey, the Government Institute of Statistics has implemented Household income and expenditure surveys to all seven geographical regions of Turkey, both urban and rural areas since 1963.

The results are useful to determine inequalities between the highest income groups and lowest income groups (TUSIAD, 2000). To be able to determine this, they divided the income groups into twenty different clusters each representing 5 percent of the total. It is worth noting that when the number of terrorist incidents was increasing corresponds to the time when the gap in income inequality was getting bigger. For example, in 1987 the richest 5% got the 23.01% of the total income and in 1994 this went up to 30.34% (DPT, 2001).
Table 6 Income distribution according to household of each %5 Income groups

<table>
<thead>
<tr>
<th>Household income percentage group</th>
<th>Turkey (General)</th>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5%</td>
<td>0.7</td>
<td>0.69</td>
</tr>
<tr>
<td>2</td>
<td>5%</td>
<td>1.24</td>
<td>1.15</td>
</tr>
<tr>
<td>3</td>
<td>5%</td>
<td>1.53</td>
<td>1.4</td>
</tr>
<tr>
<td>4</td>
<td>5%</td>
<td>1.76</td>
<td>1.62</td>
</tr>
<tr>
<td>5</td>
<td>5%</td>
<td>2.01</td>
<td>1.83</td>
</tr>
<tr>
<td>6</td>
<td>5%</td>
<td>2.28</td>
<td>2.04</td>
</tr>
<tr>
<td>7</td>
<td>5%</td>
<td>2.53</td>
<td>2.26</td>
</tr>
<tr>
<td>8</td>
<td>5%</td>
<td>2.79</td>
<td>2.49</td>
</tr>
<tr>
<td>9</td>
<td>5%</td>
<td>3.06</td>
<td>2.74</td>
</tr>
<tr>
<td>10</td>
<td>5%</td>
<td>3.33</td>
<td>2.99</td>
</tr>
<tr>
<td>11</td>
<td>5%</td>
<td>3.66</td>
<td>3.28</td>
</tr>
<tr>
<td>12</td>
<td>5%</td>
<td>4.02</td>
<td>3.59</td>
</tr>
<tr>
<td>13</td>
<td>5%</td>
<td>4.43</td>
<td>3.97</td>
</tr>
<tr>
<td>14</td>
<td>5%</td>
<td>4.93</td>
<td>4.43</td>
</tr>
<tr>
<td>15</td>
<td>5%</td>
<td>5.52</td>
<td>4.97</td>
</tr>
<tr>
<td>16</td>
<td>5%</td>
<td>6.28</td>
<td>5.65</td>
</tr>
<tr>
<td>17</td>
<td>5%</td>
<td>7.25</td>
<td>6.53</td>
</tr>
<tr>
<td>18</td>
<td>5%</td>
<td>8.66</td>
<td>7.84</td>
</tr>
<tr>
<td>19</td>
<td>5%</td>
<td>11.01</td>
<td>10.17</td>
</tr>
<tr>
<td>20</td>
<td>5%</td>
<td>23.01</td>
<td>30.34</td>
</tr>
</tbody>
</table>

Source: State statistics department of Turkey's Household income and expenditure survey (1987 and 1994)

Table 6 shows that the bottom 20% has had a decrease in income from 5.24% in 1987 to 4.86% in 1994. Contrary to that, the income of the richest 20% increased from 49.94% in 1987 to 54.88% in 1994 (DPT, 2001). This shows us that the income inequality has gotten worsen in Turkey between 1987 and 1994 (TUSIAD, 2000).

The quality of all facilities or opportunities directly or indirectly result income inequalities between different regions of Turkey. This shows the importance of examining other inequalities besides income inequality. The income inequality problem had worsened in part because of the unequal development of the regions. For example Eastern Anatolia region’s average GDP per capita is less than Turkey’s average. Kocaeli
a province in the west of Turkey, has the highest GDP per capita ($ 7500). This is nine times higher than income in the Agri a province of East Anatolia region which has lowest GDP per capita ($877). The table shows the changes of GDP per capita in 7 geographic regions of Turkey between 1991 and 1998. According to the data in the table below, East Anatolia and South East Anatolia regions don’t show any improvement in terms of GDP. As a matter of fact GDP gets worse with time. Interestingly, the terrorism problem of Turkey is the highest in these two geographical regions.

### Table 7 GDP per capita rate according to regions

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mediterranean (South)</td>
<td>1401432</td>
<td>0.95</td>
<td>1453896</td>
<td>0.95</td>
<td>1554760</td>
<td>0.96</td>
<td>14552261</td>
<td>0.96</td>
</tr>
<tr>
<td>East Anatolia</td>
<td>601735</td>
<td>0.41</td>
<td>626713</td>
<td>0.41</td>
<td>648386</td>
<td>0.4</td>
<td>643753</td>
<td>0.43</td>
</tr>
<tr>
<td>Ege (West)</td>
<td>1771808</td>
<td>1.2</td>
<td>1856638</td>
<td>1.21</td>
<td>1987366</td>
<td>1.22</td>
<td>1918373</td>
<td>1.27</td>
</tr>
<tr>
<td>South East Anatolia</td>
<td>914638</td>
<td>0.62</td>
<td>918788</td>
<td>0.6</td>
<td>953969</td>
<td>0.59</td>
<td>853543</td>
<td>0.57</td>
</tr>
<tr>
<td>Middle Anatolia</td>
<td>1389395</td>
<td>0.94</td>
<td>1424737</td>
<td>0.93</td>
<td>1505712</td>
<td>0.93</td>
<td>1427576</td>
<td>0.95</td>
</tr>
<tr>
<td>Black sea (North)</td>
<td>1004798</td>
<td>0.88</td>
<td>1077487</td>
<td>0.7</td>
<td>1097752</td>
<td>0.68</td>
<td>1063647</td>
<td>0.71</td>
</tr>
<tr>
<td>Marmara (North West)</td>
<td>2237249</td>
<td>1.52</td>
<td>2309062</td>
<td>1.51</td>
<td>2455326</td>
<td>1.51</td>
<td>2169458</td>
<td>1.44</td>
</tr>
<tr>
<td>Turkey (General)</td>
<td>1472000</td>
<td>1</td>
<td>1530808</td>
<td>1</td>
<td>1623613</td>
<td>1</td>
<td>1507539</td>
<td>1</td>
</tr>
</tbody>
</table>


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<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mediterranean (South)</td>
<td>1506426</td>
<td>0.95</td>
<td>1554081</td>
<td>0.96</td>
<td>1706976</td>
<td>0.95</td>
<td>1712882</td>
<td>0.94</td>
</tr>
<tr>
<td>East Anatolia</td>
<td>626359</td>
<td>0.39</td>
<td>647481</td>
<td>0.39</td>
<td>660216</td>
<td>0.37</td>
<td>673339</td>
<td>0.37</td>
</tr>
<tr>
<td>Ege (West)</td>
<td>1990537</td>
<td>1.25</td>
<td>2103466</td>
<td>1.26</td>
<td>2246740</td>
<td>1.25</td>
<td>989641</td>
<td>1.25</td>
</tr>
<tr>
<td>South East Anatolia</td>
<td>914638</td>
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<td>918788</td>
<td>0.6</td>
<td>953969</td>
<td>0.59</td>
<td>853543</td>
<td>0.54</td>
</tr>
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<td>Middle Anatolia</td>
<td>1389395</td>
<td>0.94</td>
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<td>1505712</td>
<td>0.93</td>
<td>1427576</td>
<td>0.93</td>
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<tr>
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<td>0.68</td>
<td>1063647</td>
<td>0.75</td>
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<td>2455326</td>
<td>1.51</td>
<td>2169458</td>
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<td>1</td>
<td>1623613</td>
<td>1</td>
<td>1507539</td>
<td>1</td>
</tr>
</tbody>
</table>


Table below derived from the data of 1987-1994 household income distribution survey. This shows us that the Mediterranean region (South), Middle Anatolia region, Black Sea regions (North) of Turkey have almost the same average yearly income. Marmara Region (Northwest), Aegean Sea region (West) has income below average, and
Eastern & Souteaster Anatolia regions have income below average. For example in 1994 Marmara and Aegean Sea region have 48.086.150 TL income whereas Eastern and South Eastern Anatolia have 20.697.169 TL average income.

Table 8 Income distribution according to Regions

<table>
<thead>
<tr>
<th>Regions</th>
<th>Household members</th>
<th>members with income</th>
<th>Total income</th>
<th>Average personal income (TL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marmara (North West)</td>
<td>31.3</td>
<td>38.2</td>
<td>34.3</td>
<td>39.8</td>
</tr>
<tr>
<td>Mediterrain (South)</td>
<td>13.4</td>
<td>12.7</td>
<td>12.1</td>
<td>12.2</td>
</tr>
<tr>
<td>Middle Anatolia</td>
<td>23.3</td>
<td>17.2</td>
<td>23.5</td>
<td>16.5</td>
</tr>
<tr>
<td>Black sea (North)</td>
<td>11.4</td>
<td>13.5</td>
<td>13.4</td>
<td>16.3</td>
</tr>
<tr>
<td>South East &amp; East Anatolia</td>
<td>20.6</td>
<td>18.4</td>
<td>17.3</td>
<td>15.2</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

source: 1987-94 household income distribution survey

DPT (2001) states that the factors that affect Turkey’s income distribution are population density, the high population increase in the regions, problem of unemployment, inflation, unexpected interruptions to the economy, education level, and structure of public services. Nicolas Sambanis (2004) explained that the problem of poverty and inequality occur as a result of “rapid growth rates and structural changes to the economy, deepen group competition for limited sources.”

Previous researches show that inequalities are highly related to crime, terrorism, and conflict. It has been demonstrated that income inequalities in Turkey are alarmingly high. Therefore, it is hypothesized that; H2: “High inequality rate between provinces of Turkey increase the likelihood of terrorist incidents”.

This study will use GINI coefficient to look for whether income inequality” in cities of Turkey has any relationship to terrorist incidents. Therefore, the following
hypothesis can be postulated; H2a: “Provinces of Turkey with higher income inequalities compared to other provinces have more terrorist incidents.”

Previous studies imply that Gini coefficient is a good indicator for inequalities however, it only shows income inequalities. It can be inferred from the literature that inequalities refer to disparities in the universal public provision of services such as health care, education, water and sanitation (Anderson, 2005). Governments’ policies to reduce inequalities between race, gender, regions, and disabilities focuses on providing equal opportunities between members of social groups, in education and health.

Redistribution of resources constitutes a large part of public policy (Ríos-Rull, 2001). Therefore, this study will also focus on these issues as data becomes available for Turkey. This is the case because the literature has shown evidence that unequal distribution of government resources may result conflict (Gunatilaka & Chotikapanich, 2005).

Unequal distribution of resources seem related to grievances (Fearon & Laitin., 1996; Murshed & Gates, 2003; Sambanis, 2004) further it is may even related to conflict (Anderson, 2005; Gunatilaka & Chotikapanich, 2005; Martin, 2004; Tanzi, 1998). Considering the conditions of Turkey, it is hypothesized that “Unequal distribution of government resources between provinces of Turkey is related to number of terrorist incidents.”

This hypothesis can be tested by using different variables that reflect public investments in different areas. To be able to measure inequalities, this study included variables as indicator of inequalities within different broad areas. Mainly variables that
are accepted to be imperative and for which reliable data were available were chosen. It is believed that these variables that are picked have some of the determinants of inequality (Martin, 2004). One of the variables is public investment per person in each province, as this will be a good indicator of inequalities since the data shows that different areas of Turkey have differing amounts of public investment per capita. For example in Canakkale, a west coast province public investment per capita was 322 USD whereas in Hakkari, a Southeast province it was 132 USD in the year 2000. It can be inferred that unequal public investment increases the inequality between provinces. Therefore, the following hypothesis can be postulated: H2b: “Provinces of Turkey that have lower public investment per capita as compared to other provinces have a higher number of terrorist incidents.”

Health and educational services are the two basic services that the government supplies. This is different than the America’s system in which local governments distribute public services. In Turkey, the government in Ankara has the power to allocate public services among the provinces using any criteria it chooses. One of the responsibilities of the government is to then ensure that every part of the country receive the same level of services. Therefore, it should provide enough doctors and teachers and other resources to every part of the country (Atav, 2001). The National Ministry of Health and Social Welfare is legally responsible for shaping and implementing health policies in Turkey. These responsibilities include prevention, guiding and coordinating the curative services, control of hyperendemic diseases such as malaria, tuberculosis, trachoma, and supplying curative services to mother and child health. It supplies health
services to everyone in many of the hospitals under its management. This means that the
government owns a large extend of the healthcare facilities. (Atav, 2001).

There have been many attempts to reform the healthcare system and to supply
equal services however the system still has not succeeded. For example, the government
had implemented mandatory rural service for doctors but it didn’t work because
physicians mostly preferred cities where they could earn good incomes, and provide a
wide variety of opportunities for themselves and their families (Atav, 2001). According
to year 2000 census results, population per doctor in the Caspian Sea Region (West
Anatolia Region) of Turkey is 675 while the Southeastern region the nation is 1.823. This
shows an enormous difference between the two regions (DIE, 2001). So this study will
look at the number of doctor per 10,000 in each province. Indicators show that “socio-
economically advantaged groups receive higher shares of services than others” (Atav,
2001, p.2). The literature warns that unequal distribution of resources may cause conflict
within society (Gunatilaka & Chotikapanich, 2005). From these discussions, the
following hypothesis is generated: H2c: “Provinces of Turkey that have lower health
service per capita as compared to other provinces of Turkey have higher terrorist
incidents.”

In addition to health outcomes, another factor that should be examined under
health inequalities title is health outcome. They are accepted as another indicator of
inequality between groups, race, regions (Murray, Gakidou, & Frenk, 1999). Health
inequities are accepted as a significant part of a set of the existing inequalities
(Marchand, Wikler, & Landesman, 1998). (Gakidou, Murray, & Frenk, 2000, p. 537)
define health inequality to be “variations in health status across individuals in a population.” Previously, health inequalities such as infant mortality rate, HIV infection ratio, cancer ratio rates were used as indicators of inequalities in health service. This study will also use the indicator which shows health disparities between cities. As data becomes available the study will use infant mortality rates as an indicator of health. Although infant mortality rates of Turkey have decreased since 1970 when compared to other OECD countries, it still has the highest infant mortality rates (Ministry of Health, 2004). As seen from the explanations above the number of infant mortality differs among the provinces of Turkey (Atav, 2001). Thus, the following hypothesis is postulated: H2d: “Provinces of Turkey that have higher health disparities as measured by infant mortality rate compared to other provinces have higher terrorist incidents.”

Similar to the distribution of health services there are also inequalities in distribution of education services in Turkey. Unequal distribution of education is pronounced one of the main contributors to inequality in the intergenerational reach of inequality (Duygan & Guner, 2005). Education data of Turkey shows alarming numbers. There are high rates of illiteracy. According to World Bank 15 percent of the population over 15 years of age is illiterate which is just below the Brazil and Peru which have a 12% and 10% rate of illiteracy (World development report, 2003). Education also plays a role as determinant of inequalities (Anderson, 2005) and a cause of disparities (Martin, 2004). Unequal distribution of education resources such as number of teachers and number of schools for each province can have a possible effect on inequality. It can be implied that inequality in distribution of education resources by government may result in

Thus the following hypothesis is postulated:

\[ H2d: \text{Provinces of Turkey that have lower education service per capita as compared to other provinces of Turkey have higher terrorist incidents.} \]

Besides the mentioned inequalities unequal distribution of public investment to the provinces can be easily recognized from the data. For example in Canakkale, a west coast province, the public investment per capita is 322 USD whereas in Hakkari, a Southeast province, the investment was 132 USD in 2000. It can be inferred that unequal public investment increases the inequality between provinces. Thus this hypothesis is proposed; H2e: “Provinces of Turkey that have lower public investment per capita as compared to other provinces have a higher number of terrorist incidents.”

**Size of Population and Age in Turkey**

The population of Turkey is growing very fast. The first census held in 1927 indicated a population of 13.6 million whereas the 1990 census showed a 56.5 million population (Toros, Ulusoy, & Ergocmen, 1997) and the last census shows 67.8 million with an 18.28 percent annual growth rate (DIE).

Distribution of population according to age groups is important. 1/3 of the population constitutes the 15 years and younger age group of Turkey. This age group brings some unique problems. For example, according to the 1990 census results, each 100 working people have 65 dependents. (Toros et al., 1997). On the other hand, the age group older than 65 constitutes only 4.2 percent of the total population (DIE). Migration
from rural areas to urban areas also adds more problems to increasing the urban population.

This study will include population variables to the logistic regression analysis to be able to determine whether population size has any effect on predicting the terrorist incidents rate in the cities of Turkey. From these discussions, the following hypothesis is generated: H3: “Provinces of Turkey with a higher population have a higher number of terrorist incidents.” H4: “Provinces with a high number of populations between 15 to 24 years old have higher numbers of terrorist incidents.”

**Unemployment in Turkey**

Unemployment is seen as one of the important problems of Turkey. Turkey’s Labor force increased 1.3 percent between 1998 and 1999 to 22.2 million and the number of employed people increased 1.2 percent to 20.7 million. The unemployment rate of Turkey has been determined as 6.1 percent (DPT, 1998). The unemployment rate increased from 6.56 percent in 2000 to 8.32 percent 2001 as a result if an economic crisis. In the year 2002 the estimated official unemployment rate was 10.41 (Tansel & Tasci, 2004). Official unemployment rates which are released by the State Statistic Department of Turkey are accepted as underestimating or minimizing the real unemployment rates and new measure of unemployment should be used (Özel & Mehran, 1992). Therefore, a more realistic measure is obtained by combining the unemployment and underemployment rates, and the result is 15.82 percent in 2002 (Tasci, 2005). This increase in year 2002 is related to Turkey’s recent economic and financial crises. Also there are differences in unemployment rates between the young and the mature and by
rural and urban divide, which is another indicator showing that Turkey’s unemployment has been a serious problem for a long time (Tansel & Tasci, 2004). Data shows that the rate of participating people in Turkey’s labor force is declining because of the following reasons: rapid urbanization, economic crises, and high migration towards urban areas. These factors are causing a diminishing job market labor force participation rate.

Additionally to that, an unseen part of the problem also exists. The rate of people unemployed does not include people such as unpaid family workers who are customary in the rural labor force (Tansel & Tasci, 2004). This shows that the unemployment rate is higher than the official figures indicate.

Data indicating unemployment problems of Turkey comes from the household labor force survey that is implemented by State Institute of Statistics. This is done on a bi-annually basis and so contains rich information about the Turkish labor market (Tansel & Tasci, 2004). The State Department of Statistics of Turkey (SIS) collects the information on unemployment and their definition of unemployment is important to mention here. They use the International Labor Organization (ILO) definition which defines the unemployed as “all people age 15 and over who were not employed during the reference period who have used at least one of the search channels for seeking a job during the last three months and were available to start work within 15 days” (DIE, 2001). Besides this definition of unemployment, (Tansel & Tasci, 2004) use another definition of unemployment in their study which they called “broad unemployment.” And their purpose for using this second definition of unemployment is to be able to include those unemployed who are willing to work but are not actively looking for a job. When
broad unemployment was used the rate increased from 9.4 to 10.9 percent in 2000, showing a particular increase in the urban locations. These different definitions of unemployment show other unseen dimension of the Turkey’s unemployment problem.

In conclusion, the effect of unemployment to crime rate is positive and statistically significant. From the finding of these previous studies it is understood that the unemployment level is one of the most important determinants of crime and political violence. This study will also look for the effect of unemployment rate on the number of terrorist incidents. Thus the following hypothesis is generated: \( H_5: \text{”Provinces of Turkey with higher unemployment rates have higher numbers of terrorist incidents.”} \)

### Education Attainment in Turkey

Basic education before a college degree in Turkey consist three levels 1) preschool education; 2) basic education; and general secondary education and 3) vocational secondary education. These include both public and private sector education. 25.3% of Turkey’s population continue on to a school and the number of teachers in preschools, basic and secondary education schools is 528,738 (Akkök & Watts, 2003). The Ministry of National Education (MONE) is responsible for education facilities all over the country. Similar to the other public institutions, the administrative structure of the Ministry of National Education is centralized. Additionally, they provide higher education through 75 universities both public and private. There are around 1.5 million university students (DPT, 2000).

Additionally, the inequalities in education attainment in Turkey should be explored. Tansel and Gungor’s study (2000) showed the disparity in school enrollment in
Turkey. They stated that per capita income and degree of rurality of each province are important determinants of unequal school enrollment between geographical regions. The relatively low level of inequality in enrollments at the primary school level is an expected result since primary schooling is compulsory in Turkey. At the middle school level, the inequality index fell from 0.058 in 1980 to 0.041 in 1994, constituting a decline of about 29%. The decline in overall inequality at the primary and middle school levels is consistent with increased enrollment rates at these levels in all provinces between 1980 and 1994. Finally, great variation is seen in the intra-province inequality indexes computed for Turkey’s provinces.

The study of Nilgun Ergun et. al (2003) examined the relationship between physical and demographic characteristics of metropolitan areas and crime rates. Their findings show that education level has a relationship to the crime.

Previous studies show that education attainment is related to crime and violence rates. Explanation of educational attainment in Turkey shows that there are regional differences in educational attainment in Turkey. From the discussion it is proposed that; H6: “Provinces of Turkey with higher education attainment have a lower number of terrorist incidents.”
Conclusion

In this section a brief history of terrorism was provided and a brief description of Turkey’s terrorism history was given. Additional to that, the poverty and inequalities in Turkey was explored. This was meant to help the reader to understand how Turkey’s poverty and inequality conditions may interact with its terrorism problem. Finally, previous literature is examined to see how they approached the issue of poverty inequality and their relationships to crime. This examination allowed us to focus on major economic variables and major demographic variables examined through a study of the
literature. The majority of studies reviewed for this research utilized secondary data with much of the concentration directed toward geographic divisions of metropolitan areas. Many of them used structural variables such as crime, poverty and unemployment to predict and explain the rates of crime and terrorism. The majority of these studies used ordinary least square regression models to identify the relationship between determinants of crime and crime rates (Silke, 2001). Focusing on poverty and inequality, many of these studies also used GDP, education level, unemployment, population, age structure, race, Gini coefficient, drug activity, firearm availability. Similar to the previous studies, this study also utilizes secondary data and looked at the relationship between the number of terrorist incidents in each city of Turkey and the following independent variables: poverty, GINI index, GDP, work status, school enrolment, population size, and income. Differing from the examined studies, this study focused specifically on terrorism problem of a country and tried to find some of the determinants of terrorism inspired by the crime literature.

The next chapter will explain the methodology and how it was implemented in the study and operationalized. There will be an explanation of the hypotheses of the study which were derived from the examined literature in order to answer the research question.
CHAPTER 3 - Research Design and Methodology

Introduction

Nachmias & Nachmias (2000; p. 88) explain that a researcher should clarify fundamental problems before starting a research project. These are as follows: who is being studied, what is observed, how the data is collected, and how the data will be used. These are the issues that enable researchers to come up with solutions to problems and also guide them in their various stages of the research. This chapter provides a discussion concerning the research approach, research design, unit of analysis, data collection, hypothesis, and data analysis procedures.

Research Approach

The research approach used in this study was secondary data analysis. Secondary data is any analysis of data collected by another researcher or organization for some other purposes (Hakim, 1987). One of the major reasons for utilization of secondary data is that some times conceptual factors require the use of secondary data. This is true for the social and political science fields because of the nature of their study (Nachmias & Nachmias, 2000). The second reason for the increased utilization of secondary data is its methodological advantages. In most general implementation, secondary data research the dataset is used to replicate the original research’s results or to address an entirely different question (Hakim, 1987). Additionally to that, secondary data can be used to
compare large groups allowing the researcher to generalize the issue. Another great benefit of the secondary data is its low cost (Nachmias & Nachmias, 2000, Hakim, 1987).

**Research Design**

This study used cross sectional research design. The cross sectional research design was used to identify collected data measured at a single point in time on all appropriate variables (Olsen, St. George, 2004). This design type is suitable for studies that entail collecting data on many variables. It is also appropriate for studies on large groups of subjects, from wide geographical area (Nachmias, & NAchmias, 2000). These issues made a cross sectional design suitable for this study.

Many other advantages of cross sectional design exist (O’Sullivan, 2003). Cross sectional study approach to this study helped to ensure that the appropriate information was collected and that the data analysis was correct (Nachmias, & Nachmias, 2000). Researcher with different interests and models often can work with data from a single cross sectional study, and many researchers can look at the same issue from different points of view (O’Sullivan, 2003). Additionally, the cross sectional design allow researcher to investigate relationships among numerous variables (Nachmias, & Nachmias, 2000). A well implemented multivariate analysis of variables demonstrates the influence of many factors that are controlled in an experimental study (O’Sullivan, 2003).
Unit of Analysis

According to Nachmias & Nachmias (2000) after formulating the research problem, the next step is to determine the unit of analysis. In this research design the unit of analysis was the provinces of Turkey. There are 81 provinces in Turkey. The provinces are divided up by administrative divisions. Geographically they consist of both rural and urban areas such as central city, towns, and villages. An independent province should have a population more than 20,000, including sub-areas such as, central city, towns, and villages. Each province depends on the central government of Turkey. The government directly controls and decides the quantity and quality of the public services including the distribution of resources (Atav, 2001).

By providing each region with similar levels of analysis, this study addressed to the question of whether or not terrorists strike in the regions where they live. Negative socioeconomic conditions may lead people to become terrorists, but, terrorists may act in geographical areas other then those they were raised in. Their targets and activities may be located in some other geographic areas, because terrorist attack targets that guarantee media attention. This is done so that the lives of millions of people will be influenced, not only throughout victimization, but also through fear (Long, 1990). Some cities provide better high-profile targets and therefore create more media attention. This fact may result in these cities of Turkey attracting terrorist from other cities. To prevent inaccurate results, this study eliminated the cities that may attract more terrorist from outside areas. This study eliminated 8 large cities in Turkey that are higher in population, higher in migration and contain more national vulnerabilities compared to other cities. These cities
are 1) Istanbul; the largest city in Turkey, with its cultural and economic center, its historic places, and high levels of tourism. (www.wikipedia.com), 2) Ankara; the capital city of Turkey with the second largest population, 3) Izmir; the third largest city in Turkey and the largest in the western Anatolia region with important historical sites, tourism, and also an important industrial center (www.izmir.gov.tr), 4) Adana; the fourth largest city and the biggest in the south Anatolia region. It has one of the largest agricultural areas of Turkey. This makes Adana an attractive place for seasonal works in agriculture fields. 5) Bursa; is fifth largest and the fifth most developed city also containing large industrial areas (www.bursa.gov.tr), 6) Diyarbakir: the largest city in Turkey is also the largest in the South-Eastern Anatolia region. It also attracts migration from the other cities of south-Eastern Anatolia. 7) Antalya; an important cities that attracts tourist from all over the world. It is famous for its beaches and historical places (www.antalya.gov.tr). 8) Mersin was also eliminated from the data set, because of it also attracts an unusually high number of terrorist acts. This is due to the high number of migrants from the eastern and south eastern parts of Turkey pursuing job opportunities in agriculture and industry.

**Data Collection**

Secondary data for this study was obtained from three different sources. The data for the number of terrorist incidents for each city in Turkey came from Turkish National Police terrorist incidents database. This data contained the number of terrorist incidents according to Turkish penal law. Data for economic and demographic variables came from
Turkish Statistical Institute’s (Turkstat) database, and Turkey’s Government Planning Office’s database.

**Variables**

**Dependent Variable**

*Number of terrorist incidents:* Data for this variable was derived from the Turkish National Police’s Counter terrorism Department’s database for the year 2003. The number of terrorist incidents per 10,000 in each province was calculated for the year 2003. According to the results minimum number of incidents in provinces is “0” and maximum number of incident is “4.94” for 10,000 population with “0.38” mean and “0.18” median and “0.74” standard deviation.

**Independent Variables**

*Poverty:* Previous studies used the number of people living under the poverty limit in a geographical region as an indicator of poverty in the region. However data for the population living under the poverty line was not available for Turkey. Instead of this data, the number of beneficiaries of Green Card was used. This is provided a projection of the number of poor people under social security coverage since 1993. The Green card program is similar to the Medicaid program of USA. The Green Card Program of Turkey supports health related expenses for people living under the poverty line (Ministry of Health, 2004). It is believed that the proportion of green card users is a sufficient indicator of the poverty levels in each of the provinces of Turkey. Therefore, it was used as an independent variable in this study.
GDP per capita: In Turkey Gross Domestic Product is calculated by the Turkish Statistical Institute (Turkstat) using production, expenditures, and income variables. GDP is one of the most important variables used to demonstrate the development rates of regions’ and cities. It also shows the differences in distribution of domestic resources (DIE, 2005). The most recent GDP for the cities of Turkey were calculated for the year 2001 so this study used the GDP for 2001.

Inequality indicators

a) Income inequality: To be able to see the relationship of income inequality to the terrorist incidents, this study used Gini coefficient which is accepted as a good indicator of income inequality. Data was derived from the Turkish Statistical Institute (Turkstat) for the year 2003. “The Gini coefficient (or Gini ratio) is a summary statistics from the Lorenz curve and a measure of inequality in a population. The Gini coefficient is most easily calculated from unordered size data as the "relative mean difference," i.e., the mean of the difference between every possible pair of individuals, divided by the mean size $\mu$” (Damgaard, 2003).

b) Unequal distribution of resources: The literature warns that unequal distribution of resources may cause conflicts in a society (Sen, 1998, Tanzi, 1998, Anderson, 2005, Gunatilaka. & Chotikapanich, 2005). In this study various proxy indicators about unequal distribution of resources were employed as follows:

b1) Distribution of health services: This variable shows the number of doctors per 10,000 populations in a province. This data was derived from the Turkish Statistical Institute for the year 2002 as this was the most recent available data.
b2) Infant mortality rate: Inequalities in health status was also used as an indicator of inequality between groups (Murray, et. al., 1999). The infant mortality rate in each province is considered an indicator of health status in each province. Data was available from the Turkish Statistical Institute (Turkstat) for the year 2000 from the provincial indicator’s dataset.

b3) Distribution of education services: This variable shows the number of students per teacher in a province and the data was calculated from the Turkish Statistical Institute’s dataset of “Number of school, student and teacher by education level.” The number of schools, students and teachers by education level and number of all levels of schools and teachers were included in this calculation for the 2001 - 2002 education year.

b4) Distribution of public investment: This variable shows the amount of public investment per person in each province. Data was available from the Turkish Statistical Institute (Turkstat) for the year 2003.

Unemployment: The data from Turkish Statistical Institute (Turkstat) was used for the unemployment rate of each province to test whether it had any relationship to the terrorist incidents. The recent available data for this variable was for the year 2000 and this study utilized this data.

School attainment: This was derived from the Turkish Statistical Institute (Turkstat). It included “the number of schools, students and teachers by education level dataset”. This variable showed the percentage of population that was enrolled in secondary education and vocational and technical school in the provinces of Turkey for the 2001 and 2002 education year.
**Population size:** This variable shows population projections for 2003 calculated by Turkish Statistical Institute (Turkstat) as number of people living in each province.

**Age:** Percentage of Age group between 15 and 24 for each province was used. Data was available from the Government Planning Institution of Turkey from 2000 census.

**Region:** A dummy variable representing the provinces in the eastern and south eastern parts of Turkey was created to see whether being in a certain geographical region had any effect on the number of terrorist incidents.

**Reliability and Validity of the Study**

Nachmias, & Nachmias (2000) identify 3 basic types of validity, content validity, face validity, and empirical validity. As the study examined the literature and looked at many dimensions of the study, it was understood that this study has content validity. This was true because the measurement instruments covered all the attributes of the concept that the study was trying to measure as supported from the previous research. Thus, this study included the variables that previous research used and added more to measure the inequality more effectively as the data was available (Nachmias, & Nachmias, 2000).

Empirical validity means that the relationship and the implementation among the variables measured should be the same in the actual world. This may be a subjective issue that can be interpreted differently according to a particular view point, and based on the arguments of researcher. This may be clearer after the findings of the study are revealed (Nachmias, & Nachmias, 2000). To ensure empirical validity this study used a wide
selection of related variables to increase the validity and to make sure those different variables yielded the same results (Martin, 2005). To ensure construct validity this study relied on different theories to explain poverty, and the inequality relationship to crime and delinquency (O’Sullivan, 2003).

An advantage of this study is that it examined the country (Turkey) as a whole. This increase the external validity or generalizability of the study. However, it may not be generalized to all terrorist incidents in different part of the world. This may be accepted as a threat to the validity of this study (Henry, 1990). On the other hand, the cross sectional design of this study allowed the researcher to carry out the study in natural, real life setting as a result of the increase in the external validity of their studies (Nachmias & Nachmias, 2000).

The reliability of a study means that there is a consistent and expected end result over and over (Martin, 2005). However, it is an unavoidable fact that measurement in social science is mostly indirect and this may result in more errors compared to measuring physical variables in other areas of science (Nachmias, & Nachmias, 2000). Although the random errors cannot be eliminated completely, they should occur on a acceptable level (O’Sullivan, 2003).

O’Sullivan et. al (2003) reported three dimensions of reliability; stability, equivalence, internal consistency. Stability refers to the ability of the measure to yield the same result time after time. There are no similar studies in the same geographical regions which are using the same dependent variable so; it was very hard to report stability. However, it is estimated that other studies using secondary data in the same geographical
area would lead to similar results. *Equivalence*; means that there is consistency amongst the results of the studies done by different researchers using the same instrument. *Internal consistency*; is also ensured as this study used many measures as indicators of poverty and inequality. These are believed to have contributed to the reliability of the study (Nachmias, & Nachmias, 2000). The Gini coefficient, distribution of education service, distribution of health service, distribution of public investments per capita for each province were all used as indicators of inequality for each province (O’Sullivan, p. 108).

**Hypothesis**

**H1a:** Provinces of Turkey with higher poverty rates have a higher number of terrorist incidents.

**H1b:** Provinces of Turkey with lower levels of GDP per capita have more terrorist incidents.

Social disorganization theory explains that poor economic conditions are the reason for crime and deviance. It is believed that these are the responses of normal people to undesirable social conditions (Shaw & McKay, 1942). Many studies that are guided by the social disorganization theory confirm that poor economic conditions are related to a higher rate of crimes, and violence (Hagan, 1994; Krivo & Peterson; 1996, Sampson & Grove, 1989; Lederman et. al, 2000). Studies on the poverty problem in Turkey show alarming numbers, especially in some geographical areas (Dumanli, 1996; Erdogan, 1996; Dansuk, 1997). They indicate that the poverty conditions of Turkey require serious attention in the examination of the determinants of the terrorism problem in Turkey. In
this study, the poverty and terrorist incidents relationship is intended to be measured by this hypothesis. The study examines what effects poverty has on terrorist incidents. To test this hypothesis used two different variables, percent of population who were green card beneficiaries and GDP per capita.

**H2a:** Provinces of Turkey with higher income inequalities compared to other provinces do not have more terrorist incidents.

**H2b:** Provinces of Turkey that have lower public investment per capita as compared to other provinces have a higher number of terrorist incidents.

**H2c:** Provinces of Turkey that have lower health service per capita as compared to other provinces of Turkey have higher terrorist incidents.

**H2d:** Provinces of Turkey that have lower education service per capita as compared to other provinces of Turkey have higher terrorist incidents.

**H2e:** Provinces of Turkey that have higher health disparities as measured by infant mortality rate compared to other provinces have higher terrorist incidents.

Merton’s anomie theory (1938) identifies inequality as a causal factor of crime. According to the theory, disadvantaged groups and the lower class do not have the same access to such legitimate opportunities as others. This is true because the social structure effectively limits the possibilities of individuals within certain groups to achieve their goal through the use of institutionalized means. Limited access to education, health, and other government resources are a few examples of these limits. Absolute deprivation may also have its effects on the psychological well being of those affected and can result in disturbing situations that can rise into violence (Lynch and Groves, 1989). Marxist theory
also proposes that crime occurs because of the class differences created by a capitalist economic system. With the maximization of profit as its central goal, capitalism promotes competition and individualism to the detriment of cooperation and is harmful to the community (Bohm, 1985; Messner and Rosenfeld, 1994). Consistent with this theory, continual inequality raises the demand for political change because perceived inequality leads to growing degradation and despair (Murshed & Gates, 2003). Murshed & Gates (2003) focused on inequalities as main motivating force of insurgency because it increases the grievance.

Following these ideas many studies have found significant relationship between income inequality and crime (Kennedy, at. al, 1998; Hojma, 2002; Blau, & Blau, date?; Ehrlich, 1973), and political violence (Sambanis, 2004; Demombynes, & Ozler, 2002). However, these studies use only the income inequality as an indicator of inequality. There are many other ways in which inequality can be measured, depending upon the issue at hand (Martin, 2005; Anderson, 2005).

Sambanis (2004) believes that it is possible to examine inequality in relation to many diverse parts of life. Sen (1998) warns policy makers about inequalities that appear most damaging to the general notion of justice. From this point of view the government’s role is to ensure equality and justice, especially in distribution of resources, and to ensure justice (Tanzi, 1998, Rios-Rull, 2001, Martin, 2005).

An examination of inequalities in Turkey showed some significant differences between geographical regions of Turkey (Tusiad, 2000; Doğanoğlu & Gülcü, 2001; DPT, 2001). As stated in the previous research studies, the inequalities might contribute to
terrorism in Turkey. Following from these previous studies, this study looked at the effects of the inequality rate in provinces of Turkey on the relationship of terrorist incidents. This study used a wide range of variables as indicators of inequalities, including indicators to determine unequal distribution of resources between provinces. Data used by some main government services included education, health, and direct public investments in each province were used in this study.

**H3**: Provinces of Turkey with a higher population have a higher number of terrorist incidents.

Previous literature proves that a high population size increases the rates of crime (Messner, 1980; Mooris, & Tweeten 1971; Arthur’s (1991). Looking at the population of Turkey’s provinces, there was a significant difference between province population sizes. This study utilizes population to measure the relationship between population of an area and number of terrorist incidents Data was derived from Turkish Statistical Institute’s database.

**H4**: Provinces with a high number of population between 15 to 24 years old have higher numbers of terrorist incidents.

The literature review showed that previous studies found a strong relationship between the number of young in a city and the crime rate (OJJDP, 1996, Land et al., 1990, Patterson, 1991, Messner and Tardiff, 1986, Baron and Straus, 1988). Data from Turkey showed that Turkey’s population has a large amount of youth. Having that much youth population might have an effect on the terrorism rates as the literature indicated.
Including age group variable to the analysis measured any effect that the number of young people might have on terrorist incidents.

**H5:** Provinces of Turkey with High unemployment rates have higher terrorist incidents.

Evidence from the literature on crime showed that high unemployment rates have a relationship with high crime rates in geographical areas (Elli, 1991; Gould, et. al, 1998; Machin, & Meghir, 2003). This study examined whether high unemployment rates had an effect on increasing the likelihood of terrorist incidents in a province. Data for this was derived from the Turkish Statistical Institute department’s database.

**H6:** Provinces of Turkey with higher educational attainment have lower numbers of terrorist incidents.

It is expected that higher educational attainment reduces the risk of political violence by encouraging political participation and channeling conflict through institutional pathways (Collier and Hoeffler 2001). Studies found a significant relationship between educational attainment, crime, and political violence (Crutchfield & Pitchford, 1997; Sambanis, 2004; Gould, Weinberg, & Mustard, 1998). As previous studies stressed, this study also examined whether the percentage of student to the population of a province contributed to the terrorism.

Table 3.1 summarizes the operationalization of the variables, their source and links them to hypothesis as well as to literature.
<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Variable</th>
<th>Source of Data</th>
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| **H1a:** Provinces of Turkey with higher poverty rates have higher numbers of terrorist incidents. | DV: Number of terrorist incidents  
IV: Poverty rate measured by percentage of people green card users | DV: Turkish National Police (2003).  
| **H1b:** Provinces of Turkey with lower levels of GDP per capita have more terrorist incidents. | DV: Number of terrorist incidents  
IV: Turkish Statistical Institute (2001) |
| **H2a:** Provinces of Turkey with higher income inequalities compared to other provinces have more terrorist incidents. | DV: Number of terrorist incidents  
IV: Turkish Statistical Institute (2003) |
| **H2b:** Provinces of Turkey that have lower public investment per capita as compared to other provinces have a higher number of terrorist incidents. | DV: Number of terrorist incidents  
IV: Public investment per capita in each provinces in USD | DV: Turkish National Police (2003).  
IV: Turkish Statistical Institute (2003) |
| **H2c:** Provinces of Turkey that have lower health service per capita as compared to other provinces of Turkey have higher terrorist incidents. | DV: Number of terrorist incidents  
IV: Number of doctors per 10,000 | DV: Turkish National Police (2003).  
IV: Turkish Statistical Institute (2002) |
| **H2d:** Provinces of Turkey that have lower education service per capita as compared to other provinces of Turkey have higher terrorist incidents. | DV: Number of Terrorist incidents  
IV: Number of students per teacher. | DV: Turkish National Police (2003).  
IV: Turkish Statistical Institute (2001-2002) |
| **H2e:** Provinces of Turkey that have higher health disparities as measured by infant mortality rate compared to other provinces have higher terrorist incidents. | DV: Number of terrorist incidents  
IV: Turkish Statistical Institute (2000) |
| **H3:** Provinces of Turkey with a higher population have a higher number of terrorist incidents. | DV: Number of terrorist incidents  
IV: Turkish Statistical Institute (2003) |
| **H4:** Provinces with a high number of population between 15 to 24 years old have higher numbers of terrorist incidents. | DV: Number of terrorist incidents  
IV: Population aged between 15 to 24 for each provinces | DV: Turkish National Police (2003).  
IV: Turkish Statistical Institute (2000) |
| **H5:** Provinces of Turkey with higher unemployment rates | DV: Number of terrorist incidents | DV: Turkish National Police (2003). |
This study has one dependant variable (DV) and multiple independent variables (IV) and effect of IVs on the DVs is examined. The study used “multiple regression analysis” to identify the effects of IVs on DV (number of terrorist incidents). As Tabachnick states (2001) Multiple Regression Analyses is a statistical technique that can be used to analyze the relationship between a single dependent variable and several independent variables. While the intent of correlation emphasizes the relationship between the DV and IVs, regression analysis puts emphasize on prediction using the regression model.

In selecting a suitable application for multiple regression these three issues should be considered: 1) appropriate research problem 2) specification of statistical relationship 3) selection of dependent and independent variables (Hair, 1995).

Multiple regression can be used for both prediction and explanation purposes. In this study, multiple regression analysis provides us with the ability to objectively assess the degree and character of the relationship between the dependent and independent variable, in addition to their combined prediction power in relation the dependent variable. IVs can be considered for their individual contribution to the variate and its
prediction power. Multiple regression differs from univariate regression because it provides simultaneous assessment of the relationship between the DV and IVs.

Also, it allows us to choose the IVs and the DV according to the theory. Hair (1995, p.102) states that “if the analyst does not exert judgment during variable selection but instead selects variables indiscriminately or allows for the selection of an IV based on solely empirical bases, several of the basic tenets of model development will be violated.” Considering these issues it is determined that the multiple regression model was the best model for this study.

The Multiple regression model is represented in the following equation;

\[ Y^1 = A + B_{\text{popul}}X_{\text{popul}} + B_{\text{poor}}X_{\text{poor}} + B_{\text{doctor}}X_{\text{doctor}} + B_{\text{gdp}}X_{\text{gdp}} + B_{\text{infmort}}X_{\text{infmort}} + B_{\text{pubinv}}X_{\text{pubinv}} + B_{\text{unemployment}}X_{\text{unemployment}} + B_{\text{young}}X_{\text{young}} + B_{\text{student_per_teacher}}X_{\text{student_per_teacher}} + B_{\text{schoolattainment}}X_{\text{schoolattainment}} + B_{\text{gini}}X_{\text{gini}} + B_{\text{region-east}}X_{\text{region-east}} \]

Where: \( Y^1 \) is the predicted value of \( Y \), and \( a \) is the value of \( Y^1 \) when all Xs are zero, \( B_{\text{popul}}, B_{\text{x}}, \ldots \) indicates regression coefficients, and \( X_{\text{popul}}, X_{\text{x}}, \ldots \) represents the IVs.

**Assumption of Multiple Regression Analysis**

It is advised that checking the assumptions before starting the multiple regression has significant benefits for the researcher. This helps to avoid Type I and II errors, When these assumptions are not met, the results may not be dependable, and over or underestimation of significance or effect size may occur (Osborne, & Waters, 2002). This study examined the assumptions that appear to carry important benefits for this study.
Outliers, Normality, Linearity and Homoscedasticity:

In regression analysis, it is assumed that variables have normal distributions. Variables that are not distributed normally which in most cases contain highly skewed or kurtotic variables or variables with large outliers can affect significance tests and relationship between variables. This study checked several pieces of information that were useful in testing these assumptions. This included visual inspections of data plots, skew, kurtosis. Besides that univariate or multivariate outliers were observed in multiple regression (Tabachnick & Fidell, 2001). Also standardized or unstandardized residuals were examined (Tabachnick & Fidell, 2001).

Removing the outliers was helpful in achieving normality but at times, for different reason, it was undesirable to remove outliers, and transformation was utilized in these situations (Osborne, & Waters, 2002). However transformation can make it complicated to interpret the results of the analysis. Osborne, & Waters, (2002), advise to inform the reader about the transformation.

Linearity

Linearity of the relationship between independent variable and dependent variable is important to accurately estimate the relationship between dependent and independent variable. If there is a nonlinear relationship then the results of the analysis will underestimate the true relationship (Tabachnick & Fidell, 2001). This can increase the risk of having a Type II error for that IV, and also a Type 1 error for IVs that share variance with that IV (Osborne, & Waters, 2002).
Homoscedasticity

Homoscedasticity tells that the variance of errors is the same on all levels of the IV (Tabachnick & Fidell, 2001). Osborne, & Waters, (2002) states that heteroscedasticity is indicated when the variance of errors differs at different values of the IV. High heteroscedasticity can cause serious change in the findings and critically weaken the analysis. Homoscedasticity can be checked in different ways such as examining regression standardized predicted value or simply by visual examination of a plot of the standardized residuals (Osborne, & Waters, 2002).

Multicollinearity and Singularity

While using multiple regression, there are concerns about correlated predictor variables, which can effect the interpretation of regression estimates (Mason, & Perrault, 1991). It is necessary to perform a collinearity test to see whether any multicollinearity issues are present in the dataset. Failing to do that may lead to wrong results through the inclusion of collinear variables in the data analysis. This may prevent us from identifying the true relationship between variables (Tabachnick, 2001).

Limitations

One of the major limitations of this study design was that the study cannot make causal inferences about relations among the study variables due to the use of a cross-sectional study design. This study was not trying to conclude that there is a cause and effect but its aim was to find the relationship of terrorist incidents in the cities of Turkey for the given socioeconomic variables.
Because terrorism has different definitions according to particular view of points, the results of this study may not be generalized to all kinds of terrorism, and to all terrorist groups. It is more valid for the case in Turkey. This study does not examine state terrorism because the process underlying involvement in state terrorism is relatively dissimilar than the process underlying sub-state terrorism, and would involve a different type of analysis.

This study accepts that it is difficult to reach agreement about what inequality actually means (Douglas & Devins, 1998), and because different kind of inequalities exist researcher would like to limit this study to economic inequalities specifically inequalities besides poverty level of provinces, distribution of education and health services, health disparities and public investment to the provinces of Turkey.

This study has all the limitations of a secondary data research. There are some limitations due to the use of secondary data. The most important limitation of secondary data is that the data generally does not provide the desired information in its all aspects by the researcher because the aim of collection of the data is mostly very much different than what the researcher is aiming. Even a dataset that matches the researcher’s need for information may not be used because of restricted access. Also researchers who use secondary data should have a complete knowledge concerning how the secondary data was collected in order to determine potential sources of bias, errors, or problems with external and internal validity (Nachmias & Nachmias, 2000).

The study states that leaders of terrorist organizations may have higher education and they may be wealthier than the other members of the groups but there is no available
data to measure this. The study measurements are based on the data from Turkish Statistical Institute, Government Planning Office and Turkish National Police’s terrorism incident’s database. The classified nature of the topic prevents us from reaching every source about the issue, so the study is limited to unclassified sources.

It should be acknowledged that there are other variables that also affect the incidence of terrorism, such as ideology, individual’s search for identity (Crenshaw, 1986), individual’s need for belonging to a group (Luckabaugh, et. al 1997). Ignoring them may bias the estimated effect of poverty and inequality. This type of detailed information is not available for a cross-section of the country. Therefore, in this study, it is acknowledged that the problems of poverty and inequality highlight the results related to the poverty and inequality indicators, and by their construction are more likely to represent society-wide poverty and inequality.

Crenshaw (1985) explained motives to join a terrorist organization and to engage in terrorism across different types of groups, and also within groups. It is true that there are other issues related to terrorism which may be mentioned as fertile grounds for terrorism, such as perception of injustice (Borum, 2004, Hacker, 1976), individual’s search for identity (Crenshaw, 1986), individual’s need for belonging to a group (Luckabaugh, et. al 1997), but this study dealt only with some of the socioeconomic factors such as poverty, inequality, unemployment, education level.

This study accepted that it is difficult to reach agreement about what equality actually means (Douglas & Devins, 1998). Different kinds of inequalities exist but this study is limited to economic inequalities specifically income inequalities, and inequalities
in distribution of services such as health service, education service, investments, health, also number of unemployed people in the cities.

This study cannot automatically assume that terrorist attacks occur in the province where terrorists live. Because of this fact the study eliminated the areas that might be more attractive to terrorists to commit their actions.

This study was not comparing terrorism to the crime; rather it looked at the studies about crime’s relationship to some of the socioeconomic factors and looked at whether the same relationship exists concerning terrorism and these socioeconomic factors.

**Summary of the Chapter**

This chapter delineated the quantitative approach to investigate the relationship of terrorist incidents under certain socioeconomic conditions. The unit of analysis, data collection methods, and variables were all explained as they were derived from the previous literature as shown in the second chapter. Finally, the hypothesis, and the statistical technique that were used to test them was presented. The next chapter will show the results of the statistical analysis.
CHAPTER IV-Results

In this chapter, the results of the statistical analyses are presented. The first section shows the descriptive information about the study variables. The second section of the chapter presents the results of the multiple regression analysis. The third section of the chapter shows hypothesis testing and compares the findings of the analysis with previous research.

Introduction

This study is designed to answer the research question: “Are poverty level, income inequalities, unequal distribution of sources, education attainment, population, young percentage in the population and unemployment level relate to terrorist incidents in provinces of Turkey?” In order to answer the research question presented here, this study combines several theories, including sociological theories, social disorganization theory, anomie strain theory, and Marxist theory of crime which can all explain the high number of crime and delinquencies in some geographical areas as a result of negative living conditions and inequalities between the conditions of different geographical areas.

Previous literature indicates a relationship between poverty and crime; however, some studies did not find it adequate to just look solely at poverty levels to explain crime. Some researchers allege that the inequalities between race, gender, or geographical area are more effective in explaining crime than poverty (Braithwaite, 1979; Martin, 2004; Merton, 1938; Messner & Golden, 1992; Shaw & McKay, 1942). Previous literature also
indicates that the percentage of young population in a geographical area (Baron and Straus, 1988; Cohen & Land, 1987; Gould et al, 1998; Land et al., 1990; Messner and Tardiff, 1986; Nagin and Land, 1993; OJJDP, 1996; Patterson, 1991) school attainments (Allison, 1972; Collier and Hoeffler, 2001; Crutchfield; Pitchford, 1997; Jefferson and Pryor, 1999; Pogue, 1975, Elhrich, 1975), and high population (Blau & Blau, 1982; Kau and Rubin, 1975; Messner, 1980; Mooris, & Tweeten, 1971), are all contributors to high numbers of crime, delinquency, regional conflicts, and terrorism in addition to poverty and inequalities.

Studies that are done by different government agencies or researchers in Turkey show that Turkey has been trying to solve the problem of poverty and inequalities between geographical regions for a long time (Dağdemir, 1999; Dansuk, 1997; DPT, 2001; Dumanli, 1996; Erdogan, 1996; Tusiad, 2000; 2005). On the other hand for more than 30 years Turkey has been suffering from the terrorism problem, which has originated from many different sources. The combination of these two facts brings the following question to mind: “which variations in social conditions make it likely that many terrorist groups commit terrorist incidents.” The aim of this paper is to find an answer to this question.

Like many other previous studies, this study will also use secondary data analysis to answer the research question. A multiple regression analysis will be utilized to reveal the relationship between the number of terrorist incidents in provinces of Turkey and the population of provinces, percentage of green cards users (indicator for poverty level), GDP per capita, Gini coefficient (income inequality indicator), number of doctors per
10,000 population, distribution of public investment per capita, number of students per teacher, infant mortality rate, school attainment rate, percentage of youth, unemployment and location (being on the east or southeastern part of the country). The following section will present the descriptive statistics of the aforementioned variables.

**Descriptive Statistics**

Frequency distributions, means, standard deviations, and ranges were used to generate the descriptive statistics of all the variables. Table 10 shows the descriptive statistics for the variables.

*Dependent variable:* Number of terrorist incidents (DV) per 10,000 populations for the year 2003 is calculated. According to the results, the minimum number of incidents in provinces is “0” and the maximum number of incident is “4.94” per 10,000 population with “0.38” mean and “0.18” median and “0.74” standard deviation. This shows that some provinces do not have any terrorist incidents while some have very high incident rates.

*Population of provinces:* This variable shows the population projections for 2003 calculated by the Turkish Statistical Institute as number of people living in each province. The frequency analysis shows that the smallest province population is “85,027” while the maximum province population is “2,294,707”, with a standard deviation of “408,489.211” for the provinces that are included in the regression analysis. The mean of the population is “582,668.59”, median is “470,245” for the 73 provinces that are included in the analysis.
**Percentage poor:** This variable is represented by number of green card beneficiaries, which is a program similar to the Medicaid program in the U.S.A. This variable shows that in Turkey the average number of green card users is “21.18%” with a minimum of “6%” and a maximum of “64%” in provinces with a “10.07” standard deviation. The median is “20%”.

**GDP:** Average GDP of the provinces is “1,691.1” by minimum GDP of “568” and maximum GDP of “6,165” in provinces in the regression analysis. The standard deviation is “910.8” and median is “1,509”.

**Gini coefficient:** The minimum Gini coefficient is “0.31” and the maximum is “0.43”, standard deviation is “0.026”, and the mean is “0.36”.

**Number of Doctors per 10,000:** Minimum number of doctor per 10,000 is “3” and the maximum number of doctors per 10,000 is “21”. The standard deviation is “3.7”, mean is “9.68” and the median is “9.37”.

**Infant mortality rate:** This variable represents infant mortality rate per 10,000 births in provinces. The minimum number is “31” per 1000 whereas the maximum is “77”. Standard deviation is “9.1”, mean is “43” and the median is “42”.

**Number of students per teacher:** The minimum number of students per teacher is “16” and the maximum is “54”. Standard deviation is “6.7”, median is “22.2” and the mean is “24.31”.

**Distribution of public investment (Million TL):** Minimum 12.4 to maximum “3138.63” with a standard deviation of “370.24”. Mean is “136.21” and median “66.40”.

**Unemployment**: Frequency analysis of this variable shows that the mean percentage of unemployment is “7.47%” and the median is “6.7”. Minimum percentage of unemployment is “4%” and the maximum is “17”. The standard deviation is “2.9”.

**School attainment**: This variable shows the percentage population continuing high school and vocational schools. The data shows the percentage is between “.97%” and “3.87” percent of the province’s total population. The mean is “2.20” and the median is “2.16”. Standard deviation is “0.5%”.

**Percent young**: The young population of provinces that are in the analysis average “20%”. Minimum percent young “16%” and the maximum percentage of young is “30.86%”. The mean is “20.65%”. Median is “20.55%” with a standard deviation of “2.2”.

**Table 10. Table for frequency analysis for variables**

<table>
<thead>
<tr>
<th>Minimum Value</th>
<th>Maximum Value</th>
<th>Mean</th>
<th>Median</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of terrorist incidents (DV) per 10,000</td>
<td>0.00</td>
<td>4.94</td>
<td>0.38</td>
<td>0.18</td>
</tr>
<tr>
<td>Population of provinces</td>
<td>85027.00</td>
<td>22947076.00</td>
<td>582668.59</td>
<td>470245.00</td>
</tr>
<tr>
<td>Percent Poor</td>
<td>6.00</td>
<td>64.00</td>
<td>21.18</td>
<td>20.00</td>
</tr>
<tr>
<td>GDP</td>
<td>568.00</td>
<td>6165.00</td>
<td>1691.10</td>
<td>1509.00</td>
</tr>
<tr>
<td>Gini Coefficient</td>
<td>0.31</td>
<td>0.43</td>
<td>0.36</td>
<td>0.37</td>
</tr>
<tr>
<td>Number of Doctors per 10,000</td>
<td>3.00</td>
<td>21.00</td>
<td>9.68</td>
<td>9.38</td>
</tr>
<tr>
<td>Infant mortality rate</td>
<td>31.00</td>
<td>77.00</td>
<td>43.00</td>
<td>42.00</td>
</tr>
<tr>
<td>Number of students per teacher</td>
<td>16.00</td>
<td>54.00</td>
<td>24.31</td>
<td>22.20</td>
</tr>
<tr>
<td>Distribution of public investment</td>
<td>12.40</td>
<td>3138.63</td>
<td>136.21</td>
<td>66.40</td>
</tr>
<tr>
<td>Unemployment</td>
<td>4.00</td>
<td>17.00</td>
<td>7.47</td>
<td>6.70</td>
</tr>
<tr>
<td>School attainment</td>
<td>0.97</td>
<td>3.87</td>
<td>2.20</td>
<td>2.16</td>
</tr>
<tr>
<td>Percent Young</td>
<td>16.55</td>
<td>31.00</td>
<td>20.56</td>
<td>20.50</td>
</tr>
</tbody>
</table>
Multiple Regression Analysis using “Number of Terrorist Incidents per 10,000” as DV & Data of 73 Provinces (Model 1)

Multiple regression analysis is a statistical technique that can be used to analyze the relationship between a single dependent variable and several independent variables (Tabachnick, 2001). While the purpose of correlations emphasizes the relationship between the dependent variable and independent variables, regression analysis put an emphasis on prediction using the regression model. On the other hand, our research question is a question that can be answered by multiple regression. According to Hair, et al. (1995) multiple-regression is suitable when the analyst is interested in statistical relationships. In addition to that, the researcher can asses the percentage of variance in the dependent variable predicted by regression, as well as, asses the relative importance of the independent variables. It should be kept in mind that multiple regression analyses reveals the relationship among variables but that does not mean that there is a causal effect among the variables; it cannot show causality (Tabachnick, 2001).

Although the variables are chosen according to theory and previous literature for the best results of regression analysis, independent variables should strongly correlate with the dependent variable but should not be correlated with each other (Tabachnick, 2001). Which variables are included in the regression analysis is also important, because the results are highly sensitive to the combination of variables (Hair, et. al, 1995). Before starting to run the multiple regression analysis in the statistical software, the assumptions of regression analysis should be examined, to see whether the assumptions of multiple regression are met. To make sure that all assumptions of multiple regression are met
missing values, absence of outliers among dependent variables and independent
variables, absence of multicollinearity and singularity, normality, linearity and
homoscedasticity should be examined.

**Normality, Linearity, Homoscedasticity, and Independence of Residual**

Screening continuous variables for normality is an important step in multivariate
analysis. To be able to assess normality the skewness and kurtosis should be examined
(Tabachnich, & Fidel, 2000). The value of skewness and kurtosis for each variable is
available in SPSS Frequencies (Appendix, Tables, 1). Results show that all variables
except “Gini coefficient, Percentage of population in High school, percentage of school
attainment, and number of doctors per 10,000” are all skewed and have a kurtosis
problem. To prevent possible distortion of the results, transformation is considered for
eight of these variables (Osborne, & Waters, 2002). Four of the variables (number of
students per teacher, unemployment, population of provinces, and number of green card
users /poor) are transformed using square root transformation. Four of the variables
(Infant mortality rate, public investment, GDP, and percent young) are transformed using
logarithmic transformation (Lg10). The dependent variable is transformed using square
root transformation (Appendix, 2).

Screening the residual is an alternative to screening the variable if a multiple
regression analysis is to be performed (Tabachnich, 2001). If normality is present then
the residuals are normally distributed and there is no reason to screen the individual
variables for normality. Residuals were checked for normality and it was observed that
there was no problem of normality, after transformation (Appendix, 3,)
Homoscedasticity.

It is advised to perform transformation to achieve homoscedasticity, which means that the assumptions of multivariate normality are met. Variables were transformed and normality was acquired for the dataset (Tabachnick, 2001).

Outliers

Univariate Outliers: Univariate outliers are cases with extreme values on one variable. As Hair et al. (1995) advise that in case of candidates for outliers are found; researchers will be examined and made their decision on keeping or deleting them. $Z$-scores of each variable were examined to determine univariate outliers using SPSS software. Three univariate outliers were found in different variables, but they were not dropped from the dataset because of the concern that this may affect the generalizability of the study.

Multivariate Outliers: multivariate outliers were also checked by looking at the Chi square highest distance (Tabachnick, 2001). It can be observed by finding out Mahalonobis distance using SPSS software. Four multivariate outliers were found during the examination. However, these cases were not dropped from the dataset because of the concern that this may affect the generalizability of the study.

Multicollinearity

Multicollinearity was also examined to ensure that independent variables were not highly correlated with each other, which would distort the results of the analysis. Three ways of testing multicollinearity were used. The first one is regression analysis’
collinearity diagnostics. In the SPSS output’s *coefficient table* (Appendix, 4) the values that are close to zero are candidates for multicollinearity, in this case none of the variables are approaching to zero. In addition to that, the SPSS output “collinearity diagnostics” tables’ (Appendix, 5) “condition index” was also examined and it is observed that this table does not indicate any collinearity either; however, before making the decision collinearity diagnostics is also done. According to Tabacknick (2001, p. 83) “If a bivariate correlation is too high, it shows up in a correlation matrix as correlation above .90.” Although the correlation table produced using SPSS software’s correlation statistics shows some weak collinearity, they do not pose any threats to the model (Appendix, 6). As such, no variables were dropped from the dataset.

After satisfying all the assumptions following regression model was run in the SPSS software.

The equation for this model is:

\[ Y^1 = A + B_{\text{popul}}X_{\text{popul}} + B_{\text{poor}}X_{\text{poor}} + B_{\text{number of doctor}}X_{\text{number of doctor}} + B_{\text{gdp}}X_{\text{gdp}} + B_{\text{inf_mort}}X_{\text{inf_mort}} + B_{\text{pub_invs}}X_{\text{pub_invs}} + B_{\text{unemployment}}X_{\text{unemployment}} + B_{\text{young}}X_{\text{young}} + B_{\text{Student_per_teacher}}X_{\text{Student_per_teacher}} + B_{\text{Schoolattainment}}X_{\text{Schoolattainment}} + B_{\text{gini}}X_{\text{gini}} + B_{\text{region-east}}X_{\text{region-east}} \]

**Result of Regression Analysis**

After examining the assumptions for multiple regression analysis, the model that is presented in the above formula was run in the SPSS software and results are reported (Appendix, 7).
For this statistical test the $49\% (R^2 = 0.496)$ of variance in the dependent variable (number of terrorist incidents per 10,000) can be predicted from the independent variables that are included in the regression model (Appendix, 7). R is the square root of R-squared and is the correlation between the observed and predicted values of the dependent variable. In this analysis, the observed and the predicted values of the dependent variable is 0.704.

The regression model is significant which means that the p-value associated with this F-value is very small (p=0.000) (Appendix, 8). This means that the independent variables reliably predicted the dependent variable.

According to the results, only three of twelve independent variables contributed significantly to prediction of number of terrorist incidents per 10,000 in provinces of Turkey, using the transformed variables. Table 11 presents the SPSS analysis results for each variable. Poor percentage in population ($\beta=-.320$, $t=2.463$, $p=.017$), percentage young ($\beta=-.401$, $t=3.054$, $p=.003$), students per teacher ($\beta=.423$, $t=-2.031$, $p=.47$) are found statistically significant. There is no statistically significant relationship between number of GDP of a province, being in the east or south east of Turkey (region), school attainment, infant mortality rate, public investment, unemployment, income inequality (Gini coefficient), population of a province, number of doctors per 10,000 in a province.

Although a regression analysis is done using the number of terrorist incidents per 10,000 in each province as dependent variable, another regression analysis is done using the absolute number of terrorist incidents in each province as a dependent variable to see whether there exists differences in results between these two dependent variables.
Multiple Regression Analysis Using “Number of Terrorist Incidents” as DV & Data of 73 Provinces (Model 2)

In this model, the assumptions of regression analysis are also examined. Since the data set already met the normality, linearity, homoscedasticity, independence of residuals, outliers, and multicollinearity issues, the dependent variable for this model- “absolute number of terrorist incidents in each province” is examined for skewness and kurtosis. A slight problem of skewness is observed and a square root transformation is done to solve the issue (Appendix, 10 & 11).

Regression analysis in SPSS software is run with the dependent variable “absolute number of terrorist incidents in each province” and independent variables, provinces dummy, Gini coefficient, school attainment, infant mortality rate, students per teacher, public investment per capita, unemployment rate, GDP per capita, young percentage of the population, population of the province, poor percentage of the population, number of doctors per 10,000 (Appendix, 12).

For this statistical test, the %60 ($R^2 = 0.601$) of variance in the dependent variable (number of terrorist incidents per 10,000) can be predicted from the independent variables that are included in the regression model (Appendix, 12). In this analysis, the observed and the predicted values of the dependent variable is (R) 0.704. Independent variables reliably predicted the dependent variable because the p-value associated with this F value is very small (p=0.000) (Appendix, 13).

According to the results, only three of the twelve independent variables contributed significantly to the prediction of the number of terrorist incidents in provinces
of Turkey, using the absolute number of terrorist incidents as a dependent variable in the second model. Table 11 presents the SPSS analysis result for each variable. Variables, student per teacher ($\beta = .524$, $t=2.831$, $p=.006$), population of province ($\beta = .294$, $t=3.068$, $p=.003$), and poor percentage of population ($\beta = .276$, $t=2.384$, $p=.020$) are found to be significantly related to the dependent variable (number of terrorist incidents in each province). However, this model did not find a statistically significant relationship between the number of terrorist incidents in each provinces and the GDP of a province, being in the east or south east of Turkey (region dummy), school attainment, infant mortality rate, public investment, unemployment, income inequality (Gini coefficient), number of doctors for 10,000 population, and young percentage of population in a province.

Findings for both models are shown in Table 2. These finding differ in some ways to the findings of the first model, which uses the dependent variable as number of terrorist incidents per 10,000. While students per teacher and poor percentage of population are still significant, in the second model- instead of young percentage of population-population of provinces is found significant.
### Table 11 Results of multiple regression analysis (Model 1 & Model 2)

<table>
<thead>
<tr>
<th>Variables (Transformed)</th>
<th>Model 1 (DV Number of terrorist incidents per 10,000 population)</th>
<th>Model 2 (DV Number of terrorist incidents)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population of Provinces</td>
<td>-.158</td>
<td>.294*</td>
</tr>
<tr>
<td>Percentage Poor</td>
<td>.320*</td>
<td>.276*</td>
</tr>
<tr>
<td>GDP</td>
<td>.244</td>
<td>.221</td>
</tr>
<tr>
<td>Income inequality (Gini)</td>
<td>.024</td>
<td>.054</td>
</tr>
<tr>
<td>Distribution of Health Service (Doctors per 10,000)</td>
<td>-.071</td>
<td>-.023</td>
</tr>
<tr>
<td>Distribution of Public Investment</td>
<td>.065</td>
<td>-.013</td>
</tr>
<tr>
<td>Distribution of Education Service (Number of student per teacher)</td>
<td>.423*</td>
<td>.524*</td>
</tr>
<tr>
<td>Health disparities (Measured by Infant mortality rate)</td>
<td>-.221</td>
<td>-.209</td>
</tr>
<tr>
<td>School attainment</td>
<td>-.043</td>
<td>-.090</td>
</tr>
<tr>
<td>Young population</td>
<td>.401*</td>
<td>.134</td>
</tr>
<tr>
<td>Provinces dummy (East and Southeast of Turkey v. the rest of the Turkey)</td>
<td>.110</td>
<td>.194</td>
</tr>
<tr>
<td>Unemployment</td>
<td>-.077</td>
<td>.008</td>
</tr>
<tr>
<td>Model R²</td>
<td>.496**</td>
<td>.601**</td>
</tr>
</tbody>
</table>

*p < .05, ** p ≤ .001

### Regression Analysis using all 81 Provinces (Model 3 & Model 4)

In the previous chapter, it is explained that some cities can attract terrorist incidents from other provinces because they provide more high-value, high-profile targets, and these cities create more media attention compared to others. Because of this reason, the main statistical model of this study did not include the cities that fit this definition. However, another two regression models are run which includes all the
provinces of Turkey and the results will be discussed to be able to see whether any
differences exist using the number of terrorist incidents per 10,000 and the number of
terrorist incidents.

As in the previous models, all assumptions of multiple regression are examined to
prevent possible misrepresentation (Tabachnick, 2001). Missing values, absence of
outliers among dependent variables and independent variables, absence of
multicollinearity and singularity, normality, linearity and homoscedasticity, are all
examined in this model.

**Normality, Linearity, Homoscedasticity, and Independence of Residual**

All variables were screened for skewness and kurtosis through SPSS Frequencies.
It is seen that three of the variables (province dummy, school attainment, Gini
coefficient) did not have a skewness or kurtosis problem. However, five of the variables
(number of students per teacher, unemployment rate, number of doctor per 10,000, infant
mortality rate, percentage poor) had a slight skewness and kurtosis problem. The
remaining four independent variables (per capita public investment, GDP, percentage of
populating between 15 to 24), and dependent variable (terrorist incidents per 10,000
population) highly skewed. (Appendix, 15). To prevent possible distortion of the results,
transformation is considered for eight of these variables (Osborne, & Waters, 2002). The
following variables were transformed using square root transformation: number of
students per teacher, unemployment rate, number of doctor per 10,000, infant mortality
rate, percentage poor and dependent variable (terrorist incidents per 10,000 population).
Per capita public investment, GDP, percentage of population between 15 and 24, and
population of provinces were transformed by logarithmic transformation (lg10). (Appendix, 16).

Residuals were also screened and were residuals all normally distributed (Tabachnich, 2001) (Appendix, 17).

*Hoscedestacity.*

It is advised to perform transformation to achieve homoscedestacity, which means that assumptions about the multivariate normality are met. Variables were transformed and normality was acquired for the dataset (Tabachnick, 2001).

*Outliers*

Five univariate outliers were found while examining the Z scores of each variable. Also, to determine multivariate outliers Chi square highest distance is observed and eight multivariate outliers were found; however, cases with outliers were not dropped from the dataset because of the concern that this may affect the *generalizability* of the study.

*Multicollinearity*

Multicollinearity was also inspected as in the previous models by examining SPSS regression analysis’s collinearity diagnostics’ tolerance (Appendix, 18), as well as, a correlation analysis (Appendix, 19) and no multicollinearity was observed. Besides that, correlation statistic was done (Appendix, 20). Although the examined output of SPSS software indicated some slight correlation, they do not pose any threats to the model (Tabachnick, 2001) and no variables were dropped from the dataset.
Results of Regression Analysis using 81 Provinces Data and Terrorist Incidents per 10,000 as DV

After satisfying all the assumptions the regression analysis was run in the SPSS statistics software for all 81 provinces of Turkey.

For this statistical test the %42 ($R^2 = 0.428$) of variance in the dependent variable (number of terrorist incidents per 10,000) can be predicted from the independent variables that are included in the regression model (Appendix, 19). $R$ is the square root of R-Squared and is the correlation between the observed and predicted values of dependent variable. In this analysis the observed and the predicted values of the dependent variable is 0.654 (Appendix, 19). The independent variables reliably predicted the dependent variable because the p-value associated with this F value is very small ($p=0.000$) (Appendix, 20).

According to the results, only three of the twelve independent variables contributed significantly to the prediction of the number of terrorist incidents in provinces of Turkey, using the transformed variables. Table 12 presents the SPSS analysis result for each variable. The number of students per teacher ($\beta = .462$, $t=2.218$, $p= .030$), per capita public investment ($\beta = .226$, $t=2.179$, $p=.033$), percentage of population between age 15-24 ($\beta = .394$, $t= 3.011$, $p=.004$) were found statistically significant. There was no statistically significant relationship between GDP per capita, being in the east or south east of Turkey (region), school attainment , infant mortality rate, unemployment, income inequality (Gini coefficient), population of a province, number of doctors per 10,000 population in a province.
Analysis using Absolute Number of Terrorist Incidents as DV for 81 Provinces

(Model 4)

As in the previous model (model 2) the absolute number of terrorist incidents for each province is used as a dependent variable for the multiple regression analysis with 81 provinces. All of the data set with the number of terrorist incidents is examined and the dependent variable (number of terrorist incidents) is transformed using logarithmic (lg10) transformation in addition to the previous transformations for independent variables (Appendix, 22).

The model for all 81 provinces with the dependent variable “absolute number of terrorist incidents in each province” was run in the SPSS software and the results are reported below.

For this statistical test, the %62 ($R^2 = 0.621$) of variance in the dependent variable (number of terrorist incidents per 10,000) can be predicted from the independent variables that are included in the regression model. Correlation between the observed and the predicted values of dependent variable (R) is 0.788 (Appendix, 23). The regression model is significant which means that the p-value associated with this F value is very small (p=0.000) (Appendix, 24). This means that the independent variables reliably predicted the dependent variable.

According to the results, only three of the twelve independent variables contributed significantly to the prediction of the number of terrorist incidents in provinces of Turkey, using absolute number of terrorist incidents as dependent for all 81 provinces of Turkey. Table 12 presents the SPSS analysis result for each variable. The following
variables, including number of students per teacher ($\beta = .355$, $t=2.095$, $p=.040$), poor percentage of population ($\beta = .253$, $t=2.209$, $p=.031$), population of provinces ($\beta = .508$, $t=4.704$, $p=.000$) were all found significantly contributing to the dependent variable. However, this model did not find a statistically significant relationship between the number of terrorist incidents in each province and GDP per capita, being in the east or south east of Turkey (region dummy), school attainment, infant mortality rate, public investment per capita, unemployment, income inequality (Gini coefficient), number of doctors for 10,000 population or young percentage of population in a province.

Table 12 Results of multiple regression analysis (Model 3 & Model 4)

<table>
<thead>
<tr>
<th>Variables (Transformed)</th>
<th>Model 3 All 81 provinces (DV Number of terrorist incidents per 10,000 population)</th>
<th>Model 4 All 81 provinces (DV Number of terrorist incidents)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population of Provinces</td>
<td>$.018$</td>
<td>$.508**</td>
</tr>
<tr>
<td>Percentage Poor</td>
<td>$.137</td>
<td>$.253*</td>
</tr>
<tr>
<td>GDP</td>
<td>$.158</td>
<td>$.144</td>
</tr>
<tr>
<td>Income inequality (Gini)</td>
<td>-.015</td>
<td>.088</td>
</tr>
<tr>
<td>Distribution of Health Service (Doctor for 10,000)</td>
<td>.051</td>
<td>-.008</td>
</tr>
<tr>
<td>Distribution of Public Investment</td>
<td>.226*</td>
<td>.042</td>
</tr>
<tr>
<td>Distribution of Education Service (Number of student per teacher)</td>
<td>.462*</td>
<td>.355*</td>
</tr>
<tr>
<td>Health disparities (Measured by Infant mortality rate)</td>
<td>-.182</td>
<td>-.137</td>
</tr>
<tr>
<td>School attainment</td>
<td>.013</td>
<td>-.001</td>
</tr>
<tr>
<td>Young population</td>
<td>.394*</td>
<td>.121</td>
</tr>
<tr>
<td>Provinces dummy (East and Southeast of Turkey v. the rest of the Turkey)</td>
<td>-.033</td>
<td>.118</td>
</tr>
<tr>
<td>Unemployment</td>
<td>.037</td>
<td>.086</td>
</tr>
<tr>
<td>Model $R^2$</td>
<td>$.428**</td>
<td>$.621**</td>
</tr>
</tbody>
</table>

*p < .05, ** p ≤ .001
Hypothesis Testing

The following section presents the results of the hypothesis testing. Hypothesis including “0” in the hypothesis name is the null hypothesis for each hypothesis. All hypothesis tested used a 95% confidence interval and $\alpha=0.05$ specified error.

H1a: “Provinces of Turkey with higher poverty rates have higher numbers of terrorist incidents.”

H1a$_0$: “Provinces of Turkey with higher poverty rates do not have higher numbers of terrorist incidents.”

To test this hypothesis this study used “number of terrorist incidents per 10,000 in the provinces of Turkey” as dependent variable and “percentage of green card users in the provinces of Turkey” as the independent variable as an indicator of percentage poor in the population of provinces. Multiple regression analysis is used to find whether the independent variable has any relationship to the dependent variable. Results of the statistical analysis shows that there is a statistically significant positive relationship between the higher green card users (poverty rate) and number of terrorist incidents in provinces of Turkey ($\beta=0.320$, $p=0.017$). So the null hypothesis was rejected.

3 of the other 4 models found statistically significant relationship between this variable and the dependent variables. The second model using absolute number of terrorist incidents as the dependent variable, and data of 73 provinces after eliminating the provinces that attract terrorist incidents from other provinces found a statistically significant relationship ($p= .020$). Additionally the 4$^{th}$ model using data of all 81 provinces and using number of terrorist incidents as the dependent variable found a
significant relationship between population of provinces and the dependent variable ($\beta = .508, t=4.704, p= .000$).

Findings of this study are consistent with the finding of previous studies which indicate a statistically significant positive relationship between poverty level of a geographical region and the number of delinquencies. There are many sociological and criminological theories that support these claims. Since Shaw and McKay’s classic work in 1942, which argued that crime could be linked to broad social forces such as socioeconomic deprivation that consist of the basis for social disorganization theory, many studies investigated the relationships of poverty and income inequality to violent and property crime (Bechdolt, 1976; Corzine, et. al, 1991; Danziger, & Wheeler, 1975; Hagan, 1994; Krivo, & Peterson, 1996; Messeschmidt, 1993; 1997; Sampson & Grove; 1989). Most of them used cross-sectional analysis using secondary data and different units of analysis such as states, census tracts, and cities. Hsieh and Pugh (1993) implemented a meta-analysis on 34 studies published on poverty, income inequality, and violent crime. They found that most of the studies were of the same opinion that violent crime is related to poverty and income inequality.

Findings in three of the four models show a significant positive relationship between the population of a province and the number of terrorist incidents in the provinces or number of terrorist incidents per 10,000 in the provinces. Turkey has been suffering terrorism more than many other countries for years (Laqueur, 1999). Studies on poverty in Turkey also indicate that the number of people living under the poverty level
is alarmingly high in some parts of the country compared to others. The results of this study show that these two phenomena are positively related.

H1b: “Provinces of Turkey with lower levels of GDP per capita have more terrorist incidents.”

H1b0: “Provinces of Turkey with lower levels of GDP per capita do not have more terrorist incidents.”

To test this hypothesis this study used “number of terrorist incidents per 10,000 in the provinces of Turkey” as the dependent variable, and “GDP per capita” as the independent variable for an indicator of income in provinces, and multiple regression is used to find whether the independent variable has any relationship to the dependent variable. Results of the statistical analysis show that there is no statistically significant relationship between GDP per capita and number of terrorist incidents ($\beta=.244 \& p=.149$). This study fails to reject the null hypothesis.

This finding of the study is not consistent with most previous research which indicates that GDP is robust in determining the incidence of violent crime rates (Bechdolt, 1976; Corzine, et. al, 1991; Danziger, & Wheeler, 1975; Hagan, 1994; Krivo, & Peterson, 1996; Messeschmidt, 1993; 1997; Sampson & Grove, 1989). However there is some research on terrorism that concludes that there is no relation to GDP per capita and the number of terrorist incidents (Berrebi, 2003; Krueger, & Maleckova, 2002). The difference between the findings of the studies, including this study, demonstrates that the empirical literature on the crime/terrorism rate contains inconsistent findings across different geographical units and different time periods. These apparent differences in the
findings of studies may be due to the statistical or methodological structure of particular studies, such as different time periods covered, units of analysis, samples, model specifications, and problems of statistical analysis and inference. For example, Laderman et al. (2000) used “growth rate of GDP per capita” as a robust determinant of homicide rate whereas this study uses GDP per capita. Also Laderman et al’s study is a cross country study in which they studied 39 countries while this paper focuses solely on the provinces of Turkey.

This study uses two indicators of poverty: the number of people living below poverty line and per capita GDP, that are accepted by United Nation Development Institute (Lok, 1995). These two indicators of poverty were mostly found significantly related to crime, but only one of these was found to be significantly related to the number of terrorist incidents in provinces of Turkey.

H2a: “Provinces of Turkey with higher income inequalities compared to other provinces have more terrorist incidents.”

H2a0: “Provinces of Turkey with higher income inequalities compared to other provinces do not have more terrorist incidents.

To test this hypothesis “number of terrorist incidents per 10,000 in the provinces of Turkey” was used as the dependent variable, and “Gini coefficient” as the independent variable as an indicator of income inequality then multiple regression analysis was used to find whether the independent variable had any relationship to the dependent variable. Results of the statistical analysis show that there is no statistically significant relation between higher income inequalities compared to other provinces and the number of
terrorist incidents in provinces of Turkey ($\beta = .024$, & $p = .816$). Null hypothesis was rejected.

This finding is not consistent with the findings of the many previous studies which indicate that the higher the income inequalities, the higher the number of incidents (Blau, & Blau, 1982; Demombynes, & Ozler, 2002; Elhrich, 1973; Hojma, 2002, Kennedy, et. al., 1998).

The Gini coefficient was used as an indicator of income inequality in the provinces of Turkey but studies show that the main problem of Turkey is not the income inequalities inside provinces but between the provinces (Doganoglu, & Gulcu, 2001; DPT, 2000; Tusiad, 2001), that may be an explanation why the results of this study are different then what were expected and different than previous research. Besides it might be the data used as indicator of income inequality, as Neumayer (2004, p. 12) explains that “there is too much noise and too little real over-time variation in the income inequality data such that the within-country variation in inequality is not sufficient to render the coefficient statistically significant.” Neumayer (2004) adds to the conclusion that the link between income inequality and violent crime is far less robust than is suggested, and he does not endorse the claim that states income inequality is a major cause of violent crime.

These inconsistent findings across different studies may be due to statistical or methodological artifacts of particular studies, such as different time periods covered, units of analysis, samples, model specifications, and problems of statistical analysis and inference (Kennedyt, et al, 19998). For example Blau & Blau’s (1982, p.126) study found
income inequality is an important determinant of violent crime; however, they also indicate that it is not true for all conditions. According to their study’s results, if the difference between races is roughly controlled in the analysis then the analysis can explain the relationship; whereas, within-race income inequality has no significant direct effect on the total rate of major violent crimes, but has an indirect effect on the total rate. On the other hand, Messner (1982) found no significant relationship between income inequality and crime. This statistical uncertainty is a feature of empirical research when “theory is vague about the exact relationship between variables and a true model cannot be articulated” (Fowles, & Merva, 1996, p.166).

$H2b$: “Provinces of Turkey that have lower public investment per capita as compared to other provinces have a higher number of terrorist incidents.”

$H2b_0$: “Provinces of Turkey that have lower public investment per capita as compared to other provinces do not have a higher number of terrorist incidents.

To test this hypothesis this study used “number of terrorist incidents per 10,000 in the provinces of Turkey” as the dependent variable, and “public investment per capita in each province” as the independent variable. A multiple regression analysis is used to find whether the independent variable has any relationship to the dependent variable. Results of the statistical analysis show that there is no statistically significant relationship between lower public investment per capita and higher number of terrorist incidents in provinces of Turkey ($\beta = .065$, & $p=.519$). This study fails to reject the null hypothesis.

Results of this study are not consistent with the previous research. Previous studies indicate unequal distribution of sources is one of the common reasons that
terrorists use as a justification for their acts, and explained unequal distribution of resources as a fertile ground to grow terrorism fast, (Baregu, 2002; Gutierrez, 2002; Kucan, 2004; O’Neill, 2002). Findings of this study do not indicate any significant relationship between lower public investment and the number of terrorist incidents in provinces of Turkey.

Although the main model that is reported could not find a statistically significant relationship between the number of terrorist incidents per 10,000 and per capita public investment, the 3rd model with data of 81 provinces using number of terrorist incidents per 10,000 found a statistically positive relationship ($\beta = .226, t=2.179, p= .033$). The finding of this model could be considered as another important finding if this study did not have a concern that some provinces are more prone to be a target of terrorist incidents and high number of incidents could be this rather than what this study is investigating for.

Although previous researches used some other indicators of distribution of government service as indicators of inequalities, none of them previously used exactly the same variables as this study did. This may be one of the reasons why the main model of this study and the other two models cannot find matching results with the other studies. As Neumayer (2004) pointed out: without finding good instruments for inequality, it is impossible to tell which variable explains the terrorism inequality relationship better.

**H2c:** “Provinces of Turkey that have lower health service per capita as compared to other provinces of Turkey have higher terrorist incidents”

**H2c0:** “Provinces of Turkey that have lower health service per capita as compared to other provinces of Turkey do not have higher terrorist incidents”
To test this hypothesis this study used “number of terrorist incidents per 10,000 in the provinces of Turkey” as the dependent variable, and “number of doctors per 10,000 populations” as the independent variable. A multiple regression analysis is used to find whether the independent variable has any relationship to the dependent variable. Results of the statistical analysis show that there is no statistically significant relationship between lower health service per capita and the number of terrorist incidents in provinces of Turkey ($\beta = -.071$ & $p = .615$). This study fails to reject the null hypothesis.

This finding is not consistent with previous studies (Gunatilaka, & Chotikapanich, 2005), which conclude that continuing social conflict and greater political instability is related to distributional issues rather than low economic development and low unemployment levels. Although the government tries to achieve the equal distribution of health services, for some different reason it has not been achieved and the implemented policies have not produced the desired effects since they do not supply equal opportunities (Tanzi, 1998). However, this study could not prove this.

One of the reasons why the findings of this study are different than previous studies may be due to the low number of cases in the dataset that this study is using. The unit of analysis is provinces of Turkey and Turkey has only 81 provinces, with some of the provinces which are known as attracting terrorist incidents from other provinces taken out leaving only 73 cases. Besides these issues, availability of fast transportation and distance to other provinces where better health care is provided with better and more doctors is also an important consideration in terms of distribution of health service. This
kind of information was not available and these may be why expected results were not achieved.

Although previous research used some other indicators of distribution of government service as indicators of inequalities, none of them previously used exactly the same variables as this study did. This may be one of the reasons why the main model of the study and the other two models did not find matching results with the other studies. Finding good instruments for measuring inequality might help to explain the terrorism inequality relationship better (Neumayer, 2004).

\[ H2d: \text{"Provinces of Turkey that have lower education service per capita as compared to other provinces of Turkey have higher terrorist incidents"} \]

\[ H2d_0: \text{Provinces of Turkey that have lower education service per capita as compared to other provinces of Turkey do not have higher terrorist incidents"} \]

To test this hypothesis “number of terrorist incidents per 10,000 in the provinces of Turkey” is used as the dependent variable, and “number of students per teacher” as the independent variable. Multiple regression analysis was used to find whether the independent variable had any relationship to the dependent variable. Results of the statistical analysis show that there is a statistically significant positive relationship between the distribution of education services and the number of terrorist incidents in provinces of Turkey ($\beta = .423$, & $p = .047$). The null hypothesis is rejected.

It is important to note that there was a statistically significant positive relationship in all four models with the variable “number of students per teacher” and the number of
terrorist incidents or number of terrorist incidents per 10,000 (Model 2: $\beta = .524$, $t=2.831$, $p=.006$; Model 3: $\beta = .462$, $t=2.218$, $p=.030$; Model 4: $\beta = .355$, $t=2.095$, $p=.040$).

This is consistent with previous studies. Previous studies conclude that distributional issues are important sources of conflict (Gunatilaka & Chotikapanich, 2005). Distribution of education services is an important issue because in Turkey, the government in Ankara has the central power to allocate public services among provinces on the basis of any criteria it chooses, which results in the government having the responsibility of ensuring the same level of services. One of the important services of government is providing education service, so it should provide enough teachers and other education resources to every part of the country (Atav, 2001). This study concludes that the number of students per teacher is related to a higher number of terrorist incidents.

It can be inferred from the results of this study that Unequal distribution education services contributing to the support and spread of terrorism in the provinces of Turkey. This finding endorses that the inequalities increases the grievance, separation, hopelessness, and increasing aggression that can result in conflicts which may be appear in the shape of terrorism.

$H_2e$: “Provinces of Turkey that have higher health disparities as measured by infant mortality rate compared to other provinces have higher terrorist incidents.”

$H_{2e0}$: “Provinces of Turkey that have higher health disparities as measured by infant mortality rate compared to other provinces do not have higher terrorist incidents.”

To test this hypothesis this study used “number of terrorist incidents per 10,000 in the provinces of Turkey” as the dependent variable, and “infant mortality rate” as the
independent variable as an indicator of health disparities in provinces of Turkey. Multiple regression analysis was used to find whether the independent variable has any relationship to dependent variable. Results of the statistical analysis show that there was no statistically significant relationship between higher health disparities as measured by infant mortality rate and higher number of terrorist incidents in provinces of Turkey (β=-.221 & p=.125). We fail to reject the null hypothesis.

Although previous studies do not state any direct relationship with the health disparities and crime, delinquencies, regional conflicts, or terrorism, this study uses health disparities as measured by infant mortality rate as one indicator of inequalities between provinces (Murray, Gakidou, & Frenk, 1999). Measurement would be better by finding good indicators of inequalities which would help to explain the terrorism inequality relationship better (Neumayer, 2004).

\[ H_3: \text{"Provinces of Turkey with a higher population have a higher number of terrorist incidents."} \]

\[ H_{30}: \text{"Provinces of Turkey with a higher population do not have a higher number of terrorist incidents."} \]

To test this hypothesis this study used “number of terrorist incidents per 10,000 in the provinces of Turkey” as the dependent variable, and “population of the provinces” as the independent variable. Multiple regression analysis was used to find whether the independent variable has any relationship to dependent variable. Results of the statistical analysis show that there was no statistically significant relationship between population of a region and the number of terrorist incidents in that region (β=-.158 & p=.147). This
hypothesis was not confirmed by the results of the statistical test, so this study fails to reject the null hypothesis.

This finding of the study is not consistent with many of the previous studies which indicate that the higher the population of a region, the higher the crime and delinquency (Blau & Blau, 1982; Kan, & Rubin, 1975; Messner, 1980: Morris & Tweeten, 1971). Contrary to that some studies (Allison, 1972; Huff & Strahura, 1980) found no relationship, between crime rate and population as this study did not found any relationship between terrorism incidents and population of provinces of Turkey.

Multiple regression analysis models that are using the number of terrorist incidents instead of the number of terrorist incidents per 10,000 (Model 2) found a statistically significant positive relationship (Model 2: $\beta = .294, t=3.068, p=.003$ & Model 4: $\beta = .508, t=4.704, p=.000$).

The difference between the findings of the studies, including this study demonstrates that the empirical literature contains inconsistent findings across different geographical units and different time periods, and the seen differences in the findings of the studies may result from the different statistical analyses that studies utilized or different methodological structures of studies, such as different time periods covered, difference in units of analysis and samples. For example, Kau, & Rubin (1975) found a positive relationship between population and violent and property crime, but their statistical analysis techniques were also different. Mooris, (1971) also found a positive relationship with population and crime rate; however, this author included some additional variables that were different than many other studies, such as police protection.
Also, the limitation of the study shows some differences. For example, Mooris’s study (1971) was limited to cities with populations ranging from under 25,000 to over 1 million inhabitants, which is different than the analysis of this paper. These issues should be considered when comparing and criticizing the findings of this study to the other studies.

\[ H_4: \text{“Provinces with a high number of population between 15 to 24 years old have higher numbers of terrorist incidents.”} \]

\[ H_{40}: \text{“Provinces with a high number of population 15 to 24 years old do not have higher numbers of terrorist incidents.”} \]

To test this hypothesis this study used “number of terrorist incidents per 10,000 in the provinces of Turkey” as the dependent variable, and “percentage of young age between 15 to 24 in provinces of Turkey” as the independent variable. Multiple regression analysis was used to find whether the independent variable had any relationship to the dependent variable. Results of the statistical analysis show that there was a statistically significant relationship between higher number of people aged between 15 to 24 years and higher numbers of terrorist incidents in provinces of Turkey ($\beta=.401$ & $p=.003$). This study rejects the null hypothesis.

Confirming the findings of the 3rd regression model in this study, this model also found a statistically significant positive relationship between poor percentage of population as determined by percentage of green card users and the number of terrorist incidents per 10,000.

Finding of this study are consistent with many of the previous studies that found that a high number of young population aged between 15-24 years has a potential to have
a higher number of delinquency (Baron, & Straus, 1988; Cohen, & Land, 1987; Gould, et. al., 1998; Land, et. al., Messner and Tardiff, 1986; Nagin, & Land, 1993; OJJDP, 1996; Patterson, 1990). Consistent with the finding of this study, Yayla’s study (2005) which uses a previous survey on prisoners who were captured for their terrorist acts in Turkey, indicates that most of the surveyed terrorists tend to be in their early twenties at the time of their arrest.

\[ H5: \text{“Provinces of Turkey with higher unemployment rates have higher numbers of terrorist incidents.”} \]

\[ H5_0: \text{“Provinces of Turkey with high unemployment rates do not have higher numbers of terrorist incidents.”} \]

To test this hypothesis, “number of terrorist incidents per 10,000 in the provinces of Turkey” is used as the dependent variable, and the “percentage of unemployed population” as the independent variable. Multiple regression analysis was used to find whether the independent variable had any relationship to the dependent variable. Results of the statistical analysis show that there was no significant relationship between higher rates of unemployment and higher numbers of terrorist incidents in provinces of Turkey (\(\beta=-.077\) & \(p=.635\)). This study fails to reject the null hypothesis.

The finding of this study is not consistent with the results of many other previous studies in crime (Bourguignon, et. al, 2003; Elli, 1991; Gould, et. al, 1998; Machin, Meghir, 2004). Besides these studies, Teymur’s (2004) indicates a high number of unemployment among terrorists. His descriptive analysis shows that only eight percent of the respondents had full time jobs to support themselves; whereas, 50% of them had no
job, and 30% worked part-time, according to the statements of a leftist revolutionary
group, which is acting in Turkey. However, there are also studies concluding that
unemployment has nothing to do with the crime rate (Holzman, 1972; Hojma, 2002;
Jefferson, & Pryor, 1999) or terrorism (Berrebi, 2003).

There may be different reasons why this study’s finding on this variable are
different than previous literature. Official unemployment rates which are released by the
Turkish Statistical Institute is accepted as its underestimating or minimizing the real
unemployment rate and new measure of unemployment should be used (Ozel & Mehran,
1992), and the data may not be reflecting real numbers. However, this is the only data
that is available. Also, this study does not consider the effect of marginal labor market
involvement. Robert D. Crutchfield and Susan R. Pitchford (1997) state “vitality of the
local labor market also matters, because the concentration of marginally employed
people is itself criminogenic. Finally, we should recognize that it is not just
unemployment that affects criminality, but also marginal employment and time out of the
labor force. As inner cities increasingly become places where the most advantaged
residents can only secure secondary sector jobs, and other residents are consigned to no
job at all or to the illegal labor market, we should expect substantial increases in crime”
(p.112). This statement shows that it is important to consider marginal employment but
this kind of data also is not available to. It is an important issue because absence of secure
and satisfying jobs brings the discussion of the relationship between crime and
unemployment as unavoidably connected to that of the inequality and crime relationship
Besides these discussed issues, Gould et. al (1998) indicate that wages are a better measure of labor market conditions than the unemployment rate. Also, Adler (1991) found it unbenevolent to use macro-level measurements of unemployment. Alder (1991) also explains one possible cause of this uncertainty as a lack of a simple, direct, association between unemployment and crime. Also, she explains that this uncertainty might be a result of methodological and statistical problems and specification of the data that are used for the analysis. These issues might prevent researchers from finding conclusive evidence showing the expected relationship between unemployment and crime/terrorism.

\textit{H6: “Provinces of Turkey with higher education attainment have a lower number of terrorist incidents.”}

\textit{H60: “Provinces of Turkey with higher education attainment do not have a lower number of terrorist incidents.”}

To test this hypothesis “\textit{number of terrorist incidents per 10,000 in the provinces of Turkey}” is used as the dependent variable, and “\textit{percentage of population continuing high school or vocational schools}” as the independent variable. Multiple regression analysis was used to find whether the independent variable had any relationship to the dependent variable. Results of the statistical analysis show that there was no statistically significant relationship between lower education attainment and a higher number of terrorist incidents in provinces of Turkey ($\beta=.043$, & $p=.729$). This study fails to reject null hypothesis.
This finding of this study is not consistent with many of the previous studies on crime, regional conflict and terrorism, which indicate that a high number of school attainments prevent people from being involved in illegal works (Allison, 1972; Collier, & Hoeffler, 2001, Crucefield, & Pitchford, 1997; Samanis, 2004; Gould, Weinberg, Mustard, 1998; Jefferson, & Pryor, 1999; Pogue, 1975), but is consistent with some other research which also cannot find any significant positive relationship between school attainment and crime, or delinquency (Elrich, 1975; Krueger, & Maleckova, 2002; Samanis, 2004).

The difference between findings of the studies, including this study, demonstrates that the empirical literature determinant of crime/terrorism rates contains inconsistent findings across different geographical units and different time periods. This apparent difference in the findings of studies may be due to the statistical or methodological structure of particular studies, such as different time periods covered, units of analysis, samples, model specifications, and problems of statistical analysis and inference. For example Samanis’ (2004) study uses data for civil war between 1960 and 1999 with school attainment related to civil war.

Table 3 shows which of the hypotheses of this study are supported by the findings of the statistical analysis and which are not supported.
Table 13 Summary of hypothesis testing

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Outcome (Model 1)</th>
<th>Outcome (Model 2)</th>
<th>Outcome (Model 3)</th>
<th>Outcome (Model 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DV:</strong> Number of terrorist incidents per 10,000</td>
<td>Number of terrorist incidents</td>
<td>Number of terrorist incidents</td>
<td>Number of terrorist incidents</td>
<td>Number of terrorist incidents</td>
</tr>
<tr>
<td><strong>Data:</strong> 73 provinces</td>
<td>73 provinces</td>
<td>81 provinces</td>
<td>81 provinces</td>
<td>81 provinces</td>
</tr>
<tr>
<td><strong>H1a:</strong> Provinces of Turkey with higher poverty rates have higher numbers of terrorist incidents.</td>
<td>Supported</td>
<td>Supported</td>
<td>Not Supported</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H1b:</strong> Provinces of Turkey with lower levels of GDP per capita have more terrorist incidents.</td>
<td>Not Supported</td>
<td>Not Supported</td>
<td>Not Supported</td>
<td>Not Supported</td>
</tr>
<tr>
<td><strong>H2a:</strong> Provinces of Turkey with higher income inequalities compared to other provinces do not have more terrorist incidents.</td>
<td>Not Supported</td>
<td>Not Supported</td>
<td>Not Supported</td>
<td>Not Supported</td>
</tr>
<tr>
<td><strong>H2b:</strong> Provinces of Turkey that have lower public investment per capita as compared to other provinces have a higher number of terrorist incidents.</td>
<td>Not Supported</td>
<td>Not Supported</td>
<td>Supported</td>
<td>Not Supported</td>
</tr>
<tr>
<td><strong>H2c:</strong> Provinces of Turkey that have lower health service per capita as compared to other provinces of Turkey have higher terrorist incidents</td>
<td>Not Supported</td>
<td>Not Supported</td>
<td>Not Supported</td>
<td>Not Supported</td>
</tr>
<tr>
<td><strong>H2d:</strong> Provinces of Turkey that have lower education service per capita as compared to other provinces of Turkey have higher terrorist incidents</td>
<td>Supported</td>
<td>Supported</td>
<td>Supported</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H2e:</strong> Provinces of Turkey that have higher health disparities as measured by infant mortality rate compared to other provinces have higher terrorist incidents.</td>
<td>Not Supported</td>
<td>Not Supported</td>
<td>Not Supported</td>
<td>Not Supported</td>
</tr>
<tr>
<td><strong>H3:</strong> Provinces of Turkey with a higher population have a higher number of terrorist incidents.</td>
<td>Not Supported</td>
<td>Supported</td>
<td>Not Supported</td>
<td>Supported</td>
</tr>
<tr>
<td><strong>H4:</strong> Provinces with a high number of populations between 15 to 24 years old have higher numbers of terrorist incidents.</td>
<td>Supported</td>
<td>Not Supported</td>
<td>Supported</td>
<td>Not Supported</td>
</tr>
<tr>
<td><strong>H5:</strong> Provinces of Turkey with higher unemployment rates have higher numbers of terrorist incidents.</td>
<td>Not Supported</td>
<td>Not Supported</td>
<td>Not Supported</td>
<td>Not Supported</td>
</tr>
<tr>
<td><strong>H6:</strong> Provinces of Turkey with higher education attainment have a lower number of terrorist incidents.</td>
<td>Not supported</td>
<td>Not supported</td>
<td>Not supported</td>
<td>Not supported</td>
</tr>
</tbody>
</table>
Summary of the Chapter

This chapter presented the results of the statistical analysis of the research. In the beginning, descriptive information about the variables is given. Before running the multiple regression analysis, the dataset was checked to see if it met the assumptions of multiple regression analysis to prevent possible distortion of the results. Results of the multiple regression analysis found only four variables related to the terrorist incidents in provinces of Turkey. According to the results, the number of poor population in provinces, distribution of education services, and percentage of young in a province all explaining the number of terrorist incidents in provinces of Turkey. On the other hand, GDP per capita, income inequalities in a province, distribution of health services (Number of doctors for 10,000), public investment per capita, health disparities measured by infant mortality rate, education attainment, and population of a province are not found to be related to the number of terrorist incidents in provinces of Turkey.

Results of the multiple regression analysis support H1a, H2d, and H4. However, the results do not support the hypothesis H1b, H2a, H2b, H2c, H2e, H3, H5, and H6:

Also, some other hypotheses that are not supported by the main model (model 1) are supported by some other models. Model 2 and 4 support the first hypothesis and confirm the first model; model 2 and 3 support the hypothesis H3, while model 1 does not; model 3 supports H2b; whereas, all others do not. All models support H2d; model 3 supports H4, as well as, model 1.
The next chapter discusses these results in relationship to the research question and study hypothesis. Implications and suggestions for future researches are also discussed.
CHAPTER 5 -Discussion, Implications, & Recommendations

This chapter begins with the summary of the findings of the research and a discussion of the implications of the findings from a variety of perspectives follows. Next, the researcher presents both, suggestions for future research and policy implementations. Finally the limitations of the study are presented.

Summary and Discussion of Key Findings

The present study was undertaken in order to assess the empirical validity of crime literature and crime theories for explaining cross provincial rate of terrorist incidents in Turkey. A number of studies have found that poverty is an important determinant of crime, delinquency, regional conflict and terrorism. However some studies indicate that poverty alone is not enough to explain the crime, delinquency, regional conflict and terrorism; inequalities between groups, race, gender, or geographical areas should also be considered (Alder, 1991). Further, Braithwaite & Braithwaite’s (1980) study on homicide rates in thirty-one countries found that higher homicide rates were strongly related to economic inequalities. They also used different indicators of economic inequality such as the gap between the rich and the average wage earner, the disparities in income between workers in different sectors of industry and the percentage of gross national product spent on social security. Looking at Turkey, studies have indicated problems of poverty and inequalities between geographical regions for a long time (DPT, 2001; Dumanli, 1996; Dansuk, 1997; Dağdemir, 1999; Erdogan, 1996;
Tusiad, 2000; Tusiad, 2005), at the same time Turkey has been suffering from terrorism (Laqueure, 2001). This study shows that these conditions are related. Since many terrorist incidents were carried out by different terrorist organizations, this study looked at which variations in socio-economic conditions made it likely that many terrorist groups commit terrorist incidents. As such, the following research question is asked: “Are poverty level, income inequalities, unequal distribution of sources, education attainment, population, young percentage in the population and unemployment levels related to terrorist incidents in provinces of Turkey?”

The main hypothesis of this study states that high numbers of terrorist incidents in some provinces of Turkey are related to poverty and inequalities between provinces. This study also examines the effect of other issues derived from the literature, such as unemployment, population, young percentage of population, and education attainment that might have an effect on the number of terrorist incidents.

Multiple regression analysis is used. It is the statistical technique utilized to reveal the effect of multiple variables as independent variables on one dependent variable. Results of the multiple regression analysis support three of the twelve hypothesis of this study. The number of people living under the poverty line in each province, the lower education service per capita compared to other provinces, and the percentage of young population in each province were found to be related to the number of terrorist incidents in the provinces of Turkey. However, GDP per capita, income inequalities in provinces, public investment per capita, distribution of health services, health disparities, population
of provinces, unemployment and education attainment did not explain the number of
terrorist incidents in provinces of Turkey for the data that this study examined.

Further, three additional models were run using SPSS software to analyze the
differences between our models. The second regression model took the data of 73
provinces and changed the DV to the number of terrorist incidents instead of the number
of terrorist incidents per 10,000. All other variables remained the same. Unlike the first
model, the second model found that the population of provinces was significant rather
than the percentage of young population. The other two significant variables, the
percentage of poor and the distribution of education service in the first model remained
significant in the second model.

The third model found that per capita public investment significantly related to
the number of terrorist incidents per 10,000 using data of 81 provinces and the number of
terrorist incidents per 10,000 populations. Model 2 and Model 4 used data of 73
provinces and 81 provinces respectively; however, they both found population of
provinces positively correlated to number of terrorist incidents.

This study uses two indicators of poverty that are accepted by the United Nation
Development Institute (Lok, 1995). The first indicator is number of people living below
the poverty line, and the other indicator is GDP per capita. Since data for the number of
people living below the poverty line is not available for the cross-section of the country,
the number of people using a green card is used as a proxy variable for the number of
people living below the poverty line. The findings show a statistically significant
relationship to terrorist incidents and percentage of green card users in each province of
Turkey in three of the four models implemented in this study. However, GDP was not found to be statistically significant in any of the models. It can be inferred from the results of this study that provinces of Turkey which have higher percentages of poor populations compared to other provinces might have more terrorist incidents. In sum, it appears from the findings of this study that poverty and the conditions leading to such poverty are related to the support and spread of terrorism in the provinces of Turkey.

Another major hypothesis of this study postulates that the higher the inequalities in education service between provinces of Turkey, the higher the number of terrorist incidents. Inequalities in education services pose a significant barrier to development of a region (Mansuri, 2006). Although this study used five indicators of inequalities between provinces, only one of the indicators, distribution of education services, was found to be statistically significant in all of the multiple regression models. It can be inferred from the results of this study that unequal distribution of education service is contributing to the support and spread of terrorism in the provinces of Turkey. Distribution of public investment was found to be significant in only one of the models (model 3) in this study. This can also be accepted as a suggestion from the findings of the study which states that unequal distribution of public investment is related to number of terrorist incidents in provinces of Turkey. These two findings of the study might be considered as indicators that show that unequal distribution of any government resources might be related to terrorist incidents. The reason for that might be because this may stimulate the perception of injustice, which is stated as one of the basic motivations for terrorism (Baregu, 2002; Gutierrez, 2002; Kucan, 2004; O’Neill, 2002). An important point that the study brought
forth about inequalities and terrorism relationship might find rationalization similar to Blau & Blau’s explanation (1982) of crime and inequality relationship. They state that higher inequalities produce isolation, misery, and aggression, which may find appearance in frequent conflicts. This may also include a high incidence of terrorism.

Although this study found some indicators of inequality that are significantly related to number of terrorist incidents in provinces of Turkey, other findings of the study indicate no relationship between the number terrorist incidents and some other indicators of inequality such as income inequality measured by gini coefficient, distribution of health services measured by number of doctor per 10,000 populations, and health disparities measured by infant mortality rate. One reason why this study could not find any relationship between income inequality and number of terrorist incidents might be due to the fact that the gini coefficient was used as an indicator of income inequality in the provinces of Turkey but studies show that the main problem of Turkey is not the income inequalities inside provinces but between the provinces (Doganoglu, & Gulcu, 2001; DPT, 2000; Tusiad, 2001). Gini coefficient is used as the only indicators of inequality in many of the studies but the other indicator that is utilized is unique to this study. The indicator of health disparities and the indicators of distribution of health services are not found related to terrorist incidents. It is not surprising to have the same results from both of these indicators because good health service delivers good health as an outcome. Availability of fast transportation and distance to other provinces where better health care is provided with better and more doctors is also an important consideration in terms of distribution of health service and health disparities as an
outcome. Another explanation might be that the variables that are used as indicators of unequal distribution of health services and health disparities are not good indicators. Whereby some other indicators for these two variables might give a significant relationship.

Another important finding of this study is the relationship between a high percentage of young population and higher terrorist incidents. It is likely that a different proportion of young in population of geographical areas may also contribute to crime rates (Baron, & Straus, 1988; Cohen & Land, 1987; Land, et. al. 1990; Messner, & Tardiff, 1986; Patterson, 1991). A high number of Turkey’s population is young; one-third of the population in Turkey constitutes the 15 years and younger age group and this age structure of Turkey’s population brings some unique problems. For example, according to the 1990 census results, for every 100 working people there are 65 dependents (Toros et al., 1997). Findings of this study also show that the high percentage of the young population between ages 15 through 24 is associated with a high number of terrorist incidents in provinces of Turkey. The high number of the young population and the high terrorist incident relationship should be considered deeply with the problems that are brought forth by this age group. Some special attention should be paid to the young population to prevent them from engaging in illegal activities. Efforts aimed at addressing education, availability of jobs or trainings might help to keep this target group away from the reach of terrorists.

As noted the he findings show evidence indicating that the higher percentages of the young population are associated with higher number of terrorist incidents. A different
interpretation of this finding may be found in the explanation by the lack of self-control that Gottfredson and Hirschi (1990) emphasize. Their argument is that self-control develops early and affects behavior throughout the life course, and those who have lack of self-control are more likely to engage in crime and are more likely to be marginal to the labor market. It is possible that the young population does not have self-control as the older population does. Besides, it is indicated that youth involvement in violence or terrorism might be related to demographics (Huntington, 1996; Kaplan, 1994) or because they are forced to either by physical abduction, or because of a lack of other alternatives for survival (McIntyre, 2002; Brett, 2003), and grievances may be effective (Richard, 1996; Keen, 2003). Although the findings cannot reveal which of these factors make young people engage in terrorism, the findings confirm this notion by indicating a relationship between a higher percentage of young population and a higher number of terrorist incidents.

Although the main model (model 1) could not find significant relationship with the number of terrorist incidents and population of provinces, two other models (model 2, and model 4) show significant relationship between population of the provinces and number of terrorist incidents. Since more than one model of the study indicates a relationship, it might be an indicator of another important issue that is related to number of terrorist incidents in provinces of Turkey. Among Turkey’s rapid growing population some provinces have a very high level of population increase whereas some other provinces have a decreasing number of population which is mostly resulted by migration
to other provinces (Toros, Ulusoy, & Ergocmen, 1997). This study shows that higher number of population may result in greater terrorist incidents.

Additionally findings of the study do not indicate any relationship between school attainment and number of terrorist incidents in any of the models. Tansel and Gungor’s study (2000) indicates disparities in school enrollment mostly in rural areas in Turkey. The researcher believed that the higher the school attainment the lower the number of incidents. However results of the current study do not endorse such a relationship. The expected benefit from higher school attainment was in various ways such as higher educational attainment should reduce the risk of political violence by encouraging political participation (Collier, & Hoeffler, 2001), or school prevents people from involving in illegal activities by keeping students away from engaging in illegal works. It is possible that school cannot achieve these.

Literature indicates that areas with a high proportion of unemployment would experience more crime than areas with an overall low proportion of unemployment (Elli, 1991). Although the rate of participation in Turkey’s labor force is declining because of rapid urbanization, economic crises, and high migration towards urban areas, no models of this study could find any relationship between unemployment rate and terrorist incidents. Possible reasons for this result are that unemployment does not have any effect on number of terrorist incidents or data of unemployment does not represent the actual unemployment rate to make the study reach precise results (Özel & Mehran, 1992).

This study also used a dummy variable to be able to see whether being in the east and the south-east part of the country has any relationship to high number of terrorist
incidents. These two geographical regions are known to have more poverty than the other geographical regions of the country (Erdogan, 1996; Tusiad, 2005). However none of the four models indicates any relationship between being in the east and the south-east part of the country and terrorist incidents.

Table 14 shows the hypotheses and the variables to test the hypotheses with the results of the analysis for each hypothesis. In Model 1, 73 out of 81 Turkish provinces after eliminating the provinces attracting terrorist incidents from other provinces, and the number of terrorist incidents per 10,000 is used as DV. The second model used data of 73 out of 81 Turkish provinces after eliminating the provinces attracting terrorist incidents from other provinces, and the number of terrorist incidents. The third model used the data of all 81 provinces and the number of terrorist incidents per 10,000 as DV. The last model, Model 4, used the data of all 81 provinces and number of terrorist incidents.

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Another benefit from this study is that it broadens the social disorganization theory, anomie/strain theory and Marxist theory of crime by evaluating them in the terrorism area. Findings of this study show that what these theories are proposing in the area of crime, delinquency and conflict is also valid for terrorism. By comparing low and high socioeconomic communities, social disorganization theory found low socioeconomic status communities suffer from a weaker organizational base than higher status communities; therefore, these communities have less ability to engage in both social control and the appropriate socialization of residents (Sampson & Groves, 1989). Social disorganization theory explains that low economic status; high levels of racial/ethnic heterogeneity and residential mobility affect the community’s level of social disorganization. From the findings of this study, it can be inferred that the lower the economic condition of a province, the higher the possibility of terrorist incidents.
Anomie/strain theory and Marxist theory explains the reason for crime as inequalities. These theories state that the social structure effectively limits the possibilities of individuals within certain groups to achieve their goals through the use of legitimate means. For example, lower class individuals do not have the same access to legitimate opportunities, such as conventional educational and occupational opportunities, as others and this may cause strain. This study also found some support for this, as it found some inequalities between provinces of Turkey are related to higher terrorist incidents in provinces of Turkey.

**Recommendations for Future Research**

More research in this area is needed. The recommendations presented here will suggest further research ideas, which may broaden the findings of this study.

Although this study accepts that other factors that are related to formation of terrorism exist (Borum, 2004; Cranshew, 2001; Luckabaugh et al, 1997), it only looks for some of these factors, such as poverty, inequality, unemployment and higher population for the purpose of this study. Future studies may include other factors that are related to formation of terrorism besides the aforementioned to determine their relationship. This may give robust evidence for decision makers to develop better policies against terrorism.

This study advises that future studies compare Turkey to other countries that have been suffering from terrorism like Turkey. Since the variations in the conditions might change from country to country, a comparison of the effects of poverty and inequality to other countries would make the findings more robust.
Although this study found a positive relationship between the percentage of young population and the number of terrorist incidents per 10,000 in provinces of Turkey, this relationship deserves closer attention as the association between youth and terrorism is far from automatic (UNDP, 2006). This study also advises future studies to examine which sources can determine what makes young people choose to engage in violence or renounce it.

Although findings of this study found relation between some inequalities and terrorist incidents, fewer indicators of inequalities are found related than this study was expecting to find. Many of the indicators of inequalities that this study utilized were not used in other studies, so this study suggests that future studies utilize different indicators, such as the gap between the rich and the average wage earner, the disparities in income between workers in different sectors of industry and the percentage of gross national product spent on social security which were used by Braithwaite and Braithwaite (1980).

This study uses the number of terrorist incidents per 10,000 as dependent variable but data on the number of captured terrorist according to where they originated might give better results as it can reveal the effect of socioeconomic factors on producing terrorists, rather than the terrorist incidents. This kind of data was not available for the current study through the data sources that were sought; however, this kind of data may be available in the near future. Using the number of terrorists captured and classified according to their originating province would give better results and future studies may choose to use this data as it becomes available.
Through longitudinal research it can be observed how changes in socioeconomic conditions affect the number of terrorist incidents in time. Since the economic policies have been changing in time and new developments or deteriorations occurred, examinations of these changes might give a good indication of how these factors affect the number of terrorist incidents in provinces. In Turkey, fluctuations in the economy have occurred in recent history and some varying amounts of terrorist incidents have occurred during this time as well. Considering this trend, it is important to examine such phenomenon in their historical context, and this study advises that future research be undertaken with longitudinal data.

Future research should consider using various units of analysis. Smaller units of analysis, such as neighborhood-level, would give a better result, as it would increase the number of cases for the analysis. Although it is difficult to obtain neighborhood-level data, it may be theoretically the best level of analysis since there may be a large amount of variation in social and economic variables within a given province.

To better understand how people’s perception of inequalities affects their attitudes toward violent behaviors/terrorism, a survey could be implemented to a sample of the population in each provinces of the country.

This study could not find where terrorism and crime overlap and where they diverge. Comparing the findings of this study to the findings of majority of the previous works on crime might give idea about this issue but it might not be accurate. This study advises future studies to look at the factors that are related to terrorism and crime and try to find where they are overlap and where they diverge.
Finally, future studies may choose to include the effect of preventive measures targeting terrorism. Considering this issue in the analysis could allow for being able to see the effect of preventive measure in addition to the other factors that affect terrorism.

**Policy Recommendations**

One of the purposes of this study is to aid decision-makers in developing policies addressing terrorism by revealing some related issues to terrorism. In this sense the current research should provide some important considerations for policymakers. Public policy often changes when some occurrence pushes a question into the public knowledge. Although terrorism has been a very important problem that has resulted in Turkey losing a lot of life and money, policy considerations to combat terrorism have been limited to deterrence measures. This study brings forth some factors that are related to terrorism. These factors exist in areas that act as fertile ground for terrorism, which find support easily. These areas boast high poverty and higher inequalities in terms of distribution of resources compared to other areas.

This study also shows that the existence of more terrorist incidents in some geographical areas is related primarily to higher poverty rates and inequalities especially in distribution of education services and public investment to each province. Higher percentage of the young population is an important factor. Beside these, higher population of some provinces is found related to high number of terrorist incidents. These findings show that policy decisions on these issues are important factors in combating terrorism.
It is important that this study reveals that special socio-economic conditions such as poverty, inequalities and characteristics of population are related to terrorist incidents. Although this study is not designed to find information about the formation of terrorist groups into regions, higher incident rates indicate their presence in some specific regions. It can be inferred that if particular socio-economic conditions are related to the location of these groups or if they are just related to terrorist incidents it might be possible to discourage their formation or activities by producing special types of regional economic policies (Jefferson, & Pryor, 1999).

Developing policies that address poverty is imperative. Thus, this study advises policymakers to develop government policies that may have an effect on reducing poverty levels. Government policies to reduce poverty should go beyond the programs that simply target groups living in poverty. Braithwaite (1979) alleges that these kinds of policies do not have a significant impact on the overall crime rates in society, but that “gross economic measures to reduce the gap between the rich and the poor and the rest of the population” (p. 231) are necessary if a significant reduction in crime is to be expected (Kennedy et al, 1998). Thus, this study advises that polices to reduce the gap between rich and the poor should be developed.

Specific policies aiming to decrease inequalities in distribution of education services should be developed. More teachers should be supplied to the province where there are not enough teachers. Besides supplying enough teachers, decision makers should consider supplying other educational resources, such as computers, enough and efficient school buildings, and other educational materials.
The high number of population might also be considered as another important issue related to the high number of terrorist incidents. Policies should address solutions to rapid grooving population of urban areas especially in some big metropolitans. Rapid grooving population emerge as a result of migration from rural areas to urban areas, and from east or south east to other provinces, also high number of fertility rate is another effective factor in rapid increase in population (Toros, Ulusoy, & Ergocmen, 1997). Polices should be developed to prevent these uncontrolled causes of rapid population increase in some provinces.

Turkey has a very fast growing population with a very high percentage of youth. Findings of this study indicate a positive relationship between the distribution of population according to the age group and the number of terrorist incidents in provinces of Turkey. The age structure of Turkey’s population brings some unique problems. For example according to the 1990 census, results indicate that for every 100 working people there are 65 dependents (Toros, Ulusoy, & Ergocme, 1997). Developing specific policies for this high number of young population is also important in terms of minimizing future terrorism. Specific policies for youth should be considered to be able to keep them away from involvement in terrorism.

Although the goals and priorities for policy makers regarding poverty and inequalities is controversial, the empirical results of this study should allow for more confidence in assessing the economic costs and benefits of the programs directed towards lessen the poverty and inequalities. Overall, to control the level of terrorism, the
structured inequalities of the society and the values and approaches that sustain and encourage them should be addressed.

Other Policy Considerations

There are also some policy implications from the findings of this study that are not directly derived from the findings of the study but found to be important.

The influential work of Becker (1968) presents an economic analysis of criminal behavior. This particular economic model explains how an individual makes his/her decision whether to be involved in criminal activities or not. The decision involves simply comparing the returns of legitimate market opportunities to the expected returns of crime. Policy implications for this explanation of crime are to increase the certainty and severity of punishment to be able to make crime less attractive. On the other hand, Imrahoglu et al. (1996) suggests another approach: increasing the returns of legitimate alternatives to crime such as welfare programs and, more generally, redistribution programs. Implementation of this approach on terrorism policies may be different.

Terrorism is justified by many as a response to inequality or as a way to shape policy in response to public opinion (Collier, & Hoeffler, 2001; Sambanis, 2004). Social problems are a good starting place for terrorists to influence and make their propaganda. They emphasize problematic issues such as such as poverty, inequity, and lack of freedom that some of the society members or groups suffer, then they start by talking and protesting these issues. These issues become justification for their later violent acts (Teymur, 2003). It is seen as a reason for terrorizing the public, which emerges as a reaction to a government policy. More complaints by citizens for any reason demonstrate more
opposition to government policies and can feed into terrorist action. Offering increased punishment, as Becker (1968) advised, may not be a good way to eliminate terrorism, however, finding alternatives to engaging in terrorism might be a good source to be able to solve this issue. In other words, terrorism would not be seen as the only way of solving problems (Imrohoroglu et al, 1996).

Improving human and social services is another way of approaching policy developments against poverty (Worldbank, 2006). For this reason, the current study recommends developing polices on improving human capital, which includes improvement in the quality of the delivery of education, health, housing, social safety, environment and infrastructure (UNDP, 2003; Worldbank, 2005). Such improvements may also help to decrease the level of terrorism related to poverty.

Policies that increase the role of Civil Society Organizations (CSO) for reducing poverty are also recommended. Contribution to Civil Society Organizations to reduce poverty is being acknowledged and supported (Fukuyama, 1995). CSOs are playing a mediating role between the state and society, which is beneficial to both parties as shown by number of studies (Rosenstone & Hansen, 1993; Verba, Schlozman, & Brady 1995). Larger roles for CSOs increase the performance of government programs when state agencies deal with organized community groups rather than individuals because CSOs organize individual efforts and are more consistent (Krishna & Prewitt, 2000). Finally, Krishna and Prewitt (2000) also identify CSOs’ duty in poverty reduction as, “Articulating citizens’ interests and demands; Defending citizens’ rights; and providing goods and services directly, without recourse to state agencies” (p.6).
Additionally, this study reveals that it is important to develop governmental policies that may decrease the inequalities between regions. Besides income inequalities, unequal distribution of resources can also be considered and new policies should be developed as a remedy for such factors that are related to terrorism. The findings of this study show a relationship between some distribution of government sources and number of terrorist incidents. Policies to prevent existing implementation of unequal distribution of resources should be developed and new policies should be implemented to change people’s perception of inequalities.

Youth are seen as a possible threat to security and a high young population combined with unemployment, urbanization and other factors can lead to violence (UNDP, 2006). The UNDP Report (2006) warns that as the young population increases and they get fewer educational and employment opportunities, there is increasing concern that these conditions may encourage their participation in violence. The Report further (2006, p.12) indicates that, “The issue of ‘youth and violent conflict’ concerns more than youth: it is a reflection – and at the same time a further aggravation – of a broader societal crisis. Trying to understand the intersection between youth and violent conflict is a way of re-examining societies and development processes.”

The rate of people participating in Turkey’s labor force is declining due to factors such as rapid urbanization, economic crises and high migration towards urban areas. These are all factors that are seen to encourage a diminishing job market and labor force participation rate. In addition, an unseen part of the problem exists which consists of the rate of people that are not included in the unemployment numbers, such as also unpaid
family work which is customary in the rural labor force (Tansel, & Tasci, 2004). This may encourage the development of policies that specifically consider the young population in keeping them away from different forms of crime and violence, including terrorism.

Literature indicates that youth become involved in violence or terrorism due to a number of reasons. First, youth may turn to violence because of demographics (Huntington, 1996; Kaplan, 1994) Second, coercion may play a role as young people fight because they are forced to either by physical abduction, or because of a lack of other alternatives for survival (McIntyre, 2002; Brett, 2003). Third, grievances may play role. This indicates that youth violence resulted from the alienation of young and they feel that have been forgotten (Richard, 1996; Keen, 2003). Policies need to address all of these issues revolving around the youth population.

One of the important youth policy issue are educational opportunities that are offered to youth. Many education policies emphasize on primary and secondary education; whereas, enough skills to be able to continue higher education or skills to enable young to enter the labor force is an important policy considerations. Besides the content of the education, how education socializes the youth, such as teaching them how they can keep themselves away from terrorist recruiters might be another policy issue in terms of education that this study recommends.

Insufficient opportunities for young people to earn a living are another negative factor that might make them engage in terrorism (UNDP, 2006). Policies also should
consider creating job opportunities for young people and educating them to be able to
develop their skills to join workforce.

It has also been argued that including youth in the decision making process would help them not to be involved in violent acts. Other than the traditional way of being in the part of youth division of a political parties, creating youth councils and youth forums in which young people come together in committees to discuss issues relating to their communities might help encourage more youth to be involved in decision-making which might prevent them involving in violence (Matthews & Limb, 2003; UNDP, 2006).

Limitations

One of the major limitations of this study is the availability of better data to explain the effect of poverty, inequality and other socio-economic condition on terrorism. Second, this is not a study of causality. Due to the nature of the study design and the statistical analysis utilized, the study cannot indicate any causality; rather, it indicates the relationship between the DV and IVs.

Third, the theoretical model for this study is based on the literature, researchers’ heuristics and familiarity with terrorism. However, it is possible that some other studies could be more effective in studying the factors that are creating fertile ground for terrorism.

Fourth, because terrorism has a number of different official definitions, the results of the study may not be generalized to all kind of terrorism and to all terrorist groups. It is more valid for the case of Turkey. This study does not examine state terrorism because it
is suspected that the process underlying participation in state terrorism is quite different than the process underlying sub-state terrorism, and would involve a different type of analysis.

Fifth, this study has all the limitations of secondary data research. The most important limitation of secondary data is that the data generally do not completely fulfill the desired information by the researcher because the aim of collection of the data is very much different than what the researcher is aiming to gather. The most important disadvantage of this study in terms of the data set is availability of the data. The number of terrorist incidents per 10,000 is used as dependent variable but data of number of captured terrorist according to where they originated would give better results as it can reveal the effect of socioeconomic factors on producing terrorists, rather than terrorist incidents. This kind of data was not available for the current study.

This study cannot automatically assume that terrorist attacks occur in the province where terrorists live. Because of this fact, the study eliminates the areas that might be more attractive for terrorists to commit their actions. This may create more impact in the public in case of a terrorist incident.

This study is not comparing terrorism to crime; rather, it looks at the studies about the crime relationship to some socioeconomic factors and looks at whether the same relationship exists about terrorism and these socioeconomic factors.

This study states that leaders of terrorist organizations may have a higher education and may be wealthier than the other members of the groups but no source of data is currently available to measure it. The study measurements are based on the data
from Turkish Statistical Institute, Turkish National Police’s terrorism incident’s database.
The classified nature of the topic prevents us from reaching all sources on the issue, so
the study is limited to unclassified sources.

It should be acknowledged that there are other variables that also affect the
incidence of terrorism, such as ideology, individual’s search for identity (Crenshaw,
1986) and individual’s need for belonging to a group (Luckabaugh, et. al 1997). Ignoring
these variables may bias the estimated effect of poverty and inequality. This type of
detailed information is not available for a cross-section of the country. Therefore, in this
study, it is acknowledged that the problem of poverty and inequality highlight the results
related to such indicators. By the construction of these indicators, they are more likely to
represent society-wide poverty and inequality.

The factors that are creating fertile ground for terrorism can be classified into
numerous groups (Borum, 2004). Crenshaw (1985) explains motives to join terrorist
organizations across different types of groups, and also within groups. It is true that there
are other issues related to terrorism which may also be mentioned as factors that are
related to formation of terrorism, such as perception of injustice (Borum, 2004; Hacker,
1976), individual’s search for identity (Crenshaw, 1986) and individual’s need for
belonging to a group (Luckabaugh, et. al 1997), but this study does not deal with the
other factors creating fertile ground for terrorism; rather, it deals with some
socioeconomic factors such as poverty, inequality, unemployment, education level.
In terms of unemployment, Crutchfield et al. (1997) state that longer expected job duration, and labor participation diminishes criminal records. However, this kind of information is not available to us except for the unemployment rate of the provinces.

This study does not look at any tribal effect on terrorism such as tribal rules, traditions because there is no data that might enable us to measure this kind of relationship. In addition, this study does not have a tool to measure to what degree terrorist incidents are related to westernization.

Conclusion

This study intended to reveal some factors that are related to creation of terrorism. To be able to do this, the study examines the relationship of the number of terrorist incidents to poverty, inequalities, unemployment, population, percentage of young population and school attainment. These particular factors were identified as related to high number of crime in the literature. Social disorganization theory, anomie theory and Marxist theory are used as a pathway to explain the relationship between DV and IVs. To be able to answer the research question, a cross sectional study was designed, and a multiple regression analysis was utilized as a statistical technique. In addition to our major model, three other regression models were run to see how the results differed from our findings.

The findings of this study indicate that poverty, and inequalities such as distribution of education services and public investment make it easy for terrorists to find support and spread quickly in different geographic areas. These two findings indicate that
unequal distribution of government resources might be related to terrorist incidents. The reason for that might be because this may stimulate the perception of injustice, which is stated as one of the basic motivations for terrorism (Baregu, 2002; Gutierrez, 2002; Kucan, 2004; O’Neill, 2002).

In addition to poverty and inequalities, the high number of young population is another issue that contributes to the high number of terrorist activities in Turkey. The UN Secretary General (2001) indicated, “young people with limited education and few employment opportunities often provide fertile recruiting ground for parties to a conflict. Their lack of hope for the future can fuel disaffection with society and make them susceptible to the blandishments of those who advocate armed conflict. This problem can be especially acute in countries that have a ‘youth bulge’, a population comprised of a large number of youth compared to other age groups” (as cited in UNDP, 2006, p. 32).

Findings also suggest that population of the provinces and number of terrorist incidents might be related. It might be inferred that rapid growing population in some provinces might result in greater terrorist incidents.

The study did not find any relationship between income inequality, distribution of health services, health disparities, school attainment, unemployment rate, and number of terrorist incidents in the provinces of Turkey. These findings inconsistent with the literature might result from lack of available data to measure different aspect of it, or it may be due to the statistical or methodological structure of particular studies, such as different time periods covered, units of analysis, samples, model specifications, and problems of statistical analysis and inference.
This study could not find where terrorism and crime overlap and where they diverge. Comparing the findings of this study to the findings of majority of the previous works on crime might give idea about this issue but aim of this study is not comparing crime to terrorism. However from the findings, it can be interpreted that, factors that are related both terrorism and crime are; high population, high percentage of poor in the population, high percentage of youth in the population, unequal distribution of government resources mainly education resource, and public investment. Where they diverge is the income inequality, school attainment, and unemployment rate.

Inferred from these results the current study also make suggestions for future research and advice for future policy implications. It is seen that the area needs more research which will look at the issue in a different perspective because there is still much to learn about the relationship between economic variables and terrorism, which at times appears gloomy and difficult to assess. Better policies are needed to help prevent terrorism or at least to keep it at a minimal level. As the findings of this study recommend, policy needs to aim at poverty reduction and at diminishing the inequalities between regions. Besides specific policies should be developed aimed at high population areas. Also it is understood that some policies that are targeting the young population should be developed.
REFERENCES
References


Matthews/Limb (2003), ‘Another white elephant? Youth councils as democratic structures’, *Space and Polity*, 7, 2.


Appendices
## Appendix, 1: Frequency Analysis Showing Skewness & Kurtosis

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<th>Terror Insidents per 10000</th>
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## Appendix, 2: Frequency Analysis showing transformed variables

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<th>GDP (lg10)</th>
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Appendix, 3: Examination of Skewness & Kurtosis on unstandardized residuals after transformation

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Appendix, 4: Regression analysis’s collinearity diagnostic for 73 province data set

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a Dependent Variable: Terrorism incidents per 10000 (sqrt)
Appendix: 5 Collinearity Diagnostics for 73 province' data set

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a Dependent Variable: :Terror incidents per 10000 (sqrt)
### Appendix, 6: Correlation Matrix (73 province’s data)

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<th>GDP (ln10)</th>
<th>Young (lg10)</th>
<th>Population (sqt)</th>
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<td>-0.252</td>
<td>1</td>
<td>-0.375</td>
<td>0.301</td>
<td>0.039</td>
<td>-0.208</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.013</td>
<td>0.220</td>
<td>73</td>
<td>73.000</td>
<td>73</td>
<td>73</td>
<td>73</td>
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<td>73</td>
<td>73</td>
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<td>73</td>
</tr>
<tr>
<td>N</td>
<td>73</td>
<td>73</td>
<td>73</td>
<td>73</td>
<td>73</td>
<td>73</td>
<td>73</td>
<td>73</td>
<td>73</td>
<td>73</td>
<td>73</td>
<td>73</td>
</tr>
<tr>
<td>Doctor per 10000</td>
<td>-0.337</td>
<td>-0.546</td>
<td>0.287</td>
<td>-0.327</td>
<td>0.621</td>
<td>-0.258</td>
<td>0.080</td>
<td>-0.375</td>
<td>1</td>
<td>-0.421</td>
<td>-0.127</td>
<td>0.488</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.004</td>
<td>0.023</td>
<td>73</td>
<td>73</td>
<td>73</td>
<td>73</td>
<td>73</td>
<td>73</td>
<td>73</td>
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<tr>
<td>N</td>
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<td>73</td>
<td>73</td>
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<td>73</td>
<td>73</td>
<td>73</td>
<td>73</td>
<td>73</td>
<td>73</td>
<td>73</td>
</tr>
<tr>
<td>Region Dummy</td>
<td>0.510</td>
<td>0.671</td>
<td>-0.029</td>
<td>0.585</td>
<td>-0.546</td>
<td>0.649</td>
<td>0.006</td>
<td>0.301</td>
<td>-0.421</td>
<td>1</td>
<td>-0.146</td>
<td>-0.166</td>
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<tr>
<td>Sig. (2-tailed)</td>
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<td>0.010</td>
<td>73</td>
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<td>73</td>
<td>73</td>
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<td>73</td>
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</tr>
<tr>
<td>GINI</td>
<td>-0.054</td>
<td>-0.004</td>
<td>-0.108</td>
<td>-0.020</td>
<td>-0.071</td>
<td>-0.038</td>
<td>0.168</td>
<td>0.039</td>
<td>-0.127</td>
<td>-0.146</td>
<td>1</td>
<td>-0.110</td>
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<tr>
<td>Sig. (2-tailed)</td>
<td>0.647</td>
<td>0.975</td>
<td>0.362</td>
<td>0.864</td>
<td>0.548</td>
<td>0.749</td>
<td>0.155</td>
<td>0.746</td>
<td>0.284</td>
<td>0.219</td>
<td>0.356</td>
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<tr>
<td>N</td>
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<td>73</td>
<td>73</td>
<td>73</td>
<td>73</td>
<td>73</td>
</tr>
<tr>
<td>School Attainment</td>
<td>-0.182</td>
<td>-0.315</td>
<td>0.050</td>
<td>0.053</td>
<td>0.449</td>
<td>-0.129</td>
<td>0.034</td>
<td>-0.208</td>
<td>0.488</td>
<td>-0.166</td>
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<td>1</td>
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<tr>
<td>Sig. (2-tailed)</td>
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<td>0.000</td>
<td>0.278</td>
<td>0.775</td>
<td>0.077</td>
<td>0.000</td>
<td>0.162</td>
<td>0.356</td>
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<td>73</td>
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<td>73</td>
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<td>73</td>
<td>73</td>
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<td>73</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).
Appendix, 7: Summary Table for Regression Analysis Model with 73 Province & number of Terrorist Incidents per 10,000 as DV.

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.704</td>
<td>.496</td>
<td>.395</td>
<td>.302</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Doctor per 10,000, Population (sqrt), Gini, Young (lg10), Public Investment (lg10), Infant Mortality (lg10), School Attainment, Poor (Sqrt), Unemployment (Sqrt), Region Dummy, GDP (lg10), Student per Teacher (Sqrt)

Appendix, 8: Anova Table for Multiple Regression Analysis Using data of 73 province and number of terroist incidents per 10,000 as DV

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>5.379</td>
<td>12</td>
<td>.448</td>
<td>4.922</td>
<td>.000(a)</td>
</tr>
<tr>
<td>Residual</td>
<td>5.464</td>
<td>60</td>
<td>.091</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10.843</td>
<td>72</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a Predictors: (Constant), Doctor per 10000, Population (sqrt), GI Ni, Young (lg10), Public Investment (lg10) Infant Mortality (lg10), School Attainment, Poor (Sqrt), Unemployment (sqr t), Region Dummy, GDP (lg10), Student Per Teacher (sqr t)

b Dependent Variable: Terrorist incidents per 10000 (sqrt)
Appendix, 7: Results of Multiple Regression Analysis Using data of 73 province and number of terrorist incidents per 10,000 as DV.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>-5.561</td>
<td>-2.434</td>
<td>0.018</td>
<td></td>
</tr>
<tr>
<td>Region Dummy</td>
<td>0.091</td>
<td>0.110</td>
<td>0.688</td>
<td>0.494</td>
</tr>
<tr>
<td>GINI</td>
<td>0.342</td>
<td>0.024</td>
<td>0.234</td>
<td>0.816</td>
</tr>
<tr>
<td>School Attainment</td>
<td>-0.029</td>
<td>-0.043</td>
<td>-0.348</td>
<td>0.729</td>
</tr>
<tr>
<td>Infant Mortality (lg10)</td>
<td>-1.014</td>
<td>-0.221</td>
<td>-1.554</td>
<td>0.125</td>
</tr>
<tr>
<td>Student per Teacher (sqrt)</td>
<td>0.261</td>
<td>0.423</td>
<td>2.031</td>
<td>0.047</td>
</tr>
<tr>
<td>Public Investment (lg10)</td>
<td>0.061</td>
<td>0.065</td>
<td>0.648</td>
<td>0.519</td>
</tr>
<tr>
<td>Unemployment (sqrt)</td>
<td>-0.058</td>
<td>-0.077</td>
<td>-0.477</td>
<td>0.635</td>
</tr>
<tr>
<td>GDP (lg10)</td>
<td>0.462</td>
<td>0.244</td>
<td>1.463</td>
<td>0.149</td>
</tr>
<tr>
<td>Percentage Young (lg10)</td>
<td>3.535</td>
<td>0.401</td>
<td>3.054</td>
<td>0.003</td>
</tr>
<tr>
<td>Population (sqrt)</td>
<td>0.000</td>
<td>-0.158</td>
<td>-1.469</td>
<td>0.147</td>
</tr>
<tr>
<td>Percentage Poor (sqrt)</td>
<td>0.116</td>
<td>0.320</td>
<td>2.463</td>
<td>0.017</td>
</tr>
<tr>
<td>Doctor per10000</td>
<td>-0.007</td>
<td>-0.071</td>
<td>-0.506</td>
<td>0.615</td>
</tr>
</tbody>
</table>

a Dependent Variable: Terrorist incidents per 10000 (sqrt)

Appendix, 8: Skewness & Kurtosis for Number of Terrorist Incidents using data of 73 provinces (Model 2)

<table>
<thead>
<tr>
<th>Statistics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Terrorist incidents</td>
<td></td>
</tr>
<tr>
<td>N Valid</td>
<td>73</td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
</tr>
<tr>
<td>Skewness</td>
<td>1.583</td>
</tr>
<tr>
<td>Std. Error of Skewness</td>
<td>.281</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>1.968</td>
</tr>
<tr>
<td>Std. Error of Kurtosis</td>
<td>.555</td>
</tr>
</tbody>
</table>
Appendix, 9: Skewness & Kurtosis for DV Number of Terrorist Incidents transformed (Model 2)

Statistics

<table>
<thead>
<tr>
<th>N</th>
<th>Valid</th>
<th>73</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Missing</td>
<td>0</td>
</tr>
<tr>
<td>Skewness</td>
<td></td>
<td>.551</td>
</tr>
<tr>
<td>Std. Error of Skewness</td>
<td></td>
<td>.281</td>
</tr>
<tr>
<td>Kurtosis</td>
<td></td>
<td>-.332</td>
</tr>
<tr>
<td>Std. Error of Kurtosis</td>
<td></td>
<td>.555</td>
</tr>
</tbody>
</table>

Appendix, 10: Summary Table for Regression Analysis Model with 73 Province & Number of Terrorist Incidents as DV.

Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.7752(a)</td>
<td>0.601</td>
<td>0.521</td>
<td>1.5391</td>
</tr>
</tbody>
</table>

a Predictors: (Constant)Region Dummy, GINI, School Attainment, Infant Mortality (lg10), Student per Teacher (sqrt), Public Investment (lg10), Unemployment (sqrt), GDP (lg10), Percentage Young (lg10), Population (sqrt), Percentage Poor (sqrt), Doctor per10000

Appendix, 11: Regression model Anova Table

ANOVA (b)

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
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<tbody>
<tr>
<td>Regression</td>
<td>214.199</td>
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<td>17.85</td>
<td>7.535</td>
<td>.000 (a)</td>
</tr>
<tr>
<td>Residual</td>
<td>142.13</td>
<td>60</td>
<td>2.369</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>356.329</td>
<td>72</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a Predictors: (Constant)Region Dummy, GINI, School Attainment, Infant Mortality (lg10), Student per Teacher (sqrt), Public Investment (lg10), Unemployment (sqrt), GDP (lg10), Percentage Young (lg10), Population (sqrt), Percentage Poor (sqrt), Doctor per10000
Appendix, 12: Results of Regression Analysis with data of 73 provinces and number of terrorist incidents as DV

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
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<td>1</td>
<td>(Constant)</td>
<td>-18.690</td>
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<td>Region Dummy</td>
<td>0.921</td>
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<td>GINI</td>
<td>4.528</td>
<td>7.448</td>
<td>0.054</td>
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<td></td>
<td>School Attainment</td>
<td>-0.343</td>
<td>0.424</td>
<td>-0.090</td>
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<td></td>
<td>Infant Mortality (lg10)</td>
<td>-5.503</td>
<td>3.327</td>
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<tr>
<td></td>
<td>Student per Teacher (sqrt)</td>
<td>1.854</td>
<td>0.655</td>
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</tr>
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<td>Public Investment (lg10)</td>
<td>-0.068</td>
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<tr>
<td></td>
<td>GDP (lg10)</td>
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<td></td>
<td>Percentage Young (lg10)</td>
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<td>5.903</td>
<td>0.134</td>
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<td>Population (sqrt)</td>
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<td>Doctor per10000</td>
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<td>-0.202</td>
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</table>

a Dependent Variable: Number of Terrorist Incidents (sqrt)
Appendix, 13: Skewness & Kurtosis for Data of 81 province & Terror Incidents per 10,000 as DV

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Terror Incidents per 10000 Population</th>
<th>Students per teacher</th>
<th>Public Investment</th>
<th>Unemployment</th>
<th>GDP</th>
<th>Doctors per 10000</th>
<th>Percent Young</th>
<th>Region Dummy</th>
<th>GINI</th>
<th>School Attainment</th>
<th>Percentage Poor</th>
<th>Infant Mortality Rate</th>
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<td>81</td>
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<tr>
<td>Skewness</td>
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<td>0.909</td>
<td>-0.073</td>
<td>0.133</td>
<td>1.076</td>
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<tr>
<td>Std. Error of Skewness</td>
<td>0.267</td>
<td>0.267</td>
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<td>0.267</td>
<td>0.267</td>
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<td>Kurtosis</td>
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Appendix, 14: Skewness & Kurtosis for Data of 81 province & Terrorist Incidents per 10,000 as DV after Transforming Variables

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Student per teacher (sqrt)</th>
<th>Unemployment (sqrt)</th>
<th>Doctor per 10000 (sqrt)</th>
<th>Infant Mortality (sqrt)</th>
<th>Percentage Poor (sqrt)</th>
<th>Public Investment (lg10)</th>
<th>percent young (lg10)</th>
<th>GDP (lg10)</th>
<th>population (lg10)</th>
<th>Terrorist Incidents per 10000 (sqrt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N Valid</td>
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<td>81</td>
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</tr>
<tr>
<td>Skewness</td>
<td>1.431</td>
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<td>0.324</td>
<td>0.923</td>
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<td>0.267</td>
<td>0.267</td>
<td>0.267</td>
<td>0.267</td>
<td>0.267</td>
<td>0.267</td>
<td>0.267</td>
<td>0.267</td>
</tr>
<tr>
<td>Kurtosis</td>
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<td>0.779</td>
<td>0.051</td>
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<td>-0.064</td>
<td>0.693</td>
<td>2.043</td>
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<tr>
<td>Std. Error of Kurtosis</td>
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<td>0.529</td>
<td>0.529</td>
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<td>0.529</td>
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</table>
Appendix, 15: Unstandardized Residual for the dataset of 81 provinces

### Statistics

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<th>Unstandardized Residual</th>
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</thead>
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<td>N</td>
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</tr>
<tr>
<td>Valid</td>
<td>81</td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
</tr>
<tr>
<td>Mean</td>
<td>.0000000</td>
</tr>
<tr>
<td>Median</td>
<td>-.0134257</td>
</tr>
<tr>
<td>Mode</td>
<td>-.35021a</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>.18663934</td>
</tr>
<tr>
<td>Skewness</td>
<td>.453</td>
</tr>
<tr>
<td>Std. Error of Skewness</td>
<td>.267</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>.272</td>
</tr>
<tr>
<td>Std. Error of Kurtosis</td>
<td>.529</td>
</tr>
</tbody>
</table>

* a. Multiple modes exist. The smallest value is shown.

Appendix, 16: Collinarity Diagnostic Results of Multiple Regression Analysis using Data of 81 Provinces & number of Terrorist Incidents per 10,000 as DV (Model 3)

### Coefficients(a)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>-4.276</td>
<td>1.401</td>
<td>-3.052</td>
</tr>
<tr>
<td>Province Dummy</td>
<td>-0.018</td>
<td>0.087</td>
<td>-0.033</td>
</tr>
<tr>
<td>GINI</td>
<td>-0.133</td>
<td>0.954</td>
<td>-0.015</td>
</tr>
<tr>
<td>School Attainment</td>
<td>0.006</td>
<td>0.056</td>
<td>0.013</td>
</tr>
<tr>
<td>Student per Teacher (sqrt)</td>
<td>0.183</td>
<td>0.082</td>
<td>0.462</td>
</tr>
<tr>
<td>Unemployment (sqrt)</td>
<td>0.017</td>
<td>0.077</td>
<td>0.037</td>
</tr>
<tr>
<td>Doctor per 10000 (sqrt)</td>
<td>0.018</td>
<td>0.055</td>
<td>0.051</td>
</tr>
<tr>
<td>Infant Mortality Rate (sqrt)</td>
<td>-0.069</td>
<td>0.053</td>
<td>-0.182</td>
</tr>
<tr>
<td>Percentage Poor (sqrt)</td>
<td>0.030</td>
<td>0.031</td>
<td>0.137</td>
</tr>
<tr>
<td>Public investment (lg10)</td>
<td>0.139</td>
<td>0.064</td>
<td>0.226</td>
</tr>
<tr>
<td>Percent Young (lg10)</td>
<td>2.286</td>
<td>0.759</td>
<td>0.394</td>
</tr>
<tr>
<td>GDP (lg10)</td>
<td>0.188</td>
<td>0.209</td>
<td>0.158</td>
</tr>
<tr>
<td>Population (lg10)</td>
<td>0.012</td>
<td>0.085</td>
<td>0.018</td>
</tr>
</tbody>
</table>

* a Dependent Variable: Terrorist incidents per 10000
### Appendix, 17: Table of variance proportion

<table>
<thead>
<tr>
<th>Model</th>
<th>Dimension</th>
<th>Condition Index (Constant)</th>
<th>Province Dummy</th>
<th>GINI</th>
<th>School Attainment</th>
<th>Student per Teacher (sqr)</th>
<th>Unemployment (sqr)</th>
<th>Doctor per 10000 (sqr)</th>
<th>Infant Mortality Rate (sqr)</th>
<th>Percentage Poor (sqr)</th>
<th>Public Investment (lg10)</th>
<th>Percent Young (lg10)</th>
<th>GDP (lg10)</th>
<th>Population (lg10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>12.055</td>
<td>0.000</td>
<td>0.001</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>2</td>
<td>0.720</td>
<td>4.092</td>
<td>0.000</td>
<td>0.287</td>
<td>0.000</td>
<td>0.001</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>3</td>
<td>0.084</td>
<td>11.954</td>
<td>0.000</td>
<td>0.089</td>
<td>0.000</td>
<td>0.088</td>
<td>0.088</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>4</td>
<td>0.048</td>
<td>15.820</td>
<td>0.000</td>
<td>0.003</td>
<td>0.000</td>
<td>0.224</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
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<td>0.000</td>
</tr>
<tr>
<td>5</td>
<td>0.043</td>
<td>16.746</td>
<td>0.000</td>
<td>0.051</td>
<td>0.003</td>
<td>0.068</td>
<td>0.011</td>
<td>0.058</td>
<td>0.026</td>
<td>0.000</td>
<td>0.145</td>
<td>0.101</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>6</td>
<td>0.022</td>
<td>23.484</td>
<td>0.000</td>
<td>0.147</td>
<td>0.002</td>
<td>0.098</td>
<td>0.000</td>
<td>0.139</td>
<td>0.020</td>
<td>0.007</td>
<td>0.336</td>
<td>0.001</td>
<td>0.000</td>
<td>0.002</td>
</tr>
<tr>
<td>7</td>
<td>0.013</td>
<td>31.000</td>
<td>0.000</td>
<td>0.007</td>
<td>0.006</td>
<td>0.264</td>
<td>0.002</td>
<td>0.238</td>
<td>0.474</td>
<td>0.015</td>
<td>0.154</td>
<td>0.265</td>
<td>0.001</td>
<td>0.004</td>
</tr>
<tr>
<td>8</td>
<td>0.006</td>
<td>45.317</td>
<td>0.001</td>
<td>0.140</td>
<td>0.100</td>
<td>0.019</td>
<td>0.010</td>
<td>0.001</td>
<td>0.024</td>
<td>0.345</td>
<td>0.028</td>
<td>0.015</td>
<td>0.002</td>
<td>0.007</td>
</tr>
<tr>
<td>9</td>
<td>0.004</td>
<td>54.745</td>
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<td>0.020</td>
<td>0.553</td>
<td>0.008</td>
<td>0.068</td>
<td>0.010</td>
<td>0.001</td>
<td>0.114</td>
<td>0.041</td>
<td>0.010</td>
<td>0.006</td>
<td>0.036</td>
</tr>
<tr>
<td>10</td>
<td>0.002</td>
<td>73.488</td>
<td>0.008</td>
<td>0.000</td>
<td>0.001</td>
<td>0.128</td>
<td>0.285</td>
<td>0.381</td>
<td>0.004</td>
<td>0.069</td>
<td>0.125</td>
<td>0.072</td>
<td>0.033</td>
<td>0.034</td>
</tr>
<tr>
<td>11</td>
<td>0.002</td>
<td>82.518</td>
<td>0.001</td>
<td>0.008</td>
<td>0.285</td>
<td>0.016</td>
<td>0.506</td>
<td>0.121</td>
<td>0.143</td>
<td>0.351</td>
<td>0.037</td>
<td>0.004</td>
<td>0.006</td>
<td>0.001</td>
</tr>
<tr>
<td>12</td>
<td>0.001</td>
<td>111.120</td>
<td>0.011</td>
<td>0.180</td>
<td>0.045</td>
<td>0.080</td>
<td>0.000</td>
<td>0.044</td>
<td>0.002</td>
<td>0.003</td>
<td>0.160</td>
<td>0.036</td>
<td>0.192</td>
<td>0.633</td>
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<tr>
<td>13</td>
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<td>260.709</td>
<td>0.975</td>
<td>0.888</td>
<td>0.005</td>
<td>0.007</td>
<td>0.051</td>
<td>0.002</td>
<td>0.080</td>
<td>0.093</td>
<td>0.089</td>
<td>0.002</td>
<td>0.760</td>
<td>0.282</td>
</tr>
</tbody>
</table>

a Dependent Variable: Terroistsidentsper1000_sqrt
### Appendix, 18: Correlation Matrix with data of 81 provinces & Number of Terrorist Incidents per 10,000 as DV.

<table>
<thead>
<tr>
<th>Province Dummy</th>
<th>Pearson Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sig. (2-tailed)</td>
<td>N</td>
</tr>
<tr>
<td>Province Dummy</td>
<td>GINI</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>N</td>
</tr>
<tr>
<td>GINI</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>N</td>
</tr>
<tr>
<td>School Attainment</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>N</td>
</tr>
<tr>
<td>Student per Teacher (sqr)</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>N</td>
</tr>
<tr>
<td>Unemployment (sqr)</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>N</td>
</tr>
<tr>
<td>Doctor per 10000 (sqr)</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>N</td>
</tr>
<tr>
<td>Infant Mortality Rate (sqr)</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>N</td>
</tr>
<tr>
<td>Percentage Poor (sqr)</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>N</td>
</tr>
<tr>
<td>Public investment (lg10)</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>N</td>
</tr>
<tr>
<td>Percent Young (lg10)</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>N</td>
</tr>
<tr>
<td>GDP (lg10)</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>N</td>
</tr>
<tr>
<td>Population (lg10)</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>N</td>
</tr>
<tr>
<td>Terrorist Incidents per 10000 (sqr)</td>
<td>Pearson Correlation</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>N</td>
</tr>
</tbody>
</table>

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

*Correlation is significant at the 0.05 level (2-tailed).
Appendix, 19: Model Summary Table for Regression Analysis Model with 81 Province & number of Terrorist Incidents per 10,000 as DV.

**Model Summary**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.654(a)</td>
<td>.428</td>
<td>.327</td>
<td>.20244</td>
</tr>
</tbody>
</table>

a Predictors: (Constant), Province Dummy, GINI, School Attainment, Student per Teacher (sqrt), Unemployment (sqrt), Doctor per 10000 (sqrt), Infant Mortality Rate (sqrt), Percentage Poor (sqrt), Public investment (lg10), Percent Young (lg10), GDP (lg10), Population (lg10)

Appendix, 20: ANOVA Table for Regression Analysis Model with 81 Province & number of Terrorist Incidents per 10,000 as DV.

**ANOVA(b)**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regress</td>
<td>2.084</td>
<td>12</td>
<td>.174</td>
<td>4.238</td>
</tr>
<tr>
<td>Residu</td>
<td>2.787</td>
<td>68</td>
<td>.041</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4.871</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a Predictors: (Constant), Province Dummy, GINI, School Attainment, Student per Teacher (sqrt), Unemployment (sqrt), Doctor per 10000 (sqrt), Infant Mortality Rate (sqrt), Percentage Poor (sqrt), Public investment (lg10), Percent Young (lg10), GDP (lg10), Population (lg10)

b Dependent Variable: Terrorist Incidents per 10000 (sqrt)
Appendix, 21: Result of MR analysis with 81 Province & number of Terrorist Incidents per 10,000 as DV.

Coefficients (a)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>-4.276</td>
<td>1.401</td>
</tr>
<tr>
<td>Province Dummy</td>
<td>-0.018</td>
<td>0.087</td>
</tr>
<tr>
<td>GINI</td>
<td>-0.133</td>
<td>0.954</td>
</tr>
<tr>
<td>School Attainment</td>
<td>0.006</td>
<td>0.056</td>
</tr>
<tr>
<td>Student per Teacher (sqrt)</td>
<td>0.183</td>
<td>0.082</td>
</tr>
<tr>
<td>Unemployment (sqrt)</td>
<td>0.017</td>
<td>0.077</td>
</tr>
<tr>
<td>Doctor per 10000 (sqrt)</td>
<td>0.018</td>
<td>0.055</td>
</tr>
<tr>
<td>Infant Mortality Rate (sqrt)</td>
<td>-0.069</td>
<td>0.053</td>
</tr>
<tr>
<td>Percentage Poor (sqrt)</td>
<td>0.030</td>
<td>0.031</td>
</tr>
<tr>
<td>Public investment (lg10)</td>
<td>0.139</td>
<td>0.064</td>
</tr>
<tr>
<td>Percent Young (lg10)</td>
<td>2.286</td>
<td>0.759</td>
</tr>
<tr>
<td>GDP (lg10)</td>
<td>0.188</td>
<td>0.209</td>
</tr>
<tr>
<td>Population (lg10)</td>
<td>0.012</td>
<td>0.085</td>
</tr>
</tbody>
</table>

a Dependent Variable: Terrorist incidents per 10000 (sqrt)

Appendix, 22: Skewness & Kurtosis for DV (Number of Terrorist incidents with data of 81 provinces)

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Number of Terrorist Incidents</th>
<th>Number of Terrorist Incidents (lg10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N Valid</td>
<td>81</td>
<td>81</td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Skewness</td>
<td>7.517</td>
<td>.004</td>
</tr>
<tr>
<td>Std. Error of Skewness</td>
<td>.267</td>
<td>.267</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>62.796</td>
<td>-.500</td>
</tr>
<tr>
<td>Std. Error of Kurtosis</td>
<td>.529</td>
<td>.529</td>
</tr>
</tbody>
</table>
Appendix, 23: Model Summary Table for Regression Analysis Using 81 province data and Number of Terrorist Incidents as DV.

Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.788 (a)</td>
<td>.621</td>
<td>.554</td>
<td>.420</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Province Dummy, Gini, School Attainment, Student per Teacher (sqrt), Unemployment (sqrt), Doctor per 10,000 (sqrt), Infant Mortality Rate (sqrt), Percentage Poor (sqrt), Public investment (lg10), Percentage Young (lg10), GDP (lg10), Population (lg10)

Appendix, 24: Anova Table for MR Analysis using data of 81 provinces & Number of Terrorist Incidents as DV

ANOVA(b)

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>19.623</td>
<td>12</td>
<td>1.635</td>
<td>9.281</td>
<td>.000(a)</td>
</tr>
<tr>
<td>Residual</td>
<td>11.981</td>
<td>68</td>
<td>.176</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>31.604</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a Predictors: (Constant), Province Dummy, Gini, School Attainment, Student per Teacher (sqrt), Unemployment (sqrt), Doctor per 10000 (sqrt), Infant Mortality Rate (sqrt), Percentage Poor (sqrt), Public investment (lg10), Percent Young (lg10), GDP (lg10), Population (lg10)

b Dependent Variable: Number of Terrorist Incidents (lg10)
Appendix, 25: Multiple Regression Analysis. Data of 81 Provinces & Number of terrorist incidents as DV

Coefficients(a)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>-10.163</td>
<td></td>
<td>-3.499</td>
<td>0.001</td>
</tr>
<tr>
<td>Province Dummy</td>
<td>0.161</td>
<td>0.118</td>
<td>0.896</td>
<td>0.374</td>
</tr>
<tr>
<td>GINI</td>
<td>1.993</td>
<td>0.088</td>
<td>1.008</td>
<td>0.317</td>
</tr>
<tr>
<td>School Attainment</td>
<td>-0.001</td>
<td>-0.001</td>
<td>-0.010</td>
<td>0.992</td>
</tr>
<tr>
<td>Student per Teacher (sqrt)</td>
<td>0.358</td>
<td>0.355</td>
<td>2.095</td>
<td>0.040</td>
</tr>
<tr>
<td>Unemployment (sqrt)</td>
<td>0.101</td>
<td>0.086</td>
<td>0.634</td>
<td>0.528</td>
</tr>
<tr>
<td>Doctor per 10000 (sqrt)</td>
<td>-0.007</td>
<td>-0.008</td>
<td>-0.060</td>
<td>0.953</td>
</tr>
<tr>
<td>Infant Mortality Rate (sqrt)</td>
<td>-0.132</td>
<td>-0.137</td>
<td>-1.210</td>
<td>0.230</td>
</tr>
<tr>
<td>Percentage Poor (sqrt)</td>
<td>0.142</td>
<td>0.253</td>
<td>2.209</td>
<td>0.031</td>
</tr>
<tr>
<td>Public investment (lg10)</td>
<td>0.067</td>
<td>0.042</td>
<td>0.504</td>
<td>0.616</td>
</tr>
<tr>
<td>Percent Young (lg10)</td>
<td>1.791</td>
<td>0.121</td>
<td>1.138</td>
<td>0.259</td>
</tr>
<tr>
<td>GDP (lg10)</td>
<td>0.436</td>
<td>0.144</td>
<td>1.008</td>
<td>0.317</td>
</tr>
<tr>
<td>Population (lg10)</td>
<td>0.827</td>
<td>0.508</td>
<td>4.704</td>
<td>0.000</td>
</tr>
</tbody>
</table>

a Dependent Variable: Number of Terrorist incidents (lg10)
Vita

Mutlu Koseli, was born in Adana, Turkey on February, 10, 1974. He graduated from the Police Academy with a Bachelor degree in Criminal Justice in 1995. Following to graduation from Police Academy he worked in Nigde Police Department’s Anti-Terrorism division. In 1997, he started to work in the headquarters of Turkish National Police in Ankara as an intelligence analyst against terrorist groups.

In 2001 Mutlu was awarded a full scholarship from Turkish National police for graduate education in the United States. He had his post bachelor certificate in Criminal Justice in Virginia Commonwealth University in 2001-2002. During this time he also attended FBI National Academy’s 207th session. Following that he completed his master degree in Criminal Justice in University of North Texas. He continued his doctoral education at Virginia Commonwealth University in Public Policy and Administration and completed the requirements for the Ph.D. in August 2006.