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Dropout or Delinquent: An Ecological Analysis of High School Attrition Rates in Correlation to Criminal Behavior

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Dropout or Delinquent: An Ecological Analysis of High School
Attrition Rates in Correlation to Criminal Behavior

By

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ABSTRACT

KILEY, MALLORY: Dropout or Delinquent: An ecological analysis of high school attrition rates in correlation to criminal behavior

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The high school student attrition rate in the United States is unexpectedly high. The purpose of this research is to demonstrate a correlation between high school non-completion and criminal arrest rates in order to establish the importance of improving the public school system in the country. I analyze dropout rates, crime rates, and demographic differences through an ecological study of the United States. States with high dropout rates also have high overall arrest rates, families living in poverty, and are more religious. These factors are particularly present across the Southeast United States as well as the Southwest, particularly those with large amounts of Indian Reservations. I explore how these factors may be interconnected with dropout rates and offer explanations for these relationships.

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CHAPTER 1: Introduction and Literature Review

Introduction

Is there a relationship between criminal arrest rates and non-completion of high school? Recent examples of crime amongst youth and young adults underscore the importance for understanding the role that education and school completion play in criminal activity. For example, the recent Parkland, Florida school shooter had been expelled from school, and ultimately did not receive his high school degree (Fausset 2018). The shooter had a troubled past. The ten years prior to the shooting, the assailant had been reported for at least two accounts of violent or disruptive behavior, although no action was ever taken as a result of the reports (Gonzales 2018). He and his brother were adopted and raised in the nice community of Pine Tree Estates; devastatingly he lost his father in 2004 and his mother this past fall (Fausset 2018). He reportedly had been diagnosed somewhere on the autism spectrum, and is Caucasian (Fausset 2018). Despite this history, what was the role of school? If he remained in school would he have stayed away from committing crimes and carrying out the attack he did? High school non-completion (or dropout) rates throughout the United States are a vital issue that needs to be addressed in this country. Dropping out of high school is the result of a combination of pre-determined factors and personal experiences and relationships that set youth on criminal trajectories. Many high school dropouts engage in delinquent behavior before and /or after dropping out—connecting crime rate and the country's safety to the quality of education and graduation rates. The relationship between criminal offending and dropping out of school is high. For example, 68%, of the inmates in the United States prison system are high school

dropouts (Tyler and Lofstrom 2009). However, it is unclear the role that dropping out of school specifically plays in determining criminality or whether or not other factors present in the lives of school dropouts predict their likelihood to commit crimes.

To understand this relationship, I begin by reviewing literature by a number of social scientists who explore factors related to dropping out or non-completion of high school. I will analyze dropout rates, crime rates, and demographic differences in an ecological study of the United States. Finally I explore the results and come to conclusions based on the data.

Literature Review

Graduation Rates

Many social scientists begin their research on student dropout rates, criminal behavior, and prison populations with basic statistics. Tyler and Lofstrom (2009) report that the overall national high school dropout rate is between 22 and 25%. Additionally, they note that there is a noticeable increase in dropouts among African American and Hispanic students (Tyler and Lofstrom 2009). Tyler and Lofstrom (2009) indicate that this rate has relatively not changed in the last 40 years as of 2009. Bowers, Spratt, and Taff's (2013) report relatively the same dropout rate, which is 20 to 30% or a 70 to 80% graduation rate.

Alternatively, Murnane and Hoffman (2013), report that from 2000 to 2010 there has been a substantial increase in graduation rates, especially amongst black and Hispanic students. They suggest reasons for this increase including the decrease in the birth rate among teen girls, and the decline in the arrest rate of teenagers for violent crimes over the

last decade and a half. With less teen births, there are less teen girls in an adult role with adult responsibilities—caretaking for their child, and earning an income—so they are able to finish their high school education. If students are less involved in violent crime, this suggests they are acting in less deviant ways, potentially correlated to an increased involvement in school and alternative extracurricular activities.

School Factors

To understand dropout or non-completion rates, we must understand both institutional and personal factors that influence school success. For example, Tyler and Lofstrom (2009) suggest that there are characteristics of individual schools that contribute to a schools dropout rate. They suggest pupil-teacher ratio, quality of teachers, school size, per pupil spending, school location, teacher quality, and student demographics as all possible variables in determining the dropout probability of students. Pupil-teacher ratio is important because it can help or hurt the feeling of belongingness for a student at school. The quality of teachers within a school also plays a role in student success. Taken together, success may be determine don whether or not students feel that their teachers care and that their time in class is worth it.

The location of a school is also important. Schools in impoverished areas tend to be worse both physically and academically than schools in wealthier areas. In one study, schools in Kentucky, Christle, Jolivette, and Nelson (2007) compared the twenty with the lowest dropout rates to those with the highest dropout rate and found that they had different physical conditions. The schools with lower dropout rates were noticeably cleaner, in better condition, and more orderly than those with high drop out rates; likely because they are in a higher income area where the schools are allocated more funds and

therefore can put some of this funding towards cleanliness and appearance. (Christle, Jolivette, and Nelson 2007). In contrast, the schools with higher drop out rates tended to be more run down in appearance, which is likely a result of less funding, which signifies a lower income school district.

Many social scientists also find that a school's organization is relevant to its dropout rate (Zvoch 2006). Zvoch (2006) suggests that a school with a personalized educational climate will provide students with a more positive school experience than in a school with a depersonalized learning experience as its educational climate and organization. Schools with a personalized atmosphere have more of a community goal and structure in order to increase student visibility (Zvoch 2006). This type of climate Zvoch (2006) argues gives students a less intimidating school experience. This sense of belongingness that a smaller community oriented school provides, is thought to decrease negative outcomes such as criminal behavior and dropping out. In summary, if a student feels that the environment is catered towards them then they will feel more attached to the school, put more effort in, and are consequently more likely to graduate.

More broadly, Bowers, Spratt and Taff (2013) express that in poor, urban areas public high schools may have only half the average national graduation rates. Not only are urban communities prone to high drop out rates, so are small towns and rural communities (Thompson 2014). Underperforming schools are often in low-income areas, and sometimes specifically in communities whom have lost their basis for employment (Thompson 2014).

Student Factors

Many social scientists also agree that student achievement and test performance, attendance, and early adult responsibilities are key factors, which influence whether or not students drop out of high school (Tyler and Lofstrom 2009, Christle, Jolivette, and Nelson 2007, Bradley and Renzulli 2011). For example, Travis Hirschi's Causal Chain theory connects academic achievement to delinquency, which is significantly connected to high school attrition (Hirschi 1969). In summary, the chain begins at academic incompetence, which leads to poor school performance, leading to a dislike of school, then a rejection of school's authority, and finally the commission of delinquent acts (Hirschi 1969). Subsequently, numerous social scientists, including Fagan and Pabon (1990) report that adolescent delinquency is a strong predictor of dropping out of high school.

Christle, Jolivette, and Nelson (2007) also note that students in families of low socioeconomic status in particular are 2.4 times more likely to dropout of school than middle class students. They go on to draw conclusions that poverty appears to produce large inequalities within our country's public education system; this may occur for multiple reasons. For example, in lower income families, adolescents may also pressured into working to bring in an income for the family. That being said, students who work (more than a few hours a week) while in school are shown to have a higher chance of dropping out (Tyler, Lofstrom 2009). Along the lines of early adult responsibility, there is also evidence that women in situations of poverty may drop out of high school at higher rates because of pregnancy (Tyler, Lofstrom 2009). However this trend may be declining,

Murnane and Hoffman (2013) report that the amount of teen births of 15-17 year old girls declined by 44% from 1990 to 2008.

Student achievement and attendance are also important factors in predicting whether a student will dropout or not. Christle, Jolivette, and Nelson (2007) found in their research that academic achievement had the strongest relation to dropping out. The next was attendance rate. This makes perfect sense that academic achievement and attendance rate are so important, as they are also directly related. If you are not doing well in school, poor attendance may be at fault, and vice versa. Christle, Jolivette, and Nelson (2007) draw a conclusion based on this that if a student feels a sense of belonging and feels connected to the school they are less likely to drop out of the school.

This idea directly relates to Social Capital Theory discussed by Wright and Fitzpatrick (2006). They define social capital as, “resources embedded in social relationships and ties that can be used for expressive purposes such as the maintenance of physical health” (Wright and Fitzpatrick 2006). A previous study done by Fitzpatrick (1997) showed that adolescents will be more likely to act violent towards others when they lack relationships and ties to those around them—they feel disconnected from their environment (Wright and Fitzpatrick 2006). Wright and Fitzpatrick (2006) apply social capital theory to this and suggest that students who involve themselves in positive social behavior will benefit in the form of social capital, which comes along with the supportive relationships they form. School social capital and neighborhood social capital both contribute to an adolescents’ future (Wright and Fitzpatrick 2006). Specifically relating to school, students’ attachment and feeling of belongingness is very important, if students feel like they belong and feel cared for by teachers they are shown to be less likely to initiate

violent behaviors (Wright and Fitzpatrick 2006, Christle, Jolivette, and Nelson 2007).

Similarly, in terms of the neighborhood, the level of social connectedness that an adolescent feels to his or her residence and those around it is directly related to violence (Wright and Fitzpatrick 2006).

Not only is location important, but location is also related to race and economic status. Oftentimes schools with high drop out rates are in areas with large ethnic and minority populations (Thompson 2014). For example, in one study Bradley and Renzulli (2011) focus on the details of dropping out, and run tests that control for socioeconomic status in order to focus on race, ethnic, and gender differences. They find that no matter what ethnic group, males are more likely than females to report leaving school as a result of a suspension or expulsion. When focusing on just males, Black males are more likely to drop out than white males, but even when controlling for socioeconomic status, black females are less likely than white males to dropout of high school.

Self-reported dropout data reveals many additional gender differences in schooling. For example, in their study of school dropouts, Fagan and Pabon (1990) showed that males have the weakest school attachments. Most females who dropped out reported they either lost interest or needed a job, while male dropouts reported having higher rates of drug problems in school. These males reported they would often attend school high or drunk and had higher crime rates. This subsequently resulted in missing more school, a lack of respect for teachers, and putting minimal effort in. One specific similarity found between genders was that both male and female dropouts self-reported more serious and more often substance use than non-dropouts, and that there was generally a disengagement period in school leading up to dropping out (Fagon and Pabon

1990). However, the question remains, why is it that overall males seem to have less success in school, even though they have historically been attending school longer than their female counterparts?

As previously noted, graduation rates have increased between the years 2000-2010 (Murnane and Hoffman 2013). Murnane and Hoffman (2013) suggest that this as a result of both a decline in teen pregnancy and a decline in the arrests of teenagers for violent offenses. Murnane and Hoffman (2013) report that the birth rate for 15-17 year old girls declined by a shocking 44% from the year 1990 to 2008. Not only do teenage mothers often dropout of high school, the children of teenage mothers are especially susceptible to have developmental learning handicaps which they suggest has affected the increase in math skills of young teenagers and in the graduation rates (Murnane and Hoffman 2013). Additionally, Murnane and Hoffman (2013) report a 47% decline from 1994 to 2009 in teenage arrests related to violent crimes, which may be related to the graduation rate increase, because involvement with the criminal justice system as an adolescent often results in dropping out. Campbell (2015) discusses that a student may discontinue school after being arrested, because of institutional responses. Suggesting that the school may be ‘pushing’ him or her out following the arrest. So arrest rates may not lead to dropping out on the students own accord, they may un-enroll because of the schools push back as a result of an arrest and interaction with the justice system.

Family and Home Life

Family history and home life of a student are also important factors in predicting whether or not students increase or decrease their chances of dropping out. As previously mentioned, student’s family household income is extremely telling. Low-income families

If are 2.4 times as likely to dropout of high school than their middle class counter parts (Christle, Jolivet, and Nelson 2007). Bradley and Renzulli (2011) agree, and describe the different family factors that contribute to lower class school failure. Factors include low GPA, lack of participation in extracurricular activities, and poor social networks. Low socioeconomic status can lead to poor school performance and academic failure, but it also may lead to a student having to leave school because of the early onset of adult responsibilities—needing to work to bring in money to the family (Bradley and Renzulli 2011).

Not only is the family's economic status important, but it is also correlated with the level of education that a student's parent attains (Tyler, Lofstrom 2009). Parents with higher degrees most likely have more money and therefore are setting their children up in a better position when entering school. In Stephens and Repa's (2009) research, they found that many of the high school dropouts they studied, were the offspring of dropouts. Thompson (2014) reports that in the areas with low performing schools it oftentimes is found that many of these students' parental figures have minimal educational attainment. Tyler and Lofstrom (2009) explain that since parents with an educational background are aware of how important education is, they are more involved in the schooling, and have a greater capital investment in their children's education.

A child's early experiences within their family influence how they will bond to others and their school, as well as how they will learn self-control according to (Fagan and Pabon 1990) Travis Hirschi's (1969) Social Bond Theory poses that those juveniles whom have strong bonds to their social groups, such as family, school, and peers are less likely to commit acts of delinquency than those with weak bonds (Schmallegger and

Bartollas 2008). Hirschi defines four elements to determine an individual's level of social bond: Attachment, commitment, involvement, and belief (Schmallegger and Bartollas 2008). To briefly summarize each element, attachment is characterized by an individual's ties of affection, ability to build a conscience and respecting bonds. Commitment is the time and energy that the individual has invested in conventional goals versus free time to consider delinquent behavior. Involvement is similar to commitment. This element refers to how involved you are in conventional activities and how much time is actually available for the opportunity to commit deviant acts. Finally, belief is important because it stands for individual's level of respect and belief in the values of the legal system, which Hirschi says, begins with parenting (Schmallegger and Bartollas 2008). Hirschi found that students with weak connections to their parents were more likely to have less concern for the opinions and thoughts of their teachers, and therefore were more likely to dislike school (Schmallegger and Bartollas 2008).

In one study of children's learning in grade school, Calarco (2014) similarly articulates the importance of socioeconomic status and attachment. She observed that through cultural transmission, parents use active efforts to influence their children, which show up in the different ways that children interact with their teachers in the classroom depending on their families' socioeconomic status. She finds that the children of working class families were often raised with a "no-excuses" mentality, which in school translated to children respecting their teacher's authority and therefore not seeking any help from them (Calarco 2014). On the other hand middle class families tended to instill a "by any means" mindset, teaching their children to problem solve and negotiate with their teachers for any assistance necessary (Calarco 2014). Calarco (2014) suggests that, at

least for the short term, the “by any means” mindset is more beneficial because more than anything it will help foster the important attachment between a child and school.

Early familial experiences will directly impact future school success, and the likelihood of creating social bonds and attachment to their school, and a child’s level of their commitment to their education. This is similar to the argument above. If a child is in a family in which they value education and college is the norm, then they are more likely to have a stronger commitment to education, and bond with their school—viewing it as important. On the contrary, if a child grows up in a low income household where that is the main focus, and there is no history or focus on higher education, then they have an increased risk of dropping out following a disengagement from school. This may happen because they were not raised to have a strong commitment and importance in education.

As Fagan and Pabon (1990) explain, the locus of socialization will shift from the family to the school, which is the most critical time as they are entering the developmental phase when dropout risks become important. This social development model theorizes that healthy developments of attachments to parents will prompt future healthy attachments to school, and with it, a commitment to education, normative social behavior, and the law (Schmalleger and Bartollas 2008) So, depending on how an individual’s early personal family experiences were, their locus of socialization may or may not be focused on school.

Regional Differences

Consequently, we cannot to neglect the country’s history and regional differences when studying the relationship between school dropout rates and crime. For example, the south—South Atlantic, East South Central, and West South Central part of the United

States—is historically more violent than any other area in America (Fuchs 2013, Erlanger 1976). FBI’s 2012 crime statistics show that the southern United States has more violent crime than anywhere else in the United States (Fuchs 2013). Fuchs possible theories for this increase in crime. The “culture of honor” mindset passed throughout generations of families (Fuchs 2013). This is the idea that boys and men are raised to hide emotion, and show aggression in order to gain power, authority, and respect.

Based on the General Social Survey data from 1972 through the 2000s, identifiable trends confirming the South holds more traditional gender role beliefs than non-southerners, as well as in reference to race (Campbell 2012). It is also notable to comment on the fact that the South typically has the largest non-white population, outside of major cities such as New York and Washington D.C. For all of the gender role related questions in the GSS, southerners were more traditionally mindset while non-southerners were more liberal in their answers, for most questions in most years (Campbell 2012). Included in these questions were the topics of traditional gender division in the labor market, and whether men are more apt for politics than women. One possible explanation that Campbell (2012) gives for the lack of liberalism in the South is religion. There are more evangelical Protestants in the South than anywhere else, and they typically have more traditional beliefs compared to those of Jewish descent who are much more liberal but quite a minimal part of the Southern population in comparison to other regions. Furthermore, residents in the south are more likely to describe their religious beliefs as “strong” than any other region of the country (Campbell 2012). It is possible that religion is the backbone to the traditional gender role views, portrayed as a powerful, aggressive male, and a quiet, stay at home female. With this in mind, southern males must then

believe that violence is a way to solve problems, in turn increasing their crime rate, which is may be connected to education, and earning a high school diploma.

The second theory suggests that since the south has dramatically lower incomes, and higher poverty rates, and crime is often linked with poverty, that this explains the violence (Fuchs 2013). Stretesky, Schuck, and Hogan (2004) summarize three possible explanations of why poverty and violent crime are connected. The first explanation is that the violence results from persistent poverty in which the men, women, and families are simply reacting to conditions of deprivation. Secondly, they suggest the formation of violent subcultures as a result of nonconventional attitudes and behaviors from living in poverty. Finally, they discuss the idea that in cases of extreme poverty in which the individuals are so isolated from the mainstream social society and results in violence (Stretesky, Schuck and Hogan 2004).

The final theory that Fuchs (2013) discusses is that hot summer weather can be associated with crime waves throughout the country. If it is naturally hotter in the south all year long, does this explain the violence? It wasn't until the 1960's that social scientists seriously took a look at a correlation between criminal behavior and weather, spurred by a wave of numerous riots in the summer heat (Cohn 1990). Social Scientists have shown that weather changes and extreme weather can be stressors and or act as a stimulus to humans. Cohn's (1990) research discovered that the frequency of collective violence increased consistently as the temperature rose up to 85 degrees Fahrenheit, but the increase comes to a halt at temperatures above 90. The correlation between heat and assault was simple to study because of the high daily frequency of violent assault, which also showed a positive relationship between the two (Cohn 1990). Overall, Cohn (1990)

was able to conclude that violent crimes increase with temperature up to 85 degrees Fahrenheit with the exception of homicide.

Indian Reservations

Indian Reservations are plentiful in the Southwest and Western United States. The identifying issue in this study in regards reservations is that they have not been studied nearly as much as other minorities in big cities (Lee 1993). This creates a lack of literature on the topic and the impact of Indian Reservations on the state and country. This may be explained in relation to the secluded aspect of Indian Reservations (Lee 1993). Since the general population does not have much interaction with the reservations in comparison to other groups of people, this results in a lack of funding towards research simply because they are not a part of the daily life of the majority of United States civilians (Lee 2013).

The existing literature tells of a lot of crime associated with Indian Reservations. This is suggested to be connected to the largest Native American business—the casino (Mays, Casillas, and Maupin 2007). Casinos and gambling are associated with alcohol, and according to Lee (1993) the majority of violent crimes connected to reservations involve alcohol consumption. Furthermore, it is reported that Native American Indians have a much larger than expected prison population as well as arrest rates (Lee 1993). Through various studies, it has also been noted that on many different reservations there is a large amount of residents receiving benefits such as SNAP, as well as many who do not have high school diplomas (Lee 2013, Pandey, Min Zhan, and Tenison 2004). Additionally, reservations are often very isolated from employment opportunities, which

help to explain the high unemployment levels, and the need for benefits like SNAP (Pandey, Min Zhan and Tension 2004).

Personal Consequences

There are numerous consequences due to the number of teens not earning their high school diplomas throughout the United States. High school education is important for individuals in order to better live a healthy, and stable life. Chongmin (2017) advocates for secondary education completion as he suggests it represents a critical period in time, in which we transition from adolescent to adult roles, form identities, and build critical social networks. Despite it being important, Campbell (2015) reports that research on the repercussions of dropping out is much harder to come by than on the demographics and characteristics predicting who will drop out. We do know that, approximately 16% of high school graduates live in poverty in comparison to the 33% of high school dropouts (Campbell 2015). Consequently, there are many more dropouts using food stamps than graduates, and more dropouts that self-report poor physical health. Additionally, it should go without saying that those who dropout of high school have a lower income than those with high school degrees (Campbell 2015) In 2000, the average income of a high school graduate was \$21,000 while that of a drop out was \$12,400 (Christle, Jolivette, and Nelson 2007). This suggests that individuals with a high school degree will make almost two times as much money as an individual who dropped out of high school. According to Campbell (2015) even if the actual difference in skills and knowledge is not significant between a drop out and graduate, the loss of the high school diploma as a credential is quite critical. Employers may infer the lack of a high school diploma as a lack of skills or

persistence, or simply of undesirable attitudes and behaviors in the workplace (Campbell 2015).

Societal Consequences

Not only does the dropout epidemic influence the individual level, it has very important consequences at the societal level. Gewertz (2009) wrote a brief article on a study done by the Washington-based Alliance for Excellent Education revealing that if half of the students in the class of 2008 that had dropped out had actually graduated, they would have produced \$4.1 billion more in income and \$536 million in state and local taxes in one year. If nothing else about the important dropout issue in the country makes an impression on the citizens, this statistic must!

Dropouts are most likely unemployed or making very minimal money so they do not contribute very much to taxes or the country's total income, in fact they often do quite the opposite (Tyler and Lofstrom 2009). As previously discussed, many young female teens who dropout do so because of pregnancy. Almost half of all single mothers who are recipients of Temporary Assistance for Needy Families or TANF are high school dropouts (Tyler and Lofstrom 2009). Additionally Campbell (2015) reports that based on data from the March Supplement of the 2013 Current Population Survey that there is a larger portion of high school dropouts than graduates who receive SNAP (food stamps).

The crime rates in our country would without a doubt be lessened if the dropout rate was smaller. It has been shown that delinquency and future crime are correlated to dropping out of high school (Murnane and Hoffman 2013, Fagan and Pabon 1990, Schmallegger and Bartollas 2008). Tyler and Lofstrom (2009) report a finding that approximately one additional year of school will result in the reduction of murder and

assault by almost 30%, motor vehicle theft by 20%, arson by about 13%, and finally burglary and larceny by 6%. This unequivocally needs more research, in order to find more specific connections between dropping out and crime rates. Sweeten, Bushway, and Paternoster (2009) tell us that through the 1980's, and since that time, not much has changed. As such, we can infer similar results, that high school dropouts were more involved in delinquent behavior such as drug use and selling, and had more contact with the juvenile and criminal justice system.

Naturally high crime rates that are connected to high school dropout rates, lead to our large prison population. We put a large portion of our tax funds towards the prison system in which we are just paying to keep criminals alive. But if we take a closer look at the prison population we can deduce that since the majority of inmates are high school dropout, this problem must be addressed (Stephens and Repa 1992 and Christle, Jolivette, and Nelson 2007). As of 2007, dropouts accounted for 82% of the prison population and 85% of juvenile justice cases. Imagine if the crime rate was decreased, as Tyler and Lofstrom (2009) suggest, the prison population would in turn be much smaller, and we would be putting less tax payer money into sustaining the lives of criminals locked in a building. Because society is so greatly affected by the dropout rate, as just explained, the entire country should be concerned. Regardless of whether or not you live in a privileged suburb, or have never had a child, every single resident of this country is affected.

In their study of dropouts in the prison population, Stephens and Repa (1992) found that high school dropouts in prison were on average, arrested about three years earlier than graduates in prison; and that once being in prison the recidivism rate was higher for dropouts (Stephens and Repa 1992). Stephens and Repa (1992) discuss that

both incarcerated and non-incarcerated dropouts had similar characteristics, of many have been previously discussed in the literature review. These include having a parent whom dropped out, poor academic performance, a dislike of school, and not being able to see the relevance of school as well the need for employment. Many of these are connected, literature has examined that a student is more likely to drop out of school if their parental figure did as well (Tyler and Lofstrom 2009). If their parental figure did not complete high school they are likely to live in a low-income household. Furthermore, Calarco (2014) describes that children raised in a working class households are brought up with a “no-excuses” mentality so they are less likely to seek help in school when having trouble. Then leading to poor academic performance, since they are not reaching out when they should be, and therefore falling further behind classmates. Stephen and Repa (1992) additionally discovered that of the inmates that receive their GED in prison have lower recidivism rates than the general prison population (Stephens and Repa 1992). Suggesting attaining a GED may help the former inmate seem more attractive to employers, and furthermore stay out of prison.

Summary

Just under a quarter of the United States’ population is not graduating high school, and has not been for decades (Tyler and Lofstrom 2009). The school itself may be an important contributing factor—whether it is cleanly kept, and has the resources to attend to each student and make them feel individually important (Christle, Jolivette, and Nelson 2007). We look at this in the data by observing income levels in each state; the states with higher income levels have more money to allocate to public education, and vice versa. Will states with lower income levels have a higher number of un-enrolled teens? The

overwhelming majority of social scientists whom research and write on this topic agree that academic failure and a lack of interest in school are important warning signs of a student dropping out (Christle, Jolivette, and Nelson 2007, Schmallegger and Bartollas 2008).

Does academic incompetence occur because a school does not have enough resources to tend to everyone's individual needs, so some students slip through the cracks? Does it all come back to money, and the lack there-of? Money may be a significant telling sign. A child raised in a low-income family has a higher chance of dropping out and not completing high school, when compared to their middle-income counterparts (Bradley and Renzulli 2011). Going back further than this, a student is even more likely to drop out of high school if their parental figure did not complete high school (Stephens and Repa 2009, Tyler and Lofstrom 2009). Logically, a parent that did not complete high school oftentimes make less money than those who did complete school, and therefore live in a lower income situation, so their offspring are then less likely to graduate high school, now with multiple pre-determined factors stacked against them.

As previously discussed, another factor associated to dropping out of school, is interaction with the justice system (Murnane and Hoffman 2013). In other words, if a teen performs acts of delinquency he or she is more likely to drop out of school. Murnane and Hoffman (2013) also connect an increased risk of future criminal behavior if a teen does not complete high school. If a state has a higher crime and/or arrest rate does this mean that they will have a higher percentage of teens dropping out of high school? In turn, will this be correlated with lower income states? Furthermore, race is a

factor as there are twice as many Black students dropping out compared to White students (Christle, Jolivet, and Nelson 2007, Murnane and Hoffman 2013).

The strong correlation between crime and non-completion of high school has previously been explored, Fagan and Pabon (1990), and Schmallegger and Bartollas (2008). However, it is still unclear how this relationship differs from state to state. Based on what we understand from previous research, which explores the relationship of dropout rate to crime, I draw the following hypothesis:

States with higher rates of crime arrests and poverty will have higher rates of high school attrition.

When analyzing and understanding the data in the next chapter, it is important to factor in the regional differences in the country as well as the effect of Indian Reservations. First, the southern United States is historically more violent (Fuchs 2013, Erlanger 1976). Connecting this to previous literature, does this mean that since there is more crime in the south that they will inevitably have higher rates of non-completion of high school? Secondly, Indian Reservations are vastly common throughout the middle of the country. Reservations are often filled with poverty due to the lack of jobs nearby, or are deep into the casino business where alcohol causes high rates of violent crime, both which can be connected to low rates of high school graduation (Lee 1993, Pandey, Min Zhan and Tension 2004).

This research is valuable because its purpose is to establish the importance of improving the public school system in the country. To fully understand the need, it is

necessary to comprehend that the failing schools and the connection between criminal activity and high school non-completion affects all residents of the country, regardless of if they are personally raising children and watching them go through the school system. First off, the potential individual consequences of not completing high school include poverty, incarceration, poor health, and unemployment (Nelson 2007 and Campbell 2015). As for the societal consequences, a dropout will make little to no money so they will not be contributing to the country's tax's nor the income (Gewertz 2009). But the tax money that graduates will pay each year will assist in paying for the benefits, such as food stamps, for these dropouts whom cannot make enough to survive on their own (Tyler and Lofstrom 2009). If more civilians graduated high school, less tax money would need to be put towards benefits, not to mention prison costs and this money could be going towards the public school system. According to the literature, the crime rates would be lessened if the high school graduation rates were increased, making the cities, states, and country a safer place to live for all (Murnane and Hoffman 2013, Fagan and Pabon 1990, Schmallegger and Bartollas 2008).

CHAPTER 2: Methods

In this study, I explore the link between crime and school dropout rates in the United States. Throughout this section I will discuss the method of research used, the data, and the variables I constructed to test my hypothesis. To compare the relationship of school dropout rates, crime and poverty, I conducted an ecological study. An ecological study, sometimes referred to as a descriptive study is used to find and demonstrate patterns of health and or crime related factors in a given population (Barratt and Kirwan 2009). The units of study in ecological research are groups within the given population. This research method is often used for studies involving investigating potential correlations between factors or studying and observing disease clustering within a group or population (Barratt and Kirwan 2009).

An ecological study has a few important strengths, first of all it is relatively simple and non-expensive. Secondly, from conclusions you can form hypotheses to apply at the individual level. Finally, these studies can be relevant and current because population survey data is routinely updated (Barratt and Kirwan 2009). Despite these strengths, there are also significant weaknesses of ecological studies. The biggest weakness are ecological fallacies, which suggests that it may not be entirely accurate when you take conclusions based upon larger groups, and apply them to the individual level (Barratt and Kirwan 2009). The other main weakness to an ecological study is that the study only demonstrates correlation and not causality.

Data

To perform this study, a set of crime data, and a set of population data are necessary; additionally they must be from the same year in order to be merged. The data sets I chose for the study came from Social Explorer. Social Explorer is a website database that contains numerous sets of data, and thousands of variables that are free to use. New data sets are constantly being added, but older archives are also available. The most recent U.S. UCR Crime Data available is from 2014; therefore this ecological study is entirely based on 2014 data. The Uniform Crime Reporting Program, which is collected by the Census Bureau, contains all of the crime data needed according to each state, which will now on be referred to as the UCR data set (Social Explorer 2014). This data set was merged with the American Community Survey 1 Year Estimates for 2014 (Social Explorer 2015). This survey contains hundreds of variables that can be organized by state, such as race, poverty status, and education—which now on will be referred to as the ACS dataset (Social Explorer 2015). Once the two data sets were chosen, I merged them into a single SPSS file. SPSS or Statistical Package for the Social Sciences is a computer application that can be used to run trends and analyze sets of data (SPSS 23). After merging the data, the SPSS file had hundreds of variables, which I filed through and chose seven to focus on for this study.

Variables

In this section each of the eight variables used in the research will be outlined and briefly discussed. Figure 2.1 displays an outline of the variables.

Figure 2.1: Outline of Variables

1. Dropout rate
2. Arrest rate
3. Family poverty rate
4. Percent of population that is non-white
5. Violent arrest rate
6. Murder arrest rate
7. Level of religiosity
8. Average summer temperature

The dropout rate for each state is calculated using the ACS variables on the total number of civilians between the ages of 16 and 19, and the total number of civilians between the ages of 16 and 19 not enrolled in high school, nor graduating, in other words, those whom dropped out. These are used to determine the percentage of students not graduating high school in each state based on the following equation:

$$(civ. pop. between 16-19 not graduating high school / total civ. Pop. 16-19) * 100$$

The arrest rate variable comes from the UCR data set. It tells the rate of arrest per 100,000 for each state, from the UCR data set. This is used as a baseline for the amount of crime, as this is more accurate in relation to observed crime, and the prison population when compared to the total crime rate, because crime rate considers each time a crime is reported which in some cases for major cities may count one crime numerous times if many people report it (Social Explorer 2014). Furthermore, the arrest rate is more reflective of the prison population than the crime rate.

Poverty is delineated from the ACS variable, which measures the percentage of families living in poverty. This is used to understand poverty because the literature above describes children growing up in a low-income family as a potential risk to dropping out.

Using the percentage of families living in poverty rather than individual poverty rate it is more applicable to the literature and the future conclusions drawn from this research.

To understand race, I used the ACS's variables for the total population and the total white population. Using the following equation I was able to account for the percentage of non-white residents in each state:

$$((total\ population - total\ white\ population) / total\ population) * 100 = \% of\ population\ non-white$$

To understand violent crime trends I used the UCR's variable on the total violent crime arrest rate for each state. Much of the literature speaks in regard to violent crime specifically how it may be related to criminal behavior and or poverty. I chose to include the murder arrest rate in order to understand a more specific category from within violent crime; this comes from the UCR data set. Some of the literature suggests that religiosity is also an important factor to understand crime and dropout rates. This dataset comes from a Pew Research center report published in 2016. Literature also proposes that heat may drive violent behavior, so the average summer temperature of each state is analyzed as a variable. This data comes from the British Journal of Criminology, published in 1990. Although average temperatures may have increased or decreased since then, they are going to still likely to have the same relative distribution from state to state.

ArcGIS

For the first part of my analysis I used the ArcGIS mapping source in order to input my data from my variables and output them across a map of the United States. I mapped the

four main variables in order to understand any potential trends or patterns that may be contingent on region of the country. In order to do this, I separated each variable to an individual excel spreadsheet, keeping the values lined up with their corresponding state. To be able to upload the data into ArcGIS the file has to be saved in a certain form. I saved each as comma separated variables or csv files. I did this four times on four separate maps and then began to analyze the findings.

In order to better analyze regional trends, I separate the United States into five regions. The West is made up of Oregon, Idaho, Washington, Montana, Wyoming, Colorado, Nevada, California, and Utah. The Midwestern states include North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Indiana, Missouri, Wisconsin, Illinois, Iowa, Ohio, and Michigan. The Northeast consists of Pennsylvania, New York, Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut, New Jersey, Delaware, and Maryland. The Southwest states are Arizona, New Mexico, Texas, and Oklahoma. Finally, the Southeast states include Arkansas, Louisiana, Mississippi, Tennessee, Kentucky, West Virginia, Washington D.C., Virginia, North Carolina, South Carolina, Georgia, Florida, and Alabama. I used excel to calculate the averages for each variable in each region in order to better understand any univariate trends.

Bivariate and Partial Correlations

To analyze state level differences I ran a variety of correlations and regressions through SPSS.. I ran Pearson coefficient correlations to see the strength of positive or negative relationships between all 8 variables, as well as the significance based on a two-tailed t test using the p-value. The smaller the p value the more statistically significant the relationship is.

CHAPTER 3: Results

ArcGIS and Regional Analysis

In order to analyze the results, we must look at each variable individually on a map of the United States. Figure 3.1 displays a basic map of the country, with state names to refer back to if necessary.

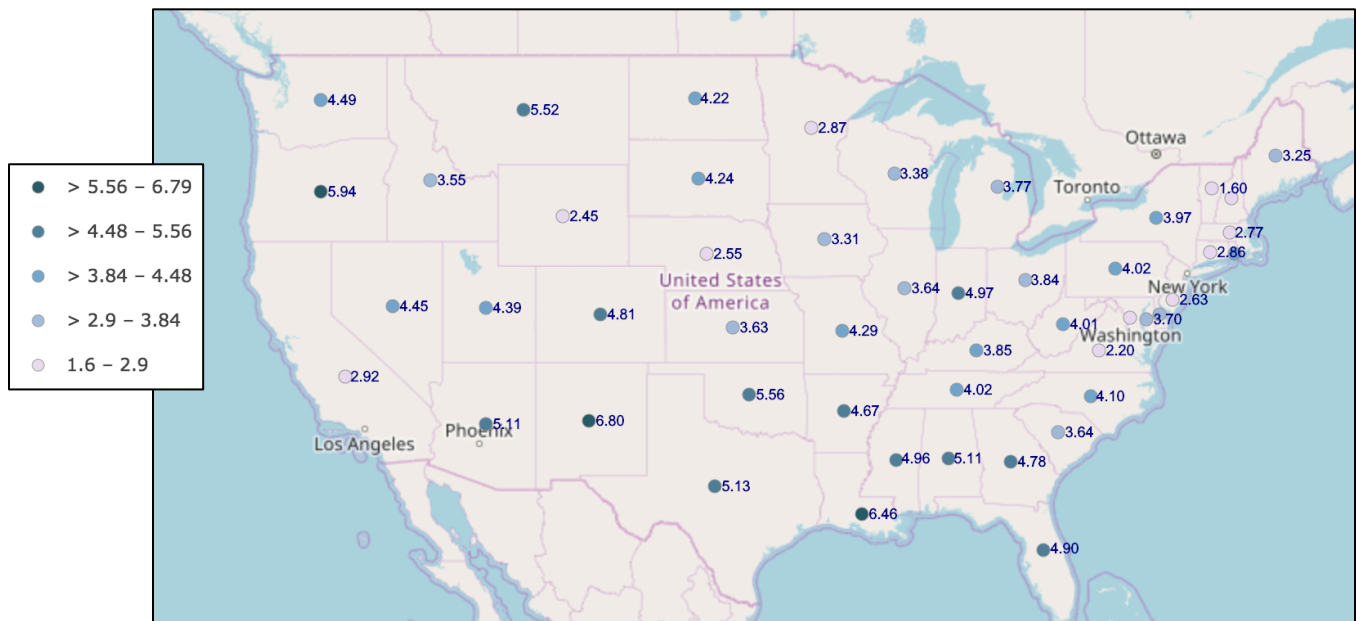
Figure 3.1: United States with labeled states (google image)



Figure 3.2 displays the dropout rate for each state within the United States. Along with a key to show that the darker the circle is the higher the dropout rate in the given state is, for the year 2014, and vice versa—the lighter the circle, the lower the dropout rate. The rate is also in numerical text on the map. The higher non-completion rates are concentrated in the southern United States, around Louisiana and Mississippi. New Mexico and Arizona are amongst the higher dropout rates as well, which may be

connected of the large number of Indian Reservations. Oregon is also especially high. Amongst the states with the lowest drop out rates are Vermont, New Hampshire, Massachusetts, and Connecticut. Additionally a few states scattered in the middle of the country have quite low rates, these states are Wyoming, Nebraska, and Minnesota. We can deduce that the states across the southern United States have higher overall drop out rates, while those in the northeast have low overall rates.

Figure 3.2: Dropout Rates by State per 100,000



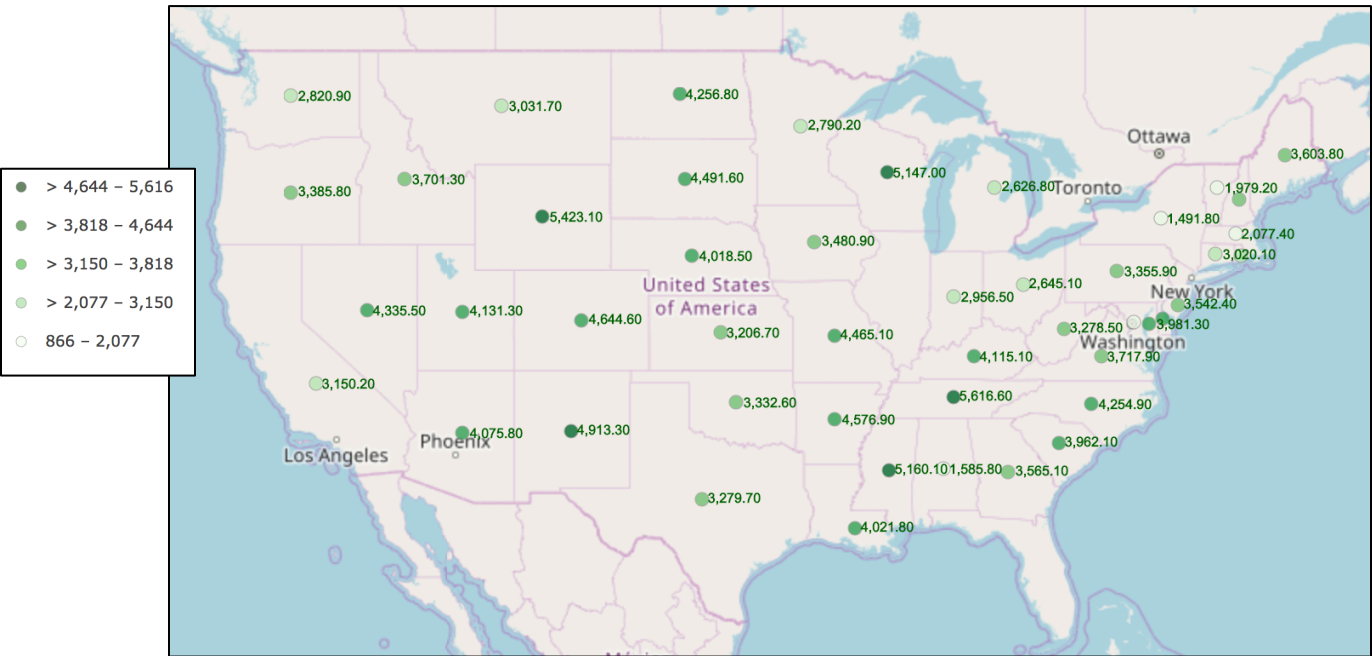
To more narrowly analyze potential regional trends, Figure 3.3 depicts the average dropout rates for each region. The Southwest states have the highest average rate, by about 1.4 percentage, while the region with the lowest rate of dropping out is the Northeast.

Figure 3.3: Average Dropout Rate by Region

West	4.279627268
Midwest	3.74268821
Northeast	3.083913025
Southwest	5.649429131
Southeast	4.248298748

Figure 3.4 shows the arrest rates per 100,000 for each state. The purpose of this study is to find correlations between crime and dropout rate, which is why these are the first two maps analyzed in this chapter. They are not as obvious as the southern versus northeastern pattern for arrest rate as there was for dropout rate. States with low rates of arrest include Massachusetts, Alabama, Vermont, Washington, New York, and Minnesota. Which does not give us any sort of defined regional pattern, except that three are in the northeast. However, states with higher rates of arrest per 100,000 do coincide somewhat with dropout rate, and include Louisiana, Mississippi, New Mexico—somewhat scattered, but clustered around the southern and Midwestern United States.

Figure 3.4: Arrest Rates by State per 100,000



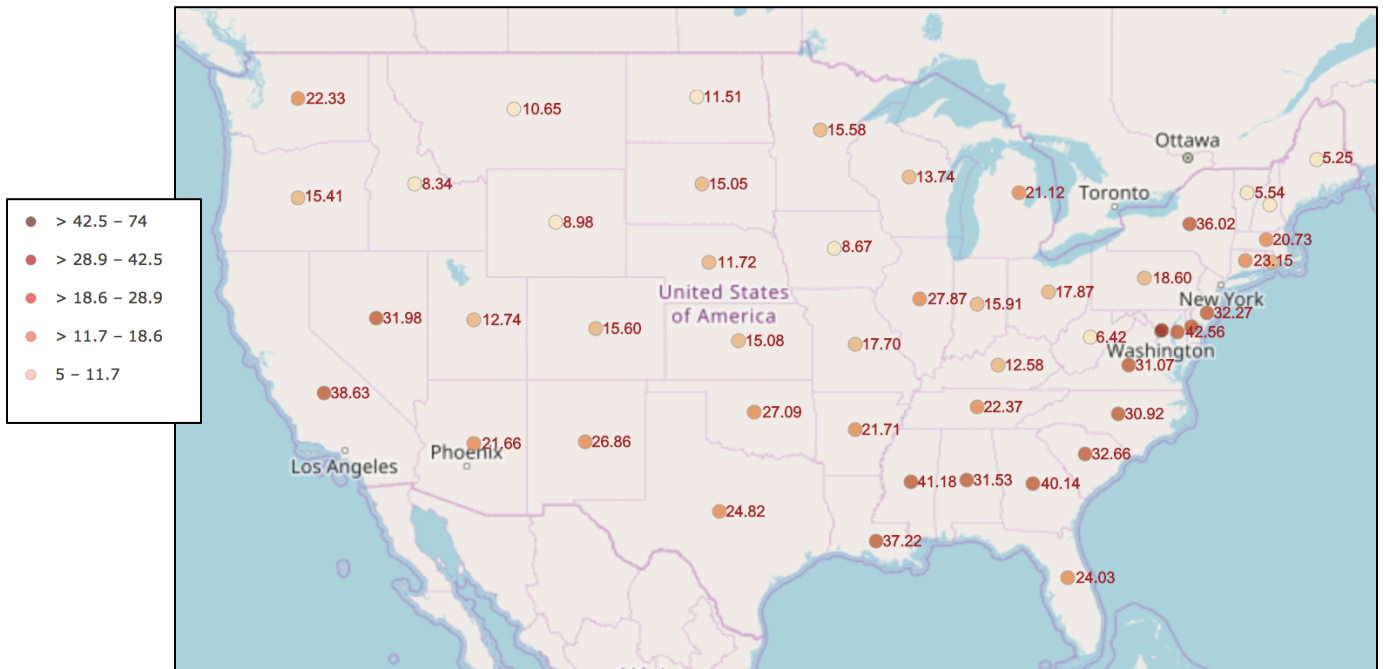
Again, in order to better analyze potential significant regional trends Figure 3.5 shows the five regions and their average arrest rate. This supports the previous observations statement, that there is no strong pattern amongst arrest rates, they seem to be relatively close. The largest gap observed is between the highest rates of arrest, which is in the Southwest (the Southeast is not far behind) compared to the Northeast.

Figure 3.5: Average Arrest Rates by Region per 100,000

West	3847.155556
Midwest	3644.109091
Northeast	3067.663636
Southwest	3900.35
Southeast	3726.808333

The next variable observed across the country is the percent of non-white members of the population of the given state, as seen in Figure 3.6. This variable is used to analyze diversity within each state. Based on the data, states with bigger cities appear to have more diversity such as New York, California, and Washington D.C. This logically makes sense, as cities are hot spots for diversity. In addition to the states with big cities, those with a greater percentage of diversity are clearly in the more southern states, including but not limited to, North and South Carolina, Mississippi, and Georgia. Diversity may be an important factor variable given Bradley and Renzulli's (2011) observation that Black students are more likely to drop out than white students. When comparing figure 3.4 to figure 3.2, there are overlaps in high rates of diversity and non-completion of high school in the southern United States.

Figure 3.6: Percentage of population of state that is non-white



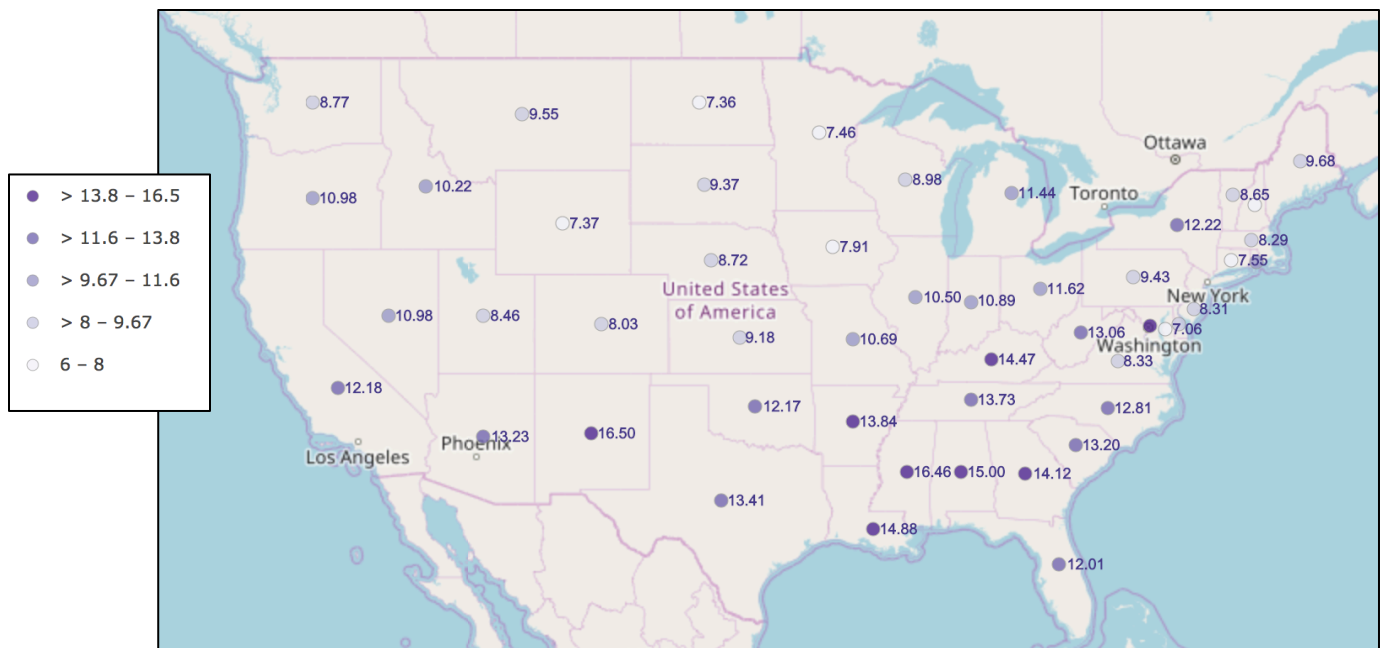
In Figure 3.7, averages by region of the percentage of the population that is non-white is depicted. There is a clear trend in this figure, the states across the southern United States, in both the Southwest and Southeast clearly have much more diverse populations.

Figure 3.7: Average Percent Non-white by Region

West	18.29520679
Midwest	15.98556504
Northeast	21.83276139
Southwest	25.10744011
Southeast	30.12240013

An important factor, as expressed through the literature is poverty. Will states with more poverty have more violent crime, and will this have a positive correlation to higher dropout rates? In Figure 3.8 the percentage of families living in poverty by state is analyzed. Much of the highest rates of poverty by family are condensed into the southern states including Louisiana, Mississippi, Arkansas, Alabama, Georgia, Tennessee, and Texas. It is important to note that California and New York also have high rates but this is suspected as a result of major urban areas. Additionally Arizona and New Mexico have high rates of poverty, which may be a result of Indian Reservations. As discussed in the literature above reservations often have higher poverty levels partially as a result of being secluded from potential employment opportunities.

Figure 3.8: Percentage of Families Living in Poverty by State



Using the data from each state for the percentage of families living in poverty, we can see the average regional percentage in Figure 3.9. The Southwest and Southeast are both

approximately 4 percentage points higher in the rate of families living in poverty compared to the next highest region which is the West. Although, there are no dramatic differences, the South remains the biggest target, while the Midwest and West fall in the middle, and the Northeast has the least amount of families living in poverty.

Figure 3.9: Average Percentage of Families Living in Poverty by Region

West	9.61442019
Midwest	9.5105016
Northeast	8.697369279
Southwest	13.82822176
Southeast	13.54418134

In order to better understand variations in average summer temperature throughout the country, Figure 3.10 depicts the averages for each of the five regions. The Southwest and Southeast have very similar average summer temperatures, which are much higher than any other region. This important distinction between regions and temperature will be important when interpreting the results from the bivariate correlation in the next section.

Figure 3.10: Average Summer Temperature by Region

West	66.23333333
Midwest	70.68333333
Northeast	68.64545455
Southwest	77.55
Southeast	77.10833333

Bivariate Correlation Analysis

In this section, I will analyze the results of the bivariate correlation matrix shown in Figure 3.10. The Pearson coefficient, which is called the r-coefficient is used to evaluate the strength of the relationship between the two given variables. The closer to one the number is, the stronger the relationship is. If the sign is positive it is a positive relationship, and if negative then a negative relationship. In order to identify statistic significance, a t-test is run; this is the p-value. In general, the smaller, or closer to 0 the p-value is, the more significant the relationship is. For this research I will focus on correlations that are significant at the 0.01 level, but also consider correlations significant if they are at the 0.05 level.

Figure 3.11: Bivariate Correlation Matrix

	<i>Religiosity</i>	<i>Av. Summer Temp.</i>	<i>Percent Non-White</i>	<i>Total Arrest Rate</i>	<i>Dropout Rate</i>	<i>Percent of Families in Poverty</i>	<i>Total Violent Crime Arrest Rate</i>	<i>Murder Arrest Rate</i>
Religiosity								
Pearson Correlation	1	.725	.349	.303	.453	.654	.177	.608
Significance (2 tailed)	-	.000	.014	.038	.001	.000	.235	.000
Av. Summer Temp.								
Pearson Correlation	.725	1	.582	.169	.356	.625	.329	.574
Significance (2 tailed)	.000	-	.000	.261	.013	.000	.026	.000
Percent Non-White								
Pearson Correlation	.349	.582	1	-.134	.138	.284	.197	.254
Significance (2 tailed)	.014	.000	-	.357	.334	.043	.176	.078
Total Arrest Rate								
Pearson Correlation	.303	.169	-.134	1	.210	.007	.430	.552
Significance (2 tailed)	.038	.261	.357	-	.147	.963	.002	.000
Dropout Rate								
Pearson Correlation	.453	.356	.138	.210	1	.563	.198	.405
Significance (2 tailed)	.001	.013	.334	.147	-	.000	.173	.004
Percent of Families Living in Poverty								
Pearson Correlation	.654	.625	.284	.007	.563	1	.156	.539
Significance (2 tailed)	.000	.000	.043	.963	.000	-	.283	.000
Total Violent Crime Arrest Rate								
Pearson Correlation	.177	.329	.197	.430	.198	.156	1	.559
Significance (2 tailed)	.235	.026	.176	.002	.173	.283	-	.000
Murder Arrest Rate								
Pearson Correlation	.608	.574	.254	.552	.405	.539	.559	1
Significance (2 tailed)	.000	.000	.078	.00	.004	.000	.000	-

To begin analyzing and understanding Figure 3.11, I focus on the dropout rate row, to interpret the relationship between arrest rate and dropout rate, as this is the main

focus of the research. The r-coefficient is .210, which is a relatively weak relationship strength, and the p-value is .147 which is not statistically significant. However, when looking further, there are strong relationships between dropout rate and other variables. Dropout rate has a very strong correlation with the percent of families in poverty, the r-coefficient is .563 and the p-value is .000, meaning it is statistically significant at the .01 level. This can be interpreted as a positive relationship between dropout rate and families in poverty; in essence, the two variables positively increase together. Although there is a lack of a relationship between dropout and total arrest rate, dropout has a strong positive correlation with the murder arrest rate, the r-coefficient is .405, and it is statistically significant as the p-value is .004. Furthermore, dropout rate has strong positive and statistically significant relationships with both religiosity and average summer temperature.

Besides dropout relationships, the bivariate correlation matrix also offers interesting statistically significant relationships between other variables. First, family poverty has a strong positive relationship with the murder arrest rate with an r-coefficient value of .539, and a statistically significant p-value of .000. This means that in states with higher rates of poverty, they are likely to have higher murder arrest rates. Since the south is historically more violent, are they also prone to having higher rates of poverty, if this is the case, why? This will be addressed in the following chapter. Family poverty also has a strong relationship with average summer temperature, as expressed in the r-coefficient value of .625, and the p-value of .000, which reveals that this is a statistically significant relationship. Does this add to evidence that the south is a hotspot for some of these

characteristics? Furthermore, there is also a significant relationship between religiosity and average summer temperature with an r-coefficient of .725 and a p-value of .000.

Average summer temperature has strong relationships with two other variables. Its strong positive relationship with diversity is seen in the r-coefficient of .582, and is expressed as statistically significant through the p-value of .000. This suggests that as the temperature increases, the percent of non-white civilians increases as well. In conclusion, average summer temperature also has a strong relationship with murder arrest rate, with an r-coefficient of .574 and a p-value of .000, it is evident this is correlation statistically significant.

Partial Correlation Analysis

In order to better understand a potential relationship between arrest rate and dropout rate, I ran a partial correlation controlling for poverty and race, since these are two important demographic characteristics. Figure 3.12 shows this matrix. Controlling for families living in poverty and percent non-white, the r and p values have changed. The r-coefficient is now .249 and the p-value is .092. Although values are not very strong nor significant, they are stronger and closer to the .05 level of significance than they were in the original bivariate correlation. This suggests dropout rate and arrest rate have a slight correlation, and dropout rate may be driving arrest rate by a modest amount.

Figure 3.12: Partial Correlation Matrix Controlling for Poverty and Race

	<i>Dropout Rate</i>	<i>Total Arrest Rate</i>
<i>Dropout Rate</i>		
<i>Pearson Correlation</i>	1	.249
<i>Significance (2 tailed)</i>	-	.092
<i>Total Arrest Rate</i>		
<i>Pearson Correlation</i>	.249	1
<i>Significance (2 tailed)</i>	.092	-

To further analyze the dropout rate's correlation to murder arrest rate, I did the same as above and ran a partial correlation controlling for poverty and race, shown in Figure 3.13. In this case the strong, significant relationship between total murder arrest rate and dropout rate in the original bivariate correlation no longer exists. The r-coefficient is .152 and the p-value is .308. This correlation when controlling for race and poverty is neither strong nor statistically significant. This change in significance suggests that dropout rate does not drive murder arrest rate, but it does drive the total arrest rate at a slight level. This will be further discussed in the next chapter.

Figure 3.13: Partial Correlation Matrix Controlling for Poverty and Race

	<i>Dropout Rate</i>	<i>Total Murder Arrest Rate</i>
<i>Dropout Rate</i>		
<i>Pearson Correlation</i>	1	.152
<i>Significance (2 tailed)</i>	-	.308
<i>Total Murder Arrest Rate</i>		
<i>Pearson Correlation</i>	.152	1
<i>Significance (2 tailed)</i>	.308	-

CHAPTER 4: Discussion

In this chapter I will summarize the results of my research, and discuss these results as they connect to the literature.

Summary of Results

As stated in the previous chapter, the Southwest has the highest dropout rates with the Southeast and West coming in second, and the Northeast substantially lower. As for arrest rates, there is less of a significant accumulation in one region. But the West and Southeast have the higher averages, with the Northeast again with the lowest. The GIS and table of averages showed that the Southeast is definitely the most diverse region in the country as a whole. Furthermore, the Southeast has the highest percent of families living in poverty. Finally, the averages of summer temperature by region show that the Southeast and Southwest are the hottest states, which should be taken into account when interpreting and discussing the correlation results.

The initial bivariate correlation produced many strong and significant relationships. Dropout rate had a strong and significant relationship with religiosity, poverty, and murder arrest rate. But the relationship between arrest rate and dropout rate did not become clear until I controlled for poverty and race and the relationship then strengthened. The first partial correlation demonstrated that the relationship between dropout rate and arrest rate is altered by poverty and race. The second partial correlation showed that when race and poverty are controlled for, the correlation between murder arrest rate and dropout rate disappears. The bivariate correlation also showed important

relationships between diversity and temperature, poverty and temperature, poverty and murder arrest rates, and religiosity and temperature.

The South and the Impact of Poverty

It is important to note that all four of the variables mapped in the ArcGIS system have higher rates in the Southwest and Southeast regions of the United States, albeit not all as strong as others, but at least one or the other is the highest ranking region for each of the variables—race, total arrest rates, poverty and dropout rates. This observation supports previous research, Campbell (2012) besides states with large cities such as New York, the south has the largest non-white population. According to the literature the Southern United States have more violent crime than anywhere else in the country, which increases the total arrest rate as a whole, making it evident in the results (Fuchs 2013). Fuchs (2013) suggested that the heavier amount of crime might be caused by more traditional gender role beliefs that the southern population holds. It is suggested that religion is the backbone to these traditional gender role beliefs. The bivariate correlation matrix showed that religiosity and higher summer temperatures have a strong and significant correlation, and the south have the highest summer temperatures, so we can conclude that the Southern population as a whole considers themselves quite religious compared to the rest of the country. Southern residents are more likely to describe their religious beliefs as “strong” than any other region when asked in the GSS survey (Campbell 2012). This extreme religiosity that supports traditional gender roles then propels the stereotype of the confident, powerful, and aggressive male. When trouble arises in the south, males may be turning to violence more often than males in other regions, for example, the Northeast,

because they believe they need to assert their power through aggressive behavior, in order to earn respect and solve the problem as a ‘man’.

The literature also states that the southern region of the United States has higher poverty rates (Fuchs 2013), which is shown through the ArcGIS map, as well as the strong correlation between the percent of families living in poverty and the average summer temperature. According to the literature in Chapter 1, students in families of low socioeconomic status are approximately 2.4 times more likely to drop out of school than middle class students (Christle, Jolivette, and Nelson 2007). The slight increase in dropout rate observed in the Southern regions of the country may be accurate, since poverty and dropout rate are related. The data in the bivariate correlation supports this with a strong and significant relationship between the percent of families living in poverty and the dropout rate.

So, why are poverty and dropout rates so strongly related? It may be because teens in lower income families are pressured into early adult responsibilities such as working full time to bring in an income for the family (Christle, Jolivette, and Nelson 2007 and Bradley and Renzulli 2011). The level of education attainment of the student’s parental figure is also very important, students with parents whom did not complete high school are less likely too as well (Tyler and Lofstrom 2009). Since these parental figures have no high school diploma they are most likely to be making a minimal income, which circles back to poverty’s connection with dropout rate. Furthermore, parents raising children in poverty do not always realize how important education is because they themselves did not complete their high school education and may even have had a

negative experience, so they have less investment in their child's education and are more invested in getting their child into the workforce (Tyler and Lofstrom 2009).

Hirschi's (1969) causal chain theory wraps all of these relationships up together, and continues to be supported by the data found in my research. The chain begins at academic incompetence leading to poor school performance (Schmallegger and Bartollas 2008). Based on other literature we know that children in lower class families are raised with a "no-excuses" mindset which in schools translates to the children respecting their teacher's authority and believing they cannot ask for help when they need it (Calarco 2014). This ultimately leads to poorer performance in schools. Following the logic, if they are not performing well in school they may reject the authority of the school and dislike being there all together (Schmallegger and Bartollas 2008). Hirschi's Social Bond Theory (1969) explains that juveniles with weak bonds to their social groups, school being one of them are more likely to commit acts of delinquency. Delinquency in adolescent years is a strong predictor of dropping out of high school (Fagon and Pabon 1990), which will then increase the arrest rate of the area. These weak bonds are more often found in low-income schools because of the lack of resources these schools will have to serve students' individualized needs. All of these factors discussed in Chapter 1, can now be understood as completely interconnected based on the data from the regional averages and the bivariate correlation.

Diversity is also strongly correlated with summer temperature, and we know the higher summer temperatures are in the Southwest and Southeast. High temperatures are also correlated with strong religious beliefs, which can be interpreted as a belief in strict traditional gender roles. Total arrest rate had a strong correlation with religiosity, proving

that traditional gender roles create more animosity and crime. The correlation between poverty and summer temperature shows that there is more poverty in the southern regions of the country, and since poverty is strongly correlated with dropout rate and has a smaller but still significant relationship with diversity, all of these variables are intertwined. In order to better improve the country's school system these issues need to all be looked at with the idea of intersectionality in mind rather than individualized separate social problems.

The Southwest

The Southwest region of the United States, as previously discussed, falls into the highest category of many of the variables, experiencing high dropout rates, high diversity, high arrest rates, and high poverty rates. All of these observations are shown in the regional averages as well as the bivariate correlation through the significant relationships with high summer temperature. In this section I will link Indian Reservation as partially responsible for these living conditions in the Southwest states—Arizona, New Mexico, Texas, and Oklahoma. I have already discussed how intersectionality is key, therefore I will focus on explaining crime and poverty, which is what the minimal amount of literature available on reservations discusses. Crime rates are often higher in states with large Indian Reservations because of the casino business and the large impact it has on the consumption of alcohol (Mays, Casillas, and Maupin 2007). Since alcohol consumption has been connected to the increase in violent crime in Native American Reservations (Lee 1993), we can further understand the correlation between the summer temperatures (extremely prevalent in the Southwest) and arrest rates. The high rates of poverty can in part be explained by the fact that many reservations are isolated from

employment opportunities, creating high rates of poverty, and the need for benefits such as food stamps (Pandey, Min Zhan and Tension 2004). The results of the research support the arguments in the literature.

Understanding Arrest Rates

The shift in the correlation between dropout rate and total arrest rate from the bivariate correlation to the partial correlation when controlling for poverty and race is important to note and explore. Originally there was no significant relationship between the two in the bivariate correlation matrix, which is not what was hypothesized based on the literature. The literature connects dropping out of high school to arrest rates. For example, Tyler and Lofstrom (2009) reported that an additional one-year of school would result in the reduction of many crimes. Hirschi's (1969) causal chain and social bond theory, suggests that poor school performance and dropping out of school are related to delinquent behavior (Schmallegger and Bartollas 2008). Fagon and Pabon (1990) report that delinquency in the adolescent years is a strong predictor of dropping out of high school. Murnane and Hoffman (2013) connected an increased risk of future criminal behavior to non-completion of high school. So why was there no original relationship? Potentially, these juvenile delinquents are coming in contact with the criminal justice system but are not actually be arrested and therefore not adding to the rate. To further investigate this result, I ran a partial correlation controlling for poverty and diversity to neutralize demographics. The correlational relationship between arrest rate and drop out rate strengthened, although not enough to be significant. But it shows us that there is a relationship, with poverty and diversity playing a larger role than first expected.

The murder arrest rate correlation helps us to understand the total arrest correlation as well. Originally the murder arrest rate had a strong and significant correlation with dropout rate as well as poverty rate and religiosity. The relationship between these three has already been discussed. But why when poverty and diversity are controlled for, does the correlation between murder arrest rate and dropout rate significantly decrease? This relationship decreases while total arrest rate slightly increases. This may suggest poverty drives the murder rates. When you control for poverty, the relationship to dropout rate decreases while the total arrests to dropout rate increases. If adolescents are dropping out of school it is not likely they are engaging in murder very often. But, they need to fill their now empty days, and are likely to get into trouble, and increase the arrest rates through minor crimes rather than through murder.

Chapter 5: Conclusions

The Importance of Intersectionality

Throughout the discussion in Chapter 4 it is important to understand that one single variable does not predict nor cause another. Rather, they are interconnected so that in order to comprehend the severity of the issues they need to be studied alongside each other. The Southwest and Southeast are by far the regions with the highest severity within this study; they need the most help in order to keep up with the rest of the country, especially the Northeast in terms of high school attrition rates, crime and poverty. All of these are affected by religiosity and diversity, which are more prominent in these two regions as well. The literature truly helps to explain the data in this case. It reminds researchers to remember the impact and different cultural norms within different regions and areas, specifically demonstrated within Indian Reservations. A big take away from this research is the importance of funding the understanding of reservations and to learn how to better engage these residents with a positive educational experience as well as improve the poverty levels impacted by restricted employment opportunities. The Northeast has lower rates of each of these factors, again showing the importance of intersectionality, when one of the factors is lower, the rest in turn are. This region also has lower rates of diversity, and religiosity. We should take all of this into consideration going forward in order to better improve the public education system. In order to create a country with less crime and a smaller prison population you cannot simply focus on a school's a community and physical performance, but at all of the other aspects which surround it, such as race, poverty, religiosity, and crime.

Limitations and Future Research

There are two main limitations in this study. First, we must be careful not to fall into the trap of an ecological fallacy. This occurs when conclusions drawn from data using big groups of people is applied to the individual level. Although these findings are true for the general population they may not be accurate at the individual level. There are always outliers. Secondly, this study showed correlation but not causality. The research shows the intersectionality of all of the variables but does not show any sort of chain of causality. In future research, this fault can be explored in order to figure out the best approach to solving the large issue of the education system the relevance it has to poverty, race, and crime. In future research I would also want to take a more qualitative look at this data. In order to best improve the country I think it is important to learn and understand through a large amount of individual's experiences throughout the education system and their relation to poverty, race, and crime. Data and numbers are extremely helpful but to best make improvement, it is vital to speak and learn from a large and diverse group of people to truly understand ways to make improvements and how they will affect individuals.

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