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## Juvenile recidivism: an analysis of race and other socio-demographic predictors within three intervention modalities in the state of Louisiana

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**JUVENILE RECIDIVISM: AN ANALYSIS OF RACE AND OTHER SOCIO-  
DEMOGRAPHIC PREDICTORS WITHIN THREE INTERVENTION  
MODALITIES IN THE STATE OF LOUISIANA**

A Dissertation

Submitted to the Graduate Faculty of the  
Louisiana State University and  
Agricultural and Mechanical College  
in partial fulfillment of the  
requirements for the degree of  
Doctor of Philosophy

in

The Department of Sociology

by  
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December 2004

## **DEDICATION**

This work is dedicated to my late father-in-law,  
Isack Kaburia M'Nkanata.

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## ABSTRACT

Owing to the increasingly growing problem of juvenile crime and the recognition that adult criminals begin their criminal careers in their juvenile years, the need to contain juvenile offending has never before been so glaring. Delinquency of young offenders can be predicted and prevented. But the methods most often used to predict juvenile recidivism typically derive from stereotypical conceptions, which often yield very low accuracy levels. This study is an attempt to make up for this shortfall. It tracks one year recidivism of 2,810 juvenile offenders released from state custody of Louisiana between July 1999 and June 2000. Of these releases, 919 were discharged from non-secure or community-based treatment modality, 572 from secure short-term modality, and 1,319 from secure regular type of incarceration.

The aim of the study was: to find out whether recidivism varies according to the three treatment modality types; to establish the correlation between recidivism and clients' individual socio-demographic characteristics; to find out whether race would have any effect on recidivism, *ceteris paribus*; and to examine the relationship between race and other potential predictors of recidivism.

Existing literature was reviewed and among the frequently cited predictors of recidivism were: race, age at first adjudication, age at release, gender, duration of stay in custody, offense type, drug use, peer influence, alcohol use, family background, emotional stability, health status, employment, educational achievement, school discipline, and economic status. The data were analyzed in three stages. The first involved a descriptive presentation, the second bivariate correlations, and the third logistic regression analyses.

It was found that the rate of juvenile recidivism does not vary according to the intervention modality type. The most significant predictors of recidivism were: (a) offense type/seriousness of the offense; (b) age at first adjudication; (c) duration of stay in the correctional system; (d) drug use; and (e) peer influence. The offender's race was not found to be important in determining the likelihood of recidivating. Black offenders differ from white offenders only in terms of gender, but not with respect to any other socio-demographic characteristics that influence their reoffending behavior.

# **CHAPTER 1**

## **BACKGROUND**

### **1.1 Introduction**

One of the biggest challenges facing society today is the problem of juvenile offending. Juvenile recidivism and its concomitant patterns including the risks and needs factors, socio-demographic characteristics, as well as their delinquent histories are the most important issues relating to juvenile crime in the modern society. The recidivism of young offenders presents even a more disturbing problem, considering the consensus in general literature that adult criminals begin their criminal careers in their juvenile years, suggesting that to fight adult criminality, we must begin by controlling juvenile delinquency. A study on 20-year trends in juvenile detentions, correctional and shelter facilities in the United States showed that “there were more juveniles... in more crowded, secure, and costly juvenile correctional facilities in 1995 than there were in the preceding years” (Smith, 1998:539). Nationwide, violent crimes are being committed by younger and younger persons and are even increasing among middle-class youth in suburban neighborhoods and communities (Durant, 1999:268). In 2000 the number of arrests for persons under 18 years stood at a staggering 1,560,289 (Pastore & Maguire, 2002). Out of these, those charged with violent crimes such as murder, non-negligent manslaughter, forcible rape, robbery, and aggravated assault – were 65,910 while those charged with property crimes, including, burglary, larceny-theft, motor vehicle theft, and arson, were 345,731 (Pastore & Maguire, 2002:352). Consequently, the necessity to contain young offenders before they become ensnared in adult criminal occupations presents a societal concern that has never before been so glaring.

## 1.2 Problem Statement

Attempts to grapple with problems of juvenile delinquency vary widely from one society to another. Even in the United States, juvenile correctional agencies are not identical across states (Dedel, 1998). But typically, such efforts range from the least restrictive community-based rehabilitation to the most punitive incarceration in total institutions. Since the 1967 recommendation by the President's Commission on Law Enforcement and Administration of Justice that the juvenile justice system should emphasize deinstitutionalization and diversion instead of incarceration of children and adolescents (Empey, 1967), juvenile justice policy-makers have increasingly been interested in determining which rehabilitation programs actually reduce recidivism (Quist & Matshazi, 2000). But whether it is the program or the individual offender that needs attention remains to be determined.

The fact that the phenomenon of juvenile offending is worrisome cannot be overstated. However, the delinquency of young offenders can be predicted and could thus be prevented. But the methods most often used to predict juvenile recidivism typically derive from conventional wisdom, which often may not stand any scientific verification. The result is that they yield very low accuracy levels, only a little above chance. A more substantive and quantitative-oriented procedure is necessary in order to elevate the effectiveness of prediction and subsequent prevention of juvenile reoffense. The best way to determine whether a particular characteristic is related to recidivism is to compare the recidivism rates of offenders with that characteristic (Hanson, 2000). The main goal of this study was to establish a socio-demographic profile of juvenile offenders who have the highest risk of reoffending and to ascertain the recidivism rates for each of the three

treatment modalities in the state of Louisiana, namely, secure regular, secure short term, and community-based programs. In addition, the study aims at establishing whether there is a link between race and other socio-demographic predictors of recidivism. Upon meeting these goals, an aggregation of predictive factors of reoffending will determine three distinct models, one for each of the three treatment modality types.

### **1.3 Research Objectives**

Four general objectives of this study were:

- (a) To determine the recidivism rates for each of the treatment modalities employed by the Department of Public Safety and Corrections in the State of Louisiana and to show whether recidivism varies according to the three treatment modality types.
- (b) To establish whether a correlation exist between recidivism and clients' individual socio-demographic characteristics, risks and needs factors, as well as their delinquent histories. These variables are summed together as (1) race, (2) age at first adjudication/conviction, (3) age at release from custody/supervision, (4) gender, (5) duration of stay in custody, (6) offense type, (7) drug use, (8) peer influence, (9) alcohol use (10) family stability, (11) emotional stability, (12) health status, (13) employment, (14) educational achievement, (15) school discipline problems, and (16) economic status.
- (c) To find out whether, holding all things equal, race would have an effect on the likelihood of recidivating.
- (d) To examine the relationship between race and other potential predictors of recidivism.

#### **1.4 Significance of the Study**

Understanding juvenile recidivism is crucial for the development of effective policy responses to the broader ramifications of juvenile offense. The commonplace that a small proportion of offenders is responsible for a very large proportion of offenses (Farrington and West, 1993) need to be addressed within the milieu of the specific factors that predict reoffending. This study examines the socio-demographic characteristics of juvenile offenders who have the highest likelihood of reoffending, and seeks to ascertain the recidivism rates for each of the three treatment modalities in the state of Louisiana. The current juvenile justice system is imbued with major operational and structural problems including overcrowded courts, high caseloads, increasing levels of recidivism, and a general system lethargy (Harrison, et al., 2001). This points to an urgent need for juvenile justice system reform that should aim at increasing the system's efficacy in order to achieve greater levels of delinquency reduction. This type of reform necessitates a new type of risk assessment for reoffending, which should be based on an updated profile of clients that frequent state juvenile custody and supervision facilities. That kind of profile forms a central objective of this study. It is therefore anticipated that by using the findings of the current study, probation and juvenile rehabilitation agencies in general will benefit in two main ways. First, the improved risk assessment encapsulated in the client socio-demographic profile will help advance the rate of prediction of reoffending. And second, the findings will help juvenile justice and rehabilitation personnel to better understand the patterns of reoffending for females and minority groups.

## **1.5 Modality Types**

As mentioned earlier, the Department of Public Safety and Corrections runs three major intervention modality types; non-secure programs; secure short-term programs; and secure regular programs. The criteria for placing juveniles into these modality types depends on a variety of reasons, including, offense type, offense history, and, perhaps more importantly, the screening score assigned by the Office of Youth Development as a result an intensive evaluation for various needs and risk factors. The operations and general characteristics of these programs, as explained by the Office of Youth Development, are examined below.

### **1.5.1 Non-Secure Modality**

There is a common maxim that “nothing works” which is imputed to Martinson, (1974) for concluding his study titled “What Works”, that “with few and isolated exceptions, the rehabilitative efforts that have been reported so far have had no appreciable effect on rehabilitation”. In spite of this maxim which tends to find tremendous expression within the corridors of the correction system in the United States, controlled studies have reported a reduction in the rate of recidivism among offenders who have gone through intervention programs (Andrews, et al. 1990; Lipsey, 1992). The community-based option, in particular, has been singled out as an ideal program for any successful attempt to reduce recidivism (Harland, 1996; Champion, 1998). Public support for community-based juvenile rehabilitation has also been verified by a statewide survey of Tennessee residents, where the residents failed to endorse an exclusively punitive system of juvenile justice (Moon, et al., 2000). However, according to Harland (1996), without a clear vision as to how and for whom the variety of options may best be applied, excessive

emphasis on non-secure rehabilitation may hobble the intended correctional outcomes. Nonetheless, the determination of the most appropriate intervention modality for specific cases is not indiscriminate; according to Sharkey et al. (2003:467-8), juveniles whose profiles suggest the highest likelihood of reoffending are usually placed on maximum supervision status while those whose risk assessment scores fall below the threshold are likely to be placed on a lower level of supervision.

The state of Louisiana runs a non-secure or community-based intervention program for youths assigned to non-secure care. Such youths are placed under the supervision of the Division of Youth Services, which oversees probation and parole services as well as other non-custodial intervention programs such as therapeutic foster care, group treatment homes, half-way houses/independent living homes, foster homes, staff secure homes, the family preservation program, day treatment programs, emergency shelter care service, and other contracted residential facilities. The functions and characteristics of these non-secure community-based programs are listed below, as explained by the Office of Youth Development.

(a) Day Treatment programs

These are non-residential programs designed to provide enhanced community supervision and support to juveniles whose risk of offending or reoffending is higher than regular probation can manage. Besides the heightened supervision, day treatment programs provide educational remediation, rehabilitative services and behavior modification for adjudicated juveniles and status offenders. The programs also offer the services to juveniles returning from more restrictive residential care or secure institutions, who have demonstrated an increasing ability and willingness to remain out of trouble. These



services are provided in an environment that allows the juvenile to live at home while reporting to designated facilities every morning until they are seen to reform or otherwise until they complete the program. Offenders or juveniles in the program usually have experienced failure and may have been suspended or expelled from regular education settings due to truancy, academic problems or behavioral maladjustments. Offenses that warrant admission to a day treatment center are usually minor and commonly non-violent. Juveniles are referred to these programs by the Office of Youth Development, typically through a court order. Baton Rouge Marine Institute, a facility for both boys and girls, is an example of a day treatment center.

(b) Family Preservation Program

This is an intensive, crisis-oriented, non-residential program that provides services on an outreach basis to juveniles already adjudicated as delinquents or status offenders. As a home-based service, the program also offers adaptive skills and conflict resolution to the families of the affected juveniles in order to prevent the otherwise high probability of out-of-home placement following adjudication.

(c) Emergency Shelter Care Service

These are temporary housing programs for juveniles adjudicated for minor delinquent or status offenses. The programs offer recreational activities and transportation to court, medical services, and local schools. They also arrange counseling services, medical, dental, and mental health appointments on an emergency or crisis basis.

(d) Group Homes

Group homes represent a higher level of restriction than day treatment programs and are reserved for more serious offenders or those initially admitted to day treatment facilities

but fail to conform to the laid down rules of the program. Services in such facilities are individualized, but group counseling is also an integral component. Rehabilitation programs in group homes are based on specific plans developed for the juvenile by the provider, in conjunction with the local Office of Youth Development district office. Some group homes serve juveniles adjudicated with specific offenses. “Focus”, a boys-only facility situated in downtown Baton Rouge, is an example of such a group home, whose clientele is specifically adjudicated for sex-related offenses, but which are not serious enough to occasion need for secure custody.

There are alternatives to group homes or non-secure treatment placement. The Office of Youth Development has two such alternatives. These include the following:

(i) Therapeutic Foster Care

The foster care program provides services to adjudicated delinquents as well as status offenders in the home of professionally trained surrogate parents where juveniles are provided a treatment service in a supportive, family home environment. Where reunification with the natural family is an established goal, the provider works closely with the family during the course of the treatment, but if return is not possible, treatment goals are designed to prepare the juvenile for another alternative to group home, the independent living program.

(ii) Independent Living/Halfway Houses

This program provides a structured transition from an institution or residential treatment facility to the community. Halfway houses seek to provide services aimed at enhancing life skills as well as independent living skills, for the purpose of reducing the rate of return to the correctional and/or rehabilitation system. Acquisition of such skills

facilitates successful reintegration of the juveniles into their homes and communities and may aid in acquiring jobs.

When all attempts at correcting and rehabilitating juvenile offenders at non-secure treatment facilities has failed, or when the offense in question is so serious that placing the offender in a non-secure setting would jeopardize public safety, the offender is placed in secure care custody where all manner of restrictions obtain.

### **1.5.2 Secure Short-Term Modality**

Secure short-term treatment is variously referred to as shock incarceration or boot camps. Shock incarceration regimen involves strict, military-style discipline, unquestioning obedience to orders, and highly structured days filled with drill and hard work (Clark, et al., 1994). An amplification of the need for intervention and a rebuttal of the notion that nothing works, is epitomized by the works of Gendreau (1996), who found that intensive services, reminiscent of the boot-camp style or short-term secure custody, are critical in ensuring the success of the program. This notion is, nevertheless, not coterminous with the findings of Sherman et al. (1997), who believed that the perceived toughness of boot camp programs account for more subsequent criminal behavior upon release than do regular intervention programs.

In the state of Louisiana, there are both secure short-term and secure regular treatment modalities. Secure short-term, as the name suggests, is a transient, usually 90-120 and sometimes 180 days of treatment that provides constructive intervention to increase the youth's awareness for their potential for achievement and success. The program seeks to promote the offenders' productivity and to increase their sense of being valued, with the goal of achieving successful community reintegration of the youth. Two

facility used by the Office of Youth Development for offering secure short-term intervention are:

(1) Bridge City Correctional Center for Youth (BCCY)

This was formerly known as Louisiana Training Institute – Bridge City. It is located in Bridge City along the banks of Mississippi River in Jefferson Parish and is a secure correctional facility for male juveniles who are adjudicated with delinquent offenses and found to deserve a custodial placement. BCCY provides pre-vocational programming opportunities instead of the regular vocational education program, owing to the young age and average educational attainment level of the inmate population. The facility runs not only short-term secure custody, but also secure regular treatment for male offenders who deserve elongated confinement.

(2) Swanson Correctional Center for Youth (SCCY) in Monroe

This is another secure correctional facility for male juveniles who have been adjudicated with delinquent offenses. The SCCY received American Correctional Association accreditation in 1994. Like BCCY, this facility also doubles up as a secure short-term and secure regular custody for male juvenile offenders. In addition, SCCY operates a program for offenders with serious mental illnesses, as well as vocational educational opportunities in diverse areas.

### **1.5.3 Secure-Regular Modality**

According to Joutsen & Zvekic (1994:4) although there is need to address the special need for rehabilitation while punishing, where the offender is regarded as so dangerous to the community, he or she should be incapacitated or rendered harmless by isolation from

the environment within which the dangerous offenses could be committed. Indeed, long incarceration is appropriate for vicious remorseless violent offenders not only because it necessarily aims at correcting them, but also because it is safer for the community (Champion, 1998; Ingley, 2000). The state of Louisiana offers regular secure intervention for incorrigible and other serious juvenile offenders in a number of institutions, some of which offer both secure short-term and secure regular treatment. The secure regular treatment is intervention in a secure confinement for any period of time beyond four months. The state's facilities that offer this type of intervention include:

(a) Louis Jetson Correctional Center for Youth (JCCY), formerly known as Louisiana Training Institute - East Baton Rouge. This is a secure correctional facility for both male and female offenders. It is located on the outskirts of Baton Rouge to the north, and it doubles up as the intake center for all youths assigned to secure care. In addition, the facility has a vocational educational program.

(b) Swanson Correctional Center for Youth (SCCY) in Monroe already described under secure short-term programs.

(c) Bridge City Correctional Center for Youth (BCCY) as described under secure short-term programs.

Various types of programs operating in the state of Louisiana, comprising the non-secure, secure-short-term, and secure regular modality types were also reviewed, and examples of each offered wherever appropriate.

## **1.6 Chapter Summary**

In this chapter, the central problem being investigated as well as the specific goals of the study were articulated. The study basically seeks to examine socio-demographic characteristics, risk and needs factors as well as previous history of releases with respect to whether or not they influence their likelihood of reoffending. The state's juvenile intervention programs were similarly reviewed.

## **CHAPTER 2**

### **THEORETICAL FOUNDATION OF OFFENDING BEHAVIOR**

#### **2.1 Introduction**

This chapter details the main theoretical reflections upon which the concepts of offense and reoffense can be appreciated. The chapter endeavors to show and emphasize that all mainstream theoretical orientations of delinquency, crime, and deviance in general are borne out of the tenets of the deterrence paradigm. Conventional theories of social learning, strain, and control are reviewed in a bid to show that their principles derive largely from the central essence of the deterrence doctrine.

#### **2.2 Theoretical Foundations**

In this study, it is recognized that all hitherto mainstream theoretical orientations in the explanation of the concepts of offense and reoffense are borne out of the essence of the deterrence doctrine. It is maintained and demonstrated that all explanations of law breaking, whether it is the initial act of delinquency or a repeat violation, begin and end with deterrence. This section examines how the tenets of deterrence as rooted in the past literature subsume the more conventional theories of social learning, control, and strain as tools of explaining non-conformity to socio-legal norms.

The deterrence model of delinquent behavior principally holds that people engage in an act only after carefully and rationally considering its benefits and risks. Williams and Hawkins (1986:545) articulate the relationship thus: “Deterrence theory implies a psychological process whereby individuals are deterred from committing criminal acts only if they perceive legal sanctions as certain, swift, and/or severe”. According to Paternoster and Piquero (1995) there is a vital distinction between general deterrence and

specific deterrence. Specific deterrence occurs as a result of the actual imposition of sanctions on the subsequent behavior of the offender. “It occurs when punished offenders cease offending, commit less serious offenses, or offend at a lower rate because of the fear of some future sanction” (Paternoster and Piquero, 1995:251). On the other hand, general deterrence occurs as a result of fear instilled into potential offenders who witness sanctions being meted out against actual offenders. It has been argued that the more the individual perceives legal sanctions as certain, swift, and/or severe, the greater is the perceived cost of crime and thus the probability of deterrence (Williams and Hawkins, 1986). This way, general deterrence occurs when persons refrain from offending, or they offend less frequently or commit less serious crimes due to the fear of being punished that is produced and sustained when others have been sanctioned for their offending (Paternoster and Piquero, 1995:253).

While general deterrence affects the conventional members of the society who may not have committed any offenses yet, specific deterrence applies more directly to repeat offenders or recidivists whose likelihood of reoffending is malleable by their perception of previous sanctions or punishment. This view suggests that the relevance of deterrence in offending becomes real only when punishment has occurred. Specific deterrence is relevant when self has been punished while general deterrence makes sense when others have been punished (Paternoster and Piquero, 1995). But Stafford and Warr (1993) argue that the experience of punishment is not the only experience relevant to deterrence; the experience of “avoiding punishment” is similarly critical. Stafford and Warr maintain that the experience of avoiding punishment when one has actually committed an offense “is likely to affect perceptions of the certainty and severity of



punishment, the two principle variables in recent deterrence studies” (p.124). To illustrate this assertion, Stanford and Warr feel that it is probable that avoidance of possible punishment after committing an offense may contribute more to encouraging crime than punishment does to discourage it. “Offenders whose experience is limited largely to avoiding punishment may come to believe that they are immune to punishment, even in the wake of occasional evidence to the contrary”(Stafford and Warr, 1993:125).

Earlier works had argued for an inverse relationship between the perceived certainty of legal punishment and law breaking. According to Paternoster (1987:180), the association “may simply reflect the fact that most instances of rule breaking go undetected and that participants in crime eventually lower their initially unrealistic high estimates of the risk involved”.

In their “reconceptualization of deterrence”, Stafford and War (1993:131) even add the concept of peer involvement to the experience of punishment and punishment avoidance. “If a person has friends who have committed crimes, then that person’s behavior could reflect indirect experience with punishment and punishment avoidance rather than peer pressure as conventionally interpreted”. Stafford and War argue that to unscramble these factors, the issue of peer involvement must be addressed more deeply in order to find out what exactly happens to friends who commit crimes, and in particular, whether they are arrested and legally charged or not. Peer influence in delinquency and other forms of law breaking may affect perceptions of the certainty and severity of punishment by sharing the experience of punishment and punishment avoidance with others. And this claim gains even more currency from the enormously proven fact that juvenile offending is largely a group phenomenon. For this reason, juveniles are likely to

surmount possible deterrence because they have a “ready access to the *collective* experience of their companions, [or in other words] an intelligent offender might be tempted to draw stronger conclusions about the certainty and severity of punishment from the cumulative experiences of friends than from his or her own relatively narrow life experience” (Stafford and Warr, 1993:132).

The role of peer influence in offending, as well as in reoffending, as articulated by Stafford and War (1993) is not incongruous with the classical writings about the function of the social environment in learning. One of the oldest formulations about learning, which placed total emphasis on associations, was Aristotle’s four laws of similarity, contrast, succession in time, and coexistence in space, about which he argued that “all knowledge is acquired through experience and that none is inborn or instinctive” (Vold, *et al.*, 1998:180). But perhaps Gabriel de Tarde’s “laws of imitation” represents the first most elaborate attempt to describe criminal behavior in terms of learning experiences. Tarde argued that criminals were basically normal people who, “by accident of birth, were brought up in an atmosphere in which they learned crime as a way of life” (Vold, *at al.*, 1998:182). His first law was that people imitate one another in proportion to how much close contact they have with one another. He argued, secondly, that the inferior usually imitates the superior, and that the newer fashions so imitated replace the older ones. Taken at both the face and the theoretical value, these theories represent a primordial notion of the current general deterrence schema. This is fundamentally so because the experience of punishment or punishment avoidance from others is central to learning as envisioned by the early learning writers. Following an analogous argument to the one advanced by Tarde, that criminal behavior is the result of normal learning, Edwin

Hardin Sutherland (1939) formulated the differential association theory, in which he asserted that criminal or deviant behavior is not innate but rather acquired through a process of learning. This type of learning is best exemplified among ones closest associates, who turn out to be peers. Citing Title et al. (1986), Stafford and Warr (1993:132) state that, “although neither Sutherland nor his interpreters did so, it seems reasonable to treat fear of legal sanctions as an aspect of criminal perspective possibly learned from associations”.

The experience of punishment and punishment avoidance from peers are, however, not the sole or even the most important determinants of deterrence. Within the general control theory runs a deep corollary of deterrence. Control theory is an offshoot of the classical theories, which held that people who committed criminal acts had no special propensities in criminality but were merely following the universal tendency to enhance their own pleasure (Gottfredson & Hirschi, 1990). Broadly speaking, control theory proposes that crime results when an individual’s bond to society is weak or broken. According to Hirschi (1969), this social bond is explained by four elements, namely, attachment to society, commitment to long-term conventional goals, involvement in conventional activities, and belief in the moral validity of the law. Referring to these social bonds as “personal capital”, Nagin and Paternoster (1994:581) present a sturdy discourse on social control, whereupon they argue that “individuals who are more present oriented and self-centered invest less in social bonds and therefore are less deterred from committing crime by the possibility of damage to such bonds”. It follows, consistent with this argument, that individuals who are more future-oriented and less self-centered are more deterred by the perceived risk of damage to that investment (Nagin and Paternoster,

1994:600). In other words, people who have invested more heavily on what classical control theorists would call the prerequisites to strong social bonds are the same people who are likely to have a more pronounced sense of deterrence in flouting socio-legal norms. While awareness of the natural and legal consequences of delinquent acts is itself an effective control in behavior, a person who is not aware of such consequences remains largely uncontrolled, and, by implication and extension, undeterred.

With respect to strain theories and their place in the deterrence model, one of the most cited writings in this regard is the works of Robert K. Merton (1938) on social structure and anomie. Merton argued that certain phases of social structure are responsible for the circumstances in which infringement of social codes amounts to a normal response, “normal in the sense of a culturally oriented, if not approved, response” (Merton, 1938:672). Merton avers that society is itself responsible for all law-breaking because it exerts pressure of “prestige-bearing success” on all members irrespective of their differential abilities. The most crucial element in this type of pressure, in the parlance of Merton, is that it “tends to eliminate the effective social constraint over means employed to this end” (p. 681). The individual whose effective social constraint is thus eliminated begins to experience eroded deterrence and ultimately develops a higher predilection to offending and even reoffending until the pressure is alleviated.

From Merton (1938), on mechanisms of adapting to economic strain through Cohen (1955), Cloward and Ohlin (1960), who showed how middle-class status is the goal for most adolescents to (Brezina, 1996), crime and delinquency emerges as a form of adaptive problem-solving behavior, usually committed in response to problems involving frustration and undesirable social environments. According to Brezina (1996), strain

brings about negative emotions, including disappointment, resentment or feeling of injustice when normative expectations of equity have been breached. These negative emotions create pressure for corrective action and may lead one to make use of illegitimate channels of goal achievement, attack or escape from the source of adversity, or manage the negative effects through the use of illicit drugs (Agnew, 1992). Anger is especially more central because it “increases the individual’s level of felt injury, creates a desire for retaliation/vengeance, energizes the individual to action, and lowers inhibitions” thereby making delinquency a more likely possibility (Agnew, 1992:60). From the foregoing synopsis of strain theory, it is apparent that both specific and general deterrence are forcefully at play to direct the outcome of the strain.

### **2.3 Chapter Summary**

In this chapter, the theoretical bases of offending behavior were reviewed. It was noted that the critical consideration for engaging in any type of behavior, whether it is law-abiding, initial act of delinquency or a repeat violation, is the interplay between gains and risks, and when risks outweigh the gains, the individual is deterred and refrains from the envisioned behavior. This is what the mainstream theoretical orientation in the explanation of offending advocates.

## **CHAPTER 3**

### **LITERATURE REVIEW**

#### **3.1 Introduction**

This chapter examines the findings of previous studies in juvenile reoffending. Recent findings on the diverse variables identified in this study as the potential predictors of reoffending are reviewed, in addition to examining the various definitions of recidivism. The chapter also runs an overview of the three intervention modality types in the state of Louisiana. The reviewed literature culminates in the identification of four research hypotheses, which are tested in the subsequent chapters.

#### **3.2 Definition of Recidivism**

Recidivism is widely used to refer to reoffending within a specified period of time after release from a correctional facility. The duration taken between the time of discharge and reoffending is not constant, but has to be specified depending on the needs, constraints, or other circumstances of the research in question. Maltz (1984) identifies at least fourteen definitions, with the most common ones being rearrest, reconviction, resentencing, and any type of return to prison with or without a new sentence. Arrests and convictions have been the most widely used measures, and the main reason for this is their relative ease of measurement because they require no active cooperation of subjects (Greenwood, et. al., 1993). However, many studies have used all four measurements in combinations (Klein & Caggiano, 1986; Langan & Levin, 2002). Whatever the measure that is ultimately chosen, it has been shown that recidivism is not a chance event, but can be predicted using certain variables (Klein & Caggiano, 1986; Florida Department of Corrections, 2003). Such variables include race, age at release from custody or supervision, gender,

duration of stay in custody or state supervision, offense type, any prior substance abuse, criminal history, and influence by peers, among others.

Since juvenile justice policy-makers routinely make use of recidivism as an overriding means of evaluating rehabilitation programs (Piper & Warner, 1980/81, Maltz, 1984; Gottfredson & Tonry, 1987; Florida Department of Corrections, 2001; Sharkey, et al., 2003), it is important to establish how the above-listed individual socio-demographic characteristics impact on recidivism so they can serve as a yardstick for measuring whether and how well intervention modalities perform in concrete situations. Literature pertaining to the importance of such characteristics in the prediction of recidivism is reviewed below. Thus the three main definitions of recidivism are the following:

(a) Re-arrest

This refers to a subsequent arrest after release from a custodial or supervision facility, often within a specified period of time. This measure ignores the fact that the arrestee may later be released for lack of sufficient evidence, maintaining that a mere act of arrest is indicative of recidivism. In other words, the arrestee may not have engaged in any delinquent behavior.

(b) Re-adjudication/Reconviction

This is a confirmation, through an official judicial proceeding, that a person has engaged in a subsequent offense after release and is bound for sentencing. While re-adjudication is for juvenile offenders processed in juvenile courts, reconviction is either for adult criminals, or for juveniles tried and found guilty in adult courts. Re-adjudication/reconviction has been found to be the most fecund indicator of recidivism because new crimes are involved (Champion, 1998).

### (c) Resentence

Since not all juveniles convicted of reoffending are sentenced as sentencing may partly be contingent on the probation officers' reports, resentence as a measure of recidivism also becomes narrow when compared with re-adjudication/reconviction. The main ground for this argument is that whether the person is sentenced or not does not obliterate the reality that a new crime was committed upon release. The only way to confirm guilt for the crime is by adjudication/conviction.

In this study, re-adjudication is used as the indicator of the presence or absence of recidivism for all three intervention modalities.

## **3.3 Predictors of Recidivism**

A wide array of factors has been associated with the incidence of reoffending among juveniles. These factors can be organized into different ambits including: (a) risk and needs indicators; (b) demographic characteristics; and (c) previous history dynamics. Different specific factors that can be classified into these three domains are reviewed under this subsection.

### (a) Race and Sex

The effect of race varies across different levels of the justice system, including the decision to hand a custodial adjudication to a juvenile offender. Such decisions are contingent upon "time, macrosocial factors (e.g. racial composition of communities), the characteristics of the court in question (e.g. degree of bureaucratization), and the presence and extent of racial stereotyping" (Bridges and Steen, 1998; Leiber, 2003:1).

According to Bridges and Steen (1998), stereotypes are an important factor in the common conception that blacks are more criminogenic and recidivate at a higher rate



than whites. This view echoes earlier assertions by Peterson and Hagan (1984:67) that blacks and other minorities are seen as more villainous and therefore as deserving of more severe penalties. Although many studies do not control for these variables, there seems to be a general consensus in literature that there is a strong correlation between the pattern of offending and race (Benda, 2001; Strom, 2000; Harms, 2003; Puzzanchera, 2003; Pope and Snyder, 2003; Stahl, 2003). In a study of three-year recidivism of 272,111 former inmates of prisons in fifteen states, Langan & Levin (2002) found that blacks were more likely than whites to recidivate irrespective of the measurement of recidivism used, while Hispanics had the lowest recidivism rate compared to other races. Regarding the relationship between race and gender with respect to the rate of prevalence of juvenile custody, DeComo (1998) found that the rate of African American males was more than five times higher than the rate for white males. Indeed, the rate for African American males was higher than the rate for males of any other race. This trend remains the same not only at the level of recidivism, but also at the first act of offending (Strom, 2000; Harms, 2003). A study on predictors of racial arrests differentials showed that although blacks are arrested more often than whites, this may have something to do with the blacks' higher susceptibility to be arrested because they are more likely to be participants in more serious types of crimes or offenses that warrant police responsiveness (Cureton, 2000). It has also been suggested that the belief by certain racial groups that the justice system is unfair may fuel criminogenic attitudes that are an important prerequisite in the decision to offend. For example, "blacks may turn to criminality or engage in more crime because of a perception that the criminal law and its enforcement are unfair and even racist" (Wilbanks, 1987:2; Cureton, 2000). Such beliefs

are used to rationalize and justify delinquent and criminal behavior by maintaining that the affected persons are not actually offenders when they commit a crime but victims of an unjust system (Wilbanks, 1987). This notwithstanding, this race-offending or race-reoffending nexus is sometimes refuted by research. For example, in a study of psychosocial variables associated with recidivism, Katsiyannis, et al., (2004) found no difference between recidivists and nonrecidivists with regard to race.

With respect to sex, existing research findings are invariable that men are not only more represented than women in the general phenomenon of crime, but also, they are overly represented in recidivism rates compared to women on all measurement types (Gauthier & Bankston, 1997; Greenwood et. al., 1993; Quist & Matshazi, 2000; Strom, 2000; Harms, 2003; Puzzanchera, et al. 2003). In a recent study, DeComo (1998) estimated the prevalence of juvenile custody by race and gender and found a higher prevalence rate for males than females for all races. Overall, it is estimated that only 22% of all individuals arrested and 17% of incarcerated Americans are female (Stuart and Brice-Baker, 2004).

(b) Age

Recent studies on juvenile court statistics and prediction of recidivism tend to show a preponderance of delinquency among youths aged 15 or younger for all the cases processed by the juvenile courts (Katsiyannis and Archwamety, 1997; Archwamety and Katsiyannis, 1999; Puzzanchera, et al., 2003; Katsiyannis et. al, 2004). Although the number of cases involving 17-year-olds may be depicted as lower than the number involving 16-year-olds, this may owe to the fact that in some states 17-year-olds are legally treated as adults and are therefore processed in adult courts rather than in juvenile

jurisdictions, a case that Puzzanchera and associates also confirm. But even after controlling for the age of majority factor, the younger age brackets at the time of first adjudication are more represented in both offending and reoffending (Duncan et al., 1995). This claim is further corroborated by Miner (2002), who, in a study of predictors of recidivism in serious juvenile sex offenders, found that youths who began offending at younger ages were at increased risk of reoffending.

Conversely, an inverse relationship exists between the age at release and the likelihood of recidivism. The younger the offender at the time of release, the higher the likelihood of reoffending and vice versa (Klein & Caggiano, 1986; Ashford & LeCroy, 1990; Carr, 1994; Sanders, 1998; Strom, 2000; Benda, 2001; Harrison, et al., 2001; Harms, 2003; Puzzanchera, 2003). According to Langan & Levin (2002:7), while recidivism rate is about 45% for those released at the age of 45 or above, the same is a staggering 80% for offenders released at the age of 18 or under.

#### (c) Duration of Stay

The period of time spent in a correctional facility before release is a factor that is positively related to the likelihood of return to the correctional system (Sabol et al., 2000; Langan & Levin, 2002; Miner, 2002; Baker, et al., 2003; Seabloom, et al., 2003). There has also been a growing conception that the severity of punishment, especially as encapsulated in long incarceration sentences, is positively related to deterrence, or, in other words, is inversely related to recidivism (Paternoster, 1989; Fass & Pi, 2002). If this assertion were to be defensible, higher recidivism rates would be witnessed among offenders treated in community-based modalities, which are perceived to be the least punitive. However, considering that severe punishment that characterizes regular secure

custody may also spawn anger and defiance that may lead to recidivism (Corrado, et al., 2003; Sherman et al. (1997), the relationship between severity of punishment and reoffending remains unclear.

In a study in Florida, Winokur et al., (2002) found no consistent relationship between length of confinement and recidivism. However, they found that although this variable was significant at the bivariate level for nonresidential and high-risk programs, in the multivariate analyses, its effects were only significant for juveniles released from high-risk facilities. And in a study of recidivism of sex offenders, Langan et al. (2003) found a higher rearrest rate among sex offenders who served the shortest period of time in prison than those who served the longest. Nevertheless, after controlling for the type of offense for which the offender was rearrested, Langan and associates found that the relationship between period of stay in prison and the rate of rearrest turned positive, and held that a general conclusion about an association between the level of recidivism and the amount of time served is not tenable.

#### (d) Offense Type

The type of the offense for which a person was released from custody or state supervision has been shown by previous research to be an important factor in whether or not the person will engage in further criminal or delinquent behavior upon release (Corrado, et al., 2003). Juveniles who commit violent offenses are more likely than minor and property offenders to commit additional offenses, both violent and non-violent (Duncan et al., 1995; Sabol, et al., 2000; Bondeson, 2002). In an eight-year comparative analyses of adolescent rapists and child molesters, Hagan et el. (2001), found adolescent sex offenders to have a significantly higher likelihood of reoffending after release from a

correctional facility than a control group of other non-sex offending adolescent delinquents.

But in a sharp contrast a recent study has diametrically disputed this offense type-recidivism nexus and argued in the reverse order. According to Langan & Levin (2002), persons released after a custodial sentence for property offenses such as arson, burglary, larceny, auto theft, fraud and other types of theft have the highest rate of recidivism compared to those released for violent offenses, drug-related violations, and public order transgressions. Langan and Levin also found that violent offenses such as homicide, robbery, kidnapping, and rape have the lowest rate of recidivism compared to the other types of offenses.

#### (e) Prior Offense

Where the offender has assumed delinquent or criminal behavior as a lifestyle of choice, which in other words translates to existence of prior offenses, recidivism rates tend to be higher (Corrado et al., 2003; Nagin, & Paternoster, 1991; Minor, et al., 1999). According to Corrado et al., (2003:184) the import of prior offense or criminal history in predicting recidivism is that the decision to commit further offenses post-release from custody or state supervision “preexists”. Prior criminal involvement weakens conventional social bonds thereby damaging those relationships that once helped deter criminal behavior (Wright, et al., 1999). According to Akers (1985), criminal acts and the resultant formal sanctions can give the affected individuals the greater exposure to and affinity for other individuals who constantly violate the law and this patterning of reinforcement leads to elevated participation in further criminal behavior. It has been argued that whether or not

prior offense will determine reoffending largely depends on the number and severity of previous offenses, often in the region of five or more times (Snyder, 1998).

(f) Family Background

Family stability, often defined from the point of view of whether or not both parents are living together with their siblings, is the single most important factor in ensuring that a child is properly assimilated into the mainstream of society. The influence of the family in reducing or encouraging recidivism stems from the notion of social control, where it is believed that parental influence is capable of counteracting negative swings in adolescents and forms a potential barrier to delinquent behavior (Warr, 1993). Warr also argues that attachments to parents helps inhibit the initial formation of delinquent friendships, which itself helps interrupt the cycle of negative peer influence and delinquent behavior.

According to recent studies, marriage and parenthood are a strong basis of social bonds that promote conformity to social and socio-legal norms (Rand, 1987; Sampson and Laub, 1993; Laub et al., 1998; Li et al., 2000). Families aid greatly in the construction of social capital, which may be a necessary, though not necessarily a sufficient ground for remaining law-abiding (Cottle, et al., 2001; Winter, 2000). Even after a period of interventive treatment, common problem-solving techniques and interaction between family members have been shown to be a major factor in subsequent offending behavior (Epstein et al., 1983; Andrews et al., 1990). In Andrews and associates' (1990) meta-analysis, functional family therapy was found to be the leading factor in the reduction of recidivism and this was further corroborated by follow up works on family therapy on delinquency and criminal behavior by Gordon et al. (1995). In a

study, Fendrich (1991) concluded that supportive family relationships are likely to reduce repeat delinquent behavior for youth who are on parole or other follow-up interventions.

(g) Drug and Alcohol Abuse

The relationship between drug use and delinquent behavior has attracted a lot of concern in the last few decades. Although in the public mind the relationship between drugs and crime is often seen as fairly straightforward, with drug use being viewed as directly causing criminal behavior, critical analysis has found the relationship far more complex (McBride & McCoy, 1997; Parker & Auerhahn, 1998; Day et al., 2003). A study of alcohol, drugs, and violence showed no significant evidence to suggest that drug use is associated with violence but demonstrated substantial evidence to suggest that alcohol use is significantly associated with violence of all kinds (Parker & Auerhahn, 1998).

However, other studies have found an important association between use of drugs/substance abuse and the rate of recidivism (Grenier and Roundtree, 1987; Haapanen, 1990; Howell, 1995). Nevertheless, although other studies have attempted to establish the relationship between drug use and offending, they have only showed that offenders are, in general, heavy substance users while heavy substance users are disproportionately likely to engage in criminal activity. This, according to McMurrin (1996), does not confirm drug use as an important predictor of recidivism as the antipodal relationship is also possible. In spite of these findings, other recent studies has found positive associations between use of drugs/substance abuse including alcohol and reoffending, and have thus belied this view, with a conclusion that use of drugs/substance abuse increases the likelihood of recidivating for young offenders (Loza, et al., 2004; McCoy, et al. 2004).

#### (h) Peer Influence

A large body of research has successively and steadily linked peer influence to patterned delinquent behavior, with peer pressure forming a central explanation of not only the first involvement in delinquency, but also the repetitive pattern that typifies recidivism (Loeber & Loeber, 1987; Warr & Stanford, 1991; Warr, 1993; Thornberry, et al., 1995; Matsueda & Anderson, 1998; Benda, 2001; National Research Council & Institute on Medicine, 2001). Indeed, delinquent peers and delinquent behavior have been found to be reciprocally related; delinquent peer associations foster future delinquency and delinquency increases the likelihood of associating with delinquent peers (Matsueda & Anderson, 1998:269). In a study on the influence of delinquent peers, Warr and Stafford (1991) found that the attitudes of adolescents are influenced by the attitudes and behavior of their peers and those attitudes in turn affect delinquency.

The consequence of peer influence on recidivism has been intertwined with the effect of criminal history (Sutherland and Cressey, 1947; Akers, 1985). Individuals who have a positive definition towards crime have a higher affinity for one another and this reinforces their creed thereby leading to further crime. However, the relationship between peer influence and delinquency has long been questioned, with Glueck & Glueck (1950:164) proposing that delinquency may not be caused by the transmission of definitions favorable to violation of law through associating with other delinquents, but it may be that “birds of a feather flock together”.

#### (i) Educational Performance and School Discipline

Considerable evidence suggests that irrespective of the type of measurement, both male and female delinquency is related to poor academic performance (Bartollas, 2003).



Adolescents who fail to continue with school and drop out midway are far more susceptible to delinquent behavior than those who stay and graduate (Bynum and Thompson, 2005). School dropouts tend to have a hard time finding jobs and girls who drop out are more likely to become pregnant than those who stay in school (Cantelon and LeBoeuf, 1997). Thus, while failure in school is itself not linked to offending behavior, contemporaneous circumstances have a high affinity to delinquent and repeat delinquent behavior. Several other recent studies have found a consistent association between academic achievement at the time of admittance to a residential institution and not only first criminal acts, but also recidivism (Spellacy and Brown, 1984; Duncan et al., 1995; Archwamety & Katsiyannis, 1999). Low levels of academic achievement and negative attitude towards school are positive predictors of reoffending. Archwamety and Katsiyannis (2000) found that on average, delinquents score lower than non-delinquents across academic measures, and that school dropouts are 3.5 times more likely than graduates to be arrested.

On the other hand, school bonding and problems associated with school discipline, which are actually contemporaneous to school achievement, are also directly linked to the incidence of reoffending (Cernkovich & Giordano, 1992). Cernkovich & Giordano argue that the greater the degree of school bonding, the less the likelihood of involvement in delinquent activities. According to this argument, lack of commitment or attachment to the school increases the odds of truancy, waywardness and other forms of disobedience to school authorities. Adolescents who find themselves in such situations are more likely to turn to peers for support and acceptance, which further compounds and

reinforces the discipline problem, if the peers are themselves undisciplined (Bartollas, 2003).

(j) Employment

Recent studies have demonstrated a direct link between employment and recidivism, and confirmed that the relationship is strongest when recidivism is most likely (Ekland-Olson & Kelly, 1993; Schmidt & Witte 1988). The importance of employment in reoffending was amplified in a study of work as a turning point in the life course of criminals, where it was shown that “offenders who are provided even marginal employment opportunities are less likely to reoffend than those not provided such opportunities” (Uggen, 2000:542). However, this effect of employment is age-related and is most felt among older releases than among the more youthful adolescents. According to Uggen (2000), older offenders past the age of 26 were amenable to employment interventions than younger offenders.

(k) Emotional Problems and Health of the Offender

Offenders’ emotional instability is an important precursor to the high likelihood of return to the correctional system upon release. A study that compared first-time and repeat runaways from an adolescents’ shelter facility showed that youths’ emotional problems were significantly related to recidivism for repeat runaways (Baker, et al., 2003).

However, although there is little evidence to suggest that physical illness is an important factor in offending, save for HIV serostatus (Harris et al., 2002), there is a general consensus in the available literature that persons with mental illness who are released from correctional facilities are at a higher risk of rearrest (McCoy, et al., 2004).

### 3.4 Research Hypotheses

Four hypotheses in this study are:

**H1:** *Ceteris paribus*, there is a relationship between treatment modalities and the likelihood of reoffending.

**H2:** The socio-demographic characteristics of offenders will influence their likelihood of recidivating.

**H3:** *Ceteris Paribus*, there is a relationship between race and recidivism.

**H4:** Black offenders differ from white offenders in terms of the socio-demographic characteristics that influence their likelihood of recidivating.

### 3.5 Chapter Summary

Existing literature finds certain factors crucial in determining the odds of reoffending among juveniles. These include race, age at release, gender, duration of stay in custody or supervision, offense type, drug and alcohol use, prior offense, peer influence, family stability, emotional stability, school discipline problems, offender attitude, and economic status. However, the literature yields mixed results regarding which form of intervention really works. Whereas some findings point to non-custodial sentence or community-based rehabilitation as the most effective interventive modality, others advocate for “short-sharp-shock” as the most ideal course of therapy, while still others call for prolonged custodial placements as the only appropriate regimen.

## **CHAPTER 4**

### **METHODOLOGY**

#### **4.1 Introduction**

This chapter outlines the methodological and statistical procedures of the study. It begins with a description of the types of data and how these data were identified and obtained. The validity and reliability of the data and how the possible effects of these threats were precluded is also examined. In addition, the three intervention modality types are described and the operationalizations of the dependent and independent variables of the study are discussed. The coding of the data as well as the rationalization of various coding schemes in the light of the existing alternatives follow. Finally the chapter describes the methods of data analysis and offers a justification for the statistical methods that are ultimately adopted for the study.

#### **4.2 Data Types**

In order to conduct a thorough analysis of the impacts of race and other socio-demographic predictors of juvenile recidivism, this study required information about socio-demographic characteristics of juveniles released from a variety of correctional facilities and the risk factors associated with juvenile offending. A record of the offender's adjudication, disposition and eventual discharge was also needed. Individual case histories with respect to delinquent as well as status offending were also necessary. A final requirement for the analysis was data pertaining to the background of the intervention or treatment programs and how those were associated with different offender characteristics.

### 4.3 Identification of Data

The information required for this study was obtained from the Office of Youth Development (OYD) in the Department of Public Safety and Corrections in the form of two databases. Following a formal application and request for access to the information, permission was granted by the OYD, and the specific data were supplied, with the agreement that all necessary steps would be taken to conceal the identity of the persons to whom the information pertains. Described below are the two datasets.

The first set consisted of five data files, which OYD identifies as the Juvenile Information Records Management System (JIRMS). These include

- (a) a demographic file that contained information pertaining to date of birth, race, gender, and home parish for each youth released from state custody/supervision during the 1999/2000 fiscal year;
- (b) a transfer file that included details of the physical location of placement for individual cases, transfer dates, type of commitment, screening score, and the facility exit outcome;
- (c) a petition and offense history file that contained the information pertinent to the petition dates, offense histories, current offense type, date of adjudication, and disposition type for youth released from the state custody or supervision in the specified fiscal year;
- (d) a referral information file that contained such information as the referral source, referral date, referral statute, and the referral sequence for every release made during the specified period of 1999/2000 fiscal year;

- (e) a risk and needs assessment file that contained the assessment scores for the fourteen domains demonstrated by the existing research literature to be predictive of delinquency are contained.

The second set of data was in the state's Corrections Adult Justice Uniform Network (CAJUN) that contained only those convictions that resulted in adult placement. Some of the juveniles who had been released during the period specified for this study (July 1999 to June 2000) and who were returned to the correctional system within one year of release were sentenced as adults and were consequently traced with the CAJUN dataset. Since information pertaining to all juvenile releases in the study period was either found in the JIRMS or CAJUN datasets, the combination of the two sets facilitated the isolation of the juvenile recidivists from the common pool of total releases. To achieve this, common identifiers such as social security numbers were used; however, as soon as the 1999/2000 releases were categorized, such personal identifiers as social security numbers as well as the Office of Youth Development's case classification numbers were immediately replaced with a set of completely unrelated cataloging in order to conceal the identity of the persons involved.

For the purpose of augmenting the two available datasets, there were also on-site visits to a sample of juvenile correctional institutions that employed the three correctional modalities. In addition, face-to-face discussions were held with the Office of Youth Development administration. Moreover, the administrative staff of the institutions visited also gave presentations of their operations and, where it was possible, informal discussions were held with a sample of the population clients in each of the institutions.

#### **4.4 Selection of Target Population**

The Office of Youth Development of the Louisiana Department of Public Safety and Corrections uses three major intervention/treatment modalities, namely:

- (1) Non-secure programs;
- (2) Secure short-term programs; and
- (3) Secure regular programs.

Youth adjudicated as delinquent or as Family-In-Need-of-Services (FINS) by a court of juvenile jurisdiction are either placed in any of the state's secure juvenile facilities, or, if assigned to non-secure care, they are placed under the supervision of the Division of Youth Services, under whose control is non-secure community care including juvenile probation and parole. This study involved a complete enumeration of subjects because all the offenders released from the custody or supervision of Louisiana Department of Public Safety and Corrections during the fiscal year 1999/2000 were included in the analysis.

The criteria for inclusion into the sample were:

- (1) Given that some offenders may exit one program to another and so not all exits from a program amounted to release, offenders included in the analysis were only those released into the community;
- (2) The offenders must have been released within the specified time period, which is between July 1999 and June 2000.

#### **4.5 Validity and Reliability**

Validity, a term that refers to "the extent to which an empirical measure adequately reflects the real meaning of the concept under consideration" (Babbie, 2002:139), quite often adversely affects research findings. A classic monograph by Campbell and Stanley

(1963) lists several factors that affect the internal validity of a study, namely, maturation, history, testing, instrumentation, statistical regression, selection bias, experimental mortality, and selection-maturation interaction. While these factors are not discussed in detail in this dissertation, as that is outside of the study's scope, they are very briefly defined in relation to the threat they pose to this study and how that threat was obviated. Even then, not all of these factors are addressed because most of them pertain to experimental research, and are best applicable in attitude-related outcomes. Those that are relevant to this type of study include maturation, instrumentation, and experimental mortality.

(a) Maturation

This refers to biological or psychological changes in the respondents during the course of study that are not due to the envisioned predictor variables. As Hagan (2003:77) puts it, "as a given age cohort matures, its crime commission in general tends to decrease; that is, there are very few eighty-year-old cat burglars". But in the current case, the study did not only involve a single year of follow up, but also, all the subjects were below the age at which physical activity could reasonably be expected to begin declining.

(b) Instrumentation

This may refer to measuring instruments including observers, questionnaires, interviews, and analyses of existing records. It was initially feared that since the data for this study were collected and originally coded by different personnel at different times, their interpretation especially in allocating high, medium, or low codes for juvenile needs and risk factors might have been highly subjective. While it is not plausible to lay a legitimate claim to the ability to completely eliminate such prejudice, several consultative forums



were held with the administration of the Office of Youth Development during which the main domains of the data were examined and confirmed to be accurate. Besides, consistency checks and cross-checks helped to identify any other outlying cases.

### (c) Experimental Mortality

In any follow-up study, unexpected loss of subjects occurs quite often and this may have an important consequence on the results. Perhaps studies on recidivism are the most hurt by this validity problem because they inhere in follow-ups. In the current study, although some of the releases may have died or moved to other states after release, the proportion of those affected in this way was expected to be negligible. But it was not possible to include into the study pool all categories of offenders in proportionate numbers because those who were incarcerated for prolonged periods of time depending on the seriousness of their offenses were still in the system and whether or not they would recidivate upon release could not be established. This was indeed an issue that concerned the OYD administration, and therefore one that could not be ignored. The percentage of such offenders was, however not significant at all. A fixed release time period criterion of inclusion into the sample helped define who enters the study pool, and dealing with individual cases on the bases of the various treatment modalities helped greatly in taking care of proportions for each modality type.

On the other hand, reliability in measurements refers to “the consistency or dependability of a measuring technique” (Leary, 2001:58). Said differently, reliability “is a matter of whether a particular technique applied repeatedly to the same object would yield the same result each time” (Babbie, 2002:136). As was observed earlier, the initial coding for the data used in this study was performed by people other than the researcher

or his agents. The main areas of concern here are not the straightforward variables such as age, race or sex. Rather, reliability concerns revolve around risk and needs factors or such variables as peer influence, family stability, alcohol use, school discipline, or health status. The determination of the score to attribute to variables of this nature, from the lowest to the highest, is not as straightforward and is much more likely to be affected by the subjective judgment of the person collecting and compiling the data.

Although it is not practicable to solve every possible reliability problem (Babbie, 2002), sufficient efforts were made to ensure that the data used in the study were dependable and that the results obtained could be replicated. In particular, it was confirmed that the Office of Youth Development staff that were entrusted with collating information pertaining to dispensation of juvenile justice were adequately trained and evaluated often enough to ensure minimal discrepancy in their personal assessment and coding classifications. Besides, on-site visits to some of the correctional facilities and interviews with a random number of the clients therein helped confirm some of the more fluid issues of measurement reliability. Finally, the measurement of recidivism is relatively reliable; it is either present or not, and is therefore not affected by such reliability concerns.

## **4.6 Variable Description And Operationalization**

This section describes the measurement and operationalization of the dependent and independent variables of this study.

### **4.6.1 The Dependent Variable**

The dependent variable for this study is recidivism. The Office of Youth Development (OYD) defines recidivism as any juvenile who has been adjudicated delinquent and either

placed into the custody of or under the supervision of the Department of public Safety and Corrections (DPS&C), who then, following discharge: (1) is subsequently readjudicated for any delinquent offense as a juvenile, and is again placed into the custody of or supervision of the DPS&C, or (2) is convicted in an adult court, and sentenced to the custody or supervision of the DPS&C. In addition to this definition, the current study also treats as recidivism, any subsequent adjudication of a juvenile as a status offender. The recidivism of the study subjects was tracked for one year upon release. The rationale for the decision to consider only one year instead of the conventional three years lies in the fact that almost 70% of all the recidivism in the first three years takes place within the first year (Langan & Levin, 2002:3). The relevant factor in the rate of recidivism is not the number of times a person is adjudicated/convicted after release, but whether or not the person was re-adjudicated/reconvicted.

Recidivism was operationalized as a binary variable with values (0,1), where “0” stands for lack of adjudication/conviction a year after release thereby implying absence of recidivism, and “1” shows that the person was adjudicated/convicted within a year of release, which is indicative of recidivism.

#### **4.6.2 Independent Variables**

A number of variables were shown by the literature to predict recidivism. These include: race; age at first adjudication/conviction; age at release from custody/supervision; gender; duration of stay in custody; offense type; drug use; peer influence; alcohol use; family stability; emotional stability; health status; employment; educational achievement; school discipline problems; and economic status. The operationalization of these variables and how they were extracted from the OYD database are discussed below:

(a) Race

Race, or ethnic background, is treated as a categorical variable. According to the Juvenile Information Records Management System's (JIRMS) Demographic File, the race variable is categorized into fifteen groups, namely, Aleuts, Alaskan natives, Asian American, American Indian, Black, Oriental, Cambodians, Mixed, Pacific Islanders, Polynesians, Puerto Ricans, Vietnamese, White, Spanish/Latin American, and "other". Yet, most of these racial groups had either no cases or extremely few cases, while a concentration of cases was found for "black" and "white" categories. For the purpose of this study, the race variable is recoded into two categories as either "black=1", or "white=0".

(b) Age

Two age-related variables in this study are age at first adjudication/conviction and age at release from custody. The JIRMS data files do not directly provide any of these variables. Age at first adjudicated offense is derived by subtracting the date of birth from the minimum referral date, while age at release is obtained by subtracting the date of birth from the date of release. These dates are found in the JIRMS Transfer File. For offenders in consecutive secure programs, the date of release was the date on which the person was ultimately released into the community, ignoring all other dates during which the release ended up in other facilities. Both age variables are measured in years.

(c) Gender

The offender's gender, which refers to whether the person is male or female, was directly obtained from the Office of Youth Development data files. It is treated as a dichotomous variable coded as "male=0" and "female=1".

#### (d) Duration of Stay

This refers to the total period of time spent in custody. This variable is not directly available in the JIRMS dataset. It is obtained by subtracting the referral date from the date of release into the community. For those offenders who were referred from one facility to another, referral date was the initial referral into the first state custody or supervision facility, while release date was the date of exit from the last intervention facility. Duration of stay was measured in months.

#### (e) Offense Type

Three distinct variables were created from the general type of offense committed. “Offense type 1” was based on the seriousness of the offense, and this was derived from the criterion of whether an offense was a “felony”, thereby coded “1”, or a “misdemeanor”, coded “0”. The second type, “Offense type 2”, was based on whether the offense is considered a crime irrespective of whether it is committed by an adult or an underage, termed “delinquent offense” and coded “1”, or the offense can only be attributed to juveniles and never adults, “termed status offense” and coded “0”. The third type of offense, referred to here as “Offense type 3”, pertains to whether the offender actually committed the act, which was assigned a code of “1”, or the person just attempted to commit, incited others into committing, or conspired to commit the offense. Any of these responses was coded “0”.

#### (f) Drug Use

Individual drug use histories of each juvenile in the study were scrutinized. The OYD categorized drug use into three classes, namely (a) no history of use, (b) occasional/suspected use, and (c) chronic use. For the purposes of the current study, the recoded

format for this variable combined “no history of use” and “occasional/suspected use” to form a measure of “no drug use”, thereby producing two possible outcomes as “no drug use=0” and “drug use=1”. This permutation was not only the most logical, but it was also a better predictor in the model than any other possible combinations.

(g) Alcohol Use

Each juvenile’s case records were studied to determine whether or not there was any history of alcohol use before the current placement. This variable, like drug use, was categorized by the Office of Youth Development information record into three forms as (a) no use, (b) occasional/suspected use, and (c) chronic use. Two combinations were plausible. The first was to combine (a) and (b) while the second was to merge (b) and (c), with each case producing two outcomes as “no alcohol use=0” and “alcohol use=1”.

When the regression model was run with both combinations, the latter option was found to be a better predictor and it was thus used in the analysis.

(h) Peer Influence

An examination of the role of peers in the behavior of all the juveniles in the study group was conducted. The Juvenile Information Records Management System classified peer influence into three categories, including (a) not a contributing factor; (b) negative influence, involved in delinquency; and (c) strong negative influence. A decision had to be made for this study about which of the two possible recoding formats for this variable to adopt. The two options were either (i) “(a+b)=1” and “(c)=0”; or (ii) “(a)=1” and “(b+c)=0”. Option (ii) was adopted for the analysis, owing to its stronger contribution to the explained variance in the dependent variable.

(i) Family Stability

The family of each individual in the study was examined to determine the extent of family stress as it relates to the effectiveness in helping the adolescent to remain out of trouble. The classification of this variable by the Office of Youth Development is threefold, namely, (a) stable and supportive; (b) evidence of some instability or stress but with potential for improvement, and (c) major instability or stress. Since existence of minor instability in families is as common as it is universal (Koskinen et al. 2001), it was found analytically appropriate to combine stable families with those that manifest minor instability, and to treat the outcome of the two as a normal family, while holding chronic instability as the only family factor that has the potential to plunge an adolescent into repeat delinquent behavior. That combination also had the strongest association with the dependent variable.

(j) Emotional Stability

Individual cases in the Juvenile Information Records Management files were inspected to ascertain the level of emotional stability. The Office of Youth Development classified this variable into three categories as (a) general appropriate behavior; (b) occasional inappropriate behavior and (c) excessive inappropriate behavior. For the purpose of this study, all adolescents who were found to have “general appropriate behavior” were assigned the code of “0”, and “1” for all those who manifested either occasional or excessive inappropriate behavior.

(k) School Problems

This variable pertains to school discipline difficulties and the role it can play in delinquent behavior. The Justice Information Record Management Systems (JIRMS) data

files were examined in order to identify and isolate school discipline as a variable to be used in predicting recidivism. The variable was found to be present, and JIRMS classified it into four categories as (a) attending school, graduated, GED, or already employed; (b) problems handled at home or at school; (c) truancy or behavior problems; and (d) dropped out or expelled/unemployed. In this study, it is maintained that, because minor school discipline problems that might necessitate action by a parent constitute normal school life (Cernkovich & Giordano, 1992), categories (a) and (b) above were combined as recoded as “no school discipline problems” and assigned a code of “0”. Likewise, categories (c) and (d) were combined and recoded “school discipline problems” and thereby assigned a code of “1”.

#### (l) Economic Status

The Juvenile Information Record Management Systems’ data files categorized different levels of economic status into three classes. These are: (a) no current difficulties; (b) situational or some difficulty in meeting needs; and (c) in real need. These were recoded into a dummy variable. Outcomes (b) and (c) above were combined to reflect a “needy” economic status, which was coded “1”, while option (a) comprised the second outcome that represents “stable” economic status, coded accordingly as “0”.

#### (m) Educational Performance

Case records for all the juveniles entered for this study were examined in order to establish their educational or vocational performance. This variable was initially coded by JIRMS in three categories as (a) performing in an appropriate setting and manner; (b) performing below capacity; (c) failing or in an inappropriate setting. To transform this coding classification into an analytically logical dummy variable, outcomes (b) and (c)



were combined and the resultant two outcomes were, “good performance”, coded as “0”, and “poor performance”, coded as “1”.

#### (n) Health Status

According to the JIRMS data files, health status was classified into three categories as (a) physically healthy; (b) minor/temporary medical problems; and (c) physically handicapped or chronic illness. In the current study, health status as a variable with the potential to impact recidivism was recoded into a two-outcome variable, whereby the physically healthy were combined with those with trivial medical problem to form the “physically healthy” outcome with a code of “0”, while the physically handicapped and the chronically ill formed the “physically unhealthy” category, who were assigned the code “1”.

### **4.7 Data Cleaning**

The cleaning of the data for this study was conducted in two stages. The first phase entailed a thorough examination of all the five data files from the Juvenile Information Records Management System (JIRMS) along with the Corrections Adult Justice Uniform Network (CAJUN) database, and merging of the two. This phase was fundamental because while the JIRMS dataset included youths who were released from state custody during the specified study period of July 1999/June 2000 fiscal year, the same dataset contained only partial information relating to reoffending for the same clients. Most of that information was available from the CAJUN data files, which included post release offending for both juveniles and adults. Using social security numbers, which is a common identifier for both databases, a follow up from JIRMS release to CAJUN post

release offending was achieved by isolating juvenile releases from the wider CAJUN data.

In the second phase of the data cleaning, a comprehensive editing of the consolidated dataset was conducted. This involved elimination of all “wild punches” – recording and coding errors – as well as any major case omissions that could be identified in the combined dataset. For example, since social security numbers conventionally have nine digits, all entries with a less-than-nine or more-than-nine digit figure were omitted from the analysis. Moreover, where a measuring scale for a variable was provided, the data were examined to ensure that the codes for respective variables corresponded with those provided in the codebook, and any entries outside of the scale were tracked and the particular cases dropped from the analysis. In some cases, codes were found to occur in both lower and upper cases interchangeably. This discrepancy was edited by transforming such codes to either the upper or the lower case in order to ensure consistency in the final analysis. Overall, 5.6 % of the original data were lost by the end of the cleaning exercise.

#### **4.8 Methods of Data Analysis**

This study involved a multi-stage analysis of data. The preliminary stage was descriptive in nature and was devoted to descriptive statistics including cross-tabulations, correlations, and percentages. This yielded a profile of the client populations in each of the three modality types. At the second stage, bivariate correlations between recidivism and each of the independent variables were conducted in an effort to assess the correlation and significance between recidivism and the predictor variables, and also to check for any threat of multicollineality or interdependencies among the predictor variables. The resulting Pearson’s correlation matrix was examined and in a few cases,

there were intercorrelations in excess of .6, (see Appendix 2) whose effects were tested as interaction terms for each of the three intervention modality types. That none of the correlation coefficients between predictor variables approached 1.00 was a sure way of confirming inexistence of multicollineality (Neter et al., 1996). The original correlation runs are appended at the end of this dissertation. In the third phase, chi-square and binary logistic regression analyses are conducted. The justification of these two statistics is offered in the next subsection.

#### **4.8.1 Chi-Square**

The chi-square is a test of the independence of the relationship between variables, and it basically compares observed cell frequencies with expected cell frequencies, or values that could occur by chance. Two variables are independent if the classification of a case into a particular category of one variable has no effect on the probability that the case will fall into any particular category of the second variable (Healey, 2002). The chi-square test was chosen for this study due to its versatility and, fundamentally, because it requires no major assumptions about the shape of the population or sampling distribution (Healey, 2002:268). Using the conventional chi-square distribution tables, if alpha is set at .05, the critical region with 1 degree of freedom begins at 3.841. The chi-square decision rule is that if the obtained chi-square falls within the critical region, the null hypothesis is rejected, thereby providing support for the research hypothesis.

#### **4.8.2 Rationale for Logistic Regression**

The findings of this research, like most recent and current studies, could simply be summarized using ordinary multiple regression analysis, whose output is more intuitively interpreted and much easier to discern. Ordinary multiple regression would show the

increase or decrease in the predicted probability of recidivating due to the presence or absence of the binary outcome predictors. For the few continuous variables in the study, multiple regression coefficients would similarly show the increase or decrease in the probability of recidivating as a result of a unit change in the variable in question.

However, ordinary multiple regression analyses face two major problems, one of which is conceptual, and the other statistical. The conceptual problem of ordinary multiple regression with dichotomous dependent variables such as this study is primarily based on the fact that probabilities have minimum and maximum values of 0 and 1 respectively. By definition, probabilities and proportions in such an analysis cannot exceed 1 or fall below 0. “Yet, the linear regression can extend upward toward positive infinity as the values of independent variables increase indefinitely” (Pampel, 2000:3). Moreover, in an analysis where the maximum probability is fixed at 1 and the minimum at 0, a negative intercept makes no sense. Statistically, linear regression assumes a normal distribution of error values around the predicted or dependent variable, and that this distribution is associated with each value of the predictor variables. The dispersion of the error values for each predictor value is also assumed to be the same. But the existence of only two observed values of the dependent variable in ordinary regression analysis violates these normality and homoscedasticity assumptions, thereby greatly reducing the efficiency of the estimates.

The conceptual and statistical problems associated with ordinary multiple regression analyses are serious enough to require use of an alternative method of analysis when used with qualitative dependent variables (Pampel, 2000). Logistic regression analysis surmounts these problems. It is, as a result, the technique of choice for this

study. Logistic regression fits as the most ideal method in this and other similar studies because it converts the probabilities based on a dichotomous dependent variable into logged odds that signify an underlying continuous variable. With the dependent variable as recidivism, the logistic regression model will take the following form:

$$\ln(p/1-p) = f(x) = b_0 + b_1x$$

Where:

- i.  $p$  is the conditional probability of recidivating given a specific value of the descriptive variable  $x$ , which embodies the entire array of independent variables;
- ii.  $p/1-p$  is the odds of recidivating given a specific value of the descriptive variable  $x$ ;
- iii. the intercept of the function,  $b_0$ , represents the logged odds of recidivating when  $x = 0$ ; and
- iv. the slope,  $b_1$ , is the change in the logged odds as  $x$  changes by one unit.

#### **4.8.3 Interpreting Logistic Regression Output**

The dependent variable in logistic regression analysis is usually transformed into logged odds. The key columns in a conventional logistic regression output are the following:

- (a) The estimates of the logistic regression or the logit coefficients, labeled “B”,
- (b) The Wald statistic labeled “Z<sup>2</sup>”, and
- (c) The exponential of the logit coefficient labeled “Exp(B)”.

At a general level, the logit coefficients show the change in the predicted logged odds of experiencing an event or having a characteristic for a one-unit change in the independent variables. In the current case, logit coefficients represent the change in the predicted

logged odds of recidivating due to a one unit change in the envisaged socio-demographic or other predictors. For example, a logit coefficient of  $-.084$  for sex (where females are coded “1” and males “0”) means that the logged odds of recidivating are lower for females than males by  $.084$ . It could be said, *mutatis mutandis*, that the logged odds of recidivating are higher for males than females by  $.084$ . Perhaps the aptness of logistic regression is best appreciated here due to the fact that the effect of one unit change in the independent variable on recidivism will be the same regardless of the level of the predictor or the levels of other predictors, something that is not always the case with linear regression.

In the second column, “Z” represents the ratio of the logit coefficient of  $x_i$  to the standard error of  $x_i$ , where  $x_i$  stands for a range of predictor variables. This is the column that is used to measure the statistical significance of an independent variable in predicting the dependent variable. Thus  $Z$ -squared minus the logarithm of the sample size should exceed zero for the effect of  $x_i$  to be significant. And  $Z$ -squared minus the logarithm of the sample size constitutes the Bayesian Information Criterion (BIC) (Pampel, 2000:30-31). As a general rule, if the BIC value for a variable equals or falls below zero, the data provides little support for including the variable in the model. A BIC value of between 0 and 2 is defined as weak; 2 to 6 as positive; 6 to 10 as strong; and beyond 10 as very strong (Pampel, 2000). It is recognized that these BIC categories are not mutually exclusive, but they are nonetheless adopted in this study because they offer a useful estimate of the strength of association.

The last column,  $\text{Exp}(B)$ , or the exponentiated logistic regression coefficients, is a transformation of the logits so that the independent variables affect the odds rather than

the logged odds of the dependent variable. The exponentiated logit also represents an estimated odds ratio. Since the predicted value of the dependent variable does not change when multiplied by a coefficient of 1, then, subtracting 1 from  $\text{Exp}(B)$  and multiplying the results by 100 gives us the percentage change in the odds of experiencing an event or having a characteristic as a result of one unit change in the predictor variable. For instance,  $\text{Exp}(B)$  of -.919 for sex, (again taking into account that females are coded “1” and males “0”) means that the odds of recidivating are  $(.919-1)*100 = 8.1\%$  higher for males than females. The BIC decision rule is that if  $Z^2 > \ln n$ ,  $H_0$  should be rejected and  $H_1$  accepted. The logarithms of the three sample sizes for this study are  $\ln 919 = 6.823$  for non-secure modality;  $\ln 572 = 6.349$  for secure short-term, and  $\ln 1319 = 7.185$  for the secure regular type.

#### **4.9 Chapter Summary**

In this chapter, the procedures used in the study were described. These include the methods of data collection, data coding techniques, and the methods used in the analysis of data. Some validity- and reliability-related threats and the attempts made to ameliorate them were described. Measurement of dependent and independent variables were operationalized, and a justification for the various analytical techniques employed was offered.

**CHAPTER 5**  
**ANALYSES AND FINDINGS**

**5.1 Introduction**

The data are presented and analyzed in this chapter. Several methods are used in the analysis. First, a comprehensive descriptive presentation is made in the form of cross-tabulations in order to show a quick sketch of the similarities and differences in the socio-demographic characteristics across modality types. This is followed by bivariate correlation matrices, which examine the correlation and statistical significance of each of the predictor variables with the dependent variable, as well as among themselves. In the last phase of the analysis the research hypotheses of the study are tested. Two main methods are used in these tests – the results of the logistic regression analysis, and chi-square.

**5.2 Descriptive Analyses**

This section presents a description of the variables that were initially considered to be potential predictors of juvenile recidivism. All the variables were entered for cross-tabulation with recidivism for all three modality types and the results are presented separately for each of the modality types.

Table 1  
Predictors Variables for Non-secure Treatment Modality

Predictor	Operationalization	N Recidivated	% Recidivated	Total N = 919	
				N	%
Race	White	74	24.8	298	32.4
	Black	163	26.2	621	67.6



Table 1 continued

Sex	Male	188	29.0	649	70.6
	Female	49	18.1	270	29.4
Offense type 1	Felony	128	69.2	185	20.1
	Misdemeanor	109	14.9	734	79.9
Offense type 2	Status offense	31	12.9	241	26.2
	Delinquent offense	206	30.4	678	73.8
Offense type 3	Committed	217	25.4	856	93.1
	Attempted, ...	20	31.7	63	6.9
Prior offense	No delinquent history	169	24.5	690	75.1
	Has delinquent history	68	29.7	229	24.9
Family	Stable	27	9.7	341	37.1
	Unstable	210	36.4	577	62.9
Drug use	No use	41	7.3	559	60.8
	History of use	196	54.4	360	39.2
Alcohol use	No use	48	8.4	570	62.1
	History of use	189	54.2	349	37.9
Emotion	Appropriate behavior	112	17.5	640	69.6
	Inappropriate behavior	125	44.8	279	30.4
Employment	Employed	116	16.9	686	74.6
	Not employed	121	51.9	233	25.4
Econ status	No difficulties	67	25.8	260	28.3
	In real need	170	25.8	659	71.7
Health status	Physically healthy	236	26.0	908	98.8
	Physically ill	1	10.0	10	1.2
School discipline	No disc problems	50	10.5	478	52.0
	Has discipline problems	187	42.4	441	48.0
Education	Doing well	86	14.0	615	66.9
	Failing in school	151	49.7	304	33.1
Peer influence	No peer influence	4	1.2	341	37.1
	Negative influence	233	40.3	578	62.9
Age at first adjudication (in years)		Mean=13.54	S.D = 1.57	N=237	
Age at release (in years)		Mean=17.80	S.D = 1.39	N=237	
Duration of stay (in months)		Mean=20.28	S.D =13.29	N=237	

According to Table 1, in this modality type, there are more black (67.6%) than white (32.4%) offenders. There are also far more males (79.9) than females (20.1%). In terms of the offense type, 79.9% of the releases from the non-secure treatment had been

adjudicated for misdemeanor, as opposed to 29.4%, who had been adjudicated for felonious offenses. Most of the releases (73.8%) in this modality type were delinquent offenders, and the majority of them (62.9%) came from families that were characterized as unstable, majority of whom were in real economic need. Only 39.2% of these releases had used drugs prior to entry into the correctional system. About half of them had school discipline problems, and 75.1% had no prior delinquent history. The mean age at first adjudication was 13.5 years, and the average age at release was 17.8 years. The offenders stayed in the system for an average of 20 months.

Table 2  
Predictors Variables for Secure Short-Term Treatment Modality

Predictor	Operationalization	N Recidivated	% Recidivated	Total N= 572	
				N	%
Race	White	34.6	20.2	198	34.6
	Black	65.4	24.1	374	65.4
Sex	Male	98.8	22.8	565	98.8
	Female	1.2	14.3	7	1.2
Offense type 1	Felony	58.7	28.3	336	58.7
	Misdemeanor	41.3	14.8	236	41.3
Offense type 2	Status offense	5.1	0.0	29	5.1
	Delinquent offense	94.9	23.9	543	94.9
Offense type 3	Committed	89.3	24.9	511	89.3
	Attempted, ...	10.7	4.9	61	10.7
Prior offense	No delinquent history	70.6	15.3	404	70.6
	Has delinquent history	29.4	40.5	168	29.4
Family	Stable	17.1	17.3	98	17.1
	Unstable	72.2	24.0	413	72.2
Drug use	No use	91.3	18.4	522	91.3
	History of use	8.7	68.0	50	8.7
Alcohol use	No use	49.0	13.2	280	49.0
	History of use	51.0	31.8	292	51.0

Table 2 continued

Emotion	Appropriate behavior	37.1	13.2	212	37.1
	Inappropriate behavior	62.9	28.3	360	62.9
Employment	Employed	74.7	19.0	427	74.7
	Not employed	25.3	33.8	145	25.3
Econ status	No difficulties	88.5	21.5	506	88.5
	In real need	11.5	31.8	66	11.5
Health status	Physically healthy	96.2	23.1	550	96.2
	Physically ill	3.8	13.6	22	3.8
School discipline	No disc problems	58.9	21.1	337	58.9
	Has discipline problems	41.1	25.1	235	41.1
Education	Doing well	38.8	11.7	222	38.8
	Failing in school	61.2	29.7	350	61.2
Peer influence	No peer influence	33.7	9.8	193	33.7
	Negative peer influence	66.3	29.3	379	66.3
Age at first adjudication (in years)		Mean = 14.40	S.D =1.40	N= 130	
Age at release (in years)		Mean =17.30	S.D = 1.00	N= 130	
Duration of stay (in months)		Mean = 30.62	S.D = 24.48	N=130	

In the secure short-term modality type, 65.4% of the releases were black (see Table 2). This modality type had the highest affinity for male clients; only 1.2% were females. The majority of the offenders (94.9%) in the secure short-term modality type had committed delinquent offenses, and only 5.1% were status offenders. According to Table 2, Most of them had actually committed (89.3%), as opposes to 10.7% who had attempted, conspired, or otherwise worked indirectly towards committing the offense. Out of the total client population of 572, 72.2% had unstable family backgrounds. About half of then had used alcohol prior to entering the system, and 96.2% were physically healthy. About half of them had problems associated with school discipline.

The average age at first adjudication to this modality type was 14.4 years, while the mean age at release was 17.3 years. The average duration of stay was 31 months.

In the secure regular modality type, 80.6% of the clients were black, according to Table 3 below. Males comprised 85.3%, and 63.3% of the total population in this modality type had been adjudicated for felonious offenses.

Table 3  
Predictors Variables for Recidivism for Secure Regular Modality Type

Predictor	Operationalization	N Recidivated	% Recidivated	Total N = 1319	
				N	%
Race	White	68	26.6	256	19.4
	Black	264	24.8	1063	80.6
Sex	Male	302	26.8	1125	85.3
	Female	30	15.5	194	14.7
Offense type 1	Felony	276	33.1	835	63.3
	Misdemeanor	56	11.6	484	36.7
Offense type 2	Status offense	2	2.2	91	6.9
	Delinquent offense	330	26.9	1228	93.1
Offense type 3	Committed	328	28.6	1148	87.0
	Attempted, ...	4	2.3	171	13.0
Prior offense	No delinquent history	204	21.7	939	71.2
	Has delinquent history	128	33.7	380	28.8
Family	Stable	35	20.0	146	11.1
	Unstable	262	25.4	1030	78.1
Drug use	No use	256	21.3	1202	91.1
	History of use	76	65.0	117	8.9
Alcohol use	No use	75	13.1	573	43.4
	History of use	257	34.5	746	56.6
Emotion	Appropriate behavior	67	13.1	512	38.8
	Inappropriate behavior	265	32.8	807	61.2
Employment	Employed	210	21.4	983	74.5
	Not employed	122	36.3	336	25.5
Econ status	No difficulties	269	23.1	1167	88.5
	In real need	63	41.4	152	11.5
Health status	Physically healthy	319	25.2	1267	96.1
	Physically ill	13	25.0	52	3.9
School discipline	No disc problems	158	22.3	707	53.6
	Has discipline problems	174	28.4	612	46.4

Table 3 continued

Education	Doing well	61	11.7	523	39.7
	Failing in school	271	34.0	796	60.3
Peer influence	No peer influence	47	9.0	520	39.4
	Negative peer influence	285	35.7	799	60.6
Age at first adjudication (in years)		Mean = 13.64    S.D = 1.78    N= 332			
Age at release (in years)		Mean = 17.71    S.D = 1.23    N= 332			
Duration of stay (in months)		Mean = 33.20    S.D =21.49    N=332			

According to Table 3, only 6.9% of the offenders were status offenders, and 87% of the total client population had actually committed the offense. And 28.8% had a prior delinquent or criminal history, while 78.1% had unstable family backgrounds. Many of them (43.4%) had used alcohol by the time they entered the correctional system. But many (88.5%) of these offenders were found to have no serious economic difficulties, and 96.1% of them were physically healthy. Negative peer influence was an important factor for 60.6% of these offenders, whose average age at first adjudication was 13.6 years, with an average of 33 months of stay in custody. Their mean age at release was 17.7 years.

Across the modality types, a number of observations can be made. First, there were more black offenders than white offenders in all three modality types. Likewise, there were more males than females in all the three modalities. However, with respect to offense types, there were far more misdemeanor cases (79.9%) in the non-secure modality than in the secure short-term (41.4%) and secure regular (36.7%). The percentage of status offenders compared to delinquent offenders was highest (26.2%) in the non-secure modality; in the secure short-term and secure regular modalities, status

offenders comprised 5.1% and 6.9% respectively. This pattern is perhaps explained by the fact that the seriousness of the offense partly determines the type of interventive program.

History of use of alcohol prior to adjudication is also consistent with this pattern. While 37.9% of the juveniles in the less punitive non-secure modality type had prior use of alcohol, 51.0% of those in the secure short-term and 56.6% of those in the secure regular facilities had used it. And regarding emotional stability, 30.4% of the offenders in the non-secure modality type had shown inappropriate behavior, compared to 62.9% of those in the secure short-term and 61.2% in the secure regular types.

Finally, the role of peer influence was the same across all three modality types; 62.9% of the offenders in non-secure modality had experienced negative peer influence, compared to 66.3% and 60.6% in secure short-term and secure regular modalities respectively. The rest of the variables did not show any remarkable difference across the modality types.

### **5.3 Bivariate Analyses**

In order to establish the strength and significance of the relationship between recidivism and the assortment of predictor variables, one-tailed bivariate correlation analyses were conducted for each of the three modality types. A one-tailed test was chosen because the prediction, as stated in the hypotheses, is directional (see Healey, 2002). The result was a tabular presentation of three distinct matrices in Table 4 below.

Table 4  
Bivariate Correlation for All Modality Types

Variable	Non-secure Recidivism N = 919	Secure short-term Recidivism N = 572	Secure regular Recidivism N = 1319
Recidivism	1	1	1
Race	.015	.044	-.016
Sex	-.113(**)	-.022	-.093(**)
Felony/misdemeanor	.498(**)	.158(**)	.239(**)
Status offense/delinquent offense	.176(**)	.125(**)	.144(**)
Committed/attempted	-.037	.147(**)	.203(**)
Prior offense	.051	.273(**)	.125(**)
Age at first adjudication	-.014	.088(*)	.001
Age at release	.107(**)	.044	-.004
Duration of stay	.054	.388(**)	.290(**)
Family	.314(**)	.062	.011
Drug use	.526(**)	.334(**)	.286(**)
Alcohol use	.507(**)	.222(**)	.244(**)
Emotion	.287(**)	.174(**)	.222(**)
School discipline	.365(**)	.047	.070(**)
Education	.384(**)	.209(**)	.252(**)
Peer influence	.432(**)	.219(**)	.300(**)
Employment	.348(**)	.154(**)	.150(**)
Economic status	.000	.078(*)	.135(**)
Health status	-.038	-.043	-.001

\*\* Correlation is significant at the .01 level (1-tailed).

\* Correlation is significant at the .05 level (1-tailed).

In the non-secure modality type, the single most statistically significant variable is drug use, whose Pearson's correlation coefficient is .526. This is followed, by alcohol use (.507), offense type 1 (.498), peer influence (.432), school discipline (.365), and employment (.348) in that order. In the secure short-term modality, the most statistically significant predictor of recidivism is duration of stay in the facility, whose correlation coefficient is .388. Other important variables in this modality type, in the order of their statistical significance are: drug use (.334), prior offense (.273), alcohol use (.222), peer

influence (.219), and education (.209). The scenario is different in the secure regular modality, where the most statistically significant variable is peer influence, with a correlation coefficient of .300. Closely following this is duration of confinement (.290), drug use (.286), education (.252), alcohol use (.244), and offense type 1 (.239). In conclusion, the findings in this table show that different predictor variables have widely varying effects with respect to the strength and statistical significance on recidivism, and this also varies across the modality types. Likewise, the effect of other variables is both weak and insignificant across all the modalities.

#### **5.4 Testing of Hypotheses**

All the hypotheses identified at the end of the literature review section of this study are tested in this section. As noted earlier, the test is conducted using two main methods, chi-square and the Bayesian Information Criterion (BIC) of logistic regression. Apart from hypothesis one which pertains to all the modality types, and which is therefore tested only once, the other three hypotheses are tested for each of the three modality types.

##### **5.4.1 Hypothesis One**

Hypothesis 1 states that, *there is a relationship between treatment modalities and the likelihood of reoffending*. To test this hypothesis, a cross-tabulation analysis was conducted between recidivism and modality type. The results are presented in Table 5. According to these results, the rate of recidivism varies slightly across the modality types. Non-secure modality had the highest recidivism rate of 25.8%, while the lowest rate of 22.7% was found among releases exiting from secure-short term facilities. However, this relationship is not statistically significant according to the chi-square test.



Table 5  
 Cross-tabulation Results for Total Recidivism by Modality Types

Modality Type	Releases	N Recidivated	% Recidivated
Secure-regular	1,319	332	25.2
Secure short-term	572	130	22.7
Non-secure	919	237	25.8
Total	2,810	699	24.9

Chi-square = 1.884  
 Sig. = .390

Thus, there is no statistically significant relationship between treatment modalities and the likelihood of reoffending. Therefore, the null hypothesis of no relationship between treatment modality type and recidivism rates cannot be rejected. In effect, the data do not support the hypothesis that there is a relationship between treatment modalities and the likelihood of reoffending.

#### 5.4.2 Hypothesis Two

Hypothesis 2 states that *the socio-demographic characteristics of offenders will influence their likelihood of recidivating*. This hypothesis is tested for each of the three treatment modalities using logistic regression analysis. As was noted in the methodology chapter, the logit coefficients (in the “B” column) show the change in the predicted logged odds of recidivating for a one-unit change in the independent variables. For example, a logit coefficient of -.084 for sex (where females are coded “1” and males “0”) means that the logged odds of recidivating are lower for females than males by .084. The Wald statistic, labeled “Z” represents the ratio of the logit coefficient to the standard error. When Z-squared minus the logarithm of the sample size exceeds zero, then the effect of  $x_i$  is statistically significant. The exponentiated coefficient [Exp(B)] is the estimated odds ratio. The percentage change in the odds of recidivating as a result of one unit change in

the predictor variable is obtained by subtracting 1 from  $\text{Exp}(B)$  and multiplying the result by 100. For each of the modality types, the total explained variation, signified by R-squared and the model prediction accuracy are reported.

### Non-secure Modality Type

To test the hypothesis that the socio-demographic characteristics of offenders will influence their likelihood of recidivating in the non-secure modality type, logistic regression was run for all predictors and the results are presented in Table 6 below.

Table 6  
Logistic Regression Results for the Non-secure Modality Type

Predictor	B	S.E.	Z <sup>2</sup>	BIC = Z <sup>2</sup> - ln n	df	Sig.	Exp(B)
Peer influence	3.487	.614	32.210	25.387	1	.000	32.682
Offense type 1	2.435	.277	77.275	70.452	1	.000	11.412
Drug use	1.595	.384	17.224	10.401	1	.000	4.930
Family background	-1.271	.360	12.428	5.605	1	.000	.281
Age at first adjudication	-.555	.099	31.731	24.908	1	.000	.574
Age at release	.554	.116	22.939	16.116	1	.000	1.739
Offense type 2	.751	.292	6.606	-.217	1	.010	2.119
Alcohol use	.669	.352	3.619	-3.204	1	.057	1.953
Duration of stay	-.020	.011	3.536	-3.287	1	.060	.980
Emotional stability	.499	.282	3.133	-3.690	1	.077	1.647
Health status	-2.016	1.289	2.447	-4.376	1	.118	.133
Prior offense	.389	.251	2.390	-4.433	1	.122	1.475
Employment	.335	.249	1.808	-5.015	1	.179	1.398
Offense type 3	.555	.428	1.684	-5.139	1	.194	1.743
Education	.334	.279	1.427	-5.396	1	.232	1.396
Economic status	-.138	.256	.291	-6.532	1	.590	.871
Race	.117	.246	.224	-6.599	1	.636	.890
Sex	-.084	.278	.092	-6.731	1	.761	.919
School discipline	.084	.301	.078	-6.745	1	.780	1.088
Constant	-8.333	1.791	21.649	--	1	.000	.000

N = 919

log n = 6.823

R-Squared = .645

Model prediction accuracy = 88.1%

The overall model explained 64.5% of the variance in recidivism in this treatment modality. The model was statistically significant. According to the BIC statistic, six of the predictor variables were found to be statistically significant in predicting recidivism of juveniles in the non-secure treatment modality. In order of their relative importance, they are: peer influence, offense type 1, drug use, family background, age at first adjudication, and age at release. Each of these will be discussed in turn below.

Peer influence: This variable was coded as “0 = no peer influence” and “1 = negative peer influence”. As presented in Table 6, the logged odds of reoffending are 3.487 times higher for juveniles with negative peer influence than for those with either positive or no peer influence. Thus, the null hypothesis that peer influence will not affect the likelihood of recidivating is rejected, thereby providing support for the research hypothesis.

Offense type 1: This variable was coded as a dichotomous variable with “0” for “misdemeanor” or minor transgressions and “1” for “felony” or serious offenses. For this treatment modality, the logit coefficient of 2.435 means that the logged odds of recidivating are 2.435 times higher for persons adjudicated for felonious offenses than for those charged with misdemeanors. So, the null hypothesis that offense type 1 will not affect the likelihood of recidivating is rejected, an outcome that supports the research hypothesis.

Drug use: This variable was coded as “no use=0” and “history of use=1” and refers to use or non-use of drugs before adjudication. A statistically significant relationship was found between this variable and the likelihood of reoffending. From the results shown in Table 6, the logged odds of offending upon release are 1.595 times

higher for drug users than for non-drug users. Therefore, the null hypothesis that drug use will not affect the likelihood of recidivating is rejected, and the research hypothesis supported.

Family background: This variable was coded as “stable=0” and “unstable=1”. A logit coefficient of -1.271 for family background means that the logged odds of reoffending are 1.271 lower for those from unstable family backgrounds than those from stable backgrounds. The null hypothesis that family background will not affect the likelihood of recidivating in non-secure modality is rejected. This provides support for the alternative hypothesis.

Age at first adjudication: This variable was measured in years. The logit coefficient of .555 means that one-year increase in age at the time the adolescent is first adjudicated with an offense reduces the logged odds of recidivating by .555. The BIC statistic shows that this variable is a statistically significant predictor of recidivism. Therefore, the null hypothesis that age at first adjudication will not influence the likelihood of recidivism for juveniles in the non-secure treatment modality is rejected, and in effect, the research hypothesis supported.

Age at release: This variable was also measured in years. The logit coefficient for age at release was .554. This means that one-year increase in age at the time the offender exits from a non-secure correctional facility increases the logged odds of recidivating by .554. This variable was a statistically significant factor, and so the null hypothesis that age at release from a non-secure treatment modality will not influence the likelihood of recidivism is rejected. As a result, the research hypothesis supported.

In this modality type, three possible interaction terms were identified on the basis of their strong bivariate correlations (see Appendix 2). These are: drugs and alcohol; family background and peer influence; and school discipline and peer influence. When these interaction terms were added to the model, there was no significant change in either the total explained variation or the coefficients of the main effects.

In brief, the following six variables were found to be significant predictors of recidivating for offenders discharged from non-secure facilities: peer influence, offense type 1, drug use, family background, age at first adjudication, and age at release.

#### Secure Short-Term Modality Type

In order to test this hypothesis within the secure short-term modality type, logistic regression analyses were conducted between recidivism and all socio-demographic and other predictors, and the results are presented in Table 7 below.

Table 7  
Results of the Logistic Regression for Secure Short-Term Modality Type

Predictor	B	S.E.	Z <sup>2</sup>	BIC = Z <sup>2</sup> - ln n	df	Sig.	Exp(B)
Drug use	1.832	.452	16.437	10.088	1	.000	6.245
Prior offense	1.000	.277	13.070	6.721	1	.000	2.719
Offense type 1	.866	.296	8.574	2.225	1	.000	2.377
Duration of stay	.050	.009	29.715	23.366	1	.000	1.052
Offense type 3	1.794	.716	6.273	-0.076	1	.012	6.011
Alcohol use	.632	.285	4.933	-1.416	1	.026	1.881
Peer influence	.867	.434	3.991	-2.358	1	.046	2.380
School discipline	.527	.274	3.694	-2.655	1	.055	1.693
Race	.534	.295	3.271	-3.078	1	.071	1.706
Family background	.578	.399	2.094	-4.255	1	.148	1.782
Education	.497	.387	1.648	-4.701	1	.199	1.644
Health status	-1.081	.849	1.621	-4.728	1	.203	.339
Employment	-.162	.334	.236	-6.113	1	.627	.850

Table 7 continued

Age at first adjudication	.035	.107	.109	-6.24	1	.741	1.036
Economic status	.114	.406	.079	-6.27	1	.778	1.121
Age at release	.011	.143	.006	-6.343	1	.940	1.011
Emotional stability	.005	.379	.000	-6.349	1	.991	1.005
Sex	.003	1.351	.000	-6.349	1	.998	1.003
Offense type 2	6.436	9.978	.416	-5.933	1	.998	1.862
Constant	-14.594	3.78	1.965	--	1	.997	.000

N = 572

log n = 6.349

R-Squared = .448

Prediction accuracy = 84.5%

The overall model explained 44.8% of the variance in recidivism for this treatment modality, and the model was statistically significant. Four variables were statistically significant in predicting reoffending of juveniles in this modality type. They include: drug use, prior offense, offense type 1, and duration of stay in the correctional system. Offense type 3 approached statistical significance. The relationships between them and recidivism are described below.

Drug use: As explained earlier, this variable was coded as “no use=0” and “history of use=1” and it pertains to history of use of drugs prior to adjudication. According to the regression results in Table 7, the logged odds of offending for offenders who used drugs are 1.832 times higher than for non-drug using releases. Since the BIC value confirms a very strong relationship between drug use and the likelihood of reoffending, the null hypothesis that drug use will not affect the likelihood of recidivating for offenders in the secure short-term modality type is rejected. Consequently, the research hypothesis supported.

Prior offense: This was a dichotomous variable measured as “0 = no delinquent history” and “1 = delinquent history”. From the logistic regression results in Table 7, the logged odds of recidivating for releases who had a delinquent history were 1.00 times higher than for those who were first offenders. So the null hypothesis that prior offense history will not have any effect on the likelihood of recidivating for offenders in the secure short-term modality type is rejected, and this provides grounds for supporting the research hypothesis.

Offense type 1: Recall that this variable was coded as a binary outcome with “misdemeanor=0” and “felony=1”. The logit coefficient for this variable was .866, which means that the logged odds of recidivating in the secure short-term modality were .866 times higher for persons charged with felonies than for those adjudicated for the less serious misdemeanors. For this reason, the null hypothesis that offense type 1 will not affect the likelihood of recidivating for juveniles in the secure short-term modality is rejected, and therefore the research hypothesis is supported.

Duration of stay in custody: This variable was coded in months. The logit coefficient as shown in Table 7 is .050. This means that each additional month of stay in custody increases the logged odds of recidivating by .050. Therefore, the null hypothesis that duration of confinement in the secure short-term modality type will not influence the likelihood of recidivating is rejected, a finding that provides support for the research hypothesis.

Using the bivariate correlation matrices, two interaction terms were found to be possible in this modality type, namely, educational background and emotional stability; and educational background and peer influence. However, when the terms were

introduced to the model, both the total explained variation and the coefficients of the main effects did not show any significant change. In sum, the following four variables were confirmed to be statistically significant in predicting recidivating for offenders exiting from secure short-term modality type: drug use, prior offense, offense type 1, and duration of stay.

### Secure Regular Modality Type

A logistic regression was run for this modality type with all the initially envisioned predictor variables, and the results are shown in Table 8 below. The overall model explained 46.6% of the variance in recidivism for this treatment modality, and the model was statistically significant.

Table 8  
Results of the Logistic Regression for Secure Regular Modality Type

Predictor	B	S.E.	Z <sup>2</sup>	BIC = Z <sup>2</sup> - ln n	df	Sig.	Exp(B)
Offense type 3	2.536	.547	21.520	14.335	1	.000	12.634
Drug use	1.756	.297	35.016	27.831	1	.000	5.788
Peer influence	1.552	.266	33.923	26.738	1	.000	4.720
Offense type 1	1.281	.207	38.252	31.067	1	.000	3.600
Alcohol use	.863	.202	18.196	11.011	1	.000	2.369
Age at first adjudication	-.254	.067	14.235	7.05	1	.000	.776
Duration of stay	.041	.006	53.303	46.118	1	.000	1.042
School discipline	.456	.173	6.987	-0.198	1	.008	1.578
Offense type 2	1.952	.764	6.549	-0.636	1	.010	7.043
Prior offense	.362	.183	3.905	-3.28	1	.048	1.436
Sex	-.532	.281	3.574	-3.611	1	.059	.588
Health status	-.790	.427	3.428	-3.757	1	.064	.454
Age at release	-.134	.079	2.849	-4.336	1	.091	.875
Employment	-.289	.207	1.963	-5.222	1	.161	.749
Economic status	.310	.248	1.561	-5.624	1	.212	1.364



Table 8 continued

Race	.239	.213	1.259	-5.926	1	.262	.788
Family background	-.243	.279	.759	-6.426	1	.384	.784
Emotional stability	-.236	.279	.711	-6.474	1	.399	.790
Education	.243	.290	.700	-6.485	1	.403	1.275
Constant	-3.189	1.769	3.253	--	1	.071	.041

N = 1319

R-Squared = .466

Prediction accuracy = 83.6%

Several variables were found to be statistically significant in predicting recidivism for juveniles in the secure regular modality type. They include the following, in the order of their significance: offense type 3, drug use, peer influence, offense type 1, alcohol use, age at first adjudication, and duration of confinement. The relationship between recidivism and these variables is described below.

Offense type 3: This variable was bifurcated in terms of whether the release actually committed the offense directly, coded as “1”, or whether they attempted, incited, or conspired with others, coded “0”. As shown in Table 8, the logged odds of recidivating for releases who had actually committed the offense themselves were 2.536 times higher than those who attempted or committed the offense indirectly with others. Since the BIC statistic shows that this variable is statistically significantly associated with recidivism, the null hypothesis that offense type 3 will not affect the likelihood of recidivating for offenders in the secure regular modality type is rejected and, as a result, the research hypothesis is supported.

Drug use: For offenders in secure regular custody, the logit coefficient of 1.756 shows that the logged odds of recidivating are 1.756 times higher for those who used drugs than for those who did not. So the null hypothesis that drug use will not affect the

likelihood of recidivating in the secure regular modality type is rejected and so the research hypothesis is supported.

Peer influence: Recall that this variable was coded as “no peer influence=0” and “negative peer influence=1”. In this modality type, the logged odds of recidivating were 1.552 times higher for releases who had a negative peer influence than those who had no peer influence. For that reason, the null hypothesis that peer influence will not affect the likelihood of recidivating in the secure regular modality is rejected, which lends credence for supporting the research hypothesis.

Offense type 1: Recall again that this was a dichotomous variable coded as “misdemeanor=0” and “felony=1”. The logit coefficient of 1.281 means that the logged odds of recidivating for releases charged with felonies were 1.281 times higher than those adjudicated for misdemeanor. Therefore, the null hypothesis that offense type 1 will not affect the likelihood of recidivating for juveniles in the secure regular modality type is rejected, so the research hypothesis is supported.

Alcohol use: This variable was coded “1” for “alcohol use” and “0” for “no alcohol use”. For the secure regular modality type, the logged odds of recidivating were .863 times higher for releases who used alcohol than those who did not. Since BIC statistic shows a strong relationship between this variable and recidivism, the null hypothesis that alcohol use will not affect the likelihood of recidivating for juveniles in the secure regular modality type is rejected and therefore the research hypothesis is supported.

Age at first adjudication: This variable was measured in years. As presented in Table 8, each additional year in age at first adjudication for juveniles in the secure regular

modality lowers the logged odds of recidivating by .254. This is a statistically significant predictor of recidivism. The null hypothesis that age at first adjudication will not influence the likelihood of recidivism for juveniles in the secure regular modality type is rejected. As a result, the research hypothesis is confirmed.

Duration of stay in custody: Bearing in mind that this variable was measured in months, the logit coefficient of .041 means that each additional month of stay in custody increased the logged odds of recidivating by .041. The null hypothesis that the duration of confinement for juveniles in the secure short-regular custody will not influence the likelihood of recidivating is rejected. This outcome supports the research hypothesis.

Three possible interaction terms could be used in this model, for having bivariate correlations in excess of .60. These were: emotional stability and family background; emotional stability and peer influence; and educational background and peer influence. But after adding these interaction terms to the model, there was no significant change both in the total explained variation and in the coefficients of the main effects.

In a nutshell, seven of the predictor variables were confirmed to be significant in predicting recidivating for releases from secure regular modality type. They are: offense type 3, drug use, peer influence, offense type 1, alcohol use, age at first adjudication, and duration of confinement.

### **5.4.3 Hypothesis Three**

The third hypothesis states that, *ceteris paribus*, there is a relationship between race and recidivism. This hypothesis was tested for each of the three treatment modalities, using logistic regression analyses. Recall that race was treated as a dichotomous variable with “1” for “Black” and “0” for “White”.

As was noted from Table 6, the logit coefficient for race in the non-secure treatment modality was .117. This means that the logged odds of recidivating are .117 times higher for black offenders than white offenders. It also means that the odds of recidivating are higher for black than white juveniles by  $(.871-1)*100 = 12.9\%$ . This variable is not statistically significantly associated with recidivism, so we fail to reject the null hypothesis that all things being equal, there is no relationship between race and recidivism in the non-secure treatment modality. Consequently, the corresponding research hypothesis is cannot be supported.

To test this hypothesis in the secure short-term modality type, the regression results in Table 7 were used. The logit coefficient for race was .534, which means that the logged odds of recidivating are .534 times higher for black than white offenders. It means also that the odds of recidivating for black offenders are 70.6% higher than the odds for their white counterparts. But since the BIC statistic for race in this modality type falls below zero, the null hypothesis that *ceteris paribus*, there is no relationship between race and recidivism in the secure short-term treatment modality cannot be rejected. This finding does not support the preceding research hypothesis.

The relationship between race and recidivism was similarly tested in the secure regular treatment modality. The regression results in Table 8 were used. According to the table, the logit coefficient for race was .239, which means that the logged odds of recidivating are .239 times higher for the black than for the white offenders. When this coefficient was exponentiated, it was found that the odds of recidivating were 21.2% higher for the black than for the white releases. Finally, the BIC value for race in the secure regular modality type fell below zero, and as a result, we fail to reject the null

hypothesis that, all things being equal, there is no relationship between race and recidivism in the secure regular modality type. This outcome offers no support for the research hypothesis.

In sum, the effect of race on recidivism was tested for all treatment modalities, holding constant all the other potential predictors. In none of the three treatment modalities was race found to be a statistically significant predictor of recidivism. It is concluded that race is not an important predictor of recidivism among juvenile offenders.

#### **5.4.4 Hypothesis Four**

Hypothesis 4 states that *black offenders differ from white offenders in terms of the socio-demographic characteristics that influence their likelihood of recidivating*. This hypothesis was tested in all three modalities by running a cross-tabulation of race and all socio-demographic predictors of recidivism for each of the modality types. Since the goal here is to determine the existence of a relationship that takes recidivism into account, all the subjects who recidivated were entered for the cross-tabulations while those who did not recidivate during the study year were left out.

##### Non-Secure Modality Type

To test for the relationship between race and other socio-demographic predictors of reoffending in the non-secure modality type, the cross-tabulation results in the following table were used. Only those who recidivated were reported in this table, because the number of the recidivists and the number of the no-recidivists add up to the total as reported.

Table 9  
Chi-Square Significance Between Race and Other Predictors of Recidivism for Non-Secure Modality

Predictor	Operationalization	Race				Total = 919	Chi-square
		White		Black			
		Total White = 298		Total Black = 621			
		N Recid	% Recid	N Recid	% Recid		
Sex	Male	55	29.3	133	70.7	649	1.640
	Female	19	38.8	30	61.2	270	
Offense type 1	Misdemeanor	40	36.7	69	63.3	734	2.816
	Felony	34	26.6	94	73.4	185	
Offense type 2	Status offense	12	38.7	19	61.3	241	.9310
	Delinquent offense	62	30.1	144	69.9	678	
Offense type 3	Attempted	5	25.0	15	75.0	63	.3940
	Committed	69	31.8	148	68.2	856	
Prior offense	No delinquent history	51	30.2	118	69.8	690	.300
	Has delinquent history	23	33.8	45	66.2	229	
Family background	Stable	12	44.4	15	55.6	341	2.480
	Unstable	62	29.5	148	70.5	577	
Drug use	No use	11	26.8	30	73.2	559	.446
	History of use	63	32.1	133	67.9	360	
Alcohol use	Not using alcohol	13	27.1	35	72.9	570	.480
	Using alcohol	61	32.3	128	67.7	349	
Emotional stability	Appropriate behavior	34	30.4	78	69.6	640	.074
	Inappropriate behavior	40	32.0	85	68.0	279	
School discipline	No discipline problem	15	30.0	35	70.0	478	.044
	Truancy or expelled	59	31.6	128	68.4	441	
Educational performance	Doing well in school	23	26.7	63	73.3	615	1.261
	Failing in school	51	33.8	100	66.2	304	
Peer influence	No peer influence	0	0	4	100	341	1.847
	Negative peer influence	74	31.8	159	68.2	578	
Employment	Employed	37	31.9	79	68.1	686	.048
	Not employed	37	30.6	84	69.4	233	
Economic status	No current difficulty	23	34.3	44	65.7	260	.419
	In real need	51	30.0	119	70.0	659	
Health status	Physically healthy	74	31.4	162	68.6	908	.456
	Physically ill	0	0	1	100.0	10	

In Table 9 above, the association between black and white offenders and other socio-demographic predictors of recidivating was established. To test the significance of this association, the chi-square significance was used. The alpha level was set at .05. At 1 degree of freedom, the chi-square critical region begins at 3.841. Any observed chi-

square levels that fall below this region lead to failure to reject null hypotheses, thereby providing no support for the research hypotheses.

With respect to sex, 70.0% of all the men who recidivated and 61.2% of all female recidivists were black. However, in spite of this strong correlation, the association between race and sex in terms of reoffending was not statistically significant, and since the obtained chi-square of 1.640 falls below the critical region, the null hypothesis that black offenders do not differ from white offenders in terms of the socio-demographic characteristics that influence their likelihood of recidivating in the non-secure modality type cannot be rejected. Therefore, the research hypothesis is not supported.

From the offense type point of view, there was a concentration of black offenders in both felony and misdemeanor offenses. There was also a cluster of black offenders for both status and delinquent offenses. But this notwithstanding, the chi-square tests of significance does not support a relationship between race and the offense types in this model. Indeed, this is true for prior offense, family background, drug and alcohol use, emotional stability, and all the other variables that were entered for this analysis. From the table, it is clear that no observed value of the chi-square falls within the critical region. This makes it safe to conclude that, in the non-secure modality type, there is no difference between black offenders and white offenders in terms of the socio-demographic characteristics that influence their likelihood of recidivating.

#### Secure Short-Term Modality Type

In order to test the relationship between race and other predictors of recidivism in the secure short-term modality type, a cross-tabulation analysis was conducted between race and other recidivism predictors and the results are presented in Table 10 below, in which

only those who recidivated were reported, because the number of the no-recidivists is the difference between the reported total and the recidivating clients.

Table 10  
Chi-Square Significance Between Race and Other Predictors of Recidivism for Secure Short-Term Modality

Predictor	Operationalization	RACE				Total N=572	Chi- Square
		White		Black			
		Total white=198		Total black=374			
		N Recid	% Recid	N Recid	% Recid		
Sex	Male	39	30.2	90	69.8	565	2.267
	Female	1	100	0	0.0	7	
Offense type 1	Misdemeanor	11	31.4	24	68.6	236	.010
	Felony	29	30.5	66	69.5	336	
Offense type 2	Status offense	0	0.0	0	0.0	29	--
	Delinquent offense	40	30.8	90	69.2	543	
Offense type 3	Attempted	0	0.0	3	100	61	2.365
	Committed	40	31.5	87	68.5	511	
Prior offense	No delinquent History	14	22.6	48	77.4	404	3.731
	Has delinquent history	26	38.2	42	61.8	168	
Family background	Stable	6	35.3	11	64.7	98	.248
	Unstable	29	29.3	70	70.7	413	
Drug use	No use	28	29.2	68	70.8	522	.443
	History of use	12	35.3	22	64.7	50	
Alcohol use	Not using alcohol	9	24.3	28	75.7	280	1.009
	Using alcohol	31	33.3	62	66.7	292	
Emotional stability	Appropriate behavior	7	25.0	21	75.0	212	.558
	Inappropriate behavior	33	32.4	69	67.6	360	
School discipline	No discipline problems	20	28.2	51	71.8	337	.497
	Truancy or expelled	20	33.9	39	66.1	235	
Education	Doing well in school	6	23.1	20	76.9	222	.903
	Failing in school	34	32.7	70	67.3	350	
Peer influence	No peer influence	7	36.8	12	63.2	193	.385
	Negative peer influence	33	29.7	78	70.3	379	
Employment	Employed	27	33.3	54	66.7	427	.663
	Not employed	13	26.5	36	73.5	145	
Econ status	No current difficulties	32	29.4	77	70.6	506	.631
	In real need	8	38.1	13	61.9	66	
Health status	Physically healthy	39	30.7	88	69.3	550	.009
	Physically ill	1	33.3	2	66.7	22	



Using the chi-square technique explained earlier, the critical region for alpha level of .05 and 1 degree of freedom begins at 3.841. In this modality type, the same chi-square decision rule for testing the hypothesis is used; if the chi-square obtained falls within the critical region, the null hypothesis is rejected, and the research hypothesis is supported. The opposite will be true if the chi-square obtained falls within the critical region.

In this model, the chi-square obtained levels support only a modicum association between race and the other socio-demographic predictors of recidivism, notably, sex, offense type 3, and prior offense. As observed on the table, there were no releases from secure short-term modality with status offenses because this is a more rigorous program designed only for the relatively more vicious offenders, all of whom fall under the delinquency domain. The obtained levels of chi-square for these variables, just like it is the case for all the other predictors in this modality type, fall below the critical region. Consequently, the null hypothesis is accepted and the alternative rejected, leading to the conclusion that in the secure short-term modality type, there is no difference between black offenders and white offenders in terms of the socio-demographic characteristics that influence their likelihood of recidivating.

#### Secure Regular Modality Type

In order to test the relationship between race and the other predictors of recidivism in the secure regular modality type, the following cross-tabulation analysis was used.

Table 11  
Chi-Square Significance Between Race and Other Predictors of Recidivism For the  
Secure Regular modality

Predictor	Operationalization	Race				Total N=1319	Chi-square
		White		Black			
		Total white=256		Total black=1063			
		N Recid	% Recid	N Recid	% Recid		
Sex	Male	52	17.2	250	85.8	1125	21.854*
	Female	16	53.3	14	46.7	194	
Offense type 1	Misdemeanor	14	25.0	42	75.0	484	.884
	Felony	54	19.6	222	80.4	835	
Offense type 2	Status offense	0	0.0	2	100.0	91	.518
	Delinquent offense	68	20.6	262	79.4	1228	
Offense type 3	Attempted	0	0.0	4	100.0	171	1.043
	Committed	68	20.7	260	79.3	1148	
Prior offense	No delinquent history	42	20.6	162	79.4	939	.004
	Has delinquent history	26	20.3	102	79.7	380	
Family background	Stable	6	17.1	29	82.9	146	.456
	Unstable	58	22.1	204	77.9	1030	
Drug use	No use	52	20.3	204	79.7	1202	.020
	History of use	16	21.1	60	78.9	117	
Alcohol use	Not using alcohol	13	17.3	62	82.7	573	.590
	Using alcohol	55	21.4	202	78.6	746	
Emotional stability	Appropriate behavior	7	10.4	60	89.6	512	2.189
	Inappropriate behavi	61	23.0	204	77.0	807	
School discipline	No discipline problem	34	21.5	124	78.5	707	.199
	Truancy or expelled	34	19.5	140	80.5	612	
Education	Doing well in school	8	13.1	53	86.9	523	2.490
	Failing in school	60	22.1	211	77.9	796	
Peer influence	No peer influence	8	17.0	39	80.3	520	.403
	Negative peer influen	60	21.1	225	78.9	799	
Employment	Employed	48	22.9	162	77.1	983	1.980
	Not employed	20	16.4	102	83.6	336	
Economic status	No current difficulties	54	20.1	215	79.9	1167	.145
	In real need	14	22.2	49	77.8	152	
Health status	Physically healthy	63	19.7	256	80.3	1267	2.685
	Physically ill	5	38.5	8	61.5	52	

\* Significant correlation

In the secure regular modality type, varying levels of differences were witnessed between race and the other socio-demographic predictors of recidivism. Using the chi-square test, a very strong relationship was found between black and white releases in terms sex of the

offender with respect to the likelihood of recidivating. Out of all the males who recidivated, 85.8% were black. But for female recidivists, 53.3% were white. This relationship is corroborated by the chi-square obtained value of 21.854, which, according to the test statistic set out earlier, falls within the critical region.

Considering the sex variable alone, the null hypothesis would be rejected. However, the preponderance of other determinants of recidivism have a very weak association with race, and their attendant low chi-square obtained levels, which all fall below the critical region, make it sensible to generally accept the null hypothesis and conclude that black offenders differ from white offenders only in terms of sex, but they do not differ in terms of other socio-demographic characteristics that influence their likelihood of recidivating.

#### **5.4 Chapter Summary**

In the foregoing analyses, data were presented, analyzed, and interpreted. The descriptive analysis for the continuous variables showed that although the lowest recorded age at first adjudication was 7 years, the mean age at first contact with law enforcement was fairly constant (around 13.5 years) for all three modality types. The mean age at release was also quite evenly distributed across the three modalities, averaging 17.5 years. And while the mean duration of stay in the secure correctional facilities was about 2.5 years, the same was around 1.5 years for the less restrictive non-secure modality.

In terms of significance of predictors of recidivism, the following were found to be the main determinants: sex, drugs and alcohol use, offense type, peer influence, age at first adjudication, delinquent history, and school discipline. Using these main effects of recidivism, the research hypotheses were tested. It was found that holding all other

factors constant, black offenders are more likely to recidivate than are white offenders. This notwithstanding, although 73% of all clients in state custody and rehabilitation institutions were found to be black, the difference in recidivism rate with regard to race was not significant; black offenders recidivated at the rate of 25% compared to 24.4% for the white race.

It was also found that black offenders do not differ from white offenders in terms of the socio-demographic characteristics that influence their likelihood of recidivating.

A relationship between treatment modalities and the likelihood of reoffending was established, and this was found to vary by race of the offender. The non-secure modality type was found to have the highest rate of recidivism (26.3%) while secure short-term had the lowest rate of 22.2%. Secure regular type had 25.1%, and the overall recidivism rate was 24.9%. Of all white recidivists, 39.5% were placed in non-secure facilities, compared to 31.9% of all black recidivists. Finally, the relationship between socio-demographic characteristics and recidivism was confirmed to vary according to the treatment modality. The biggest percentage of female offenders was found in the non-secure modality type, with only 0.8% of female clients placed in secure short-term facilities.

In conclusion, the likelihood of recidivating for an offender released from any modality type will largely depend on seven factors, namely, sex, use or non-use of drugs and/or alcohol, type of peer relationship, age at first adjudication, delinquency history, and school discipline.

## CHAPTER 6

### DISCUSSION AND CONCLUSIONS

#### 6.1 The Study at a Glance

This chapter first provides an overview of the findings of the study. The objectives and hypotheses of the study are summarized and a synopsis of the main findings is provided before drawing the final conclusions and suggesting various vistas that have been opened for possible lines of future research.

The recidivism of some 2,810 juvenile offenders released from the state of Louisiana in 1999/2000 was tracked for one year post release. The aim was to: (a) determine whether or not a relationship exists between the treatment modality types and the likelihood of recidivating; (b) establish a profile of juvenile offender characteristics that have the highest significance in influencing the likelihood that the offender would return to offending behavior after a period of treatment in a state correctional facility; (c) find out whether, *ceteris paribus*, race would have an effect on the likelihood of recidivating; and (d) determine whether or not black offenders differ from white offenders in terms of the socio-demographic characteristics that are predictive of recidivism.

The data for the study were obtained from the Office of Youth Development in the Department of Public Safety and Corrections in the state of Louisiana. Two separate datasets were obtained, namely, (a) Information Records Management System, and (b) Corrections Adult Justice Uniform Network. Specific information from the first set included:

- (a) Demographic characteristics such as date of birth, race, gender, and home parish for each youth released from state correctional facilities during the study year;
- (b) Details of the physical location of placement for individual cases, transfer dates, type of commitment, screening score, and the facility exit outcome;
- (c) Information pertinent to the petition dates, offense histories, current offense type, date of adjudication, and disposition type for all subjects;
- (d) Data on the referral source, referral date, referral statute, and the referral sequence for every release made during the specified period of 1999/2000 fiscal year; and
- (e) Assessment scores for various needs and risk domains

The second set of data, which was obtained from the state's Corrections Adult Justice Uniform Network, contained only those convictions that resulted in adult placement. The combination of the two data sets yielded the complete pool of information required for this study. On-site visits to some of the correctional institutions and face-to-face discussions with the Office of Youth Development administration helped to augment and confirm some of the outstanding issues in the main datasets.

The data were closely examined for any "wild punches", omissions, or other possible recording or coding errors and such inconsistencies were corrected before subjecting the data to the ultimate classifications. The data were then presented and analyzed at three levels. At the first level, a descriptive presentation in the form of cross-tabulations was made. At the second, a bivariate analysis was conducted and presented in correlation matrices, while in the third stage, a binary logistic regression was performed.

## 6.2 Discussion of Key Findings

At the bivariate level, several variables were found to have a statistically significant relationship with recidivism for the different modality types. A summary of this finding is presented in Table 12 below, where the “x” sign shows existence of a significant correlation between the respective variable and recidivism.

Table 12  
Bivariate Significant Predictors of Recidivism in Different Modality Types

Predictor	Non-secure Modality	Secure Short-term Modality	Secure Regular Modality
Race			
Sex	x		x
Offense type 1	x	x	x
Offense type 2	x	x	x
Offense type 3		x	x
Prior offense		x	x
Age at first adjudication		x	
Age at release	x		
Duration of stay		x	x
Family	x		
Drug use	x	x	x
Alcohol use	x	x	x
Emotion	x	x	x
School discipline	x		x
Education	x	x	x
Peer influence	x	x	x
Employment	x	x	x
Economic status		x	x
Health status			

The significant variables in the non-secure modality type are sex, offense type 1, offense type 2, age at release, family background, drug use, alcohol use, emotional stability, school discipline, education, peer influence, and employment.

In the secure short-term modality, significant variables include offense type 1, offense type 2, offense type 3, prior offense, age at first adjudication, duration of stay, drug use, alcohol use, emotional stability, education, peer influence, employment and economic status. And in the secure regular type, significant correlates of recidivism were sex, offense type 1, offense type 2, offense type 3, prior offense, duration of stay, drug use, alcohol use, emotional stability, school discipline, education, peer influence, employment and economic status. Two variables showed no statistical relationship with recidivism in any of the treatment modalities. These are race and health status.

This study endeavored to meet certain specific objectives. First, it was the aim of the study to determine the recidivism rates for each of the three treatment modalities in use by the Department of Public Safety and Corrections in the State of Louisiana, and to show whether recidivism varies according to the three modality types. Consistent with this objective, it was hypothesized that all things being equal, there is a relationship between treatment modalities and the likelihood of recidivating. This hypothesis was tested using cross-tabulations between the modality types and recidivism and the resultant chi-square significance. The non-secure treatment modality type was found to have the highest recidivism rate of 25.8%, while the lowest rate of 22.7% was recorded among releases from the secure-short term facilities. The secure regular modality had 25.2%. When this variation was examined for verification using the chi-square test, no statistically significant relationship was found between treatment modalities and the likelihood of reoffending. The null hypothesis of no relationship between treatment modalities and the likelihood of recidivating was therefore accepted, a finding that failed to provide support for the research hypothesis. In effect, the research hypothesis that



there is a relationship between treatment modalities and the likelihood of recidivating was rejected.

The second major focus of the study was to establish whether a correlation exists between recidivism and clients' individual socio-demographic characteristics, risks and needs factors, as well as their delinquent histories. In keeping with this objective, it was hypothesized that the socio-demographic characteristics of offenders will influence their likelihood of recidivating. This hypothesis was tested for each of the three treatment modalities. All the potential predictors were entered into a logistic regression analysis. Using the ensuing regression results, it was found that the significance of predictor variables varied from one modality type to another. The results are summarized in the following table.

Table 13  
Significant Predictors of Recidivism in Different Modality Types

Predictor	Non-secure Recidivism	Secure short-term Recidivism	Secure regular Recidivism
Race			
Sex			
Offense type 1	x	x	x
Offense type 2			
Offense type 3			x
Prior offense		x	
Age at first adjudication	x		x
Age at release	x		
Duration of stay		x	x
Family	x		
Drug use	x	x	x
Alcohol use			x
Emotion			
School discipline			

Table 13 continued

Education			
Peer influence	x		x
Employment			
Economic status			
Health status			

Six variables were found to be significant predictors of reoffending. They include, offense type 1, age at first adjudication, age at release, family background, drug use, and peer influence. Overall, the total explained variation in this model was 64.5%. In the secure short-term modality type, four variables were significant and these include offense type 1, prior offense, duration of stay, and drug use. The total explained variance for this model was 44.8%. And in the secure regular type, there were seven significant predictors of recidivating, which include offense type 1, offense type 3, age at first adjudication, duration of confinement, drug use, alcohol use, and peer influence. The total explained variance for this model was 46.6%. Overall, two variables were significant determinants of reoffending across all three modality types, namely, offense type 1, and drug use.

The third goal of the study was to find out whether, all things being equal, race would have an important effect on the likelihood of recidivating. This hypothesis was tested by examining the logistic regression results for all three modality types. The results showed no statistically significant relationship between race and the likelihood of recidivating in any of the three treatment modalities. It was concluded that race is not an important predictor of recidivism among juvenile offenders.

Turning now to the fourth major objective of the study, an assessment was made of the relationship between race and other potential socio-demographic predictors of

reoffending, whereupon it was hypothesized that black offenders differ from white offenders in terms of the socio-demographic characteristics that impact their likelihood of recidivating. The hypothesis was tested by examining cross-tabulations between race and all predictors of recidivism across all three modality types. The chi-square significance between race and each of the variables was examined. In both the non-secure and the secure short-term modality types, there was no statistically significant difference between black offenders and white offenders in terms of any of the socio-demographic characteristics that were deemed to be predictive of reoffending. However, in the secure regular type, there was a statistical significance between race and one other predictor of recidivism, namely, sex, with black men being more represented than white men, white women, and black women. It was concluded that black offenders differ from white offenders only in terms of sex, but that they do not differ with respect to other socio-demographic characteristics that influence their likelihood of recidivating. This finding is consistent at all levels of analysis.

At the bivariate level, the correlation coefficient between race and recidivism was consistently weak and statistically non-significant. It was also found that the likelihood of recidivating does not vary statistically significantly across the modality types. A profile of socio-demographic characteristics that are predictive of recidivism was established, and this was found to vary remarkably from one treatment program to another.

After the regression analysis, two factors were statistically significant across the modality types. These were: (1) offense type 1, and (2) drug use. Five factors were statistically significant for at least two modality types. These are (1) offense type 1, (2) drug use, (3) age at first adjudication, (4) duration of stay, and (5) peer influence. And

finally, ten variables were statistically significant for at least one modality type. These were (1) offense type 1, and (2) drug use. Five factors were statistically significant for at least two modality types. These are (1) offense type 1, (2) drug use, (3) age at first adjudication, (4) duration of stay, (5) peer influence, (6) offense type 3, (7) prior offense, (8) age at release, (9) family background, and (10) alcohol use.

Nine of the predictor variables were not statistically significant in any of the modality types. They were: (1) race, (2) sex, (3) offense type 2, (4) emotional stability, (5) school discipline, (6) educational performance (7) employment, (8) economic status, and (9) health status.

### **6.3 Conclusion**

The following conclusions can be made as a result of the findings of this study.

1. The rate of juvenile recidivism does not vary according to the intervention modality type.
2. Predictors of recidivism vary according to the treatment modality types, but overall, the five most important predictors include: (a) offense type/seriousness of the offense; (b) age at first adjudication; (c) duration of stay in the correctional system; (d) drug use; and (e) peer influence.
3. Race of the offender is not an important determinant of the offender's likelihood of reoffending upon release.
4. Black offenders differ from white offenders only in terms of gender but not with respect to any other socio-demographic characteristics that influence their likelihood of reoffending.

## 6.4 Implications

A few highlights need to be made concerning the main findings of this study. First, no difference in recidivism rate was found across the three treatment modalities. Since the goal of the corrections' intake screening process is to place more serious offenders in the more restrictive and punitive institutions while minor transgressions are treated in the more flexible community-based facilities, this finding confirms that the screening procedure is largely successful, at least in ensuring "just deserts" for the offenders. However, as was found in the theory section of this study, a deterrence-oriented therapy presumes the offense type – the seriousness of the offense – as the fundamental determinant of the type of sanctions to mete out against the offender. The cross-tabulation analyses revealed that all types of offenders are found in all three treatment modalities, albeit in greatly varying proportions. This pattern might call for a round of reflection on the part of stake holders in the juvenile justice system to reassess the screening procedures at the intake level in order to eschew possibilities of having a less than or even a more than just deserts in the offense-sanction balance. The mark of perfect success in this endeavor would be identical levels of recidivism for all the modality types.

Second, the results of this study demonstrated that several factors are significantly related to recidivism in different treatment modalities. It should be noted that, for each of these modality types, no single factor could be used on its own to ascertain the likelihood of reoffending. As a result, evaluators and policy makers need to consider these factors in combinations, and also to take cognizance of any possible interaction terms among the predictors of reoffending, as outlined in the "suggestions for further research" further on.

Third, it was clear from the foregoing findings that the percentage of black offenders compared to white offenders in secure regular institutions was more than the percentage of black offenders compared to white offenders in non-secure programs. Although this could be a function of the type of offenses commonly committed by black offenders compared to the typical offenses associated with white offenders, this might signify another facet of recidivism that negates many recent studies that found higher rates of reoffense among black adolescents. As a result, an upper hand in the war against juvenile crime might be gained if fresh evaluations were made into the varied backgrounds, needs, and circumstances that constitute the day-to-day realities of young offenders.

Finally, specific factors that are predictive of recidivism in respective modality types were profiled. While no claim is made to the effect that these factors are the ultimate panacea to the problem of juvenile reoffending, it is recognized that in each of the three predictive models established in this study, the total explained variation in recidivism was upwards of 40%. A careful bonding of these models with other factors that were outside of the scope of this study, notably, psychological, environmental, and situational dictates, could further elevate the prediction, and therefore prevention of juvenile reoffending.

### **6.5 Limitations of the Study**

No research is without errors and limitation, and this fact is best captured by Hagan (2003:271), who observes that “the only perfect research is no research”. A number of possible errors and limitations are acknowledged in this study.

Foremost, the study employed data obtained from a government agency, and the data had already been coded and put together in a methodical order, although a fresh coding and reorganization became necessary for various reasons explained elsewhere in this dissertation. A word of caution in using such official data for research is that, “(t)he investigator must remember that the data have been gathered for agency purposes and therefore may not contain the degree of accuracy or operationalization the researcher desires” Hagan (2003:246). Taking cognizance of this limitation, appropriate steps were taken to ensure that this limitation does not adversely impinge on the data that were used for this study. This was primarily achieved by meticulously conducting data consistency checks, recoding, and making on-site visits to a select number of correctional facilities in order to verify any conspicuously outlying observations.

Second, the recidivism of the juveniles in this study was tracked for only one year. Although this does not, in any way, adversely impact on the general findings given that almost 70% of all the recidivism of the first three years takes place within the first year (Langan & Levin, 2002:3), it is acknowledged that a longer period of follow up might see the recidivism level go up. It should be noted, however, that excessively long periods of tracking offenders upon release may capture reoffending that is not necessarily related to the initial act of offending.

Sample attrition is another limitation that could possibly have an important effect to the outcome of the study. After the initial pool of data for this study was edited and cleaned up, part of it was lost for various reasons. For example, where a case did not contain a common identifier such as a valid social security number or a unique classification code, the case could not be placed appropriately in the dataset. Such cases

were dropped from the analysis. Also, any respondent who had a missing case for any of the variables was automatically sift into “system missing” for all regression analysis. However the effect of sample attrition was not significant because only 5.6% of the cases were lost in this manner.

In addition, the findings in this study pertain to a sample collected from the state of Louisiana. Since the cultural and socio-demographic characteristics of Louisiana may be different in different ways from other population groups, these findings may not necessarily be a true microcosm of what should be expected in other states and this may affect generalization attempts.

Finally, in a few isolated cases, some juvenile offenders were sentenced as adults and placed in adult incarceration facilities. Depending on the type of offense committed, such juveniles were sentenced to extended periods of confinement and would not exit the system while still in their teen age. Thus they could not be captured for this study. In other cases, juvenile releases may relocate to other states, and whether or not they committed further offenses there a year post release could not be established. Such cases might in some way affect the findings of the study.

## **6.6 Suggestions for Future Research**

A number of suggestions are proposed for further investigation. Foremost, in addition to the various socio-demographic predictors of recidivism identified for various modality types in this study, a number of interaction effects, albeit weak, were found to exist among the variables. In the non-secure modality type, they include, (a) drugs and alcohol; (b) family background and peer influence; and (c) school discipline and peer influence. In the secure short-term modality, they include, (a) educational performance and emotional



stability, and (b) educational performance and peer influence. And in the secure regular modality type, the interaction terms include, (a) educational performance and emotional stability, (b) peer influence and emotional stability, and (c) educational performance and peer influence. A further examination of the role of these interaction terms on recidivism is recommended.

Second, this study tracked juvenile recidivism for only one year. A longitudinal study that spans across at least five years is recommended in order to realize the full effect of the socio-demographic determinants of reoffending. In addition, an abreast control group of releases should be taken into consideration. Such a study would not only ascertain the role of the socio-demographic characteristics in recidivism, but would also take care of the effect of time between consecutive court appearances, which would serve as a measure of the intensity of delinquent careers among the juveniles.

Third, since this study made use of a readily available dataset, it is recognized that certain important factors were missing, and their effect could perhaps improve the effectiveness of the predictive models that were developed for recidivism. Such missing but important variables include, *inter alia*, birth order of the respondent, specific family characteristics such as criminal history of parents and siblings, parental income, religion, as well as environmental, and psychological factors. It is suggested that information pertaining to these variables be factored into the predictive models for a fuller prediction of juvenile recidivism.

Finally, an interstate comparison of levels of juvenile recidivism and the concomitant factors associated with reoffending in each region would help surmount the problem of generalization, since, as was noted earlier, there is a great variation in the

cultural and socio-demographic characteristics across the United States. Said in other words, a replication of this study in different states and in various modality types that might exist in other states is recommended.

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**APPENDIX 1**  
**SHORT FORM DESCRIPTION OF**  
**VARIABLES IN THE CORRELATION MATRICES**

The following short form variable names are used in the matrices, which are included in this appendix:

Recid = recidivism

Race = race

Off1 = offense type 1

Off2 = offense type 2

Off3 = offense type 3

Prior = prior offense

Age 1 = age at first adjudication

Age 2 = age at release

Duratio = duration of stay in the correctional system

Schdsp = school discipline

Family = family background

Drugs = drug use

Alcohol = alcohol use

Emotio = emotional stability

Educ = educational or vocational performance

Peers = peer influence

Employ = employment

Ecost = economic status

Healty = heath status

**APPENDIX 2**  
**TABLE 14. BIVARIATE CORRELATION**  
**FOR NON-SECURE MODALITY TYPE**

	Recid	Race	Sex	Off 1	Off 2	Off 3	Prior	Age 1	Age 2	Duratio
Recid	1									
Race	.015	1								
Sex	-.113**	-.115**	1							
Off1	.498**	.064*	-.109**	1						
Off2	.176**	.137**	-.267**	.194**	1					
Off3	-.037	-.068*	.118**	-.111**	-.083**	1				
Prior	.051	-.052	-.024	-.013	.109**	.007	1			
Age 1	-.014	-.104**	.067*	.012	-.042	-.029	-.029	1		
Age 2	.107**	.055*	-.120**	.037	.013	-.121**	-.046	.523**	1	
Duratio	.054	.008	-.080**	.040	.016	-.030	.022	-.017	.358**	1
Family	.314**	-.013	-.005	.205**	.002	.014	.000	.025	.007	-.020
Drugs	.526**	-.049	-.028	.320**	.078**	-.029	.017	.253**	.166**	.041
Alcohol	.507**	-.071*	-.012	.323**	.074*	-.018	.016	.219**	.149**	.023
Emotio	.287**	-.073*	.000	.117**	-.015	-.036	.041	-.009	-.059*	.000
Schdsp	.365**	.014	-.074*	.197**	.038	-.041	.011	.068*	-.004	-.019
Educ	.384**	-.071*	.019	.235**	.014	-.038	.001	.031	.011	-.017
Peers	.432**	.016	-.093**	.211**	.054	-.021	.031	.016	.020	-.004
Employ	.348**	.040	-.041	.225**	.120**	-.050	-.012	.081**	.086**	.063*
Econst	.000	-.053	.018	-.016	-.067*	.049	-.001	.065*	-.037	-.103**
Health	-.038	.028	.024	.000	.039	.028	-.036	-.053	-.055*	.009

Table 14 continued

	Family	Drugs	Alcohol	Emotio	Schdsp	Educ	Peers	Employ	Econst	Health
Family	1									
Drugs	.479**	1								
Alcohol	.481**	.833**	1							
Emotio	.448**	.333**	.342**	1						
Schdsp	.581**	.483**	.411**	.517**	1					
Educ	.482**	.421**	.417**	.597**	.538**	1				
Peers	.725**	.524**	.494**	.390**	.648**	.459**	1			
Employ	.380**	.398**	.410**	.377**	.376**	.420**	.406**	1		
Econst	.089**	.034	.043	.031	.086**	-.005	.078**	-.039	1	
Health	.037	.002	.026	.068*	.004	.015	.037	.059*	-.050	1

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

\* Correlation is significant at the 0.05 level (1-tailed).

N = 919

**APPENDIX 3**  
**TABLE 15. BIVARIATE CORRELATION FOR**  
**SECURE SHORT-TERM MODALITY TYPE**

	Recid	Race	Sex	Off 1	Off 2	Off 3	Prior	Age 1	Age 2	Duratio
Recid	1									
Race	.044	1								
Sex	-.022	-.019	1							
Off1	.158**	.047	-.068	1						
Off2	.125**	.016	-.047	.260**	1					
Off3	.147**	-.025	.038	-.025	.101**	1				
Prior	.273**	-.063	-.002	.034	.044	.061	1			
Age 1	.088*	-.111**	.000	.055	.211**	.036	.085*	1		
Age 2	.044	.012	.108**	.040	-.021	-.144**	.044	.299**	1	
Duratio	.388**	.000	.040	.115**	.052	.056	.186**	-.057	.117**	1
Family	.062	.042	.007	-.076*	-.026	.045	-.003	-.440**	-.271**	.086*
Drugs	.334**	.017	-.034	.020	.072*	.027	.140**	.226**	.098**	.110**
Alcohol	.222**	-.066	-.018	.018	.045	.036	.079*	.084*	.053	.173**
Emotio	.174**	-.079*	.020	-.048	.120**	.157**	.082*	.203**	.031	.036
Schdsp	.047	.062	.036	-.029	-.034	.012	.015	-.039	-.078*	-.011
Educ	.209**	-.089*	-.009	-.026	.094*	.097*	.088*	.168**	.028	.061
Peers	.219**	-.061	-.021	.040	.172**	.125**	.087*	.185**	.045	.078*
Employ	.154**	.086*	.008	.080*	.098**	.045	.021	.159**	.071*	.042
Econst	.078*	-.013	.059	.003	.059	.054	.007	.111**	-.014	.027
Health	-.043	-.007	-.022	.001	.005	.069*	.011	-.028	-.095*	-.026

Table 15 continued

	Family	Drugs	Alcohol	Emotio	Schdsp	Educ	Peers	Employ	Econst	Health
Family	1									
Drugs	-.053	1								
Alcohol	-.046	.105**	1							
Emotio	-.052	.199**	.175**	1						
Schdsp	.106**	.031	.022	-.080*	1					
Educ	-.029	.208**	.160**	.652**	-.057	1				
Peers	-.031	.168**	.152**	.578**	-.103**	.630**	1			
Employ	-.002	.318**	.104**	.297**	.028	.357**	.399**	1		
Econst	-.091*	.121**	.047	.164**	.021	.153**	.119**	.104**	1	
Health	.035	.002	-.004	.116**	-.038	.141**	.066	.134**	.070*	1

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

\* Correlation is significant at the 0.05 level (1-tailed).

N = 572



**APPENDIX 4**  
**TABLE 16. BIVARIATE CORRELATION FOR**  
**SECURE REGULAR MODALITY TYPE**

	Recid	Race	Sex	Off 1	Off 2	Off 3	Prior	Age 1	Age 2	Duratio
Recid	1									
Race	-.016	1								
Sex	-.093**	-.121**	1							
Off1	.239**	.056*	-.150**	1						
Off2	.144**	.018	-.064**	.295**	1					
Off3	.203**	-.104**	.109**	-.055*	.180**	1				
Prior	.125**	-.103**	-.004	.054*	.054*	.061*	1			
Age 1	.001	-.104**	.037	.102**	.218**	.129**	.019	1		
Age 2	-.004	.071**	-.192**	.114**	-.062*	-.168**	-.032	.234**	1	
Duratio	.290**	.071**	-.137**	.164**	-.022	-.020	.057*	-.029	.347**	1
Family	.011	.009	.021	-.094**	-.078**	.009	.039	-.402**	-.215**	.008
Drugs	.286**	-.036	-.017	.060*	.053*	.073**	.013	.230**	.103**	.077**
Alcohol	.244**	-.094**	.014	.075**	.069**	.149**	.129**	.146**	.065**	.091**
Emotio	.222**	-.131**	.080**	.029	.090**	.207**	.074**	.167**	-.123**	.019
Schdsp	.070**	.049*	.060*	-.074**	.025	.083**	-.011	.020	-.043	.013
Educ	.252**	-.096**	.057*	.016	.055*	.190**	.091**	.129**	-.109**	.030
Peers	.300**	-.047*	.020	.042	.080**	.220**	.051*	.110**	-.117**	.054*
Employ	.150**	.014	.067**	.001	.063*	.122**	.024	.102**	.002	.044
Econst	.135**	-.057*	.071**	.038	.080**	.069**	.012	.124**	-.002	.026
Health	-.001	-.019	.048*	-.040	.024	.055*	.026	-.014	-.019	.019

Table 16 continued

	Family	Drugs	Alcohol	Emotio	Schdsp	Educ	Peers	Employ	Econst	Health
Family	1									
Drugs	-.071**	1								
Alcohol	-.046	.155**	1							
Emotio	-.037	.238**	.275**	1						
Schdsp	.064*	.031	.052*	.002	1					
Educ	-.027	.242**	.278**	.795**	.027	1				
Peers	-.009	.213**	.241**	.656**	-.015	.669**	1			
Employ	-.021	.289**	.172**	.391**	.035	.417**	.450**	1		
Econst	-.023	.180**	.077**	.234**	.021	.259**	.204**	.176**	1	
Health	-.021	.074**	.060*	.137**	-.001	.093**	.132**	.096**	.049*	1

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

\* Correlation is significant at the 0.05 level (1-tailed).

N = 1,319

## VITA

Jospeter Mugambi Mbuba was born and raised in Chuka, Kenya. He attended primary and secondary schools in rural Kenya. He proceeded to Egerton University for his undergraduate studies and graduated *magna cum laude* with Bachelor of Arts degree in sociology and economics in 1992, before taking up a job as a teaching assistant in the same university. He later studied at the University of Nairobi and earned a Master of Arts degree in sociology in 1997 and returned to Egerton University where he taught as an assistant lecturer until the fall of 2000 when he joined Louisiana State University for doctoral studies. At the completion of his doctoral program, he hopes to return to Kenya to teach and to conduct research in crime prevention, criminal justice and related areas.