A Comparative Analysis of High and Low Homicide Rate Cities

By

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Abstract

This thesis is an analysis of the differences between high and low homicide rate cities. The specific variables that were included in the study were: the homicide rate, the unemployment rate, the gender, racial and age characteristics of offenders and victims, the percent of homicides committed with a firearm, the percent of homicides related to gang activity, drug use, alcohol use, and to drug law violations. Fifty-four cities were included in the study, twenty-seven being categorized as low homicide rate cities and twenty-seven being categorized as high homicide rate cities. Descriptive statistics were calculated for each of the aforementioned variables for each group of cities. Certain variables were selected for correlational analysis and logistic regression. Statistically significant differences were identified using descriptive statistics for the following variables: Homicide rate, unemployment rate, robbery and aggravated assault rates, percent of white, female, and male offenders, percent of white, female, and male victims, and victims age 15 to 24, percent of homicides related to alcohol, drug trafficking, gang activity, and, drug sales, and the percent of homicides committed with a handgun.

Statistically significant correlations were found to exist between the following: Percent of homicides related to alcohol and the unemployment rate (for low homicide rate cities only), and percent of homicides related to gang activity and the unemployment rate (for high homicide rate cities only)

The logistic regression indicated that the model used was able to predict the probability of a city being a high homicide rate city accurately for 94.44 percent of the study sample. The logistic regression model contained unemployment rate and aggravated assault rate as the predictor variables.

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CHAPTER ONE

INTRODUCTION

With the exception of homicide, most industrialized nations have crime rates similar to the United States. The United States continues to lead industrialized nations with the highest homicide rate (Wilson, 1994).

During 1993, there were 26,009 homicides in the United States. That year, seventy-one percent were firearm related and over one third occurred among fifteen to twenty-four-year-olds. While supplementary homicide report (SHR) data indicates that homicide rates have been stable or declining since 1993, homicide rates among fifteen to twenty four year olds and homicides committed by firearms have increased (Anonymous, 1996).

Longer historical trends indicate that homicide rates have in fact declined over the past centuries. However, currently in this country, while homicide rates are stagnant or declining in some cities and only fluctuating slightly at the national level, there is a handful of cities that has experienced a vast increase in homicide rates. Additionally, there is a handful of cities that has had and continue to have considerably higher homicide rates when compared to cities of comparable size.

Homicide is the cause of approximately 20,000 deaths annually and a major cause of years of potential life lost (Ruben and Leeper, 1981). What is puzzling about the homicide trends in this country is that some cities have unusually high homicide rates while other have average or low homicide rates.

Need

Homicide is a major cause of mortality in this country. Homicide tends to occur in greater numbers among certain identifiable "high risk" groups (Prothrow-Stith, 1991; Fingerhut, and Kleinman, 1990). Homicide, through the analysis of Uniform Crime Report data, occurs in disproportionate numbers in a select number of cities. And, in that respect, homicide not only occurs more frequently among certain identifiable groups of people, but also within certain identifiable cities.

For example, the first group of twenty-seven cities contained in this study accounted for 17.45 percent of the homicides in 1994. That same group of cities, according to U.S. Census data accounted for approximately 3.5 percent of the United States population. These twenty-seven cities had an average homicide rate of 48.2/100,000 for 1994. During that same year, the national homicide rate was 9.0/100,000 (UCR, 1994).

In contrast, the second group of twenty-seven cities contained in this study accounted for 0.386 percent of the homicides in 1994. This second group of cities had an average homicide rate of 1.7/100,000. These twenty-seven cities accounted for roughly 2.1 percent of the United States population according to U.S. Census data (UCR, 1994).

There exists a need to disaggregate the homicide data of cities for comparative and correlational analysis. By disaggregating the homicide data differences between high and low homicide rate groups as well as differences between different circumstances of homicide, may become more evident. This need exists, as identification of these differences may lead to a better understanding as to why some cities experience high homicide rates whereas others do not.

Purpose

The purpose of this study is to identify differences in characteristics of homicide between high and low-homicide-rate-cities. Specific characteristics that are analyzed are the homicide rate, circumstances of homicide, other violent crime rates, descriptive statistics of offender and victim data, and the unemployment rate.

Nature of the Study

The study is exploratory in nature and is focused on identifying differences between high and low-homicide-rate-cities. Descriptive statistics are used to identify differences between the two groups of cities. Additional analysis is focused at identifying differences between the two groups and reviews the following data: unemployment rate, other violent crime rates, and the circumstances of homicides.

Theory

There are many theories on crime and the criminal. In this section, some of the more plausible theories will be reviewed in relation to homicide.

Two theories that seem to explain homicide are the Self-Control Theory by Gottfredson and Hirschi (Gottfredson and Hirschi, 1990) and the Subculture of Violence Theory by Ferracuti and Wolfgang (Wolfgang and Ferracuti, 1967).

Gottfredson and Hirschi (1990) developed the self-control theory on the premise that a lack of self-control was the basis of criminality. Gottfredson and Hirschi consider both the criminal offender and the criminal act. The criminal act is an act that is illegal.

However, individuals still engage in these acts when they are seen as being advantageous. According to the self-control theory, the criminal offender is a person who is predisposed to commit crimes. Given the same set of criminal opportunities, the individual lacking self control has a much higher probability of violating the law than does the person with self control. In their work, Gottfredson and Hirschi have modified the social control theory by integrating the social control concept with the concepts of biosocial, psychological, routine activities and rational choice theories (Gottfredson and Hirschi, 1990). While a biosocial explanation of a lack of self-control may be legitimate, determining whether or not self-control is biologically related is not part of this study.

In Hirschi and Gottfredson's self-control theory, the basis is self control rather than social control as earlier proposed in Hirschi's Social Control Theory. The self control theory looks at one's impulsivity, low self-control, weakening of social bonds, criminal opportunity and consequently the criminal act as being the process one goes through in becoming criminal. More specifically, the self control theory states that people with low self control tend to be more impulsive, less sensitive, physical, risk-taking, short-sighted, and nonverbal. The cause of low self-control can be attributed to poor parenting, deviant parents, and lack of supervision as a child. These aforementioned factors lead to a weakening of the social bonds. A person with these traits, when faced with criminal opportunity, will engage in the criminal act (Gottfredson and Hirschi, 1990).

In applying the theory of self-control, it must first be determined if a person's self control plays an important role in the commission of homicide. It can be stated that premeditated, intentional homicide is evidence of complete self-control. Planning a murder, then following through with that plan, indicates that the offender would have

patience and control in controlling emotions and actions. However, it could also be stated that even a premeditated murder indicates that one lacks self-control and is impulsive simply based on the fact that murders of this type may be carried out in retaliation for some previous act of the victim.

In addressing homicide as a crime of passion, the self-control theory may be fairly accurate in explaining the criminal act. The self-control theory would state that homicides of this nature are simply due to a lack of self-control on the offender's behalf. If these circumstances are all present, a homicide may occur. Evidence of the impulsivity of murder can be illustrated through the frequent use of a firearm as a means of committing the murder. In no other way is the murder committed so quickly and effortlessly. Perhaps many murders would not occur if the offender were given the opportunity to think about his actions rather than have the ability to settle the situation at hand immediately with a firearm. To add to the impulsivitiy of the situation, many homicides are committed by and upon offenders and victims who are either under the influence of drugs and or alcohol (Gottfredson and Hirschi, 1990).

While there is no measure of self-control in this study, two variables researched may be indicative of a reduction in self-control. These variables are (1) age and (2) substance use.

It is possible that the increases in homicide among fifteen to twenty-four-year-olds have to do with self-control and its lack of during those years of life. Possibly, this lack of self-control among fifteen - to twenty-four year olds, coupled with the recent proliferation of handguns has led to increases in homicide rates for this age group.

It has been proven that the introduction of an intoxicating substance can decrease one's

self control. Therefore, if there are higher rates of drug/alcohol use in a given city, there may also be less self-control and consequently more homicidal violence.

The subculture of violence theory, developed by Wolfgang and Ferracuti (1967), looks only at the interaction of the subculture and how it effects the members of the subculture. The subculture of violence theory is based on the following principles: The subculture's norms are different form society's value system. In this subculture, there exists a prevalent theme of violence which influences life-style, the socialization process and interpersonal relationships. The subculture's members expect violence to be used in certain social conflicts (Wolfgang and Ferracuti, 1967). This ethos of violence is not universal to all of the members of the subculture; the violent behavior occurs most frequently among those between late adolescence and middle age. This acceptance of and use of violence is developed via differential learning, association, and identification. The use of violence, as it is accepted by the subculture, is not viewed as illicit and does not carry feelings of guilt or shame associated with its use (Wolfgang and Ferracuti, 1967). Homicide would be addressed by the subculture of violence theory as being part of the subculture and as a possible outcome of resolving conflicts by physical means. Homicide within the subculture of violence is an expression of learned behavior.

Indicators that a subculture of violence might exist are increases in other violent crime rates (e.g. robbery and assault), as well as the homicide rate. An analysis of robbery and assault rates is contained in this study.

Another theoretical perspective, similar to the subculture of violence theory, is the theory that attempts to address the phenomenon of high homicide rates by looking at violent crimes as an epidemic. Recently, social scientists have begun applying the theory

of epidemics to human behavior (Pierce, 1997). An example of this approach is the case of drive-by shootings in Los Angeles. In 1987, drive-by shootings in Los Angeles claimed fifty-seven lives. In the following two years, 71 and 157 people were killed in drive-by shootings. Then, by 1992, death from drive-by shootings reached 211. At some point between 57 and 71, drive-by shootings in Los Angeles reached the "tipping point"; an epidemic rate. (Range, H., Anglin, D., Kyriacon, D., Hart, J., and Spears, K., 1995)

It is possible that the forces of all three theories are operating at the same time within a community that experiences the high homicide rates. Perhaps the epidemic theory page explains the formation of a subculture of violence. If there are a number of people with a lack of self-control within this subculture, the incidence of homicide, as well the occurrence of other violent crimes increases. With all of these factors operating, a self-perpetuating cycle of violence is created and sustained.

While this study is exploratory in nature and is not aimed at proving or disproving any particular theory, the aforementioned theories provided direction in the selection of some of the variables contained in the analysis.

Overview

This thesis is divided into five chapters. Chapter One has outlined the purpose and need and has outlined some of the relevant theories in relation to homicide.

Chapter Two is the literature review and covers some of the relevant previous research on homicide. Chapter Two also contains a summary as to how the previous research has influenced the methodology and contents of this analysis.

The methodology employed is explained in detail in Chapter Three. Rationale and

justifications for the methods used are also provided in Chapter Three.

Chapter Four contains the results of the analysis and the implications that they may have in regards to homicide.

Chapter Five is a summary of the thesis, its findings, caveats, and implications for further homicide research.

CHAPTER TWO

LITERATURE REVIEW

Introduction

While there exists a vast amount of literature on homicide, very little is related to the topic at hand. The content of this chapter serves to summarize the literature related to this study and to offer detailed descriptions of some of the more relevant studies. This chapter is presented in sections, with each heading identifying the topic discussed.

Firearms

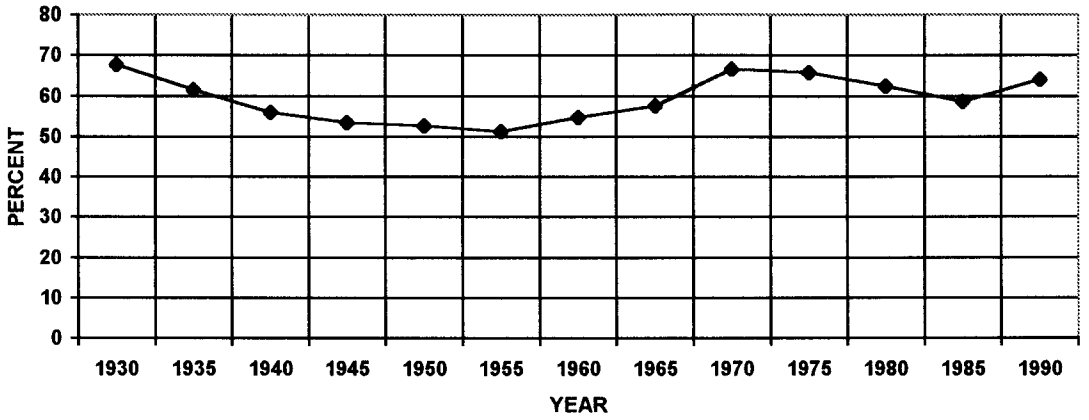
Starting in 1980 and each year thereafter, at least fifty-nine percent of all homicides in the United States have been committed with firearms. From 1987 to 1992, the percentage of homicides committed with a firearm increased from fifty-nine percent in 1987 to sixty-eight percent in 1992. In 1993, seventy percent of all homicides were committed with a firearm; fifty-seven percent by handgun, five percent by shotgun, five percent by an unknown firearm and three percent by rifle (Cook, 1982).

Firearms play a very important role in homicide. The act of homicide is easier to commit with a firearm for several reasons. The most pertinent advantages firearms possess over other readily available weapons are: firearms reduce effective victim resistance, a firearm is quicker, impersonal, and requires much less effort than other weapons. Additionally, firearms are much more lethal than other weapons (Cook, 1982).

Consequently, it would logically follow that if firearms were readily available in a community, then the number of homicides by firearm would increase. Several studies

using the number of homicides committed by firearm as a fraction of total homicides have indicated this trend (Curtis, 1974; and Fisher, 1976). What is interesting to note is that firearms, as early as the 1930's in this country, always made up a substantial number of homicides as the graph below indicates.

GRAPH 1.1-PERCENT OF HOMICIDE BY FIREARM FROM 1930 TO 1990



BJS, Firearms and Crimes of Violence. February, 1994

Tardiff (1986) found that the percent of homicides by firearm within a given city mirror the percent of homicides by firearm throughout the country. It has also been reported that firearm homicides rank as one of the leading causes of death, especially among young males and even more pronounced among young black males (Browning, 1976).

It is an assumption of the study that cities with high homicide rates will also have higher rates of homicide by firearm. This number of homicides committed with a firearm will be expressed as a percentage of total homicides for a given year. The intent is not to reveal if gun availability is related to the homicide rate, the intent is only to determine

whether or not high and low-homicide-rate-cities differ in the percentage of homicides committed with a firearm.

Age, Gender, and Race

According to The Bureau of Justice Statistics data, sixty percent of the homicide victims are age fifteen to thirty-four. Other factors aside from age that affect one's lifetime risk of being a homicide victim are race and sex. These risks are listed below.

Black Male	1 in 30
White Male	1 in 179
Black Female	1 in 132
White Female	1 in 495

So, one can see that in this country, there are increased risks of homicide for African Americans and males (Tardiff, 1986; O'Carroll, 1988; Fingerhut and Kleinman, 1990; and Fingerhut, Ingram and Feldman, 1992). This risk is greater for the younger people of our population (Fingerhut, Ingram and Feldman, 1992; and Fingerhut and Kleinman, 1990). Contrary to finding a relationship between age and homicide rates Gartner (1990), after conducting an international comparison, found that no relationship existed between percent of a population age fifteen to twenty-nine and the homicide rate. Perhaps one explanation as to why the risk of homicide is greater for youth or the young population is that younger people tend to be more impulsive in their actions. This coupled with access to firearms makes homicide by younger offenders a grave reality. As data on homicides indicates that homicide victims have similar characteristics as their perpetrators, it is logical to follow that the victims will also be younger.

One theoretical explanation that might explain the increased incidence of homicide among African American males would be the structural strain theories. In this view,

violence is the result of structural strains due to the inability to achieve one's desired lifestyle or to gain acceptance within society (Gurr, 1989). This strain leads to anger and frustration. This continued failure in the eyes of mainstream society could sometimes lead to homicidal violence (Prothrow-Stith, 1991).

Unemployment and Poverty

Perhaps one of the many factors that contribute to the homicide rate is unemployment. There have been a number of studies that deal with the unemployment rate and crime. However, very few specifically relate homicide to unemployment. The following section summarizes some studies that reviewed unemployment and crime and more specifically unemployment and homicide.

Unemployment has generally been accepted as one of the causes of crime (Boostrom, 1995 and Walker, 1989). However, the relationship between unemployment and homicide is less identifiable. Many studies have shown that there is only an insignificant relationship if any between homicide and unemployment (Lester and Yang, 1994; Gurr, 1989; Cantor and Land, 1985; and Cook and Zarkin, 1985).

Contrary to the above findings, in 1989 Crutchfield examined the idea that neighborhoods with high rates of unemployment, high rates of those working less than fifty percent of the time, and high rates of those in secondary jobs will have higher crime rates. One of Crutchfield's hypotheses was that neighborhoods with the above characteristics would have higher violent crime rates. Crutchfield did find a relationship between violent crime rates and unemployment rates. Crutchfield theorized that those that are unemployed, frequently unemployed or have secondary jobs lack a bond to

society and furthermore find themselves in a "'situation of company' that is conducive of crime." (Crutchfield, 1989, p. 494).

Very few studies have found a relationship between homicide and unemployment (Loftin, McDowall and Boudouris, 1989). However, there seems to be a consensus that poverty has an effect on the homicide rate (Loftin, et al., 1989; Gartner, 1990; Fiala and LaFree, 1988; Centerwall, 1984; and Messner, 1983). There also seems to be some legitimacy to the finding that long-term periods of unemployment have an effect on the homicide rate as well (Loftin, et al., 1989). It should be noted that unemployment and poverty are not isolated variables and therefore do not effect the homicide rates in the same manner when in different locations (Messner, 1983).

Drugs and Alcohol

There has always been the knowledge that drugs and alcohol decrease one's inhibitions and one's ability to think rationally. Viewing the effect of the drug or alcohol on a person's behavior is a pharmacological approach. This approach has yielded a relationship between alcohol use or drug use and homicide. Homicide is related to alcohol between fifty and sixty percent of the time (Green and Wakefield, 1979; Gary, 1980; Goldstein, P., Brownstein, H., Ryan, P., and Belluci, P., 1989). In addition, there exists a strong relationship between the number of arrestees that test positive for cocaine use and the number of homicides and robberies within a city (Zahn and Bencivago, 1974; Montefore and Spitz, 1975). Giannini, Miller, Loiselle, and Turner (1993) found that the administration of cocaine effects the amount of violent reaction. For most measures of

violence, free base/crack smoking, and intravenous injection yield more violent behaviors than does cocaine when administered through nasal insufflation. However, some measures of violence indicated that free base/crack smoking led to the most violence followed by intravenous injection then by nasal insufflation.

Perhaps, the introduction of crack cocaine into a community has in fact led to an increase in violence, based on the mechanism of action which crack and other derivatives of cocaine operate by. This increase in violence could be related to the formation of a subculture of violence or, this cocaine-induced violence may lead to violent behavior and violent crime becoming epidemic in proportion.

In relation to drugs and drug addiction, there has been concern that the addiction is so powerful that one might be inclined to commit crimes in order to support a drug habit. The economic compulsive approach to explaining drug related violence explains violence in just this fashion; drug addicts robbing and stealing to support their habits.

Additional ways that drugs may lead to increased homicide rates is through the systemic view. This would be the market and violent environment that illicit drug sales has created. Goldstein, et al. (1989) found that the systemic approach explains the majority of homicides in relation to cocaine use and sales in New York City. Inciardi (1990) found that the more involved an individual is in crack distribution, the more violent that person is when compared with those that distribute other types of drugs. Fagan and Chin (1990), also found that crack sellers were violent more often than other types of drug dealers, and the crack dealer was involved in a wider variety of crime including property and violent offenses. Fagan and Chin (1990) concluded that this pattern of behavior was spurious and indicative of a generalized pattern of deviance.

Gangs

According to available data (Supplementary Homicide Reports 1979-1994 and Uniform Crime Reports 1990-1994), through 1994, gang-related homicides make up a very small percentage of the total homicides experienced in this country. There are some cities that, in recent years, have experienced a large number of homicides attributable to gang-related activity.

Two types of violence are associated with gangs. The first is inter-gang violence, which is inherent to gangs. It sometimes seems that this violence is self-perpetuating, and continuously escalating. However, this violence, as evidenced by earlier research does in fact decline.

The second kind of violence is not as evident as inter-gang violence; this violence is the violence created by and associated with drug trafficking. It has been shown in past studies that much of the violence and many of the homicides associated with drugs are actually a result of drug distribution. (Goldstein, et al, 1989; Fagan and Chin, 1990; and Inciardi, 1990) While there are many gangs that do engage in illegal activity for profit, not all engage in drug sales. This type of violence, enters a gray area in that many individual gang members engage in drug trafficking and consequently the violence that goes with it. However, the gang as an entity does not, as a norm, engage in drug trafficking. Additionally, controversy arises based on one's definition of a gang. Many times, an organization will arise with the sole purpose of selling drugs. These organizations differ from the traditional gangs that do not as a norm engage in selling drugs. It could possibly be that drugs and gangs proliferate the same community in close

temporal relation based on other conditions experienced by community such as economics, or unemployment (Moore, 1990).

However, Evans and Taylor, (1995) conducted a study that assessed violence in contemporary and earlier gangs. Evans and Taylor concluded that members of contemporary gangs experience greater pressure to engage in more extreme forms of violent and exploitive forms of behavior than did members of earlier gangs. This, coupled with the data on the pharmacological effects of crack cocaine (Giannini, Miller, Loiselle and Turner 1993) and the elevated violence associated with crack sales (Fagan and Chin, 1990; and Inciardi, 1990), indicates that perhaps there is a relationship between gangs, drug trafficking, and violence.

It is possible that gang related killings do not increase the homicide rate, but occur to a greater degree in cities that have a high homicide rate based on the following assumptions: (1) High-homicide-rate-cities have or are forming a subculture of violence, and (2) Gangs are able to form and exist in areas where they are not as likely to be seen as abnormal or radical.

Disaggregation of homicide data

Research on homicide has illustrated that homicide, while always having the same result, many times has unique circumstances and relations. There is a variety of circumstances and relationships that combine to create a similar result: homicide. To that extent, homicide can vary in fundamental ways; i.e. robbery-related homicides are different from gang-related homicide, which differ from homicides as the result of a romantic triangle. Additionally, there are differences among homicides committed

against strangers, spouses, acquaintances, or other family members. There are also age and sex differences and differences as to the type of weapon used. All of these factors, being fairly heterogeneous, combine in complex ways to produce what is often classified as a single offense type. This focus on the end result of a homicide, and classification of the same as one offense is erroneous and inappropriate; as there are many paths and circumstances that lead to a homicide (Maxfield, 1989).

Disaggregation of homicide data is important both for theory testing and for analysis and planning of public policy. If there are different causal processes and demographics of homicides, it is important to examine circumstances and demographics individually for theory and public policy testing and analysis (Maxfield, 1989).

Maxfield (1989) noted in his study that there are differences in the types of circumstances of homicide when compared in an inter city basis. Maxfield explained this difference as a possible coding difference among police departments. However, these differences could merely support the belief that different areas or cities experience different types of homicide.

Another study that exemplifies the notion that circumstances vary by region, class or some other measure, is the study by Green and Wakefield, (1979). The study, titled Patterns of Middle and Upper Class Homicide reviews the data on several upper and middle class homicide. This data was then compared to data for lower class homicide. Some of the salient findings of this study are: 1) Upper class murders are significantly older than lower class murders 2) Motives for murder differ between the two groups. Lower class murders are usually the end result of an argument whereas the motive for the upper class murders in this study was insurance, property, or inheritance followed by

depression; and 3) In upper class murders, there is a very small incidence of alcohol relatedness whereas in lower class murders alcohol is related 53.5 to 63.3% of the time depending on the study.

The findings of Green and Wakefield's study like Maxfield's, are particularly important as they indicate that the operants of homicide vary among cities and socioeconomic classes.

Summary

The literature review contained in this chapter has focused on seven specific categories. The following paragraphs offer an explanation as to how the previous literature has shaped the design and factors researched in this study.

Firearms have always been related to a significant percentage of the homicides in this country (Bureau of Justice Statistics, 1994). After reviewing a significant number of studies, it became evident that the percentage of homicides committed by firearm is consistent regardless of the level of analysis. This means, that the percentage of homicides committed by firearms is relatively similar at the national, state, and local levels (Tardiff, et al. 1986). In this study, the percentage of homicides by firearm were examined to see if a difference in percentages existed among high and low-homicide-rate-cities.

According to the available data and research, there are identifiable groups of people within this country that are considered high-risk groups in terms of chances of homicide victimization. These high risks of being a homicide victim are most prevalent among

young, black males age fifteen to thirty-four (Tardiff, 1986; O'Carroll, 1988; Fingerhut and Kleinman, 1990; and Fingerhut, Ingram and Feldman, 1992). A comparison will be made among low and high-homicide-rate-cities on the basis of sex, race and age of the homicide victim and offender. Additional analysis using the percentage of the population between the ages of fifteen and thirty-four will also be completed based on the methods and findings of previous research (Gartner, 1990; Tardiff et al., 1986; O'Carroll, 1988; Fingerhut and Kleinman, 1990; and Fingerhut, Ingram and Feldman, 1992).

Some of the literature on drugs and alcohol, and gangs was also reviewed in this chapter. As with other factors analyzed, the percentage of homicides related to drugs, alcohol, or gangs will be compared between high and low-homicide-rate-cities. While there is an expectation that these factors will play an important role in homicide, previous research indicates that gang related activity leads to a small percentage of homicidal violence (Prothrow-Stith, 1991).

Unemployment and poverty have previously been linked, through theory, to crime. Further, through theoretical perspectives, unemployment has been linked to certain types of homicide (Crutchfield, 1989; Maxfield, 1989; and Cook, 1982). Based on previous theory and research findings, unemployment rates will be analyzed in relation to overall homicide rates as well as in relation to certain types of homicide.

The following chapter, Chapter Three, discusses the methodology used in the study. The particular sampling technique, analysis, and data collection are discussed.

CHAPTER THREE

METHODOLOGY

Introduction

This study examines the following variables for high-homicide-rate-cities compared to those of low-homicide-rate-cities: the homicide rate, the unemployment rate, the percent of homicides committed with a firearm, several different circumstances of homicide, and the race, sex and age of offenders and victims. The description of the sample population, method of selection, collection of data, hypotheses and methods of statistical analysis is discussed in this chapter.

Sample and Population

The population from which the sample is drawn consisted of all cities in the United States that were between 50,000 and 1.5 million in size and that participated in the Uniform Crime Reporting program. Cities under 50,000 were excluded due to the unavailability of data for cities of this size. Cities over 1.5 million in size were excluded as their size created problems in comparing with other cities included in the sample.

From the many cities within the population limits, fifty-four cities were selected. The cities were grouped into two categories based on their homicide rate. (A complete list of the sample is included in Appendix A.) Cities that met the population size criteria and had a homicide rate of at least three times the national rate for the years 1992, 1993, and 1994 were classified as high-homicide-rate-cities (N=27). Low-homicide-rate-cities were those cities that met the population size criteria and had a homicide rate of half the

national rate for 1992, 1993, and 1994 (N=27). There exists more low-homicide-rate-cities than high-homicide-rate-cities according to the classification criteria used here. The high-homicide-rate class consists of all cities meeting the criteria for selection, restated, the high-homicide-rate-group is inclusive of all cities that were between 50,000 and 1.5 million in size and had a homicide rate of at least three times the national rate. The low homicide rate group contains the largest low-homicide-rate-cities according to population size.

The type of sampling used in this study is purposive or judgmental sampling (Babbie, 1989). Purposive sampling is a non-probability sampling technique used to build a sample based on the case(s) being judged as very informative for the purposed area of the research. In purposive sampling, "Cases are handpicked to achieve some specific characteristic that will illuminate the purpose of the study." (Adams and Schvaneveldt, 1991 p. 181). In this study, cases were selected if they could be classified as high or low homicide-rate-cities and if they met the population criteria.

The sample in this study was selected in such a way that the most extreme examples of the homicide rate were selected for analysis. Selection was done in this manner in an attempt to better identify the differences between the high and low-homicide-rate-cities.

Measures and Instrumentation

Archival data was the data collection method used in this study. Consequently, retrieval of data was from databases and existing records, eliminating the use of surveys or questionnaires.

Variables

The analysis contained in the study is based on the homicide rates of fifty-four cities and the relationship of those homicide rates to the variables discussed below.

Homicide rates are the number of homicides per 100,000 people for a given city. Homicide rates were calculated by dividing the total number of homicides by the total population then multiplying by 100,000. The raw number of homicides was collected from the Uniform Crime Reports (UCR).

The age, race and gender of offender and victim was obtained from the Uniform Crime Reports Supplementary Homicide Reports (SHR). SHR data is submitted to the FBI by agencies that participate in the UCR program. The SHR data is submitted on a monthly basis.

The percentage of homicides committed by handgun, as well as the circumstances of the homicide were also obtained from the SHR data. All of these variables are expressed as a percentage of the total number of homicides for a certain year. Specific circumstances of homicide that were reviewed include the following categories:

- Homicides due to alcohol use
- Homicides due to drug use
- Homicides due to drug law violations
- Homicides due to gang activity

Assault and robbery rates are reviewed in the analysis and are expressed as the number of occurrences per 100,000 people. The raw number of robberies and assaults were obtained from the UCR. These numbers were converted to rates per 100,000 inhabitants using the same method used for calculating homicide rates.

Unemployment rates were obtained from the Bureau of Labor Statistics. These rates

are expressed as a percentage of the number of unemployed in relation to the total labor force for a given city. Unemployment rates for the years selected in this study are measured using the same benchmark and are comparable from year to year.

Design

Once all of the data was collected and converted to appropriate rates, the data was entered into the Statistical Package for the Social Sciences (SPSS). Data was entered in such a fashion that one case was created for each city for each of the three years from 1992 to 1994. The total number of cases is 162, or fifty-four for each year. Each variable was arranged in columns.

Hypothesis

As the study is exploratory in nature, and there are varying conclusions from research as to the variables analyzed in this study, no hypotheses were assumed. Rather, the study was aimed at identifying whether or not differences existed, and if they did exist, whether or not those differences were significant.

Analysis

As previously stated the SPSS software was used for data analysis. If data was missing, the case was excluded from analysis on a pairwise basis. The statistical methods used in analysis are a rank order correlational measure and logistic regression. Spearman's Rho was used in the correlational analysis.

Descriptive statistics were also run on each group of cities. The descriptive statistics

included the means and standard deviations for each group. A comparative analysis of those statistics is also included in the study. Differences between the two groups were calculated, as was the significance of those differences. An independent t-test was used to test for significance.

Spearman's Rho, an asymmetric measure for two ranked variables, was used as the correlational measurement. Spearman's Rho was selected for use, as the assumptions required for parametric testing were not present. Spearman's Rho, as with most other non-parametric tests, requires few if any pre-testing conditions to be met (Babbie, 1997).

Logistic regression was used to assess the predictive ability of the unemployment rate, and the aggravated assault rate in regards to high or low homicide rate classification. Logistic regression relates one or more predictor variables to a dichotomous dependent variable (Wright, 1995). Logistic regression estimates the probability of an event's occurring based on specific predictor variables (Norusis, 1994).

The dichotomous dependent variables used in analysis was "classification", and was coded as 0 for low-homicide-rate-cities and as 1 for high-homicide-rate-cities. The predictor variables were the aggravated assault rate, and the unemployment rate. The predictor variables were entered into the equation as continuous numeric variables rather than as categorical variables.

The predictor variables were entered into the equation using backward elimination with likelihood ratio selection. Backward selection starts with all variables in the equation. At each step, a variable is evaluated for removal based on the likelihood ratio test. If that variable does not meet the requirements of the likelihood ratio test, it is removed from the equation (Norusis, 1994). The procedure continues to remove

variables based on the likelihood ratio test until only statically significant variables remain in the equation (Wright, 1995).

As with other statistical tests, there are assumptions that must be met for a logistic regression model to be valid. The prerequisite conditions for logistic regression are less rigorous than the conditions required for linear regression. The assumptions required for logistic regression were assumed to have been met based on the following:

1. The dichotomous variable, classification, when having a value of one (high-homicide-rate) has a probability of P1. The value of zero for classification (low-homicide-rate) has a probability of P0 = 1 – P1 (Wright, 1995).

2. Each case was represented only once in the data (Wright, 1995).

3. The dichotomous categories are mutually exclusive and collectively exhaustive (Wright, 1995).

4. While the specificity assumption of logistic regression requires the model to contain all relevant predictor variables and no irrelevant predictor variables, specificity to this extent is rarely met (Wright, 1995). The predictor variables of this analysis are correctly specified in that all are theoretically relevant.

5. A minimum of fifty cases must be present for each predictor variable used (Wright, 1995).

These requirements were met with the exception noted in number four above.

Summary

Chapter Three examines the issues related to the research methodology and statistical analysis. The dependent and independent variables were identified and discussed. The population and sample were reviewed and some of the descriptive statistics for the sample were provided.

The decisions to use Spearman's Rho and logistic regression as the methods of

analysis were discussed. The analysis of variables using a correlational measure was made to identify relationships between the independent and dependent variables. Logistic regression was used to assess the independent variables predictive ability.

The following chapter, Chapter Four, presents the findings of the analysis.

CHAPTER FOUR

RESULTS

Introduction

This study was aimed at identifying differences between high and low-homicide-rate-cities with the intent of attempting to explain some of the disparity in homicide rate. The design was such that two groups of cities were created. The first group contained high-homicide-rate-cities, and the second group contained low-homicide-rate-cities. High-homicide-rate-cities were those cities that had homicide rates at least three times the national rate for the years 1992, 1993, and 1994. Low-homicide-rate-cities were those cities that had homicide rates less than or equal to half the national rate for 1992, 1993 and 1994. Statistical analysis was performed on each group of cities individually, as well as for all cities combined as one group. The results of the analysis are contained in this chapter.

This chapter is divided into three sections. Section One contains the results of the descriptive statistics analysis for the two groups of cities and a comparison of those statistics. Section Two contains the results of the correlational analysis, and Section Three reports the finding of the logistic regression analysis. A summary for the chapter is also included.

Descriptive Statistics

As stated in the introduction of this chapter and the introduction in Chapter One, the

purpose of this study is to identify differences between high and low-homicide-rate-cities. One manner in which this was attempted was to perform descriptive statistical analysis on the variables researched in this analysis. The following tables report the means, the standard deviations for the variables for each of the groups of cities (high-homicide-rate cities versus low-homicide-rate-cities), and the significance of the differences between the means. All tables provide the results of the statistical analysis for the two groups of cities analyzed individually.

Homicide Rate

The first descriptive statistic analyzed was the homicide rate. While the sampling method used was aimed at selecting high and low-homicide-rate-cities, the mean homicide rate for each of the two groups truly illustrates the disparity between these two classes of cities. The high-homicide-rate-cities had a mean homicide rate of 47.24/100,000, whereas the low-homicide-rate-cities had a homicide rate of 1.8/100,000 (significant at the .000 level). This great disparity illustrates the disproportion with which some cities contribute to the national homicide rate.

Descriptive Statistics for Victim Data

The following table, table 4.1, reports the results of the descriptive statistics for the demographic data on victims.

TABLE 4.1-ILLUSTRATION OF THE DIFFERENCES BETWEEN HIGH AND LOW-HOMICIDE-RATE-CITIES FOR VICTIM DATA IN PERCENTAGES

Variable	High-homicide-rate-cities		Low-homicide-rate-cities		
Percent Of Victims	Mean	Std. Dev.	Mean	Std. Dev.	Sig.
Black	72.204	17.472	10.838	23.825	.282
White	26.325	17.617	63.743	93.948	.000
Male	83.393	4.436	61.719	38.333	.000
Female	16.514	4.393	37.798	33.989	.000
Under Age 14	3.978	2.632	6.560	16.821	.000
Age 15 To 24	37.740	7.496	17.375	28.84	.000
Age 25 To 34	28.477	4.989	28.482	35.549	.000

The descriptive statistics on the demographic victim data indicate that the majority of victims in high-homicide-rate-cities are those victims that were identified as being high risk according to previous literature and research (seventy percent were under the age of thirty-four, eighty-three percent were male, and seventy-two percent were black). While the low-homicide-rate-cities also have a large percentage of victims under the age of thirty-four (fifty-two percent), most of the victims in low-homicide-rate-cities were white (sixty-three percent), and only sixty-one percent were male (see Table 4.1). All differences were statistically significant with the exception of the differences observed between the two groups of cities for percentage of black victims.

Descriptive Statistics for Offender Data

The following table, table 4.2, reports the results of the descriptive statistics for the demographic data on offenders.

TABLE 4.2-ILLUSTRATION OF THE DIFFERENCES BETWEEN HIGH AND LOW-HOMICIDE-RATE-CITIES FOR OFFENDER DATA IN PERCENTAGES

Variable	High-homicide-rate-cities		Low-homicide-rate-cities		
Percent Of Offenders	Mean	Std. Dev.	Mean	Std. Dev.	Sig.
Black	40.459	17.737	10.936	25.213	.255
White	10.710	9.882	50.339	38.435	.000
Male	47.452	14.634	64.558	39.146	.000
Female	5.058	4.353	3.905	11.885	.001
Under Age 14	0.904	1.006	1.411	11.204	.114
Age 15 To 24	25.488	10.440	23.117	31.433	.000
Age 25 To 34	12.127	6.143	19.612	27.665	.000

The descriptive statistics on offenders show that in both groups of cities, the majority of known offenders were male (forty-five percent in high-homicide-rate-cities and sixty-four percent in low-homicide-rate-cities). Additionally, in both groups of cities, there is a large percent of offenders under the age of thirty-four (thirty-eight percent in high-homicide-rate-cities and forty-four percent in low-homicide-rate-cities). Where the two groups of cities differ is in terms of race of the offender. When reviewing offender race, the trends seen in the victim's race are mirrored. In high-homicide-rate-cities, the percentage of known offenders that are black is forty percent, with ten percent being white. In low-homicide-rate-cities, fifty percent of the known offenders were white and ten percent were black. One concern that must be mentioned in regards to the offender data is that a large portion of the offender data is unknown, as not all homicides are solved when data was reported to the FBI through the Supplementary Homicide Reports (SHR). In the sample used in this study, approximately forty-eight percent of the offender data in high-homicide-rate-cities is unknown and approximately thirty-seven percent of the offender data in low-homicide-rate-cities is unknown (See Table 4.2).

The first major difference noted in the offender statistics was the racial composition of

the offenders (this difference was not statistically significant). In the high-homicide-rate-cities, forty percent of the known offenders were black and ten percent were white; in low-homicide-rate-cities, fifty percent were white and ten percent were black. Whether or not this difference has any meaning is unclear, however, it is evident that in terms of racial composition, known offenders in high and low-homicide-rate-cities greatly differ.

The only other disparity among homicide offender data that is evident between the two groups of cities is the gender of the offender. In high-homicide-rate-cities, forty-seven percent of the known offenders are male and five percent are female; compared with sixty-four percent male and three percent female in the low-homicide-rate-cities. Again, whether or not this difference has any implications is unclear; however, this is another apparent difference in the demographics of offender data. All differences were statistically significant at the .01 level with the exception of percentages of black offenders and the percentages of offenders under the age of fourteen.

Descriptive Statistics for Homicide Circumstance Data

Four circumstances of homicide were reviewed in the study. These circumstances were: percent of homicides related to alcohol use, percent of homicides related to drug use, percent of homicides related to gang activity, and percent of homicides related to drug law violations (See Table 4.3).

TABLE 4.3 ILLUSTRATION OF THE DIFFERENCES BETWEEN HIGH AND LOW-HOMICIDE-RATE-CITIES FOR CIRCUMSTANCE OF HOMICIDE IN PERCENTAGES

Variable	High-homicide-rate-cities		Low-homicide-rate-cities		
Percent Of Homicides Due To	Mean	Std. Dev.	Mean	Std. Dev.	Sig.
Alcohol Use	0.851	3.029	6.501	22.736	.000
Drug Use	0.944	2.945	0.159	1.434	.000
Gang Activity	7.487	12.854	3.138	13.558	.029
Drug Law Violations	9.788	9.113	2.934	10.2222	.030

There is much literature cited in chapter two that indicates a relationship between drugs (both use and sales) and/or alcohol to violent crime; and some evidence that links drugs and/or alcohol to homicide. The circumstances of drug use, alcohol use, and drug sales as the proximate circumstance of homicide were analyzed in an attempt to identify which circumstance of homicide was more prevalent in each of the groups of cities. As illustrated in table 4.3, the percent of homicides related to alcohol use is 6.5 percent in the low-homicide-rate-cities and approximately 1 percent in the high-homicide-rate-cities. Drug use accounts for approximately 1 percent of the homicides in high-homicide-rate-cities and approximately 0.2 percent of the homicides in low-homicide-rate-cities. Drug sales, possibly one of the most violent components of the drug market, accounts for roughly 10 percent of the homicides in high-homicide-rate-cities and approximately 3 percent in the low-homicide-rate-cities.

Goldstein (1989) found that the majority of drug related homicides in New York City were explained through the systemic approach. The systemic approach is:

> A noninclusive list of systemic violence includes territorial disputes between rival dealers, assaults and homicides committed to enforce normative codes within a particular drug dealing operation, robberies of drug dealers, executions of police informants, retaliations for selling adultered or bogus drugs, and assaults and homicides to collect drug related debts (Goldstein et al. 1989).

In summary, systemic violence is the normally aggressive pattern of violence associated with a drug distribution system (Goldstein, 1989).

The descriptive statistics of the sample indicate that 9.8 percent of the homicides in high-homicide-rate-cities are related to narcotics law violations. In low-homicide-rate-cities, the mean percent of homicides related to narcotics law violations is 2.9 percent. It is evident from the data that the high-homicide-rate-cities should have greater concern with drug trafficking than the low-homicide-rate-cities. Nearly ten percent of the

homicide in high-homicide-rate-cities is related to drug trafficking.

Gang activity is sometimes associated with increases in violence within a community. Gang activity can create violence in two ways: 1) Intergang violence, and 2) Violence associated with drug distribution (Moore, 1990). From table 4.03, it can be seen that high-homicide-rate-cities have a substantially higher mean percentage of homicides related to gang activity than do the low-homicide-rate-cities (7.4 percent and 3.1 percent respectively, See Table 4.03).

Descriptive Statistics for Handgun Usage

It has been shown that firearm homicides in this country have, since as early as the 1930's, made up a significant percent of the total homicides. Table 4.4 contains the descriptive statistics for the percent of homicides where a handgun was used.

TABLE 4.4 ILLUSTRATION OF THE DIFFERENCE BETWEEN HIGH AND LOW-HOMICIDE-RATE-CITIES FOR PERCENTAGE OF HOMICIDES BY HANDGUN

Variable	High-homicide-rate-cities		Low-homicide-rate-cities		
	Mean	Std. Dev.	Mean	Std. Dev.	Sig.
Percent Of Homicides By Handgun	67.966	12.895	36.604	38.463	.000

It was stated in chapter two that firearms and specifically handguns (due to concealability) facilitate the commission of a homicide. In reviewing table 4.4, it is evident that there is a substantial and statistically significant difference in the percent of homicides by handgun in high-homicide-rate-cities (68%) when compared with percent of homicides by handgun in low-homicide-rate-cities (37%). Some of the implications of this subject are discussed in chapter five.

Descriptive Statistics on Unemployment Data

The relationship between unemployment and homicide is not as evident or as accepted as is the relationship between unemployment and other types of crime (Boostrom, 1995; Walker, 1989; Lester and Yang, 1994; Gurr, 1989; Cantor and Land, 1985; and Cook and Zarkin, 1985). Crutchfield (1989) hypothesized and found that unemployment did in fact influence the violent crime rate. This was supported by the positive relationship observed between unemployment and the violent crime rates. For that reason, unemployment rates were considered as a part of the analysis. Table 4.5 reports the mean unemployment rates for the high and low-homicide-rate-cities.

TABLE 4.5 ILLUSTRATION OF THE DIFFERENCE BETWEEN HIGH AND LOW-HOMICIDE-RATE-CITIES FOR THE UNEMPLOYMENT RATE

Variable	High-homicide-rate-cities		Low-homicide-rate-cities		
	Mean	Std. Dev.	Mean	Std. Dev.	Sig.
Unemployment Rate	11.28	4.1836	4.9753	1.7287	.000

As indicated in the table, there is a fairly large and statistically significant difference between the two groups mean unemployment rates; high-homicide-rate-cities having an 11.28 mean unemployment rate, whereas low-homicide-rate-cities have a mean unemployment rate of 4.97. This is compared to the national unemployment rate of 6.9 for the same period of years. The significance of this difference will be discussed in chapter five.

Descriptive Statistics for Other Violent Crimes

Additional crimes that were analyzed in relation to homicide rates were aggravated assault rates and robbery rates. These two crime rates were analyzed based on the theoretical premises of the Subculture of Violence Theory (Wolfgang and Feracutti,

1967) and the epidemic theory, as applied to violent crime and homicide (Pierce, 1997). The logic assumed was that high-homicide-rate-cities would experience epidemic proportions of all violent crime, or that a subculture of violence would manifest itself through all violent crimes, not just the violent act of homicide. The following table, table 4.6, reports the mean aggravated assault rates and robbery rates for the two groups of cities. The data indicates that there is a vast difference between the mean aggravated assault rates and robbery rates between the high and low homicide rate city groups.

TABLE 4.6 ILLUSTRATION OF THE DIFFERENCES BETWEEN HIGH AND LOW-HOMICIDE-RATE-CITIES FOR AGGRAVATED ASSAULT AND ROBBERY RATES

Variable	High-homicide-rate-cities		Low-homicide-rate-cities		
	Mean	Std. Dev.	Mean	Std. Dev.	Sig.
Agg. Assault Rate	1348.19	498.27	287.23	236.29	.000
Robbery Rate	1066.42	399.98	93.07	90.18	.000

Descriptive Statistics for Population

The final descriptive statistic that was calculated was the mean population for the two groups of cities. The mean population for high-homicide-rate-cities was 321,183. While the mean population for low homicide rate cities was 143,431. While the difference between these mean populations in this study is substantial and statistically significant at the .000 level, all cities contained in this study are large cities when compared with the mean population for all cities in the United States. To address the disparity in population is beyond the scope of this study. However, all statistics contained in this study are expressed in rates, or percentages.

The next section in this chapter reviews the correlational measures used in the analysis.

Correlational Analysis

Certain variables were selected for correlational analysis. Those variables were homicide rate, unemployment rate, aggravated assault rate, robbery rate, and the circumstances of homicide as discussed in this chapter and in chapter three. The following discussion reports the relationships found to exist between these variables and the logic used in selecting the variables for correlational analysis.

Correlational Analysis of Circumstances of Homicide to the Unemployment Rate

The circumstances of homicide researched were: percent of homicides related to alcohol use, the percent of homicides related to drug use, the percent of homicides related to narcotics law violations, and the percent of homicides related to gang activity.

Most homicides classified as drug or alcohol use related could also be classified as conflict homicides. However, drug and or alcohol use as a circumstance of homicide indicates that the homicide at hand was so related to the drug or alcohol use that classifying the homicide in this way was the most appropriate classification. These circumstances were correlated with unemployment to determine if there was the possibility of unemployment affecting increases in these types of homicides. It seems that alcohol and drug use would be higher in cities that have high unemployment rates (Moore, 1990). Consequently, knowing the relationship between alcohol use and/or drug use and crime, a higher percentage of homicides related to drug or alcohol use could be reasonably foreseen. Table 4.7 contains the correlations between the percent of homicides related to drug use, the percent of homicide related to alcohol use, and the unemployment rate.

TABLE 4.7 CORRELATIONS BETWEEN PERCENT OF HOMICIDES DUE TO ALCOHOL USE, DRUG USE, AND THE UNEMPLOYMENT RATE.

	High-homicide-rate-cities	Low-homicide-rate-cities
Variable	Unemployment	Unemployment
Percent Of Homicides Related To Alcohol	.007	-.327**
Percent Of Homicides Related To Drug Use	-.008	-.134

**significant at the .01 level
*significant at the .05 level

Correlational Analysis of Percent of Homicides Related to Drugs, Gang Activity and the Unemployment Rate

The second set of circumstances researched were the percent of homicides related to drug sales and the percent of homicides related to gang activity. These were looked at in terms of their relationship to the unemployment rate. Both gang activity and drug sales could be expected in cities with high unemployment rates as both activities could be considered a response to limited legitimate employment opportunities within a given city.

TABLE 4.8 CORRELATIONS BETWEEN THE PERCENT OF HOMICIDES DUE TO GANG ACTIVITY, PERCENT OF HOMICIDES DUE TO DRUG SALES, AND THE UNEMPLOYMENT RATE.

	High-homicide-rate-cities	Low-homicide-rate-cities
Variable	Unemployment Rate	Unemployment Rate
Percent Of Homicides Due To Drug Sale	.037	-.100
Percent Of Homicides Due To Gang Activity	.284*	.095

**significant at the .01 level
*significant at the .05 level

From the correlational analysis, it can be seen that when analyzing the unemployment rate and circumstances of homicide, there is little variation and few significant relationships within the individual groups. The negative relationship between the percent of homicides due to alcohol use and the unemployment rate in low-homicide-rate-cities was an unexpected relationship. The other statistically significant relationship was the

relationship between the unemployment rate and the percent of homicides due to gang activity. The latter relationship was expected and is consistent with the theories offered by Moore (1990).

Correlation of the homicide rate, robbery rate, aggravated assault rate, and unemployment rate

The last set of variables analyzed using correlational analysis was the homicide rate to the unemployment rate, and the homicide rate to the robbery rate and the aggravated assault rate.

With the theoretical perspectives of the Subculture of Violence Theory and the epidemic theory in mind, the homicide rate was correlated with the aggravated assault rate and the robbery rate. Both crimes are defined as violent crimes by the UCR. It would seem logical that if a Subculture of Violence is operating within a community or among a group of cities, that unit would experience exaggerated rates of all types of violent crime, not just an exaggerated homicide rate. This would also hold true in applying the principles of the epidemic theory.

The unemployment rate was correlated with the homicide rate, as it has been shown in the past that the unemployment rate influences the occurrence of certain types of crimes. In this study, an attempt has been made to demonstrate that the unemployment rate does relate to certain types of homicides. Therefore, an analysis of how unemployment rate relates to the overall homicide rate was included.

Table 4.9 reports the correlational analysis of the homicide rate to the unemployment rate, robbery rate, and the aggravated assault rate.

TABLE 4.9 CORRELATIONS BETWEEN HOMICIDE RATE AND THE UNEMPLOYMENT RATE, ROBBERY RATE AND AGGRAVATED ASSAULT RATE.

	High-homicide-rate-cities			Low-homicide-rate-cities		
Variable	Unemploy. Rate	Robbery Rate	Agg. Assault Rate	Unemploy. Rate	Robbery Rate	Agg. Assault Rate
Homicide Rate	.176	.217	-.068	-.035	.128	.034

**significant at the .01 level
*significant at the .05 level

Logistic Regression Analysis

This section reports the finding of the logistic regression analysis used in the study. Logistic regression was used to predict the probability of a city being a high homicide rate city. This prediction was based on the following variables: Unemployment rate, and the aggravated assault rate.

The unemployment rate was used as a predictor variable due to its previously demonstrated and cited relationship to crime (Boostrom, 1995 and Walker, 1989). Additionally, Crutchfield's (1989) findings on unemployment and violent crime justified the selection of the unemployment rate as a predictor variable.

The other predictor variable included in the regression analysis was the aggravated assault rate. The aggravated assault rate was included in the logistic regression analysis as, by definition, aggravated assault is:

> .... an unlawful attack by one person upon another for the purpose of inflicting severe or aggravated bodily injury. This type of assault is usually accompanied by the use of a weapon or by means likely to produce death or great bodily harm. (UCR, 1994)

By definition, aggravated assault is as violent as murder or non-negligent manslaughter. The only difference is the end result. The intentions are the same: to cause serious bodily harm. It would follow that the incidence of aggravated assault would be a useful variable in predicting the probability of a city experiencing a high

homicide rate as the two crimes, aggravated assault and homicide, are so closely related.

While the robbery rate was analyzed in other parts of this study, it was excluded from the logistic regression analysis as the motivations for robbery differ greatly from the motivations for homicide and aggravated assault. This does not exclude robbery from the violent crime category; however, for this reason, robbery was excluded from this model.

Tables 4.10 and 4.11 report the results of the logistic regression analysis. The first table, labeled 4.10, presents the variables used in the logistic regression model and the estimated coefficients, the standard error, the Wald Statistic, the degrees of freedom, the variables significance and the R statistic.

TABLE 4.10 COEFFICIENTS FOR LOGISTIC REGRESSION VARIABLES

Variable	B	S.E.	Wald	df	Sig.	R	Exp (B)
Agg. Assault Rate	.0057	.0015	14.8689	1	.0001	.2394	1.0057
Unemploy Rate	.8996	.2998	9.0047	1	.0027	.1766	2.4585
Constant	-10.2592	2.3090	19.7418	1	.0000		

The column labeled "B" indicates the coefficients for the variables in the equation. Standard error is reported in the column labeled "S.E." The Wald Statistic, reported in the "Wald" column, is the square of the ratio of the coefficient to its standard error. The significance of the Wald Statistic is reported in the "Sig." column. The R statistic, listed in the "R" column, is a statistic that looks at the partial correlation between the dependent variable and each of the predictor variables. A positive value for R indicates that as the variable increases in value, so does the probability that the dependent condition occurs. A negative value would indicate an inverse relationship in terms of probability. The final column "EXP (B)" reports the natural logarithm base e to the B power. Exp (B) indicates how the odds of an event occurring change based on a change in that variable. (Norusis, 1994).

Additional measures that are associated with logistic regression are -2 log likelihood (-

2 LL), goodness of fit, model chi-square, and improvement. The -2 log likelihood is the log of the likelihood, the probability of the observed results, multiplied by -2. A good model is one that has a high likelihood or a small value for -2 log likelihood. If a model is perfect, the likelihood is one, and –2 times the log likelihood is zero (Norusis, 1994).

Another way to use the -2 LL statistic is to compare the change in the -2 LL between steps of the model. This statistic, the difference between the -2 LL, is known as the improvement statistic and is reported in table 4.11 (Norusis, 1994).

TABLE 4.11 GOODNESS OF FIT FOR LOGISTIC REGRESSION

Variable Added	-2 LL	Improvement	Goodness Of Fit	Model Chi Square
Constant	224.57969			
Agg. Assault Rate	61.300	163.280	240.785	163.280
Unemploy Rate	42.505	18.795	82.655	182.075

The data in table 4.11 indicate that as each variable is added, the -2 LL decreases. This decrease in -2 LL indicates that the model is increasing in its ability to accurately predict the probability of a city being a high homicide rate city.

The other two statistics in table 4.11 are the goodness of fit and model chi square statistic. The model chi square statistic indicates the total change in the -2 LL between the model at a current step and the model with only the constant. The goodness of fit statistic compares the observed probabilities to those predicted by the model (Norusis, 1994). A classification table and histogram contained in appendix B illustrates how well the regression model performs.

Given the coefficients reported in table 4.10, the probability of a city being a high homicide rate city is written as:

Prob. (of high homicide rate) = $e^z/(1+ e^z)$

Where

Z = -10.2592+. 0057(assault rate)+.8996(unemployment rate).

This equation will return the probability of a city being a high homicide rate city. If the probability returned is greater than .5, it is assumed that the city will be a high homicide rate city. If the probability were under .5, low homicide rate status would be assigned. If the probability is exactly .5, a flip of a coin would be appropriate for determining the prediction (Norusis, 1994).

Summary

In Chapter Four, the findings of this study were reported. It was illustrated, through the descriptive statistics that the two groups of cities in this study vary substantially on certain variables. Correlational analysis indicated that several of the variables show relationships to the unemployment rate, robbery rate and assault rate. The logistic regression illustrated the relationship and interrelationship of the unemployment rate, and the aggravated assault rate in predicting the probability that a city will be a "high" homicide rate city.

In summary, upon completing the statistical analysis, it was evident that several relevant differences existed between the two groups of cities, and that relevant, statistically significant relationships existed amongst several variables. More specifically, statistically significant differences were identified using descriptive statistics for the following variables:

- Homicide Rate
- Unemployment Rate
- Robbery and Aggravated Assault Rates
- Percent of White, Female, and Male Offenders
- Percent of White, Female, and Male Victims and Victims age 15 to 24
- Percent of homicides related to alcohol and drug use, drug trafficking,

and gang activity
- Percent of homicides committed with a handgun

Additionally, substantial differences were noted about the percentage of black offenders and victims. However, these differences were not statistically significant.

Statistically significant correlations were found to exist between the following:

- Percent of Homicides Related to Alcohol and The Unemployment Rate (For low-homicide-rate-cities only)
- Percent of homicides related to gang activity and the unemployment rate (For high-homicide-rate-cities only)

The logistic regression indicated that the model used was able to predict the probability of a city being a high homicide rate city accurately for 94.44 percent of the study sample. The logistic regression model is expressed as an equation below. The probability of a city being a high homicide rate city equals

Prob. (of high homicide rate) = $e^z/1+ e^z$

Where

Z = -10.2592+.0057(assault rate)+.8996(unemployment rate).

While the results of the analysis were reported in this chapter, only a limited discussion as to the meaning and possible implication of the results was provided. Chapter five offers a summary and discussion of the findings of the analysis. Additionally, chapter five discusses methodological limitations, and suggestions and implications for future research on the topic of homicide.

CHAPTER FIVE

DISCUSSION AND SUMMARY

Introduction

This study was a comparative analysis of high and low-homicide-rate-cities. An attempt was made to identify differing characteristics between the two groups of cities. Characteristics researched included demographic data of homicide offenders and victims, certain circumstances of homicide, percent of homicides committed by handgun, unemployment rate, and other violent crime rates.

The selection of variables for analysis was based on previous literature and research. The previous research identified age, race, and gender as contributing to the lifetime risks of being a homicide victim. Gang activity, drug sales, drug use, and alcohol use were also identified as factors that might contribute to the homicide rate. Other violent crimes were analyzed in relation to the homicide rate based on the Subculture of Violence Theory and the Epidemic Theory.

Unemployment rates were included in the analysis based on Crutchfield's (1989) findings that unemployment is related to violent crime.

Fifty-four cities were selected for analysis in this study. Twenty-seven of those cities were low-homicide-rate-cities and twenty-seven were high-homicide-rate-cities. A city was classified as a high-homicide- rate-city if it had a homicide rate at least three times the national homicide rate for the years 1992, 1993, and 1994. Low-homicide-rate-cities were those cities that had a homicide rate less than half the national homicide rate for 1992, 1993, and 1994.

Three types of analysis were employed in this study; comparative analysis of

descriptive statistics (using t-tests to assess the statistical significance of observed differences), a correlational measure (Spearman's Rho), and logistic regression.

Descriptive statistics were compared between the two groups of cities for all variables. Correlations were calculated for selected variables where a meaningful, logical relationship was assumed to exist. The logistic regression was completed using unemployment rate, and assault rate as predictor variables for the probability of a city's being a high homicide rate city.

Descriptive analysis revealed that there are substantial differences between high and low-homicide-rate-cities for most of the variables, and that many of theses differences were statistically significant. It was additionally revealed that there is little variance in correlational relationships within the two groups of cities.

The logistic regression analysis indicated that, given the sample contained in this study, the unemployment rate, and the aggravated assault rate combine as good predictors of the probability of a city being a high homicide rate city.

This chapter provides a summary and discussion of the conclusions, implications for further research, and caveats associated with the study.

Victim and Offender Data

Offender Data

It seems important to revisit the percent of known offenders for the two groups of cities. In high-homicide-rate-cities, just under fifty-five percent of the offenders are known, compared with sixty-seven percent in the low-homicide-rate-cities. Without knowing all of the offender data, it is difficult to draw meaningful conclusions about the

offender data. Additionally, it is difficult to draw completely accurate conclusions about the offender data without knowing the demographic statistics for the total populations of the two groups of cities. However, offenders traditionally mirror their victims in terms of race, gender, and age.

Victim Data

The demographic data on victims indicates that there are several differences between the two groups of cities. The most evident again being race. In high-homicide-rate-cities, seventy-two percent of the victims are black and twenty-six percent are white. In low-homicide-rate-cities, approximately eleven percent are black and just under sixty-four percent are white.

In terms of gender, eighty-three percent of the victims in high-homicide-rate-cities are male and approximately sixteen percent of the victims are female. In the low-homicide-rate-cities, sixty–two percent of the victims are male and thirty-eight percent are female.

While little variation was seen in offender age, when looking at victim age groups, some disparity is seen. In the high-homicide-rate-cities, four percent of the victims were under the age of fourteen; in low-homicide-rate-cities, approximately seven percent of the victims were under the age of fourteen. The other difference was among victims age fifteen to twenty-four years old. In high-homicide-rate-cities, thirty eight percent of the victims fell within this age bracket. In low-homicide-rate-cities, seventeen percent were in the fifteen - to twenty-four year old age group.

General trends in victim and offender data for the two groups of cities indicate that:

- High-homicide-rate-cities have a higher percentage of black offenders and victims
- High-homicide-rate-cities have a higher percentage of victims age fifteen to

twenty-four
- High-homicide-rate-cities have a higher percentage of male victims
- Low-homicide-rate-cities have higher percentage of white offenders and victims
- Low-homicide-rate-cities have higher percentage of victims under the age of fourteen
- Both groups of cities had a higher percentage of male offender and victims than female offender and victims.

In attempting to explain the differences in racial composition of offenders and victims between the two groups of cities, there are several factors to consider. The first is that the black population is young when considered with the general United States population. The age at the first arrest for violent crimes is relatively young. Additionally, blacks tend to be disproportionately concentrated in urban areas, where violent crime exists at rates greater than in rural cities of the same size (Skogan, 1989).

In terms of age, both groups of cities had offender percentages in the mid twenties for the twenty-five to thirty-four year old age group (twenty-five percent in high-homicide-rate-cities and twenty-three percent in low-homicide-rate-cities). In high-homicide-rate-cities, thirty-eight percent of the victims were age fifteen to twenty-four years old. In low-homicide-rate-cities, seventeen percent of the victims were age fifteen to twenty-four. The typical age of arrest varies by crime; for violent crime, the distribution is bi-modal, at ages eighteen and twenty-four. After age twenty-four, sharp declines in violent offending are realized (Skogan, 1989). The victim and offender data for both groups supports this trend. An explanation as to why high-homicide-rate-cities have a higher percentage of victims age fifteen to twenty–four is unknown, except that perhaps the high-homicide-rate-cities have a larger percentage of fifteen to twenty-four year olds in their general populations.

Another trend that is supported by both groups is that of gender. In chapter two, it was stated that males tend to be victimized more frequently than do females. This coupled with the fact that victims and offenders usually share the same demographic characteristics, it is assumable that if all offenders were known, the percentage of male offenders would outweigh the percentage of female offenders. Why there are a greater percentage of female victims in the low-homicide-rate-cities is unknown. However, perhaps the number of non-traditional homicides experienced by the high-homicide-rate-cities shrinks the percentage of the traditional domestic homicides where a female would typically be the victim.

Firearms

As indicated in the literature review, firearms have distinct advantages over other weapons. Firearms are more lethal, quicker, more impersonal, and require much less effort than do other weapons (Cook, 1982). Handguns, as they are easily concealable, have a distinct advantage over rifles and shotguns. Handguns may therefore be the ultimate weapon to use in the commission of a homicide. These factors indicate that a geographic area with many available handguns could potentially have a higher homicide rate. The descriptive data indicate that high-homicide-rate-cities experience a larger percentage of impersonal homicides than do the low homicide rate cities and the United States in general.

Perhaps an explanation of this disparity would be the theoretical constructs of the Subculture of Violence. An additional tenant to be added to the Subculture of Violence would be the "gun culture hypothesis" (Walker, 1989 p. 186). This hypothesis states that

"the prevalence of handguns creates a cultural environment in which guns not only are prized but are seen as an acceptable means of settling problems." (Walker, 1989 p. 186).

The statistic, percent of homicides by handgun, only tells us what percentages of homicides were committed with a handgun. The extent to which handguns are available within a given community is not indicated by this data. If the availability of handguns is constant regardless of region, a plausible explanation would be the "gun culture hypothesis" (Walker, 1989) and the subculture of violence theory (Wolfgang and Ferracuti, 1967).

Unemployment

The relationship between unemployment and crime, specifically property crime, is well established (Loftin, et al. 1989). The relationship between unemployment and violent crime has little support in the literature; and, there is even less evidence on the relationship between unemployment and homicide (Blau and Blau, 1982).

The descriptive analysis of the unemployment rate indicates that high-homicide-rate-cities have a mean unemployment rate of 11.3 compared with an unemployment rate of 4.9 for low-homicide-rate-cities (The average National unemployment rate for the same time period was 6.9). It seems relevant to point out some theoretical links between unemployment and violent crime. The first theoretical viewpoint would be the structural strain theory. This strain is created by the frustration over the inability to achieve respected statuses (Blau and Blau, 1982). Some evidence of this relationship is supported by Crutchfield's (1989) findings in which a relationship between unemployment and violent crime was identified. Crutchfield (1989) summarized this finding stating that

those cities with high unemployment create an environment that is conducive to violent crime. This could be possibly due to high levels of frustration and exclusion from mainstream goals due to unemployment.

Having reviewed the results of the correlational analysis in chapter four, it seems possible that as a city's unemployment increases, so does the need for additional economies or markets. This need may lead to illegal activity such as gangs and drug markets (Moore, 1990). And, perhaps the relationship between unemployment and the homicide rate indicates that unemployment does cause frustration via structural strain (Blau and Blau, 1982) which in turn leads to free floating anger, and subsequently homicidal violence (Prothrow-Stith, 1991).

Another consideration in regard to this relationship is that high rates of unemployment "open the door" for alcohol use, drug use, and drug markets, and consequently gang activity (Moore, 1990). It has also been reported that unemployment is related to alcohol and drug use. Alcohol and drug use, drug sales and gang activity are all related to unemployment and all embrace or cause impulsivity and violence. This drug induced violence, coupled with "free floating anger" (Prothrow-Stith, 1991) or the structural strain may lead to epidemic proportions of violence. These epidemic proportions of violence lead to a subculture of violence as exposure to violence in the amounts experienced in "epidemic" communities causes violent reactions to be normalized, expected and encouraged. An important realization is that the homicide rate is highest among those people that also experience the highest unemployment rate: Young black males (Currie, 1985; Fingerhut and Kleinman, 1990).

While a causal link between homicide and unemployment rates cannot be proven with

the data at hand, a relationship between the variables has been identified. These relationships call for additional research and attention as it is possible that high a high unemployment rate is one of the precipitating factors in a series of events that leads to a high homicide rate.

Other violent crime rates

Based on the ideas presented in the subculture of violence theory, robbery rates and aggravated assault rates were analyzed in this study. Aggravated assault and robbery are both violent crimes. It is logical to assume that if a subculture of violence is operating within a given city or community, all violent crime rate will be exaggerated, not just the homicide rate.

Descriptive statistics revealed that high-homicide-rate-cities experienced a mean robbery rate of 1066/100,000 and a mean aggravated assault rate of 1368/100,000. This is compared to low-homicide-rate-cities that had a mean robbery rate of 93/100,000 and a mean aggravated assault rate of 287/100,000.

The high-homicide-rate-cities had a mean robbery rate that was 11.5 times greater than the robbery rate for low-homicide-rate-cities. The aggravated assault rate in high-homicide-rate-cities is 4.7 times greater than the aggravated assault rate in the low-homicide-rate-cities. Finally, the homicide rate in the high-homicide-rate-cities is 25.7 times greater than the mean homicide rate for the cities contained in the low-homicide-rate-group. This data indicates that there is perhaps a subculture of violence operating in the high-homicide-rate-cities or, that violence has reached an epidemic proportion in certain cities.

It has been indicated many times in this study that there could be a subculture of violence operating in the high-homicide-rate-cities, or violence has reached epidemic proportions in those high-homicide-rate-cities. The purpose of the study was not to prove or disprove the subculture of violence theory or the tenants of the epidemic theory; rather these two theories guided the selection of some of the variables analyzed in the study. Based on these two theories, the robbery rates and aggravated assault rates were analyzed. The descriptive analysis indicated that there are vast differences for the rates of these crimes when compared between the two groups of cities. Based on the epidemic theory and the subculture of violence theory, all violent crime rates would increase together. To explore this issue, correlational analysis was conducted on the homicide rates in relation to the aggravated assault rate and the robbery rate.

Analysis showed that among the cities within each group there were no statistically significant relationships between the homicide rate and the assault rate of the robbery rate. However, the descriptive statistics did indicate that the high-homicide-rate-cities had a higher incidence of homicide, aggravated assault, and robbery.

Logistic Regression Analysis

Logistic regression analysis was used to determine the relationship between the homicide rate classification definitions used in this study and the aggravated assault rate, and the unemployment rate. The assault rate was included due to its similarity to homicide, in that the intent of the crimes is to inflict injury. The unemployment rate was added to the logistic regression model based on the previously established relationship between crime and unemployment. Additionally, the unemployment rate was included

due to the theoretical idea that unemployment causes structural stain and frustration that may lead to violence (Blau and Blau, 1982).

From the tables 4.10 and 4.11 (see chapter four), it is evident that both of the variables make statistically significant contributions to the logistic regression model. This model predicts the probability of a city being high-homicide-rate-city based on the classification definitions used in this study.

The results of the analysis indicated that the unemployment rate has the largest impact on the prediction of the probability of a city being a high homicide rate city. The aggravated assault rate proved to be significant in determining the probability of a city being a high homicide rate city, but did not contribute as heavily to the model as did unemployment. Both the unemployment rate and the assault rate increased the probability of a city's being a high homicide rate city.

While the variables exhibited predictive ability, it is not possible to conclude that any of the variables causes the high homicide rate. Rather, the logistic regression illustrates that there is a relationship between these variables and the probability of a city being a high homicide rate city.

Methodological Limitations

As with any study, this study could be criticized in many ways. However, the most pressing concerns in this study are those related to secondary analysis of data. Three sets of data were used in this analysis: data from the Uniform Crime Reports, Supplementary Homicide Reports (SHR), and the Bureau of Labor Statistics (BLS). The data provided

from these three sources will be discussed in the following paragraphs.

The Uniform Crime Reports (UCR) contain data related to eight index crimes. These crimes are divided into two categories: violent and property offenses. Additional data included in the UCR is data on law enforcement, population of cities and demographic data on victims and offenders.

The UCR was used in this study to determine homicide rates, aggravated assault rates, and robbery rates. One major concern of secondary analysis is the validity of the data at hand. One remedy to this concern is to compare the data with other sources (Jacobs, 1984). Historical analysis has shown that UCR homicide data follows the same trends as that data collected on homicides by the U.S. Health Department. While the Health Departments homicide rates are higher than those of the UCR, a large part of this variation can be accounted for due to differences in definition of homicide and what acts are to be considered homicide (Public Health Reports, 1990).

The National Crime Survey, another national measure of crime, and the UCR comparisons for violent crime, while they do differ, differ much less than data for property crime (Biderman and Lynch, 1991). Additionally, it should be noted that the more severe the crime, the more likely it is to be reported to the police and therefore included in the UCR (Walker, 1989; Wilson, 1985; and Biderman and Lynch, 1991). Aggravated assault, robbery, and homicide are all serious crimes that are heavily reported to the police.

Non-reporting of data (Biderman and Lynch, 1991) or clerical errors (Jacobs, 1984) are also of concern when using published data. Non-reporting occurs where a jurisdiction does not report any data or fails to report data for certain crimes. The UCR attempts to

adjust for this error by imputing missing data. This process may introduce error itself and is therefore questionable (Biderman and Lynch, 1991). None of the data used in this study was UCR imputed data. Clerical errors can be remedied by looking for deviant cases using scatter plots and also in checking the training given by collecting agencies (Jacobs, 1984). The use of scatter plots did not reveal any unusually deviant cases. Over the years, training of collection clerks at all levels and redesigns of the UCR have increased data accuracy (Jacobs, 1984; Biderman and Lynch, 1991).

The second source of data used was the Supplementary Homicide Report (SHR) data. The concerns over the UCR data are inherent in the SHR data as well, however, based on the mutual exclusiveness of the SHR, no comparison with other data sources of the same nature can be conducted. One major source of error in the SHR is incompleteness. This is remedied by reporting agencies coding missing data as "unknown." Another concern is variation in recording procedure and policy across time and between different agencies (Maxfield, 1989). No changes were made to the questionnaire used to obtain SHR data during the years covered in this study.

Finally, the Bureau of Labor Statistics (BLS) data on the unemployment rates was used in this study. The unemployment rates used for the years 1992, 1993, and 1994 are all computed using the same questionnaire and the same benchmark (BLS, 1996). One concern in using the unemployment rates is that they do not differentiate between age and racial unemployment rates. This is another area that may need additional investigation in another study. Other criticisms of the unemployment rate include those related to the unemployment rates either over or under-reporting the actual unemployment rate.

While some of the concerns associated with the use of published data can be expelled,

others can not. After examining the data and considering the sources, it has been accepted as suitable data for a study of this nature. Increased training and updates in data collection have increased the reliability and accuracy of the UCR, SHR, and unemployment data (Jacobs, 1984; and Biderman and Lynch, 1991).

Implications for Future Research

Many findings in this study were consistent with the findings of earlier studies. Descriptive statistics on age, race, and gender revealed no unusual findings. However, there may be a need to investigate the demographic characteristics of the entire population from which the offender and victims came. Other suggestions for future research would include analysis of offender and victim relationships, an analysis of weapons used rather than limiting the analysis to handguns exclusively, and an in-depth study as to the attitudes and socialization of offenders.

Other suggestions deal with the analysis of the unemployment rate. An analysis of unemployment rates by race, gender, and age in relation to homicide would be beneficial. An additional suggested analysis would be to conduct longitudinal analysis of the homicide rate and unemployment rates. It has been noted by previous researchers that perhaps the effect of unemployment on the violent crime rate is distributed over a number of years (Loftin, et al, 1989). A final suggestion in terms of the unemployment rate and the homicide rate would be to focus on the year to year changes in unemployment rate and how that relates to homicides. This suggestion is based on research by South and Cohen (1985) that indicated that the homicide rate might be related to yearly changes in unemployment.

Policy Implications

This study was conducted in an effort to identify differences between high and low-homicide-rate-cities. While some differences were identified and can certainly be considered important, the most important outcome of this study is the illustrated value of the disaggregation of homicide data. By disaggregating the homicide data, better policies can be made in allocating a jurisdiction's resources. Homicides have different causes and consequently different preventive measures, none of which could be known without disaggregating the homicide data.

APPENDIX A

This appendix contains a listing of cities selected for the study.

HIGH-HOMICIDE-RATE-CITIES	LOW-HOMICIDE-RATE-CITIES
Atlanta, Georgia	Bethlehem, Pennsylvania
Baltimore, Maryland	Boise, Idaho
Birmingham, Alabama	Cambridge, Massachusetts
Bridgeport, Connecticut	Clearwater, Florida
Camden, New Jersey	Coral Springs, Florida
Compton, California	Eugene, Oregon
Dallas, Texas	Fargo, North Dakota
Detroit, Michigan	Fremont, California
Flint, Michigan	Green Bay, Wisconsin
Fort Worth, Texas	Honolulu, Hawaii
Galveston, Texas	Huntington Beach, California
Gary, Indiana	Irvine, California
Inglewood, California	Lincoln, Nebraska
Jackson, Mississippi	Madison, Wisconsin
Kansas City, Missouri	Naperville, Illinois
Little Rock, Arkansas	Nashua, New Hampshire
Lynwood, California	Plano, Texas
Miami, Florida	Provo, Utah
New Orleans, Louisiana	Scottsdale, Arizona
Newark, New Jersey	Simi Valley, California
Oakland, California	Sioux Falls, South Dakota
Richmond, California	Somerville, Massachusetts
Richmond, Virginia	Sterling Heights, Michigan
Saint Louis, Missouri	Thousand Oaks, California
San Bernardino, California	Warwick, Rhode Island
Washington D.C.	Westminster, Colorado
Youngstown, Ohio	Woodbridge Township, New Jersey

APPENDIX B

This appendix contains the histogram and classification table for the logistic regression analysis. For further discussion, refer to the Logistic Regression sections of Chapters Four and Five.

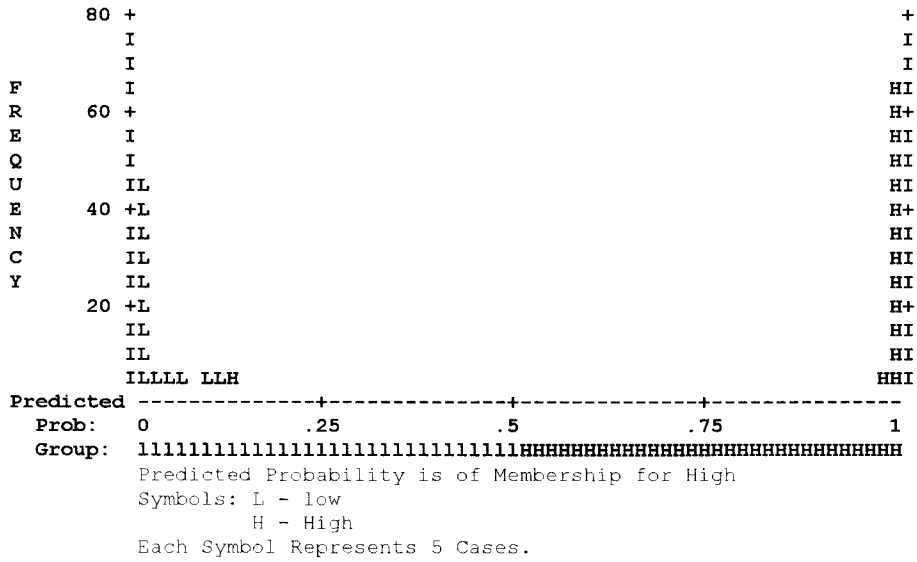
Classification Table for Homicide Rate Classification

Observed		Predicted Low (L)	Predicted High (H)	Percent Correct
Low	L	77	4	95.06%
High	H	5	76	93.83%
			Overall	94.44%

---------- Variables in the Equation ----------

Variable	B	S.E.	Wald	df	Sig.	R	Exp(B)
Assault Rate	.0057	.0015	14.8689	1	.0001	.2394	1.0057
Unemploy Rate	.8996	.2998	9.0047	1	.0027	.1766	2.4585
Constant	-10.2592	2.3090	19.7418	1	.0000		

Observed Groups and Predicted Probabilities



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