HIERARCHICAL CLUSTER ANALYSES OF JUVENILE

DELINQUENTS AND JUVENILE RECIDIVISTS

IN HARRIS COUNTY

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TABLE OF CONTENTS

Page

LIST OF TABLES

LIST OF FIGURES

Figure	Page

CHAPTER ONE

BACKGROUND INFORMATION

The juvenile justice system can be defined as a network of agencies, institutions, organizations, and personnel with the objective of processing juvenile offenders (Champion, 1998). This system includes law enforcement agencies (e.g., corrections, probation, and parole), prosecutors, court officials, and public/private community service organizations which provide diversion services for the juvenile (Champion, 1998). However, this system, depending on the state, may be more or less complex (Champions, 1998).

In 32 states, legislation was created with the goal of establishing juvenile probation from 1900 through 1910 (Howell, 1997, p. 13). Juvenile courts were established in 22 states by the year 1910, with all except two states having established a court by 1925 (Howell, 1997, p. 13). The reasoning for the development of the juvenile court system was to provide a social response to the threat of juvenile delinquency; in other words, the response was due to a humanitarian concern (Howell, 1997). Furthermore, the development of the juvenile court system answered the problem of overcrowding in the adult criminal system (Howell, 1997). This new juvenile court system established a new tradition in which juveniles were no longer subject to the adult criminal court (Howell, 1997). This change of tradition occurred because of the reasoning children and adolescents should not be held to the same accountability level as adults because of their age and immaturity (Howell, 1997). Elrod & Ryder (1999) explained this reasoning by stating that children may be too young to understand what is right from wrong; therefore, the child should not be expected to be held responsible for a delinquent behavior.

There is no juvenile court at the federal level; therefore, all juvenile court jurisdictions come from the states (Champion, 1998). Although there are instances of federal cases in which juveniles were involved, once processed through the system, the juvenile is then sent to a state or local facility if sentenced to incarceration (Champion, 1998). At the federal level, the Juvenile Justice and Delinquency Prevention Act was passed in 1974 in which juveniles were considered to be individuals who had not reached their 18th birthday (Champion, 1998). This Act was passed by the United States Congress due to the increase in juvenile delinquency and crime (Champion, 1998). The Act also allowed for the establishment of the Office of Juvenile Justice and Delinquency Prevention (Champion, 1998). In 1977, the Act was amended in which juveniles, including both juvenile and status offenders, were to be separated by both sight and sound from adults while in detention centers and correctional facilities (Champion, 1998; Clement, 2002). Another amendment occurred in 1980 in which states were prohibited from detaining juvenile delinquents in jails (Champion, 1998). Furthermore, disproportionate representation of juvenile minorities in confinement was to be examined by states (Champion, 1998). In 1992, Congress passed an amendment that any state who received grant money from the federal government would have 25% of its funds withheld if the state was not in compliance with past mandates (e.g., disproportionately minority confinement) (Champion, 1998).

Delinquency or juvenile delinquents are defined as individuals, not yet adults, who have committed certain criminal acts or behaviors prohibited by either the family or juvenile code, and thus are processed through the juvenile justice system (Elrod &

Ryder, 1999). Champion (1998) furthers this definition by inserting that the

delinquent is in need of rehabilitation, treatment, or supervision. Each state has a

different set of juvenile laws (Champion, 1998; Clement, 2002; Elrod & Ryder,

1999). This allows the age of the juvenile to be subject to the state in question as well

as the behaviors (Champion, 1998; Clement, 2002; Elrod & Ryder, 1999). Champion

(1998) put forth that there are different categories of delinquency. Elrod and Ryder

(1999) stated that behaviors are categorized into two groups: 1) behaviors that are

similar to the criminal offenses committed by adults; and 2) behaviors, called status

offenses, that can only be committed by juveniles (e.g., school truancy, runaway).

For most states, the upper age limit to be considered part of the juvenile court

jurisdiction is 17 years of age (Champion, 1998; Elrod & Ryder, 1999). Once an

individual passes this age, the person is no longer considered a minor and must be

tried in the adult court system (Champion, 1998; Elrod & Ryder, 1999). The upper

age limit for Georgia, Illinois, Louisiana, Massachusetts, Michigan, Missouri, South

Carolina, and Texas is 16 years of age (Champion, 1998; Elrod & Ryder, 1999). A

few other states hold 16 as the age for being subject to the adult court jurisdiction

(Champion, 1998; Elrod & Ryder, 1999). Furthermore, some states also have a lower

age limit in which the individual can be tried in the juvenile justice system

(Champion, 1998; Elrod & Ryder, 1999). If a state has a lower age limit (e.g., 10

years of age in Texas), then any individuals younger than that age cannot be tried for

the behavior (Champion, 1998; Elrod & Ryder, 1999).

Police officers give 90 percent of referrals which bring juveniles into the

juvenile justice system; however, referrals can be given by anyone in the community

(e.g., parent, school principal, teacher, and neighbor) (Champion, 1998). Referrals are defined as a notification to a juvenile court about a certain juvenile (Champion, 1998). After being arrested (e.g., taken into custody), the next step for the juvenile in the juvenile justice system is the intake screening process (Champion, 1998).

The intake process was developed to ascertain the best way to handle juvenile cases (Champion, 1998; Elrod & Ryder, 1999). Typically, the intake screening process is performed by juvenile probation officers who are authorized by the juvenile court or another agency (Champion, 1998; Clement, 2002; Elrod & Ryder, 1999). The primary purpose of the screening is determining whether the elements of the offense the juvenile is charged with committing are present (Champion, 1998; Clement, 2002; Elrod & Ryder, 1999). Typically, the intake process is informal, which consists of the intake officer questioning the juvenile (Champion, 1998; Clement, 2002). The intake officer screens the referral or complaint in order to decide how the case should be processed (Champion, 1998; Clement, 2002; Elrod & Ryder, 1999). The following actions may result from the intake process: 1) the case is dismissed, 2) give the juvenile into the custody of his or her parents, 3) give the juvenile into the custody of his or her parents with a provision to receive counseling or another service, 4) divert the juvenile through a community alternative program, 5) refer the juvenile to the attorney for the adjudication process, and 6) the juvenile is waived to the adult criminal court (Champion, 1998; Clement, 2002). Some of the factors considered during this process include the type and seriousness of the offense, the juvenile's age, the juvenile's prior criminal record, the responses of the parent or guardian, and the behavior of the juvenile at school or at home (Clement, 2002; Elrod

& Ryder, 1999). In less serious criminal charges, the intake officer has more discretion as to how to handle the juvenile's case (e.g., dismissal or giving a warning) (Elrod & Ryder, 1999). Although some cases can be diverted from the juvenile justice process, other cases due to the seriousness of the offense, are formally processed by mandated state or local law; therefore, the case is petitioned to the juvenile court (Clement, 2002; Elrod & Ryder, 1999). A petition is defined as a formal statement of charges which is given at the trial stage of the juvenile justice process (Clement, 2002; Elrod & Ryder, 1999).

Legal factors are considered to be factual information concerning the offense(s) committed (e.g., seriousness of crime, prior juvenile record, and amount of evidence found), whereas extralegal factors are typically considered to include academic grades, gender, race or ethnicity, socioeconomic status, and age of the juvenile (Champion, 1998; Clement, 2002). The seriousness of the offense concerns whether bodily harm occurred against another person from the delinquent's crime (Champion, 1998). The more serious offenses an adolescent can commit include forcible rape, aggravated assault, robbery, and homicide (Champion, 1998; Clement, 2002). Another legal factor includes prior records of the juvenile. Champion (1998) contends the prior record of a juvenile shows that the prior punishment for a past crime or crimes was ineffective in preventing the juvenile from becoming a recidivist. A recidivist is defined as an individual who repeatedly commits crimes although the court system has attempted to rehabilitate that person (Elrod & Ryder, 1999). A juvenile's prior record also helps in determining a harsher punishment for the individual at the time of the disposition (Champion, 1998; Clement, 2002). Age is

considered both a legal and an extralegal factor (Champion, 1998). This is due to the fact that age determines whether the individual is waived to the criminal court (adult court system) (Champion, 1998). Furthermore, age is considered an extralegal factor because older juveniles have a higher likelihood of having a prior record and are less willing to undertake intervention (Champion, 1998). Gender, an extralegal factor, is important because approximately 10 percent of the juvenile justice system is female (Champion, 1998). Also, race and ethnicity are considered predictor variables because they are prominent in arrest and detention decisions (Champion, 1998).

Champion (1998) stated that truants are considered those individuals who do not attend school either without the school's or a parent's permission. Unfortunately, truants are more likely to become chronic offenders (e.g., a recidivist) as well as commit more serious crimes (Champion, 1998; Shaw & McKay, 1942). A long-range goal of intake officers is to lower the recidivism rate of the juveniles brought into the system (Champion, 1998).

Risk assessment instruments are used as a screening tool in order to differentiate between offenders and their likelihood to commit certain types of behaviors or crimes (Champion, 1998). Risk assessments are defined as a part of a classification system which determines the likelihood of a person will become a recidivist (Champion, 1998). Risk assessments predict the likelihood of serious or violent behavior, recidivism, and violations of probation or parole (Champion, 1998).

CHAPTER TWO

REVIEW OF LITERATURE

Introduction

The juvenile justice system, once developed in the early 1900s, changed the government's approach to processing juveniles by bringing them into a system separate from the adult criminal system (Champion, 1998; Niarhos & Routh, 1992). One of the juvenile justice system's purposes was to intervene with the juvenile in order to prevent future recidivism (Niarhos & Routh, 1992). Over the years, in order to develop intervention strategies researchers have proposed many different risk and protective factors (e.g., unemployment, first offense, and education) which lead a juvenile to commit an offense; furthermore, some factors have been found to contribute to a juvenile's recidivism (e.g., being truant from school, prior record) (Farrington, 1998; Fergusson et al., 1997; Wright and Cullen, 2001). Demographic characteristics (e.g., age, race/ethnicity, and gender) also have been found to be associated with juvenile delinquency and recidivism (Armstrong & Rodriguez, 2005; Kelly, 2002). One of the main concerns for the United States government is to fully understand disproportionate minority confinement (DMC) due to the high number of juvenile minorities in the juvenile justice system; therefore, DMC is discussed in detail (Bilchik, 1999; Mooradian, 2003). The following gives an in-depth review of the literature covering juvenile delinquents and the factors contributing to delinquency and recidivism.

Juvenile Justice System

The primary purpose of the juvenile justice system, as compared with the criminal justice system, is to rehabilitate juveniles (Niarhos & Routh, 1992). The

juvenile justice system was developed in the early 1900s when officials recognized

rehabilitation may in fact prevent later deviance by juveniles (Niarhos & Routh,

1992). Each case was treated individually in which psychological assessments were

completed to determine a juvenile's educational, psychological, and emotional needs

(Niarhos & Routh, 1992). Recently, researchers have put forth that the current

juvenile justice system has turned away from the original philosophy and has become

more similar to the criminal justice system (Armstrong & Rodriguez, 2005; Mendel,

2000; Welsh, 2001).

The juvenile who is arrested, convicted, and detained depends on his/her

characteristics as well as the jurisdiction in which the offense took place (Singer,

1996). Most studies use the categories developed by the Uniform Crime Report

recording handbook which list the crimes as index offenses; furthermore, researchers

use the most serious offense if the person has committed more than one offense

(Singer, 1996).

Juvenile justice officials, throughout the justice process, will take into

consideration all the offenses the juvenile has committed before making a decision on

the individual case (Singer, 1996; Thomas & Sieverdes, 1975). Studies have found

jurisdictional differences in making a decision based on how often and the level of the

delinquent act (Armstrong & Rodriguez, 2005; Niarhos & Routh, 1992; Singer,

1996). Therefore, as the jurisdiction becomes less likely to convict a juvenile, the

more serious the offense must be (Singer, 1996). On the other hand, jurisdictions

with high conviction rates are more likely to have juveniles commit offenses which

are considered less serious (Singer, 1996). Similar to this finding, urban jurisdictions

were found more likely to have severe outcomes to result while rural jurisdictions are less likely across different levels of the juvenile justice system (Bilchik, 1999).

Welsh (2001) stated adolescent violence, contradictory to the common perception, is not widespread. Welsh (2001) continued by explaining violence is committed by a small minority of juveniles and is more likely to occur in certain circumstances and areas of the United States. Although misdemeanors are the most often committed offense, delinquency has been found to be more serious (e.g., felonies) in urban and suburban areas in comparison to rural areas (Kelly, 2002). Interestingly, age of the juvenile did not differentiate across jurisdictions (Kelly, 2002). However, black juveniles are more likely to be found in urban areas than suburban or rural areas (Kelly, 2002). This difference in the number of black juveniles in certain areas is probably due to black juveniles being more prevalent in urban areas than others (Kelly, 2002). Mendel (2000) stated the U.S. now has the ability to reduce juvenile crime without costing more than detaining juveniles in detention facilities. However, the changes needed to reduce juvenile crime are not occurring at the pace necessary (Mendel, 2000).

Criminogenic Factors

In order to develop prevention and intervention programs for lowering the risk of delinquency or recidivism, researchers must first identify the factors contributing to offense initiation (Farrington & Hawkins, 1991). Also, understanding which factors contribute to recidivism compared with one-time offenders will benefit these programs as well (Farrington & Hawkins, 1991). Due to the original rehabilitation philosophy, studies have traditionally focused on legal factors (e.g., offense

classification and frequency of prior arrests) as well as demographic factors (e.g., age, race, and socioeconomic status (SES)) in which juvenile justice officials use to make decisions (Niarhos & Routh, 1992). To a far lesser extent and more recently, studies have researched criminogenic factors not found in the arrest information (e.g., family stability) (Niarhos & Routh, 1992). The results of these studies show contradictory findings (Niarhos & Routh, 1992). Delinquency does not result from only a single factor but rather from a combination of factors (Mendel, 2000). Over the years, researchers have been interested in finding which risk factors increase the likelihood of future delinquency (Niarhos & Routh, 1992).

Heilbrun, Brock, Waite, et al. (2000) and Mendel (2000) put forth several domain factors which have been classified for the identification of high-risk offenders, including school, family, peers, substance abuse, and past offense history. Niarhos and Routh (1992) claimed several factors have been found to correlate with delinquency more than others, including legal, extralegal, psychological, and social factors. Loeber and Dishion (1983) found the following factors are correlated with delinquency, from greatest to least importance: level of offense committed, age at the time of first offense, age at the time of the most recent offense, number of other delinquents involved in the offense, and family stability. Niarhos and Routh (1992) stated the age a juvenile first commits a crime is the best predictor of future delinquency, with psychosocial factors being least likely to predict delinquency. Singer (1996) asserted juveniles who have prior arrests as well as have been charged with a more serious offense are more likely to be sent to the adult criminal court. Niarhos and Routh (1992) found the variable severity of offense was weakly related

to the disposition decision. Farrington and Hawkins (1991) and Loeber and Dishion (1983) discussed a person was more likely to re-offend depending on the number of offenses the individual had committed previously. However, researchers later asserted the beginning of juvenile delinquency is related to later offending, including seriousness, rate, and range of the offenses (Farrington & Hawkins, 1991). Studies have found factors such as academic achievement, conduct problems, and parents' disciplinary practices, when combined, result in a decent prediction of the occurrence of juvenile delinquency (as cited in Niarhos & Routh, 1992). Poverty, as a criminogenic factor, has also been found to lead to an overrepresentation of juveniles from the lower SES in the justice system (The Sentencing Project, 2000).

Glaser (1987) stated researchers have studied risk factors potentially contributing to offending as well as which type of offenses would be committed (e.g., violent versus property crimes). The most common method in identifying violent offenders is through the use of police records, court records, or self-reports (Farrington, 1998). Violent juvenile offenders typically do not persist with a certain type of offense but rather are versatile in the offenses they commit (Farrington, 1998). Violent offenses include homicide, rape, robbery, and assault (Farrington, 1998). Mendel (2000) found violent offending to occur between 12 and 20 years of age. These juvenile offenders are also more likely to be truants, school dropouts, and substance abusers (Farrington, 1998; Rutter & Giller, 1983). Furthermore, the children who have been categorized by teachers as having disciplinary problems (e.g., conduct disorder) were found more likely to commit a violent offense at a later time (Farrington, 1998; Rutter & Giller, 1983). Violent juvenile offenders have a higher

likelihood of being chronic offenders as well (Farrington, 1998). Heilbrun, et al. (2000) discussed that previous research shows more serious offenders are not the most likely to re-offend; rather, property offenders had a greater risk for recidivating. Violent juvenile recidivists, in terms of characteristics, were not found to be significantly different from non-violent recidivists (Farrington, 1998). Crimes of a violent nature are more likely to be committed after property crimes have been committed (Farrington, 1998). Therefore, the question is begged as to whether a juvenile who commits violent crimes and recidivates deviates from a juvenile who does not commit violent crimes and recidivates.

Previous research has studied whether juvenile delinquents are different from others strictly by the number of delinquent acts they commit or by their characteristics (e.g., emotions, behavior, and relationship) (Rutter & Giller, 1983). Rutter and Giller (1983) found both instances (e.g., the number of delinquent acts committed and the juveniles' characteristics) to occur. Moffitt and Caspi (2001) also outlined two pathways to delinquency: long-term criminal behavior and strictly criminal behavior during adolescence. Some delinquents deviate from the general adolescent population strictly by the number of offenses committed; however, most are distinguishable by their individual characteristics (Rutter & Giller, 1983). Schumacher and Kurz (2000, p. 4) found most delinquents (70 percent) are one-time offenders; however, eight percent of the study participants chronically recidivated. These chronic offenders represented approximately 55 percent of the recidivism cases (Schumacher & Kurz, 2000). This sample of eight percent of juveniles was also found to have committed at least one serious or violent crime (Schumacher & Kurz,

2000). Schumacher and Kurz (2000) found that chronic offenders differentiate significantly from the general juvenile population. These recidivist juveniles display at least three of the following factors: 1) disrupted families, 2) school failure, 3) drug and alcohol abuse, and 4) pre-delinquent behaviors (Schumacher & Kurz, 2000). Schumacher and Kurz (2000) proposed a theory explaining why the age of first-time offenders was important in understanding recidivism. Most delinquents beginning to offend during late adolescence were less likely to have the factors listed previously. The factors these late adolescent juvenile delinquents did have were considered less severe in nature (Schumacher & Kurz, 2000).

Juvenile delinquents typically are more likely to not conform to the social norm and be considered unpopular (Rutter & Giller, 1983). Additionally, juvenile delinquents have been found in studies to abuse alcohol, fight when drunk, smoke, be active sexually, and gamble (Rutter & Giller, 1983). Rutter and Giller (1983) also claimed juveniles had a higher likelihood of having relationship problems with their parents and difficulty keeping a job. Loeber and Dishion (1983) found the three best predictors for delinquency: high school enrollment, grade point average, and the level of grade retardation by the age of 15 (e.g., retained two school years). Furthermore, Rutter and Giller (1983) stated juvenile re-offenders are more likely to show these three characteristics than the common juvenile delinquent. Bernburg, Krohn, and Rivera (2006) discussed the idea of criminal embeddedness which concerns offenders having an enduring deviant peer network; however, this network may also include relations who commit criminal acts as well as other people. These relationships set the stage for the juvenile becoming receptive towards certain values and behaviors

(Bernburg, et al., 2006). Bernburg et al. (2006) found juvenile delinquents who had experienced juvenile justice intervention were significantly more likely to become involved in serious delinquent acts. Bernburg et al. (2006) found being a gang member is not a significant factor in determining if juveniles engage in serious delinquency. Research has found first time offenders usually display the same characteristics as non-delinquents (Rutter & Giller, 1983).

Family

Rutter and Giller (1983) and Wright and Cullen (2001) both found a relatively strong relationship between parental supervision and delinquency. Several studies have used parental discipline and parental supervision as variables to measure their relationships with juvenile delinquency (Farrington & Hawkins, 1991; Mendel, 2000; Wright & Cullen, 2001). Kelly (2002, p. 28) found 40 percent of the juveniles referred had problems with parental supervision. However, measuring parental supervision is difficult. There is disagreement about what parental supervision entails, especially since one type of supervision works better for one child depending on his/her personality characteristics (Rutter & Giller, 1983). Parental supervision, even with this difficulty, allows for the regulation of peer groups the child associates with (Rutter & Giller, 1983). Parental supervision also reduced the likelihood of vandalism to occur as well as gang involvement (Rutter & Giller, 1983).

Mendel (2000) and Juby and Farrington (2001) discussed when factors are analyzed, the most commonly significant risk factor is family dysfunction. Children who experience a family life in which they live with only one parent were more likely to be involved in delinquency (Juby & Farrington, 2001; Thornberry, Smith, Rivera,

Huizinga, & Stouthamer-Loeber, 1999). In a study completed by Thornberry et al.

(1999) findings showed as family transitions (e.g., divorce and moving to a new

place) increased in an adolescent's life, the more likely he would commit a delinquent

act. This increased likelihood to become involved in delinquency was especially the

case for adolescents living in poverty and minorities (Thornberry et al., 1999).

Unemployment

      Full understanding of juveniles and how their unemployment affects

delinquency is not yet available (Britt, 1994; Fergusson, Lynskey, & Horwood, 1997;

Rutter & Giller, 1983). Unemployment has been found to be linked to juvenile

delinquents, with the longer the unemployment period, the more likely the juvenile is

to commit an offense (Fergusson et al., 1997; Rutter & Giller, 1983). There is

evidence that employment is a correlate of delinquency since delinquency often

precedes the unemployment period (Rutter & Giller, 1983). One study discussed by

Rutter and Giller (1983) found male school dropouts, who were unemployed, had

higher delinquency rates while females, who were in school and employed, had

higher delinquency rates.

Mitigating factors

      Although there may be characteristic differences between juveniles, there is

the possibility in which mitigation factors, or lack thereof, may also benefit

interventions or preventions (Farrington, 1998). Mitigating, or protective, factors are

defined as variables which help minimize the effect of risk factors (Farrington, 1998).

Farrington (1998) asserted most studies, when researching on protective factors, have

focused on the children who are resilient to delinquency. Little research has been

found to have studied the juvenile delinquents, and their corresponding protective

factors, who have not resorted to recidivating once already in the juvenile justice

system (Farrington, 1998; Mendel, 2000). Protective factors are tied to a risk factor

as well (e.g., attending school decreased delinquent acts versus not attending school

increased delinquent acts; Farrington, 1998). Two studies found juveniles who had

not repeatedly re-offended have good academic records, good parental supervision,

and associated with a non-deviant peer groups (Keith & McCray, 2002; Myner,

Santman, Cappelletty, & Perlmutter, 1998).

School

Despite the research completed on dropouts and their corresponding

relationship to delinquency, the relationship varies depending upon the method of the

study (Jarjoura, 1993). Jarjoura (1993) proposed some dropouts may have a higher

risk of involvement in delinquency while others, by dropping out, have reduced their

risk. One reason the adolescents who have reduced their risk of delinquency by

dropping out of school is potentially due to the lack of opportunities as well as a

reduction in deviant peer interactions (Gottfredson, 2001; Jarjoura, 1993). Several

factors have been identified as relating to dropping out, including prior misconduct,

school performance and experience, and employment (Jarjoura, 1993). Jarjoura

(1993) found dropouts listing reasons including marriage, pregnancy, and disliked

school to have a higher risk of becoming involved in violent delinquency than high

school graduates. Other dropouts listing reasons including failing academically,

being expelled, and having financial problems were similar to high school graduates

in their risk for delinquent involvement (Jarjoura, 1993).

Truancy has been classified as a risk factor for juvenile delinquency (Cavan, 1969; Fritsch, Caeti, & Taylor, 2003; Garry, 1996; Rutter & Giller, 1983; Shaw & McKay, 1942). Shaw and McKay (1942) found a strong positive correlation between truancy and delinquency when collecting data between 1927 and 1933. Shaw and McKay (1942, p. 106) found of the 3653 boys brought into the Juvenile Court of Cook County for truancy, approximately 43 percent were delinquents for other crimes. Truancy and chronic absenteeism have been found as significant predictors for delinquency (Baker, Sigmon, & Nugent, 2001; Garry, 1996). Truancy is defined as the act of being illegally absent from the school or without the parents' permission (Baker et al., 2001; Cavan, 1969). Truancy was found to peak at the age of 14 and 16 (Cavan, 1969). These two ages are also the height for general juvenile delinquency (Cavan, 1969; Singer, 1996; Rutter & Giller, 1983). The majority of truancy occurrences (60%) are by males and many truants are also involved in other delinquent acts (Cavan, 1969). One study (Roberts, 1956) found as many as 70 percent of the truant sample were behind at least half a year in classes (as cited in Cavan, 1969, p. 293). Truant students have a higher likelihood of becoming involved in delinquent behavior (e.g., drugs, alcohol, and violence) (Fritsch, Caeti, & Taylor, 2003; Garry, 1996). Garry (1996) contends that about 50 percent of female juvenile delinquents test positive for drugs while males test at about 53%.

Recidivism

Understanding the nature of re-offenders and how they develop is important when creating and establishing crime control policies (Piquero, Blumstein, Brame, Haapanen, Mulvey, & Nagin, 2001). There are two different delinquent crime

patterns occurring in the U.S. (Mendel, 2000). One pattern is of juveniles, otherwise normal, who recidivate only for a short time while the other involves chronic offenders (Mendel, 2000). Criminologists have attempted to draw conclusions on the nature of recidivating offenders by studying the effects of changes over time, length of career, offense diversity, and differences between offenders (Piquero, et al., 2001). The onset of violent re-offending typically results after the occurrence of deviant behaviors including defiant, disruptive, and aggressive behavior prior to adolescence (Mendel, 2000). From childhood to adulthood, chronic and violent juveniles follow a similar developmental pathway (Mendel, 2000).

Studies have found one of the most consistent findings is the fact majority of offenses are the result of a few recidivists (Cottle, Lee, & Heilbrun, 2001; Farrington & Hawkins, 1991; Loeber & Dishion, 1983; Mendel, 2000; Piquero et al., 2001). Many factors have been linked to juvenile recidivism; however, there are inconsistencies across studies (Cottle et al., 2001). When Niarhos and Routh (1992) and Heilbrun et al. (2000) studied the variable recidivism, they found the factor prior arrests to best predict future re-offending. Furthermore, the researchers found educational achievement and history of drug use were also predictors of recidivism (Heilbrun et al., 2000; Niarhos & Routh, 1992). However, Myner et al. (1998) found alcohol abuse to be a significant predictor of recidivism while drug abuse was not. Several studies found that several variables were consistently associated with juvenile recidivism including: age at first referral, number of out-of-home placements/institutional commitments, academic achievement, school behavior and attendance, family stability, parental control, and peer relationships (Heilbrun et al.,

2000; Mendel, 2000; Myner et al., 1998). Although other studies have found age at first arrest to be a significant predictor of recidivism, Niarhos and Routh (1992) did not find this variable to be significant. Niarhos and Routh (1992) suggest the reason for this discrepancy is due to the length of the follow-up period (3 months versus 1 year) after the original arrest. Conviction during early adolescence has a positive effect on future recidivism (Li, 1999). In another study, Cottle et al. (2001) found juveniles who had contact with the police during early adolescence, been committed during early adolescence, been arrested during early adolescence, and committed more violent crimes were more likely to recidivate.

Juveniles who recidivate typically have lower job status than non-offenders (Rutter & Giller, 1983). Juveniles, depending on their race, have been found to differ considerably in their recidivism records (Schafer, 1998). In one study, Black juveniles who had re-offended five or more times were referred for assault, weapons violations, as well as property offenses while White juveniles did not have any consistency in offenses within their racial group (Schafer, 1998). In another study, more White females had committed lesser offenses and were more likely to be a first-time offender than other juveniles (Schwalbe, Fraser, Day, & Cooley, 2006). Black male juveniles were considered to be a higher risk for re-offending than Black females, White males, or White females (Schwalbe et al., 2006).

Carr and Vandiver (2001) also examined the risk and protective factors of juvenile delinquents and recidivism. Overall, protective, or mitigating, factors (e.g., personal characteristics, chosen peers, and family conditions) were found to distinguish juvenile offenders and juvenile recidivists (Carr & Vandiver, 2001). Risk

factors (e.g., dropping out of school, problem behavior) are defined as variables in which a negative outcome is most likely (Carr & Vandiver, 2001). Other risk factors found for recidivism include poor school attendance, poor parenting styles, and low self-esteem. Research has shown that although juveniles may have the same risk factors, not all juveniles re-offend (Carr & Vandiver, 2001). These studies have primarily researched juvenile males; however, there are female juvenile offenders and their predictors may or may not coincide with male offenders.

Female Juvenile Offenders

Because males continue to offend at a higher rate than females, gender is a good predictor of delinquency (Girls Study Group, n.d.). Interestingly, little is known about female juvenile offenders (Rutter & Giller, 1983). This lack of information may be due to the lower number of female delinquents as compared with males which leads to difficulty completing research with a high degree of accuracy. One statistics showed arrests of males outnumber female arrests by more than a 2:1 ratio (Chesney-Lind & Shelden, 2004). In one study, females were found to constitute approximately eight percent of juvenile offenders (Singer, 1996), while in another female juvenile offenders account for 25 percent of juvenile arrests (Pollock, 1999). Over the years, female crime has slowly increased, with a rapid rise in arrests of female juveniles occurring between 1965 and 1975 (Chesney-Lind, 2001; Girls Study Group, n.d.; Pollock, 1999; Rutter & Giller, 1983). However, between 1976 and 1985, the number of arrests decreased (Pollock, 1999). For this reason, more research must be completed in order to understand the variables involved in female delinquency and how it differs from male delinquency (Girls Study Group, n.d.; Rutter & Giller,

1983). Historically, juvenile women were primarily arrested for sex crimes and running away from home (Pollock, 1999). Pollock (1999) and Girls Study Group (n.d.) purported female juvenile offenders do not follow the same pattern of offending as males to a lesser extent. Female juveniles were found more likely to be cautioned than brought to court (Rutter & Giller, 1983). Compared with males, females are more likely to be arrested for status offenses (e.g., truancy and running away from home) (Pollock, 1999; Rutter & Giller, 1983).

Singer (1996) claimed there is variation between the offenses committed depending on the offender's race and gender. For example, females are much more likely to be arrested for less serious felonies (e.g., 3rd degree) while males are charged with committing more serious felonies (e.g., 2nd degree) (Chesney-Lind & Shelden, 2004; Singer, 1996). Rutter and Giller (1983) and Pollock (1999) further claimed male juvenile delinquents, as compared to females, are more involved in violent crimes as well as serious property crimes. Chesney-Lind and Shelden (2004) purports this statement by statings the male-to-female ratio for violent index crimes is approximately 5:1. Females brought to court, however, have committed less serious crimes and are more likely to be institutionalized for these offenses than male juveniles (Rutter & Giller, 1983; Chesney-Lind & Shelden, 2004).

To further add to the discrepancy of female crime as compared to male juvenile crime, Pollock (1999) and Chesney-Lind and Shelden (2004) purported minority females (including women and girls) have a different crime pattern than White females. Minority females have a higher probability of committing more serious offenses (e.g., homicide) (Pollock, 1999). Minority juvenile females were

found as more likely to commit violent crimes (5.5 times) in comparison to White

juvenile females (Pollock, 1999, p. 74). Minority females were also found as more

likely to recidivate than White females (Pollock, 1999).

Pollock (1999) and Chesney-Lind and Shelden (2004) stated minority women

crime rates are closer to minority men than white women to White men; furthermore,

minority women rates of offending closely resemble White males. Minority women

(e.g., Blacks and Hispanics) have displayed a higher risk for violent offending

(Chesney-Lind & Shelden, 2004; Pollock, 1999). Pollock (1999) continued with an

explanation of the reason for minority women's criminality by asserting this is

potentially due to their economic background (e.g., minorities are more likely to be of

the lower SES). Of all the minorities, Black women are more likely to be

unemployed and poor; in addition, when employed their wages are typically less than

White women (Pollock, 1999). Therefore, Black women may be more likely to

commit crimes than White females due to evidence found by Fergusson et al. (1997)

that unemployment is linked to juvenile delinquency.

<u>Minorities</u>

Although often categorized into one group, ethnic minority groups should not

be regarded as being similar (Rutter & Giller, 1983). For example, Asian Americans

have different background characteristics (e.g., experiences and family

responsibilities) than Blacks (Rutter & Giller, 1983). Besides Black juveniles,

minority groups need more research completed on their offense, re-offense, and

background characteristics (Bilchik, 1999). Between 1987 and 1996, the number of

offenses committed by minority groups increased (Bilchik, 1999).

Recently, there has been a growing concern on the overrepresentation of minorities in the juvenile justice system (Schafer, Curtis, & Atwell, 1997). This literature primarily focused on certain points in the system (e.g., intake, detention, adjudication, and disposition) (Pope & Snyder, 2003). Race has been found to be significantly related to certain decision points (e.g., decision to refer juvenile to court and decision to detain) (Devine, Coolbaugh, & Jenkins, 1998; Schafer et al., 1997). Compared with White juveniles, minorities are more likely to enter into the juvenile justice system (Devine et al., 1998). Singer (1996) asserted the juveniles arrested are typically from a racial/ethnic minority group. In the juvenile justice system, overrepresentation of racial and ethnic minorities occurs at all stages (Bilchik, 1999; Hartstone & Richetelli, 2001). Minority overrepresentation is likely due to a combination of factors (Bilchik, 1999; Pope & Snyder, 2003).

Minority juveniles, in 1997, represented approximately one-third of the juvenile population across the US but consisted of two-thirds of the detained juvenile population (Bilchik, 1999). Black juvenile offenders are more likely to be charged with committing less serious offenses (e.g., 3rd degree felony) than White or Hispanic juveniles (Singer, 1996). White juveniles, if brought into the juvenile justice system, are found to have committed a more serious offense compared to Black and Hispanic juveniles (Singer, 1996). Black juveniles showed even more overrepresentation than the overall minority population (Bilchik, 1999). Bilchik (1999, p. 1) and Rust (1999) put forth that though the black juvenile population consisted of only 15 percent of the juvenile population, they represent approximately 25 percent of the arrests and 45 percent of detentions. Bilchik (1999, p. 5) found whites to have a lower likelihood of

being arrested (9%) compared to black males (13%) and Hispanic males (12%).

However, Pope and Snyder (2003) found whites to be significantly more likely to be

arrested than minorities. When looking at violent offense characteristics which would

increase the likelihood of arrest, Pope and Snyder (2003) found, contradicting the

previous findings, no differences between White and minority offenders. The only

exception of this finding was the offender's victim; the race of the victim was

associated with a higher probability for arrest for minority juveniles but not white

juveniles (e.g., white victim compared to minority victim) (Pope & Snyder, 2003). In

California, Black (4.4 times), Hispanic (3.8 times), and Asian juveniles (3.8 times)

were found to be more likely to be sentenced to a California Youth Authority facility

than White juveniles (Males & Macallair, 2000, p. 9). Also, Males and Macallair

(2000, p. 10) found minorities were 8.3 times more likely to be transferred to an adult

court than White juveniles. This discrepancy is due to minorities committing violent

crimes, which led to a higher likelihood of an adult court transfer (Males, 2000).

Minority juveniles were found to represent 50 percent of the juvenile

population in Texas (Males, 2000, p. 4). However, minorities consist of 65 percent of

the detention population, 80 percent in secure corrections, and 100 percent in adult

jails (Males, 2000, p. 4). Looking at each minority group for recidivism, Black males

(7%) and Hispanic males (5%) resulted in a higher percentage of re-offenders than

White males (4%; Bilchik, 1999, p. 5). Minority females, on the other hand, were

equal in their arrest and re-offense percentages (approximately 6% and 2%,

respectively) (Bilchik, 1999, p. 5).

Hartstone and Richetelli (2001) discussed minority delinquents often differed from White delinquents by the type of offense they committed as well as how far into the system they go. For example, in Connecticut, both Black and Hispanic juveniles, were overrepresented at all decision points which increased at each point (Hartstone & Richetelli, 2001; Rust, 1999). These results in Connecticut have the ability to be generalized for the Black delinquent population in the United States as well (Hsia, Bridges, & McHale, 2004; Pope, Lovell, & Hsia, 2002). A disproportionate number of minorities in the juvenile justice system is due, in part, to the consecutive actions taken at earlier decision points (e.g., decision at initial arrest; Poe-Yamagata & Jones, no date). Rutter and Giller (1983) contend Blacks have different crime rate patterns in comparison to white offenders with Black committing more serious offenses (e.g., violent crimes) (Armstrong & Rodriguez, 2005; Pope & Snyder, 2003).

Several factors were found to increase the likelihood of minority adolescents becoming involved in delinquency (Hsia et al., 2004). These factors include the lack of school resources, not engaging minority students in school activities, and high dropout rates (Hsia et al., 2004). Other factors found to increase risk of minority delinquency include being poor, abusing substances, lacking job opportunities, and living in an area with a high crime rate (Hsia et al., 2004; Pope & Snyder, 2003). Schafer et al. (1997) also found minorities had a higher rate of prior referrals than White juveniles. Furthermore, as the seriousness of the prior offenses increases; the more likely the juvenile is receiving detention (The Sentencing Project, 2000). There is overrepresentation of juvenile minorities held in detention facilities which is far higher than the actual rate of minority offending (Rust, 1999). With minority youth

being more likely to be detained and formally charged, having committed delinquent acts at an earlier age increases the likelihood of involvement in the system and receiving harsher punishments (The Sentencing Project, 2000). Past research has also found a relationship between juvenile race and the detention at the preadjudication stage (as cited in Armstrong & Rodriguez, 2005). Furthermore, this finding is mediated by the factors gender and prior record of the juveniles (Bishop & Frazier, 1996). Black and Hispanic juveniles were at a greater risk of being placed in detention than White juveniles (Armstrong & Rodriguez, 2005).

The Sentencing Project (2000) predicted that as long as racism exists in the general population, racism will also be found in the criminal justice system. This is because overt bias (e.g., attitude, language, and assumptions) in any institution is associated with racism (The Sentencing Project, 2000). Overt bias has been found to be related to racial disparity in the criminal justice system (Rust, 1999; The Sentencing Project, 2000). Past researchers put forth the hypothesis of different arrest rates being caused by police bias towards black offenders (Rutter & Giller, 1983; Pope et al., 2002; Pope & Snyder, 2003; Schafer et al., 1997); however, other findings (e.g., National Youth Survey) have hinted at Blacks also being responsible for committing a higher rate of delinquent acts (Bilchik, 1999; Hartstone & Richetelli, 2001; Pope & Snyder, 2003; Schafer et al., 1997). Continuing this reasoning, Bilchik (1999) put forth the hypothesis that if minority youth are committing more crimes, including more serious crimes, then these individuals will be overrepresented in the juvenile justice system though no discrimination took place. Rutter and Giller (1983) concluded there is a real difference between Black and White juvenile crime rates,

especially when violent offenses against a person are involved. However, even when controlling for social and legal background characteristics, minority youth are disproportionately represented in the juvenile justice system (Hartstone & Richetelli, 2001; The Sentencing Project, 2000). Therefore, Bilchik (1999) and Pope, Lovell, & Hsia (2002) suggested minority groups are treated differently by the juvenile justice system for at least part of the time.

Elrod & Ryder (1999) found a race by class interaction for violent offenses against a person, with lower-class Black juveniles committing a higher rate of violent crimes. Another study found the race factor was not significant after controlling for the juveniles' socioeconomic status (Cottle et al., 2001).   Unfortunately, minority juveniles have a higher likelihood of being from the lower economic status (Armstrong & Rodriguez, 2005; The Sentencing Project, 2000).

The majority of minority research is based on Blacks, with an emphasis on certain decision points (e.g., application of the death penalty) (Schafer et al., 1997). Although only one percent of the United States population, American Indian delinquents represent two percent of the detained population across the nation (Hsia et al., 2004, p.3). Hsia et al. (2004) also observed, when focusing on individual states, this overrepresentation of American Indian youth increases. Schwartz (1988) found American Indians as more likely to be jailed for committing status offenses in comparison to Blacks or Whites. Due to the categorization of Hispanics being inconsistent, research on Hispanics has been difficult (Poe-Yamagata & Jones, no date). The least studied minority group is Asian and Pacific Islanders (Hsia et al., 2004). Results from few studies completed have shown this population to be

underrepresented in the juvenile justice system (Hsia et al., 2004). However, in certain geographical areas with a higher concentration of Asian Americans, findings of overrepresentation have occurred (Hsia et al., 2004).

Disproportionate Minority Contact

Reducing Disproportionate Minority Contact (DMC) has become a state requirement as determined by the passing of the Juvenile Justice and Delinquency Prevention Act in 1992, with minorities listed as Blacks, American Indians, Asians, Pacific Islanders, and Hispanics (Bilchik, 1999; Devine et al., 1998; Mooradian, 2003; Pope et al., 2002). Under this Act, states have the responsibility of determining the extent, if any, of DMC and produce efforts in its reduction (Juvenile Justice and Delinquency Prevention Act, 1992; Bilchik, 1999). The 1992 amendment of the Juvenile Justice and Delinquency Prevention Act listed DMC as a core priority, with future funding tied to compliance to attempting to overcome DMC (Mooradian, 2003; Pope et al., 2002). Pope et al. (2002), due to finding mixed results, put forth that actually discovering the sources of disproportionality may be difficult due to its complexity. Where a certain decision point in the juvenile justice system results in a significant disproportion of minorities present, the legal variables (e.g., prior record, type of offense committed) may not be the reason (Pope et al., 2002). Due to this possibility, Pope et al. (2002) proposed more intense research focusing on other possible variables was needed. The definition of overrepresentation is defined as when a proportion of, in this context, an ethnic or racial minority group, at varying decision points within the juvenile justice system is larger than expected due to the population rate (Bilchik, 1999; Devine et al., 1998; U.S. Department of Justice,

1996). Although specifically stated to refer to detained juveniles, overrepresentation

is seen as a product of decisions prior to the detention point in the juvenile justice

process (Devine et al., 1998). Disparity, on the other hand, is defined as the

probability of receiving a particular outcome which differs from each group studied

(Bilchik, 1999).

In order for DMC to be reduced, Hsia et al. (2004) defined several factors

which must be addressed, including racial stereotyping, lack of alternative programs

from detention, misuse of the practice of discretion, and lack of cultural services (e.g.,

interpreters). These factors, along with standardized risk assessment instruments

(RAI) would help in lowering overrepresentation of minority juveniles (Hsia et al.,

2004). Hsia et al. (2004) explained states are having difficulty reducing

disproportionate minority confinement due to their lack of consistent constructs while

collecting data in their juvenile justice system.

Risk Assessments

Even with the increase in studies focusing on risk factors for referred

juveniles, there is still little systematic research completed on the topic (Kelly, 2002).

Glaser (1987) defined risk assessments, not as a standardized instrument, as a method

of classifying an individual into a group as he or she corresponds to others in similar

circumstances and characteristics. As a method, how risk assessments categorize

individuals depends upon the jurisdiction (e.g., one city versus another city) and the

level of the justice process (e.g., police officer versus judge; Glaser, 1987; Heilbrun et

al., 2000). The example Glaser (1987) gave is of an attorney who is new to an area

and has to learn the 'local norms' before attempting to resolve a case (p. 252). For

this reason, risk assessments are quite diverse and will change according to the agency using certain factors when making a decision (Glaser, 1987). Due to this diversity, the possibility of bias arises (Glaser, 1987). Criminal justice officials do not use prediction tables due to their belief the tables lack significant information (e.g., factors) to accurately predict an outcome (e.g., juvenile will recidivate; Glaser, 1987). However, research has shown the predictions made with more factors are less likely to be correct (Glaser, 1987). Around 1960, researchers realized the easiest way for justice officials to trust these prediction tables is to have them participate in their creation (Glaser, 1987).

The juvenile justice system has the task of intervening with offenders considered high-risk (Heilbrun et al., 2000). In order for this task to be effective, officials in the juvenile justice system should incorporate a standardized risk assessment instruments (RAIs) (Heilbrun et al., 2000). Even though research has shown consistently several variables which contribute to delinquency and recidivism, there is much differentiation between states as to what is assessed (Heilbrun et al., 2000). The research completed by Heilbrun et al. (2000) signifies the importance of developing a risk assessment instrument (RAI) for jurisdictions separately after they found variables changed in each instrument depending on the predictive power of that factor.

The primary reason for RAIs is for decisions to become objective while following current public policies (Rust, 1999). For example, local and state admission criteria, based on public policy, define a jurisdiction's decision-making abilities (Rust, 1999). RAIs allow juvenile justice officials (e.g., police, intake staff,

and judges) to make a more objective decision for each juvenile brought into the system (Rust 1999). Due to the lack, to a certain extent, of research on the risk factors for juvenile delinquency at certain stages of the juvenile justice system as well as the benefit these assessments would have for officials in the system, more effort is necessary in order to address which variables are associated with risk for juvenile delinquency and recidivism (Kelly, 2002).

The past decade has seen an increase in the acknowledgement of the extent of how important understanding risk and protective factors are in preventing future delinquency (Kelly, 2002). In one study of the potential of a RAI, a number of risk factors were used, including prior referrals, number of days if placed outside of home, age at time of assessment, substance abuse history, employment, and status offenses (Kelly, 2002). Also, the study included factors related to school, including attendance history and school conduct as well as factors related to family, such as parental supervision (Kelly, 2002). One limitation of the study completed by Kelly (2002) is the lack of studying mitigation factors.

Since being created in the 1920s, RAIs have evolved (Kelly, 2002). Kelly (2002) discussed how three generations of RAIs have been developed. The instrument, used for this study, is considered to be associated with the second generation. The second generation of RAIs is thought to use a scale with specific items or questions and rely on unchanging risk factors (e.g., prior offense record; Kelly, 2002).

Conclusion

      Developing intervention strategies in order to prevent future recidivism is one

of the juvenile justice system's primary purposes; however, these strategies differ

depending on the local and state jurisdiction (Armstrong & Rodriguez, 2005; Niarhos

& Routh, 1992). Researchers must first identify the factors contributing to

delinquency and recidivism before successful programs are developed (Farrington &

Hawkins, 1991). The juvenile's age when he or she first commits an offense was

found to be a significant predictor for delinquency (Niarhos & Routh, 1991). Other

studies have found academic achievement, peers, conduct problems, discipline

strategies of parents, and past offense history as predictors of delinquency (Heilbrun

et al., 2000; Mendel, 2000) Another study found high school enrollment, grade point

average, and the level of grade retardation by the age of 15 to be the best predictor for

delinquency (Loeber & Dishion, 1983). Truancy has also been classified as a risk

factor for juvenile delinquency (Fritsch et al., 2003; Garry, 1996). Especially

important is to understand why juveniles recidivate in order to establish successful

crime control policies (Piquero et al., 2001). Studies have found that the majority of

offenses are committed by a few recidivists (Cottle et al., 2001; Farrington &

Hawkins, 1991; Mendel, 2000). Although some research has been completed on

female juveniles, there is still little known on these offenders (Pollock, 1999; Rutter

& Giller, 1983). The low number of females makes research difficult to find

predictors with any amount of accuracy (Pollock, 1999; Rutter & Giller, 1983).

Depending on the juvenile's race, the number of re-offenses that occur will differ

considerably (e.g., Blacks are more likely to re-offend) (Schafer, 1998). Furthermore,

minorities are more likely to enter into the juvenile justice system (Devine et al.,

1998).   In Texas, minority juveniles represent 50 percent of the juvenile population

(Males, 2000, p. 4). Therefore, reducing DMC is important due to the high number of

juvenile minorities in the juvenile justice system (Bilchik, 1999; Morradian, 2003).

During the past decade, research on juvenile delinquency and recidivism has allowed

for a better understanding of the risk and protective factors and is beneficial to the

creation of better juvenile justice policies (Kelly, 2002).

CHAPTER THREE

RESEARCH METHODS AND PROCEDURES

Sample Description

The data used for this study were retrieved from the Risk Assessment Instrument Pilot project which was funded by the Office of the Governor, Criminal Justice Division grant beginning in 2003. The Risk Assessment Instrument Pilot project had three core objectives: 1) to develop a risk assessment instrument accurately predicting the risk of recidivism at detention intake; 2) to determine whether standardization of the intake detention decisions would reduce the overall secure detention population; and 3) to determine whether standardization of juvenile intake would reduce disproportionate minority representation (Center for Safe Communities & Schools, 2006).

The Risk Assessment Instrument (RAI) was conducted three times over a two year period. The first round of data collection began May 2004 which continued through September 2004. The second round of data collection began in October 2004 and ended December 2004 while the third round of collection began in March 2005 and ended in July 2005. In the first two rounds of collection, only juvenile detention facilities in two counties were involved (Denton and Travis County). However, in the third round of data collection, four counties participated in the data collection (Denton, Travis, Dallas, and Harris County). Following the data collection, recidivism data were collected for a specified time period. The first two waves of recidivism data was collected for six months while the third wave consisted of three months (Center for Safe Communities & Schools, 2006). The current study is analyzing the data from the third wave of data collection from Harris County alone.

Research Hypotheses

The key purpose of this study is to determine how the risk and protective factors form clusters in relation to juvenile delinquency and recidivism in Harris County.

Hypothesis 1

Variables measuring aggravating factors will form clusters with small variance between other aggravating variables. Variables measuring aggravating factors will form clusters with small variance between similar variables in relation to recidivism.

Niarhos and Routh (1992) stated the age a juvenile first commits a crime is the best predictor of future delinquency. Schumacher and Kurz (2000) proposed a theory explaining why the age of first-time offenders was important in understanding recidivism. Most delinquents beginning to offend during late adolescence (e.g., over the age of 16) were less likely to have pre-delinquent behaviors, disrupted families, and a history of drug and alcohol abuse (Schumacher & Kurz, 2000). Farrington and Hawkins (1991) discussed a person was more likely to re-offend depending on the number of offenses the individual had committed previously. However, Farrington and Hawkins (1991) later asserted the beginning of juvenile delinquency is related to later offending, including seriousness, rate, and range of the offenses. Bernburg et al. (2006) found juvenile delinquents who had experienced juvenile justice intervention (e.g., prior referrals and prior adjudications) were significantly more likely to become involved in serious delinquent acts. Niarhos and Routh (1992) found a juvenile with prior arrests on his/her record was the best predictor for future offending. Serious

juvenile offenders are more likely to be truants and school dropouts (Farrington, 1998; Rutter & Giller, 1983).

Hypothesis 2

Variables measuring 'protective factors' will form closely related clusters to each other but will have large cluster variance in relation to recidivism.

Rutter and Giller (1983), in their study, found a relatively strong relationship between parental supervision and delinquency. Farrington (1998) found attending school decreased delinquent activities. Another study found juveniles who had not repeatedly re-offended have good academic records and good parental supervision (Smith, et al., 1995).

Hypothesis 3

Offense variables, depending on the level of seriousness, will cluster with aggravating variables and protective variables.

Farrington and Hawkins (1991) put forth that the beginning of juvenile delinquency is related to later offending, including the seriousness, rate, and range of the offenses committed. Mendel (2000) found more serious offenses were committed by juveniles between the ages of 12 and 20. These same juveniles were also found to have a higher likelihood of be truant, school dropouts, and substance abusers (Farrington, 1998; Rutter & Giller, 1983). Although Heilbrun, et al. (2000) asserted that property offenders were more likely to recidivate, Farrington (1998) found serious juvenile offenders (e.g., committing violent crimes) are more likely to re-offend. Schwalbe, et al. (2006) found White females had committed lesser offenses and were more likely to be a first-time offender than other juveniles.

Variables

The RAI data contain four types of factors which will be analyzed within the current study. The four factors include offenses, mitigating (protective) factors, aggravating (risk) factors, and demographic characteristics. Detention officers in each county were asked to complete the RAI questionnaire for each juvenile brought into the detention facility.

Risk and Protective Factors

Juvenile Delinquency

Two factors, risk and protective factors, are considered the primary attributes used in the current study. The questionnaire used in this study listed seven variables as aggravating factors (e.g., previous runaway, prior adjudication, prior referrals) and six variables as mitigating factors (e.g., responsible adult, attends school, and employed). Table 3.1 lists the variables in each factor category used in the study. Table 3.2 shows a breakdown for Harris County and the corresponding variables selected over the course of the data collection.

Table 3.1. List of Variables Included in the Aggravating and Mitigating Factors.

Aggravating Factors	First Time Age 16 or over
	Previous Runaway
	Prior Adjudication
	No Supervision
	Prior Referrals
	Not Attending School
	Dangerous to himself, herself, or others
Mitigating Factors	Responsible Adult
	No Prior Referrals
	First Time Offender
	Attends School
	Employed
	Under 16 at time of offense

Table 3.2. Frequency and Percentages of Independent Variables for
Harris County for Juvenile Delinquents.

Independent Variables	Harris	
	N	%
First Time Age 16 or over	212	17
Previous Runaway	128	10
Prior Adjudication	433	35
No Supervision	119	10
Prior Referrals	656	52
Not Attending School	272	22
Dangerous to himself, herself, or others	336	27
Responsible Adult	501	37
No Prior Referrals	362	29
First Time Offender	326	26
Attends School	257	21
Employed	34	3
Under 16 at time of offense	583	47

Operational Definitions and Examples of Aggravating (Risk) Factors

The variable first time age 16 or over is defined as the juvenile's first time to

commit an offense while being the age of 16 or older. No supervision means the

child has no supervision in the home either by the parent or guardian. The variable

previous runaway is operationalized as a child voluntarily leaving his or her home

without the parent's or guardian's consent (Center for Safe Communities & Schools,

2006). The variable prior referrals is defined as a prior formal complaints by law

enforcement, the Probation Department, or the Court for a juvenile who has been

taken through the formal intake process. Prior referrals may include a new offense

and arrested on a warrant. The variable prior adjudications is operationalized as prior

courts finding a juvenile has conducted delinquent activities or a status offense. The

variable not attending school is operationalized as at the time of intake, the child is

not attending school. The variable dangerous to himself, herself, or others includes both evidence of aggressive behavior and negative comments during the intake. Examples of this variable would be cursing, threatening intake staff, striking intake staff, and expressing suicidal thoughts.

Operational Definitions and Examples of Mitigating (Protective) Factors

The variable responsible adult is operationalized as an adult (parent or guardian) who is approved to provide care and supervision to the juvenile.   The variable first time offender is defined as a juvenile who for the first time has been referred to the Juvenile Probation Department for alleged delinquent activity or status offense.

Offense Variables

Juvenile Delinquency

The other factor studied in analyses is the offense classification variables. The offense classification includes from lowest to highest level of offense: Class C misdemeanor, Class B misdemeanor, Class A misdemeanor, Felony 4, Felony 3, Felony 2, and Felony 1.

These variables measured what level of offense juveniles had committed at the time of the detention intake. Similar to the independent variables, each of these variables was coded as dichotomous, with 0=no, 1=yes. Due to the questionnaire process, only one offense was listed for the juvenile; therefore, a juvenile may be listed more than once if he or she has committed more than one crime. Due to the set-up of the questionnaire, no variables could be listed as 'missing.'

Table 3.3. Frequency and Percentages of Offense Variables for Harris County.

Dependent Variables	Harris	
	N	%
Felony 1	112	6
Felony 2	220	12
Felony 3	159	8
Felony 4	178	9
Class A Misdemeanor	453	24
Class B Misdemeanor	605	32
Class C Misdemeanor	77	4

Operational Definitions and Examples of Felony Levels

Felony 4 crimes may include burglary of a building, unauthorized use of a

motor vehicle, and possession of a control substance (less than 1 gram). Felony 3

offenses may include the following: assault of a family member (2nd conviction) and

attempted sexual assault. Examples of Felony 2 crimes include attempted murder,

robbery, and sexual assault. Attempted capital murder, aggravated robbery, and

aggravated sexual assault are examples of Felony 1 offenses.

Operational Definitions and Examples of Misdemeanor Levels

Examples of Class A Misdemeanors include burglary of a vehicle and

unlawfully carrying a weapon. Possession of Marijuana and assault with injury are

two examples of Class B Misdemeanors. Class C Misdemeanor examples include

failure to identify oneself and disorderly conduct.

Recidivism Variable

The three months of recidivism data collected during the Risk Assessment

Instrument Project were transformed and standardized into one variable. The number

of times the juvenile re-offended during the data collection was not analyzed. If the

juvenile re-offended, then the recidivism variable was labeled as a 1 (e.g., 1=re-

offended; 0=did not re-offend). This allowed for a cleaner sample of juvenile

delinquents (e.g., not having the same individual in the analysis more than once).

Furthermore, the sample size dropped from 1892 to 1674 juvenile delinquents due to

the multiple entries during the data collection period.

Cluster Analysis

These variables were analyzed using a Hierarchical Cluster Analysis using

Variance as the clustering method. This allows for the proximity matrix to give

correlations between each two variable combination for a better understanding of the

clusters. Hierarchical Cluster Analysis is a statistical technique used within

behavioral sciences to look for patterns or trends in behavior among a sample of

individuals. This analysis examines available data to look for groupings or

associations within that data in order to see what characteristics are associated with

each other. Because of these associations or groupings of data, this approach can be

used to identify clusters of individuals that resemble each other in regards to their

behavior or characteristics. This technique was selected for its ability to identify

trends within groups of individuals. To control for the unequal scaling of variables

all scores were changed to binary numbers prior to analysis.

CHAPTER FOUR

RESULTS

Cluster analysis of Harris County's juvenile delinquent population revealed

some similar and contradictory finds as compared to past research. In order to have a

cleaner sample and more interpretable hierarchical clusters, any variables having less

than one percent of the sample listed under individual categories were disregarded in

the analysis (e.g., Employed represented only .7 percent of the sample). The final set

of variables (N = 20) to be analyzed can be seen in Table 4.1.

Table 4.1. Variables and Percentages Included in Final Analysis.

Variable	%
Recidivism	12.6
Felony 4	9.7
Felony 3	8.2
Felony 2	11.8
Felony 1	6.1
Class C	4.0
Class B	32.3
Class A	24.3
Responsible Adult	26.88
No Prior Referrals	24.5
1st Time Offender	30.9
Attends School	20.3
No Supervision	13.0
Prior Adjudication	42.0
Prior Referrals	58.8
Not Attending School	19.4
Previous Runaway	14.0
Dangerous to Himself, Herself, or Others	16.4
Under 16 at Time of Offense	52.9
16 or Over at Time of Offense	15.1

Variance is defined as the mean of the squared deviation scores for each two

variables compared; therefore, the lower the variance between two variables, the

higher the similarity or proximity the two are (e.g., the closer the variance is to .0, the

more similar the variables). Deviation scores are defined and calculated by the

distance of the each variable from the mean score. A dendrogram was used in the analysis which represents the clustering process in a treelike graph (see Figure 4.1). The horizontal axis represents the agglomeration coefficient or the distance used in joining clusters. Using a dendrogram is useful for identifying outliers or entropy variables. Furthermore, a dendrogram depicts clusters as being homogeneous or less homogeneous. For example, if large increases in the overall measure occur, then this is an indication two clusters or variables were not that similar.

First Hierarchical Cluster Analysis

The first hierarchical cluster analysis completed included the offenses (e.g., Felony 1, Felony 2, and Class C misdemeanor), risk factors (e.g., no supervision, not attending school, and prior adjudication), and protective factors (e.g., responsible adult and attends school). The first cluster had the lowest variance, thus the highest similarity, as compared to all other variables in the analysis. The first cluster includes the variables Felony 1 offenses and Class C misdemeanor offenses ($\sigma^2 = .025$). The second cluster combined Felony 3 offenses with the first cluster with a slight decrease in similarity between variables ($\sigma^2 = .036$, Felony 1 and Felony 3; $\sigma^2 = .030$, Class C misdemeanor and Felony 3). A slight jump occurred at the third cluster when Felony 4 offenses were combined with the variables within the second cluster. This jump resulted in a slightly larger increase in the overall measure. This slight increase identifies a less homogeneous combination of variables within the cluster. The fourth cluster combines the third cluster with the variable no supervision.

The fifth cluster included the variables no prior referrals and first time offender ($\sigma^2 = .049$). This cluster with no prior referrals and first time offender

variables is not combined until a much less homogeneous cluster occurs and will be discussed later. The sixth cluster combined the variable previous runaway with the fourth cluster (e.g., no supervision, Felony 4, Felony 3, Class C misdemeanor, and Felony 1). For example, the variance between the variables previous runaway and no supervision resulted in ($\sigma^2 = .051$), previous runaway and Felony 4 ($\sigma^2 = .053$), and previous runaway and Felony 3 ($\sigma^2 = .051$). The seventh cluster also is its own cluster involving the variables Felony 2 offenses and dangerous to himself, herself, or others ($\sigma^2 = .055$). These two variables are not combined to variables in the sixth cluster until the eighth cluster when the variable 16 or over at time of offense combines the previous variables. The next two separate clusters have the same similarity ($\sigma^2 = .058$). The variables responsible adult and attends school are not combined with the other previously discussed variables until the 12th cluster combination occurs. The variables prior adjudication and prior referrals, due to this cluster being combined in the next to last cluster combination, are considered an outlier cluster. In other words, although these two variables are close in proximity to each other, this cluster when combined with all other variables in the analysis results in a far less homogeneous cluster.

The 11th cluster combines the variable not attending school with the eighth cluster (e.g., variables not attending school and dangerous to himself, herself, or others resulted in a variance of $\sigma^2 = .068$). For even a less homogeneous cluster, the ninth cluster involving the variables responsible adult and attends school is combined with the previous cluster (e.g., variables responsible adult and dangerous to himself, herself, or others resulted in a variance of $\sigma^2 = .078$). The variable Class A

misdemeanor is combined with the fifth cluster (no prior referrals and first time offender) into the 13th cluster (e.g., variables Class A misdemeanor and no prior referrals resulted in a variance of $\sigma^2 = .091$).

The 14th cluster combined the previous cluster (no prior referrals and first time offenders) to all the previously discussed variables included in the clusters (e.g., 12th cluster). A decision was made that the final solution would include 14 clusters with this last cluster combining the 14th cluster with all previous variables. All other variables (e.g., Class B misdemeanor, prior adjudication, prior referrals, and under 16) are not included in the final analysis and are categorized as outliers or entropy variables. As can be seen through the variance and clusters, the offenses and the risk factors are more similar, thus clustering together in close proximity than compared with protective factors.

Second Hierarchical Cluster Analysis

Due to the relatively less homogeneous clusters resulting due to the addition of protective factors, another hierarchical cluster analysis was completed with these variables alone. In this analysis involving four variables (view Figure 4.2), the first cluster involved the variables no prior referrals and first time offender ($\sigma^2 = .049$). The second cluster involved the variables responsible adult and attending school with a slightly less proximity than the first cluster ($\sigma^2 = .058$). Considered an outlier, the last cluster combines the first two clusters at a great distance (far less homogeneous cluster). This does not align with the hypothesis as expected. The first two clusters results in subcategories of what is considered protective factors.

Third Hierarchical Cluster Analysis

When the variable recidivism is inserted into the analysis (view Figure 4.3),

the same two clusters result (e.g., no prior referrals and first time offender as well as

responsible adult and attends schools). Interestingly, the variable recidivism is

combined with the cluster with the variables responsible adult and attending school.

This should be reviewed with caution, however, due to the great decrease in

proximity. As would be expected, the protective variables have little similarity to the

variable recidivism.

Fourth Hierarchical Cluster Analysis

When the variable recidivism is inserted into a hierarchical cluster analysis

with the risk factors and offenses, recidivism aligns in the middle of the dendrogram

(view Figure 4.4). This leads to the conclusion that recidivism is more similar or

closer in proximity to these variables. The offense and risk variables that do not

align (outliers or entropy variables) with the hypothesis include Class A misdemeanor

offense, Class B misdemeanor offense, and the variables prior adjudication and prior

referrals within its own cluster.

Figure 1. First Hierarchical Cluster Analysis.

```
Dendrogram using Average Linkage (Between Groups)


                    Rescaled Distance Cluster Combine

   C A S E       0         5        10        15        20        25
  Label     Num  +---------+---------+---------+---------+---------+

  Felony1     4  ──┐
  ClassC      5  ──┘───┐
  Felony3     2  ──────┴──┐
  Felony4     1  ─────────┤
  NoSuper    13  ─────────┘─┐
  Felony2     3  ─────────┐ │
  Previous   18  ─────────┴─┴─┐
  Dangerou   19  ─────────────┤
  AgeatTim   11  ─────────────┴─┐
  NotAtten   16  ───────────────┤
  Responsi    8  ─────────────┐ │
  AttendsS   12  ─────────────┴─┘──────┐
  ClassA      7  ──────────────────────┤
  NoPriorR    9  ─────────┐            │
  @1stTime   10  ─────────┤            │
  ClassB      6  ─────────┴────────────┘──────────────────┐
  PriorAdj   14  ─────────────┐                           │
  PriorRef   15  ─────────────┴────────────────────────┐  │
  Under16    17  ─────────────────────────────────────┴──┘
```
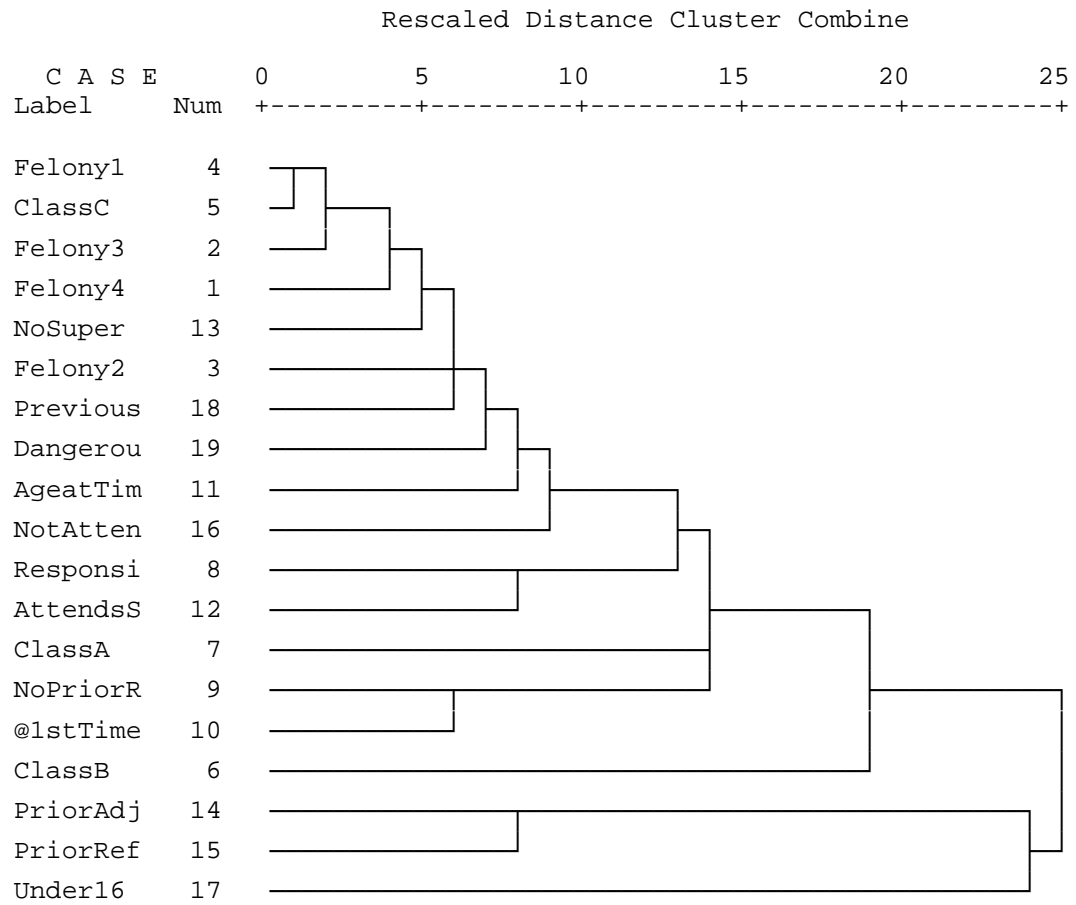
Figure 2. Second Hierarchical Cluster Analysis.

```
 Dendrogram using Average Linkage (Between Groups)

                     Rescaled Distance Cluster Combine

    C A S E      0         5        10        15        20        25
   Label    Num  +---------+---------+---------+---------+---------+

   NoPriorR   2  ─┐
   @1stTime   3  ─┘
   Responsi   1  ──────────┐
   AttendsS   4  ──────────┘
```
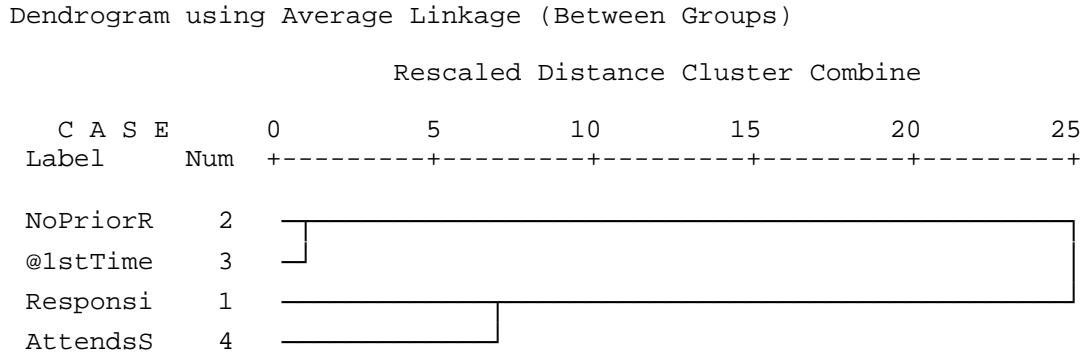
Figure 3. Third Hierarchical Cluster Analysis.

```
 Dendrogram using Average Linkage (Between Groups)

                     Rescaled Distance Cluster Combine

    C A S E      0         5        10        15        20        25
   Label    Num  +---------+---------+---------+---------+---------+

   NoPriorR   2  ─┐
   @1stTime   3  ─┘
   Responsi   1  ───────────┐
   AttendsS   4  ───────────┘
   Recidivi   5  ──────────────────────────┘
```

52
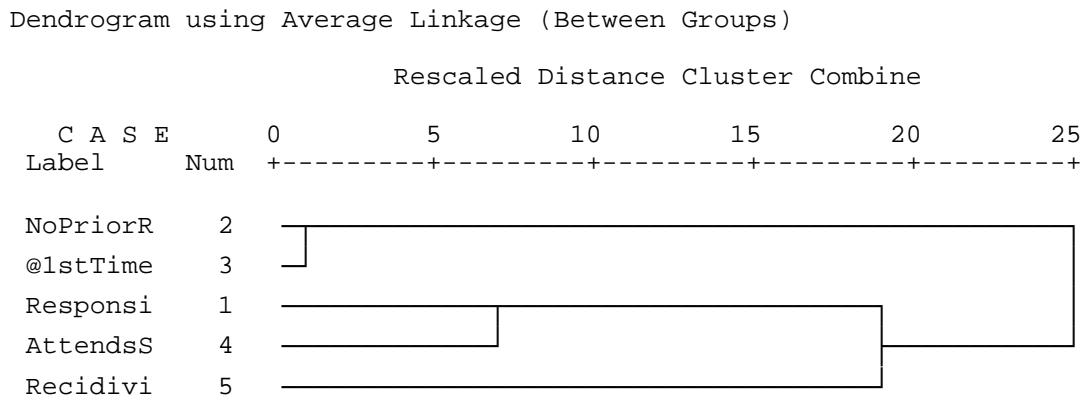
Figure 4. Fourth Hierarchical Cluster Analysis.

```
Dendrogram using Average Linkage (Between Groups)

                    Rescaled Distance Cluster Combine

     C A S E      0         5        10        15        20        25
    Label    Num  +---------+---------+---------+---------+---------+

    Felony1    4    ┐
    ClassC     5    ┘└┐
    Felony3    2    ──┤
    Felony4    1    ─┐├┐
    NoSuper    9    ─┘ │
    Recidivi  15    ──┐│
    Felony2    3    ──┤┘
    Previous  13    ──┘
    AgeatTim   8    ──┐
    Dangerou  14    ──┤
    NotAtten  12    ──┘
    ClassA     7    ───
    ClassB     6    ───
    PriorAdj  10    ──
    PriorRef  11    ──
```
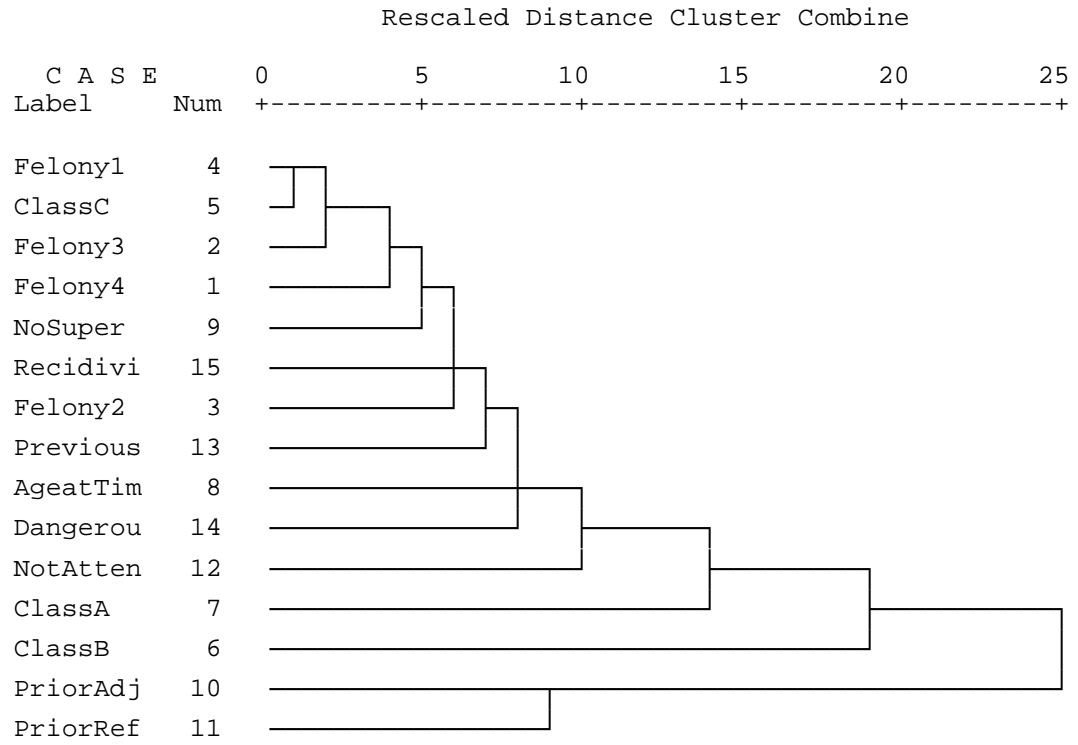
CHAPTER FIVE

DISCUSSION

Discussion of Findings

The results presented in the first analysis highlight several points worth discussion. The results suggest the risk (aggravating), protective (mitigating), and offense variables can be broken into two separate cluster analyses. The risk variables and the offense variables resulted in fairly close clusters while the protective variables were included in later (less homogeneous) clusters in the first analysis. If looked at in context, protective variables, when grouped with offenses and risk variables, should lead to a less homogeneous cluster due to being 'opposite' to the latter two categories of variables. Mendel (2000) and Wright and Cullen (2001) found a strong negative relationship between juvenile delinquency and parental supervision. Because the sample used in the analysis only has information on juvenile delinquents, there is more likely to be a large variance score (large discrepancy) between the variable parental supervision and other variables (e.g., Felony 1 and previous runaway).

Aggravating Factor Variables and Offense Classifications

The first hypothesis concerning aggravating factors and how they relate to each other was found to be closely clustered with offense classifications except in a few exceptions. Interestingly, the risk factor variables prior adjudication and prior referrals do not cluster with the other risk or offense variables. This finding suggests that at least one subcategory exists within the broad category of Aggravating Factors. The possibility exists that these two variables may be a category by themselves. Furthermore, the two offenses Class B and Class A misdemeanors were also found to not be related to the other risk and offense variables (higher variance scores). These

two offenses were committed by the largest percentage of juvenile delinquents. Because of this finding and the large number of juveniles committing these offenses, more analyses should be completed.

As discussed previously in chapter two, delinquency was not shown to result from only a single factor (Mendel, 2000). The current study's findings also coincides with Mendel (2000). For example, a hierarchical cluster was formed with several offense classifications (e.g., Class C misdemeanors, Felony 1, and Felony 2) and risk variables (e.g., not attending school and dangerous to himself, herself, and others). This finding furthers Mendel's argument but also helps to understand why previous research has such contradictory results. In other words, the reason for the discrepancies in the past findings is due to the fact that multiple variables are closely related to each other in regards to delinquency.

Furthermore, Jarjoura (1993) and Frisch et al. (2003) found dropouts and truancy, respectively, to be risk factors for delinquency. The variable not attending school was found to be clustered in close proximity to other risk factors within the analysis; therefore, this assertion was upheld.

Previous studies have found juvenile recidivism to relate to various factors (e.g., Cottle et al., 2001, Farrington & Hawkins, 1991; Mendel, 2000; Piquero et al., 2001). For example, several variables have been consistently associated with juvenile recidivism including age at first referral, parental control, academic achievement, school behavior and attendance, and family stability. The current study resulted in a fairly close proximity of clusters including the variables all four Felony offenses, Class C misdemeanor offenses, no supervision, recidivism, previous runaway, 16 or

older at time of offense, dangerous to himself, herself, or others, and not attending school. The variable no supervision aligns with the previous research with its close proximity to recidivism. Furthermore, not attending school is another similar finding to previous research. Interestingly, dangerous to himself, herself, and others first clustered with 16 or over at time of offense. This finding should be researched further in order to understand its significance to recidivism because these two variables were not clustered together first during the first analysis.

In regards to Heilbrun, Brock, Waite, et al. (2000) and Mendel's (2000) allegation that several factors relate to high-risk offenders, past offense history (e.g., prior referrals and prior adjudication) was not found to be closely clustered with recidivism. Furthermore, this contradicts the finding from Farrington and Hawkins (1991) and Loeber and Dishion (1983) in which a person was more likely to re-offend depending on the number of offenses the individual had committed previously. More research must be completed to better understand the discrepancy between the current study's findings and previous research. There is the possibility the discrepancy is due to Farrington and Hawkins (1991) assertion in which the age a juvenile begins committing crimes is more closely related to future offending. Therefore, the earlier the juvenile first offends, the more likely he or she is to re-offend at a later date. Future analyses should complete clusters with the various ages, recidivism, and prior referrals and adjudications in order to better interpret the relationship.

Protective Variables

In the first analysis completed, the fifth cluster resulted in the variables no prior referrals and first time offender as being in fairly close proximity to each other

as a single cluster ($\sigma^2 = .049$). These two variables are essentially the same concept because a first time offender will not have had any prior referrals. However, the two variables do not necessarily go in the reverse order. A juvenile delinquent does not necessarily have to be referred to the juvenile justice system by a police officer (Champion, 1998). A neighbor, family member, or citizen can refer a juvenile to the system (Champion, 1998). Since the two variables are similar, there was an expectation of a low variance score. However, due to being protective variables, the cluster was not combined until a less homogeneous cluster occurred. Farrington (1998) put forth the concept that protective factors are tied to a risk factor as opposites (e.g., attending school decreased delinquent acts versus not attending school increased delinquent acts). However, both variables considered opposites (prior referrals and no prior referrals) were combined at a less homogeneous, but different cluster level.

A second hierarchical cluster analysis was completed involving only the protective variables. Two pairings were found in the second cluster. The first cluster included the variables no prior referrals and first time offender while the second cluster included the variables responsible adult and attending school. Due to the cluster outcome, subcategories of protective factors should be considered as a possibility. In other words, the first cluster may be categorized as systematic or offense-related protective factors. The second cluster may be categorized as social institution protective factors. One possibility for the high variance between each other, as discussed briefly earlier, is that protective factors are listed on juvenile delinquents. The majority of research on protective factors is completed on children

who have shown resilience to delinquency (Farrington, 1998). In this perspective, the protective factors have not shown, in the instance of these delinquents, as having helped the juveniles in not committing a crime; therefore, the clustering of these variables may be skewed. However, these protective factors may help in reducing recidivism after the juvenile has been brought into the system.

The third hierarchical cluster analysis with the insertion of recidivism resulted in the same clusters occurring (no prior referrals/first time offender and responsible adult and attending school). Although the distance was greatly increased prior to the recidivism variable clustering with responsible adult and attending school, recidivism did cluster with these two variables at the third cluster combination. Therefore, the recidivism variable is far less similar to the cluster including no prior referrals and first time offender. A conclusion can be drawn then that a juvenile who is a first time offender and has no prior referrals has a far less likelihood of committing a re-offense. Keith and McCray (2002) and Myner et al. (1998) found juvenile non-recidivists had good parental supervision. This observation was upheld to a point by the current study; however, a post hoc test using Discriminant Analysis is needed to ensure the significance of this finding.

Limitations

One of the limitations of this study is that the findings are not easily generalized to other juvenile delinquent populations due to Harris County being a large urban county. Another limitation is that the study included a nonrandom sample and only included one sample, Harris County juvenile population. Future research, in order to ensure reliability and validity, should do cluster analyses on other juvenile

delinquent populations in other counties. Another limitation of the study pertains to the method of collecting this data. Detention officers completed a 'profile' for every juvenile brought into the system during the data collection period. There is a possibility the detention officer did not either answer the instrument correctly or ask the juvenile all the questions due to time constraints. A disadvantage to this type of analysis is that cluster analysis is subjective in nature as it relates to choosing a 'stopping point' or final cluster solution. This leads to the next limitation which is the question of representative sample. Although the study included the total population for a three month data collection period, the study only looked at juveniles for a short period of time. A longer period of data collection may be needed in order to deduce whether the sample studied was a true representation of juvenile delinquents.

Using a hierarchical clustering method has its own disadvantages. The first disadvantage is the concern for a large number of outliers on hierarchical methods. One way to reduce this possibility is by deleting problem observations (e.g., deleting variables which represented less than one percent of the population). However, by deleting these variables can cause a distortion of the final solution or measure. Another disadvantage is that hierarchical methods are not as suitable for analyzing large amount of data (e.g., samples or variables). In other words, as the number of variables increases (N = 30), there is a substantial increase in the data storage requirements.

Analyzing cluster analyses and determining the final number of clusters is a potential problem as well. There is currently no standard or table in which the researcher can utilize in order to make this decision. Therefore, the determination is

completed on an ad hoc basis. This study examined the measure of similarity or distance between clusters at each successive step and chose a distance in which the similarity matrix or distance made a sudden jump.

Future Research

One future research possibility is to complete post hoc tests using Discriminant Analysis in order to understand how demographic characteristics (e.g., gender and race/ethnicity) change the various cluster variance. More research is needed concerning the variables prior adjudication, prior referrals, Class B misdemeanor offenses, Class A misdemeanor offenses to understand the reason for these variables not being closely clustered with other risk and offense variables. The variables Under 16 and 16 or over at time of offense should be broken into the various ages to see how the overall fit within clusters. Under 16 may be too broad of a variable (e.g., ages 10-15) which caused this variable to be an entropy variable. Also, these two variables should be inserted into the individual risk and protective variable cluster analysis in order to see whether the ages 10 through 16 should be classified as risk factors rather than protective factors. Li (1999) and Cottel et al. (2001) both found that conviction during early adolescence has a positive effect on future recidivism. Therefore, a young age variable may be more closely related to recidivism than being aged 16 or older. Furthermore, due to the findings on the lack of similarity between the protective variables used in the study, other protective factors (e.g., family stability and good academic records) should be included in order to view how the overall measure of protective variables cluster.

Conclusion

Understanding the characteristics that define the juvenile delinquents within the juvenile justice system is important for the development of successful programs. This study brings forth more questions and possibilities of future research than expected. One conclusive fact is that offense classifications and risk (aggravating) variables are very closely related except for Class A and Class B misdemeanor offenses. Another conclusive fact is that protective variables are less closely related to each other which lead to a need for more research on these variables which allow juvenile delinquents to not re-offend. Furthermore, demographic characteristics should also be included in future studies in order to see how these characteristics change the cluster relationships between variables. Prior adjudication and prior referral also need to be studied in-depth in order to understand the discrepancy between risk factors and these two variables. Due to the results found in this study, it is imperative that research continues in regards to juvenile delinquency and recidivism. As has been found by past researchers, this study found some corresponding evidence and some contradictory evidence in relation to previous findings. Furthermore, this study was completed only on an urban county. Due to the county's policies and practices in place, the research cannot be generalized to other counties unless a county with similar policies and practices is found. This study does help in producing a picture of the juveniles who define the juvenile justice system in Harris County. By taking out the confusion of race/ethnicity and gender, the risk variables that define the juveniles are having no parental supervision, being a previous runaway, being considered a danger to himself, herself, or others, and not

attending school. The primary purpose of the juvenile justice system is to rehabilitate

juveniles; therefore, these risk factors should be considered as the beginning point for

developing certain programs in order to lower delinquency in Harris County.

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