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THE EFFECTS OF SCHOOL AND NEIGHBORHOOD CHARACTERISTICS ON  
DELINQUENCY, DRUG AND ALCOHOL  
ISSUES, EARLY CHILDBEARING, AND WELFARE RECEIPT

by

BOBETTE JO OTTO

Under the Direction of Tomeka Davis

ABSTRACT

Little research has examined the impact of school and neighborhood racial composition on delinquency, arrest, incarceration, drug issues, early childbearing, and welfare collection. The purpose of this study is to explore these particular relationships. For this project, I use Add Health data. Based on past literature and theories concerning the consequences of racially segregated schools and neighborhoods, I hypothesized that students who attended/lived in schools/neighborhoods with a higher concentration of racial minorities would be more likely to participate in delinquent acts, get arrested, be incarcerated, have issues with drugs and alcohol, have a teenage pregnancy (or their partner did), and collect welfare during young adulthood. Although research on these outcomes is sparse, Lafree and Arum (2006) and Johnson (2011)

found that increased minority racial composition in schools was related to delinquency and incarceration, while those studying neighborhoods have found similar results (Massey and Denton 1993; Krivo and Peterson 1996). Further, other research has shown that alcohol and tobacco companies target minority neighborhoods (Rabow and Watt 1982; Moore, Williams, and Qualls 1996) and this exposure could lead to higher rates of alcohol and tobacco use. The theoretical frameworks I used initially to frame how school minority concentration affects disadvantage were not completely supported. When school and neighborhood racial composition was significant, it was in a direction not predicted, which is an interesting finding that needs further examination. Overall, family structure, racial background, and prior background were significant and consistent predictors. I argue that family background and systematic racism are fundamental in explaining racial inequality.

**INDEX WORDS:** School segregation, Neighborhood racial composition, Delinquency, Drug use, Family background, Racial background, Systematic racism

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BOBETTE JO OTTO

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

in the College of Arts and Sciences

Georgia State University

2014

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by

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Office of Graduate Studies

College of Arts and Sciences

Georgia State University

May 2014

## **DEDICATION**

To my parents, Will and Mary: for believing in me and always being there.

To my siblings, Bill, Jill, and Pat: for providing me with support, laughter, and an ear to vent.

To Matt, my other half: for being the best partner anybody could ask for. Without you, this process would have been a lot more difficult. Thanks for keeping me sane, and providing me with the love and support I needed. You are the best! I love you!

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## CHAPTER ONE

### INTRODUCTION

Although *Brown v. Board of Education* ruled that segregation is inherently unequal, segregation is still present in every facet of American life. While some remain adamant about racial desegregation and its positive consequences (Schwartz 2001; Orfield, Frankenberg, and Garces 2008), other scholars argue that desegregation either adversely affects minorities or has no overall consequence, specifically in regards to academic motivation and self-concept (St. John 1975; Marsh 1987; Frost 2007; Crosnoe 2009). While segregated minority schools can be successful (Siddle-Walker 1996), segregated minority schools are more likely to be underfunded; therefore, the educational opportunities available within these schools are insufficient compared to white or integrated schools (Massey and Denton 1993; Kozol 2005; Orfield et al. 2008; Grant 2009). Students in racially isolated schools are more likely to experience higher teacher turnover, attend schools with more concentrated poverty, and experience other educational disadvantages compared to white students or students in integrated environments (Darling-Hammond 1997; Orfield et al. 2008), while minority students who attend integrated schools are more likely to be academically prepared and attend college, have less racial prejudice towards other groups, have greater critical thinking skills, have more access to social and professional networks, and are better prepared for diverse settings after high school (Orfield et al. 2008). These positive consequences of school integration cannot be ignored.

Since the 1960's, scholars studying school integration have primarily focused on the impact segregation has on academic achievement (Coleman et al. 1966; St. John 1975; Borman et al. 2004; Orfield and Chungmei 2005), self-esteem (Stephan and Rosenfield 1978; Crosnoe

2009), and group relations in racially integrated and segregated schools (Clark 1939; Wells and Crain 1997; Wells, Holme, Revilla, and Atanda 2009). Most of this research has highlighted the positive effects of racial integration for minority students, specifically blacks, while little has found any adverse affects for whites. Yet, little research has examined the impact of school racial composition on outcomes such as delinquency, arrest, incarceration, hard drug use, drug and alcohol issues, as well as the impact that school racial composition may have on the prevalence of welfare receipt and early childbearing.

Thus, the question arises—does being exposed to certain environments facilitate adverse behavior? Specifically, does the disadvantage present in segregated environments increase the likelihood of delinquent behavior? Although schools are recognized as avenues for economic and occupational success, they are entrenched with inequality and scholars are not the only ones who realize it. Students, even from a very young age, realize this inequality. In Jonathan Kozol's book, *The Shame of the Nation*, one child wrote to him and said, "We do not have the things you have. You have clean things. We do not have. You have a clean bathroom. We do not have that. You have Parks and we do not have Parks. You have all the thing and we do not have all the thing...Can you help us?" (2005: 39). This child was only in 3<sup>rd</sup> grade.

If this cycle persists, and minorities attend similar schools throughout their junior and high school years, frustration with the school system may likely transpire. If students feel like their opportunities are blocked and advancement is not possible, no matter how hard they try, delinquency may be a likely outlet (Agnew 1985; Paternoster and Mazerolle 1994). In racially segregated, high poverty schools, the resource disadvantage often present may be the catalyst for delinquent behavior. As shown in Eklund and Fitzell's (2013) study of Swedish youth, criminal activity was less common in more advantaged schools.



Additionally, given the high incarceration rate of minorities, specifically minority men, an examination of environmental factors is essential. Do certain environments influence an individual's participation in adverse behaviors that may contribute to one's likelihood of incarceration? If so, what are the characteristics of these environments? Subsequently, the purpose of this study is to explore how environmental contexts affect adverse behavior, with a specific look at school and neighborhood characteristics. This is an imperative question that must be addressed.

## **LITERATURE REVIEW**

### ***Short History of Desegregation Policy***

From the late 1890's until 1954, the *Plessy v. Ferguson* (1896) decision, which upheld the doctrine of separate but equal, was frequently challenged. Grass root organizations, dedicated individuals, and the NAACP fought to dismantle institutionalized racist practices (Patterson 2001). It was not until the monumental *Brown v. Board of Education* decision, composed of cases from Clarendon County, South Carolina; Prince Edward County, Virginia; Washington D.C.; Wilmington, Delaware; and Topeka, Kansas, that paved the way for the dismantling of *de jure* ("concerning law") segregation in public schools, as well as other institutions. Due to the nation's lack of support and implementation of desegregation policies, *Brown II* (1955) reaffirmed the original *Brown* case while also calling for the South to implement desegregation policies with "all deliberate speed" (Patterson 2001). *Brown II*, however, did not require that lower courts make school districts abide by this ruling; meaning, they did not have the jurisdiction to require segregated school districts to implement a desegregation plan by a certain date (Patterson 2001). Instead, if a case were made concerning the non-compliance of the *Brown* decision, it was up to the federal courts to require that segregated school districts comply within a "reasonable" time period. Furthermore, the opposition of whites throughout the country, specifically in the South,

as well as the lack of official guidelines on how to desegregate schools, stalled the progress of swift integration (Gordon 1994).

While some school districts did voluntarily establish desegregation plans, mandates were also imposed by the courts, especially in the South, on schools that would not voluntarily adhere to the *Brown* ruling (Orfield and Eaton 1996; Patterson 2001). With the passage of the Civil Rights Act of 1964, the federal government had the authority to litigate against school districts and withhold funding from districts that were maintaining *de jure* segregation. If a school district was found guilty of maintaining segregation, officials were ordered to develop a plan of action toward achieving racial balance whereby the racial composition of the schools should match the racial breakdown of specific neighborhoods (Patterson 2001).

Although desegregation plans were imposed on school districts throughout the country, many compulsory plans were based on choice. Under the auspices of a colorblind rhetoric in a society that preached civil rights (Patterson 2001), choice became a disguise for the continuation of segregation. Freedom of choice plans gave students the opportunity to choose what school they attended. By expanding attendance zones, blacks were free to choose any school they wanted within a determined zone, and the same was true for whites (Gordon 1994). While this seemed legitimate on paper, hardly any white parents chose to send their children to black schools, and if black parents had the desire to send their kids to white schools, the fear of hostility was an issue of concern (Patterson 2001). In the end, black schools remained black, while formerly all white schools gained a few black students (Gordon 1994). Thus, the utility of freedom of choice plans as a means of desegregation were challenged in court, as they did not lead to desegregation, since only a small percent of black children in the South were attending desegregated schools (Russo, Harris III, and Sandidge 1994). In *Green vs. County School Board of New*

*Kent County* (1968), the Supreme Court struck down the use of freedom of choice plans as a valid means to desegregate schools, and steps had to be taken to legitimately desegregate schools (Russo, Harris III, and Sandige 1994). The “composition of the student body, faculty, staff, transportation, extracurricular activities, and facilities” would be examined to see if a dual system, one white one black, existed within the school system (Gordon 1994: 302).

As freedom of choice and other race neutral plans were being challenged, student-busing plans were being implemented in school districts throughout the South. To the courts, and to people adamant about integration, busing was a means to achieve integration. In *Corpus Christi Independent School District v. Cisneros* (1970) and in *Swann v. Charlotte-Mecklenburg Board of Education* (1971), the court ruled in favor of mandatory busing as a policy to achieve school integration (Gordon 1994; Orfield and Eaton 1996). However, opposition to busing was rampant throughout the country. Political officials, as well as much of the American populous, were adamantly against busing. While many opponents argued that it was too much of a tax burden, others argued that neighborhood schools promoted a sense of community, because students were able to form closer friendships with those that lived in their neighborhood (Patterson 2001). Opponents also feared that busing would lead to an increase in crime, declining schools, and less qualified teachers. Anger towards busing as a policy became even more widespread, as states outside the South were not mandated to implement busing, since *de jure* segregation was not present. As a result of mandated busing in the South, schools were less segregated compared to states in the North and West (Patterson 2001)

While many desegregation policies were implemented in the South, it was not until 1973 when school segregation in a non-Southern city was under the scrutiny of the Supreme Court. Even though blacks in Denver, Colorado, were better off economically compared to their South-

ern counterparts, many black children (as well as Hispanics) were isolated in segregated schools due to the policies of the school board (Orfield and Eaton 1996; Patterson 2001). For example, the school board gerrymandered student attendance zones, used “optional” zones for student attendance, and used to excess mobile classrooms (Horn and Kurlaender 2006). Due to these policies, in *Keys v. Denver School District Number 1* (1973), the Supreme Court found that the school board was deliberately segregating racial groups. Yet, if a school district could prove that they were not at fault for the enforced segregation in schools, integration plans did not have to be implemented (Patterson 2001). Therefore, even though the *Keys v. Denver* decision was the first to rule against segregatory schooling outside of the South, if school districts could prove that segregation was unconscious and non-deliberate, court-mandated desegregation was not forced upon them. While Denver did implement busing throughout the city as a means of desegregation, this decision did not provide a framework for mandated integration plans throughout the country.

From the 1950’s to the early 1970’s, Supreme Court rulings led to increased racial integration in schools; ironically though, the Court also had a profound hand in overturning the validity of the Brown decision (Orfield and Eaton 1996). With the election of Richard Nixon in 1968, the political and ideological views of the Supreme Court changed (Patterson 2001; Grant 2009). In fact, the justices Nixon appointed during his term had to pass an “anti-busing” test (Patterson 2001; Grant 2009). With the Supreme Court Justices appointed by Nixon, the attitudes of the Court, as well as the opinions of the American populace started to become more conservative.

Due to the conservative nature of the court, decisions halting integration were being made. In Detroit, Michigan, white suburbanization and the isolation of blacks in the cities led to

segregation between the city and its surrounding suburbs. Although not a form of *de jure* segregation, district lines isolated racial groups from each other. To reduce segregation between districts, the lower courts permitted a plan that would integrate schools across district lines, thereby affecting the racial composition of schools in the city and the surrounding suburbs (Orfield and Eaton 1996). However, opposition mounted, and due to the political sway by the Nixon administration, the Supreme Court overturned this decision. In *Milliken v Bradley* (1974), the Supreme Court ruled that an inter-district desegregation plan (across district lines) was not constitutionally lawful, unless segregation in the city was purposely created by actions of the state. However, such intentionality was often hard to prove, especially in the North, where *de facto* segregation (segregation that existed outside of the law) was more common.

While the court ruled that desegregation across district lines was unconstitutional in *Milliken v. Bradley*, in *Milliken v. Bradley II* (1977), the court ruled in favor of compensatory education programs as they recognized the detrimental effects that racial isolation (i.e., inadequate schools) can have on black students. Therefore, if states were found guilty of intentional segregation and discrimination, the state would have to fund educational programs geared toward improving instruction in city schools adversely affected by segregation. Since this ruling, a number of school districts have established state-funded compensatory education programs. However, “[these] remedies have become a way for school districts and states to endure a short and superficial punishment for prior intentional segregation” (Orfield and Eaton 1996:177). Thus, the effects of racial isolation on short and long-term outcomes often remain.

The *Milliken* decision, as well as the *Green v. School Board of New Kent County* ruling, were stepping stones for future court decisions. In 1986, in *Riddick v School Board of the City of Norfolk, Virginia*, the Supreme Court declared that if a school district were considered unitary, it

would no longer have to abide by a desegregation plan. A school district would be deemed unitary if desegregation policies had alleviated a dual system—one white, one black (Orfield and Eaton 1996). If a school district has unitary status, it means they have taken steps to alleviate the ill effects of discrimination. From here, similar rulings followed. In 1991 and 1992, the court ruled in *Board of Education of Oklahoma v. Dowell* that the Oklahoma City school district was no longer responsible for desegregation efforts since they were found to have unitary status, and in *Freeman v. Pitts*, the court ruled that districts could dismantle their desegregation plans if all the desegregation components inherent in *Green* did not happen concurrently (Orfield and Eaton 1996). Another setback for integration policies occurred in 1995, when the Supreme Court downplayed the *Milliken II* decision in *Missouri v. Jenkins* and ruled that the negative effects of segregation at *Milliken* schools did not have to be corrected through long-term compensatory education programs. As these cases highlight, the Supreme Court, a proponent of desegregation in the 1950's and 1960's changed course starting in the 1970's. With the election of Nixon, the political climate changed, and desegregation, especially through busing, was a policy that was vehemently disliked. By the late 1980's, the Supreme Court mirrored the conservative opinions of the Nixon, Reagan, and Bush administrations, and integration was not a high concern.

### ***The Impact of Court Ordered Policies on School Racial Composition***

Even though desegregation plans are no longer mandatory, specifically in school districts that have reached unitary status, after the *Brown* decision a number of schools had voluntarily adopted racial assignment plans as a means of integration. According to Rossell and Armor (1996), voluntary plans can be just as effective as mandatory plans, even if the plan was established because of mandatory plans in surrounding districts. For example, in Logan and Oakley's (2004) study of court action and school districts, some of the greatest strides towards desegrega-

tion were made in large school districts without mandatory desegregation plans. Therefore, even in areas that did not mandate integration plans, the push for integration and its positive consequences were felt in school districts throughout the country. Nonetheless, voluntary plans were challenged in 2007 when the Supreme Court reviewed voluntary desegregation plans in Louisville, Kentucky, and Seattle, Washington (Orfield et al. 2008). Although hundreds of social scientists urged the Supreme Court to rule in favor of desegregation plans because of the positive implications of diversity, in *Parents Involved in Community Schools v. Seattle School District* and *Meredith v. Jefferson County Board of Education*, the court ruled that the racial assignment policies in these districts were not “sufficiently narrowly tailored in their use of race,” and if plans were to be implemented, they needed to be more specific in how diversity, and its benefits, were going to be achieved (Orfield et al. 2008: 97). This decision, while it did not completely strike down race as a factor in school assignment plans, made it more difficult for school districts to achieve racial diversity and reduce the likelihood of segregation.

However, not having race conscious plans as a means for integration, or being released from court-ordered desegregation plans, may directly affect the racial composition of one’s school. According to Reardon, Grewal, Kalogrides, and Greenberg (2012), once a district is released from a mandated court order, levels of segregation increase over time. In Lutz’s (2011) recent study of districts that were released from a court order compared to districts that were still mandated by a court order, those who were released were more likely to experience increased levels of segregation for at least 10 years after the release from the court mandate. Further, in Clotfelter, Vigdor, and Ladd’s (2006) study of court orders and levels of resegregation in Southern and Border states, districts released from court-ordered integration plans were more likely to experience increased levels of resegregation over time, compared to districts who were never

placed under a court order. Thus, as more school districts are declared unitary and released from court orders, school districts are resegregating (Orfield and Yun 1999).

Although many of the decisions made by the Supreme Court were directed at specific school districts, neighboring districts, as well as surrounding metro areas, can also be affected by a court's ruling. In Logan, Oakley, and Stowell's (2008) study of segregation levels in metropolitan areas from 1970-2000, segregation decreased within school districts, regardless of whether or not there was a court mandate. The authors hypothesized that it was a combination of court orders, pressure by the government, and the fear of lawsuits that created a "national policy climate" of desegregation. Nonetheless, while segregation decreased within districts, segregation increased between districts during this time, and between district segregation is a dominant reason for school racial segregation.

Similar to Logan et al.'s (2008) study, James (1989) found that school segregation increased between cities and their surrounding suburbs among 65 metropolitan areas between 1968-1979. While this could be due to the fact that court mandates were often institutionalized within specific school districts (Logan et al. 2008), the existence of white flight, where whites leave areas that are experiencing desegregation policies, may partially explain high levels of between district segregation (Coleman, Kelly, and Moore 1975; Rossell 1978; Ravitch 1978; Farley, Richards, and Wurdock 1980; James 1989). Others, however, have found no relation between white flight and increased segregation in desegregating districts (Pettigrew and Green 1976; Rossell 1976; Smock and Wilson 1991). For example, in Smock and Wilson's (1991) analysis of nine southern and non-southern public school districts, the decrease in white student enrollment within particular schools was not caused by white flight due to desegregation plans,



as the change in school enrollment after desegregation was similar to changing enrollment patterns before.

Nonetheless, after the resegregation policies of *Milliken* (1974), and specifically the decisions of *Dowell* (1991), *Pitts* (1992), and *Jenkins* (1995), segregation is still a widespread phenomenon, especially between school districts, as highlighted in a study conducted by Reardon, Yun, and Eitle in 2000. In their analysis of metropolitan school segregation, 4/5<sup>th</sup> of school segregation in the 217 metropolitan areas in their study was due to segregation between whites and racial minorities (blacks, Asians, and Hispanics), while the remaining 1/5<sup>th</sup> was between racial minorities themselves. Overall, the majority of school segregation was between districts, and where one chooses to live, greatly impacts this type of segregation. While suburbanization is one factor that contributes to between-district segregation, institutionalized discrimination in the housing market, specifically in the suburbs, is another factor that contributes to between district segregation (Reardon et al. 2000). When looking within particular school districts, 1/4<sup>th</sup> of school segregation in metropolitan areas could be eradicated if desegregation plans focused on integrating whites and racial minorities within the same district (Reardon et al. 2000). Thus, while within-district desegregation is important, and plans focused on this could alleviate some racial segregation throughout schools, between-district desegregation plans would have more of an impact on total metropolitan segregation. However, without specific policies aimed at eradicating housing discrimination, residential segregation is a dominant hurdle that stands in the way of school desegregation.

As highlighted in the above literature, the integration of America's schools has been (and still is) an arduous process. The courts, along with public opinion, have greatly influenced how and at what speed school desegregation occurs. Theory, however, provides us with an insight

into how school and neighborhood racial composition influence individual success/failure. In this next section, I will address different theoretical frameworks concerning the relationship between schools/neighborhoods and their consequences.

## **THEORETICAL PARADIGMS**

Throughout this project, three theoretical paradigms guided my research questions on how schools and neighborhoods affect behavioral outcomes.

### ***The Neighborhood Segregation-School Segregation Link***

Neighborhood segregation is a prominent facet of many minorities' everyday experiences. Where one lives has an enormous impact on school and housing quality, presence of crime, drug use, amount and quality of public services, general health, and the characteristics of one's social network (Massey and Denton 1993). As shown in Shihadeh and Flynn's study of residential segregation, black isolation is a significant predictor of violent behavior among black men (1996). Although overall neighborhood segregation decreased between 1980-2000 (Iceland 2004), neighborhood segregation is still very prominent, and blacks are the most segregated group (Massey and Denton 1993; Charles-Zubrin 2003; Wilkes and Iceland 2004). When neighborhoods are segregated, schools also become segregated, as the majority of those who attend public school attend the school nearest to their home. Thus, the adverse effects of living in a segregated neighborhood (e.g., crime and drug use) may also spill over into the neighborhood school.

The racial and economic segregation many black families face has a negative impact on a child's educational outcomes. Since school assignment is based on residential location, the existence of neighborhood segregation is a main cause of segregated, high poverty schools (McArdle, Osypuk, and Acevedo-Garcia 2010). As previously mentioned, the disadvantages present in seg-

segregated schools have short and long-term consequences. Racially isolated, low-income schools have fewer educational resources, lower teacher quality and higher turnover rates among staff, and poorer facilities compared to those in integrated schools (Orfield et al. 2008). The educational disadvantages experienced by minority students leads to lower educational outcomes, thus affecting students' long term success such as the opportunity to attend and complete college and retain well-paying jobs enabling social mobility. Even among blacks with high incomes that afford them the chance for spatial mobility, it is often limited due to overt and subtle discrimination as well as the preferences of whites to remain isolated from blacks (Krysan and Farley 2002; Bonilla Silva 2003; Lewis 2003). Therefore, many black children, as well as Hispanics, are often stuck in poor, segregated neighborhoods with deteriorating schools that lack the resources for students' present and long-term success (Massey and Denton 1993; Kozol 2005).

### ***Strain Theory***

Due to the lack of resources available in segregated schools, minority students may feel alienated and instead of conforming to society's norms, commit deviant behavior. Merton (1938), the originator of strain theory, discussed how criminal activity could likely emerge if one felt that their opportunities for social mobility were blocked. In 1955, Cohen applied Merton's concept to the school level. According to Cohen (1955), adolescents from working-class families feel strained because while they want to adhere to the American ideals of hard work and success, they do not have the capacity to reach those goals due to the structural disadvantage present in their schools. Because of this, they create a delinquent subculture rejecting the very goals they cannot reach.

This theory can be extended to minority adolescents, as they are disproportionately from working-class and low-income families and attend schools that are disadvantaged. Further,

“school climates known to foster delinquency tend to have low expectations for achievement, ineffective administration, and lack of commitment to building student efficacy in learning” (Reinke and Herman 2002: 552). Thus, schools with a high percentage of minority students, where opportunities for mobility are often blocked due to a number of disadvantages inherent in them (Orfield et al. 2008), may be a breeding ground for the creation of delinquent subcultures.

### ***Social Disorganization Theory***

Most research concerning ecological effects of delinquency have focused on neighborhood characteristics. According to Shaw and McKay (1942), the founders of social disorganization theory, disadvantaged neighborhoods characterized by poverty, racial diversity, and high residential mobility are more prone to criminal activity. If a community is socially disorganized, it becomes an ideal place for criminal activity due to the absence of social cohesion. In Sampson and Grove’s (1989) analysis of the connection between disorganized communities and crime, the presence of unsupervised teenage groups was significantly related to the presence of delinquent behavior.

Some scholars, however, have focused on how school characteristics (similar to the ones laid out in social disorganization theory) influence criminal activity. Sellstrom and Bremberg (2006) conducted a literature review examining the effects of school characteristics on child outcomes. Of the 17 articles reviewed, overall, higher SES schools and those with a good school climate were less likely to have students participate in delinquent behavior. Other studies have found similar results (Bernburg & Thorlindsson 1999; Pauwels 2011). In Pauwels (2011) study of Belgian adolescents, he found that school disadvantage, measured by the percentage of adolescents living in lower income families, was an important predictor of delinquent behavior. Further, when comparing the importance of school and neighborhood disadvantage on behavior, he

found that schools were more important predictors of delinquent behavior. Additionally, in Eklund and Fritzell's study (2013) concerning Swedish youth, students in disadvantaged schools<sup>1</sup> were more likely to commit crime and use drugs than students in more advantaged schools.

Other scholars, however, have found that school characteristics do not significantly influence delinquent behavior (Gottfredson et al. 2005; Ousey and Wilcox 2005).

While social disorganization theory focuses on ethnic heterogeneity, ethnic homogeneity may also lead to adverse outcomes. Because racial minorities are more likely to be poor compared to whites, students who attend schools with more minority students are more likely to attend schools with students from disadvantaged backgrounds. Therefore, it is not erroneous to hypothesize that school minority concentration is also related to delinquency and drug use.

In conclusion, it appears that racially and economically isolated schools and neighborhoods potentially lead to adverse outcomes for minority youth. The goal of this dissertation is to disentangle their effects and examine how they impact a number of behaviors.

## **EMPERICAL RESEARCH ON THE CONSEQUENCES OF DESEGREGATION**

After *Brown vs. Board of Education* (1954), sociologists were concerned with the effects of how desegregation would impact students. When desegregation plans were first implemented in the late 1960's and early 1970's, scholars focused most of their attention on academic achievement, intergroup relations, and self-esteem. Beginning in the mid-to-late 1970's, however, social scientists began to study the long-term consequences of desegregation, with a specific look at post-secondary achievement, occupational attainment and expectations, and social networks. Yet, since the mid 1980's, research on desegregation has been modest, even comparable to the years right after *Brown* (Schofield and Hausmann 2004). The lack of research on desegre-

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<sup>1</sup>Variables that measured school disadvantage included percent of: native pupils, highly educated parents, and "marks" or grades.

gation can be traced to a number of factors (Orfield 2001; Schofield and Hausmann 2004). For example, due to the lack of agreement on how integration plans should be carried out, the overall decline in the percentage of Americans who think the government should be involved in school integration (Schuman, Steeh, Bobo, and Krysan 1997), the lack of government support for desegregation policies, and America's changing racial landscape (Rivkin 2000; Schofield and Hausmann 2004), the amount of funding available for desegregation research, as well as scholarly interest on the subject has declined over the last 30 years (Schofield and Hausmann 2004). Thus, as society began to forget about desegregation plans and the positive consequences of integration, research on desegregation's outcomes began to diminish. Nevertheless, a vast body of literature exists concerning the effects of desegregation on a number of outcomes.

### ***The Consequences of Racial Segregation on Academic Success***

***Educational achievement.*** Soon after the implementation of *Brown vs. Board of Education* (1954), numerous scholars studied the short-term impact of segregation, with a specific look at academic achievement, intergroup relations, and self-esteem. After the *Brown* decision, the achievement gap between blacks and whites was deemed one of the most important concerns of desegregation plans (Levin 1975; Wells 2001). However, the success or failure of desegregation was often gauged by looking at test scores only one to two years after a plan was implemented, while the long-term effects were ignored (Orfield and Eaton 1996). According to Wells (2001), "school desegregation came to be perceived as more an act of charity to black students than a legal remedy for what whites had done wrong for so long" (779). This idea, however, does not get at the heart of the true problem—the inequality inherent in many segregated schools. Since the late 1960's, there have been numerous studies, and a number of comprehensive reviews conducted, concerning the effects of desegregation on black achievement (St. John 1975; Weinberg

1975; Bradley and Bradley 1977; Krol 1978; Crain and Mahard 1982; Cook et al. 1984; Braddock and Eitle 2004). While a majority of the studies showed positive results for blacks in desegregated settings, other results are mixed (St. John 1975; Weinberg 1975; Cook et al. 1984).

For example, in Armor's study of desegregation (1972), school integration did not lead to increased academic achievement. His analysis also indicated that integration led to increased racial tension, not improved race relations. However, his findings were criticized, as Pettigrew, Useem, Normand, and Smith (1973) critiqued his methodology, noting that Armor was primarily concerned with the short-term effects of busing (within one year of implementation) on black students' ability to assimilate.

In Weinberg's (1975) comprehensive review of the literature, he found only a few studies that indicated blacks would fare worse academically in integrated schools, while no research pointed to adverse outcomes for whites in desegregated settings. St. John (1975), however, took into account the methodological design of past studies in her analytical review. In her review of roughly 120 studies, she focused on specific methodological concerns, such as the time span of the study, and the type of control variables used, such as family background and quality of school. Depending on the design of the study and the control variables used, the results were mixed, as positive, negative, and neutral outcomes were found for the effects of desegregation on academic outcomes (St. John 1975).

Similar to St. John (1975), Crain and Mahard (1982) conducted a meta-analysis of 93 studies, which analyzed 323 samples of black students. Due to past concerns regarding methodological oversights, they controlled for two factors. First, they took into consideration the age of the students. According to their findings, the effects of segregation are strongest during kindergarten and the first grade. However, since many desegregation studies had focused on kids in

middle-to-late elementary school, the true effects of desegregation plans were underestimated. They also took into account the lack of adequate control groups used from past studies. When these two problems were controlled, Crain and Mahard (1982) found positive results of desegregation in 40 of 45 studies, while the other studies showed either no improvement, or students' scores decreased.

Overall, Crain and Mahard concluded that desegregation efforts are the most effective in the very earliest years of school, and the largest achievement gains occur with metropolitan plans, compared to central-city, suburban, or city-wide plans. While the nature of their analysis could not help explain why metropolitan plans were the most beneficial, the authors provided two possible explanations. First, metropolitan racial desegregation plans were the most likely to economically desegregate schools. Second, suburban school districts were more likely to have strong academic environments so when spread across areas or when blacks were transferred to suburban schools, the schools were able to maintain their administration and academic environment, and black students experienced academic gains (Crain and Mahard 1982).

While a number of older studies and meta-analyses have examined the effects of school racial segregation on academic achievement, newer research also suggests that school racial composition, specifically minority concentration, remains an important factor in disadvantage. In Caldas and Bankston's (1998) study of racial composition and achievement on Louisiana's Graduate Exit Examination in 1990, the concentration of black students in school had a negative impact on the educational success (success on three 10<sup>th</sup> grade parts of the Graduation Exit Exam) for blacks, as well as their white counterparts. Similar results have been documented in North Carolina. While the school district in Charlotte-Mecklenburg, North Carolina is known for its success in desegregating its schools (Mickelson and Heath 1999; Grant 2009), racial inequali-



ty in academic outcomes, even within integrated districts, is still present. Utilizing data from a survey of Charlotte-Mecklenburg (CMS) seniors, as well as a variety of secondary sources, Mickelson and Heath (1999) found that the longer a student attended a segregated school, the lower their grades, and the less likely their chances of being placed in a college-bound track once they reached high school. Although desegregation was widespread in the CMS school district, in the 1998-1999 school year, a number of schools were still racially identifiable as black and racial segregation was prominent within specific academic tracks.

Recent research in Florida suggests that, after controlling for poverty, per pupil expenditures, and overall school performance, the racial composition of a school had a direct impact on whether students passed the Florida Comprehensive Assessment Test (FCAT) (Borman et al. 2004). Students who attended schools with a higher proportion of black students were significantly less likely to pass the FCAT than students in schools with a lower percentage of black students. Further, students in integrated schools did not do significantly worse on the FCAT than those in majority white schools; thereby, providing supporting evidence of a positive impact of integrated high schools (Borman et al. 2004).

While this study focuses on Florida specifically, similar findings have been found in Texas. Hanushek, Kain, and Rivkin (2009) analyzed panel data comprised of math achievement scores of elementary students in Texas public schools. After isolating the impact of school racial composition on academic outcomes, the authors concluded that the percentage of black students at the school negatively impacted the math achievement of blacks. However, the achievement scores of whites were not significantly affected by the black composition of the school.

Although a number of studies and meta-analyses have been conducted on the effects of school racial composition on educational achievement, the methodologies of many past studies

have been criticized; thus, it is difficult to draw definitive conclusions regarding the overall impact on academic achievement (Crain and Mahard 1982; Schofield 1995). For example, in a comprehensive review of past studies, the control groups used by past scholars have been criticized, as some never included a control group when analyzing the effects of segregation, and when segregated control groups were included, some control groups were actually integrated (Crain and Mahard 1979; Cook et al. 1984). Therefore, the actual effects of desegregation plans could not be accurately reported. Additionally, while some studies cite how desegregation had either a positive or negative effect on educational outcomes, the effect size was often not reported (Crain and Mahard 1979). Another methodological concern by reviewers was that the pretests/posttests used in several studies were not identical. While this is very difficult to do as student knowledge increases from grade to grade, again, the effect size cannot be accurately measured or reported which may skew the success/failure of school racial integration (Cook et al. 1984).

While the impact of desegregation on black achievement has been widely studied, the effect of desegregation on white student outcomes has also been of great interest, specifically because of the negative attitudes about desegregation in the white community. Many whites believed that desegregation was doomed to fail, and would create “educational disaster zones” (Rist 1980: 126). Due to the mounting opposition (or endorsement) of desegregation, social scholars, as well as society in general, became very interested in how desegregation effected white achievement. In 1966, the Coleman Report found that minority children were more affected by the school they attended compared to whites (Orfield 1978). This was an important finding, specifically since many were opposed to busing minority children to majority white schools, as whites believed their children would be adversely affected. Since the 1970’s, subsequent re-

search has focused on the educational outcomes of whites in desegregated school environments and a majority of that research has not shown any significant impact on the academic outcomes of white children (Prichard 1969; Purl and Dawson 1971; Mayer, King, Patterson, and McCollough 1974; St. John 1975; Singer, Gerard, and Redfearn 1975; Orfield 1978; Orfield and Eaton 1996; Schofield and Hausmann 2004). However, a few studies have found adverse consequences (e.g. lower test scores) on white children's academic success when attending majority black schools (Caldas and Bankston 1998). In segregated minority schools, however, blacks *and* whites are more likely to experience poorer academic outcomes than in integrated or majority white schools (Patchen 1982; Caldas and Bankston 1998). This, however, is often due to resource disadvantage present in segregated minority schools, not the presence of blacks themselves (Orfield, Frankenberg, and Garces 2008).

***School Retention and Dropping Out.*** A vast amount of research exists concerning the effects of desegregation/school racial composition on academic achievement. However, research has also addressed what factors contribute to school retention, and the racial composition of schools is one factor that influences the probability of dropping out. Dropping out of high school is related to a number of adverse outcomes such as decreased annual and lifetime earnings, decreased labor force participation, adverse health outcomes (Pleis, Ward and Lucas 2010), increased dependence on governmental programs such as Medicare, Medicaid, and welfare, and increased criminal behavior (Levin and Belfield 2007).

Overall, in 2011, blacks (7.0%) and Hispanics (14.0%) were more likely to dropout than their white (5%) counterparts (Chapman et al. 2011). However, this problem is exacerbated in racially segregated, poverty stricken schools (Orfield and Lee 2005). When looking at the high school class of 2002, Balfanz and Legters (2004) found that the dropout rate is over 40% in ra-

cially segregated, high minority schools. Besides race, other factors concerning the likelihood of dropping out include family, school, individual, and peer characteristics (Rumberger 2001). In inner city schools throughout the country, the high teacher turnover rates, inadequate materials and facilities, and large class sizes, contributes to a disadvantaged learning environment. These disadvantages, as well as concentrated poverty and high rates of racial isolation, lead to an environment of poor educational outcomes. Within this environment, the likelihood of dropping out is greater compared to well funded suburban school districts (Orfield 2001; Orfield and Lee 2005; Grant 2009).

Some scholars have reported a positive relationship between high school graduation rates and school desegregation (Crain and Weisman 1972; Crain, Miller, Hawes and Peichert 1992). For example, Project Concern, a program implemented in Connecticut in 1966, was established to test the effects of school desegregation on academic achievement. Inner city students were randomly chosen and given the opportunity to attend a suburban school, while a second group, those who remained in segregated inner city schools, acted as controls. While many students dropped out of the program and returned to their segregated, city school, analysis of graduate rates revealed that those in the experimental group who stayed in the program were more likely to graduate from high school than those in the control group (Crain et al. 1992). According to participants, the most beneficial aspect of attending a suburban school was the interracial experience. According to the authors, interracial contact in high school should also decrease the likelihood of dropping out of college, as whites and blacks become more comfortable around each other (Crain et al. 1992).

More recently, in Goldsmith's (2009) study of the influence of neighborhood and school racial composition on educational attainment, the percentage of blacks and Latinos in schools,

not the racial composition of their particular neighborhoods, had an influence on educational attainment. Using data from the National Educational Longitudinal Study (NELS), he found that students in predominantly minority concentrated schools were less likely to graduate high school, earn a GED, or receive a bachelor's degree compared to similar students in majority white schools. While his analysis did not specifically examine the reasons why school racial composition is significantly related to educational attainment, others scholars cite school quality, social capital, and school climate as important predictors of academic success (Kozol 2005; Orfied et al. 2008).

### ***The Consequences of Racial Segregation on Intergroup Relations***

While a vast amount of literature exists on academic outcomes and school retention, research on how racial integration affects intergroup relations has also been well documented. Similar to research conducted on academic outcomes, methodological design flaws, measurement errors, and inconclusive results permeate the literature (Schofield 1991). Thus, whereas a number of studies have documented how desegregation leads to positive results in regards to interracial relations (e.g., Silverman and Shaw 1973; Schofield 1979), numerous others have documented negative effects (e.g., Armor 1972; Green and Gerard 1974), others have found mixed results (e.g., Schofield and Sagar 1977), while other scholars have found no effects at all.

In 1967, the U.S. Commission on Civil Rights published *Racial Isolation in the Public Schools*. The study was a comprehensive examination of: the degree of segregation among schools and its effect on educational achievement among blacks and whites; factors that perpetuate school segregation; how segregation affects children's intergroup relations, as well as attitudes; and different programs that would alleviate educational disadvantage and segregation. The report concluded that desegregation, for both blacks and whites, led to positive attitudes towards

members of the opposite race, while racial isolation in schools led to a preference for racial isolation outside of the school environment as well (Hannah et al. 1967).

Similarly, in Wells et al. (2009) study of six desegregated high schools, interracial contact experienced by students from the graduating class of 1980 had a long-term impact on their racial attitudes and beliefs. Many graduates cited how their experience at an integrated high school made them less prejudiced and fearful of other racial groups. These feelings, however, did not often emerge until after high school, when graduates were able to compare themselves to peers or colleagues who did not attend desegregated schools (Wells et al. 2009). While both black and white graduates stated that attending an integrated school enabled them to dismiss stereotypes of different racial groups, whites stated that the experience made them less afraid of interracial interactions, while many black graduates said that the experience prepared them for the discrimination they would face outside of the school environment, as their interracial interactions made them more comfortable in white-dominated settings and more adept at handling prejudiced beliefs (Wells et al. 2009). Although these experiences are different, both black and white graduates believed it was the *daily* interactions they experienced with each other that led to more positive interracial feelings, and more equipped for a racially diverse society.

### ***Post-Secondary Educational Outcomes—Racial Composition of College and Attainment***

Although the majority of research has focused on the educational attainment, intergroup relations, and self-esteem, beginning in the mid-to-late 1970's, scholars started to examine the relationship between school racial composition and possible long-term outcomes. For example, did attending a desegregated school influence the decision to enroll in a particular college? If so, would black students from desegregated schools be more likely to attend integrated colleges? These questions, among others, will now be examined.

According to perpetuation theory, if blacks and whites are isolated from each other and avoid interpersonal contact, segregation can be perpetuated throughout one's life (Braddock 1980). Although most of the literature on desegregation has focused on academic achievement measured by standardized test scores, the racial composition of the college attended has also been a variable of interest. Wells and Crain (1994) examined nine specific studies in this regard, with four focused on the racial composition of the specific college (Braddock 1980; Braddock and McPartland 1982; Braddock 1987; Dawkins 1991), while the other five focused on college retention and attainment (Crain 1971; Crain and Mahard 1978; Wilson 1979; Green 1982; Kaufman and Rosenbaum 1992). In all of the studies analyzed by Wells and Crain (1994), as well as in Dawkins and Braddock's (1994) review of the literature, graduating from a desegregated school increased the likelihood that black students would be more likely to attend a desegregated college. Further, blacks who attended desegregated high schools, overall, were more likely to have greater educational achievement in college.

In Braddock's (1980) study of 253 black students who graduated from either predominantly black or white high schools in Florida, those who attended a desegregated high school that was predominantly white were significantly more likely to attend a predominantly white college than those who attended segregated, minority high schools. This relationship remains significant even when social class and sex were taken into account, two factors that have an impact on college choice. This finding is important, as interracial contact in high schools years can break the cycle of segregation, while also granting access to important social networks for occupational mobility.

Additionally, using data from the National Longitudinal Study (NLS72), Braddock and McPartland (1982) conducted regression analyses to determine whether or not attending a deseg-

regated elementary and secondary school affected the post-secondary educational attainments of black students. Similar to Braddock's (1980) study, where he found that black students who attended desegregated high schools were more likely to attend white colleges, the experience of a desegregated setting before college increased the likelihood of attending a desegregated college. Further, although Crain (1971) found that desegregated blacks were more likely to graduate high school and college than blacks from segregated settings, Wilson's (1979) analysis did not illustrate a direct relationship between integration and educational attainment.

### *Occupational Attainment and Expectations*

Many scholars, however, have also focused on the effect integration has on one's occupational attainment and expectations. Research on the effects of desegregation on occupational expectations and attainment indicate that the social capital gained in integrated settings fosters higher occupational attainment. According to Wells and Crain (1994), the first research conducted on the impact of school segregation on occupational attainment was in Crain's (1970) study where he examined a 1966 sample of 1,231 Northern blacks. Using this survey, as well as data from the 1960 Census, Crain found that blacks who went to integrated schools were more likely to hold nontraditional black jobs, compared to those who attended segregated schools. Further, blacks from integrated schools were more likely to have higher occupational prestige and greater incomes than blacks from segregated schools. While two-thirds of the difference in pay was attributed to differences in educational attainment, the rest of the difference was attributed to differences in social networks. Since whites were more likely to know about well-paying jobs, interracial social networks formed in desegregated schools increased the likelihood of blacks learning about specific job opportunities. Thus, due to the lack of access to integrated social networks



in segregated schools, blacks in segregated schools often lacked the access or knowledge to well-paying jobs.

Using data from the NLS (1972), Dawkins (1983) found that Southern blacks who attended desegregated high schools were more likely to have high expectations of obtaining non-traditional, high status occupations compared to those in segregated settings. In general, blacks who attended desegregated schools were more likely to have integrated networks, end up in integrated employment settings, and work high status positions compared to blacks who attended segregated schools (Wells and Crain 1994). Further, those who attended desegregated schools were more likely to know individuals who graduated from college.

### *Social Networks*

The racial and economic background of one's social network can have a life long impact, as it is correlated with the accumulation of employment opportunities and economic capital. As highlighted in the literature above, for black students, attending a desegregated college, or one that is predominantly white, corresponds with college choice and occupational expectations. As proposed by Braddock's (1980) perpetuation theory, if interracial contact is made early in one's life, the cycle of segregation may be broken. Thus, if students attend racially integrated elementary and secondary schools, the racial composition of their social networks after high school will also likely be influenced. This is important, as one's social network has likely influences on educational, occupational, and economic mobility.

For example, in Crain's (1970) study of social networks and occupational attainment, blacks in integrated schools had higher incomes and more occupational prestige than those in segregated schools. In Braddock, McPartland, and Trent's (1984) study of black and white students from the NLS (1972), blacks who attended predominantly white colleges were more likely

to work in desegregated environments. Overall, multiple scholars have found that black children from desegregated schools are more likely to work with white co-workers (Hannah et al. 1967; Astin 1982; Green 1982; Braddock and McPartland 1989; Dawkins and Braddock 1994; Wells 1995). They are also more likely to work in white collar or professional jobs in the private sector (Wells and Crain 1994), which often correlates with higher incomes and more occupational prestige than jobs occupied by those who attended segregated schools.

Recently, using data from the Campus Life and Learning Project (CLL), a study measuring students' first year experiences from a private research university, Stearns, Buchmann, and Bonneau (2009) examined the influence that college environment had on the racial composition of social networks, and the percent of interracial friendships *before* college, was the largest predictor on the percent of interracial friendships throughout the first year of college. While this relationship has been documented in the past, what remains interesting is that while whites had the least amount of interracial friendships before college, the percent of their interracial friendships increased, while the percent of interracial friendships for blacks, although higher than whites, decreased throughout the first year of college (Stearns et al. 2009). While the CLL data cannot test why interracial networks for blacks decreased, discrimination or the tendency to create "supportive alliances" may be contributing variables. Further, many of the blacks in this sample were from middle-class backgrounds and attended integrated high schools; thus, college may have provided them the opportunity to create same race friendships, social networks they were lacking in their high school (Stearns et al. 2009).

**AN EXAMINATION OF SCHOOL AND NEIGHBORHOOD CHARACTERISTICS ON DELINQUENCY, HARD DRUG USE, DRUG AND ALCOHOL ISSUES, EARLY CHILDBEARING, AND WELFARE RECEIPT**

### ***The Impact of School and Neighborhood Racial Composition on Delinquency***

As highlighted above, a vast amount of research on the consequences of school racial segregation has focused on educational and occupational outcomes, intergroup relations, and social networks. Research on how school racial composition influences adverse outcomes, specifically delinquency, arrest, and incarceration is sparse (Lafree and Arum 2006). Lafree and Arum are one of the few to examine how the racial isolation experienced by blacks in school relates to their likelihood of incarceration. Overall, they found that blacks who attended schools with a significant number of whites were less likely to be incarcerated compared to those who attended schools that were racially isolated. Similarly, Weiner, Lutz, and Ludwig (2009) focused on the implementation of desegregation plans and their effect on homicide rates in large metro districts throughout the United States. For black youth, school desegregation policies decreased one's chances of offending and victimization.

Johnson (2011) has also highlighted the relationship between incarceration and school racial composition. Using data from the Panel Study of Income Dynamics (PSID), Johnson analyzed the effect of desegregation plans on the life chances of children born between 1950-1975. In general, Johnson concluded that school desegregation plans had a positive impact on educational achievement, black earnings, health status, as well as decreasing the chances of incarceration. Specifically, he found that one extra year of exposure to a mandatory desegregation plan was related to an increase of 5% in black men's overall annual earnings, and an increase of 0.3-0.6 points on the health index (Johnson 2011). Further, if exposure to a desegregation plan started in elementary school, one's likelihood of committing a deviant act decreased by 22.5%, and the chance of incarceration by 30 years old decreased by 14.7%. While blacks were positively

affected by the implementation of court-ordered desegregation plans, whites were not adversely affected.

Johnson also examined a subset of the data, to test for the mechanisms through which school desegregation is important. This analysis was restricted to black children in districts who had per-pupil expenditure data available. Johnson argues that school quality, measured through economic resources, is an important mechanism that influences long-term outcomes. After desegregation plans were implemented, the quality of schools increased, which influenced adolescents' life chances.

Lafree and Arum (2006) and Johnson's (2011) analyses shed light on the impact school racial composition has on delinquency and incarceration; however, their studies are limited. They both focus on older cohorts of individuals, those born between 1930-1975. Therefore, their analyses are unable to address questions about how school racial composition affects more recent cohorts.

While the literature is limited concerning school racial composition and delinquency, many scholars have examined the relationship between neighborhood characteristics and delinquent behavior. According to Wilson (1987), disadvantaged neighborhoods, which are associated with poverty and joblessness, become perfect spaces for criminal activity. In Krivo and Peterson's (1996) examination of disadvantaged neighborhoods, the more disadvantaged (measured by poverty, female-headed households, racial composition, owners/renters, males, and gender) a neighborhood, the higher the overall crime rate. While having a "controlled" experiment is rare within the social sciences, after the implementation of the Department of Housing and Urban Development's Moving to Opportunity (MTO) program, scholars could examine the effect that residential mobility had for public housing families. Participants were assigned to one of three

groups: 1) experimental group—families were offered counseling, housing assistance, and were required to move to a low poverty area; 2) section eight group—families were given housing subsidies but there were no restrictions on where they moved; and 3) control group—received no assistance.

According to Ludwig, Duncan, and Hirschfield (2001), low poverty neighborhoods reduced juvenile criminal behavior. In a similar study, Ludwig and Kling (2007) found that neighborhood minority concentration was significantly related to criminal activity. Individuals who moved into areas with higher minority concentration were more likely to commit deviant behavior. In King et al.'s study of MTO youth 4-7 years after assignment, they found that girls who moved to low poverty areas were less likely to get arrested than those in the control group (the opposite was true for boys).

Similar to the MTO experiment, the Gautreaux program was a residential mobility program in Chicago. While the MTO focused on income integration, the main goal of the Gautreaux program was racial integration. Scholars examining the success or failure of the Gautreaux program have focused on how residents fare in either the city or the suburbs. In Keels (2008) examination of Gautreaux participants, boys growing up in the suburbs were less likely to participate in delinquent behavior. Girls, on the other hand, were more likely to commit deviant behavior. Overall, while these results are inconsistent, at least in regards to gender, one thing is clear—neighborhoods do have an impact on criminal behavior.

### ***The Impact of Schools and Neighborhood Racial Composition on Drug and Alcohol Issues***

The research is sparse concerning the connection between school racial composition and health behaviors, specifically drug use. In Johnson's (2011) article on the effects of desegregation plans on adult outcomes, he found that attending a desegregated school had a positive im-

pact on one's overall health. Goosby and Walsemann (2009), however, found that black adolescents who attended predominantly white schools were more likely to report poorer overall health. Yet, both of these studies are limited because they do not look at health behaviors.

Other studies, however, have focused on this relationship. In Ennett, Flewelling, Lindrooth, and Norton's (1997) study of alcohol, tobacco, and marijuana use among students in elementary school, the authors looked at how neighborhoods and schools affected drug use. Contrary to some of the literature on the relationship between social disadvantage and delinquency, they found that students from more advantaged backgrounds were more likely to use drugs. For example, the schools that these students attended were located in more advantageous neighborhoods, where students were living in neighborhoods that were less crowded, more stable, and had greater access to tobacco and alcohol. Similarly, other studies have shown that students in higher socioeconomic schools are more likely to drink alcohol compared to students in more disadvantaged schools (O'Malley, Bachman, and Johnston 1988; Skager and Fisher 1989). Skager and Fisher (1989) hypothesized that there could be a variety of reasons for this relationship. First, it could be because adolescents from advantaged backgrounds have the money to purchase drugs and alcohol. Second, it could be because middle and upper class adolescents are bored; they lack meaningful responsibilities in their life so they participate in recreational drug use. Another reason they discuss is the differential-dropout hypothesis. The lower rate of drug use in high minority schools is not because these schools do not have students who use alcohol and drugs. Instead, students who do use drugs in minority schools are more likely to drop out, and are thus not counted in surveys examining this relationship.

While Skager and Fisher (1989) hypothesize why adolescents from advantaged backgrounds are more likely to use drugs and alcohol, I hypothesize that students in segregated

schools may be more prone to drug and alcohol use. According to strain theory, if opportunities are blocked and strain is experienced, delinquent behavior may emerge, which can include drug use. Further, drugs and alcohol could be used as a coping strategy to dull the pain experienced with blocked mobility and cumulative disadvantage.

Although the literature is limited concerning the relationship between schools and drug use, many scholars have pointed to the effect of neighborhoods on overall health. According to Williams and Collins (2001), the residential segregation experienced by blacks is the fundamental reason for the black-white health disparity. Since residential segregation restricts the access to jobs, quality schools, and limits one's earning potential, the health status of the individual, as well as the neighborhood is adversely affected (Williams and Collins 2001). Research also suggests that segregation leads people to partake in unhealthy behaviors. Research has shown that high poverty neighborhoods have fewer recreational facilities and a concern for public safety may sway people against outdoor exercise. Further, alcohol and tobacco companies often target minority communities with a number of advertisements (Rabow and Watt 1982; Moore, Williams, and Qualls 1996). The presence of these advertisements, as well as the exposure to a number of stressors common in segregated neighborhoods, may lead to the consumption of alcohol and tobacco as common coping strategies (Linsky, Straus, and Colby 1985; Landrine and Klonoff 2000). Other studies, however, have found that alcohol and drug use are more common among adolescents who live in advantaged neighborhoods (Ennett et al. 1997).

While tobacco and alcohol companies often target minority communities, studies have shown that pharmacies often do not carry certain prescription drugs in minority neighborhoods (a variable included in my hard drug index). In a study of 347 pharmacies in New York City, only 25% of pharmacies in minority concentrated neighborhoods had enough opium prescriptions to

treat people compared to 72% in majority white neighborhoods (Morrison et al. 2000). Thus, since access is limited, prescription drug use (legal and illegal) among racial minorities may be lower compared to their white counterparts.

### ***The Impact of School and Neighborhood Racial Composition on Early Childbearing***

While school minority racial composition has been linked to delinquency and incarceration, research concerning the relationship between school racial composition and early childbearing is limited. This relationship is interesting, however, as early childbearing leads to a number of outcomes such as increased likelihood of poverty, unemployment, and poor health, among others. Overall, the live birth rate for those aged 15-19 in 2010 was 34.3 for every 1,000 women, a historical low for younger and older teens, and for all racial groups (Hamilton, Martin, and Ventura 2011). While a number of reasons contribute to this decline such as increased contraception use and lower rates of sexual activity, significant racial and ethnic differences exist as Hispanics, Blacks, and American Indians have higher teenage pregnancy rates compared to whites and Asians (Hamilton et al. 2011). This disparity, along with the number of social and economic costs associated with early childbearing, are a great concern for academics, health professionals, and government agencies. However, does the racial composition of one's school influence the odds of early childbearing?

While research on this relationship is limited, using High School and Beyond data (HSB), Mayer (1991) found that white students enrolled in predominately black or Hispanic schools were more likely to become pregnant than white students with similar economic backgrounds enrolled in primarily white schools. In regards to blacks and Hispanics, once the SES of the school was controlled for, the percent black at the school had no significant effect on teenage pregnancy.



Although Mayer (1991) presents evidence concerning the relationship between school SES and teenage pregnancy (and the lack of significance for school racial composition), the study is dated and to my knowledge, there are no current articles that have explored (again) the relationship between school racial composition and early childbearing. Most research on the causes of early childbearing have focused on social contexts outside of school, as family background, peer networks, and neighborhood context have been known influences of teenage sexual activity (Mayer and Jenks 1989; Mayer 1991; Evans, Oates, and Schwab 1992; Brewster, Billy, and Grady 1993; Harding 2003; Mollborn 2010). For example, in Harding's (2003) study of neighborhood effects on early childbearing, those who grew up in high-poverty neighborhoods were more likely to become teenage mothers compared to those who grew up in low-poverty neighborhoods. Further, using data from the Panel Study of Income Dynamics, Sucoff and Upchurch (1998) examined how neighborhood poverty and racial composition influence premarital adolescent childbearing. They found that black adolescents residing in highly segregated neighborhoods (compared to integrated neighborhoods) were more likely to become pregnant, regardless of neighborhood poverty rates. They argue that the social and economic isolation from “mainstream” norms leads to an increased risk of premarital adolescent childbearing.

However, due to the lack of current research (last major study was done over 20 years ago) between school racial composition and early childbearing, this study will examine whether or not a relationship exists. The effect of neighborhoods will also be examined.

### ***The Impact of School and Neighborhood Racial Composition on Welfare Receipt***

To my knowledge, there is not any literature addressing the relationship between school characteristics and welfare collection. There is, however, limited research concerning neighborhood characteristics. Because of the economic and social isolation blacks face in segregated

neighborhoods, their access to jobs is limited (Wilson 1987; Massey and Denton 1993). If jobs are limited, the reliance on government aid is often a necessity. Using data from the Gautreaux program, Rosenbaum and DeLuca found that low-income residents who moved to areas with higher educated neighbors were more likely to stop receiving government assistance compared to low-income residents who moved to areas with less educated neighbors (2000). In Mendenhall, DeLuca, and Duncan's (2005) study of Gautreaux participants, women who lived in neighborhoods with a low number of blacks and a high amount of resources (neighborhood resources were characterized by educational levels, income, safety, and jobs), were less likely to collect welfare over time.

Although there is not any literature (at least to my knowledge) that examines the relationship between welfare collection and school characteristics, when compared to integrated schools, segregated schools are often structurally disadvantaged and lack resources needed for educational success (Orfield et al. 2008). If students lack resources in segregated schools, the opportunity for stable employment may be hindered which in turn, effects the probability of welfare collection. Thus, it will be interesting to see if a relationship exists between school segregation and welfare receipt (an indicator of poverty).

## **CONCLUSION**

Although the results remain mixed concerning the consequences of desegregation, since the 1960's, the majority of research points to the positive consequences of desegregation, specifically for blacks. For example, blacks who attend desegregated schools have been found to have higher levels of academic attainment (St. John 1975; Crain and Mahard 1982; Crain et al. 1992; Schofield and Hausmann 2004) and experience positive interracial relationships (Hannah et al. 1967) compared to their black counterparts in segregated schools.

While academic achievement, intergroup relations, and self-esteem have been widely studied outcomes of desegregation, research on other consequences of desegregation have been limited. When scholars have researched other outcomes, the majority of research has focused on the racial composition of one's college (Braddock 1980; Wells and Crain 1994), social networks (Dawkins and Braddock 1994; Wells 1995), and occupational expectations and attainment (Crain 1970; Braddock et al. 1984; Wells and Crain 1994).

Research on how school racial composition influences adverse outcomes, specifically delinquency, arrest, incarceration, hard drug use, alcohol and drug issues, early childbearing, and receipt of welfare remain sparse. While Johnson (2011) and Lafree and Arum (2006) examined the effects of school racial composition on delinquency, their analyses ignore students who may be currently affected by school segregation. For this analysis, I will be examining the effects of school racial composition on individuals born between 1974-1983. Also, Johnson (2011) and Lafree and Arum (2006) only addressed whether or not someone was incarcerated (Johnson also looks at other forms of delinquency); they don't focus on the impact of school racial composition on the likelihood of arrest, hard drug use, drug and alcohol issues, early childbearing, or welfare receipt. The literature on the relationship between school racial composition and these outcomes is limited, and this study will add to the incomplete literature that exists in the field. In addition to examining this question, the effects of neighborhoods will also be explored, specifically because of the link between neighborhoods and schools.

### ***Research Questions***

My main goal of this project is to examine how school and neighborhood characteristics affect behavioral outcomes. Therefore, I intend to investigate the following questions: 1) How does school and neighborhood racial composition affect young adult outcomes? More specifical-

ly, how does school and neighborhood racial composition affect adult delinquency, likelihood of arrest and incarceration? 2) How do these factors affect drug and alcohol use, early childbearing, and welfare receipt? In the next chapter, I discuss the data set used, the variables included, and the handling of missing data.

## CHAPTER TWO

### DATA AND METHODS

#### DATA

##### *Overview of Data Set*

For this project, I use data from The National Longitudinal Study of Adolescent Health (Add Health), the largest longitudinal study of adolescents that has ever been undertaken. From 1994-2008, adolescents participating in the study completed an in-school questionnaire and four in-home interviews. The first questionnaire was administered in schools, to a nationally representative sample of students in 7<sup>th</sup>-12<sup>th</sup> grade. Follow-up in-home interviews were conducted with respondents in 1994-1995 (Wave I), 1996 (Wave II), 2001-02 (Wave III), and 2008 (Wave IV) (Harris 2011). Questionnaires were also given to parents, siblings, school peers, and administrators, and interviews were conducted with the romantic partners of enrolled students. This comprehensive study assesses students on a number of issues ranging from adolescent health to delinquency and drug use. While Add Health data is available for public use, restricted data (which includes all students interviewed) is available under contract. For this project, I use restricted data because it includes a larger sample size as well as a data on school and neighborhood characteristics relevant for analysis that were not included in the public-use dataset. Further, I only include respondents who answered questions in both Waves I and IV because I am interested in analyzing how contextual components during adolescence affect a variety of outcomes.

Overall, 80 high schools were selected to participate in Wave I of the study. A clustering sampling design was used to ensure stratification with regard to region, racial/ethnic composition of the school, school size, school type, and urbanicity. To qualify for selection, schools needed a

minimum enrollment of 30 students and an 11<sup>th</sup> grade. Of the high schools originally selected, over 70% participated in the study. To reach a sample size of 80 high schools, replacement schools were chosen within each stratum until an eligible school was located, yielding an overall response rate for high school participation of 79% (Harris 2011). After the sample of high schools was selected, those high schools identified feeder schools (schools with at least a 7<sup>th</sup> grade), which are schools whose students would enter that particular high school. Overall, 52 feeder schools were identified for a total of 132 schools, with schools ranging from less than 100 students to more than 3,000.

From September of 1994 to April of 1995, an in-school questionnaire was administered to more than 90,000 students in grades 7<sup>th</sup>-12<sup>th</sup>. The questionnaire consisted of items measuring a number of topics, ranging from social and demographic characteristics, to self-esteem, risk behaviors, and health status. After the completion of the in-school questionnaire, all students (students who answered the in-school questionnaire as well as those who did not but were on the school's roster) were eligible for selection for the in-home survey, which consisted of more in-depth questions concerning delinquency, health and sexual behaviors, leisure activities, and a host of other topics. After stratifying by sex and grade, of the more than 90,000 students who completed the in-school questionnaire, roughly 200 students were chosen from each pair of schools to complete the in-home questionnaire. Overall, the core sample consists of 12,105 adolescents in grades 7<sup>th</sup>-12<sup>th</sup> plus additional subgroups (racial groups, siblings, disabled, and networks), yielding a total sample size of 20,745 adolescents.

Between April and December of 1995, in-home interviews were conducted with all 20,745 adolescents (of the original 90,118 respondents who were interviewed in-school). Each interview was between one-two hours, and most of the interviews were conducted in the partici-

pant's home. To control for interview and parental influence on respondent's answers, when sensitive questions were asked, participants listened to questions through earphones and recorded their own answers on a laptop. Also during the in-home interview, researchers recorded the address of each student thus enabling the linkage of geospatial data to 1990 Census data.

During Wave I, parents were asked to complete a thirty-minute interview, which consisted of topics concerning marriage, education, health conditions, communication with adolescents, familiarity with adolescent's friends, and neighborhood characteristics. Roughly 85% or 17,670 parents of participating adolescents agreed to participate during the first wave. Additionally, 144 school administrators answered questions concerning school characteristics. Overall, the contextual data gathered during Wave I consisted of school data derived from administrators and adolescents, peer network data gathered during the in-school questionnaire, spatial data including the address of each household, and genetic pairs' data on more than 3,000 adolescents.

The fourth Wave of the study was carried out between 2007 and 2008. Participants were now adults, ranging in age from 24-34. During Wave IV, broad face-to-face interviews were conducted with 15,701 original Add Health respondents, yielding a response rate of 80.3% (Harris 2011). Data includes information on respondent's psychological, social, economic, educational, behavioral, and health circumstances throughout their life.

### ***Final Sample***

I limit my sample to respondents who participated in both Wave I (1994-95) and Wave IV (2008) interviews, which produces an overall sample size of 14,800 students (includes only students who have sample weights at Wave IV). However, I do not include all students in my final sample. First, I restrict my analyses to those students enrolled in public schools (feeder and

high schools) and exclude students enrolled in private schools<sup>2</sup>. Second, I exclude students who identified as Native American/American Indian, while only including students who identified as White, Black, Asian, Hispanic, or Other<sup>3</sup>. Lastly, I exclude students who had missing values on important variables of interest, which will be discussed in the section below. Overall, my total sample size is 12,639 (subpopulation size=11,736).

## **METHODS**

### ***Missing Data***

Missing data is a common problem within the social sciences and it can occur for a variety of reasons. First, respondents may refuse to answer a question if they find it sensitive in nature. In surveys asking about respondents' income or drug use, respondents may blatantly skip the question and refuse to answer because they may have concerns regarding confidentiality. Second, in self-administered surveys, respondents may accidentally skip a question or the question may not be applicable to them. Further, if the respondent is interviewed, interviewers may forget to ask a question which could also lead to missing data. Although missing data can happen for a number of reasons, it yields the same results—biased statistical estimates.

There are a number of possible solutions for dealing with missing data. The most common and simplest solution is listwise deletion, where any case with a missing value is excluded from the analysis. While listwise deletion is popular for its simplicity, it is also problematic because it can dramatically reduce the sample size of the population under study, which reduces statistical power during analyses (Allison 2002).

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<sup>2</sup> Since private schools are more likely to be comprised of white students from middle-high income backgrounds, I excluded them from the analysis because I did not want the inclusion of students from these schools to dilute the effects of school segregation on adverse outcomes. Additionally, the number of blacks and Hispanics attending private schools was particularly small.

<sup>3</sup> I excluded Native Americans, as they only comprised a small percent of my sample (less than 1%).



However, listwise deletion is not the only solution available when dealing with missing data. Missing data can be imputed, which replaces each missing value with a substitute value. Multiple imputation (MI), when used appropriately, will produce unbiased statistical results. MI produces multiple complete data sets, where each missing value is replaced by a substitute value. Once different versions of the missing data are created, analyses are conducted on each computed data set and the results are combined.

Yet, the recommendation for the number of multiple imputed data sets that are needed varies. According to some scholars (Rubin 1987; Schafer and Olsen 1998), only three to five imputations are needed to produce unbiased estimates. Others, however, disagree and believe that additional imputations are needed to produce unbiased estimates and to control for loss of power. Based on Monte Carlo simulations, Graham, Olchowski, and Gilreath (2007) recommend that the number of imputations should roughly mirror the number of cases that are incomplete. Thus, they recommend 20 imputations for 10-30% of missing data. Similar to Graham et al. (2007), Bodner (2008) and White, Royston, and Wood (2011) conducted their own simulations and recommend having more imputations to produce accurate coefficients.

Table 2.1 displays all the variables in my analysis that have missing data. I used listwise deletion and multiple imputation to deal with these missing values. I used listwise deletion for dependent variables that had less than 1% of their cases missing as it did not drastically affect my sample size.<sup>4</sup> However, not all of my variables had a minimal amount of missing data. The percentage of missing values on my independent variables varied from 1.8% to 32.5%. Due to

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<sup>4</sup> Two variables (shot or stabbed someone; pulled a knife) part of my index measuring delinquency during Wave IV were missing almost 10% of cases; I deleted respondents who did not answer either question (the majority of the time, it was the same respondent). While I tried to impute school racial composition due to missing values (7.2%), the model wouldn't converge, even after raising the number of draws allowed during analysis. After deleting the missing cases, I calculated the mean of the remaining cases and used the mean as a substitute for all the missing cases.

this variation, and one variable missing roughly 30% of cases, I imputed my data 20 times as recommended by a number of scholars (Graham et al. 2007; Bodner 2008; White et al. 2011). I imputed data for the following independent variables that were all measured during Wave I: welfare receipt of parent; mother's education; percent free or reduced lunch, and GPA.

### ***Analytical Weights and Subpopulations within Add Health***

While accounting for missingness is important, I also had to take into account the sampling design and subpopulations. Since the collection of Add Health data utilized cluster sampling, the schools in the sample were sampled with unequal probability. Therefore, not every school within the United States had the same chance of being included in the study. However, Add Health provides a number of weights to account for this unequal probability of selection. The stratum variable in Add Health identifies what region (Northeast, Midwest, South, and West) the school is located in. Since middle schools and high schools in the United States are the primary sampling unit (PSU) within the Add Health data set, the school identifier variable is the appropriate cluster variable to use when weighting my analysis (this weight accounts for the effect of clustering). In regards to the weight variable, Add Health provides grand sample weights; however, it depends on what Wave of data you are analyzing. If analyzing more than one Wave, the sample weight chosen should reflect the most recent Wave of data. After the correct weight is implemented, respondents with missing weights should be eliminated from the analysis. By eliminating those without weights, I ensure that I'm analyzing the same population regardless of whether or not I use weights.

While I use analytical weights during my analyses to ensure correct statistical estimates, I also have to take into consideration different subpopulations throughout my analyses. In my analysis, I analyze a specific subpopulation—those enrolled in public schools. Although anal-

yses of subpopulations will lead to correct point estimates, Chantala and Tabor (2010) warn that the standard errors could be inaccurate because it compromises the design structure of Add Health. For example, in the Add Health data set there are 132 PSU's (Schools) and 4 stratum variables (Region). By deleting adolescents who attend a private school and only looking at adolescents in public schools, the number of PSUs decreases, thereby compromising the design structure of Add Health, which affects the calculation of the standard errors. For example, after deleting the roughly 1,000 students (who were interviewed in both Wave I and IV) who attended a private school and then running a binary logistic regression, the PSU's in my analysis decreased from 132 to 119. Therefore, when analyzing a subset of the Add Health data, the SUBPOP command in STATA must be used to ensure that all PSU's are represented when statistical estimates are computed.

### *Multicollinearity*

While missing data, analytical weights, and subpopulations were all issues I was concerned with, I was also concerned with multicollinearity. Since I look at the effect that both schools and neighborhoods have on delinquent outcomes, I may have issues of multicollinearity (if the two variables are highly correlated), as most students attend their neighborhood school and the racial breakdown of students in a school often mirrors the racial breakdown of residents in their neighborhood.

The correlation between school minority concentration and neighborhood minority concentration is relatively high, at 0.81. To test the impact of multicollinearity, I conducted a variance inflation factor (VIF) test, which measure how much coefficients are inflated due to their relationship with other independent variables in the model. While scholars differ on how high a VIF has to be to indicate an issue with multicollinearity, according to Neter, Wasserman, and

Kutner (1985), a VIF over 10 indicates a problem. I calculated a VIF for all my independent and control variables, and the VIFs for all my important variables of interest were less than 10 (1.02-8.82).<sup>5</sup> Further, my sample size is large (subpopulation=11,736) which eases the problems associated with multicollinearity (Hanushek and Jackson 1977).

### ***Multivariate Analyses***

Since my variables are categorical and numerical in nature, I use two different analyses. I use logistic regression for my binary variables, which include arrest, incarceration, welfare, and teenage pregnancy. Although the majority of respondents have not participated in delinquent behavior or had a teenage pregnancy (which positively skews the data), unlike for ordinary least squares (OLS) regression, the data do not have to be normally distributed for logistic regression (Hosmer, Lemeshow, and Sturdivant 2013). However, for my count variables (delinquency, hard drug use, and drug and alcohol issues), I use negative binomial regression, as the distributions of variables are not normal. When looking at the frequency distribution, zero is the most common value for general delinquency, drug and alcohol issues, and hard drug use (84% vs. 65% vs. 64%). Due to the positive skew in the distribution of these variables, the assumption of normality for OLS is not met. Therefore, I use negative binomial regressions, which is a regression used for count data and is designed to deal with a large number of zero values. While similar to a Poisson regression, negative binomial regressions include a random component, which allows for more accurate coefficients when estimating the probability of a certain behavior (Gardner, Mulvey, and Shaw 1995).

## **VARIABLES**

### ***Dependent Variables***

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<sup>5</sup> The VIF's for GPA and mother's education were 11.87 and 16.69. However, since they are controls and not collinear with my main independent variables of interest, the coefficients of my main variables are not affected (Allison 2012).

My analyses include **seven** dependent variables measured during Wave IV, when respondents were between 24-34 years old. They include:

***General delinquency.*** Due to the lack of research on the effects of school racial composition on post-secondary outcomes other than educational attainment/achievement, delinquency is one of my main dependent variables. To measure general delinquency, I used a number of different indicators. During Wave IV, young adults were asked a number of questions concerning their participation in illegal behavior in the past 12 months. The questions are listed in Table 2.2 at the end of this chapter. I dummy coded all variables to either yes (1), the respondent had participated in the behavior or no (0), the respondent had not. After each variable was recoded, I created an index, which measured respondents' overall rates of delinquency. The Cronbach's alpha was 0.70, showing high internal consistency among items.

***Arrested and incarceration.*** Respondents were also asked if they had ever been arrested or incarcerated. Responses were dummy coded to either yes (1), the respondent had experience with the Criminal Justice System (CJS) or no (0), the respondent had not. Although respondents were asked about their first and last experiences with the CJS, for this analysis, I focus on the respondent's *first* experience with the Criminal Justice System, because I am concerned with whether or not a respondent has had any contact (not perpetual) with the CJS, as it only takes one experience with the CJS to effect one's life opportunities, regardless of age.

***Drug and alcohol problems.*** In the fourth wave of the survey, a number of questions were asked about drug use and whether or not the respondent had ever encountered troubles due to their drug use. The variables I focused on were the respondent's use of "hard drugs," and if their experiences involving alcohol, marijuana, and their favorite drug of choice had either caused them work, legal, or family trouble or had put them or someone else at risk. Concerning

the respondent's use of hard drugs, they were asked whether or not they had ever taken: prescription drugs (without a prescription), steroids, cocaine, crystal meth, or other drugs, which included LSD, PCP, ecstasy, heroin, mushrooms, or inhalants. Each variable was dummy coded as either yes (1), the respondent had used the drug, or no (0), the respondent had not. I created an index which measures the overall likelihood of hard drug use and the Cronbach's alpha was 0.66, close to 0.7, which is an indicator of high internal consistency among items.

An index was also created measuring the harm that marijuana, alcohol, and a respondent's favorite drug of choice had caused in their life or the lives of others. Respondents were asked how often they had participated in the following: 1) "Been under the influence of marijuana [alcohol, favorite drug] when you could have gotten yourself or others hurt, or put yourself or others at risk, including unprotected sex?"; 2) Had legal problems because of your marijuana [alcohol, favorite drug] use, like being arrested for disturbing the peace or anything else?"; 3) "Had problems with your family, friends, or people at work or school because of your marijuana [alcohol, favorite drug] use?"; and/or 4) Your marijuana [alcohol, favorite drug] use interfered with your responsibilities at work or school?" The Cronbach's alpha for this index was 0.79, which exhibits high internal consistency.

*Early childbearing.* Another concern of this project is whether or not school racial composition (among other variables) affects the likelihood of teenage pregnancy. During Wave IV of the in-home interview, a pregnancy history was collected from each respondent. For each pregnancy, the respondent reported the month and year the pregnancy ended, allowing for a close approximation of age at childbirth. The respondent also reported the outcome of each pregnancy (e.g. live birth, miscarriage, etc.). For this analysis, I only include a respondent's first pregnancy. I code teenage pregnancy if the respondent (or respondent's partner) had a child before the

age of 20. Since I'm interested in comparing how a school environment impacts the likelihood of becoming a teenage mother or father, I dummy coded the variable into yes (1), the respondent had a teenage pregnancy, or no (0), the respondent did not.

***Welfare assistance.*** Whether or not someone received "any public assistance, welfare payments, or food stamps" was dummy coded into yes (1), the respondent had collected welfare between 1995/2002 and 2006/2007/2008 or no (0), the respondent had not.

### ***School and Neighborhood-Level Independent Variables***

There are a number of variables that influence rates of general delinquency, teenage pregnancy, and welfare assistance. While the main focus of this project concerns the impact of school racial composition, I'm also interested in how neighborhoods, past delinquent behavior, and individual and family demographics influence a number of outcomes.

***School racial composition.*** I measure school racial composition using the proportion of minority students (black and Hispanic) in each school. Included in the Add Health restricted data is data from the National Center for Education Statistics Common Core of Data (CCD). The CCD collects data on all public schools throughout the United States. Within the Add Health restricted data set, data on school racial composition is available during the 1990-1991, 1993-1994, 1994-1995, and 1999-2000 school years. I use data from the 1994-1995 school year as it parallels when data were collected during Wave I, providing an accurate account of the racial proportion of each respondent's school at the time they were first interviewed.

Due to the possibility of a nonlinear relationship among school racial composition and my dependent variables of interest, I include a quadratic term (school racial composition squared) in additional analyses. If a nonlinear relationship exists, the effect of X (independent variable) on Y (dependent variable) depends on what the value of X is; on the contrary, when a

relationship is linear, a change in Y is not dependent on the value of X. Thus, I include a quadratic term to account for the possibility of nonlinearity.

***Free or reduced Lunch.*** Similar to school racial composition, data on free or reduced lunch are available during the 1990-1991, 1993-1994, 1994-1995, and 1999-2000 school years. I measure school socioeconomic status (SES) using the proportion of students who qualified for free or reduced lunch during the 1994-1995 school year, as reported by the CCD

***Neighborhood racial composition.*** Like school racial composition, neighborhood racial composition may also be related to rates of delinquency, difficulties with drug and alcohol, the chance of teenage pregnancy, and receipt of welfare, as segregated neighborhoods experience concentrated poverty and other social ills (Massey and Denton 1994). Included in the Add Health restricted data are measures of neighborhood characteristics at the census, tract, and block level reported by the Census (1990). I measure neighborhood racial proportion at the tract level.<sup>6</sup> Similar to school racial composition, I include a quadratic term to check for the existence of non-linearity.

***Neighborhood poverty.*** Also included in the Add Health restricted neighborhood data are neighborhood poverty rates. To measure neighborhood poverty at the tract level, I use the proportion of persons with incomes below the poverty line in 1989 as reported by the 1990 Census.

### ***Student-Level Controls***

***Individual and family background.*** I control for a number of demographic variables that are associated with rates of delinquency, drug and alcohol behavior, teenage pregnancy, and the receipt of welfare. Individual control variables include gender (with females as the reference

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<sup>6</sup> Similar to school racial composition, I ran additional analyses with a quadratic term to test for curvilinear relationships.



category) and race (Non-Hispanic whites are the reference category compared to those who identify solely as black, Asian, Hispanic, or Other). To gauge family background I use three measures: parental welfare receipt (1=yes, 0=no), mother's education (ranging from 0-18), and family structure (with two married biological parents as the reference group, compared to two parents (other types), single mother, single father, and other family structures).<sup>7</sup> I also control for GPA.

***Past delinquency, drugs, and alcohol.*** I control for past delinquency because past delinquent behavior may influence future delinquency. During Wave I, students were asked a variety of questions pertaining to specific delinquent acts that they may or may not have committed over the past 12 months. The delinquent acts are listed in Table 2.3 at the end of the chapter. I dummy coded each variable into yes (1), the respondent had participated in the act, or no (0), the respondent had not. Replicating Haynie's (2002) index on juvenile delinquency, I created the same index with the 14 delinquent acts and the Cronbach's alpha was 0.79, which indicates good internal consistency.

Other control variables used in my models pertain to past drug and alcohol use, as they too may influence future delinquency and prolonged drug use. During Wave I respondents were asked whether or not they had ever used marijuana, cocaine, inhalants, or any other drugs. Each variable was dummy coded into yes (1), the respondent had used the drug, or no (0), the respondent had not. I created an index and the Cronbach's alpha was 0.66, approaching considerable internal consistency. Respondents were also asked six questions about their alcohol use over the past 12 months, and whether or not it had caused them any difficulties. They were asked

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<sup>7</sup> Haynie (2002) uses receipt of welfare and parent's highest education as indicators of social class. Similar to Mollborn (2010), responses for maternal education were coded into approximate years of school. 0=No schooling, 8=8<sup>th</sup> grade or less, 10=some high school, 11=trade/vocational/business school instead of high school, 12=high school graduate or GED, 13=trade/vocational/business school after high school, 14=some college, 16=college degree, 18=graduate/professional training.

how often each of the following had happened to them due to their alcohol use: 1) Got into trouble with your parents; 2) Had problems at school or with school work; 3) Had problems with your friends; 4) Had problems with someone you were dating; 5) Did something you regretted; and 6) Get into a physical fight. Each response was dummy coded into yes (1), a problem had occurred, or no (0), a problem had not occurred. I created an index and the Cronbach's alpha was 0.73.

## **CONCLUSION**

The purpose of this study is to examine how school and neighborhood racial composition affects general delinquency, arrest, incarceration, hard drug use, drug and alcohol problems, teenage pregnancy, and receipt of welfare. In Chapter 3, I will examine the effects that school characteristics have on behavioral outcomes. In Chapter 4, I introduce neighborhood characteristics and examine whether or not neighborhood or school characteristics have more of an impact on behavioral outcomes. In Chapter 5, I discuss the conclusions of my research, the limitations, and paths for future research.

**Table 2.1: Missing Data**

<b>Dependent Variables (Wave IV)</b>	<b>Percent (n=count)</b>
Arrest	0.3 (n=48)
Incarceration	0.1 (n=21)
Welfare	0.2 (n=32)
Teenage Pregnancy	0.2 (n=20)
<b>Delinquency</b>	
Damage property that didn't belong to you	0.3 (n=41)
Steal something worth more than \$50	0.2 (n=36)
Steal something worth less than \$50	0.3 (n=37)
Buy, sell, or hold stolen property	0.3 (n=37)
Go into a house or building to steal	0.3 (n=38)
Use or threaten to use a weapon	0.3 (n=40)
Take part in a physical fight with friends	0.3 (n=38)
Use someone else's credit card, bank card, or automatic teller card without their permission or knowledge	0.3 (n=38)
Deliberately write a bad check	0.3 (n=37)
Get into a serious physical fight	0.3 (n=39)
Injured someone	>0.1 (n=2)
Pulled a knife	9.2 (n=1366)
Shot or stabbed someone	9.2 (n=1368)
<b>Hard Drugs</b>	
Cocaine	0.5 (n=71)
Crystal meth	0.4 (n=61)
Other illegal drugs	0.5 (n=69)
Prescription	0.6 (n=)
Steroids	0.5 (n=72)
<b>Alcohol Issues</b>	
Interfere with work or school	>0.1 (n=5)
Risk	>0.1 (n=7)
Legal problems	>0.1 (n=5)
Family problems	>0.1 (n=7)

**Table 2.1: Missing Data**

<b>Marijuana Issues</b>	
Interfere with work or school	>0.1 (n=3)
Risk	>0.1 (n=9)
Legal problems	>0.1 (n=6)
Family problems	>0.1 (n=4)
<b>Favorite Drug Issues</b>	
Interfere with work or school	>0.1 (n=1)
Risk	>0.1 (n=4)
Legal problems	>0.1 (n=3)
Family problems	>0.1 (n=3)
<b>Independent Variables (Wave I)</b>	
<b>Delinquency</b>	
Paint graffiti	0.7 (n=102)
Steal something worth more than \$50	0.6 (n=95)
Steal something worth less than \$50	0.7 (n=109)
Shoplift	0.8 (n=117)
Damage property	0.7 (n=104)
Steal/borrow car without permission	0.6 (n=91)
Burglarize property	0.6 (n=94)
Sell drugs	0.7 (n=108)
In serious fight	0.7 (n=108)
In group fight	0.7 (n=99)
Seriously injure someone	0.8 (n=112)
Pulled a knife/gun	0.6 (n=82)
Use/threaten with weapon	0.6 (n=95)
Shot or stabbed someone	0.6 (n=90)
<b>Alcohol Issues</b>	
Problems with parents	0.1 (n=12)
Problems with school	0.1 (n=8)
Problems with friends	>0.1 (n=4)
Problems on dates	>0.1 (n=4)
Regret actions	0.1 (n=8)
<b>School, Neighborhood, and Controls</b>	
Age	0.1 (n=10)
Gender	> 0.1 (n=2)
GPA	32.5 (n=4804)
Mother's education	14.2 (n=2098)
Neighborhood poverty rates (tract level)	0.8 (n=123)
Neighborhood racial composition (tract level)	0.8 (n=121)
Percent free or reduced lunch	22.8 (n=3368)
School racial composition	7.2 (n=1072)
School type	>0.1 (n=3)
Parental receipt of welfare	14.1 (n=2083)

**Table 2.2: Delinquency (Wave IV)**


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Damage property that didn't belong to you  
 Steal something worth more than \$50  
 Steal something worth less than \$50  
 Buy, sell, or hold stolen property  
 Go into a house or building to steal something  
 Use or threaten to use a weapon  
 Take part in a physical fight with friends  
 Use someone else's credit card, bank card, or automatic teller card without their permission or knowledge  
 Deliberately write a bad check  
 Get into a serious physical fight  
 Injured someone  
 Pulled a knife  
 Shot or stabbed someone

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**Table 2.3: Past Delinquency (Wave I)**


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Paint graffiti  
 Steal something worth more than \$50  
 Steal something worth less than \$50  
 Shoplift  
 Damage property  
 Steal/borrow car without permission  
 Burglarize property  
 Sell drugs  
 In serious fight  
 In group fight  
 Seriously injure someone  
 Pulled a knife/gun  
 Use/threaten with weapon  
 Shot or stabbed someone

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**CHAPTER THREE**

**THE EFFECT OF SCHOOL RACIAL COMPOSITION ON DELINQUENCY,  
HARD DRUG USE, DRUG AND ALCOHOL PROBLEMS, TEENAGE PREGNANCY,  
AND WELFARE RECEIPT**

**INTRODUCTION**

While past literature has focused on how school racial composition affects educational attainment and achievement (St. John 1975; Weinberg 1975; Balfanz and Legters 2004; Braddock and Eitle 2004), occupational mobility (Schofield 1979; Wells 2009), and composition of peer networks (Crain 1970; Dawkins 1983), little research has focused on the impact school racial composition has on delinquency, drug and alcohol problems, teenage pregnancy, and welfare receipt. First, although Johnson (2011) and Lafree and Arum (2006) examined how school racial composition affects the likelihood of incarceration, they focused on older cohorts of individuals. Lafree and Arum (2006) limited their sample to those born between 1930-1969 while Johnson (2011) included individuals born between 1950-1970. While they focus on older cohorts, individuals who were directly effected by *de jure* segregation and desegregation policies that occurred after *Brown vs. Board of Education*, my study looks at individuals born between 1974-1983.

Second, previous literature only examines the likelihood of incarceration; it does not focus on the likelihood of hard drug use, drug and alcohol issues, teenage pregnancy, or welfare collection. The inclusion of these variables is important, as they are different forms of deviant behavior that have not been thoroughly addressed. In this Chapter, I will discuss the relationship between school racial composition and these outcomes.

My goal in this Chapter is to examine the impact of school racial composition on my dependent variables. To do this, I run a number of logistic and negative binomial regressions. My models follow the sequence listed below:

- 1) Model 1: school racial composition
- 2) Model 2: school SES
- 3) Model 3: school racial composition and SES
- 4) Model 4: school racial composition and SES; gender; racial background; and family structure
- 5) Model 5: school racial composition and SES; gender; racial background; family structure; prior background; mother's education; parental welfare receipt; and GPA

Since school racial composition and SES are often intrinsically linked, I examine the sole effect of each variable (Models 1 and 2). In Model 3, I include both school racial composition and SES because I want to see if the effect of school racial composition disappears. If it does, then the effect of school racial composition (if it is significant in Model 1) is due to school SES. In Model 4, I add racial background, family structure, and gender, variables that will likely decrease the effect of school characteristics. In the last Model, I include income measures, GPA, and prior background.

Additionally, because racial segregation is likely to affect groups differently, I examine the effects on blacks and Hispanics separately. I also include a quadratic term to test for non-linear relationships. These additional model specifications will be discussed throughout this chapter.

Throughout this chapter, I test the following overarching hypotheses <sup>8</sup>:

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<sup>8</sup> Minority concentration is measured during Wave I (1994/1995) and behavior outcomes are measured during Wave IV (2007/2008). I used multiple measures of school racial composition (herfindahl index; proportion minority over

Hypothesis 1: As the minority concentration increases in schools, the likelihood of participating in delinquent behaviors (general delinquency, arrest, and incarceration) also increases.

Hypothesis 2: As the minority concentration increases in schools, the likelihood of doing hard drugs or developing issues with drugs and alcohol increases.

Hypothesis 3: As the minority concentration increases in schools, the likelihood of being a teenage parent increases.

Hypothesis 4: As the minority concentration increases in schools, the likelihood of collecting welfare also increases.

## RESULTS

### *Descriptive Statistics*

Tables 3.1 through 3.4 show the weighted means for all variables and items in my indices, as well as the means for each item depending on whether or not the respondent attended a predominantly minority school.<sup>9</sup> As shown, respondents in my sample are predominantly white (67%) and during adolescence, lived in households with both biological parents (54%). While enrolled in school, respondents are more likely to attend schools that are predominantly white (69%), where roughly 26% of the student population qualifies for free or reduced lunch.

As shown in Tables 3.1 through 3.4, the majority of respondents have not participated in delinquent acts (arrest, incarceration, or general delinquency), used hard drugs, or have had issues with drugs and alcohol. Although the majority of respondents have not participated in delinquent acts, students who attend predominantly minority schools are *significantly* more likely to participate in delinquent acts during young adulthood (which is measured during Wave IV).

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50%) and the results were similar. In the appendix, I include the results (Model 1 and Model 5) for each dependent variable.

<sup>9</sup> Similar to Orfield and Lee (2005), I measure predominantly minority schools as schools whose black and Hispanic population is over 50% (I use proportions throughout my analyses).



They are also more likely to collect welfare during young adulthood and to have had a teenage pregnancy. On the other hand, students who attend schools with a minority proportion under fifty percent are *significantly* less likely to have ever used drugs or had any issues with drugs or alcohol. Further, respondents are more likely to commit delinquent acts during adolescence (Wave I: 1.77) than as young adults (Wave IV: 0.35).

Shown in Table 3.1 are also my control variables. Students, who attend schools with over 50% minority enrollment, are *significantly* more likely to report lower overall GPAs. They are also more likely to have been raised in single parent households and come from welfare families. Conversely, they are *significantly* less likely to report being raised in a family with two biological parents. While descriptive statistics shed light on some patterns in my data, I now turn to multivariate analysis to determine whether or not and to what magnitude my independent and control variables influence my dependent variables.

### ***The Effects of School Characteristics: Results of Negative Binomial Regression and Logistic Regression Analyses on Delinquency, Arrest, and Incarceration***

In this section, I address the impact that my independent and control variables have on general delinquency, arrest, and incarceration. Since my dependent variables are either categorical or numerical in nature, I use both logistic and negative binomial regression as analytical techniques. Tables 3.5-3.11 address the linear effect of school characteristics (and controls) on each outcome variables. In each of those tables, I have two baseline models—Model 1 shows the effect of school racial composition while Model 2 shows the influence of school SES. In Model 3, I examine the effect of both school racial composition and SES. In Model 4, I add racial background, gender, and family structure. My last model, Model 5, includes all individual,

family, and school-level variables.<sup>10</sup> I also examine different model specifications, specifically the effect of school racial composition on blacks (Tables 3.12-3.18) and Hispanics (Tables 3.19-3.25) and the effect of a quadratic term (Tables 3.26-3.29).

**General Delinquency.** In order to assess the impact that school racial composition has on general delinquency, Model 1 in Table 3.5 examines the influence that minority racial composition has on general delinquency in young adulthood (respondents were asked if they had committed a number of delinquent acts during the past 12 months). Contrary to what I hypothesized, there is no significant relationship between school minority composition and delinquency. In Model 2, I focus on the SES of the school, which is measured by the proportion of students who qualify for free or reduced lunch. As shown in Model 2, as the proportion of students receiving free or reduced lunch increases, the likelihood of committing delinquent acts also increases. In Model 3, I look at the effects of both school racial composition and SES. When both are included in the model, the effect of SES disappears.

As shown in Models 4 and 5, school characteristics remain insignificant. The coefficients for black, Hispanic, and Other are significant, however. Blacks and Hispanics are more likely to commit delinquent while those who identify as Other are less likely compared to whites. Gender, prior delinquency, prior drug, GPA, and family structure (stepfamily) are all significant predictors.

**Arrest.** In Table 3.6, I examine the effects of school characteristics on whether or not someone has ever been arrested, as being arrested is often a precursor for incarceration. As shown in Models 1-3, neither school racial concentration nor SES are significant predictors of arrest, which contradicts my initial hypothesis. In Model 4, when I control for racial background, gender, and family structure, school characteristics are still not significant, while most of

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<sup>10</sup> All tables are at the end of this chapter

the added controls are. Blacks are significantly more likely to get arrested while Asians are less likely to get arrested compared to whites. Males are more likely to be arrested compared to females and those from non-nuclear families are more likely to be arrested than those from families with two biological parents. In Model 5, when GPA, past delinquent behavior, and variables measuring income are added to the model, racial background is no longer significant. Respondents with better grades are less likely to have been arrested; yet, mother's education and parental receipt of welfare (during Wave I) are not significant predictors of arrest.

***Incarceration.*** In Table 3.7, I examine the effect of school characteristics on whether or not a respondent has ever been detained in jail, prison, or any other type of correctional facility. As shown in Models 1-3, school characteristics are *not* significant predictors of incarceration. In Model 4, race, gender, and family structure are all significant predictors of incarceration. Blacks and Hispanics are significantly more likely to have been incarcerated compared to whites and those from non-nuclear families are significantly more likely to have been incarcerated compared to those from nuclear families. In Model 5, when I add GPA, past delinquent behavior, and income measures, most of the relationships remain the same. However, while blacks are still more likely to be incarcerated compared to whites, there is no longer a significant relationship concerning Hispanics and incarceration.

***The Effects of School Characteristics: Results of Negative Binomial Regression Analyses on Hard Drug Use and Drug and Alcohol Issues***

During Wave IV, respondents were asked if they had ever used drugs or had issues (legal, family/friend, work/school, high risk behavior) with alcohol and/or drugs. My next two tables address the impact that school, individual, and family-level variables have on hard drug use and drug and alcohol issues.

**Hard drug use.** Looking at the baseline model in Table 3.8, I analyze the effect that school racial composition has on whether or not the respondent has *ever* used hard drugs (prescription pills, meth, cocaine, steroids, or other drugs). As minority concentration increases in schools, respondents are *less* likely to have ever used hard drugs. As shown in Model 2, school SES is also a significant predictor. As the proportion of those collecting free or reduced lunch increases in schools, the less likely respondents report using hard drugs. In Model 3, when I control for both school racial composition and school SES, school SES is no longer significant while school racial composition remains significant. As shown in Model 4, race, gender, and family structure are significant predictors. Blacks, Asians, and Hispanics are significantly *less* likely to use hard drugs compared to whites while those from non-nuclear families are more likely to use hard drugs. In Model 5, when I include all other controls, school racial composition, racial background, and family structure are still significant predictors. Additionally, past drug use, prior delinquency, GPA, and mother's education are all significant predictors of hard drug use. The higher the education of the respondent's mother, the more likely the respondent has used hard drugs (the effect is minimal, however).

**Drug and alcohol issues.** Similar to hard drug use, school minority composition is significantly related to drug and alcohol issues (as shown in Table 3.9). The same relationship exists between school SES and drug and alcohol issues. Students who attend schools with a higher proportion of students on free or reduced lunch are *less* likely to have had drug and alcohol issues at some point during their lifetime. In Model 3, however, the effect of school SES disappears. As shown in Model 4, blacks and Asians are less likely to have had drug and alcohol issues compared to whites. School minority concentration is still significant and all other added controls are also significant. In Model 5, when I add all additional controls, minority composi-

tion is still significant and school SES is again, significant. Past behavior, race (blacks and Asians), gender, mother's educational background, and family structure (stepfamilies vs. nuclear families) are important predictors of drug and alcohol issues. Similar to Model 5 in Table 3.8, mother's education is positively associated with drug and alcohol issues.

***The Effects of School Characteristics: Results of Logistic Regression Analyses on Welfare Receipt and Teenage Pregnancy***

***Welfare receipt.*** Similar to the models analyzing delinquency, hard drug use, and drug and alcohol problems, my baseline model (Model 1) for welfare receipt (Table 3.10) examines the effect of school racial composition. Similar to what I hypothesized, as school minority composition increases, the likelihood of collecting welfare also increases. In Model 2, when I look at school SES, a powerful relationship exists. As the proportion of students who receive free or reduced lunch increases, the likelihood of the respondent receiving welfare also increases. In Model 3, when both school racial composition and SES are included in the model, the effect of school racial composition is no longer significant. In Model 4, when I add racial background, gender, and family structure, school racial composition and SES are *both* significant. Additionally, blacks are significantly more likely while Asians are significantly less likely to collect welfare compared to whites. Gender (females more than males) and family structure (non-nuclear vs. nuclear) are also important predictors. As shown in Model 5, school characteristics, prior delinquency, GPA, and income variables are all associated with welfare receipt.

***Teenage pregnancy.*** Table 3.11 reports the effect of school, individual, and family-level variables on whether or not someone reported a teenage pregnancy (or their partner). Shown in Model 1, school racial composition is significant. As school minority composition increases, the likelihood of becoming a teenage parent also increases. In Model 2, school SES is positively re-

lated to teenage pregnancy and is a stronger predictor than school racial composition. As the proportion of students receiving free or reduced lunch increases, the likelihood of a respondent reporting a teenage pregnancy also increases. In Model 3, when school racial composition and SES are included, the effect of school racial composition disappears. As shown in Model 4, blacks and Hispanics are significantly more likely than whites to become a teenage parent and those from non-nuclear families are more likely to become a teenage parent (being raised in a single-parent father headed household is not significant). In Model 5, I include GPA, past delinquent behavior, and income measures. When these are added, school SES is *still* significant. Prior delinquency, GPA, parental receipt of welfare, mother's education, and family structure are all significant predictors of teenage pregnancy. Those who live with both biological parents are less likely to have a teenage pregnancy compared to those from stepfamilies, single-mother households, and other family structures.

***Alternative Modeling Specifications: Group-Specific Impacts***

Since school segregation affects groups differently, I examine the effect of school racial composition on blacks and Hispanics. As shown in Model 5 in Tables 3.12 and 3.19, school racial composition does not affect the likelihood of blacks or Hispanics committing delinquent behavior. When arrest is the outcome variable (Table 3.13 and 3.20), the effect is significant. As the proportion of blacks and Hispanics increases in schools, blacks and Hispanics are *less* likely to have been arrested. Tables 3.14 and 3.21 show the effects of school segregation on the likelihood of incarceration. As shown in Model 5, the effect is significant for just Hispanics (Table 3.21). Hispanics who attend schools with a higher proportion of minority students are less likely to be incarcerated.

Similar to the linear analysis examining the effect of school racial composition on drug use, Tables 3.15 and 3.22 depict the same relationship. When examined separately, blacks and Hispanics are less likely to use hard drugs in racially segregated schools. However, as shown in Tables 3.16 and 3.23, when all controls are included in the model, the effect of school racial composition on drug and alcohol issues remains significant only for Hispanics. Hispanics are less likely to have drug and alcohol issues in schools that have a higher proportion of black and Hispanic students.

When welfare receipt is my outcome variable, the effect is only significant for blacks (Model 5; Table 3.17). The likelihood of collecting welfare in adulthood decreases as the proportion black and Hispanic increases in schools. Lastly, Tables 3.18 and 3.25 show how school racial composition influences teenage pregnancy for blacks and Hispanics. When examining Model 5, the effect of school racial composition is only significant for Hispanics. As the proportion black and Hispanic increases in schools, Hispanics are less likely to become a teenage parent.

#### ***Alternative Modeling Specifications: Nonlinear Effect of School Racial Composition***

I also include a quadratic term to examine if nonlinear relationships exist. When I include a quadratic term, school racial composition is a significant predictor of delinquency. Yet, not in the direction predicted. As the proportion of blacks and Hispanics increases in a school, respondents are less likely to commit delinquent behavior (Table 3.26). As shown in Figure 3.1, the more segregated a school, the less likely respondents report delinquent behavior. Specifically, as the proportion of black and Hispanic students surpasses 0.6, the likelihood of participating in delinquent behavior decreases.

Similar results are shown for arrest and incarceration (Table 3.26 and Table 3.27 and Figures 3.2 and 3.3). As the proportion of black and Hispanic students exceeds 0.5, the less likely students report ever being arrested or incarcerated. A sharp decrease is present for hard drug use and drug and alcohol issues, however. Any increase in minority concentration decreases one's likelihood of using hard drugs or having drug and alcohol issues. These relationships are shown in Table 3.27 and 3.28 and Figures 3.4 and 3.5

Tables 3.28 and 3.29 show the coefficients for the nonlinear effect of welfare receipt and teenage pregnancy. Although the inclusion of a quadratic term was significant for all other outcome variables, it is not significant when welfare receipt is the outcome variable. For teenage pregnancy, however, the likelihood of teenage pregnancy levels off as the proportion minority increases to 0.7. This relationship is depicted in Figure 3.6.

## DISCUSSION

Some interesting relationships emerge throughout this chapter. Primarily (when all controls are included in the model), when examining the linear effect of school minority composition on all racial groups, it does *not* have an *adverse* impact on general delinquency, arrest, incarceration, drug and alcohol issues, welfare receipt, and teenage pregnancy and often has no significant impact at all. On the contrary, when school racial composition is significant (when all variables are included in the model), the likelihood of adverse outcomes decreases. This was the case for hard drug use, drug and alcohol issues, and welfare receipt.

When I examine other model specifications, my hypotheses are still not supported. Instead, for blacks and Hispanics, increased minority concentration (when all controls are included) decreases the likelihood of arrest, incarceration (Hispanics), hard drug use, drug and alcohol



issues (Hispanics), welfare receipt (blacks), and teenage pregnancy (Hispanics). Once I include a quadratic term to examine the possibility of nonlinear relationships, the same pattern remains.

This challenges the work done by Lafree and Arum (2006). In their study, the probability of incarceration among blacks decreased when a higher proportion of their classmates were white. They also found that over time, the effects of school racial isolation on incarceration rates for blacks became stronger (1970-1990). While their study does not pinpoint an exact reason why this is the case, they hypothesize that after the 1960's, predominantly black schools may not be as economically diverse as they were in the past and that the learning climate in these schools has deteriorated over time.

In Johnson's analyses of school desegregation plans, he found that blacks were less likely to be incarcerated as an adult after the implementation of desegregation plans. Yet, it was not necessarily going to school with whites that affected blacks' chances of social mobility; instead, he argued that school desegregation led to greater access to resources seen by increased expenditures per student and reduced class sizes. While I did not specifically examine the impact of those variables, I did examine the proportion of students who qualified for free or reduced lunch. In models measuring incarceration, school SES was positive and significant when it was the only variable in the model; however, when all control variables were included in the model, school SES did *not* have a significant effect on whether or not a respondent had been incarcerated.

Although past research has shown how school disadvantage can lead to delinquent behavior, school characteristics do not have a negative effect on a number of outcomes. Instead, when minority concentration is significant, it decreases the chances of participating in adverse behaviors or collecting welfare. When examining individual and family-level controls, racial background, prior delinquency and drug use, GPA, gender, and family structure are all consistently

significant. As depicted in my results, while blacks are less likely than whites to report hard drug use and drug and alcohol issues, blacks are more likely to get arrested. The policing of African Americans has contributed to the overrepresentation of blacks in U.S. prisons and jails. The reasons and implications of this will be discussed in the final chapter.

## **CONCLUSION**

Overall, when examining the effect of school minority concentration, it does not adversely affect behavioral outcomes. Instead, specifically when examining different model specifications, as minority concentration increases in schools, students are significantly less likely to participate in general delinquency.

Yet, as a group (as shown in the linear models), blacks are more likely to commit delinquent acts, be arrested, and go to jail, while they are less likely to use hard drugs or have issues with drugs and alcohol compared to whites. As briefly mentioned above, this may not relate as much to their frequency of delinquent behavior, specifically in regards to drug use, but going to schools and living in neighborhoods that are more likely to be poor which are more often patrolled by the police.

While school characteristics are important, neighborhood characteristics also influence behavioral outcomes. This next chapter focuses on the independent influence of neighborhoods, as well as examining both school and neighborhood characteristics together.

**Table 3.1: Weighted Means**

<b>Individual-level variables</b>	<b>Mean</b>	<b>High Minority Concentration (≥50% B &amp; H)</b>	<b>Low Minority Concentration (&lt;50% B &amp; H)</b>
Non-Hispanic white	.67	<b>.22</b>	.83
Non-Hispanic black	.15	<b>.40</b>	.06
Hispanic	.12	<b>.28</b>	.06
Non-Hispanic Asian	.03	<b>.05</b>	.02
Non-Hispanic Other	.005	.007	.005
Alcohol issues (scale; Wave I)	.51	<b>.41</b>	.54
Drug use (scale; Wave I)	.47	<b>.41</b>	.49
Delinquency (scale; Wave I)	1.77	<b>1.9</b>	1.7
Gender	.50	.50	.51
GPA	2.51	<b>2.2</b>	2.6
Age	15.4	<b>15.6</b>	15.4
Parental welfare receipt	.09	<b>.16</b>	.07
Mother's education	13.0	<b>12.2</b>	13.3
Two-parent (biological)	.54	<b>.44</b>	.58
Stepparent	.17	<b>.14</b>	.18
Single mother	.20	<b>.30</b>	.17
Single father	.03	.03	.03
Other	.06	<b>.08</b>	.05
<b>School-level variables</b>			
Free or reduced lunch	.26	<b>.43</b>	.20
White composition	.69	<b>.24</b>	.84
Black composition	.18	<b>.47</b>	.08
Hispanic composition	.09	<b>.25</b>	.04
<b>Dependent variables</b>			
Arrest	.29	.30	.29
General delinquency	.35	<b>.38</b>	.34
Incarceration	.16	.17	.15
Drug and alcohol issues	1.1	<b>.70</b>	1.23
Use hard drugs (scale)	.77	<b>.48</b>	.86
Welfare recipient **	.25	.30	.23
Teenage pregnancy	.17	<b>.23</b>	.16

+ Bolded means are significantly different from means in low minority concentrated schools at 0.0001

+\*\*p<0.01 \*p<0.05

Table 3.2

Respondent Committed a Delinquent Act During Wave I (Weighted Means)	Committed the act	High Minority Concentration ( $\geq 50\%$ B & H)	Low Minority Concentration ( $< 50\%$ B & H)
Paint graffiti *	.09	.10	.09
Steal something worth more than \$50	.05	.05	.05
Steal something worth less than \$50	.20	.19	.20
Shoplift **	.23	.24	.23
Damage property	.18	<b>.16</b>	.19
Steal/borrow car without permission *	.10	.11	.09
Burglarize property	.05	.04	.05
Sell drugs	.07	.07	.07
In serious fight	.32	<b>.38</b>	.30
In group fight	.20	<b>.23</b>	.19
Seriously injure someone	.18	<b>.22</b>	.17
Pulled a knife/gun	.04	<b>.06</b>	.04
Use/threaten with weapon	.04	<b>.06</b>	.03
Shot or stabbed someone **	.01	.02	.01

*Overall N = 11,756 (subpopulation)*

+ Bolded means are significantly different from means in low minority concentrated schools at 0.0001

+\*\*p<0.01 \*p<0.05

Table 3.3

Respondent had Drug or Alcohol Issues during Wave I (Weighted Means)	Had an issue	High Minority Concentration ( $\geq 50\%$ B & H)	Low Minority Concentration ( $< 50\%$ B & H)
<b>Drug Use</b>			
Marijuana	.28	.27	.28
Cocaine	.04	.04	.04
Inhalants	.07	<b>.05</b>	.07
Other drugs	.09	<b>.05</b>	.10
<b>Alcohol Issues</b>			
Trouble with parents	.10	<b>.08</b>	.11
Interfere with work or school *	.03	.02	.04
Trouble with friends	.07	<b>.05</b>	.07
Trouble with dating **	.09	.08	.09
Did something but regret	.15	<b>.12</b>	.16
Fight **	.07	.05	.07

*Overall N = 11,756 (subpopulation)*

+ Bolded means are significantly different from means in low minority concentrated schools at 0.0001

+\*\*p<0.01 \*p<0.05

Table 3.4

<b>Respondent Committed a Delinquent Act During Wave IV (Weighted Means)</b>	<b>Did commit the act</b>	<b>High Minority Concentration (<math>\geq 50\%</math> B &amp; H)</b>	<b>Low Minority Concentration (<math>&lt; 50\%</math> B &amp; H)</b>
Damage property that didn't belong to you	.05	.05	.05
Steal something worth more than \$50	.02	.02	.02
Steal something worth less than \$50	.05	.04	.05
Buy, sell, or hold stolen property *	.04	.04	.03
Go into a house or building to steal something	.007	.007	.006
Use or threaten to use a weapon *	.009	.01	.008
Take part in a physical fight with friends **	.06	.04	.03
Use someone else's credit card, bank card, or automatic teller card without their permission or knowledge	.007	.006	.007
Deliberately write a bad check	.02	.02	.02
Get into a serious physical fight	.04	.06	.06
Injured someone	.02	.02	.02
Pulled a knife	.03	.04	.02
Shot or stabbed someone	.01	.01	.01

*Overall N = 11,756 (subpopulation)*

+ Bolded means are significantly different from means in low minority concentrated schools at 0.0001

+\*\*p<0.001 \*p<0.05

**Table 3.5: Negative binomial regression models measuring delinquency**

	Model 1	Model 2	Model 3	Model 4	Model 5
School minority concentration	0.281 (0.155)		0.121 (0.187)	-0.307 (0.203)	-0.281 (0.201)
School SES		0.496* (0.203)	0.388 (0.251)	0.394 (0.234)	0.264 (0.240)
Black				0.447*** (0.099)	0.403*** (0.109)
Hispanic				0.353** (0.116)	0.276* (0.122)
Asian				-0.239 (0.204)	-0.215 (0.183)
Other				-0.832* (0.378)	-0.823* (0.416)
Gender				1.015*** (0.065)	0.820*** (0.065)
Delinquency					0.135*** (0.017)
Drug use					0.103* (0.048)
Alcohol issues					-0.034 (0.033)
GPA					-0.198*** (0.056)
Welfare					0.121 (0.134)
Mother's education					0.014 (0.015)
Stepfamily				0.390*** (0.107)	0.249* (0.104)
Mother				0.315*** (0.092)	0.147 (0.094)
Father				0.265 (0.147)	0.024 (0.135)
Other family				0.424*** (0.123)	0.166 (0.127)
F statistic	3.30	5.94	2.99	32.32	35.64

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=11,736 (subpopulation)

**Table 3.6: Logistic regression models measuring arrest**

	Model 1	Model 2	Model 3	Model 4	Model 5
School minority concentration	0.091 (0.135)		0.023 (0.158)	-0.228 (0.180)	-0.149 (0.175)
School SES		0.190 (0.196)	0.169 (0.233)	-0.019 (0.217)	-0.311 (0.226)
Black				0.308** (0.105)	0.202 (0.105)
Hispanic				0.063 (0.110)	-0.173 (0.117)
Asian				-0.559* (0.268)	-0.370 (0.254)
Other				-0.198 (0.441)	-0.334 (0.490)
Gender				1.274*** (0.057)	1.099*** (0.062)
Delinquency					0.127*** (0.016)
Drug use					0.238*** (0.048)
Alcohol issues					0.084* (0.034)
GPA					-0.597*** (0.053)
Welfare					0.157 (0.137)
Mother's education					0.018 (0.016)
Stepfamily				0.628*** (0.923)	0.419*** (0.083)
Mother				0.516** (0.080)	0.206* (0.083)
Father				0.420*** (0.155)	-0.123 (0.174)
Other family				0.800*** (0.132)	0.428** (0.129)
F statistic	0.46	0.94	0.47	57.67	59.73

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=11,736 (subpopulation)

**Table 3.7: Logistic regression models measuring incarceration**

	Model 1	Model 2	Model 3	Model 4	Model 5
School minority concentration	0.182 (0.160)		-0.005 (0.164)	-0.148 (0.205)	-0.330 (0.224)
School SES		0.457 (0.240)	0.462 (0.253)	0.340 (0.258)	-0.040 (0.292)
Black				0.367** (0.121)	0.272* (0.132)
Hispanic				0.347** (0.132)	0.055 (0.141)
Asian				-0.528 (0.328)	-0.277 (0.308)
Other				0.124 (0.565)	0.015 (0.628)
Gender				1.307*** (0.085)	1.123*** (0.091)
Delinquency					0.097*** (0.017)
Drug use					0.256*** (0.049)
Alcohol issues					0.080* (0.040)
GPA					-0.606*** (0.065)
Welfare					0.162 (0.145)
Mother's education					-0.042* (0.020)
Stepfamily				0.698*** (0.114)	0.472*** (0.118)
Mother				0.625*** (0.108)	0.287* (0.114)
Father				0.537** (0.191)	-0.010 (0.209)
Other family				0.684*** (0.148)	0.218 (0.141)
F statistic	1.30	3.63	1.95	37.56	37.34

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=11,736 (subpopulation)



**Table 3.8: Negative binomial regression models measuring hard drug use**

	Model 1	Model 2	Model 3	Model 4	Model 5
School minority concentration	-0.982*** (0.144)		-1.047 *** (0.152)	-0.309* (0.141)	-0.305* (0.129)
School SES		-0.700** (0.223)	0.152 (0.206)	0.175 (0.222)	0.342 (0.204)
Black				-1.551*** (0.112)	-1.496*** (0.102)
Hispanic				-0.293*** (0.069)	-0.304*** (0.066)
Asian				-0.560*** (0.169)	-0.480*** (0.166)
Other				-0.495 (0.322)	-0.484 (0.341)
Gender				0.440*** (0.040)	0.321*** (0.042)
Delinquency					0.074*** (0.010)
Drug use					0.316*** (0.025)
Alcohol issues					0.008 (0.020)
GPA					-0.135*** (0.032)
Welfare					-0.147 (0.089)
Mother's education					0.047*** (0.010)
Stepfamily				0.281*** (0.059)	0.179** (0.056)
Mother				0.264*** (0.051)	0.137* (0.058)
Father				0.362*** (0.090)	0.085 (0.088)
Other family				0.210* (0.095)	0.003 (0.093)
F statistic	46.63	9.84	25.59	43.54	69.94

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=11,736 (subpopulation)

**Table 3.9: Negative binomial regression models measuring drug and alcohol issues**

	Model 1	Model 2	Model 3	Model 4	Model 5
School minority concentration	-0.996*** (0.117)		-0.864*** (0.139)	-0.494** (0.162)	-0.387* (0.143)
School SES		-1.04*** (0.202)	-0.310 (0.210)	-0.352 (0.222)	-0.489* (0.208)
Black				-0.693*** (0.095)	-0.602*** (0.086)
Hispanic				-0.120 (0.082)	-0.117 (0.082)
Asian				-0.440* (0.171)	-0.386* (0.169)
Other				-0.254 (0.277)	-0.251 (0.292)
Gender				0.522*** (0.042)	0.387*** (0.041)
Delinquency					0.105*** (0.009)
Drug use					0.249*** (0.026)
Alcohol issues					0.078*** (0.018)
GPA					-0.057 (0.036)
Welfare					-0.061 (0.098)
Mother's education					0.062*** (0.011)
Stepfamily				0.218*** (0.059)	0.136* (0.064)
Mother				0.180** (0.060)	0.053 (0.059)
Father				0.092 (0.117)	-0.157 (0.130)
Other family				0.053 (0.095)	-0.100 (0.090)
F statistic	71.87	26.80	34.47	29.79	57.96

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=11,736 (subpopulation)

**Table 3.10: Logistic regression models measuring welfare receipt**

	Model	Model 2	Model 3	Model 4	Model 5
School minority concentration	0.531** (0.190)		-0.358 (0.223)	0.926*** (0.242)	-0.905*** (0.226)
School SES		1.844*** (0.243)	2.169*** (0.327)	2.000*** (0.303)	1.437*** (0.280)
Black				0.654*** (0.100)	0.461*** (0.099)
Hispanic				0.112 (0.149)	-0.277 (0.147)
Asian				-0.778* (0.316)	-0.630* (0.300)
Other				0.196 (0.394)	0.115 (0.424)
Gender				-0.621*** (0.067)	-0.862*** (0.073)
Delinquency					0.036* (0.016)
Drug use					0.001 (0.041)
Alcohol issues					0.007 (0.033)
GPA					-0.583*** (0.055)
Welfare					0.655*** (0.105)
Mother's education					-0.086*** (0.015)
Stepfamily				0.613*** (0.940)	0.435*** (0.097)
Mother				0.700*** (0.087)	0.417*** (0.090)
Father				0.737*** (0.161)	0.364* (0.168)
Other family				0.984*** (0.139)	0.580*** (0.144)
F statistic	7.81	57.45	29.94	39.98	39.61

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=11,736 (subpopulation)

**Table 3.11: Logistic regression models measuring teenage pregnancy**

	Model	Model 2	Model 3	Model 4	Model 5
School minority concentration	0.757*** (0.192)		0.165 (0.229)	-0.464 (0.273)	-0.420 (0.261)
School SES		1.609*** (0.256)	1.459*** (0.324)	1.406*** (0.334)	1.005** (0.321)
Black				0.485*** (0.141)	0.326* (0.131)
Hispanic				0.493** (0.178)	0.221 (0.168)
Asian				-0.127 (0.275)	0.068 (0.231)
Other				0.632 (0.430)	0.596 (0.414)
Gender				-1.103*** (0.069)	-1.351*** (0.075)
Delinquency					0.082*** (0.017)
Drug use					0.080 (0.045)
Alcohol issues					0.027 (0.034)
GPA					-0.589*** (0.059)
Welfare					0.323** (0.098)
Mother's education					-0.032* (0.020)
Stepfamily				0.571*** (0.076)	0.373*** (0.086)
Mother				0.620*** (0.084)	0.340*** (0.095)
Father				0.396 (0.323)	-0.042 (0.254)
Other family				1.459*** (0.145)	1.222*** (0.137)
F statistic	15.49	39.66	19.82	43.46	46.18

+ Standard errors in parenthesis

+ \*p&lt;0.05 \*\*p&lt;0.01 \*\*\*p&lt;0.001

+ All controls are measured during Wave I

+ N=11,736 (subpopulation)

**Table 3.12: Regression models measuring delinquency for blacks**

	Model	Model 2	Model 3	Model 4	Model 5
School minority concentration	-0.631* (0.313)		-0.582 (0.331)	-0.578 (0.319)	-0.507 (0.311)
School SES		-0.523 (0.225)	-0.117 (0.411)	-0.087 (0.395)	0.180 (0.342)
Gender				0.687*** (0.137)	0.492*** (0.142)
Delinquency					0.190*** (0.033)
Drug use					-0.040 (0.133)
Alcohol issues					-0.205 (0.065)
GPA					-0.188 (0.112)
Welfare					0.183 (0.221)
Mother's education					0.039 (0.035)
Stepfamily				0.368 (0.223)	0.149 (0.180)
Mother				0.287 (0.158)	0.179 (0.182)
Father				0.324 (0.522)	0.065 (0.445)
Other family				0.255 (0.97)	0.138 (0.217)
F statistic	4.05	1.49	2.04	5.93	6.79

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=2,463 (Black)

**Table 3.13: Regression models measuring arrest for blacks**

	Model	Model 2	Model 3	Model 4	Model 5
School minority concentration	-0.562* (0.216)		-0.783** (0.284)	-0.783** (0.284)	-0.575** (0.247)
School SES		-0.003 (0.413)	0.523 (0.432)	0.528 (0.432)	0.168 (0.375)
Gender				1.194*** (0.142)	1.020*** (0.147)
Delinquency					0.194*** (0.030)
Drug use					0.179 (0.123)
Alcohol issues					-0.002 (0.094)
GPA					-0.584*** (0.112)
Welfare					0.136 (0.184)
Mother's education					0.004 (0.036)
Stepfamily				0.890*** (0.214)	0.640** (0.229)
Mother				0.457** (0.154)	0.145 (0.179)
Father				0.619 (0.412)	0.089 (0.380)
Other family				0.466 (0.246)	0.225 (0.249)
F statistic	6.75	0	3.95	12.20	13.10

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=2,463 (Black)

**Table 3.14: Regression models measuring incarceration for blacks**

	Model	Model 2	Model 3	Model 4	Model 5
School minority concentration	-0.686** (0.253)		-0.772** (0.303)	-0.765** (0.325)	-0.563 (0.345)
School SES		-0.339 (0.428)	0.205 (0.435)	0.150 (0.433)	-0.170 (0.474)
Gender				1.299*** (0.196)	1.099*** (0.193)
Delinquency					0.175*** (0.035)
Drug use					0.285* (0.124)
Alcohol issues					-0.141 (0.097)
GPA					-0.526*** (0.127)
Welfare					-0.103 (0.236)
Mother's education					-0.015 (0.038)
Stepfamily				0.753** (0.271)	0.484 (0.294)
Mother				0.406* (0.198)	0.111 (0.209)
Father				1.096* (0.448)	0.705 (0.416)
Other family				0.352 (0.238)	0.153 (0.242)
F statistic	7.35	0.63	3.65	7.95	8.74

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=2,463 (Black)

**Table 3.15: Regression models measuring hard drug use for blacks**

	Model	Model 2	Model 3	Model 4	Model 5
School minority concentration	-1.025** (0.319)		-1.216** (0.442)	-1.046** (0.393)	-0.841** (0.321)
School SES		-0.404 (0.685)	0.431 (0.737)	0.256 (0.593)	0.185 (0.447)
Gender				0.651*** (0.153)	0.477** (0.153)
Delinquency					0.185*** (0.030)
Drug use					0.398** (0.126)
Alcohol issues					-0.164 (0.114)
GPA					0.051 (0.133)
Welfare					0.188 (0.195)
Mother's education					0.050 (0.038)
Stepfamily				0.777** (0.260)	0.643* (0.246)
Mother				0.621** (0.253)	0.552* (0.095)
Father				0.835 (0.543)	0.495 (0.453)
Other family				0.324 (0.366)	0.243 (0.295)
F statistic	10.34	0.35	5.28	5.90	10.26

+ Standard errors in parenthesis

+ \*p&lt;0.05 \*\*p&lt;0.01 \*\*\*p&lt;0.001

+ All controls are measured during Wave I

+ N=2,463 (Black)



**Table 3.16: Regression models measuring drug and alcohol issues for blacks**

	Model	Model 2	Model 3	Model 4	Model 5
School minority concentration	-0.848** (0.298)		-0.724 (0.360)	-0.548 (0.303)	-0.490 (0.251)
School SES		-0.779 (0.560)	-0.298 (0.596)	-0.595 (0.436)	-0.615 (0.382)
Gender				0.918*** (0.190)	0.833*** (0.182)
Delinquency					0.145*** (0.026)
Drug use					0.355* (0.116)
Alcohol issues					0.107 (0.121)
GPA					-0.087 (0.133)
Welfare					0.029 (0.189)
Mother's education					0.090* (0.034)
Stepfamily				0.457* (0.213)	0.201 (0.205)
Mother				0.368* (0.175)	0.223 (0.180)
Father				-0.021 (0.439)	-0.206 (0.496)
Other family				0.026 (0.256)	0.029 (0.274)
F statistic	8.09	1.94	4.18	6.67	12.59

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=2,463 (Black)

**Table 3.17: Regression models measuring welfare receipt for blacks**

	Model	Model 2	Model 3	Model 4	Model 5
School minority concentration	-0.266 (0.236)		-0.909* (0.330)	-1.059 (0.331)	-0.824** (0.310)
School SES		0.901* (0.432)	1.548*** (0.463)	1.706*** (0.509)	1.172** (0.444)
Gender				-1.011*** (0.138)	-1.305*** (0.163)
Delinquency					0.039 (0.017)
Drug use					0.146 (0.112)
Alcohol issues					0.047 (0.071)
GPA					-0.585*** (0.109)
Welfare					0.735** (0.204)
Mother's education					-0.090** (0.032)
Stepfamily				0.614** (0.192)	0.370 (0.209)
Mother				0.965*** (0.170)	0.600** (0.199)
Father				1.237** (0.394)	0.734 (0.470)
Other family				1.108*** (0.270)	0.715** (0.287)
F statistic	1.28	4.36	6.13	22.32	22.28

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=2,463 (Black)

**Table 3.18: Regression models measuring teenage pregnancy for blacks**

	Model	Model 2	Model 3	Model 4	Model 5
School minority concentration	-0.079 (0.335)		-0.376 (0.481)	-0.437 (0.515)	-0.230 (0.492)
School SES		0.465 (0.521)	0.727 (0.659)	0.810 (0.721)	0.422 (0.694)
Gender				-1.073*** (0.131)	-1.287*** (0.148)
Delinquency					0.080* (0.032)
Drug use					0.130 (0.111)
Alcohol issues					-0.050 (0.095)
GPA					-0.441*** (0.118)
Welfare					0.407* (0.172)
Mother's education					-0.009 (0.042)
Stepfamily				0.441* (0.222)	0.246 (0.240)
Mother				0.467** (0.161)	0.203 (0.180)
Father				0.747 (0.510)	0.340 (0.616)
Other family				0.749*** (0.196)	0.507 (0.202)
F statistic	0.06	0.80	0.62	12.59	13.03

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=2,463 (Black)

**Table 3.19: Regression models measuring delinquency for Hispanics**

	Model	Model 2	Model 3	Model 4	Model 5
School minority concentration	-0.464 (0.305)		-0.653 (0.338)	-0.744* (0.374)	-0.731 (0.406)
School SES		0.182 (0.365)	0.626 (0.373)	0.843* (0.419)	0.659 (0.430)
Gender				0.869*** (0.192)	0.752*** (0.187)
Delinquency					0.078** (0.029)
Drug use					-0.051 (0.096)
Alcohol issues					0.029 (0.079)
GPA					-0.293 (0.174)
Welfare					0.124 (0.365)
Mother's education					0.015 (0.030)
Stepfamily				0.062 (0.250)	-0.085 (0.238)
Mother				0.163 (0.285)	0.045 (0.244)
Father				0.543 (0.463)	0.236 (0.465)
Other family				-0.265 (0.335)	-0.466 (0.377)
F statistic	2.32	0.25	2.23	4.75	3.16

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=1,973 (Hispanic)

**Table 3.20 Regression models measuring arrest for Hispanics**

	Model	Model 2	Model 3	Model 4	Model 5
School minority concentration	-0.782* (0.283)		-0.905** (0.283)	-0.944*** (0.285)	-0.815** (0.283)
School SES		-0.262 (0.458)	0.379 (0.391)	0.470 (0.408)	0.314 (0.444)
Gender				1.267*** (0.137)	1.173*** (0.140)
Delinquency					0.063 (0.033)
Drug use					0.307** (0.116)
Alcohol issues					0.127 (0.083)
GPA					-0.574*** (0.117)
Welfare					0.188 (0.261)
Mother's education					0.026 (0.031)
Stepfamily				0.355 (0.223)	0.118 (0.265)
Mother				0.433 (0.234)	0.133 (0.231)
Father				0.566 (0.403)	0.069 (0.500)
Other family				0.978* (0.417)	0.801* (0.405)
F statistic	7.62	0.33	4.87	15.34	15.59

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=1,973 (Hispanic)

**Table 3.21: Regression models measuring incarceration for Hispanics**

	Model	Model 2	Model 3	Model 4	Model 5
School minority concentration	-0.848* (0.349)		-1.006 ** (0.371)	-1.037** (0.408)	-1.053** (0.386)
School SES		-0.251 (0.562)	0.471 (0.472)	0.585 (0.526)	0.438 (0.554)
Gender				1.294*** (0.185)	1.224*** (0.195)
Delinquency					0.027 (0.034)
Drug use					0.404*** (0.110)
Alcohol issues					0.129 (0.094)
GPA					-0.512** (0.159)
Welfare					0.043 (0.341)
Mother's education					-0.055 (0.035)
Stepfamily				0.230 (0.297)	0.045 (0.350)
Mother				0.569* (0.251)	0.343 (0.248)
Father				0.633 (0.486)	0.144 (0.612)
Other family				0.153 (0.394)	-0.050 (0.424)
F statistic	5.91	0.20	3.60	11.92	8.43

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=1,973 (Hispanic)

**Table 3.22: Regression models measuring hard drug use for Hispanics**

	Model 1	Model 2	Model 3	Model 4	Model 5
School minority concentration	-0.851*** (0.185)		-1.243*** (0.163)	-1.223*** (0.165)	-0.992*** (0.186)
School SES		0.269 (0.358)	1.124*** (0.242)	1.250*** (0.233)	1.388*** (0.290)
Gender				0.493*** (0.130)	0.393** (0.145)
Delinquency					0.064* (0.027)
Drug use					0.358*** (0.077)
Alcohol issues					-0.001 (0.053)
GPA					-0.158 (0.092)
Welfare					-0.184 (0.222)
Mother's education					0.055* (0.024)
Stepfamily				0.204 (0.184)	0.090 (0.201)
Mother				0.029 (0.163)	-0.084 (0.175)
Father				0.505* (0.241)	0.120 (0.207)
Other family				0.039 (0.275)	-0.064 (0.258)
F statistic	21.10	0.56	30.29	24.95	25.55

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=1,973 (Hispanic)

**Table 3.23: Regression models measuring drug and alcohol issues for Hispanics**

	Model	Model 2	Model 3	Model 4	Model 5
School minority concentration	-0.933*** (0.281)		-1.277*** (0.229)	-1.344*** (0.321)	-1.113*** (0.275)
School SES		0.063 (0.376)	0.957** (0.371)	1.058** (0.334)	1.237** (0.409)
Gender				0.637*** (0.142)	0.515*** (0.129)
Delinquency					0.122*** (0.020)
Drug use					0.272*** (0.069)
Alcohol issues					0.038 (0.043)
GPA					-0.020 (0.105)
Welfare					-0.028* (0.192)
Mother's education					0.044 (0.025)
Stepfamily				0.311 (0.207)	0.213 (0.209)
Mother				0.076 (0.167)	-0.056 (0.161)
Father				0.152 (0.347)	-0.208 (0.320)
Other family				0.050 (0.354)	-0.029 (0.320)
F statistic	11.00	0.03	9.27	6.02	10.81

+ Standard errors in parenthesis

+ \*p&lt;0.05 \*\*p&lt;0.01 \*\*\*p&lt;0.001

+ All controls are measured during Wave I

+ N=1,973 (Hispanic)



**Table 3.24: Regression models measuring welfare receipt for Hispanics**

	Model	Model 2	Model 3	Model 4	Model 5
School minority concentration	-0.234 (0.285)		-0.534 (0.347)	0.677 (0.511)	-0.538 (0.296)
School SES		0.571 (0.436)	0.933 (0.481)	-0.517 (0.286)	0.235 (0.556)
Gender				-0.860*** (0.168)	-1.105*** (0.185)
Delinquency					0.053 (0.034)
Drug use					-0.038 (0.113)
Alcohol issues					0.041 (0.059)
GPA					-0.621*** (0.145)
Welfare					0.569* (0.269)
Mother's education					-0.006 (0.031)
Stepfamily				0.640** (0.246)	0.440 (0.269)
Mother				0.931*** (0.219)	0.689** (0.244)
Father				-0.523 (0.790)	-0.845 (0.795)
Other family				0.973** (0.320)	0.844** (0.321)
F statistic	0.67	1.72	2.15	9.18	7.96

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=1,973 (Hispanic)

**Table 3.25: Regression models measuring teenage pregnancy for Hispanics**

	Model	Model 2	Model 3	Model 4	Model 5
School minority concentration	-0.701 (0.397)		-1.280*** (0.373)	-1.222** (0.397)	-1.250** (0.398)
School SES		0.785 (0.748)	1.660** (0.597)	1.428* (0.397)	1.187 (0.689)
Gender				-0.914*** (0.215)	-1.233*** (0.242)
Delinquency					0.125** (0.041)
Drug use					0.121 (0.110)
Alcohol issues					-0.010 (0.068)
GPA					-0.622*** (0.160)
Welfare					0.143 (0.226)
Mother's education					-0.015 (0.040)
Stepfamily				0.840*** (0.221)	0.607* (0.242)
Mother				0.564* (0.236)	0.327 (0.262)
Father				-0.025 (0.653)	-0.374 (0.734)
Other family				1.347*** (0.363)	1.206** (0.411)
F statistic	3.12	1.10	8.72	10.42	8.20

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=1,973 (Hispanic)

**SCHOOLS****Table 3.26**

	<b>Delinquency</b>		<b>Arrested</b>	
	Model 1	Model 5	Model 1	Model 5
School racial composition	1.241* (0.440)	0.629 (0.478)	1.002* (0.419)	0.459 (0.422)
Quadratic term (school race)	-1.135* (.485)	-1.049* (0.480)	-1.076* (0.444)	-0.705 (0.402)
F statistic	4.39	34.53	2.98	56.87

**Table 3.27**

	<b>Incarceration</b>		<b>Hard drugs</b>	
	Model 1	Model 5	Model 1	Model 5
School racial composition	1.241* (0.440)	0.629 (0.478)	0.609 (0.382)	0.607* (0.308)
Quadratic term (school race)	-1.135* (.485)	-1.049* (0.480)	-2.018*** (0.518)	-1.121** (0.382)
F statistic	4.39	34.53	23.85	74.38

**Table 3.28**

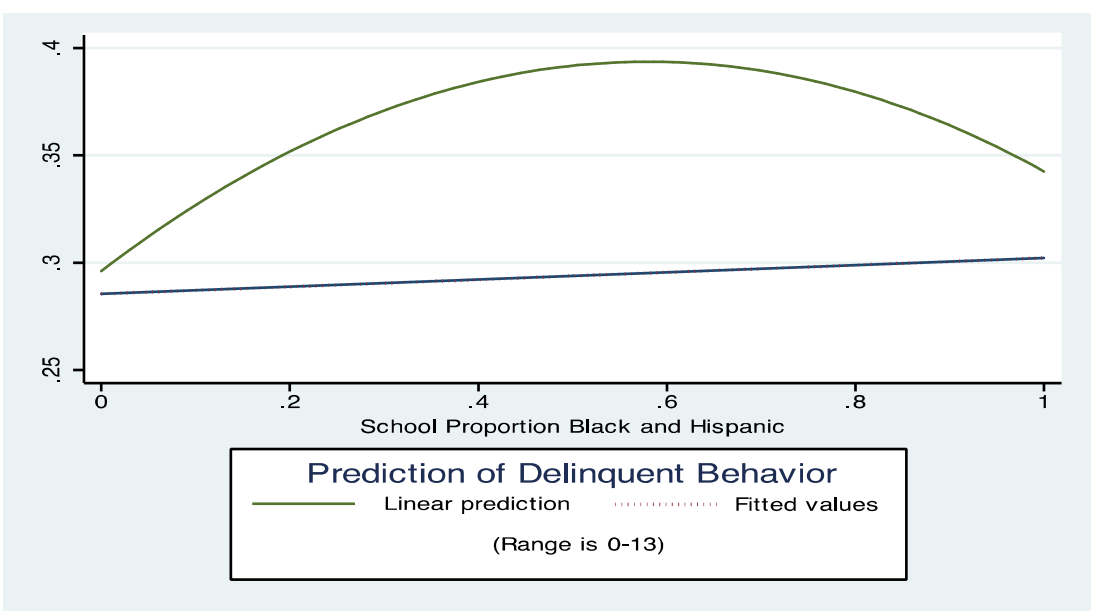
	<b>Drug issues</b>		<b>Teen pregnancy</b>	
	Model 1	Model 5	Model 1	Model 5
School racial composition	-0.308 (0.304)	-0.190 (0.323)	2.106*** (0.628)	0.531 (0.567)
Quadratic term (school race)	-0.850* (0.364)	-0.378 (0.362)	-1.538* (0.687)	-1.063 (0.646)
F statistic	40.61	58.88	10.45	46.18

**Table 3.29**

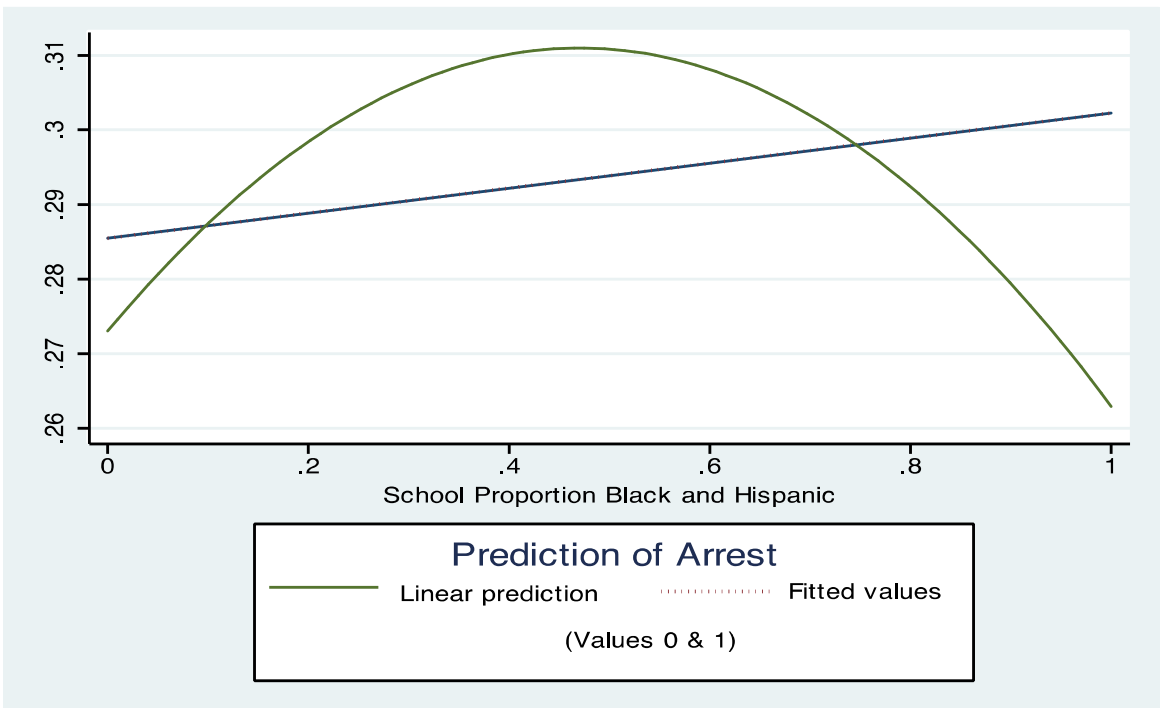
	<b>Welfare receipt</b>	
	Model 1	Model 5
School racial composition	1.058 (0.625)	-0.716 (0.538)
Quadratic term (school race)	-0.610 (.630)	-0.216 (0.527)
F statistic	3.94	38.48

### SCHOOLS

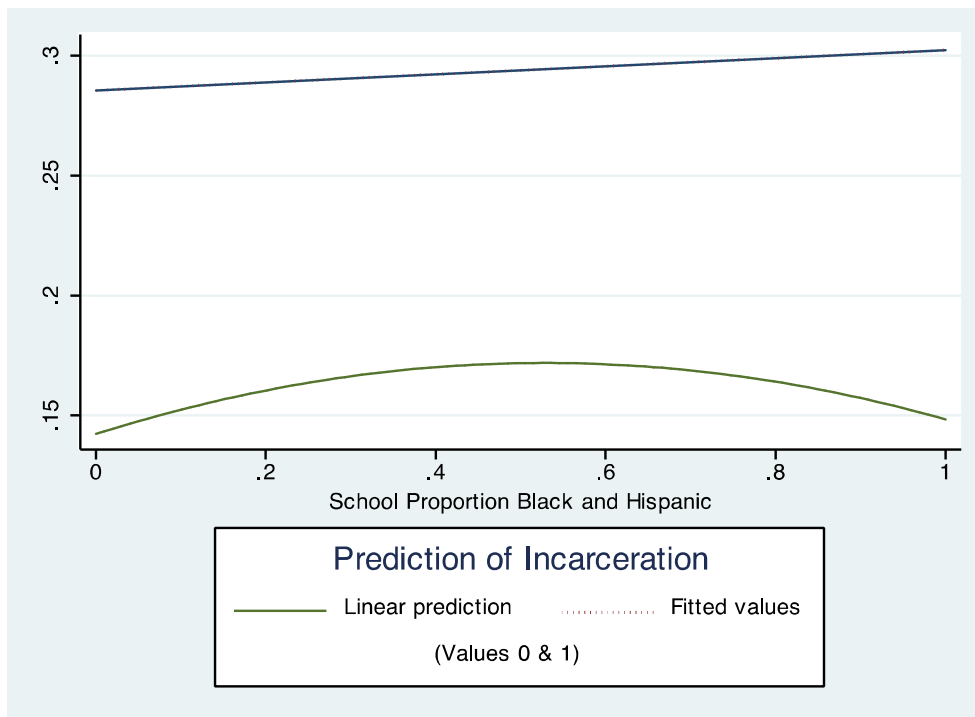
**Figure 3.1: The Effect of School Racial Composition on Delinquency**



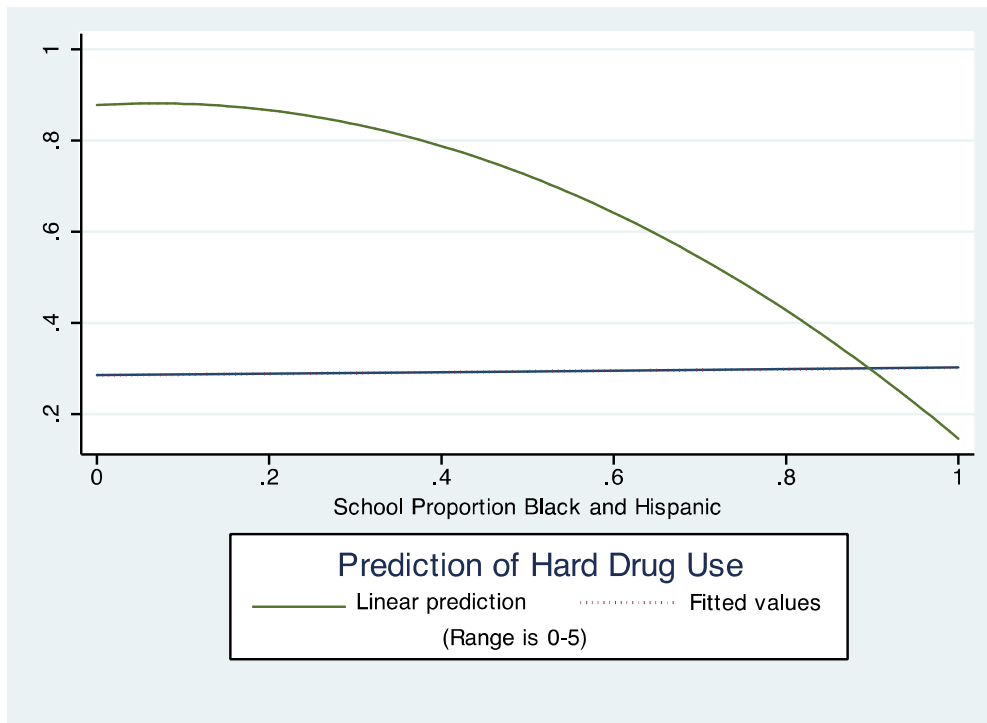
**Figure 3.2: The Effect of School Racial Composition on Arrest**



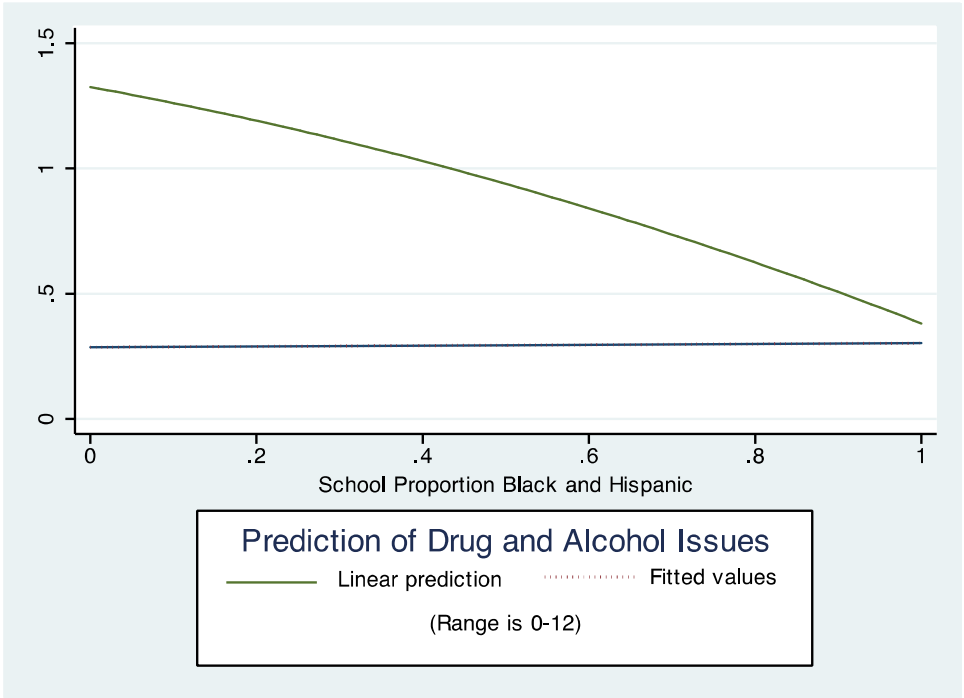
**Figure 3.3: The Effect of School Racial Composition on Incarceration**



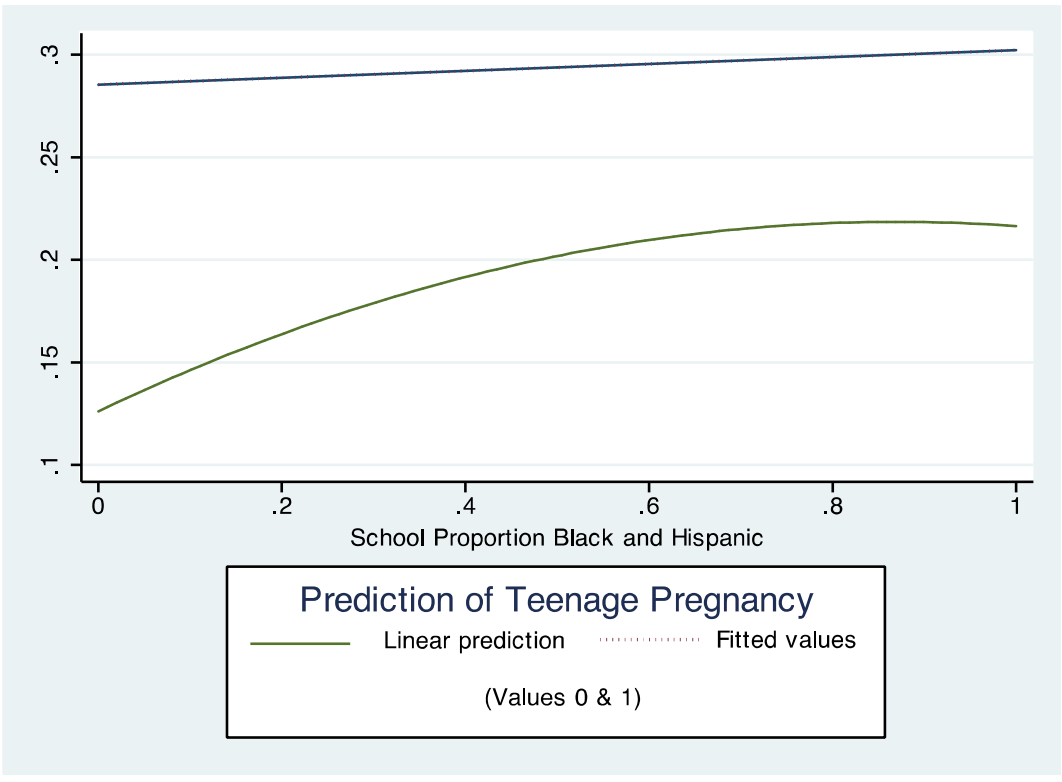
**Figure 3.4: The Effect of School Racial Composition on Hard Drug Use**



**Figure 3.5: The Effect of School Racial Composition on Drug and Alcohol Issues**



**Figure 3.6: The Effect of School Racial Composition on Teenage Pregnancy**



**CHAPTER FOUR**

**ARE NEIGHBORHOOD OR SCHOOLS MORE IMPORTANT? THE EFFECT  
OF NEIGHBORHOOD AND SCHOOL CHARACTERISTICS ON BEHAVIORAL  
OUTCOMES**

**INTRODUCTION**

In Chapter 3, I discussed the impact that school racial composition had on delinquency, drug use, alcohol and drug issues, welfare receipt, and teenage pregnancy. I hypothesized that increased minority concentration would increase one's participation in general delinquency. However, when examining the effects of outcomes on blacks and Hispanic, as well as examining nonlinear effects, if school racial composition is significant, as minority concentration increases in schools, the less likely respondents participate in adverse behavior. In this chapter I seek to address the impact that neighborhood characteristics (proportion minority and poverty rates at the census tract level) have on these same outcomes.

Social disorganization theorists posit that juvenile delinquency occurs in disadvantaged neighborhoods, which are neighborhoods characterized by residential instability, high poverty rates, and racial heterogeneity (Shaw and McKay 1969). Scholars have also shown that people who grow up in neighborhoods with high levels of concentrated poverty and residential segregation are more likely to become teenage mothers and drop out of school (Wilson 1987; Massey and Denton 1993). Further, in Anderson's (1990) ethnographic study of an Eastern urban community, as communities lost jobs, youth were more likely to participate in criminal activities and abuse drugs. Similar to Goldsmith (2009), I examine the influence that neighborhoods and schools have on delinquency, drug use/issues, welfare receipt, and teenage pregnancy. To test



these relationships, I run a number of logistic and negative binomial regressions. Throughout this chapter, I test the following overarching hypotheses:

Hypothesis 1: As the minority concentration increases in neighborhoods, the likelihood of participating in delinquent behaviors (general delinquency, arrest, and incarceration) also increases.

Hypothesis 2: As the minority concentration increases in neighborhoods, the likelihood of doing hard drugs or developing issues with drugs and alcohol increases.

Hypothesis 3: As the minority concentration increases in neighborhoods, the likelihood of being a teenage parent increases.

Hypothesis 4: As the minority concentration increases in neighborhoods, the likelihood of collecting welfare also increases.

Similar to Chapter 3, I include a quadratic term (neighborhood racial composition squared) and examine the effect of neighborhood characteristics on blacks and Hispanics separately. For the quadratic term, I discuss the results if the coefficient is significant. Since neighborhood racial composition did not have a significant effect on blacks participation in delinquent behavior (it did on Hispanics), I do not discuss the results in each section. The tables (4.20-4.26), however, are at the end of this chapter.

## **RESULTS**

### ***Descriptive Statistics***

The central independent variables in this chapter are neighborhood and school minority concentration and SES. As mentioned in Chapter 2, multicollinearity could possibly be an issue because of the high correlations that exist between neighborhood and school racial characteristics. However, after running a VIF test to test for inflation, the scores on the test did not indicate

any issues with multicollinearity. In Tables 4.1 through 4.4<sup>11</sup>, the means for each variable are listed (the means for school characteristics were in Chapter 3), along with the mean for each variable dependent upon whether the respondent lives in a predominantly minority neighborhood. As shown in these tables, during adolescence, respondents are more likely to live in predominantly white neighborhoods (81%), where 14% of people are at or below the poverty line. Similar to the means concerning predominantly minority schools, adolescents who grow up in predominantly minority neighborhoods are significantly more likely to participate in delinquent acts, be arrested, go to jail, be a recipient of welfare in young adulthood, and become a teenage parent. On the other hand, respondents who grow up in these same neighborhoods are significantly less likely to have ever used hard drugs or had drug and alcohol issues. I will now discuss the results of my multivariate analyses, as these models shed light on the relationship among all of my variables.

***The Effect of Neighborhood Characteristics: The Results of Negative Binomial Regression and Logistic Regression Analyses on Delinquency, Arrest, and Incarceration***

In this section, I discuss the impact that neighborhood racial composition (black and Hispanic) and poverty rates have on general delinquency, arrest, and incarceration. Tables 4.5-4.7 show the standardized coefficients and standard errors for each regression. In each table, my first three models address neighborhood minority racial composition and poverty rates at the tract level. In Model 4, I add individual racial background, gender, and family structure and in Model 5, GPA, income measures, and past delinquency are included.

***General Delinquency.*** To look at the impact of neighborhood racial composition on general delinquency, my baseline model (Model 1) in Table 4.6 examines the independent influence of this variable. Shown in Model 1 of Table 4.6, neighborhood racial composition is signifi-

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<sup>11</sup>All tables are at the end of this chapter

cantly related to general delinquency. As the proportion of minorities (black and Hispanic) increases in a neighborhood, the likelihood of committing delinquent acts in young adulthood also increases. In Model 2, when neighborhood poverty is the sole variable, a significant relationship exists. Those who lived in neighborhoods with higher poverty rates are more likely to commit delinquent acts in young adulthood. In Model 3, when both are included, the significant effect disappears for both racial composition and poverty. As shown in Model 4, a positive association exists for Blacks, Hispanics, males, and different types of family structure. When all controls are included in the model (Model 5), neighborhood characteristics are still *not* significant.

**Arrest.** Table 4.7 examines the impact of neighborhood characteristics on the likelihood of arrest. As shown in Models 1 and 2, neighborhood racial composition is *not* significantly related to arrest while neighborhood poverty is. Respondents who live in more poverty stricken neighborhoods are more likely to have been arrested (Model 2). When both neighborhood racial composition and poverty are included in the model, neighborhood poverty is still significant. However, the positive effect of neighborhood poverty disappears in Model 4, when racial background, gender, and family structure are included. As shown in Model 5, neighborhood characteristics are *not* significant predictors of arrest while those with lower GPA's and from stepfamilies, single-mother households, and other family structures are more likely to have been arrested compared to those with higher GPA's and from nuclear families.

**Incarceration.** The estimated standardized coefficients and standard errors for neighborhood minority racial composition and poverty rates are shown in Models 1, 2, and 3 of Table 4.8. Neighborhood minority racial composition is not a significant predictor of incarceration. Neighborhood poverty, however, is strongly associated with a respondent's likelihood of going to jail. As shown in Model 4, neighborhood composition and poverty are both significant. Interesting,

though, as minority neighborhood racial concentration increases, individuals are less likely to be incarcerated. Once I add all controls, neighborhood poverty is no longer a significant predictor of incarceration while neighborhood racial composition remains significant.

***The Effects of Neighborhood Characteristics: Results of Negative Binomial Regression Analyses on Hard Drug Use and Drug and Alcohol Issues***

***Hard drug use.*** Tables 4.9 and 4.10 show the estimated standardized coefficients and standard errors for the effects of neighborhood characteristics on hard drug use and drug and alcohol issues. As shown in Model 1 of Table 4.9, neighborhood minority concentration is significantly related, although in a negative direction, to hard drug use. As the proportion black and Hispanic increases in a neighborhood, the less likely a respondent has reported ever using hard drugs. In Model 2, neighborhood poverty is also negatively related to hard drug use. In Model 3, when racial composition and poverty are both included, neighborhood poverty is no longer significant. When I add racial background, gender, and family structure, neighborhood minority racial concentration is still a significant predictor of hard drug use. All independent variables are also significantly related to hard drug use. Blacks, Asians, and Hispanics are significantly less likely to have used hard drugs compared to whites. In Model 5, when all variables are included in the model, neighborhood racial composition and poverty rates are *not* significant predictors of hard drug use when all controls are added into the model.

***Drug and alcohol issues.*** Table 4.10 assesses the effect of neighborhood characteristics on drug and alcohol issues. In Models 1 and 2, neighborhood minority racial composition and poverty are significantly and negatively related to drug and alcohol issues. This relationship remains even in Model 3, when both variables are included in the analysis. As minority concentration and poverty rates increase in a neighborhood, the less likely respondents report having is-

sues with drugs and alcohol. In Model 4, when I add racial background, gender, and family structure, neighborhood minority racial composition is no longer significant, while neighborhood poverty remains significant. This relationship is true even in Model 5, when all variables are included in the model. As shown, neighborhood poverty and race are significantly related to *fewer* issues (legal, school/work, family, and friend issues) with drugs and alcohol.

***The Effects of Neighborhood Characteristics: Results of Logistic Regression Analyses on Welfare Receipt and Teenage Pregnancy***

***Welfare Receipt.*** Shown in Models 1 and 2 of Table 4.11 are the standardized coefficients and standard errors of neighborhood minority racial composition and poverty. Both variables significantly relate to welfare receipt during young adulthood. While they are both strong predictors, neighborhood poverty has a much stronger effect on welfare receipt. When both are included in the Model, the effect of neighborhood racial composition disappears. In Model 4, however, neighborhood minority racial composition becomes significantly related to welfare receipt. As the proportion of blacks and Hispanics increases in a neighborhood, individuals are *less* likely to collect welfare. Neighborhood poverty is still a significant predictor. As shown in Model 5, blacks are more likely while Asians and Hispanics are less likely to collect welfare compared to whites. Prior delinquency, gender, GPA, parental welfare receipt, mother's education, and all family forms (compared to the nuclear family structure) are significant predictors of welfare receipt.

***Teenage Pregnancy.*** Table 4.12 reports the effects of neighborhood, individual, and family-level variables on the likelihood of teenage pregnancy. Shown in Models 1 and 2, neighborhood minority racial composition and poverty are both significantly related to teenage pregnancy. In Model 3, when both variables are included in the model, the effect of neighborhood

racial composition disappears, while neighborhood SES remains significant. This association remains in Models 4 and 5.

***Alternative Modeling Specifications: Group-Specific Impacts***

As mentioned earlier, I conducted additional analyses examining how neighborhood racial composition affected groups differently. While there are no effects for blacks, and these results are shown in Tables 4.20-4.26, there are significant effects for Hispanics. These effects are displayed in Tables 4.27-4.33. However, it is not in the direction predicted. As the proportion of minority students increases in a school, the likelihood of getting arrested, going to jail, using hard drugs, having drug and alcohol issues, collecting welfare, or having a teenage pregnancy decreases, at least for Hispanics. These results are interesting, and need to be examined; yet, it is beyond the scope of this research.

***Alternative Modeling Specifications: Nonlinear Effect of School Racial Composition***

In Chapter 3, numerous nonlinear relationships existed between school racial composition and my outcomes of interest. When I include a quadratic term measuring the effects of neighborhood racial composition, only two significant relationships emerge. While the coefficients for Model 1 and Model 5 are listed in Tables 4.34-4.37, I only include figures of the relationships that are significant (in either Model 1 or 5).

The only significant results that appear when I include a quadratic term are for hard drugs and teenage pregnancy. Similar to my other results, it was in a direction not predicted. As the proportion of black and Hispanic residents increase in a neighborhood, the less likely respondents are to use hard drugs (Table 4.35). Figure 4.1 depicts this relationship and as shown, any increase in neighborhood minority concentration leads to a decrease in hard drug use. Table 4.36 depicts the relationship between neighborhood racial composition and teenage pregnancy. Alt-

though only significant in Model 1, an increase in neighborhood minority concentration decreases the likelihood of having a teenage pregnancy. As highlighted in Figure 4.2, as the proportion of blacks and Hispanics reaches about 0.7, the likelihood of becoming a teenage parent decreases. The next results I discuss focus on the effects of school and neighborhood characteristics.

***The Effect of Neighborhood and School Characteristics: The Results of Negative Binomial Regression and Logistic Regression Analyses on Delinquency, Arrest, and Incarceration***

When examining the *linear* effect of all outcome variables, overall, neighborhood poverty had more of a robust effect compared to neighborhood racial composition. When I add all controls to the model, neighborhood minority racial composition was often not significant and when it was, it was in the opposite direction of what I predicted. However, does the magnitude and direction of variables change when school characteristics are added to the models? Are school or neighborhood characteristics greater predictors of delinquent behavior? These results are shown in Tables 4.13-4.19.

***General Delinquency.*** In Models 1-3 in Table 4.13, both school and neighborhood characteristics are *not* significant. In Model 5, when all controls are included in the model, school and neighborhood characteristics (race and poverty) are still *not* significant. Race (blacks, Hispanic, and Others), GPA and family structure (stepfamilies vs. nuclear families) are significantly related to delinquency.

***Arrest.*** Similar to general delinquency, as shown in Table 4.14, neighborhood and school racial characteristics are *not* significant. In Model 2, when neighborhood and school poverty are the sole variables in the model, neighborhood poverty is significant. Adolescents growing up in more poverty-stricken neighborhoods are more likely to report having ever been arrested. In Model 3, however, the effect of neighborhood poverty disappears. This is also true in all subse-

quent models. In Model 5, when all controls are included, racial background is no longer a significant predictor of arrest. GPA, prior delinquency, and family structure (stepparent, single mother households, and other family structures) are significant predictors of arrest, however. Similar to Table 4.13, neighborhood and school characteristics are *not* significant predictors of arrest.

***Incarceration.*** In Table 4.15, the coefficients and standard errors for incarceration are displayed. Similar to Tables 4.13 and 4.14, neighborhood and school racial composition are *not* significant predictors of incarceration. In Model 2, when I examine neighborhood and school poverty, neighborhood poverty is significantly linked to one's likelihood of incarceration while school SES is non-significant. In Model 3, when both school and neighborhood characteristics are included, neighborhood poverty is still significantly related to incarceration. In Model 5, when all controls are included in the model, neighborhood poverty is no longer significant.

***The Effects of Neighborhood and School Characteristics: Results of Negative Binomial Regression Analyses on Hard Drug Use and Drug and Alcohol Issues***

As shown in the previous analyses, neighborhood poverty is the only significant predictor of neighborhood and school characteristics when examining delinquency, arrest, and incarceration. In this next section, I examine whether or not neighborhood or school characteristics influence hard drug use or drug and alcohol issues.

***Hard drug use.*** In Models 1 and 2 of Table 4.16, neighborhood racial composition and poverty are significant predictors of hard drug use while school characteristics are not. Respondents growing up in neighborhoods with higher poverty rates and a higher concentration of blacks and Hispanics are less likely to use hard drugs compared to those that did not. In Model 3, when school and neighborhood characteristics are both included, the effect of neighborhood SES



disappears while neighborhood racial composition remains significant. However, in Model 4, when racial background, gender, and family structure are added, neighborhood racial composition is no longer significant while neighborhood poverty becomes significant again. In Model 5, when I add all other controls, neighborhood poverty is still a significant predictor—higher poverty is associated with less hard drug use. School SES is also significant, however, in a different direction.

*Alcohol and drug issues.* In Table 4.17, the standardized coefficients and standard errors for drug and alcohol issues are shown. As shown in Models 1 and 2, both school and neighborhood racial composition and poverty rates are important predictors of whether or not a respondent has had drug and alcohol issues. In Model 3, when school and neighborhood characteristics are both included, neighborhood poverty and school racial composition are significant predictors. These relationships remain significant in subsequent models. Additionally, racial background, past behavior, gender, mother's education, and family structure (stepfamilies) are all significant predictors of drug and alcohol use.

*The Effects of Neighborhood and School Characteristics: Results of Logistic Regression Analyses on Welfare Receipt and Teenage Pregnancy*

*Welfare receipt.* Table 4.18 displays the standardized coefficients and standard errors for welfare receipt during young adulthood. As shown in Model 1, neighborhood minority concentration is a strong predictor while school racial composition is not. In Model 2, both neighborhood and school poverty are significant, although neighborhood poverty is a stronger predictor. When both school and neighborhood characteristics are included together, neighborhood and school poverty are associated with welfare receipt while school and neighborhood racial minority composition are not (this relationship remains in Model 4). In Model 5, when I add all controls,

school racial composition becomes significant; however, not in the direction predicted. As the minority concentration increases in schools, the *less* likely a respondent will collect welfare in young adulthood. Neighborhood racial composition is not significant while neighborhood and school poverty are significant predictors of welfare receipt. All of the added controls are also significant.

***Teenage pregnancy.*** The last table addresses the effects of neighborhood and school characteristics on teenage pregnancy. In Model 1 of Table 4.19, only neighborhood minority concentration is significant. As the proportion of blacks and Hispanics increases in a neighborhood, the more likely respondents are to report a teenage pregnancy. In Model 2, neighborhood and school poverty are also significant predictors of teenage pregnancy. In Model 3, when school and neighborhood characteristics are included together, neighborhood and school poverty are still significantly related to teenage pregnancy. This is also true in Model 4, when racial background, gender, and family structure are included. In Model 5, when I include all variables in the model, neighborhood and school characteristics are *not* significant predictors while almost all of the added controls are. Those with higher GPAs and from nuclear are less likely to report a teenage pregnancy compared to those with lower GPAs and from all different family structures (except father headed household). Although mother's education is not a significant predictor, parental receipt of welfare during adolescence is positively associated with teenage pregnancy.

## **DISCUSSION**

At the onset of this chapter, I hypothesized that neighborhoods would have an adverse effect on a respondent's participation in a number of delinquent behaviors. After running a number of analyses, there is no consistent pattern that emerges. When examining the linear relationships for delinquency, arrest, and incarceration, once I add *all controls* to the model, neighbor-

hood and school characteristics are not significant (neighborhood characteristics were also not significant when ran alone). When I examine hard drug use, neighborhood poverty is significantly associated with hard drug use (those growing up in lower income neighborhoods are less likely to have ever used hard drugs; this association is also true when I run analyses for just Hispanics). When examining drug and alcohol issues, neighborhood poverty and school racial composition are both significant. As neighborhood poverty rates increase, respondents are less likely to develop drug and alcohol issues. As school minority concentration increases, the less likely respondents will have drug and alcohol issues. Neighborhood poverty is a stronger predictor, however.

The last two outcomes I examined were welfare receipt during young adulthood and teenage pregnancy. In Model 5, after I included all variables in the model, neighborhood and school poverty and school racial composition are significantly related to welfare receipt. Neighborhood poverty is the strongest predictor, however. Teenage pregnancy is the last variable I examined. Neighborhood poverty is significantly related to teenage pregnancy, while neighborhood racial composition is not (once all controls are included). When I include school characteristics, neighborhood poverty is no longer significant and neither are any of the school characteristics.

The other model specifications included in this chapter examine the effects on individual groups and nonlinear relationships. In regards to neighborhoods, there are only two nonlinear effects—increased neighborhood minority concentration decreases the chances of hard drug use and teenage pregnancy. When I examined the groups separately, neighborhood characteristics did not have a significant effect on blacks, while they were significantly related to Hispanics.

Overall, when neighborhood and school characteristics are included in my models together, neighborhood poverty is the strongest predictor among school and neighborhood characteristics. Although Goldsmith (2009) focused on educational attainment, this contradicts his findings. He found that school racial composition was more of a predictor compared to neighborhood racial composition. In this analysis, when school or neighborhood characteristics were significant, neighborhood poverty had the greatest effect. While he did not include school and neighborhood poverty rates in his analyses, school and neighborhood racial characteristics are often insignificant.

Although past research has cited the negative consequences of attending schools and/or living in neighborhoods that are predominantly minority, this research does not show a negative relationship between school/neighborhood racial composition (segregation) and delinquency, arrest, incarceration, hard drug use, drug and alcohol issues, and welfare receipt. For example, as shown in Chapter 3, increased minority concentration decreases the likelihood of participating in adverse behaviors (overall and for blacks and Hispanics). Similar results are apparent in Chapter 4, at least in regards to Hispanics. These are interesting findings, and need further examination. For instance, do segregated minority schools/neighborhoods have better climates, where there is no racial tension? Or, are students in segregated schools/neighborhoods policed more, which deters them from participating in deviant behavior? While these questions are beyond the scope of this research, they warrant further investigation.

Overall, in both results chapters, racial background, family structure, GPA, and prior background are consistent predictors. Further, as shown in my results and as cited by past literature, blacks and Hispanics are less likely to use hard drugs. Why then, are minorities over repre-

sented in America's prisons and jails, specifically in regards to non-violent crime (Durose and Mumola 2004)? This question will be examined in my final chapter.

**Table 4.1: Weighted Means**

<b>Individual-level variables</b>	<b>Mean</b>	<b>High Minority Concentration (≥50% B &amp; H)</b>	<b>Low Minority Concentration (&lt;50% B &amp; H)</b>
Non-Hispanic white	.67	<b>.07</b>	.78
Non-Hispanic black	.15	<b>.59</b>	.07
Hispanic	.12	<b>.29</b>	.08
Non-Hispanic Asian	.03	<b>.02</b>	.03
Non-Hispanic Other	.005	.004	.006
Alcohol issues (scale; Wave I)	.51	<b>.35</b>	.54
Drug use (scale; Wave I)	.47	<b>.34</b>	.49
Delinquency (scale; Wave I) *	1.77	1.9	1.7
Gender	.50	<b>.49</b>	.51
GPA	2.51	<b>2.13</b>	2.58
Age (Wave I)	15.4	<b>15.7</b>	15.4
Parental welfare receipt	.09	<b>.21</b>	.08
Mother's education	13.0	<b>11.9</b>	13.2
Two-parent (biological)	.54	<b>.37</b>	.58
Two-parent (at least one non-biological)	.17	<b>.14</b>	.17
Single mother	.20	<b>.36</b>	.17
Single father	.03	.03	.03
Other	.06	<b>.10</b>	.05
<b>Neighborhood-level variables</b>			
Poverty (tract level)	.14	<b>.31</b>	.12
White composition	.81	<b>.32</b>	.89
Black composition	.13	<b>.56</b>	.06
Hispanic composition	.07	<b>.23</b>	.04
<b>Dependent variables</b>			
Arrest	.29	.31	.29
General delinquency *	.35	.40	.34
Incarceration	.16	.17	.16
Drug and alcohol issues	1.1	<b>.58</b>	1.19
Use hard drugs (scale)	.77	<b>.30</b>	.85
Welfare recipient	.25	<b>.34</b>	.23
Teenage pregnancy	.17	<b>.23</b>	.16

+ Tables 4.1 through 4.5 display means concerning neighborhood minority concentration

+ Bolded means are significantly different from means in low minority concentrated neighborhoods at 0.0001

+ \*\*p<0.01 \*p<0.05

**Table 4.2**

<b>Respondent Committed a Delinquent Act During Wave I (Weighted Means)</b>	<b>Committed the act</b>	<b>High Minority Concentration (<math>\geq 50\%</math> B &amp; H)</b>	<b>Low Minority Concentration (<math>&lt; 50\%</math> B &amp; H)</b>
Paint graffiti	.09	.10	.09
Steal something worth more than \$50	.05	.04	.05
Steal something worth less than \$50	.20	<b>.16</b>	.21
Shoplift	.23	.22	.24
Damage property	.18	<b>.14</b>	.19
Steal/borrow car without permission	.10	.11	.09
Burglarize property	.05	.04	.05
Sell drugs	.07	.07	.07
In serious fight	.32	<b>.39</b>	.31
In group fight	.20	<b>.25</b>	.19
Seriously injure someone	.18	<b>.23</b>	.17
Pulled a knife/gun	.04	<b>.08</b>	.04
Use/threaten with weapon	.04	<b>.07</b>	.03
Shot or stabbed someone	.01	<b>.03</b>	.01

*Overall N = 11,756 (subpopulation)*

+ Bolded means are significantly different from means in low minority concentrated neighborhoods at 0.0001

**Table 4.3**

<b>Respondent had Drug or Alcohol Issues during Wave I (Weighted Means)</b>	<b>Had an issue</b>	<b>High Minority Concentration (<math>\geq 50\%</math> B &amp; H)</b>	<b>Low Minority Concentration (<math>&lt; 50\%</math> B &amp; H)</b>
<b>Drug Use</b>			
Marijuana	.28	<b>.25</b>	.28
Cocaine *	.04	.03	.04
Inhalants	.07	<b>.03</b>	.07
Other drugs	.09	<b>.03</b>	.10
<b>Alcohol Issues</b>			
Trouble with parents	.10	<b>.07</b>	.11
Interfere with work or school	.03	.02	.03
Trouble with friends	.07	<b>.04</b>	.07
Trouble with dating	.09	<b>.08</b>	.09
Did something but regret	.15	<b>.10</b>	.16
Fight	.07	<b>.04</b>	.07

*Overall N = 11,756 (subpopulation)*

+ Bolded means are significantly different from means in low minority concentrated neighborhoods at 0.0001

+\*\*p<0.001 \*p<0.05

Table 4.4

Respondent Committed a Delinquent Act During Wave IV (Weighted Means)	Did commit the act	High Minority Concentration ( $\geq 50\%$ B & H)	Low Minority Concentration ( $< 50\%$ B & H)
Damage property that didn't belong to you	.05	.06	.05
Steal something worth more than \$50	.02	.02	.02
Steal something worth less than \$50 *	.05	.03	.05
Buy, sell, or hold stolen property	.04	<b>.05</b>	.03
Go into a house or building to steal something	.007	.008	.006
Use or threaten to use a weapon *	.009	.01	.008
Take part in a physical fight with friends	.06	.04	.03
Use someone else's credit card, bank card, or automatic teller card without their permission or knowledge *	.007	.004	.007
Deliberately write a bad check	.02	.02	.02
Get into a serious physical fight	.04	.07	.06
Injured someone	.02	.02	.02
Pulled a knife *	.03	.04	.03
Shot or stabbed someone	.01	.02	.01

*Overall N = 11,756 (subpopulation)*

+ Bolded means are significantly different from means in low minority concentrated neighborhoods at 0.0001

+ \*\*p<0.001 \*p<0.05



Table 4.5

<b>Respondent Used Hard or had Drug or Alcohol Issues during Wave IV (Weighted Means)</b>	<b>Used/Had an issue</b>	<b>High Minority Concentration (<math>\geq 50\%</math> B &amp; H)</b>	<b>Low Minority Concentration (<math>&lt; 50\%</math> B &amp; H)</b>
<b>Hard Drugs</b>			
Cocaine	.21	<b>.09</b>	.24
Crystal meth	.10	<b>.03</b>	.11
Other illegal drugs	.24	<b>.09</b>	.27
Prescription	.19	<b>.07</b>	.21
Steroids *	.03	.01	.03
<b>Alcohol Issues</b>			
Interfere with work or school	.18	<b>.08</b>	.20
Risk	.28	<b>.13</b>	.30
Legal problems	.11	<b>.05</b>	.12
Family problems	.13	<b>.05</b>	.14
<b>Marijuana Issues</b>			
Interfere with work or school	.07	<b>.05</b>	.07
Risk **	.07	.05	.07
Legal problems *	.05	.04	.05
Family problems **	.05	.04	.05
<b>Favorite Drug Issues</b>			
Interfere with work or school	.05	<b>.03</b>	.06
Risk	.05	<b>.03</b>	.06
Legal problems	.02	<b>.01</b>	.02
Family problems	.05	<b>.03</b>	.05
<i>Overall N = 11,756 (subpopulation)</i>			

+ Bolded means are significantly different from means in low minority concentrated neighborhoods at 0.0001

+ \*\*p<0.001 \*p<0.005

**Table 4.6: Negative binomial regression models measuring delinquency**

	Model 1	Model 2	Model 3	Model 4	Model 5
Neighborhood	0.306*		0.195	-0.248	-0.199
minority concen- tration	(0.138)		(0.181)	(0.198)	(0.193)
Neighborhood poverty		0.704*	0.424	0.275	-0.042
		(0.331)	(0.435)	(0.415)	(0.425)
Black				0.470***	0.425***
				(0.108)	(0.118)
Hispanic				0.344**	0.260*
				(0.112)	(0.115)
Asian				-0.263	-0.215
				(0.199)	(0.164)
Other				-0.818*	0.427*
				(0.381)	(0.205)
Gender				1.011***	0.815***
				(0.065)	(0.065)
Delinquency					0.135***
					(0.017)
Drug use					0.103**
					(0.048)
Alcohol issues					-0.036
					(0.032)
GPA					-0.201***
					(0.060)
Welfare					0.143
					(0.136)
Mother's education					0.011
					(0.016)
Stepfamily				0.398***	0.258*
				(0.109)	(0.106)
Mother				0.318***	0.150
				(0.092)	(0.095)
Father				0.263	0.022
				(0.147)	(0.136)
Other family				0.422***	0.162
				(0.125)	(0.129)
F statistic	4.96	4.52	2.92	31.58	31.58

+ Standard errors in parenthesis

+ \*p&lt;0.05 \*\*p&lt;0.01 \*\*\*p&lt;0.001

+ All controls are measured during Wave I

+ N=11,736 (subpopulation)

**Table 4.7: Logistic regression models measuring arrest**

	Model 1	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concentration	0.237 (0.160)		0.021 (0.208)	-0.195 (0.223)	-0.134 (0.204)
Neighborhood poverty		0.821** (0.303)	0.790* (0.392)	0.390 (0.409)	-0.046 (0.398)
Black				0.242* (0.103)	0.149 (0.109)
Hispanic				0.014 (0.113)	-0.207 (0.118)
Asian				-0.574* (0.271)	-0.385 (0.260)
Other				-0.211 (0.434)	-0.349 (0.483)
Gender				1.273*** (0.057)	1.099*** (0.062)
Delinquency					0.127*** (0.016)
Drug use					0.241** (0.048)
Alcohol issues					0.088* (0.034)
GPA					-0.590*** (0.053)
Welfare					0.138 (0.133)
Mother's education					0.020 (0.017)
Stepfamily				0.625*** (0.092)	0.419*** (0.096)
Mother				0.502*** (0.078)	0.201* (0.082)
Father				0.415** (0.156)	-0.120 (0.174)
Other family				0.780*** (0.134)	0.427*** (0.130)
F statistic	2.18	7.34	3.74	59.58	59.75

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=11,736 (subpopulation)

**Table 4.8: Logistic regression models measuring incarceration**

	Model 1	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concentration	0.299 (0.164)		-0.128 (0.211)	-0.557* (0.261)	-0.501* (0.234)
Neighborhood SES		1.351*** (0.350)	1.540*** (0.436)	1.276** (0.451)	0.628 (0.436)
Black				0.336* (0.137)	0.286 (0.150)
Hispanic				0.319* (0.129)	0.060 (0.134)
Asian				-0.510 (0.282)	-0.255 (0.301)
Other				0.134 (0.556)	0.028 (0.620)
Gender				1.308*** (0.085)	1.123*** (0.091)
Delinquency					0.097*** (0.017)
Drug use					0.258*** (0.049)
Alcohol issues					0.080* (0.040)
GPA					-0.602*** (0.065)
Welfare					0.123 (0.141)
Mother's education					-0.039 (0.020)
Stepfamily				0.696*** (0.115)	0.474*** (0.117)
Mother				0.603*** (0.106)	0.280* (0.113)
Father				0.532** (0.190)	-0.003 (0.210)
Other family				0.646 (0.149)	0.207 (0.142)
F statistic	3.33	14.96	8.25	38.60	37.34

+ Standard errors in parenthesis

+ \*p&lt;0.05 \*\*p&lt;0.01 \*\*\*p&lt;0.001

+ All controls are measured during Wave I

+ N=11,736 (subpopulation)

**Table 4.9: Negative binomial regression measuring hard drug use**

	Model 1	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concentration	-1.336*** (0.140)		-1.272*** (0.154)	-0.316* (0.158)	-0.258 (0.148)
Neighborhood SES		-1.804*** (0.332)	-0.235 (0.306)	-0.366 (0.272)	-0.274 (0.269)
Black				-1.451*** (0.133)	-1.411*** (0.131)
Hispanic				-0.201*** (0.069)	-0.300** (0.069)
Asian				-0.575*** (0.170)	-0.504** (0.167)
Other				-0.502 (0.322)	-0.484 (0.341)
Gender				0.441*** (0.041)	0.321*** (0.042)
Delinquency					0.075*** (0.010)
Drug use					0.312*** (0.024)
Alcohol issues					0.006 (0.021)
GPA					-0.138*** (0.033)
Welfare					-0.097 (0.090)
Mother's education					0.041*** (0.010)
Stepfamily				0.288*** (0.059)	0.183** (0.056)
Mother				0.279*** (0.051)	0.145* (0.057)
Father				0.368*** (0.096)	0.085 (0.088)
Other family				0.231** (0.096)	0.011 (0.093)
F statistic	90.80	29.50	45.62	34.34	70.01

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=11,736 (subpopulation)

**Table 4.10: Negative binomial regression measuring drug/alcohol issues**

	Model 1	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concentration	-0.994*** (0.136)		-0.757** (-0.153)	-0.221 (0.162)	-0.180 (0.144)
Neighborhood SES		-1.899*** (0.281)	-0.858*** (0.302)	-1.019*** (0.300)	-0.968** (0.295)
Black				-0.740*** (0.102)	-0.644*** (0.094)
Hispanic				-0.217** (0.076)	-0.220** (0.075)
Asian				-0.534** (0.192)	-0.478** (0.184)
Other				-0.337 (0.272)	-0.321 (0.287)
Gender				0.524*** (0.042)	0.390*** (0.041)
Delinquency					0.105*** (0.009)
Drug use					0.250*** (0.026)
Alcohol issues					0.084*** (0.017)
GPA					-0.053*** (0.036)
Welfare					-0.031 (0.096)
Mother's education					0.057*** (0.011)
Stepfamily				0.222*** (0.058)	0.141* (0.064)
Mother				0.193** (0.062)	0.061* (0.060)
Father				0.101 (0.116)	-0.155 (0.128)
Other family				0.062 (0.096)	-0.099 (0.091)
F statistic	53.22	45.59	29.20	27.54	57.08

+ Standard errors in parenthesis

+ \*p&lt;0.05 \*\*p&lt;0.01 \*\*\*p&lt;0.001

+ All controls are measured during Wave I

+ N=11,736 (subpopulation)

**Table 4.11: Logistic regression measuring welfare receipt**

	Model 1	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concentration	0.799*** (0.185)		-0.300 (0.251)	-0.804** (0.269)	-0.803* (0.254)
Neighborhood SES		3.547*** (0.346)	3.993*** (0.441)	3.567*** (0.451)	2.667*** (0.442)
Black				0.530*** (0.101)	0.361*** (0.108)
Hispanic				0.017 (0.142)	-0.363* (0.150)
Asian				-0.798** (0.301)	-0.672* (0.289)
Other				0.192 (0.406)	0.097 (0.431)
Gender				-0.624*** (0.067)	-0.874*** (0.072)
Delinquency					0.041* (0.016)
Drug use					-0.002 (0.041)
Alcohol issues					-0.005 (0.033)
GPA					-0.590*** (0.056)
Welfare					0.599*** (0.102)
Mother's education					-0.081*** (0.014)
Stepfamily				0.601*** (0.095)	0.432*** (0.096)
Mother				0.663*** (0.085)	0.396*** (0.089)
Father				0.706*** (0.106)	0.342* (0.170)
Other family				0.889*** (0.137)	0.519*** (0.144)
F statistic	18.60	105.21	61.78	33.15	36.14

+ Standard errors in parenthesis

+ \*p&lt;0.05 \*\*p&lt;0.01 \*\*\*p&lt;0.001

+ All controls are measured during Wave I

+ N=11,736 (subpopulation)

**Table 4.12: Logistic regression measuring teenage pregnancy**

	Model 1	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concentration	0.830*** (0.189)		0.138 (0.272)	-0.521 (0.303)	-0.501 (0.276)
Neighborhood SES		2.703*** (0.328)	2.495*** (0.484)	2.183*** (0.510)	1.558** (0.484)
Black				0.503*** (0.155)	0.363** (0.153)
Hispanic				0.502** (0.165)	0.234 (0.161)
Asian				-0.106 (0.260)	0.075 (0.225)
Other				0.648 (0.433)	0.608 (0.414)
Gender				-1.034*** (0.068)	-1.358*** (0.075)
Delinquency					0.084*** (0.017)
Drug use					0.076 (0.044)
Alcohol issues					0.017 (0.034)
GPA					-0.598*** (0.060)
Welfare					0.308** (0.095)
Mother's education					-0.032 (0.020)
Stepfamily				0.565*** (0.074)	0.370*** (0.086)
Mother				0.607*** (0.087)	0.336*** (0.097)
Father				0.379 (0.238)	-0.059 (0.260)
Other family				1.409*** (0.142)	1.089*** (0.137)
F statistic	19.19	68.05	33.50	44.50	51.19

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=11,736 (subpopulation)



**Table 4.13: Negative binomial regression measuring delinquency**

	Model 1	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concentration	0.193 (0.185)		0.167 (0.211)	-0.090 (0.228)	-0.038 (0.226)
Neighborhood SES		0.334 (0.367)	0.140 (0.447)	-0.061 (0.418)	-0.315 (0.422)
School minority concentration	0.135 (0.220)		-0.192 (0.252)	-0.250 (0.249)	-0.247 (0.247)
School SES		0.379 (0.226)	0.355 (0.261)	0.406 (0.240)	0.340 (0.248)
Black				0.470*** (0.108)	0.429*** (0.117)
Hispanic				0.364** (0.116)	0.284* (0.119)
Asian				-0.238 (0.204)	-0.220 (0.184)
Other				-0.832* (0.377)	-0.826* (0.416)
Gender				1.015*** (0.065)	0.819*** (0.065)
Delinquency					0.135*** (0.017)
Drug use					0.157** (0.049)
Alcohol issues					-0.033 (0.033)
GPA					-0.199*** (0.056)
Welfare					0.136 (0.135)
Mother's education					0.012 (0.016)
Stepfamily				0.391*** (0.107)	0.252* (0.104)
Mother				0.318*** (0.093)	0.151 (0.095)
Father				0.264 (0.146)	0.026 (0.135)
Other family				0.425*** (0.123)	0.169 (0.127)
F statistic	2.44	3.04	1.81	28.72	28.72

+ Standard errors in parenthesis  
+ N=11,736 (subpopulation)

+ All controls are measured during Wave I  
+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

**Table 4.14: Logistic regression measuring arrest**

	Model 1	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concentration	0.472 (0.247)		0.223 (0.335)	-0.012 (0.325)	0.012 (0.270)
Neighborhood SES		0.985** (0.351)	0.813 (0.495)	0.489 (0.500)	0.204 (0.436)
School minority concentration	-0.271 (0.218)		-0.217 (0.282)	-0.230 (0.274)	-0.164 (0.231)
School SES		-0.168 (0.235)	-0.062 (0.297)	-0.153 (0.272)	-0.360 (0.250)
Black				0.277** (0.103)	0.186 (0.111)
Hispanic				0.053 (0.112)	-0.176 (0.119)
Asian				-0.546* (0.263)	-0.365 (0.251)
Other				-0.191 (0.441)	-0.331 (0.491)
Gender				1.274*** (0.058)	1.098*** (0.062)
Delinquency					0.127*** (0.016)
Drug use					0.238*** (0.048)
Alcohol issues					0.084* (0.034)
GPA					-0.597*** (0.053)
Welfare					0.148 (0.134)
Mother's education					0.019 (0.017)
Stepfamily				0.624*** (0.093)	0.418*** (0.097)
Mother				0.507*** (0.079)	0.204* (0.083)
Father				0.414** (0.155)	-0.125 (0.174)
Other family				0.783*** (0.134)	0.423*** (0.130)
F statistic	1.91	4.15	2.38	52.45	51.82

+ Standard errors in parenthesis

+ N=11,736 (subpopulation)

+ All controls are measured during Wave I

+ \*p&lt;0.05 \*\*p&lt;0.01 \*\*\*p&lt;0.001

**Table 4.15: Logistic regression measuring incarceration**

	Model 1	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concentration	0.425 (0.261)		-0.043 (0.344)	-0.384 (0.347)	-0.403 (0.268)
Neighborhood SES		1.411*** (0.396)	1.515** (0.521)	1.274* (0.529)	0.812 (0.466)
School minority concentration	-0.147 (0.265)		-0.098 (0.289)	-0.233 (0.298)	-0.113 (0.253)
School SES		-0.027 (0.278)	0.017 (0.301)	-0.025 (0.295)	-0.367 (0.315)
Black				0.363** (0.137)	0.313* (0.149)
Hispanic				0.355** (0.132)	0.083 (0.141)
Asian				-0.482 (0.284)	-0.243 (0.307)
Other				0.149 (0.562)	0.039 (0.622)
Gender				1.309*** (0.085)	1.122*** (0.091)
Delinquency					0.098*** (0.017)
Drug use					0.256*** (0.049)
Alcohol issues					0.077 (0.040)
GPA					-0.607*** (0.065)
Welfare					0.130 (0.141)
Mother's education					-0.040* (0.020)
Stepfamily				0.694*** (0.115)	0.473*** (0.118)
Mother				0.607*** (0.107)	0.282* (0.113)
Father				0.531** (0.189)	-0.010 (0.209)
Other family				0.649*** (0.149)	0.205 (0.142)
F statistic	2.05	7.78	4.57	33.14	33.67

+ Standard errors in parenthesis  
+ N=11,736 (subpopulation)

+ All controls are measured during Wave I  
+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

**Table 4.16: Negative binomial regression measuring hard drug use**

	Model 1	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concentration	-1.193*** (0.149)		-1.036*** (0.184)	-0.175 (0.183)	-0.097 (0.191)
Neighborhood SES		-1.650*** (0.368)	-0.478 (0.362)	-0.696* (0.333)	-0.723* (0.334)
School minority concentration	-0.159 (0.176)		-0.289 (0.189)	-0.196 (0.157)	-0.235 (0.164)
School SES		-0.154 (0.238)	0.246 (0.242)	0.358 (0.160)	0.518* (0.235)
Black				-1.462*** (0.123)	-1.426** (0.121)
Hispanic				-0.263*** (0.067)	-0.289*** (0.065)
Asian				-0.561*** (0.172)	-0.487** (0.169)
Other				-0.507 (0.319)	-0.494 (0.338)
Gender				0.443*** (0.040)	0.324*** (0.042)
Delinquency					0.074*** (0.010)
Drug use					0.316*** (0.025)
Alcohol issues					0.010 (0.020)
GPA					-0.134*** (0.032)
Welfare					-0.108 (0.089)
Mother's education					0.043*** (0.010)
Stepfamily				0.287*** (0.059)	0.182*** (0.056)
Mother				0.279*** (0.051)	0.145* (0.057)
Father				0.372*** (0.895)	0.091 (0.087)
Other family				0.234** (0.953)	0.018 (0.092)
F statistic	56.79	14.76	28.43	41.95	69.11

+ Standard errors in parenthesis

+ N=11,736 (subpopulation)

+ All controls are measured during Wave I

+ \*p&lt;0.05 \*\*p&lt;0.01 \*\*\*p&lt;0.001

**Table 4.17: Negative binomial regression measuring drug/alcohol issues**

	Model 1	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concentration	-0.378** (0.130)		-0.108 (0.173)	0.266 (0.181)	0.320 (0.169)
Neighborhood SES		-1.293*** (0.281)	-0.900** (0.329)	-1.022** (0.338)	-1.120*** (0.328)
School minority concentration	-0.719*** (0.141)		-0.727*** (0.173)	-0.629*** (0.179)	-0.654*** (0.171)
School SES		-0.587** (0.211)	-0.044 (0.223)	-0.050 (0.234)	0.120 (0.228)
Black				-0.686*** (0.099)	-0.602*** (0.090)
Hispanic				-0.124 (0.079)	-0.133 (0.080)
Asian				-0.470** (0.171)	-0.412* (0.166)
Other				-0.278 (0.279)	-0.274 (0.295)
Gender				0.524*** (0.042)	0.389*** (0.041)
Delinquency					0.104*** (0.009)
Drug use					0.249*** (0.026)
Alcohol issues					0.085*** (0.018)
GPA					-0.058 (0.036)
Welfare					-0.020 (0.095)
Mother's education					0.058*** (0.011)
Stepfamily				0.224*** (0.058)	0.140* (0.064)
Mother				0.195** (0.060)	0.063 (0.059)
Father				0.107 (0.118)	-0.145 (0.130)
Other family				0.082 (0.096)	-0.082 (0.091)
F statistic	37.85	22.88	21.53	27.35	55.99

+ Standard errors in parenthesis  
+ N=11,736 (subpopulation)

+ All controls are measured during Wave I  
+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

**Table 4.18: Logistic regression measuring welfare receipt**

	Model 1	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concentration	1.040*** (0.250)		0.203 (0.309)	-0.280 (0.325)	-0.269 (0.286)
Neighborhood SES		2.727*** (0.371)	2.850*** (0.502)	2.505*** (0.503)	1.912*** (0.453)
School minority concentration	-0.282 (0.280)		-0.747* (0.297)	-0.817** (0.296)	-0.798** (0.257)
School SES		0.870** (0.286)	1.357*** (0.353)	1.286*** (0.328)	0.924** (0.289)
Black				0.539*** (0.100)	0.391*** (0.107)
Hispanic				0.093 (0.146)	-0.267 (0.148)
Asian				-0.715* (0.304)	-0.585* (0.290)
Other				0.224 (0.402)	0.137 (0.428)
Gender				-0.628*** (0.067)	-0.874*** (0.072)
Delinquency					0.038* (0.016)
Drug use					0.002 (0.041)
Alcohol issues					0.0004 (0.034)
GPA					-0.588*** (0.056)
Welfare					0.581*** (0.103)
Mother's education					0.077*** (0.015)
Stepfamily				0.598*** (0.095)	0.430*** (0.097)
Mother				0.662*** (0.087)	0.401*** (0.091)
Father				0.715*** (0.162)	0.373* (0.170)
Other family				0.911*** (0.135)	0.543*** (0.142)
F statistic	13.05	48.58	31.53	33.36	35.29

+ Standard errors in parenthesis  
+ N=11,736 (subpopulation)

+ All controls are measured during Wave I  
+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

**Table 4.19: Logistic regression measuring teenage pregnancy**

	Model 1	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concentration	0.552** (0.197)		0.027 (0.277)	-0.386 (0.304)	-0.399 (0.277)
Neighborhood SES		1.797*** (0.481)	1.764** (0.643)	1.390* (0.699)	1.025 (0.627)
School minority concentration	0.327 (0.209)		-0.002 (0.253)	-0.267 (0.298)	-0.208 (0.282)
School SES		0.961** (0.354)	0.957* (0.423)	1.010* (0.448)	0.726 (0.417)
Black				0.470** (0.156)	0.347* (0.152)
Hispanic				0.505** (0.174)	0.249 (0.166)
Asian				-0.086 (0.275)	0.099 (0.233)
Other				0.650 (0.430)	0.615 (0.414)
Gender				-1.104*** (0.068)	-1.355*** (0.075)
Delinquency					0.083*** (0.017)
Drug use					0.081 (0.044)
Alcohol issues					0.023 (0.034)
GPA					-0.591*** (0.060)
Welfare					0.287** (0.096)
Mother's education					-0.029 (0.020)
Stepfamily				0.563*** (0.075)	0.362*** (0.085)
Mother				0.600*** (0.086)	0.336*** (0.096)
Father				0.384 (0.236)	-0.047 (0.257)
Other family				1.422*** (0.140)	1.103*** (0.135)
F statistic	9.11	34.25	18.16	39.46	47.20

+ Standard errors in parenthesis  
+ N=11,736 (subpopulation)

+ All controls are measured during Wave I  
+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

**Table 4.20: Regression models measuring delinquency for blacks**

	Model 1	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concen- tration	-0.440 (0.258)		-0.237 (0.262)	-0.209 (0.245)	-0.215 (0.261)
Neighborhood SES		-1.107* (0.515)	-0.831 (0.539)	-0.871 (0.498)	-0.966 (0.498)
Gender				0.661*** (0.134)	0.467*** (0.142)
Delinquency					0.195*** (0.034)
Drug use					-0.058 (0.127)
Alcohol issues					-0.194** (0.067)
GPA					-0.183 (0.115)
Welfare					0.205 (0.224)
Mother's education					0.027 (0.034)
Stepfamily				0.446* (0.219)	0.215 (0.176)
Mother				0.336* (0.154)	0.221 (0.179)
Father				0.471 (0.562)	0.179 (0.469)
Other family				0.320 (0.199)	0.185 (0.221)
F statistic	2.91	4.62	2.47	6.03	7.24

+ Standard errors in parenthesis

+ \*p&lt;0.05 \*\*p&lt;0.01 \*\*\*p&lt;0.001

+ All controls are measured during Wave I

+ N=2,463 (Black)



**Table 4.21: Regression models measuring arrest for blacks**

	Model	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concentration	-0.118 (0.283)		0.061 (0.461)	-0.157 (0.323)	-0.284 (0.261)
Neighborhood SES		-0.102 (0.409)	-0.135 (0.335)	-0.035 (0.431)	0.139 (0.405)
Gender				1.190*** (0.141)	1.015*** (0.145)
Delinquency					0.199*** (0.030)
Drug use					0.196 (0.124)
Alcohol issues					-0.012 (0.095)
GPA					-0.579*** (0.113)
Welfare					0.144 (0.183)
Mother's education					-0.001 (0.034)
Stepfamily				0.923** (0.210)	0.663** (0.223)
Mother				0.470* (0.149)	0.145 (0.175)
Father				0.631 (0.425)	0.010 (0.341)
Other family				0.467 (0.251)	0.223 (0.247)
F statistic	0.17	0.06	0.09	13.65	13.35

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=2,463 (Black)

**Table 4.22: Regression models measuring incarceration for blacks**

	Model	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concen- tration	-0.327 (0.283)		-0.010 (0.803)	-0.372 (0.369)	-0.304 (0.201)
Neighborhood SES		-0.408 (0.592)	-0.324 (0.392)	-0.119 (0.746)	0.685 (0.434)
Gender				1.296*** (0.195)	1.112*** (0.192)
Delinquency					0.097*** (0.017)
Drug use					0.251* (0.048)
Alcohol issues					0.078 (0.040)
GPA					-0.615*** (0.064)
Welfare					0.130 (0.140)
Mother's education					-0.036 (0.019)
Stepfamily				0.807** (0.262)	0.481 (0.216)
Mother				0.432* (0.187)	0.320** (0.106)
Father				1.145* (0.452)	-0.004 (0.207)
Other family				0.382 (0.243)	0.246 (0.140)
F statistic	1.33	0.48	0.70	9.54	46.46

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=2,463 (Black)

**Table 4.23: Regression models measuring hard drug use for blacks**

	Model	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concentration	-0.424 (0.253)		-0.006 (0.296)	0.029 (0.270)	-0.164 (0.252)
Neighborhood SES		-1.574** (0.504)	-1.566** (0.534)	-1.843** (0.540)	-1.549*** (0.438)
Gender				0.692*** (0.151)	0.504*** (0.152)
Delinquency					0.194*** (0.032)
Drug use					0.406** (0.131)
Alcohol issues					-0.177 (0.119)
GPA					0.058 (0.141)
Welfare					0.211 (0.190)
Mother's education					0.031 (0.039)
Stepfamily				0.878** (0.257)	0.719** (0.241)
Mother				0.670** (0.255)	0.599** (0.214)
Father				0.975 (0.578)	0.595 (0.445)
Other family				0.356 (0.359)	0.254 (0.296)
F statistic	2.81	9.77	4.98	4.74	10.88

+ Standard errors in parenthesis

+ \*p&lt;0.05 \*\*p&lt;0.01 \*\*\*p&lt;0.001

+ All controls are measured during Wave I

+ N=2,463 (Black)

**Table 4.24: Regression models measuring drug and alcohol issues for blacks**

	Model	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concentration	-0.336 (0.268)		-0.034 (0.282)	0.038 (0.210)	-0.041 (0.201)
Neighborhood SES		-1.111 (0.591)	-1.065 (0.629)	-1.412* (0.578)	-1.020* (0.427)
Gender				0.919*** (0.178)	0.828*** (0.176)
Delinquency					0.141*** (0.025)
Drug use					0.385*** (0.115)
Alcohol issues					-0.093 (0.105)
GPA					-0.074 (0.128)
Welfare					-0.003 (0.181)
Mother's education					0.089* (0.035)
Stepfamily				0.514* (0.206)	0.242 (0.208)
Mother				0.414* (0.171)	0.259 (0.179)
Father				-0.000 (0.433)	-0.191 (0.502)
Other family				0.031 (0.243)	0.032 (0.263)
F statistic	1.56	3.53	1.82	5.22	12.91

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=2,463 (Black)

**Table 4.25: Regression models measuring welfare receipt for blacks**

	Model	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concen- tration	0.347 (0.261)		-0.121 (0.303)	-0.138 (0.365)	-0.177 (0.276)
Neighborhood SES		1.586** (0.573)	1.731** (0.636)	1.422* (0.653)	1.128* (0.559)
Gender				-0.975*** (0.137)	-1.290*** (0.158)
Delinquency					0.089* (0.042)
Drug use					0.162 (0.113)
Alcohol issues					0.035 (0.071)
GPA					-0.585*** (0.110)
Welfare					0.741*** (0.200)
Mother's education					-0.096** (0.032)
Stepfamily				0.595** (0.192)	0.345 (0.210)
Mother				0.915*** (0.164)	0.556** (0.197)
Father				1.117** (0.388)	0.637 (0.475)
Other family				0.998*** (0.283)	0.628* (0.300)
F statistic	1.76	7.65	4.17	20.69	21.65

+ Standard errors in parenthesis

+ \*p&lt;0.05 \*\*p&lt;0.01 \*\*\*p&lt;0.001

+ All controls are measured during Wave I

+ N=2,463 (Black)

**Table 4.26: Regression models measuring teenage pregnancy for blacks**

	Model	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concen- tration	0.265 (0.250)		0.164 (0.350)	0.192 (0.375)	0.166 (0.303)
Neighborhood SES		0.572 (0.515)	0.377 (0.710)	0.095 (0.749)	-0.078 (0.674)
Gender				-1.064*** (0.137)	-1.286*** (0.151)
Delinquency					0.083* (0.033)
Drug use					0.128 (0.107)
Alcohol issues					-0.047 (0.093)
GPA					-0.440*** (0.118)
Welfare					0.432* (0.166)
Mother's education					-0.014 (0.044)
Stepfamily				0.445 (0.228)	0.247 (0.044)
Mother				0.463** (0.164)	0.194 (0.182)
Father				0.716 (0.507)	0.315 (0.615)
Other family				0.723*** (0.199)	0.486* (0.206)
F statistic	1.13	1.24	0.82	10.57	13.94

+ Standard errors in parenthesis

+ \*p&lt;0.05 \*\*p&lt;0.01 \*\*\*p&lt;0.001

+ All controls are measured during Wave I

+ N=2,463 (Black)

**Table 4.27: Regression models measuring delinquency for Hispanics**

	Model 1	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concentration	-0.158 (0.242)		-0.526 (0.343)	-0.560 (0.371)	-0.481 (0.408)
Neighborhood SES		0.590 (0.646)	1.513 (0.912)	1.596 (0.953)	1.276 (1.080)
Gender				0.830*** (0.196)	0.718** (0.189)
Delinquency					0.078*** (0.029)
Drug use					-0.049 (0.094)
Alcohol issues					0.080 (0.097)
GPA					-0.285 (0.178)
Welfare					0.145 (0.390)
Mother's education					0.025 (0.032)
Stepfamily				0.101 (0.255)	-0.047 (0.243)
Mother				0.142 (0.294)	0.023 (0.251)
Father				0.643 (0.448)	0.338 (0.442)
Other family				-0.268 (0.345)	-0.456 (0.389)
F statistic	0.43	0.72	1.50	4.93	3.56

+ Standard errors in parenthesis

+ \*p<0.05 \*\*p<0.01 \*\*\*p<0.001

+ All controls are measured during Wave I

+ N=1,973 (Hispanic)

**Table 4.28: Regression models measuring arrest for Hispanics**

	Model	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concentration	-0.588* (0.258)		-1.206*** (0.303)	-1.094*** (0.324)	-0.901** (0.345)
Neighborhood SES		0.110 (0.771)	2.298* (0.897)	1.881* (0.952)	1.461 (1.053)
Gender				1.246*** (0.140)	1.156*** (0.141)
Delinquency					0.060 (0.034)
Drug use					0.314** (0.116)
Alcohol issues					0.132 (0.082)
GPA					-0.571*** (0.117)
Welfare					0.180 (0.256)
Mother's education					0.033 (0.033)
Stepfamily				0.366 (0.225)	0.128 (0.267)
Mother				0.373 (0.232)	0.082 (0.229)
Father				0.605 (0.411)	0.114 (0.490)
Other family				0.957* (0.428)	0.785 (0.420)
F statistic	5.19	0.02	6.50	15.94	15.43

+ Standard errors in parenthesis

+ \*p&lt;0.05 \*\*p&lt;0.01 \*\*\*p&lt;0.001

+ All controls are measured during Wave I

+ N=1,973 (Hispanic)



**Table 4.29: Regression models measuring incarceration for Hispanics**

	Model	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concen- tration	-0.697** (0.320)		-1.371*** (0.375)	-1.232** (0.404)	-1.166** (0.394)
Neighborhood SES		0.074 (0.846)	2.511** (0.884)	2.115 (0.948)	1.677 (1.024)
Gender				1.270*** (0.188)	1.205*** (0.194)
Delinquency					0.024 (0.035)
Drug use					0.409*** (0.112)
Alcohol issues					0.134 (0.091)
GPA					-0.512** (0.160)
Welfare					0.038 (0.335)
Mother's education					-0.048 (0.037)
Stepfamily				0.242 (0.303)	0.051 (0.359)
Mother				0.500* (0.252)	0.281 (0.249)
Father				0.673 (0.498)	0.209 (0.606)
Other family				0.120 (0.390)	-0.072 (0.420)
F statistic	4.75	0.01	7.18	11.61	7.78

+ Standard errors in parenthesis

+ \*p&lt;0.05 \*\*p&lt;0.01 \*\*\*p&lt;0.001

+ All controls are measured during Wave I

+ N=1,973 (Hispanic)

**Table 4.30: Regression models measuring hard drug use for Hispanics**

	Model	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concen- tration	-1.022*** (0.194)		-1.396*** (0.251)	-1.381*** (0.277)	-1.105*** (0.287)
Neighborhood SES		-0.957 (0.649)	1.414* (0.565)	1.480* (0.586)	1.367* (0.571)
Gender				0.462*** (0.133)	0.366** (0.153)
Delinquency					0.064* (0.026)
Drug use					0.353*** (0.079)
Alcohol issues					-0.018 (0.054)
GPA					-0.169 (0.094)
Welfare					-0.061 (0.241)
Mother's education					0.024 (0.038)
Stepfamily				0.200 (0.189)	0.090 (0.209)
Mother				-0.014 (0.172)	-0.147 (0.189)
Father				0.464 (0.244)	0.056 (0.212)
Other family				0.031 (0.271)	-0.083 (0.258)
F statistic	27.74	0.63	3.65	6.38	12.54

+ Standard errors in parenthesis

+ \*p&lt;0.05 \*\*p&lt;0.01 \*\*\*p&lt;0.001

+ All controls are measured during Wave I

+ N=1,973 (Hispanic)

**Table 4.31: Regression models measuring drug and alcohol issues for Hispanics**

	Model 1	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concentration	-0.914*** (0.277)		-1.041*** (0.313)	-1.018** (0.340)	-0.768* (0.319)
Neighborhood SES		-1.318 (0.764)	0.508 (0.650)	0.319 (0.628)	0.145 (0.648)
Gender				0.603*** (0.138)	0.494*** (0.134)
Delinquency					0.123*** (0.020)
Drug use					0.268*** (0.077)
Alcohol issues					0.026 (0.044)
GPA					-0.033 (0.105)
Welfare					0.097 (0.196)
Mother's education					0.038 (0.027)
Stepfamily				0.348 (0.201)	0.257 (0.210)
Mother				0.068 (0.177)	-0.067 (0.168)
Father				0.175 (0.335)	-0.233 (0.317)
Other family				0.014 (0.326)	-0.038 (0.304)
F statistic	10.87	2.97	5.94	4.49	10.68

+ Standard errors in parenthesis

+ \*p&lt;0.05 \*\*p&lt;0.01 \*\*\*p&lt;0.001

+ All controls are measured during Wave I

+ N=1,973 (Hispanic)

**Table 4.32: Regression models measuring welfare receipt for Hispanics**

	Model	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concentration	0.056 (0.277)		-1.182** (0.303)	-1.138** (0.426)	-1.091* (0.437)
Neighborhood SES		2.450*** (0.718)	4.587*** (1.116)	4.469** (1.197)	3.896** (1.207)
Gender				-0.927*** (0.175)	-1.151*** (0.188)
Delinquency					0.048 (0.034)
Drug use					-0.011 (0.115)
Alcohol issues					0.042 (0.062)
GPA					-0.617*** (0.141)
Welfare					0.436 (0.254)
Mother's education					0.014 (0.033)
Stepfamily				0.665* (0.259)	0.452 (0.283)
Mother				0.834*** (0.210)	0.614* (0.237)
Father				-0.488 (0.808)	-0.735 (0.784)
Other family				-0.901* (0.347)	0.792* (0.340)
F statistic	0.04	11.64	8.51	9.92	7.36

+ Standard errors in parenthesis

+ \*p&lt;0.05 \*\*p&lt;0.01 \*\*\*p&lt;0.001

+ All controls are measured during Wave I

+ N=1,973 (Hispanic)

**Table 4.33: Regression models measuring teenage pregnancy for Hispanics**

	Model	Model 2	Model 3	Model 4	Model 5
Neighborhood minority concen- tration	-0.785* (0.320)		-1.789*** (0.457)	-1.784*** (0.453)	-1.788*** (0.480)
Neighborhood SES		0.528 (0.994)	3.709** (1.205)	3.680*** (1.175)	3.214** (1.194)
Gender				-0.972*** (0.212)	-1.295*** (0.158)
Delinquency					0.126** (0.040)
Drug use					0.119 (0.106)
Alcohol issues					-0.021 (0.071)
GPA					-0.633*** (0.158)
Welfare					0.155 (0.238)
Mother's education					-0.013 (0.040)
Stepfamily				0.862*** (0.222)	0.613* (0.241)
Mother				0.491* (0.238)	0.251 (0.265)
Father				-0.043 (0.647)	-0.361 (0.736)
Other family				1.318*** (0.386)	1.196** (0.436)
F statistic	6.02	0.28	7.70	9.91	7.68

+ Standard errors in parenthesis

+ \*p&lt;0.05 \*\*p&lt;0.01 \*\*\*p&lt;0.001

+ All controls are measured during Wave I

+ N=1,973 (Hispanic)

**Table 4.34**

	<b>Delinquency</b>		<b>Arrested</b>	
	Model 1	Model 5	Model 1	Model 5
Neighborhood racial composition	1.104* (0.556)	0.567 (0.567)	0.823 (0.476)	0.635 (0.543)
Quadratic term (neighborhood race)	-0.921 (.592)	-0.844 (0.566)	-0.676 (0.550)	-0.849 (0.530)
F statistic	3.06	36.04	2.19	58.67

**Table 4.35**

	<b>Incarceration</b>		<b>Hard drugs</b>	
	Model 1	Model 5	Model 1	Model 5
Neighborhood racial composition	1.271* (0.559)	0.557 (0.636)	-0.467 (0.411)	0.545 (0.384)
Quadratic term (neighborhood race)	-1.118 (0.612)	-1.156 (0.620)	-1.078* (0.467)	-1.018* (0.431)
F statistic	3.21	35.63	44.07	68.91

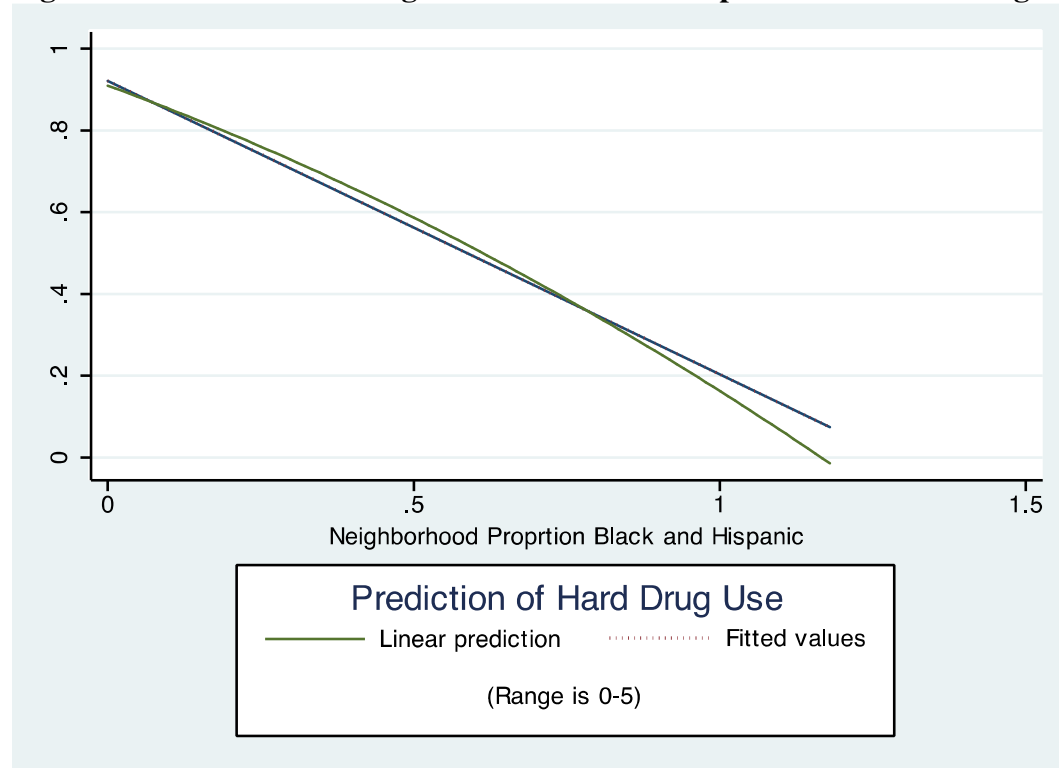
**Table 4.36**

	<b>Drug issues</b>		<b>Teen Pregnancy</b>	
	Model 1	Model 5	Model 1	Model 5
Neighborhood racial composition	-1.260* (0.398)	-0.480 (0.416)	2.422*** (0.593)	0.653 (0.668)
Quadratic term (neighborhood race)	0.313 (0.455)	0.339 (0.430)	-1.796** (0.652)	-1.239 (0.700)
F statistic	28.36	58.80	14.07	48.02

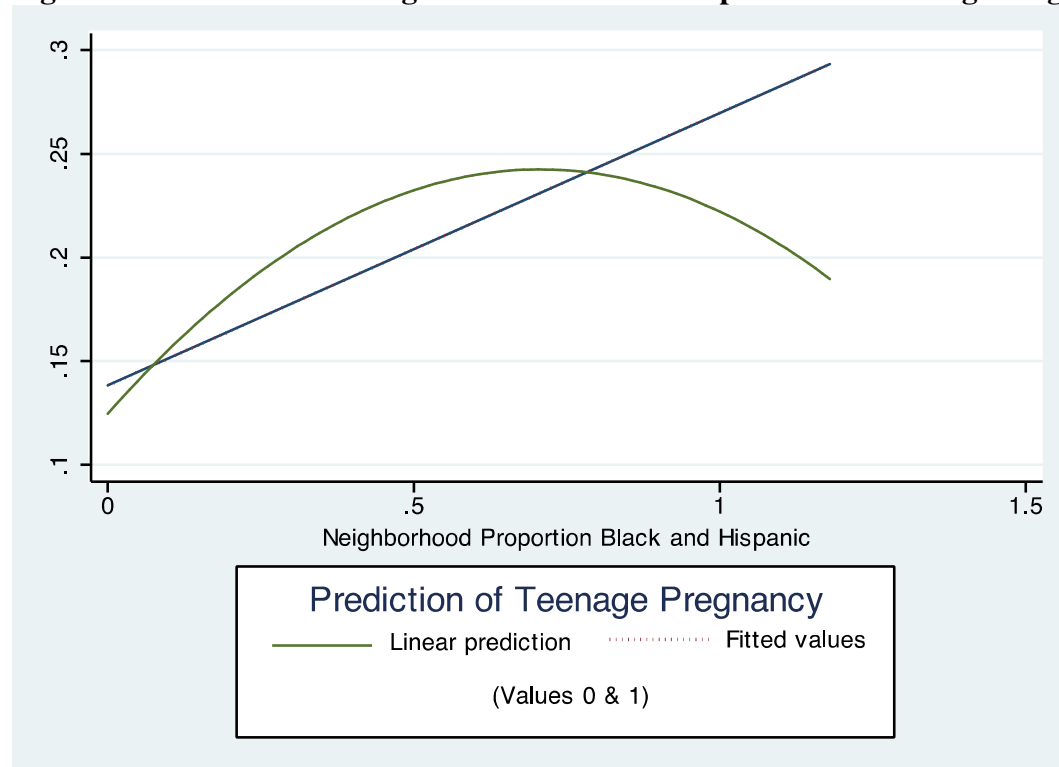
**Table 4.37**

<b>Welfare receipt</b>		
	<b>Model 1</b>	<b>Model 5</b>
Neighborhood racial composition	0.312 (0.557)	-1.715** (0.627)
Quadratic term (neighborhood race)	0.551 (.574)	0.984 (0.576)
F statistic	10.45	34.99

**Figure 4.1: The Effect of Neighborhood Racial Composition on Hard Drug Use**



**Figure 4.2: The Effect of Neighborhood Racial Composition on Teenage Pregnancy**





## CHAPTER FIVE

### CONCLUSION

#### SUMMATION OF FINDINGS

Shortly after school desegregation plans were implemented, scholars began to study the effect of racial integration on academic outcomes, particularly academic achievement, attainment, and retention. These findings indicated how school integration positively impacted blacks while not adversely affecting whites. Beginning in the 1970's, scholars began to focus their attention on post-secondary outcomes, to see if school integration affected the racial composition of one's social network or the college they attended. Similarly, the majority of studies showed the positive consequences of desegregation. While the effects of school desegregation have been thoroughly examined, limited research exists on how school racial composition affects adverse outcomes, such as delinquency, drug and alcohol issues, early childbearing, and welfare receipt. The focus of this project was to examine these relationships, while also looking at the influence of neighborhood characteristics. Based on past literature on the consequences of racially segregated schools and neighborhoods, I hypothesized that students who attended/lived in schools/neighborhoods with a higher concentration of racial minorities would be more likely to participate in delinquent acts, get arrested, be incarcerated, have issues with drugs and alcohol, have a teenage pregnancy (or their partner did), and collect welfare during young adulthood. While past literature and theory guided my research questions, overall, my findings did not support my hypotheses. First, when school and neighborhood racial composition was significant, it was in a direction not predicted. Second, family structure, racial background, and prior background were the most significant and consistent predictors.

In Chapter Three, I examined the impact of school racial composition. Contrary to what I hypothesized, at least in regards to my first analyses measuring the linear effect, school racial

composition was not significantly related to delinquency, arrest, or incarceration. It was related, however, to hard drug use, drug and alcohol issues, and welfare receipt; yet, not in the expected direction. As school minority concentration increases, respondents are *less* likely to report hard drug use, drug and alcohol issues, and welfare collection. School racial composition is also significantly related to teenage pregnancy. However, when I control for school SES, school racial composition is no longer significant. This is similar to Mayer's (1991) findings in her study on teenage pregnancy.

When I included a quadratic term to test for nonlinear effects, school racial composition was significant, though not in the expected direction. In fact, for almost all of the variables tested here, as school segregation increases (specifically when the black and Hispanic population was over 50%), the likelihood of participating in delinquent behavior or getting arrested and incarcerated *decreases*. The effect of school racial composition was more extreme for hard drug use and alcohol and drug issues. Any increase in the proportion of minority students in a school corresponded to a decrease in hard drug use and alcohol and drug issues.

Although not examined in this analysis, other school characteristics could impact the likelihood of participating (or not) in delinquent behavior. While in school, almost every movement a student makes is monitored and regulated by an adult (Ferguson 2001). As posited by Ferguson, "the school reads [black boys] expression and display of masculine naughtiness as a sign of an inherent vicious, insubordinate nature that as a threat to the order must be controlled" (2001: 86). The policing (e.g., harsher discipline, metal detectors) of black boys' could explain why school segregation does not necessarily lead to different types of delinquency. While blacks are more likely to commit delinquent acts (or be caught doing them), students in schools that are

predominantly minority may, overall, be policed more which decreases an individual's likelihood of delinquent behavior, at least while in school.

In Chapter 4, I examined the impact of neighborhood racial composition and poverty. As shown in my initial tables, neighborhood minority concentration does not have a significant impact on delinquency and arrest, and it is negatively related to incarceration (Model 5) and welfare receipt (Model 5). When examining the impact of neighborhood racial composition and neighborhood poverty, neighborhood poverty is the strongest overall predictor. It had a significant effect on teenage pregnancy, welfare receipt, and drug and alcohol issues (when all controls were included).

To examine whether neighborhood or school racial composition had a greater impact, I ran a number of regressions, which included both neighborhood and school characteristics. When racial composition did matter (after controlling for all variables), it only mattered in schools and for drug and alcohol issues and welfare receipt. Overall, neighborhood poverty was the most consistent and significant predictor of behavioral outcomes (when examining just school and neighborhood characteristics). Neighborhood poverty was associated with hard drug use, drug and alcohol issues, and welfare receipt.

My findings on the relationship between delinquency and school racial composition contradict others scholars' work (Eitle and Eitle 2003; Lafree and Arum 2006; Johnson 2011). Lafree and Arum (2006) found that school racial composition was significantly related to incarceration. Specifically, they found that when blacks attended schools with a higher proportion of white students, they were less likely to be incarcerated during adulthood. This same trend holds true for Johnson's work. He found that attending school with fewer minorities was significantly related to an individual's likelihood of incarceration. While Lafree and Arum (2006) and John-

son (2011) found that the percent of white students in a school was significantly associated with a decreased likelihood of incarceration, Eitle and Eitle (2003) found that violent crime was more prominent in schools with lower levels of school district segregation. Scholars have also cited the positive relationship between neighborhood racial composition, poverty, and delinquency (Wilson 1987; Massey and Denton 1993; Ludwig, Duncan, and Hirschfield 2001). However, in this analysis, school and neighborhood characteristics do not increase one's likelihood of participating in delinquent behavior. And depending on what analysis, segregation does not always have a negative impact.

### **THEORETICAL IMPLICATIONS**

The two main theoretical frameworks I used to frame how schools and neighborhoods affect general delinquency were strain and social disorganization theory. Proponents of strain theory argue that if opportunities for mobility are blocked, individuals are more likely to participate in delinquent behavior. Similarly, social disorganization theorists argue that school and neighborhood disadvantage may lead to delinquent behavior and drug use (Eklund and Fritzell 2013). While these theories were not supported (neighborhood poverty was significant in some models), other theories may better explain the patterns that emerged. In my analyses, family structure and racial background were significant and consistent predictors of general delinquency. Further, increased minority concentration has a positive influence on student behavior.

Since the 1960s, many studies have been published citing the family as the major factor concerning a child's educational attainment, or their likelihood of poverty and incarceration. Two classic examples are the Coleman Report (1966) and Patrick Moynihan's report on the black family (1965). While Coleman and his colleagues hypothesized that school characteristics (e.g., racial composition, school funding, pupil turnover, length of school day) would be essential

variables concerning educational attainment, they found that family structure and social class were more important determinants. They also found that disadvantaged blacks prospered academically when educated in racially and socioeconomically integrated settings. Nonetheless, Coleman's findings supported the argument that parental SES is more important than school effects, specifically when examining educational attainment. While I did not examine educational attainment, family structure was a significant predictor of the outcomes I analyzed. Individuals from nuclear families (where there are often times dual earners) were less likely to commit delinquent acts, get arrested, be incarcerated, use hard drugs, have drug and alcohol issues, be a teenage parent, or collect welfare compared to individuals from other family types.

One year prior to the Coleman Report, Patrick Moynihan cited the structure of the black family as a cause for public concern. In his controversial report, *The Negro Family: The Case for National Action*, Moynihan cited a "tangle of pathologies" (e.g., crime, concentrated poverty, low educational achievement, and single-parent households) as the contributor to prolonged inequality and despair within the black family. He was very concerned about the structure of the black family, citing single-mother households as the dominant cause of inequality within the black community. Due to single-parent households, inequality would perpetuate and criminal activity among youth would continue. Because of this report, subsequent studies followed examining the relationship between family structure, race, and delinquency. Most research has shown that black youth are more detrimentally affected by single-parent homes, which thereby increases their participation in delinquent behavior. For example, Matsueda and Heimer found that the effect of single-parent homes on delinquency was much greater for blacks than non-blacks (1987). While I did not directly address the relationship between race, family structure, and delinquency, roughly 37% (unweighted calculation) of blacks in my sample reported growing up in a single-

mother household. Therefore, growing up in single-parent home (which often connotes less supervision) is one possible explanation concerning why blacks in my sample were more likely to report delinquent behavior, arrest, and incarceration. Another reason for higher incarceration rates among minorities is systematic racism.

Although the Civil Rights Movement was successful because it created more opportunities for racial minorities, racism is still embedded within many societal institutions (Feagin 2000; Alexander 2010). Present day racism, however, differs from the racism of the past. Historically, racism was blatant and overt while currently, racism is more subtle and covert in nature (Bonilla Silva 2003; Brown et al. 2003). Due to its covert nature, many believe that racism no longer exists and that there is equal opportunity for all (Bonilla Silva 2003). However, a look at the Criminal Justice System paints a different picture.

Since the early 1980s, after the implementation of President Reagan's War on Drugs, the U.S. prison population has skyrocketed. Between 1985-2000, drug charges accounted for 1/2 the rise in state prisoners and 2/3 the rise in federal inmates (Alexander 2010). According to Alexander (2010), the War on Drugs has led to the mass incarceration of people of color. Currently, 1 in 3 black men are under the control of the Criminal Justice System. While blacks (13.1%) and Hispanics (16.9%) constitute 30% of the population (United States Census Bureau 2012), they constitute roughly 70% of those in state and federal prisons (The Sentencing Project 2014). Since the inception of the War on Drugs, blacks and Hispanics constitute 2/3 of all those imprisoned for drug offenses (The Sentencing Project 2014). However, the majority of drug dealer and users are white, not black or Hispanic. According to a 2009 National Survey of Drug Use and Health Report, among 18-25 year olds, 39% of whites compared to 34% of blacks reported using

an illicit drug in the past year. When broken down, there are approximately 5 white drug users (aged 18-25) for every 1 black drug user (Austin 2011).

Although drug use *rates* are similar for whites and blacks, compared to whites, blacks are ten times more likely to be sent to prison for drug charges (Fellner 2013). Michelle Alexander argues that the mass incarceration of racial minorities is the new Jim Crow, as people of color are stripped of their basic civil liberties (e.g., right to vote, serve on juries) due to a system built on racial discrimination. The formal and informal control experienced by racial minorities, influences racial minorities' chances for educational and occupational mobility over time.

The policing of racial minorities starts in adolescence. Black and Hispanic neighborhoods are more likely to be patrolled and black and Hispanic youth are more likely to be labeled as threatening by the police, more often stopped under pretexts, and are less likely to receive a warning (Human Rights Watch). While blacks are not significantly more likely to use drugs compared to whites, they are more likely to commit delinquent acts; however, structural disadvantage is a major contributor of this. According to Brown et al. (2003),

[P]ersistent racial stereotyping meshes with the effect of long-term structural disadvantages to ensure that blacks wind up more often in the criminal justice system. A legacy of adverse structural conditions causes blacks to have higher rates of offenses to begin with. The higher rates of offenses are then used to justify decisions by police to monitor blacks more intensively and by courts to sentence them more severely. Their greater levels of incarceration contribute to difficulties in getting steady jobs and maintaining stable families, which increases their risks of offending, which . . . and so on, in a tragic downward spiral (152).

Thus, while structural disadvantage contributes to a number of adverse outcomes, systematic racism has been cited as a precursor for much of that disadvantage. In our post-racial society, this racism, which is often hidden, is an underlying cause of the inequality experienced by a number of racial minorities.

In Mohamed and Fritsvold's book, *Dorm Room Dealers: Drugs and the Privileges of Race and Class*, the authors discuss how young, white middle-class drug dealers avoid incarceration and escape the stigma of what it means to be a drug dealer (2011). These drug dealers are often ignored by college personnel and authority figures, as they do not fit the stereotype of what a drug dealer is. Because of the privilege experienced by whites, people of color are disproportionately targeted and incarcerated. Thus, while school and neighborhood characteristics have been shown to influence criminal behavior, in this study, they were not consistent predictors. Instead, being black is significantly related to adverse outcomes, specifically delinquency, arrest, incarceration, early childbearing, and welfare receipt. I argue that these relationships are partially explained by family structure, as blacks are more likely to come from single-parent families, but systematic racism is also an underlying factor explaining the mass incarceration of black males.

## **LIMITATIONS AND IMPLICATIONS**

While Add Health is the most comprehensive study ever taken on adolescent youth, limitations exist. First, while the main goal of this study was to examine school racial composition, the majority of students attended schools that were predominantly white. Of all students in my sample, roughly 65% attended schools that were over 50% white. If I would have used a different data set, one that included more racially heterogeneous schools, a different pattern could have emerged, as more segregated schools would have been included in the sample. Additionally, as shown in the figures in my appendix, as schools become more racially segregated, the likelihood of participating in delinquent behavior decreases. This is an interesting finding, however, I can only hypothesize about why this occurs.



Second, while the CCD linked to the Add Health data provides racial and economic characteristics of the school, it would have been beneficial to have statistics gauging police presence, the existence of metal detectors, or the percentage of students under some type of school suspension. The omission of this data does not allow me to paint a full picture between school context and delinquency, which may have contributed to my lack of findings concerning school characteristics.

Third, many of the questions asked are sensitive in nature. Respondents may have lied about their age of first intercourse (needed to calculate teenage pregnancy), their participation in delinquent acts, whether they have ever been arrested or incarcerated, their use of hard drugs, or any drug/alcohol issues they may have had. Even though computers were used so respondents could fill in their own responses to sensitive questions, respondents may still lie because they are embarrassed of their actions or they may be scared to tell the truth because they do not trust the researcher. If respondents skipped questions or slanted the truth, the frequency of certain behaviors is underestimated which would affect statistical estimates.

Fourth, while neighborhood tract-level data is used in a number of studies, the SES and racial characteristics of neighborhoods do not account for the social organization (e.g., informal social control, neighborhood watch) of a neighborhood, which is instrumental in distinguishing how neighborhoods influence behavior (Leventhal and Brooks-Gun 2000). Since I only examine race and poverty, this study does not address different forms of social organization that could have influenced behavioral outcomes. Thus, even though neighborhood poverty had the greatest effect, other contextual variables were not accounted for which could have affected my results.

Even though my hypotheses were not supported and limitations exist, interesting results emerged. While school and neighborhood minority concentration have been found to adversely

impact certain behavioral outcomes, this was not the case in my analyses. Thus, there are other factors that influence a person's likelihood of participating in delinquent behavior. I argue that the cumulative disadvantage experienced by blacks (being a racial minority; more likely to come from a single-parent home and experience poverty), coupled with systematic racism, partially explains the inequality that many blacks face.

### **FUTURE RESEARCH**

Given the limitations of the data, I still plan on examining these questions in more depth. First, I would like to conduct a peer network analysis to determine whether or not peers affect the likelihood of delinquency during young adulthood. During collection of Add Health data, adolescents were asked to select up to their 5 closest male and female friends. I can link this data to each particular respondent thus defining each respondent's peer network. Due to time and the complicated nature of the analysis, I plan on re-examining the data and conducting additional analyses in the future that would answer this question.

Second, I would like to include more neighborhood contextual variables and see what relationships emerge. In future analyses, if I incorporate the educational level of residents, type of job, percent of female-headed households, length of residence, and crime rate, along with neighborhood racial composition and poverty, I would be able to test social disorganization theory and other neighborhood theories in more detail.

Third, I would like to explore the relationship between school characteristics and delinquency in more detail. Although "policing" variables are not included, I could examine whether or not pupil-teacher-ratio, graduation rates, education background of the teachers, existence of a parent-teacher association, percent of students that are testing at grade level, and/or if the type of

services (e.g., family planning and drug awareness) offered at the school relate to general delinquency. I would also like to test if school connectedness is related delinquency.

Overall, while my hypotheses were not supported, my analyses still tell a story. While a higher concentration of minorities in schools and neighborhoods has been shown to negatively impact a number of outcomes, it does *not* have this effect on general delinquency, at least in my study. Instead, it decreases the likelihood of a number of behaviors. Family structure, racial background, neighborhood poverty, and structural racism, however, are major contributors of the cumulative disadvantage experienced by minorities.

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## APPENDIX A: ALTERNATIVE MEASURE OF SEGREGATION

Although I chose to use school racial composition as an indicator of segregation, I also ran each model with a dichotomous (1=over 50% black and Hispanic) variable measuring school segregation. The results, which are similar to the ones outlined in my analysis, are shown in tables A1-A4 below.

For each table:

- Standard errors in parenthesis
- \* $p < 0.05$  \*\* $p < 0.01$  \*\*\* $p < 0.001$
- Controls in Model 5 include: school SES, racial background, gender, past delinquency, family structure, welfare receipt, mother's education, and GPA
- $N = 11,736$  (subpopulation)

**Table A-1**

	Delinquency		Arrested	
	Model 1	Model 5	Model 1	Model 5
School segregation (B & H > 50%)	0.133 (0.097)	-0.215* (0.103)	0.095 (0.099)	-0.069 (0.096)
F statistic	1.88	35.47	0.92	60.93

**Table A-2**

	Jail		Hard drugs	
	Model 1	Model 5	Model 1	Model 5
School segregation (B & H > 50%)	0.127 (0.112)	-0.229 (0.127)	-0.582*** (0.109)	-0.219* (0.084)
F statistic	1.28	37.33	28.40	69.65

**Table A-3**

	<b>Drug issues</b>		<b>Teenage pregnancy</b>	
	Model 1	Model 5	Model 1	Model 5
School segregation (B & H > 50%)	-0.556*** (0.192)	-0.225** (0.075)	0.492*** (0.142)	-0.183 (0.156)
F statistic	36.52	57.39	12.08	48.73

**Table A-4**

	<b>Welfare receipt</b>	
	Model 1	Model 5
School segregation (B & H > 50%)	0.396** (0.144)	-0.284* (0.144)
F statistic	7.58	37.18

## INTERPRETATION

As depicted in the tables above, school segregation is significantly related to delinquency, hard drug use, drug issues, and welfare receipt (Model 5). These results are similar to my analyses using school racial composition, where if school racial composition is significant, it did not have a negative effect. As shown, students in schools that are over 50% Black and Hispanic are less likely to participate in delinquent behavior, use hard drugs, have drug issues, or collect welfare.