The Relationship Between State-Level Poverty and High School Attainment

By

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Abstract

The study employs hierarchical binomial models to test the effect of poverty and the concentration of poverty within a state and a variety of other factors on the attainment of seventeen-year-old census respondents across six samples from 1960 through 2010. The state level predictors remain important in most models. These measures, taken as a whole, account for substantial variability between the states in all but one sample year. 1960 is the exception. The state level poverty variable was found to produce a negative effect of statistical significance in three of the six samples. Of the control variables, the black population in a state has a negative effect in two samples and the Asian population in a state produces a positive effect in four of the six samples. Family poverty status predicts lower attainment in all six samples. The effect yields the most powerful adjusted odds coefficient in 2010 and the weakest in 1980. One other variable, family size, has a negative effect on the attainment outcomes in each studied sample. Paternal cultural capital predictors and female gender have positive effects in all six samples. The importance of regional differences, historical trends, and emerging policy considerations are also explored.

Table of Contents

Title Page	i
Acceptance Page	ii
Abstract	iii
Table of Contents	iv
List of Tables	v
List of Figures	vi
Chapter 1: Introduction	1
Chapter 2: Literature Review	13
Chapter 3: Methods	63
Chapter 4: Results	72
Chapter 5: Analysis	90
Appendix	118
References	134

List of Tables

Table 1: State Level Attainment Means by Poverty Level 6

Table 2: Sample Characteristics 64

Table 3: Null Model for 17-Year-Old Attainment, 1960-2010 73

Table 4: Null Model for 17-Year-Old Attainment Plus State Poverty, 1960-2010 74

Table 5: Test Model for 17-Year Old Attainment (Level 1 plus State Poverty), 1960-2010 75

Table 6: Random Effect Comparison for State Level Poverty 76

Table 7: Random Effect Comparison the Full Model 77

Table 8: Full Model for 17-Year-Old Attainment, 1960-2010 79

Table A1: Regional Comparison of Depth of Poverty 118

Table A2: 1960 State Level Variable Correlation Matrix 119

Table A3: 1970 State Level Variable Correlation Matrix 120

Table A4: 1980 State Level Variable Correlation Matrix 121

Table A5: 1990 State Level Variable Correlation Matrix 122

Table A6: 2000 State Level Variable Correlation Matrix 123

Table A7: 2010 State Level Variable Correlation Matrix 124

Table A8: 1960 State Level Sample Characteristics 125

Table A9: 1970 State Level Sample Characteristics 126

Table A10: 1980 State Level Sample Characteristics 128

Table A11: 1990 State Level Sample Characteristics 129

Table A12: 2000 State Level Sample Characteristics 130

Table A13: 2010 State Level Sample Characteristics 132

List of Figures

Figure 1: National Poverty and Attainment Rates for 17-year-olds, 1960-2010 65

Figure 2: State Level Poverty and Black Population in 1960 83

Figure 3: State Level Poverty and Black Population in 1970 84

Figure 4: State Level Poverty and Black Population in 1980 85

Figure 5: State Level Poverty and Black Population in 1990 86

Figure 6: State Level Poverty and Black Population in 2000 87

Figure 7: State Level Poverty and Black Population in 2010 88

Chapter 1

Introduction

Since the middle of the twentieth century, the federal government has been engaged in a concerted effort through a variety of different programs to help alleviate the negative effects of poverty, and to some extent, these efforts have succeeded, but it still remains a problem. The effects of poverty on society can be severe. The schools represent one area where those effects take hold. Poverty, however, is not evenly dispersed throughout the country. Some areas are far more exposed to larger poor populations than others. As a result, schools serve different populations and cope with different sets of problems. This research project will attempt to discern the ways in which educational attainment is affected by poverty in consideration of these geographical differences. Specifically, the project will look to the state level to identify the effect of state level poverty concentration on the educational attainment of 17-year-old students with individual level characteristics and other state level factors controlled. The state level is important because states are defined by artificial boundaries within which different sets of governing principles and laws prevail. Thus, for the purpose of the actual analysis, it is important to view the states as simple political units in which poverty, and other characteristics, exist at different levels. The value of the study is that it expands the widest level of analysis outward to the widest possible level within the United States. Since we know that socioeconomic characteristics correlate with educational outcomes at a narrower level, such as the school (Raudenbush and Bryk, 2002), it is natural to expand the second level outward as far as possible so that we can know when to stop looking for the effect. Because of these differences, and the distinctive features that derive

from these differences, it is essential to explore the importance of state characteristics in predicting educational outcomes. This will add a new dimension of explanatory possibilities.

Based on the research presented in this volume, the expectation is that higher levels of poverty will correlate to lower levels of educational attainment and that the effect of individual poverty is intensified by higher concentrations of poverty at the state level. Since poverty, education, and a variety of demographic controls are not static concepts, this study will try to examine them over the course of fifty years in order to produce a historically coherent explanation for the findings presented.

Wilson (2012) identified 1960 as the year that the social characteristics of the country's inner cities began to reflect less desirable attributes. It was soon after that the federal government began to introduce new forms of redistributive legislation as part of its 'war on poverty.' And in the same decade, the most impactful piece of federal education legislation ever written was introduced with the Elementary and Secondary Education Act. Since 1960, the total percentage of people living in poverty has decreased, however, the poverty rate for children remains higher than for adults. As of 2014, the poverty rate among children under the age of 18 was 21 percent (Jiang, Ekono, and Skinner, 2016). The foregoing fact, in the context of the results indicated by the research that will be presented in the next chapter, suggests the magnitude of the problem of poverty facing our schools. Furthermore, the educational system, particularly in the poorest of areas, does not have the tools to counteract the problems of poverty from the outset.

Many poor families live in conditions that are far worse than those in the middle class, let alone the wealthy. Not only do large numbers of poor families lack access to steady work, quality education, and adequate healthcare, but when it comes to fundamental needs, they often remain

deficient of those on which they would base their survival, such as a decent residence, clothes, and suitable food and water supplies. Other families that do have homes suffer from other problems due to dilapidated conditions; people in poverty are nearly three times as likely to suffer from unsatisfactory living conditions as people not in poverty and that number increases more for families receiving public assistance (Federman, Garner, Cutter, Kiely, Levine, McGough, McNillen, and Short, 1996). People depend on the various types of government assistance programs, churches, and independent social service charities for the provision of the indispensable needs required for daily life while other families suffer for days at a time without fulfillment of what many others consider their simplest basic necessities.

Parents who live under these conditions find it difficult to fend for themselves, which can lead to neglect of their children, even when the intent of the parent is not to harm them, but to provide the best care possible. The idea that so many of these people have to care for small and school-aged children when they themselves lack a sound source of income to provide a primary source of support for the family, a minimal amount, if any of state child care assistance, and an unsuitable living arrangement to provide seems a dreadful proposition for a nation that wants to imagine its society as exceptional.

Even worse is the prospect for the children of the poor who must endure the tragedy of a life filled with feelings of hopelessness and despair. Poor parents often have to leave their children at home without supervision for extended periods of time. Many live with only one parent or an unrelated guardian or elder sibling to care for them. Many parents come and go from the home unexpectedly. In certain cases, children are abused or neglected. Maltreatment measures are positively associated with families with incomes below 75 percent of the poverty line (Paxson and

Waldfogel, 2002). In either case, the child lacks a stable environment in which to interact. As a result, the child does not have the appropriate opportunity for success in early life. These types of conditions lead to excessive mobility from home to home and school to school and might retard the child's social and adaptive development. The consequences can create catastrophic outcomes, leading to disengagement, dropout, and even criminal behavior. Without intervention at the earliest possible stage, there would often appear to be no impetus to prevent this cycle from perpetuating itself as the children grow into adults. As adults, due to their disadvantaged childhood, they lack the skills to land a decent job and become mired in the same bleak state as their parents before them, leading to future generations of poor and neglected children.

The effects of poverty plague the children in the school system from kindergarten through even the higher levels of postsecondary education. Its effects appear on a widespread scale. Indeed it seems that little if any disagreement among researchers in their findings with respect to the effect of economic disadvantage on educational performance at all levels appears evident in the literature. Research suggests that students who come from poorer backgrounds enter the system at a pronounced disadvantage in a variety of different ways when they are compared to their more privileged counterparts (Duncan, Magnuson, Kalil, and Ziol-Guest, 2012; Kunz and Moyer, 1969; Payne and Biddle, 1999). Ultimately, as will be described in the next chapter, those negative effects appear as a persistent pattern in the process until a point unknown in the educational life cycle, perhaps until it terminates.

Even in spite of efforts to mitigate the effects of economic disadvantage in education through policy initiatives at multiple levels of government, considerable socioeconomic gaps in both aptitude and performance remain throughout the educational process. In fact, the research

suggests that in recent years, despite a reduction in the percentage of people who live in poverty, the income gap between the wealthiest and poorest families has increased and along with that has come an achievement gap that has increased in size over the last fifty years (Reardon, 2011). Evidence suggests that these gaps that first appear evident upon entry of the student into the school system might be narrowed through individual attention in the optimal instructional environment, but in general can be expected to remain unresolved until a student has completed his or her course of educational study.

Despite near unanimous agreement with respect to the degree and direction of the effect at the individual level, it could be useful to explore how educational attainment outcomes vary across the United States in order to guide the decisions of policy makers who are responsible for the future direction of the school system. Since one expects to find differences across the states given the vast disparities in the populations served by the school systems between the states, it is important to study them. Many characteristics differ significantly between the states, as the data from this study will demonstrate, for example, the percentage of people who live in poverty, a variable of particular interest for this study. 2010 Census Bureau data reveal that the percentage of seventeen year olds living in poverty ranges from 8.4 in the lowest poverty state to 25.2 percent highest poverty state. With such remarkable disparities, it becomes important to study not just how living in poverty affects attainment, an effect that is in general known already to be negative once the model controls for other characteristics, but to examine how in fact living in states with different characteristics, and in particular, higher or lower concentrations of poverty using seventeen-year-old poverty rates affects the educational attainment outcome. The use of the state level of analysis helps to fill a gap in the literature. While studies have examined narrower unit effects, such as the

school, minimal if any evidence offers a suggestion as to what results might appear between the states specifically given that states have higher and lower concentrations of poverty within them.

The table below (Table 1) provides descriptive information that helps denote key differences among the states in terms of poverty and high school attainment levels. The states are divided into three groups based on the percentage of sampled students in poverty. The attainment means are provided for each group. The first group consists of states in the lowest third in terms of the poverty rate within the sample (meaning these are the states with the fewest people in poverty) and so forth up to the highest third.

Table 1: State Level Attainment Means by Poverty Level

	Lowest 1/3 Poverty	*Middle 1/3 Poverty*	*Highest 1/3 Poverty*
1960 Attainment Mean	.752	.744	.610
1970 Attainment Mean	.824	.834	.688
1980 Attainment Mean	.928	.892	.867
1990 Attainment Mean	.867	.837	.816
2000 Attainment Mean	.880	.850	.843
2010 Attainment Mean	.928	.917	.891

For example, the attainment mean in 1960 for states in the lowest third was .752, and for states in the highest third, it equaled .610. This means that the attainment rate in the third of states with the least poverty was more than 14 percent higher than in the third of states with the highest poverty. As can be seen from the data, substantial differences in attainment levels are evident between the lowest and highest poverty states. States in the lower third in terms of poverty tend to have the highest attainment rates and the reverse is true for states in the higher third of poverty. These results help to provide a context for the use of the state level of analysis and support for the

hypothesis that state level poverty will correlate with lower attainment. It is interesting to note that the difference in attainment rates from the poorest to the least poor states has gotten smaller over the last fifty years as attainment rates have increased for every group.

The concentration of poverty remains a serious issue and one of critical importance in modern educational and social research. The concentration of poor people living in environments where they are surrounded by other poor people is growing (Jargowsky, 2013). Yet on a smaller scale, many are found in remote and depressed rural areas in areas from the Mississippi Delta to the mountains of West Virginia and beyond. Meanwhile, the trend has been that the middle class and wealthy migrate out of these areas to find homes in suburban and wealthier rural areas where the schools have better funding due to higher overall levels of income and investment, property values are higher, crime rates are lower, and social services where needed are readily available.

This striking contrast from life in poverty to life for regular families seems to manifest itself in the inability of schools in poorer areas to compensate for achievement gaps from the outset. The fierce competition for scarce public resources favors the schools that are in districts where wealthy and middle class families pay the local mill taxes to support education. Suburban schools have more tools available to enhance the educational experience, such as high quality course offerings (Ispa-Landa, 2013). The contrast appears too often in the inner city school districts. Examples of problems appear in the form of teacher shortages and depleted stocks of school supplies among others (Lareau, 2003).

States, similar to urban areas, cities, and counties, differ in terms of the level of concentration of poverty within their borders and, as a consequence, one can compare the degree of poverty within one state to that same characteristic of another. That remains the essential state level predictive measure to be used in the study. Whether or not any differentiation yields a result

statistically important enough to produce a significant correlation with the educational attainment outcome acts as the essential state level research question for which the dissertation intends to provide an answer. This is done by repetition of the same test over six census samples. This repetition will allow for a greater ability to identify the critical trends over the time span.

It will be the purpose of the dissertation to determine through the statistical analyses what factors at the state level correlate to higher attainment. To specify, the goal of the quantitative analysis in the project is to determine whether the conditions in the states, such as higher overall concentration of poverty at the state level, correlate with lower attainment, after controlling for a variety of factors at both the individual and state levels. Because these control variables must be included in the analysis, the results will be discussed. Individual variables are comprised of parental education and occupational status, family size, race, and gender.

Other important state level variables to be studied include racial composition, geographical location, major sectors of employment, and education expenditures. These are variables that differ to a large degree between the states and have some degree of relevance to one or the other of the key variables of interest. As noted earlier, there are significant differences in the distribution of poverty based on the part of the country so that would suggest that regional location needs to be controlled. Racial variables correlate with a variety of different educational outcomes as will be discussed in the next chapter and the racial composition of the states vary greatly. High concentrations of black and Hispanic students at the school level, for example, has a negative effect on overall achievement (Brown-Jeffy, 2009). A result similar to this could be found at the state level, meaning that high concentrations of these groups of students in a state would have a comparable effect as high concentrations in a smaller unit, such as a school. One would expect some positive effects for high populations of some races and the opposite for others. Asian

students, on the other hand, tend to have higher levels of average achievement (Lee and Rong, 1988; Sakamoto, Goyette, and Kim, 2009). Education expenditures are also highly variable between the states and could be expected to have some positive effect on attainment. However, studies appear to indicate that the effect of expenditures on achievement had weakened over time (Childs and Shakeshaft, 1986). As such, these employment considerations are worthy of inclusion in the study and one would expect that the negative effects of poverty could rise as these types of jobs decline. These topics, as well as important regional, political, and historical differences will be explored in further detail in the next chapter.

The study uses data collected by the United States Census Bureau and maintained by the Minnesota Population Center at the University of Minnesota in the Integrated Public Use Microdata Series. Six census samples collected once every decade for a period of fifty-one years spanning the time frame from 1960 through 2010 comprise the examined datasets. Although the census questionnaire varies from year to year, the study selects only the same set of characteristics for each sampled year. The study samples, however, include only the subjects who identified as seventeen years old at the time the Census Bureau administered the nationwide questionnaire in each census year. None of the sampled subjects respond on more than one occasion over the course of the period examined. Thus the study must be considered a cross-sectional analysis rather than a longitudinal one.

The value of time in the models is primarily for comparative and historical purposes, though the absence of time as a variable prohibits definitive statistical conclusions with respect to its precise effect. The use of repeated measure, however, adds value to the investigation of observed differences in the significance and relative intensity of relationships between the independent variables and the attainment outcomes from decade to decade throughout the

researched term and serves to increase reliability of those results that are found consistently. It also helps to reveal trends over time in this critical period in history. Through this repeated examination, the study aims to identify the key historical trend in poverty to determine whether lower levels of attainment follow historically along the same pattern as higher levels of poverty. The presence of such a trend would add credence to the notion that negative effects on attainment can be ameliorated when the poverty level is reduced. Such a finding would suggest that the identification of the ways in which to reduce poverty outside the schools might turn out to be just as effective a strategy as proactive systemic changes within the schools.

The study uses the same sets of variables for each of the six samples. Bernoulli binomial hierarchical generalized linear models serve as the primary method of statistical analysis of the data for each of the samples, similar to how a binomial logistic regression would work were the study to employ a single level of analysis. The study uses basic educational attainment targets set at the tenth grade minimum level serving as the main dependent variable. A more detailed discussion of the research process and methodology is presented in the analysis following the literature review.

A survey of the relevant literature as it pertains to the interaction between poverty, its many aspects, and education in both process and implementation precedes the statistical analysis. This presentation of the literature follows forth from the introduction in the second chapter of the dissertation. The literature review intends not only to guide the statistical analysis but it also informs the theoretical disposition of the interpretation of the findings that follow from the statistical tests. To add clarity, the primary purpose of the literature review will be to inform the discussion of the interaction between the key variables and the general analysis, rather than to form a basis for that portion of the dissertation that comprises the quantitative assessment, which instead

comes mostly from the incentive of the author to add to the scope of the existing literature with a new addition to the field. Many aspects of poverty not measured by variables used in the census appear in the literature review and conversely certain controls used in the statistical analysis do not receive extraordinary detail in the review or only require a brief mention. Several aspects of poverty in the review as they relate to education include the concentration of poverty, neighborhood poverty, culture, race, living conditions, health, behavior, parental attitude and support of the schooling process, various forms of capital, and the structure of the family.

It can be of no doubt that the relationships between family socioeconomic conditions and the most regularly researched student-based outcomes such as graduation and attainment, achievement, and assessment test performance appear as frequent objects of study for educational researchers over the course of the last quarter of a century. In fact, this issue could perhaps be one of if not the most studied subject area in the field of educational policy. Not only does this appear to be the case, but the outcome of these studies has yielded a remarkable consistency in the results.

As a result of looking into an area that so many have so thoroughly examined, most with far greater research skill, it must be clear that not all of the information discovered by the analytical techniques performed in the dissertation will provide original conclusions, nor can any of the theories that have driven the research questions be described as in any way particularly innovative. And as a consequence, the study would not be expected to facilitate the invention of a revolutionary theory that will come about from the findings presented here, but instead to promote a deeper understanding of what the breadth of the effect of poverty represents with respect to the educational process.

That said, a cautionary caveat can be stated as either a benefit or a detriment to the study as a whole. It is, first, of course a detriment because much of the value that derives from any

research report lies in the ability to provide the field with a degree of knowledge, a new revelation, for instance, that can allow one to expand the scope of the dominant theory. But the benefit is that even without an innovation, each topic or element that one can explore from a different point of view can add value to the body of research even if the discovery only provides a minor adjustment to accepted conclusions. That in itself will allow for future research to test the reliability of the results. Furthermore, the findings will stress the importance of the state as an additional measurement level of interest in the study of the effects of poverty on attainment and provide a suggestion for why, when national data are available for interpretation, it has to be included as an element that researchers must not ignore if the conditions dictate its necessity.

These elements, differences over time, and state-to-state nuances, though not momentous are in fact not trivial either, but rather they can add useful support to research already done and give guided insight to those who seek to look deeper into poverty as a problem that although researchers understand, they must insist to know it better. At the least, the study will allow for a determination of whether or not the degree of differentiation in poverty concentration between the states is adequate enough to warrant additional measurement of that variable at that level of analysis. The final chapter provides more analytical discussion of the final outcomes.

Chapter 2

Literature Review

A Historical Look at Poverty and Education in America, 1960-2010

Since the purpose here is to explain the trends in the effect of poverty on educational attainment across a period of fifty years, it is important to study the trends in and policies that relate to them over the same time span. The fact of the matter is that in spite of extensive social and political efforts to combat poverty, the problem remains quite serious. Based on a one percent sample of the total population, in 1960, 24.6 percent of families earned an income equal to 100 percent of the poverty level or less, and that proportion had decreased by more than eight percent to 15.8 percent in 2010 (U.S. Census data). That would seem to be a rather substantial decrease.

President Kennedy first recognized in the early 1960s the need for a comprehensive plan to address the problem of poverty, and his successor Lyndon Johnson gave it a name in his 1964 inaugural address when he coined the phrase 'war on poverty,' but the plan took its official form with the passage of the Economic Opportunity Act in that same year (Katz, 1996). What followed with the plan was a series of policy adaptations and implementations designed to reduce economic inequality and mitigate the burden of indigence on the family. The primary focal points of the plan, equal opportunity and community action, were realized through programs such as Operation Headstart, the Job Corps, and another key article of legislation, the Elementary and Secondary Education Act (ESEA), Title I of which directed funds toward schools in areas of high poverty (Katz, 1989; Zimmer, 1967). ESEA was motivated by the need to devise a more equitable formula for funding schools because the states were not doing enough to help low income students (Sunderman, Kim, and Orfield 2005). But the administration had a secondary motivation for the

law as well. The president wanted to assert federal power and make it clear to lower level agencies that the federal government was going to have an influence on education (Hill 1988). This added involvement would discourage complacency and improve consistency throughout the system. The results of proactive policy generated an increase in federal funding to elementary and secondary schools, yielding a rise from half a billion in 1960 to three and a half billion in 1970 (Kantor, 1991).

The positive effects of ESEA were, however, diluted. In fact the distribution of resources yielded little effect in areas where poverty is highly concentrated (Rury and Saatcioglu, 2011). States struggled to track the funding allocations at the local level due to at least some extent the lack of communication between different levels of government (Jeffrey, 1978), and the absence of requirements for optimal implementation of funding (Ribich, 1968). Additionally, there were significant problems with the implementation of ESEA from the outset, such as misappropriation of Title I funds to build recreational facilities and fund non-essential academic programs (Kantor, 1991; NAACP LDEF, 1969). Nonetheless, the educational gains in the 1960s that accompanied passage of the National Defense Education Act, ESEA and Upward Bound, were particularly significant for minorities. The rate of high school completion among African American men in their late 20s increased from 36% in 1960 to 60% in 1969 (Owens, 1972).

At the same time, between the mid-1960s and early 1970s, a dramatic decrease in the poor population accompanied a massive increase in Social Security, but the decrease seemed largely confined to male-headed families, as the number of female-headed families in poverty remained constant from 1963 through 1969 (Patterson, 2000). It is hard to argue, however, that the poor did not benefit from the additional government intervention in the 1960s. Medicare and Medicaid

increases, for example, account in large part for the fact that the proportion of people who had never visited a physician decreased from a fifth in 1963 to just 8% by 1970 (Katz, 1996). Meanwhile, the total population of people in poverty dropped from 38.8 million to 24.3 million between the years of 1959 and 1969 (Owens, 1972). The poverty rate among the sampled seventeen year-olds in this dissertation was nearly ten percentage points higher in 1960 than in 1970, by far the largest decrease measured in any decade studied.

By 1970, the total proportion of people in poverty had decreased to 16.5 percent from nearly one quarter just a decade earlier. To suggest that remarkable fall is due solely to the war on poverty is of course an overstatement since economic growth must account for at least a portion of it. Still, the expansion of government programs had more of an effect on improving living conditions and reducing poverty, for blacks in particular, than economic growth did (Katz, 1996). Public opinion research in the late 1960s revealed that the people by more than a two-to-one margin believed the federal government should be held responsible for the elimination of poverty, but that people were dishonest about their stated levels of financial need (Asen, 2001). With public opinion still in favor of government involvement, programs with the same goal of trying to reduce the impact of poverty continued into the 1970s, but with a much different approach.

One example of such a program was the Comprehensive Employment Training Act of 1973. This was one of several measures passed that were crafted to help those in poverty locate a job, this one in particular "provided stipends to individuals from poor backgrounds, and emphasized the importance of developing skills through vocational and basic academic education" (Rury, 2013, p. 196). Another example is Supplemental Security Income (SSI), a program that began in 1972 to offer assistance to the elderly and disabled. Its approval, which at the time was

not controversial, followed four months after Congress had authorized a twenty percent increase in social security payments (Davies, 1996). Further evidence of the growth in government support for the poor was that the number of AFDC (Aid to Families with Dependent Children) recipients had more than tripled between 1960 and 1974 from 3.1 million to 10.8 million (Patterson, 2000). The Nixon administration, however, wanted to tighten access to welfare, and as a result, welfare participation rates began to decline (Randall, 1979).

Yet another significant piece of educational legislation was introduced in 1972 with the Emergency School Aid Act (ESAA). The primary goal of ESAA was to increase the flow of federal education dollars to support schools with direct involvement in desegregation efforts. The most significant benefit of the law was a provision that distributed additional funds to schools that had direct involvement in desegregation, but the law also funded voluntary integration and placed restrictions on the use of federal funds for busing (Jennings, 2015). This was an important step because it signaled to the courts that Congress had identified its interest in helping to remedy segregation (Brogan, 1980). Another helpful feature of the law was the flexibility it added for districts trying to integrate. The majority of funds from the program were allocated to a limited number of inner city school districts (Jung and Tashjian, 1983). Urban schools of course comprised the area with the greatest need due to these districts having the highest concentrations of students attending segregated schools. Evidence supports improved school performance at the elementary level in response to ESAA implementation, but no such progress appeared at the secondary level (Coulson,, 1978). In the meantime, the public schools had continued to become more equal as state legislatures, in allegiance to the fairer ESEA model, increased the flow of funds to the high poverty schools, helping to "narrow the spending gap [between city and suburban schools] by as much as half," (Rury, 2013, p. 193).

Elsewhere, some efforts to combat the effects of poverty continued. In 1975, the Earned Income Tax Credit (EITC), a program designed to provide assistance to full-time working families with children, was introduced (Eissa and Hoynes, 2011). Ultimately, however, the efforts to reduce poverty, as a whole, in the 1970s were less effective than they had been in the prior decade. The apparent result of the accumulation of expanded government efforts to reduce poverty in the 1970s was a further reduction in poverty to 14.7 percent by 1980, a 1.8 percent drop over the course of a ten year period, but still a much smaller decrease than the one witnessed in the 1960s. Even worse, income inequality actually increased in the 1970s, a trend that continued into the 1980s (Iceland, 2006). Chronic poverty rose as well from the late 1970s through the early 1980s (Rodgers and Rodgers, 1993).

Though the war on poverty never officially ended, it certainly seemed to run out of steam in the 1980s when the political climate became less favorable to social programs, due in large part to a weak economy and more conservative presidential administration. Instead of a war on poverty, what had come about was rather the opposite, a war on welfare. Ronald Reagan had been elected President and programs that had been key pieces of the war on poverty were targeted for budget cuts. "[Reagan] pared expenditures for food stamps, unemployment insurance, child nutrition, vocational education, the Job Corps, and AFDC," (Patterson, 2000, p. 205). Income and social security tax policy took a new direction as well, and the result was manifested in a net loss between 1980 and 1984 for families with incomes below $10,000 a year and a net gain for families with incomes of higher than $75,000 a year (Katz, 1996).

In terms of educational policy, the administration took a similar approach. The 1981 reauthorization of ESEA was labeled the Education Consolidation and Improvement Act (ECIA).

The purpose of the revisions was to reduce the federal role in education and allow states a greater degree of discretion in the use of funds in order to satisfy party elites who demanded stricter controls on programs they deemed 'wasteful' (Clark and Astuto, 1986). Title I of ESEA was replaced by Chapter 1 of ECIA (Graham, 1984), while Chapter 2 replaced a variety of predecessor programs, including ESAA desegregation funds and ESEA Title IV funds that had been designated for various programs and materials, with a single block grant (Apling and Padilla, 1986). Under ECIA, 20 percent of federal education funding had been cut (McGuinn, 2006). In some large urban districts, funding for programs related to desegregation was reduced dramatically after the implementation of ECIA (Jung and Stonehill, 1985). Very large districts suffered significant reductions in the degree to which they were able to support Chapter 2 programs (Orland and Apling, 1986). In a direct comparison with the previous program, the ECIA block grant was not as effective as its predecessor (which was formulated as a categorical grant with stricter requirements on the use of funds) for large districts, districts with large low income populations, and districts that had been receiving ESAA funds (Kearney and Kim, 1990). In general, the added flexibility given to the states through this program did not serve to advance the interest of equitable distribution (Orland and Tillander, 1987). In fact, the Chapter 1 money was dispersed very sparsely to the vast majority of the nearly 14,000 districts in the country; nearly 70 percent of elementary schools received some money (Smith, 1988). However, 75 percent of school districts gained funding as a result of Chapter 2 and the majority of that money was used for the purchase of supplies and materials (Apling and Padilla, 1986).

Significant reforms to welfare were introduced in 1988 with the Family Support Act, which tightened rules for welfare recipients and child support payers, but also improved access to programs for two-parent families among other changes (Schiller, 1995). The law also included a

JOBS program (Job Opportunities and Basic Skills training) designed to incentivize training for long term welfare recipients and other targeted individuals (Chilman, 1992; Schram, 1992). The programs, however, were not optimally funded to ensure that services were provided as described (Halter, 1994). Additionally, waiver modifications to AFDC began to take effect, including time limits and benefit caps (Grogger, Karoly, and Grogger, 2009). As a whole, the 1980s, probably due in part to the aggressive anti-welfare campaign, was one of only two decades studied in which an increase in the total number of people in poverty was indicated, albeit a slight one. This may have been coupled with the perception that the positive results of the progressive educational reforms of the 1960s and 1970s had run their course and exhausted their maximum benefits, such that new programs would be needed to look to solve more pervasive structural problems (Passow, 1982). 15.1 percent of people were at or below the poverty level in 1990, 0.4 percent higher than in 1980. Not only did poverty increase in the 1980s, but so too did inequality. Income inequality rose faster in the 1980s than in any time period since 1920 (Plotnick, 2015).

Even into the 1990s, the political mood seemed to reflect a lack of impetus for social programs aimed at poverty reduction as the 1980s trend toward anti-welfare policy continued into the next decade. The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA) made fundamental changes to the food stamp program and eliminated AFDC in favor of a new program known as Temporary Assistance for Needy Families (TANF) in an effort to limit the amount of time individuals could receive benefits and encourage people to find work. Supplemental Security Income (SSI), and placed a variety of new conditions on welfare recipients by encouraging states to limit the amount of time individuals could remain dependent on welfare (Duncan and Brooks-Gunn, 2001; Grogger, Karoly, and Grogger, 2009). The result of that reform turned out to be a massive drop in the percentage of people who received cash welfare assistance.

The percentage of poor people receiving cash welfare decreased from 22.3 to 10.8 from 1995 to 2000 (Iceland, 2006). However, this decrease was accompanied by an increase in the number of welfare recipients who worked while receiving benefits (Zedlewski and Alderson, 2001). Additionally, the State Children's Health Insurance Programs (SCHIP) were funded by higher levels of federal subsidies (Massaro, 2003). The Earned Income Tax Credit also increased in impact in the 1990s and eventually helped more than a quarter of these families out of poverty in 1998 (Iceland, 2006).

Thus the government of this era, which was divided between a Democratic president and a Republican congress, did not demonstrate complete indifference toward the problems associated with poverty, but along with the further tightening of welfare and other entitlement programs, came a trend toward school accountability policies. The agenda of these programs was to 'align' school curricula with standards based assessments (Rury, 2013, p. 225). Specifically, these programs eventually sought to boost the performance of students and teachers in the schools with the lowest achievement levels and to improve students in specific groups to reduce inequity, including those who were at the greatest economic disadvantage. The Improving America's Schools Act of 1994 (IASA) included an accountability program that specified requirements for the administration of new assessments and implementation of 'adequate yearly progress' standards," (McGuinn 2006). Results of these types of reforms did not become apparent until after the year 2000, but nonetheless the initiation of the standards movement constitutes important political advancements from that period that do affect the poor. The net effect of a very robust economy and relative political indifference to poverty yielded only a half percent drop in the poor population from 1990 to 2000.

The most significant federal educational reforms since ESEA were launched by the Bush administration with the No Child Left Behind Act in 2002. It was deemed necessary to force stricter accountability systems on the schools in order to ensure that they worked to improve overall performance and eliminate achievement gaps between students of different socioeconomic backgrounds. This law implemented many of the ideas first envisioned with IASA, but IASA lacked a strong federal enforcement mechanism (Sunderman, Kim, and Orfield, 2005). Under NCLB, schools were required to meet 'adequate yearly progress,' the same term used in IASA, but with more serious consequences imposed after each consecutive year to meet the standard, such as the school being publicly identified after the second year, and much more serious consequences after the fourth year, including the implementation of changes to the curriculum and staff (Hayes, 2008). The primary concern for disadvantaged students was that they were identified as members of one of the targeted subgroups for whom schools needed to raise their relative achievement (Sunderman, Kim, and Orfield, 2005). The law increased funding to ESEA Title I programs by 1.7 billion dollars to help achieve the NCLB objectives (Wong, 2008). In terms of total federal distributions, the annual rate of increase in education spending actually accelerated after the implementation of NCLB (Maranto and McShane, 2012).

The most significant economic achievements of the Bush administration were substantial tax cuts that were not directed to have the greatest relative impact on the poor, but on higher earners. One piece of legislation, however, the Job Creation and Worker Assistance Act of 2002, did include a provision to expand unemployment insurance benefits (Cohen, Hansen, and Hassett, 2002). Nevertheless, in terms of anti-poverty policy, by 2004, many of the effects of 1990s era welfare reforms were beginning to show their effects. Federal expenditures for cash assistance had decreased by nearly half since 1997, while non-cash assistance more than doubled (Allard,

2007). The net effect of relative inaction by the federal government was simply a maintenance of the status quo. By 2010, the poverty rate among 17-year-olds had actually increased to nearly sixteen percent, providing even more support for evidence that since 1970, there have been no gains in terms of the elimination of poverty for this age group, and in fact, the results point to some minor regression to that effect.

Poverty and Race in Urban Areas

People in various parts of the country live in the conditions of poverty. There are no defined geographic boundaries in which poverty is confined. Yet there are noticeable structural patterns in the spatial distribution of poverty. The prominent elements of that distribution are neighborhood poverty and the concentration of poverty in certain areas. Jargowsky (1997) provides helpful definitions of these terms. Neighborhood poverty rates include elements such as mean family income and the variation of mean neighborhood income distribution in order to measure "the percentage of a metropolitan area's total population that resides in ghettos, barrios, or other high-poverty census tracts," whereas "the concentration of the poor is the percentage of a metropolitan area's poor population that resides in high-poverty neighborhoods," thus a ratio of the number of poor people who live in poor neighborhoods to the number of poor people in the metropolitan area (Jargowsky, 1997, p. 20). A look at neighborhood level class segregation reveals an increase in the segregation of social classes over the period of 1970 to 1990, with a subsequent decline that followed the conclusion of that time frame (Massey and Fischer, 2003).

The confluence of race and space may be rooted in residential segregation; that is segregation on the basis of income that in many ways mirrors that of racial segregation. In essence, the concentration of poverty within urban neighborhoods from the 1970s through the

1980s is in fact in large part attributable to a discernible pattern of residential segregation on the basis of race (Massey, 2007). Evidence suggests that this pattern may have begun even sooner; the 1970 Census revealed that the highest growth areas were in the suburbs, yielding a concentration of poor and minority families in the urban cores of America's major cities (Passow, 1982). One factor that may be strongly associated with the fact that this trend toward poverty being concentrated in urban areas was occurring during this time period was the simultaneous and coincidental occurrence of mandatory public school desegregation.

Urban schools had been segregated for the most part since the nineteenth century by race, and particularly in the South, though the segregation of schools in the North did occur in many large cities. The historic 1954 Supreme Court decision in *Brown v. Board of Education* ruled that segregated schools were unconstitutional, and as a result, Black students began to find their way into schools of a higher educational quality. Although in many cases, segregation allowed students to attend schools that were closer to their family residence, many students had to be bussed in order to ensure that schools were integrated. As a result of desegregation and bussing, the percentage of black children attending all-black schools gradually decreased from the 1960s through the 1980s, and by the 1980s, less than a third of black children attended these schools (Hochschild and Scovronick, 2003). Ultimately, however, between-school segregation increased after the end of court ordered segregation (Gamoran and An, 2016).

Despite the successful desegregation of the public schools, the decision in *Brown* ignited struggles over discrimination and equality in the inner cities (Rury, 2005). A further consequence of desegregation was the coincidental movement of White residents from central urban areas toward new suburban residential neighborhoods. Seven million whites moved out of central cities

from 1950 to 1970 (Katz, 2008). This occurred to a large extent in Chicago, for example, leaving the city's schools with dramatically reduced White student populations (Rury, 1999). The phenomenon was not confined to the North. Schools in Jackson, Mississippi went from a 1968 enrollment of 54 percent white students, but by 2001, just 4 percent of the students in the school system were white (Bolton, 2005). Urban schools would be left to cope with many of the same problems from which they suffered prior to their forced integration. Rury (1999) concludes that battling these embedded spatial inequalities remains a difficult challenge for modern school leaders.

A major consequence was that in the era from 1970 to 2000, Americans witnessed a general movement by members of the more privileged classes to suburban areas (Watson, 2006). In contrast, minority public housing projects were typically constructed on nearby and adjacent property near the same areas that had been occupied by disadvantaged families (Massey and Kanaiaupuni, 1993). To further complicate the situation, the odds of mobility from higher poverty tracts to lower poverty tracts are higher for non-Hispanic whites than for Hispanics and non-Hispanic blacks (South, Crowder, and Chavez, 2005). The consequence is that the majority of whites live in non-poor predominantly white neighborhoods while less than a third of blacks live in non-poor racially homogeneous areas (Massey, Gross, and Shibuya, 1994). In turn, when minority group populations in a metropolitan area are proportionally low, poor group members tend to locate in different residential areas from the middle class of that same group, (Quillian, 2012). This has relates to educational outcomes as well. Evidence suggests that simply living in a ghetto relates to lower levels of educational attainment (Jargowsky and Bane, 1991)

Another apparent consequence of these factors is that the effect of redistribution of populations to and from certain neighborhoods works to increase the 'poverty exposure' to poor African Americans and Hispanics (Strait, 2006). With such racial distinctions noted, the majority of poor Americans still live outside areas considered to be 'ghettos, barrios, or slums,' yet certain regional anomalies and the fact that far lower percentages of poor blacks and Hispanics live outside of metropolitan areas, when compared to poor whites, do add context to that fact (Jargowsky, 1997).

Members of all races and cultures in American society are subject to the conditions of poverty. An individual or family who comes from a minority background is more likely to live in poverty. Poverty rates in the United States vary to a large degree on the basis of race. The poverty rate for Hispanics is 27 percent, slightly above that of African Americans, whose poverty rate is 26.5 percent, while the poverty rate for Whites is only 11 percent (Weinberg, 2004). The per capita income gap between blacks and whites was reported at around $18,000, with whites earning far more than blacks, while as of 2002, the difference in income between blacks and Hispanics was around $3,300, with blacks earning more than Hispanics (Massey, 2007). Furthermore, although income for all groups has increased since 1972, the gap has remained reasonably constant (Massey, 2007). Poverty rates clearly are higher among minorities, but there is also a poverty perception gap, particularly with respect to blacks. People, even in states with small percentages of African Americans, tend to believe that blacks account for nearly half of all poor people, which can lead to the projection of negative attitudes on people who benefit from anti-poverty programs (Gilens, 2003).

To look deeper at income inequality, an investigation into unemployment inequality would need to be done because it accounts for the percentage of the population who earn no income at all. As of February of 2010, the unemployment rate for whites stood at 8.8 percent, the rate for blacks was 15.8 percent, while the rate for Hispanics was 12.4 percent; and although unemployment for all subgroups has increased since February of 2000, ten years earlier, the unemployment gap between blacks and whites has actually increased from 4.5 percent to 7 percent, while the gap between Hispanics and whites has increased from 2.1 percent to 3.6 percent (Bureau of Labor Statistics, 2010). Thus, in spite of any common opinion that can be argued that suggests that inequality between racial groups has decreased over the past half century, the reality is that the numbers tell a different story. In fact, it appears that the condition of inequality remains intact. Herein, then, the question becomes not whether there is an inequality of poverty in the United States, but rather why that inequality is manifested across racial divides.

Many would argue that members of minorities do not live in poverty as a matter of choice, but instead that a myriad of ideological, cultural, and political forces thrust minority Americans into poverty status. Since the inception of the United States as a country, with the acceptance of the existence of slavery in the Constitution, those institutional forces have closed opportunities for minorities through racist mechanisms, through a process labeled systemic racism (Feagin, 2000). The more serious forms of systemic racism persisted in the form of Jim Crow laws in the South until the 1960s, while more covert apparatuses in the North had prevented blacks from the free exercise of all of their civil rights to help keep discriminatory processes in place (Massey, 2007). Such institutional forces remain at work in the forms of police and legal discrimination, housing discrimination, and employment discrimination, in spite of the fact that these practices remain illegal (Feagin, 2000). Housing discrimination in particular is not endemic only to blacks, but to

Hispanics as well; as of 2000, Hispanics were eight percent more likely to experience discrimination in rental markets, in contrast to eleven years earlier when they were 19 percent more likely to encounter discrimination than blacks (Massey, 2007). But a more serious problem that arises from housing discrimination is neighborhood segregation. Racial segregation in turn is a contributing factor in the concentration of poverty (Quillian, 2012).

Racial segregation compounded with class segregation works to give an advantage to poor whites over poor blacks (Massey, 1990). Neighborhood segregation in turn may lead to more poor blacks and Hispanics living in isolation. A side consequence of such a situation in turn, is white isolation and the subsequent formation of a 'white habitus,' or a sense of white solidarity that might engender a fear of minorities (Bonilla-Silva, 2006). Whether the source of the discrimination is fear or simple disdain for that which with one is not familiar, the impact of all of the structural racism is that it funnels minorities into positions of disadvantage in the competition for public goods, such as employment, a suitable environment to call home, and for other scarce resources that may include education. All of those seem a necessity for a healthy lifestyle, from which deprivation of access would generally constitute an egregious form of inequality.

Politics and Poverty in the South

In no one region of the United States does poverty run as deep and pervasive as in the South. For any number of reasons, such as the systematic oppression of blacks, the agriculturally based economy, or the stubborn regional arrogance of many white Southern political leaders, this condition of poverty seems to have been entrenched in the region for the last half century. According to the data used in this dissertation, nine of the ten poorest states in 1960 were in the South. By 2010, some improvement had been made evident, but still seven of the ten poorest

states were in the South. This section will look deeper into this phenomenon to try and identify the causes and explanations of this condition.

Institutionalized racism in the South did not end with the abolition of slavery. In fact, shortly after the slaves were legally emancipated at the end of the Civil War, southern states began to pass a series of discriminatory laws known as the black codes (Brown and Webb, 2007). Institutionalized racism in modern times seems to confound explanation, but until the mid-twentieth century, it was the dominant practice in the South. Strategies such as segregation in schools and other public institutions served to exclude blacks from certain communities and prevents them from attaining qualifications that would allow them entry into different communities and occupations (Halcoussis and Lowenberg, 1998). Blacks were required to use separate facilities in a variety of institutions, including hospitals, bathrooms, and various modes of public transportation (Massey, 2007). Southern states leveraged their support for the Social Security Act in the 1930s against restrictions on agricultural and domestic workforces, thereby excluding most blacks (Katz, 2008).

The basis of these discriminatory practices came from many years of socialization in which racist attitudes are bred. Children's literature in the postbellum South was often written in a manner that glorified the institution of slavery, even depicting the condition in which black slaves were content with their living conditions (DuRocher, 2011). This exposure to cultural prejudices becomes particularly important when considered with evidence that racial attitudes later in life tend to be correlated with the types of messages received by individuals when they are children (Brown and Lesane-Brown, 2006).

The Supreme Court had ruled segregation unconstitutional in 1954, but even after 1960, school segregation persisted in the South, with the higher concentration of blacks in a given district being the primary of correlate of segregated schools (Giles, 1975). By 1966, nearly 82 percent of Southern states were above the median in terms of the degree of school segregation (conversely no border state was above the median), and much of that continued segregation may be explained by racial prejudice (Harris, 1968). But in the late 1960s, as these districts began to desegregate, in these same areas with high minority populations, white enrollments at private schools increased dramatically as white parents sought to limit their children's exposure to non-whites in school (Clotfelter, 2004). "Segregation academies" started to sprout in the South soon after the *Brown* decision as a means to avoid mandatory desegregation (Walder and Cleveland, 1971). By the early 1970s, 176,000 students were enrolled at these academies, defined by their affiliation with the Southern Independent School Association, which itself was tied to segregationist organizations (Segregation Academies and State Action, 1973). Arguments were even made for voucher systems to be implemented for use at these academies (Rury, 2013). Simultaneously, white families were moving to the suburbs to avoid integrated schools. By 1971, Atlanta's school system, for example, was 70 percent black and 30 percent white, contrasted with thirteen years earlier when the numbers were the exact opposite, 30 percent black, 70 percent white (Hogan, 1973). The biggest distinction between those families that avoided integration and those that complied with it was family income, as families that avoided integration had incomes more than a third higher than conformant families, despite expressed attitudes that represented more tolerance with integration as income increased (Cataldo, Giles, and Gatlin, 1978).

Nonetheless, there was a clear delay in the integration of the schools in the South that can reasonably only be explained by the presence of a pervasive institutional discrimination. This

delay in the implementation of desegregation is often referred to as the "massive resistance" strategy used by segregationists, most notably, though not exclusively in the South (Hunter, 2004; Ward, 2015). Resolutions intended to nullify or block desegregation were passed in seven southern states in the immediate aftermath of *Brown* (Valien, 1956). As part of the movement, state legislatures closed schools when it was determined that blacks and whites were to be educated in the same building (Black and Black, 1987). In Prince Edward County, Virginia, a public school system closed in 1959, and remained closed for five years to avoid integration (Bankston and Caldas, 2002). In the late 1950s in Little Rock, after the governor of the state forced the closure of the high schools, it was even threatened that the district might eventually have to be abolished (Perry and Perry, 2015). In Alabama, a law was passed that allowed for the firing of teachers who were members of groups that actively advocated for integration (Jones, 1956). Public resistance came from groups known as White Citizens Councils whose purpose was to ensure the practical nullification of the Supreme Court's *Brown* decision by gathering intelligence on individuals known to be sympathetic to racial equality (Packard, 2002). The massive resistance effort had proven effective. By 1963, just one percent of black students in the South attended schools that had majority white enrollments (Orfield, 2005). Ultimately, however, the trend did reverse itself, as southern districts went from being the most segregated in the mid-1960s to the most integrated by the mid-1970s (Wainscott and Woodard, 1986). This reversal was largely spurred by the passage of the Civil Rights Act of 1964, Title IV of which granted the authority to withhold funds from institutions that were actively discriminatory (Bankston and Caldas, 2002; Bolton, 2005; Orfield, 2005).

The public schools were not the only area in which racial discrimination manifested itself. Higher education was also a common venue for discrimination. All-white state institutions in

Florida, Georgia, Alabama, and Mississippi resisted attempts of black students to enroll into the early 1960s (Drone, 2005). The most notable incident occurred in 1963 when Alabama Governor George Wallace stood in front of the door at the University of Alabama to deny entry to two black students set to enter by federal court order (JBHE, 1996). In a similar manner to the public schools, dual systems of higher education remained in effect until passage of the Civil Rights Act of 1964 (Maples, 2014).

Labor markets were exposed to discrimination as well and the South seems to have been at the epicenter. Unexplained wage gaps between blacks and whites appear to be larger in the South (Hirsch and Schumacher, 1992). These gaps may result from individual prejudice as well as institutional practice. Several Jim Crow era southern state governments institutionalized racist practices by passing a series of laws designed to force blacks into employment and reduce labor market competition (Roback, 1984). The state government in Georgia even went so far as to fire black workers, stating they had no place there (Wormser, 2003).

Nonwhite incomes for similar occupations tended to be substantially lower than white incomes through the mid-1960s (Ashenfelter, 1970). Differences in incomes during this same time period were explained more by discrimination within the labor market than by educational attainment differences (Masters, 1974). In the 1950s and 1960s, the economic transition from human labor in farming towards the use of machine labor reduced the need for black workers, creating a surplus of laborers (Feagin, 2000). Ultimately, significant numbers of blacks migrated from the South to the North, particularly to the major manufacturing cities, and in so doing, they benefited relative to those who stayed in the South, achieving higher average levels of education and earning better wages (Williams, 2004). Towards the latter years of the twentieth century and

even into the first decade of this century, labor market discrimination continued, and a wage gap between whites and blacks persisted and even increased in times when the overall labor market tightened (Biddle and Hamermesh, 2013). By 2000, gaps in wages between blacks and whites had been reduced more in Southern cities since 1940 than in cities in any other region, though the gaps still remained the largest on average of all the regions (Black, Kolesnikova, Sanders, and Taylor, 2013).

Another common area of historical discrimination has been in access to voting. Southern states implemented a variety of laws to restrict voting in a discriminatory manner. Even after passage of the Fifteenth Amendment in 1870, which gave the right to vote to black men, southern states used tactics such as literacy tests, poll taxes, residency requirements to prevent blacks from exercising their right to vote (Lawson, 1976). In 1890, Mississippi, long considered the worst offender in terms of racist politics, passed the first state constitution with language intended to disenfranchise black voters (Brown and Webb, 2007). Even into the late 1950s, formal voter registration requirements were found to correlate with black voter registration rates (Matthews and Prothro, 1963). One key reason why it was so important for blacks to have access to voting was that by voting they could reduce the ability of the government to unfairly take advantage of them through policy. For example, political participation was positively linked to higher spending on education in the South (Halcoussis, Ng, and Virts, 2009). Black voting, specifically, was tied to increased electoral turnover among candidates and a significant improvement in the availability of municipal services, such as recreation, infrastructure improvements, and garbage collection (Keech, 1968). Fortunately, the passage of the Civil Rights Acts of 1957 and 1964 and Voting Rights Act of 1965 helped to reduce discrimination in voting by requiring equality in voter registration requirements, eliminating tactics such as intimidation and coercion intended to

disenfranchise black voters, implementing preclearance requirements, and eliminating literacy tests and other barriers to voting. The Twenty-fourth Amendment, which formally prohibited the use of the poll tax as a device for restricting access to voting, was finally ratified in 1964.

Institutionalized discrimination was also found to be quite common in housing. Laws were written to keep blacks in separate geographic areas from whites because they were considered undesirable elements of the community. Racial zoning laws were implemented and subsequently upheld by state courts in certain jurisdictions, including Georgia, Virginia, and Kentucky (Godsil, 2006). Restrictive racial covenants had been put in place prior to zoning and were in effect simultaneously (Jones-Correa, 2001). Ultimately, the Supreme Court outlawed the enforcement of racial covenants in 1948, but newer types of limitations have replaced them (Darden, 1995). Nonetheless, housing discrimination persisted for many years. Even into the 1980s, evidence indicated that blacks had significantly fewer housing options shown to them (Massey and Denton, 1993). The research indicates that a reduction in housing segregation is likely to lead to an overall reduction in poverty for blacks (Galster, 1991). Given this evidence, it would seem that these racially restrictive policies are not only insidious in appearance, but may help to keep blacks in poverty.

For most of its history, southern politics has been dominated by the Democratic Party in elections. In fact, democratic dominance in the South was so strong that on only two occasions between 1876 and 1948 did a republican presidential candidate carry a single southern state (Bullock, 2010). The Democratic Party's platform tended to appeal more to southern white voters who held the balance of power. In the late nineteenth century, the Republicans were not viewed as legitimate by southern whites, as their pro-civil rights positions made them appear to be a "black

man's party," (Wormser, 2003). Even into the early twentieth century, Woodrow Wilson, who was himself a southern Democrat, implemented stricter segregation and removed blacks from positions in the bureaucracy (Brown and Webb, 2007).

President Franklin Roosevelt, however, was not a racist and began to issue executive orders aimed at eliminating discrimination, which were subsequently met with opposition from congressional southerners (Billington, 1975). This may have indicated the beginning of a trend in which southern democrats in Congress began to drift politically from the mainstream party to differences in views on race relations. The Roosevelt era gave way to a more tumultuous post-war period in which the struggle for civil rights came to the forefront of the political agenda. Soon came a failed southern filibuster of the Civil Rights Act of 1964, and the bill's ultimate passage, despite opposition from 95 percent of southerners in the Senate (Black and Black, 2002). Then, in 1968, came the election of republican President Nixon. Nixon took positions popular with white southerners, such as a 'take it slow' approach to desegregation, laying the foundation for his "southern strategy," a plan to convince white southern democrats to support him in the 1972 election (Billington, 1975). Nixon ultimately swept the South, along with the rest of the nation, in his landslide reelection bid by large margins. Since that time, republicans have slowly begun to supplant democrats in political office throughout the region.

The shift in power in the South has been dramatic. In 1976, 14 of 18 Senate seats in the Deep South (AL, AR, FL, GA, LA, MS, TN, SC, and NC) were held by democrats, and none of the four republican-held seats were on the Gulf Coast. Today, every U.S. Senate seat in the Deep South, except for one seat in Florida, is held by a Republican. For the first time, in 1988, republicans outnumbered democrats among whites in the South, highlighted by a 29 percent lead

among those under the age of 30 (Wattenberg, 1991). That clearly set forth the foundation for many years of dominance by republicans in southern politics. An important element of this realignment appears to have been a greater confidence among republican voters that their candidate is able to cope with the most important national problem than democratic voters felt about their candidate (Stanley, 1988).

While an explanation for the early years of this realignment is generally due to views on race relations, more recently, republicans have used religious views to appeal to white southerners. During the 1990s, the rate of high-commitment evangelicals voting for republican House candidates increased to more than 60 percent, whereas prior to the 1990s, these individuals were considered to be reliably democratic voters in congressional elections (Green, Kellstedt, Smidt, and Guth, 2010). Christian leaders, such as Billy Graham, Jerry Falwell, and Ralph Reed, helped republicans build southern support over the last three decades of the twentieth century to help put the party in the position that it is in now with evangelicals (Williams, 2011).

The effect of the southern shift toward republican politics has been a critical one as it relates to this dissertation because it has allowed the Republican Party to maintain a high degree of relative power in the federal government and in some southern state governments. This is important with respect to poverty because the party has generally promoted positions that have been hostile towards expanded funding for programs designed to mitigate its harmful effects. The last Republican president, George W. Bush, was not instrumentally involved in significant changes to the welfare system, but did advocate for greater incentive to be placed on two-parent families and stable fatherhood (Allard, 2007). In fact, the most significant welfare reform in recent memory was passed by a republican Congress and signed into law in 1996 by President Clinton. As noted

earlier, the PRWORA decreased the flexibility of welfare programs and required recipients to seek gainful employment. The reform was noted to significantly increase the probability that welfare recipients will work, but resulted in lower wages for those that do work (Loprest, Schmidt, and Witte, 2000). Ultimately, the reform yielded a decrease in public assistance income (Lichter and Jensen, 2001). State governments under republican leadership have also moved to restrict access to welfare. For example, in Alabama, laws have been recently signed by the republican governor to require drug tests for recently convicted TANF recipients and require public assistance applicants to apply for jobs prior to being eligible to apply for benefits (Cason, 2014). Republicans in the Deep South also tend to be less supportive of civil rights issues than democrats (Nye and Bullock, 1992). The effect of republican leadership on education may be felt as well. Democratic partisanship is found to correlate positively with expenditures per pupil (McDermott, 2003). In an example of republican leadership from outside the South, the republican government in Kansas introduced $303 million worth of cuts to education in fiscal years 2009 and 2010, forcing an intense legal battle (Crampton and Thompson, 2011).

Poverty and Race in the Schools

It is important to note that racial inequality in poverty has a profound effect on children and thus, perhaps, the entire educational system in the United States. In spite of institutional efforts to desegregate school systems, students tend to be concentrated in schools with other children who come from similar racial backgrounds (Caldas and Bankston, 1997). Furthermore, students from minority backgrounds are more likely to live in impoverished inner-city neighborhoods than non-Hispanic white children; meanwhile, children are more likely to live in impoverished neighborhoods than adults (Jargowsky, 1997). In a sample of states in the Northern part of the

United States, poverty rates for children were far higher in the urban core of cities than in suburban areas or non-metropolitan areas, in fact urban child poverty rates were nearly four times higher than suburban poverty rates and nearly three times higher than non-metropolitan poverty rates (Ng and Rury, 2009).

Of note is the fact that 30 percent of all poor, black, and Hispanic children attend school in one of the 60 largest districts in the United States (Books, 2004). Not only does that evidence suggest that schools in the urban core are more likely to face educational and pedagogic challenges that might accompany large numbers of disadvantaged children, but they may suffer from more serious problems that result from a lack of civic engagement and an erosion of the tax base, and the resources that accompany it, from urban areas. Remarkably, "[a]s long as schools are shaped by their immediate social context and laws of metropolitan development dictate deep, spatially defined inequalities, schools in central cities face immense disadvantages in the competition for status and resources," (Rury and Mirel, 1997, p. 60).

An example of such spatial inequality is reflected in the teachers in schools in high poverty areas, where often less qualified teachers are employed (Orfield and Lee, 2005), less experienced teachers are employed and teacher turnover rates are higher than in lower poverty schools (Clotfelter, Ladd, Vigdor, and Wheeler, 2006). Urban school districts, as a consequence, are in need of more highly qualified teachers (Ng, 2003). Other factors that appear common in schools with lesser resources are poor sanitation and temperature control, and low quality school lunch service (Books, 2004). The effects on performance are clear. Average school achievement is negatively correlated with unsafe school conditions and positively correlated with academic climate, a pair of constructed composite variables (Lee and Loeb, 1995). Lower average reading

scores are found in schools in the inner city, followed then by rural and small town schools, with suburban and urban fringe schools performing the best (Donahue, Voelkl, Campbell, and Mazzeo, 1999).

The effect of resources, such as classroom technology and other tools, have been found to improve student achievement (Jung, Brown, and Karp, 2014). Meanwhile, teacher experience and per pupil expenditures both correlate positively with mean school achievement (Arguea and Conroy, 2003). Some contradictory evidence suggests, however, that school resources on their own have not been found to affect student performance (Hanushek, 1997). As a consequence, full harmony on the issue of expenditures between researchers is not immediately apparent. With that given, school poverty does exhibit a negative effect on school means for sense of autonomy, concern for others, democratic values, and sense of efficacy (Battistitch, Solomon, Kim, Watson, and Schaps, 1995). Still, it seems clear that poverty does affect schools in terms of their classroom resources and in turn the way students respond to their educational environment. The ultimate consequence of this is manifested on a geographical scale where clear differences between educational attainment between suburban and urban environments have been exhibited (Rury and Saatcioglu, 2011).

Race, for whatever reason, does appear to have some measured effect on educational performance, particularly when looking at achievement measures, such as test scores. With all other factors set aside, race remains a predictor of performance (Bankston and Caldas, 1997). Average performance for whites exceeds that of blacks who are considered to be of the same social class (Rothstein, 2004). Achievement gaps in both mathematics and reading between members of different races do, however, tend to narrow and widen over the course of the schooling process.

While both Hispanic and black students enter kindergarten at lower achievement levels than white students, gaps between black and white students tend to widen between kindergarten and fifth grade while gaps between white and Hispanic students narrow in kindergarten and first grade and then become stable in subsequent years (Reardon and Galindo, 2009).

Another type of trend in the achievement gap, one of historical nature, is noticeable. From 1973 to 1992, students of all races made gains in math performance, but black and Hispanic students made larger gains than their white counterparts, though performance gaps remained, suggesting that while other races were catching up, they were not completely closing the divide (Tate, 1997). In a similar fashion, achievement gaps in reading were reduced from 1971 to 1994 (Jencks and Phillips, 1998). An alarming setback in that trend appears to have followed, however, as gaps in dropout rates and achievement between black and white students and between Hispanic and white students widened or remained steady in the 1990s (Lee, 2002). In large part, the achievement gaps appear not to have changed significantly since the passage of the *No Child Left Behind Act* (NCLB) (Lee, 2006). Black students with the highest socioeconomic status (SES) performed worse than the lowest SES white students in grades 4, 8, and 12 in both 1990 and 1996 (Lubienski, 2002). Still, however, proficiency differences tend to be decreased when socioeconomic status is considered (Bankston and Caldas, 1997; Rothstein, 2004). Nonetheless, the SES-achievement relationship is greater for whites and Asians than for non-Asian minority students (Ferguson, 2007).

Family poverty status, as one would expect, exhibits a negative effect on academic performance, but the effect is weaker than the effect of minority status (Caldas and Bankston, 1997). Even so, in a similar fashion to racial achievement gaps, no significant changes in the

achievement gap between poor students and students who are not poor are evident since the implementation of NCLB (Lee, 2006). Additionally, lower SES students are more likely to be dropouts at age nineteen (Jimerson, Egeland, Sroufe, and Carlson, 2000). With that given, the income gap in the dropout rate contracted in the in the three decades prior to the publication date of the cited article in 2003 (Hochschild and Scovronick, 2003). The implication would be that the dropout rate, though sensitive to poverty, must be less reactive to that effect than it was in the 1970s.

It is possible; however, that certain factors might tend to moderate achievement differences between students of different SES backgrounds, such as a reduction in the concentration of poverty. Average school social class or mean SES at the school level is found to relate positively with higher achievement (Caldas and Bankston, 1997; Lee and Bryk, 1989; Lee and Loeb, 1995). Implied therein is the notion that the harmful consequences of poverty at the individual level could be exacerbated by higher levels of overall poverty within the confines of the school environment. It may in part be explained in part by the fact that schools that have higher average SES are less likely to have high populations of minority students (Caldas and Bankston, 1997). But differences within the school may be largely explained by differences in educational aspirations rather than race (Coleman *et al*, 1966).

School poverty does not have a large impact racial test score gaps (Myers, Kim, and Mandala, 2004). Black students who attend predominantly white schools, however, considerably outperform black students who attend predominantly black schools, and achievement gaps in general tend to be smaller in predominantly white schools (Bankston and Caldas, 1997). Between school differences account for more than a third of achievement differences (Borman and Dowling,

2010). In agreement with that fact is the finding that the degree of black urbanization at the state level had a negative effect on attainment growth (Rury, Saatcioglu, and Skorupski, 2010). A variety of other exogenous factors may work in a multitude of different ways to create advantages for not only minority children but for all children who come from poorer families. Smaller class sizes were found to benefit both whites and minorities, but minorities made larger comparative improvements than whites over time (Finn and Achilles, 1990). In addition, performance for disadvantaged students may be more responsive to class size reductions than the general student population (Hanushek, 1998). Head Start, a program generally targeted to provide benefits to students who come from lower income families, could be beneficial; however, even though performance for white students who attend the program seems to improve, the same result does not hold true for black students, whose results did not indicate the same growth (Currie and Thomas, 1995).

While certain factors may serve as a benefit to disadvantaged and minority students, others on the contrary, may tend to work to their detriment. Ability grouping, for example, may funnel poor students into lower skill level courses that do not provide them with the appropriate academic challenges for children of their ability profile (Hochschild and Scovronick, 2003). Effects of ability grouping in mathematics are stronger in high minority schools than in low minority schools, but in both school types, students seem to benefit from higher level mathematics courses (Lleras, 2008). High school exit exams may work to the detriment of poor and minority students as well, as high school graduation rates fell in urban school districts with large minority and poor populations after the implementation of an exit exam (Dee and Jacob, 2007).

Another factor that is found to produce a negative effect on a disproportionate number of poor and minority students in contrast to upper and middle class children is residential mobility. This term refers to the frequency of movement from place to place during an educational career. Low SES children tend to move more often during their school careers, thus causing them in many cases to move from one school to another (Heinlein and Shinn, 2000). Mobility might have effects that are so severe that it might in fact be partially responsible for other measured negative effects. One study found that residential mobility accounts for part of the disadvantage associated with living in a single parent family (18%) or stepfamily (29%), (Astone and McLanahan, 1994). Even only among children in two parent families, those children who moved had significantly lower achievement than those who did not in one sample year (Murnane, Maynard, and Ohls, 1981). A negative correlation between math and reading achievement and school mobility is found in a meta-analysis of several studies (Mehana and Reynolds, 2004). In the United Kingdom, mobility was responsible for significant negative effects in mathematics, but not in writing or reading (Strand, 2002). That same effect, however, seems to disappear when the researchers control for prior achievement (Heinlein and Shinn, 2000). Notably, both the frequency of mobility between schools and its effect on achievement tend to decrease as grade level increases (Ingersoll, Scamman, and Eckerling, 1989).

Child Poverty

The importance of child poverty to the schools is obvious, given that this is the segment of society that schools reach. At the same time, it remains a problem that schools cannot solve since its roots lie outside the school system. Poverty tends to affect children more than adults as indicated by a child poverty rate that has been higher than the adult poverty rate since the late

1950s (Betson and Michael 1997). Even worse, in 1994, while 21.8 percent of children were in poverty, more than forty percent of all people who were in poverty were children (Lichter, 1997). Child poverty rates are higher than the adult rates because of the fact that children are not evenly distributed across adults and that in fact poorer adults on average have more children than adults in families who are not poor (Betson and Michael, 1997). It is not only unevenly distributed across the population, but the geographic distribution of child poverty is uneven as well, with a high concentration of poor children living in the Appalachians and the Deep South (Friedman and Lichter, 1998). Poorer inner city children in segregated neighborhoods are also more likely to remain in poverty (Garcia and Weiss, 2015).

The poverty rate, however, might tend to be deceptive since it only reports the number of people who are living in poverty at any given moment. In order to have a better grasp of how many lives are impacted by poverty in childhood, that specific question must be examined within a cohort group. A study of a childhood cohort from the late 1960s through the 1980s poverty revealed that 38 percent of children experienced poverty for some duration during their youth, but that, on average, a child would be expected to spend two years in poverty, indicative of a relatively high rate of poverty (Ashworth, Hill, and Walker, 1994).

These statistics might seem even more severe in the context of the high level of geographic concentration of poverty. 54. 9 percent of children related to the head of household who were in poverty in 2001 lived in very poor neighborhoods (U.S. Department of Health and Human Services, 2003). In particular it might be of the greatest concern to the high poverty urban schools when one considers the fact that the schools in these neighborhoods are responsible for the education of such a high percentage of youth who are in poverty. What would seem to make the

effort so difficult is the fact that poverty and classroom performance have a clear inverse relationship with one another. The percentage of children in poverty in school districts is a strong negative correlate of district average mathematics achievement (Payne and Biddle, 1999).

The schools are not the only arm of the state charged with care for children in poverty. The government does not intend to ignore the needs of poor children when they are not in school. In fact, several programs provide aid to families who need assistance to meet the needs of their school age (and younger) children. The facts suggest that the public assistance rate for poor children nearly doubled from 24.6 in 1969 to 47.2 in 1989 and that accompanied an increase in dependence on public assistance as an income maintenance strategy for these children who were in turn more likely to receive public assistance than their counterparts who did not live in poor families (Jensen, Eggebeen, and Lichter, 1993).

Given that child poverty remains such a serious problem for American society, the question turns to how to solve it. Aside from the government assistance programs mentioned above, one of the greatest solutions to child poverty might be parental income. The most typical and obvious way to earn an income, of course is through employment. The evidence suggests that child poverty rates and deep poverty rates are far higher for families with unemployed parents among both children with married parents and those who live only with a single mother (Lichter and Eggebeen, 1994).

Family Structure and Composition

A notable common characteristic is shared by families in poverty: they frequently live in an irregular family structure to the extent that many do not exhibit the traditional American two-parent household arrangement. As of 2007, 42.9 percent of children who are raised in female-

headed families lived in poverty, in contrast to all other family types, among whom only 9.5 percent of children lived in poverty (Children's Defense Fund, 2008). That difference is noted in the concentration of female-headed households in the poorest neighborhoods, where the total percentage of female-headed households is more than 40 percent higher than in the neighborhoods with the lowest poverty levels (Jargowsky, 1997). Even more serious are projections for the future, which indicate that by 2020, the number of children not living with both of their parents is expected to increase by 18 percent, while at the same time children living with mothers who have not completed high school is expected to increase by 41 percent (Natriello, McDill, and Pallas, 1990).

It also appears that minorities are more likely to be exposed to irregular family composition than whites. Expressed as a percentage, more black children (81 percent) are exposed to a parental separation and remain in a single-parent family for the duration of their childhood than Mexican American children (57 percent) and white children (51 percent) (Bumpass and Sweet, 1989). Single mothers are more likely to receive welfare benefits than married parents, and that trend further translates to their children, who are also more likely to receive welfare benefits later in life when they become adults (Conley, 2010).

Among single mothers, researchers find distinct differences between those who are welfare recipients and those who are not, and such differences tend to leave an impact on the children they raise. One of the more serious problems for poor children might be a lack of supervision at home. Researchers find that children who live with single mothers who are also on welfare do not receive as much supervision as children in other family configurations and that they further tend to value education less than children in different family types (Quane and Rankin, 1998). Notable is the fact that welfare recipient single mothers tend on average to be less educated, younger, less likely

to have ever been married, and have more children than mothers who do not receive welfare assistance (Lehman and Danziger, 2004). A rather important side effect is that parental education is a robust correlate of educational attainment (Conley, 2010).

The effect of nontraditional family composition on schoolchildren may be quite serious and could be exacerbated even more among the poorest of American families. It is generally considered to be any family environment that does not provide the child with two parents, characteristically with a mother and a father in the household, though the effect on education in a family of that type headed by a female might be even worse. The first two of these consequences are akin to one another, excessive mobility between homes and schools and a lack of environmental consistency throughout the educational process. School-aged children are more likely to change schools and less likely to stay in school continuously when they come from single-parent, stepparent, or no parent families than when they come from a household with the traditional two-parent family structure (Astone and McLanahan, 1994). Another notable effect of family composition appears to be on adolescent deviance, which is lower in two-parent families than in mother-only families (Dornbusch, Carlsmith, Bushwall, Ritter, Leiderman, Hastorf, and Gross, 1985). In terms of performance of students who live in single-parent families, both math and reading achievement are lower among students living in these conditions than for those who live in traditional two-parent families in both elementary and high school, but the effect of the number of parents on achievement itself is not statistically significant when other variables are controlled (Milne, Myers, Rosenthal, and Ginsburg, 1986). In contrast, the effect of living in a female-headed family on achievement was statistically significant after controlling for minority race and poverty status (Bankston and Caldas, 1998).

With respect to total attainment, men who lived in single-parent families attain .54 years less total education than men who did not (Krein, 1986). At the same time, the effects of life in a single-parent family on educational attainment may even be associated with the time spent in that environment and may vary to a certain extent by race. Without income controlled, educational attainment is decreased by .095 years for white men and .070 years for black men for each year spent in a single-parent family; these effects remain significant with income controlled, though a slight change in the intensity of the effects (coefficients) appears (Krein and Beller, 1988). Seventeen year old children of single parents are less likely to be in school than students who are the same age but instead live in traditional two-parent family households, and it is income differences between the household types that accounts for much of the effect (McLanahan, 1985). Compounding the problem is the fact that children who live with less educated householders are more likely to be poor than children living with more educated householders (Mangum, Mangum, and Sum, 2003)

Health, Childrearing, and Early Life Differences

A notable element of the interaction between poverty and education is that the effects of poverty on educational performance do not begin to form upon entry into the educational system, but rather the effects of disadvantage are noticed before a student ever enters into a formal school. The scenario puts both the student and the school where the student attends at an immediate disadvantage even before the formal educational process is set to begin. Students who enter from more advantaged social class backgrounds enter school with higher levels of skill and preparedness than their lower class counterparts (Rothstein, 2004). Poverty is found to correlate negatively with

intellectual development, but that effect is mediated by other variables (Guo and Harris, 2000). Much of these differences can be attributed to differences in childrearing practices.

Ultimately, a variety of differences in parenting exist when researchers compare poor and non-poor families. For example, family rituals are an important part of childrearing, and these rituals differ across the social classes (Lareau, 2003). Parents in middle class families are far more likely to engage in conversation with their children, for instance, than parents in lower class families (Rothstein, 2004). Even worse, poor children may be encouraged by their parents not to speak (Piuck, 1975). Poor children are also less likely to receive cognitive stimulation at home (Guo and Harris, 2000; McLoyd, 1998).

At the same time, there may be differences in the way poor children are treated when they are compared to their more advantaged counterparts. Parental behavior is different in lower income homes than in higher income homes. Poor mothers tend to be less likely to show affection toward their children (Bradley, Corwyn, McAdoo, and Coll, 2001). On the contrary, poor mothers tend to spank their children more than mothers who are not poor (Bradley, Corwyn, McAdoo, and Coll, 2001; McLeod and Shanahan, 1993). Beyond simple spanking, other forms of physical punishment are more likely to occur in poorer households. Rates of severe and very severe violence toward children are considerably higher in families below the poverty line than in families above the poverty line and differences are statistically significant (Gelles, 1992). Of further detriment, child neglect, too, is more common in neighborhoods with extreme poverty (Weatherburn and Lind, 1998). In general, what is suggested by all of the data is a link between poverty and irregular parental behaviors that can be considered harmful to the educational progress of a poor child.

Other parental differences that are found across social class backgrounds often relate to the level of engagement of the parents in the activities, learning, and schoolwork of their children. The evidence suggests that parental involvement is positively associated with student performance (Astone and McLanahan, 1991). Parental involvement begins in the home where poorer mothers tend to be less interested in the development of their children than wealthier and middle class mothers. The results from research indicate that poor mothers are much less likely to read to their children than non-poor mothers (Bradley, Corwyn, McAdoo, and Coll, 2001). Similarly, parents of higher socioeconomic status will tend to provide greater support for academic skill development exercises to their children (Ferguson, 2007). Much of it may be due in part to the fact that poorer mothers tend to be less educated. Mothers who complete lower levels of education tend to have children who perform worse on standardized tests for children at every age (Natriello, McDill, and Pallas, 1990).

Such an effect is reflected in parental behavior outside the home as well. Parental involvement in the school community where their children attend is also more common in middle class families than in lower class families (Rothstein, 2004). The effect may be related to the concentration of poverty to the extent that engagement in PTA and other types of business and sports organizations is correlated negatively with neighborhood poverty (Stoll, 2001). The major problem that might coincide is that with higher PTA engagement at the school level often comes a reduction in the overall negative effect of poverty on achievement (Arguea and Conroy, 2003). Not only do poor parents participate less in organized activities, but their children appear less engaged as well. Poor and working class children participate in fewer organized activities than middle class children (Lareau, 2003).

Despite these differences, it must be noted that disparities in childrearing practices are not necessarily attributable to discrepancies in value structures, but instead many differences arise due to parental capabilities and limitations. Such limitations are evidenced in lower levels of parental educational attainment, lower academic skill levels, lower wages, and less accumulated wages (Ferguson, 2007). A lack of financial resources might prevent parents who would otherwise support their children's learning from being able to acquire the tools necessary to provide access to targeted programs or activities that would allow for the cultivation of educational skills (Lareau, 2003). For instance, poverty status is a determinant of the number of books available in the home and whether or not children are taken to the theater or the museum (Bradley, Corwyn, McAdoo, and Coll, 2001); both are indicators of cultural capital. On another note, poor parents tend to be less likely to be able to afford to send their children to a preschool (Hochschild and Scovronick, 2003). Similarly, about one in five families with an income at 200 percent of the poverty threshold or below reported that their child was not in an after-school program or enrichment activity (Iceland, 2006).

And in any case, it would appear that resources do make a difference, and perhaps more so over the course of an academic career. Students with more resources are more likely to pursue a baccalaureate degree (Perna and Titus, 2005). What is more, the ability of parents to serve as a career role model may indeed serve middle class children better than lower class children whose parents tend to work in careers with lower societal status. When a parent works in a job of lower academic skill, the child may envision a similar future career for him or herself (Rothstein, 2004). Another problem for parents who attain lower levels of education is that their children may be less inclined to participate and pay attention in classes (Ferguson, 2007).

Circumstances unrelated to childrearing, but more related, generally to the overall health of the child, may affect further disadvantage for the poorest of schoolchildren. For example, children who live in poverty are less likely to have health insurance (Books, 2004), while women who live in poverty are less likely to obtain preventive healthcare for themselves and their children (Bullough, 1972). The poor are also less likely to own their own home than other families (Iceland, 2006). Another element often associated with the poor, household density, is associated with poor health conditions (Conley, 2010). A preliminary investigation of the relationship between the number of children in the household and total family income based on a larger five percent sample from the 2000 Census performed for the dissertation revealed a statistically significant relationship between the elements, but income explained only a minute proportion of the variance in number of children in the household ($\beta = -.027$, $\Delta R^2 = .001$, $p < .001$).

Other conditions that can come as a hindrance to the early age performance children from lower class families include elements such as poor nutrition, parental smoking, and alcohol use (Rothstein, 2004). Meanwhile, a variety of other factors that are related to the housing unit, such as exposure to lead paint, asbestos exposure, and exposure to common household vermin such as cockroaches, mice, and rats can also be harmful to children (Conley, 2010). Certain genetic factors, to the extent that many children are endowed with higher levels of innate ability while others are not, can play a role in early life educational differences between students of different social class backgrounds as well (Rothstein, 2004). Premature birth, a related health factor, can affect intellectual development, while extreme preterm children performed one standard deviation lower than full term children on a test of motor skill integration (Stjernqvist and Svenningsen, 1999). At the same time, preterm delivery and low birth weight have both been associated with social class (Paneth, 1995).

The Culture of Poverty Controversy

One area of interest that compels discussion is with respect to the existence of the culture of poverty. Anyone can wonder if such a culture exists, but given certain evidence mentioned above that neighborhood poverty, for example, correlates with reduced levels of civic engagement, there may be a certain reality to the existence of such a culture. The idea that life in poverty implies the acceptance of a given social culture and the predominant norms and value structures that come with it implies the fact that the class that constitutes the American poor capitulates to the abominable conditions of life in poverty. In other words, by living in poverty and being exposed to an environment where all that a person sees perpetuates the perception that poverty is an inescapable condition of life, people grow to accept it as fact. As a consequence, the culture of poverty is an idea more than social construct that is without argument proven to exist. The result is that any theory that suggests the prevalence of a culture unique to the poor would by its nature carry with it an element of controversy that requires researchers to view it with a guarded eye. And indeed the term 'culture of poverty' has grown out of favor in the publications of social scientists (Ng and Rury, 2006). Thus, it is with profound caution that any conclusions drawn on the basis of this thesis are presented.

With that given, the concept merits mention in any study that seeks to explain how poverty affects any given outcome. A theoretical proposition favored in the 1920s by researchers who hailed from the University of Chicago, according to Iceland (2006) suggested that "the breakdown of social controls and customs led to increased crime, sexual promiscuity, family breakup, and economic dependency," (p. 94-95). Views later changed by the mid-twentieth century, when Lewis (1966) in reference to the culture of poverty wrote that "there is a hostility to the basic

institutions of what are regarded as the dominant classes. There is a hatred of the police, a mistrust of government, and those in high positions and a cynicism that extends to the church," (p.23). The theory, nonetheless, provides the basis for the controversy and is of course not without challenge. One serious issue with the argument seems to be that his claims were derogatory toward poor people by way of the suggestion that poor people kept themselves poor because of this culture (Gans, 1995). Another problem for Lewis was that he failed to provide adequate evidence to support many of his claims that "linked behavioral and cultural patterns to the structure of political economy as experienced by the poor. Instead he discussed political economy only in terms of the individualized traits," (O'Connor, 2001). The logic put forward by Lewis seems to suggest that the values that penetrate the culture of poverty imply a denunciation of the norms that members of the more privileged classes accept, but the question one must ponder, given the lack of evidence of these patterns is whether that culture is what causes any of the effects mentioned above.

Do poor mothers read less to their children because of the culture of poverty? Perhaps this is a difficult question to answer, but what is known, as was mentioned earlier in the study, is that because of residential migration, poverty appears to be concentrated to a much larger extent in the urban core of cities. Evidence partially supported a hypothesis that stated that from 1970 until 1990, neighborhood level poverty increased in metropolitan areas where there were or actual decreases, or at least, not as many increases in overall labor demand in the amount of jobs (Strait, 2001).

The result of the "spatial concentration of poverty," according to Massey (2007) is a "harsh and destructive environment that perpetuates values, attitudes, and behaviors that, while adaptive within a niche of intense poverty, are injurious to society at large and destructive of the poor

themselves," (p. 205). This in turn perpetuates what amount to dense concentrations of the less desirable characteristics of a society in the central areas of cities, such as unemployment, illness, and various types of unlawful behavior (Massey, 2007). The result of this environment, in which so many wretched aspects of society are all concentrated together, is the degeneration of the urban core of American cities. This culture of poverty that has ensued, according to researchers, is one in which there is "an eroded work ethic, dependency on government programs, lack of educational aspiration and achievement, increased single parenthood and illegitimacy, criminal activity, and drug and alcohol abuse," (Iceland, 2006, p. 95). It is of no surprise then, that this environment of extreme poverty would produce attitudes reflective of this culture. The feeling of hopelessness, for example, correlates significantly and negatively with income (Parker and Kleiner, 1970).

The consequence for the children is the serious problem. The families that have the least degree of sensitivity to the importance of environmental concerns on the development of their children are the same families that tend to live in these poor neighborhoods (Wilson, 2012). For a direct effect of neighborhood poverty on attainment one must only look at evidence that suggests that in children who live in the poorest neighborhoods have an increased probability of dropping out of school, thereby preventing them from completing higher levels of education (Crane, 1991; Crowder and South, 2003). Neighborhood crime increases the odds of a student dropping out as well (Saatcioglu, 2010). As for the effect of neighborhood violence specifically, children who are exposed to violence tend to exhibit more aggressive behavior and aggressive fantasies (Guerra, Huesmann, and Spindler, 2003). Thus it appears that neighborhood violence, at least to a certain extent, could become socialized within a culture of poverty, and the culture of poverty in adults could then be passed on to the children. The effect of any culture of poverty, as a social pattern, on the schools remains to be further studied, but the evidence suggests that neighborhood violence

is detrimental to school outcomes. Neighborhood personal threats were found to correlate negatively with attendance, grades, and trouble avoidance (Bowen and Bowen, 1999).

Of even greater concern for the schools is the effect of poverty on peer group attitudes within the school. Whether these attitudes associate entirely with neighborhood poverty, or a culture of poverty, however, is not immediately clear. Still, however, evidence suggests that poor children might be more likely to associate with other students who do not value academic performance. Neighborhood poverty does correlate negatively with a child reporting that he or she has prosocial friends (Quane and Rankin, 1998). Furthermore, the expression of negative attitudes toward performance among friends associates positively with receiving school lunch assistance, a common indicator of low socioeconomic status (Farkas, Lleras, and Maczuga, 2002). Another factor appears that is not directly related to the poverty level of the neighborhood, but to the duration of time spent in a neighborhood. Students who have lived in their neighborhoods for greater lengths of time tend to put a reduced importance on educational achievement (Quane and Rankin, 1998).

General Educational Consequences of Poverty

Although the arrangement itself has not been systematically tailored to benefit only those children who come from higher income families in the same way at lower levels of education as it has at the postsecondary level, the general existence of the socioeconomic class order tends to have the unfortunate effect of sorting children from the poorer and lower rank classes into less desirable educational outcomes. In other words, the structure of the entire American elementary and secondary school system is built in such a manner that lends itself to be inherently favorable to those who have been offered, because of the social condition of their families, a more privileged

life. The children of the more advantaged classes at every turn have access to better resources and greater support both in school and in the home where parents are active in the learning process. These children are often raised in environments that are for many reasons more suitable to the cultivation of optimal learning conditions. These facts relevant to more privileged children lay in contrast to those for the poor children, who even when they are offered the opportunity to live in a stable environment, are often left without the proper materials or paternal guidance and instructional support to achieve their educational goals or to even know what they are. It is these factors, among many others, that lead to what has become at the least, an unbalanced school system. Though most would argue this is not intended by its design, this is what the patterns that are evident in the foregoing research would indicate. In spite of the fact that much in the literature review has been made of the heavily researched socioeconomic achievement and performance gaps, especially as they manifest themselves in a confluence with race, it is important to make note of other areas where the effects of a life in poverty are manifested in frequently researched educational outcomes.

A particular problem of importance for children in poverty in their education is absenteeism. Poor children have a higher rate of absenteeism in primary schools (Zhang, 2003). Students in middle class schools, on the contrary, are likely to have lower rates of absenteeism (Smyth, 1999). Absenteeism, of course, remains a serious problem in that it is associated with more severe educational consequences that arise at later stages in the academic career of a student. Dropout rates, for example, associate positively with school absences (Bond and Beer, 1990).

Grade retention, for example, is much more common for children who live in poverty than for children who do not live in poverty (Bianchi, 1984). An unfortunate side effect appears to be

that students who have been held back a year tend to reflect indications of lower academic adjustment at later ages (Jimerson, 1999). One specific outcome of grade retention found to have a detrimental effect is that children who are retained a year tend to not learn as much as they would have if they had been promoted (Hong and Raudenbush, 2005). Another serious consequence of grade retention could be school dropout, the odds of which increase for students that have been forced to repeat a grade (Roderick, 1994; Rumberger, 1995, Stearns, Moller, Blau, and Potochnick, 2007).

The harmful effects of poverty on dropout are both consistent and quite notable. Eighth grade students, for example, who are one standard deviation below the mean socioeconomic status were three times more likely to drop out than students at the mean socioeconomic status level, in contrast to those who were one standard deviation above the mean level whose odds of dropping out were nearly a third as likely to drop out as those who were at the mean, (Rumberger, 1995). Other findings with respect to that effect are similarly strong. The socioeconomic status of dropouts was .6 standard deviations lower than for those who stayed in school (Lee and Burkam, 2003). A motivating factor for poor children dropping out may be financial. Poor students may be more likely to drop out of school in order to provide an additional source of support for their family (Rumberger, 1983).

Another factor related to dropping out that has been earlier related to poverty in this literature review as well is family mobility. Students who at one time or another were required to change schools between the eighth and twelfth grades were two times more likely to drop out than students who stayed at the same school throughout that same time period (Rumberger and Larson, 1998). This would seem to indicate a serious problem when one takes into consideration the fact

that it is students who live in poverty that tend to transfer from one school to another at much higher rates than comparable middle and upper class children thus compounding the extent of the problem.

Education in High Poverty Schools

Up to this point, the primary emphasis of the literature review has been on the reported effects of individual, family, and neighborhood or local poverty. Next, however, it is important to turn attention to look inward at the educational system itself, to the schools specifically as an avenue where despite their efforts, the effects of life in poverty persist. High poverty schools in the poorest neighborhoods are the ones that are charged with the education of the children who already come into the system at the greatest disadvantage relative to upper and middles class students as previously described in detail throughout this chapter. Since education is related to exit from poverty (Cellini, McKernan, and Ratcliffe, 2008), the school effects of poverty are if not equally important, at least moderately relevant, to any individual impacts. One area where the issue seems to have manifested itself lies in the general lack of available resources these schools have to make available to their students. Urban schools tend to have teachers on their staffs who are generally less qualified than in other schools (Lankford, Loeb, and Wyckoff, 2002). Similarly, schools with lower average overall socioeconomic status in their student populations tend to employ less experienced teachers and offer fewer AP and A-F graded classes than the higher socioeconomic status schools (Betts, Rueben, and Danenberg, 2000). Comparable results translate to the classroom level as well where rooms with higher average concentrations of poverty have a tendency to have teachers with lower scores on available evaluation metrics (Borman and Kimball, 2005). With respect to students, the impact cannot be clearer—access to highly qualified teachers

correlates negatively with student poverty (Tuerk, 2005). More specific to certain subject areas, low income and minority students had less exposure to the most qualified mathematics and science instructors (Darling-Hammond, 2004). Of further concern, urban teachers describe conditions that indicate poorer levels of administrative and parental support, more problems with students, and less adequate materials than in rural and suburban schools, and these teachers have lower levels of job satisfaction (Hanushek and Rivkin, 2007). Another problem related to resources is teacher turnover. Schools with higher percentages of lower income students tend to have high turnover rates, and at the same time, school climate is negatively associated with teacher turnover (Guin, 2004). Conversely, school facility quality associates positively with teacher retention (Buckley, Schneider, Shang, 2004).

Given that based on the data, one expects the worst resource availability to be found in the districts that serve the poorest student populations, the question becomes what is the actual effect of the lack of available resources. When it comes to teacher quality, the effect seems to be quite clear. The evidence from the research suggests that teachers do matter. Higher teacher quality tends to be associated with better test performance (Hanushek, Kain, O'Brien, and Rivkin; 2004, Rockoff, 2004; Borman and Kimball, 2005; Tuerk, 2005). Two basic measures of teacher quality relate to student achievement; first, the level of teacher experience, and second the percentage of teachers without full credential both are expected to have positive overall impacts (Betts, Rueben, and Danenberg, 2000). Further to the point of the importance of teacher quality, standard subject certification correlates positively with student assessment test scores in comparison to teachers without subject certification or among those who have only the private school certification (Goldhaber and Brewer, 2000).

Other variables related to resources, such as higher education expenditures per pupil and lower pupil to teacher ratios (or similarly smaller class sizes) are also likely to reveal positive effects on student achievement (Greenwald, Hedges, and Laine, 1996). Similarly at the district level, a moderate to intense significant correlation is revealed to exist between per pupil school funding and average mathematic achievement (Payne and Biddle, 1999). Contrary findings, however, are also discovered. Expenditures on teaching do not have any significant effect on student performance in a study conducted in Finland (Häkkinen, Kirjavainen, and Uusitalo, 2003). The fact that the article in particular looks at international data would in no way seem to effect the interpretations that one might gather from it since the concept relates comparably to American education.

Examining State Level Factors in Poverty and Education

The United States, due in part to its vast geographical size and diverse population, has a great deal of variation in both poverty rates and costs of living depending on the part of the country examined. Poverty increases in areas with a higher cost of living and falls in areas with a lower cost of living (Bishop, Formby, and Zheng, 1999). The concentration of poverty tends to be higher in the core areas of major cities and in rural areas, with some regional exceptions (Rodgers and Rodgers, 1991). Nonetheless, the overall geographical variation in poverty remains high. 382 counties were identified as having poverty rates above 20% every ten years from 1959 through 1999 with most of those counties concentrated in the southern half of the country (Partridge and Rickman, 2007). 34 percent of high poverty places are found in these high poverty counties (Lichter, Parisi, and Taquino, 2012). Urban poverty rates are 19 percent, compared to less than 9 percent in the suburbs (Shaw, 1996). The highest concentrations of non-urban poverty are found

in the Mississippi Delta, the Rio Grande Valley, and various other areas in the South (Farrigan and Parker, 2012). Child poverty was historically distributed in a similar manner with large concentrations of poor children living in these same areas several years earlier (Friedman and Lichter, 1998).

Not only do states differ in terms of their demographic composition, but they have different social welfare policies as well. There is some discussion as to whether states make policies to prevent migration of welfare recipients from other states. With respect to benefit payouts, state policies are correlated with the policy actions of other competitive states (Rom, Peterson, and Scheve, 1998). Though several states restrict some welfare benefits for people who have recently migrated from another state, there is little support for the conclusion that welfare policies are an impetus for migration (Allard and Danziger, 2000). Similarly, states that distribute greater welfare benefits than their neighbors do not tend to have sudden increases in poverty rates (Berry, Fording, and Hanson, 2003).

Education expenditures tend to vary widely from state to state as well. In 2010-2011, for example, Oklahoma spent $7,631 per pupil and New York spent $18,834 (U.S. Department of Education, 2013), suggesting that Oklahoma could educate 2.47 pupils for every one New York educated. While some of the difference between states in spending on education is related to regional differences in the cost of living that cannot be accounted for by simple subtraction, some is obviously due to the commitment of the state to its schools. Political context and ideology, along with median income in a state all have measurable effects on state education spending (Burbridge, 2002). States have implemented a wide variety of different policies when it comes to school finance formulas, voucher programs, and teacher certification.

Based on the evidence presented in this chapter, it seems clear that poverty has significant effects on the lives of children and on their education. In turn, the greater the exposure to poverty and the relative intensity of poverty in a geographical sense appears to intensify the negative effects of poverty. This fact appears true at least in terms of smaller geographical spaces, such as neighborhoods and census tracts. States vary, much as these smaller units do, in terms of their socioeconomic composition, as noted in the introduction. The policies, educational institutions, and other social characteristics of states differ as well. It follows that these characteristics that have such strong effects at the narrow level may have the same effect at a wider level. This leads back to the central question of this essay. Given that the data with regard to the effects of poverty at the smaller geographical unit seem so clear, it becomes essential to examine at the state level in order to gauge how far this effect can be extended. This will allow for a definitive determination of the effects of concentrated poverty on attainment at a broader level.

Chapter 3

Methods

Sample Characteristics

The study seeks to determine whether or not concentration of poverty within the states associates with higher or lower attainment. In an effort to study the effects of poverty and other control variables on educational attainment, the samples from United States Census data collected on six separate occasions over fifty years, in increments of ten years, beginning in the year 1960 and ending in the year 2010 are the ideal source of data. The dissertation does not purport to be a longitudinal study, but rather it is one that uses a series of six cross-sectional samples. The use of six samples allows us to determine whether the same effects are found in a pattern over time, and to strengthen the evidence in support of the findings.

The census data selections consist of a one percent sample of the entire U.S. population at each data collection occasion, specifically, the samples used are as follows, the 1960 1% sample, the 1970 1% Form 2 State Sample, the 1980 1% Metro Sample, the 1990 1% Metro Sample, the 2000 1% sample, and the 2010 American Community Survey (a Census Bureau survey of a 1% sample of the U.S. population). Different samples are used in different years in order to ensure that the same variables can be used in each of the six years. Each of the samples were then trimmed to include only those individuals who were age seventeen at the time the census survey was administered. Data are collected by the U.S. Census Bureau and furnished to researchers by the Integrated Public Use Microdata Series (IPUMS). The sample size decision is dictated by the necessity for obtaining results of statistical significance. Since adequate statistical power at Level 1 is provided by the one percent sample, a larger five percent sample is not necessary. Table 2 displays the full 17-year-old sample characteristics for each of the six census occasions. It is

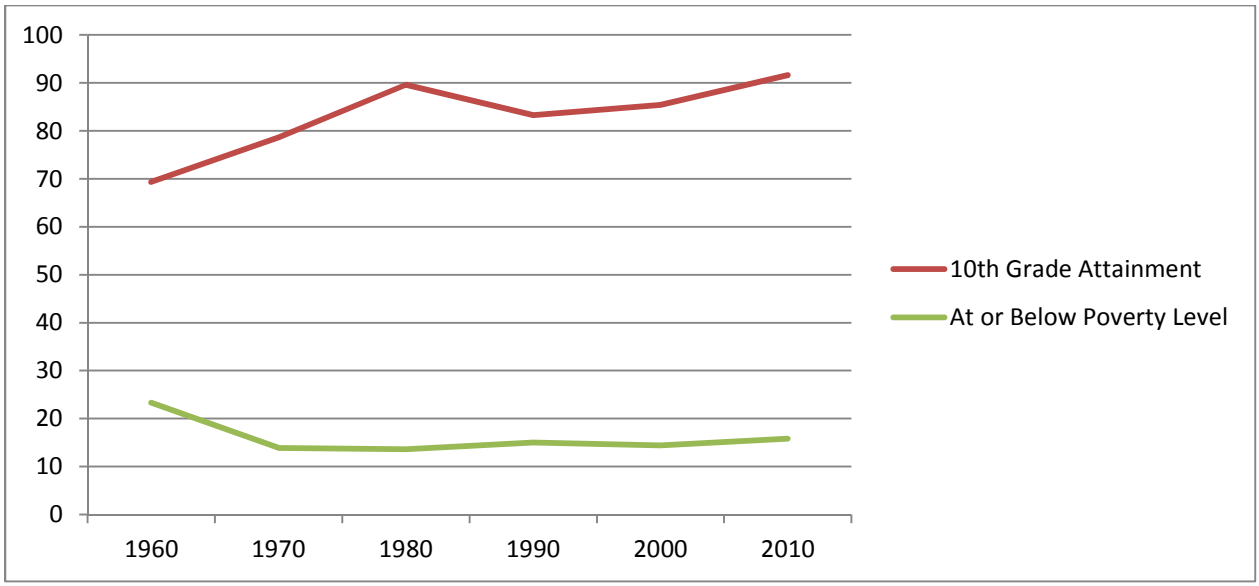
important to note that the sample sizes reported in Table 2 (below) may not correspond to the sample sizes in the findings tables due to the exclusion of cases from the final analysis because of the presence of missing data.

Table 2: 1960-2010 Sample Characteristics

	1960	*1970*	*1980*	*1990*	*2000*	*2010*
Tenth Grade Attainment	19845 (69.3%)	30077 (78.6%)	31698 (89.6%)	29176 (83.3%)	35492 (85.4%)	38449 (91.6%)
In Poverty	6684 (23.3%)	5319 (13.9%)	5733 (13.6%)	5267 (15.0%)	5999 (14.4%)	6625 (15.8%)
Black	3127 (10.9%)	4767 (12.5%)	5971 (14.2%)	1525 (12.9%)	5594 (13.5%)	5577 (13.2%)
Indian/Alaska Native	89 (.3%)	147 (.4%)	339 (.8%)	424 (1.2%)	500 (1.2%)	519 (1.2%)
Asian/Pacific Islander	104 (.4%)	242 (.6%)	557 (1.3%)	1125 (3.2%)	1558 (3.7%)	1531 (3.6%)
Other Race	43 (.2%)	20 (.1%)	28 (.1%)	36 (.1%)	80 (.2%)	90 (.2%)
Hispanic Origin	1037 (3.6%)	1848 (4.8%)	3232 (7.7%)	3968 (11.3%)	6296 (15.1%)	7697 (18.2%)
Male	14367 (50.2%)	19588 (51.2%)	21512 (51.2%)	18021 (51.5%)	21472 (51.6%)	21665 (51.3%)
Total	28644 (100%)	38244 (100%)	42055 (100%)	35015 (100%)	41581 (100%)	42239 (100%)

The total sample size is reported in the bottom row. The rows above reveal the number of sampled individuals who possess the characteristic listed in the column to the right. For example, in 1960, 14,367 of the 28,644 total respondents were males. That equals 50.2 percent of the total sample. The chart below provides a visual representation of the first two lines from Table 2. As can be seen, the rate of students meeting the tenth grade attainment target steadily increases from 1960 through 2010, with the exception of a slight downturn in the 1980s. Meanwhile, poverty decreases substantially from 1960 to 1970, but then remains relatively steady through 2010, and even increasing a bit toward the end of the sampled period.

Figure 1: National Poverty and Attainment Rates for 17-year-olds, 1960-2010



Variable Selection Criteria

The variables were selected because they were deemed to be the most useful and relevant for the purpose of testing the primary hypotheses. The chosen control variables have been widely used in other quantitative research in the field of education covering similar topics. Many of the state level variables are derived from the individual level variables found within this dataset and do not reflect data reported from another sources. Some state level variables that were included in

the initial analysis have been removed from this final set of models because they were found to detract from the ability of the model to account for the residual level two variance, did not contribute materially to the overall model, and/or were found to correlate narrowly with other variables used in the model, thereby disguising effects that may have not been discovered were it not for their exclusion from the model. The excluded variables included the number of individuals in a certain state who fit into a certain job category, such as white collar jobs, farm jobs, and manufacturing jobs, and regional binomial variables used to indicate whether or not a state lies in a specific region, e.g., the South.

The variable definitions listed below are concise interpretations of the definitions provided by IPUMS where Census Bureau variables are used as reported. In those instances where variables have been recoded, adjustments made by the researcher are noted when necessary for clarity, in consideration of the original IPUMS definition of the base variable.

Individual Level Variable Definitions

Expected Educational Attainment: The primary dependent variable in the series of models is expected attainment. This variable is a binary combination of two variables, educational attainment, which represents the highest level of education an individual had completed at the time the survey was administered, and a variable that indicates whether a student was in school or not at the time of the survey. Respondents who *are enrolled in eleventh grade* **or** *have graduated* are considered to be meeting educational expectations and are coded as 1. Respondents who *have not completed the tenth grade* **or** *are not in school* and *have not graduated* are considered to be not meeting attainment expectations and are coded as 0. This variable serves as the primary measure of attainment for this particular study.

Poverty Status: The primary independent variable required to answer the central research question is poverty status. It indicates the poverty status of an individual at the time, in particular, of the 17-year-old respondent. The variable reports continuous interval level data in its original form. It expresses "each family's total income for the previous year as a percentage of the poverty thresholds established by the Social Security Administration," (IPUMS variable description). All members of a given household are assigned the same poverty status. In other words, for most respondents in the sample, the poverty status is inherited from the parent(s) or guardian(s) and unless the respondent for whatever reason lives in an independent environment, the situation will hold true. The recoded version of the poverty status variable functions as a binomial. Respondents whose incomes are reported as being at or below an income equal to 100 percent of the poverty threshold are considered to be in poverty and are coded as 1. Respondents whose incomes are reported as being above 100 percent of the poverty threshold are not considered to be in poverty and thus are coded as 0. Thus, no special consideration of degrees of poverty applies to the variable, regardless of how far below the income baseline for that particular year an individual might be.

Race/Ethnicity: The respondent's race and/or ethnicity is recoded into several binomial variables to indicate whether or not an individual belongs to a given racial or ethnic category. Respondents who do belong to said category are coded as 1 and respondents who do not are coded as 0. The categorical race/ethnicity variables are Black, Hispanic, and Asian/Pacific Islander. If a respondent is identified as of Hispanic Origin, that ethnic category overrides all racial categories. In other words, a Black respondent who is also Hispanic is only Hispanic and not Black. The same is true for all of the racial categories of which the respondent might be a member. Non-Hispanic White respondents are members of the control group and do not have a categorical race variable.

The same holds true for respondents who identify as Indian or Alaska Native or as members of the "Other" racial category.

Gender: The codes for the sex of the respondent are 1 for female and 0 for male.

Farm Status: Respondents who live on a farm are coded as 1; respondents who do not are coded as 0. The definition for farm varies slightly by year, but in general requires that the agricultural production of the land belonging to or leased by a family or household be at a given minimum level.

People in Family: This is the number of people who live with the respondent who are members of the respondent's family. The respondent is included in the number but people in the household who are not related to the respondent do not count toward the total.

Single Female Parent: This is a transformation of the Census Bureau's household type variable. Families with a single female, with no husband or other male present, serving as head of household, are coded as 1; all other household types, whether headed by a male or both male and female, are coded as 0.

Mother's Educational Attainment/Father's Educational Attainment: These are ordinal level measures of the highest level of school completed by the mother and father of the respondent. Minor recoding of the variable was necessary for operationalization. In general, a one unit increase on the scale, indicates a year of additional education, up to a maximum of 20. For example, a value of 12 on this variable suggests that an individual completed twelfth grade or graduated from high school or an equivalent program.

Mother's Occupational Prestige/Father's Occupational Prestige: These are the Siegel occupational prestige scores for both the respondent's mother and father. They are assigned

according to the Census Bureau's 1950 'occupational classification system'. The scores are standardized from their original scale form.

State Level Variable Definitions

State level data is comprised of characteristic variables for each of the fifty states and the District of Columbia for each census year. The data was collected from both the U.S. Census Bureau data provided by IPUMS, the Department of Education, and other Census Bureau data provided in the Statistical Abstract of the United States.

Per Pupil Education Expenditures: These are the annual education expenditures per pupil in constant dollars for the given state for the school year that ends in the census year. For example, for the 2000 census, the study uses the reported expenditures from the 1999-2000 school year. (Data Source: U.S. Department of Education, Digest of Education Statistics, Common Core of Data, published 2013).

Population Density: This is the total number of persons living in the state divided by the number of square miles in the state in the census year (Data Source for 1960-2000 Samples: U.S. Census Bureau, Statistical Abstract of the United States: 2011, published 2010; Data Source for 2010 Sample: 2010 Census Resident Population Data). This variable helps to indicate the degree to which a state's population is located in urban areas.

Black and Asian/Pacific Islander Population: This is equivalent to the percentage of respondents in the state who belong to the given racial category expressed as a decimal.

Hispanic Population: This is equivalent to the percentage of respondents in the state who are of Hispanic ethnic origin expressed as a decimal. This figure includes all Hispanics regardless of racial category. This identification replaces and supersedes race for individuals who identify as

such. Thus, Hispanics who belong to a given racial category are considered only to be Hispanic and as a result are not counted in the total percentage of the racial variables.

Mean State Poverty (At 100% of Poverty Level and Below): The measure is percentage of individuals in the state who are members of families that report earning an income equal to or below the poverty level for the given census year expressed as a decimal. For each of the six census data collection points, a different figure is used to calculate the poverty level. These figures are set by the Census Bureau and change based on the rate of inflation. They are not inclusive of other forms of noncash income that come from public assistance.

Depth of Poverty: This measure is calculated by taking the average poverty score of all sampled individuals in a state who have incomes equal to or below the poverty line. An individual's score is equivalent to the percentage of the poverty level income that the individual's family earns. A score closer to zero indicates a deeper level of poverty.

South Region: This is a binomial variable used to indicate whether or not a state is in the southern region of the United States as defined by the Census Bureau. This variable was included in the initial tests of the full model, however, it was discovered to mask some important results with regard to black population and poverty level. As a result, it is not reported in the final models. It is used in correlation matrices for comparative and analytical purposes.

Data Management and Model Design

The purpose of the methods discussed here is to determine the effect of poverty and other individual and state level predictors, used for the primary purpose of control, on expected educational attainment over a series of decades, and to determine whether both the outcomes and effects vary across the states and District of Columbia with other U.S. territories excluded. This study does model state level variance despite results that suggest that between state variance in

years of schooling declined from 1840 through 2000 (Turner, Tamura, Mulholland, and Baier, 2007). The primary method to achieve this consists of a series of hierarchical generalized linear models (HGLM). The study includes six cross-sectional models that are compared to one another rather than a single longitudinal model. A different set of subjects is interviewed in each census year. Since the dependent variable has a binomial distribution (0/1), a Bernoulli HGLM model is appropriate.

The study reports a series of statistical models. It begins with a model that reports only the intercepts that constitutes a baseline in order to help determine the amount of between state variability explained by the state level variables (null model). The next model adds in only state level poverty and then next the individual variables and finally the remaining state variables. The final models include all the level 1 predictors, and in addition, the intercepts, where significant unexplained variability between the states is present, are allowed to vary randomly across the states. They are thus modeled with level 2 predictors to determine the impact of state level factors. Lee and Burkam (2003) use quite similar methods in a study about school dropout, though their level 2 units were schools not states. These researchers also include two sets of models, one with only level 1 variables and another with variables from both levels 1 and 2, a practice not adopted for the study. The same predictors as those that are listed in the variable definitions above are used in all ten models. In order to conform to accepted methodological practice, the level 1 predictors are centered around the state mean. The continuous variables are standardized to reflect a mean of zero and standard deviation of one.

Chapter 4

Results

This chapter consists of a series of tables that are intended to display the various models for the statistical tests mentioned in the preceding chapter in addition to the key demographic characteristics for each of the six study samples. Although separate models are used for each of the study years from 1960 through 2010, the six models for which the same methodological practice are followed are conveniently reported in a single series of tables, instead of six separate ones for each model design. This arrangement helps to facilitate easier comparison of the results across the entire time frame examined in the study. The models have been designed to test the effect of individual and state level variables on the educational attainment of the 17-year-old students in the sample and to determine whether significant variability in the attainment outcomes between the states is discovered after controlling for a variety of other factors at both the state and individual levels. This will then allow for a determination to be made as to which of those factors are found to correlate with it.

The findings from the binomial HGLM models for each of the six samples are reported in the following section. Several tables are included, four of these report the adjusted odds coefficients listed by year and another pair of tables that report the random effects for the attainment intercepts. In all cases, the models fix the poverty and other individual level variable slopes due to lack of variability between the states. To clarify, although there is significant variability between the states in the attainment intercepts, there is no significant variation between the states in the slopes. Because of this result, there is no need to model the poverty-attainment relationship with state level factors in order to determine if that effect is weakened or intensified by the presence of certain state level effects. This means that there remains significant variability

between the states in the attainment outcome variable and it is therefore worthwhile to determine the state level factors that contribute to that effect, but the relationship between individual level poverty and attainment does not need to be modeled with state level variables because there is no significant variability between the states. Thus, there does not appear to be enough variability in the effect of individual poverty on attainment to require an additional analysis to determine whether that effect is made better or worsened by higher poverty at the state level, as it may have been hypothesized to be. It does remain of interest, however, to determine if attainment itself is affected by that and other state level factors and that justifies the use of state level variables for the intercepts. The models are built to identify those state level variables that have statistically significant correlations with mean state attainment.

This section tries to put emphasis on the identification of trends over the course of the fifty-year period. The first model reported below is the null model with the attainment intercepts allowed to vary randomly between the states with no predictors. It acts as a baseline. The coefficient in that model functions to indicate a simple representation of the overall average unadjusted log odds of attaining the expected educational attainment benchmarks with all other factors disregarded.

Table 3: Null Model for 17-Year-Old Attainment, 1960-2010

Variable Name	*1960*	*1970*	*1980*	*1990*	*2000*	*2010*
Intercept	1.223***	1.698***	2.424***	2.037***	2.188***	2.828***

***$p < .001$

Table 4 adds in the state mean of respondents living in poverty in order test whether that variable has an effect on the attainment intercepts. This model is primarily used for the purpose of comparison to later models. It will facilitate future comparison, but in large part is useful for

the simple indication that there is indeed significant variability between the states in mean attainment. Two conclusions can be drawn from this model. First, there remains significant variability in state attainment after controlling for state poverty. And second, in support of the central hypothesis, it appears clear that the intercepts are in fact affected by state poverty in all but the first year, absent all of the other potential factors. Thus, if it was assumed that all other exogenous factors were excluded, one could conclude that poverty has a rather strong effect on attainment. It cannot be assumed that other factors will not have such an effect, however, and in fact it would seem likely that the opposite is true. As a result, it becomes necessary to perform additional tests in order to determine if that is indeed the case. The next models will include these other factors. If it is determined that the addition of other variables in addition to poverty decrease unexplained level 2 variance, their inclusion will be justified.

Table 4: Null Model for 17-Year-Old Attainment Plus State Poverty, 1960-2010

Variable Name	*1960*	*1970*	*1980*	*1990*	*2000*	*2010*
Intercept	1.216***	1.700***	2.421***	2.029***	2.171***	2.833***
Mean State Poverty	.134	-.331***	-.278***	-.828***	-.926***	-.271***

***$p < .001$

Table 5 (below) adds in all of the individual level predictors to the previous model. The only state level predictor used in this model is mean state poverty. What occurs from the evidence is that the statistical significance of the mean state level poverty effect remains intact and negative from 1970 through 2010, though it is still not present in the 1960 model, suggesting that by controlling for the student level characteristics, the impact of state poverty remains important even though the effect size, as would be expected, is reduced, however marginally, in each of the samples.

Table 5: Test Model for 17-Year Old Attainment (Level 1 plus State Poverty), 1960-2010

Variable Name	*1960*	*1970*	*1980*	*1990*	*2000*	*2010*
Intercept	1.406***	1.937***	2.610***	2.169***	2.356***	3.061***
State Level Variables						
Mean Poverty	.167	-.320***	-.254***	-.738***	-.834**	-.266***
Individual Level Variables						
Gender	.551***	.529***	.578***	.456***	.463***	.429***
Farm Status	.304***	.350***	.398**	.170	-.099	-.856***
Mother Education	.476***	.483***	.293***	.220***	.174***	.229***
Father Education	.316***	.289***	.152***	.236***	.247***	.191***
Family Size	-.336***	-.229***	-.179***	-.180***	-.338***	-.233***
Mom Occupation	-.029	-.014	.039	.143***	.142***	.185***
Father Occupation	.183***	.163***	.127***	.090***	.144***	.119***
Poverty Status	-.389***	-.320***	-.292***	-.329***	-.333***	-.514***
Black	.106	-.059	-.436***	.186*	.003	-.362***
Asian	.101	.412	-.594***	.341*	.646***	.263
Hispanic	-.273*	-.234*	-.302***	.227***	.058	-.043
Single Fem. Parent	.004	-1.617***	-.350	-.201	-.260	.131

***$p < .001$, *$p < .05$

The evidence in the Table 6 (below) seems to support the addition of the state poverty percentage variable in the model above. The statistics presented above include the variance component for the attainment intercepts compared with those from the models with fewer variables. Raudenbush and Bryk (2002) provide guidance for the calculation.

Table 6: Random Effect Comparison for State Level Poverty, 1960-2010

Estimation of Variance Component	*SD*	*Var*	χ^2 *(df)*	*Proportion Reduction*
1960 Regression with Random Intercepts	.577	.332	853.560(48)***	
1960 Individual Regression Plus State Poverty	.581	.338	857.017(47)***	-
1970 Regression with Random Intercepts	.472	.224	617.677(48)***	
1970 Individual Regression Plus State Poverty	.323	.105	302.231(47)***	.531
1980 Regression with Random Intercepts	.305	.092	209.650(48)***	
1980 Individual Regression Plus State Poverty	.183	.034	110.264(47)***	.630
1990 Regression with Random Intercepts	.245	.060	177.099(48)***	
1990 Individual Regression Plus State Poverty	.213	.046	140.233(47)***	.233
2000 Regression with Random Intercepts	.243	.059	183.825(48)***	
2000 Individual Regression Plus State Poverty	.227	.052	184.448(47)***	.119
2010 Regression with Random Intercepts	.371	.138	199.826(48)***	
2010 Individual Regression Plus State Poverty	.284	.081	161.790(47)***	.413

***$p < .001$, **$p<.01$, *$p <.05$

The state level poverty variable on its own accounts for a substantial proportion of between state variance in 1970 through 2010 above and beyond that explained by a model that uses only the individual level predictors, and helps to justify the hypothesis that at least in those five census years, that particular variable has a noteworthy effect. No reduction in variance occurs for the 1960 model, which is consistent with the fact that the state level poverty variable had no statistically significant effect in that model associated with that particular sample. The hope is that the addition of the other state level predictors to the model would help bring more clarity to the matter and that will be discovered based on the evidence in Table 8.

Table 7: Random Effect Comparison for the Full Model, 1960-2010

Estimation of Variance Component	*SD*	*Var*	χ^2 *(df)*	*Proportion Reduction*
1960 Regression with Random Intercepts	.577	.332	853.560(48)***	
1960 Full Model	.602	.364	810.878(42)***	-
1970 Regression with Random Intercepts	.472	.224	617.677(48)***	
1970 Full Model	.245	.060	184.866(42)***	.732
1980 Regression with Random Intercepts	.305	.092	209.650(48)***	
1980 Full Model	.149	.022	75.786(42)***	.760
1990 Regression with Random Intercepts	.245	.060	177.099(48)***	
1990 Full Model	.197	.039	100.183(42)***	.350
2000 Regression with Random Intercepts	.243	.059	183.825(48)***	
2000 Full Model	.166	.028	88.769(42)***	.525
2010 Regression with Random Intercepts	.371	.138	199.826(48)***	
2010 Full Model	.249	.062	102.503(42)***	.550

***$p < .001$, **$p<.01$, *$p <.05$

Tables 7 and 8 are designed to present the information relevant to the discussion of the full model with all of the individual and state level predictors included, or the one that serves as the primary basis for interpretation of the log odds coefficients and testing of the hypothesis. The justification for the use of state level variables, taken as a whole, comes from the statistics reported in Table 7 with attention to the proportion reduction in variance statistic reported in the last column. It represents the total parameter variance in attainment that is explained by the combination of all of the state level variables for each of the given pairs of models, one for each year studied.

These variables explain more than half of the total variance in attainment between the states in all but two of the six models, 1960, where they do not account for any proportion of the variance, and 1990, where they still account for more than a third of the variance between the states in the attainment intercepts. The 1960 exception occurs most likely due to the fact that in this particular model, none of the state level variables have any effect on attainment, positive or negative, that is of statistical significance. Note that the coefficient for the intercept comes much lower in 1960 than in any other year, meaning that the average probability of meeting the attainment benchmark is lower in that year, accounting for the variables in the equation. With that having been said, the addition of the state level variables into the model does not affect the coefficients at level 1. As a result, they remain in the equation to facilitate the identification of trends over the course of fifty years encompassed by the study. There appears to be no downside to their inclusion in the model.

Table 8 reports the coefficients where the results show a significant relationship for a particular predictor. Among the control variables, poverty status and family size are the only two family characteristic predictors that produce a negative effect on attainment in all six samples. With respect to family size, the result conforms to findings that the number of siblings has a negative correlation with attainment (Robertshaw and Wolfle, 1983). Farm status on the other hand has a positive effect in every year before 1990 when it has no effect. That finding does not fit with the conclusion that farm background had no effect on attainment (Robertshaw and Wolfle, 1983).

It seems reasonable to assume that effects are consistent enough with these three variables to suggest the presence of a trend. Since the coefficient for farm status was not significant once again for a later census in 2000, with two years absent in six, it is more reasonable to attribute it to an end to the trend than to an anomaly.

Table 8: Full Model for 17-Year-Old Attainment, 1960-2010

Variable Name	*1960*	*1970*	*1980*	*1990*	*2000*	*2010*
Intercept	1.521***	2.203***	2.697***	2.248***	2.459***	3.042***
State Level Variables						
Hispanic Population	.056	.017	-.003	-.065~	-.061~	.052
Black Population	.085	-.270**	-.103	-.170**	-.005	-.050
Asian Population	.685	1.886**	.628**	.262~	.780***	.105
Educ. Expenditures	-.186	-.092	.082~	-.018	-.041	.002
Population Density	-.079	-.054	.027	.274***	.066	-.011
Mean State Poverty	-.424	.054	-.157**	-.218	-.741*	-.217**
Individual Level Variables						
Gender	.551***	.529***	.578***	.456***	.463***	.429***
Farm Status	.304***	.350***	.396**	.170	-.096	-.848***
Mother Education	.476***	.484***	.295***	.220***	.176***	.232***
Father Education	.316***	.290***	.152***	.236***	.248***	.192***
Family Size	-.336***	-.229***	-.179***	-.180***	-.340***	-.234***
Mother Occupation	-.029	-.014	.038	.144***	.141***	.185***
Father Occupation	.183***	.164***	.128***	.090***	.144***	.119***
Poverty Status	-.389***	-.321***	-.292***	-.329***	-.333***	-.514***
Black	.106	-.056	-.427***	.188*	.003	-.358***
Asian	.101	.417	-.610***	.341*	.658***	.271
Hispanic	-.274**	-.243*	-.316***	.227***	.057	-.049
Single Fem. Parent	.004	-1.612***	-.356	-.226	-.257	.131

***$p < .001$, **$p < .01$, *$p < .05$, ~$p < .10$ (borderline significance reported at level 2 only)

Even though the result was statistically significant in 2010, the direction of the correlation for farm status was in the opposite direction of that from the years prior to 1990, suggesting a complete reversal in that trend. Since the result only occurs once, replication would be necessary in order to draw more defined conclusions about the changing importance of life on a farm for

school success. Single female head of household status has a statistically significant effect in only one year, though the effect is negative in four of the six models and near zero in the other. The suggestion must then follow that other correlated variables might mediate any repeated effect this variable might have.

Of the demographic variables, only gender has a positive effect on the outcome variable in all six models. That result conforms to evidence that females outperform males on a variety of measures (Demack, Drew, and Grimsley, 2000). Asian/Pacific Islander has a positive effect in two of the sampled years, 1990 and 2000, with a negative effect in 1980. The trend, with exception to the anomalous result in 1980, seems compatible with evidence that supports that Asian racial identification yields positive relationships with educational outcomes (Sander, 1999; Sander and Krautmann, 1995). Hispanic origin has a negative effect in 1960, 1970, and 1980, turns positive in 1990, and vanishes in 2000, suggesting that the trend toward weaker performance among Hispanics relative toward Non-Hispanic Whites ended after 1980, and may not be extremely important in terms of prediction in the current era. One trend may be emerging, but since the result did not repeat in 2000, more data from another decade into the future might add support to that suggestion. Since the research supported the suggestion that Hispanics tended to attain at lower levels in research published around this time frame (Sander and Krautmann, 1995), the results conform to the research. However, further study remains a necessity to determine whether this result in the modern era would be replicable. Perhaps this reflects another example of an effect that is more related to individual level poverty than to the ethnicity.

Black identification has a negative effect in 1980 and 2010 and a positive effect in 1990. It does not come as a complete surprise since evidence from research is conflicting as to what the effect of being black on educational attainment outcomes might be, with the studies noted here

finding a negative effect (Sander and Krautmann, 1995; Sander, 1999). Another study found a positive effect (Goldsmith, 2009). One might attribute these effects to mere differences from sample to sample or methodological choices. A reason for the presence of these racial effects in on unique occasions in the middle of the sampled time frame is difficult to identify. It may be that in other years, this correlation has been offset by poverty. A significant proportion of the effect of race on the achievement gap is explained by poverty (Rothstein, 2004) and wealth (Orr, 2003).

Strong trends appear for three of the four inherited cultural capital measures. Mother's and Father's Education and Father's Occupational Prestige all have statistically significant positive effects on attainment in all six samples. Both mother's and father's education in the literature tend to correlate with positive educational outcomes (Carpenter and Hayden, 1993; Kalmijn and Kraaykamp, 1996; Robertshaw and Wolfle, 1983; Sander and Krautmann, 1995). Another study found a positive relationship between parental occupational status and higher educational outcomes (Gouvias, 1998). An emerging trend is appearing for Mother's Occupational Prestige as well, with a positive effect appearing in all three of the more recent census models. This may be partly explained by changes in maternal work behavior over the course of the latter third of the twentieth century, with more women working full time. Only 28 percent of women with children worked outside the home in 1960, but that number had increased to more than 70 percent by the 1990s (Grogger, Karoly, and Grogger, 2009). Aside from gender, these four variables, seems to have the greatest positive effect on whether an individual meets the expected educational attainment targets of all of the measured predictors.

No level 2 variable has a significant effect in more than three of the census years except Asian population. The fact that state level poverty revealed a significant effect on attainment in three of the samples was an encouraging development because it produced results consistent with

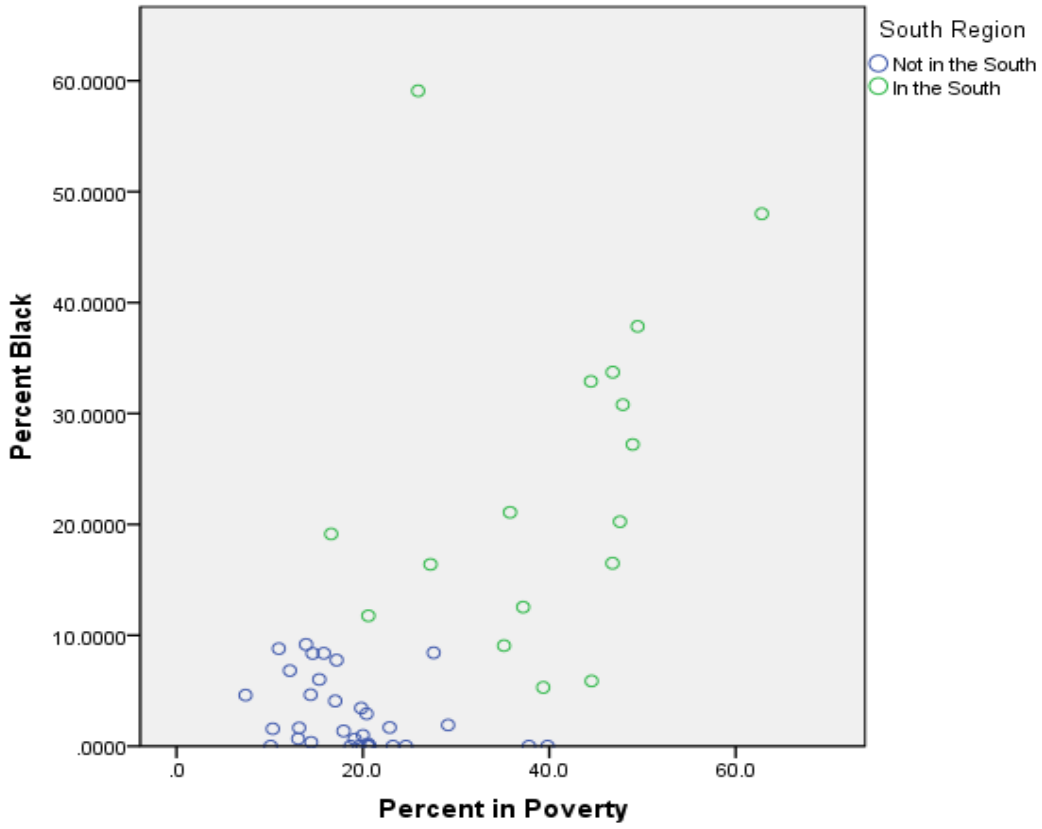
the hypotheses. Another study found adult education levels were higher in low poverty areas (Rury, 2004). It suggests that the trend with respect to state level poverty might be difficult to predict, however, since the result yielded significant results in just half of the samples. It could be mediated by another variable, such as Black population, a variable that yields a statistically significant negative result in two of the years in which the correlation for state poverty mean was absent. Thus, the conclusion cannot be to reject the hypothesis that concentration of poverty to the extent of a unit as large as a state would impact attainment. Instead it seems quite possible that there is not enough variability between the states on the other variables of interest to produce statistically significant results. It may be better suggest that the 1960 model yields anomalous results due in part to the low average attainment rates, and to thus focus on 1970 through 2010 when either mean poverty or black population (one or the other) was producing a strong negative effect at the state level. A study found that the addition of new family variables reduced the robustness of coefficients for neighborhood level (a smaller unit than a state, but nonetheless a valuable second level unit) correlations (Ginther, Haveman, and Wolfe, 2000). For this particular dataset, this selection of variables turned out to be the optimal set.

As noted earlier, one state level variable did present effects on attainment rates in four out of the six years and the correlations were significant in the same direction for all three years. The percentage Asian variable is positive in 1970, 1980, 1990, and 2000. The suggestion is that states with high Asian populations will tend to have higher attainment rates. Hispanic population produced a weak negative effect in 1990 and 2000, but otherwise yielded no statistically significant results. This is an interesting discovery and one that is worth further exploration. The other state level control variables that produced significant effects did so on only one occasion, leading to the

conclusion that the likelihood of these results being statistical anomalies was high. These variables were, Population Density and Education Expenditures.

One unique finding seemed to reveal itself in the primary results table. This was that state level poverty and black population had significant effects in opposite model years, suggesting perhaps that the two variables were offsetting each other. The scatterplots below help to illustrate the distribution of states on these two key variables, highlighting regional differences as well, in order to help identify an explanation for these confounding results.

Figure 2: State Level Poverty and Black Population in 1960



These figures help to illustrate the apparent nexus that exists between the black population in a state, the poor population, and the geographical location of the state by providing a graphical representation of the interaction. Each dot represents a data point for a given state. The poverty

rate is displayed on the X-axis and the black population is on the X-axis. States that are in the South region are marked with a green dot and the remaining states are marked with a blue dot. Figure 1 clearly indicates that the states with both large poor populations and large black populations tend to be located in the southern United States.

Figure 3: State Level Poverty and Black Population in 1970

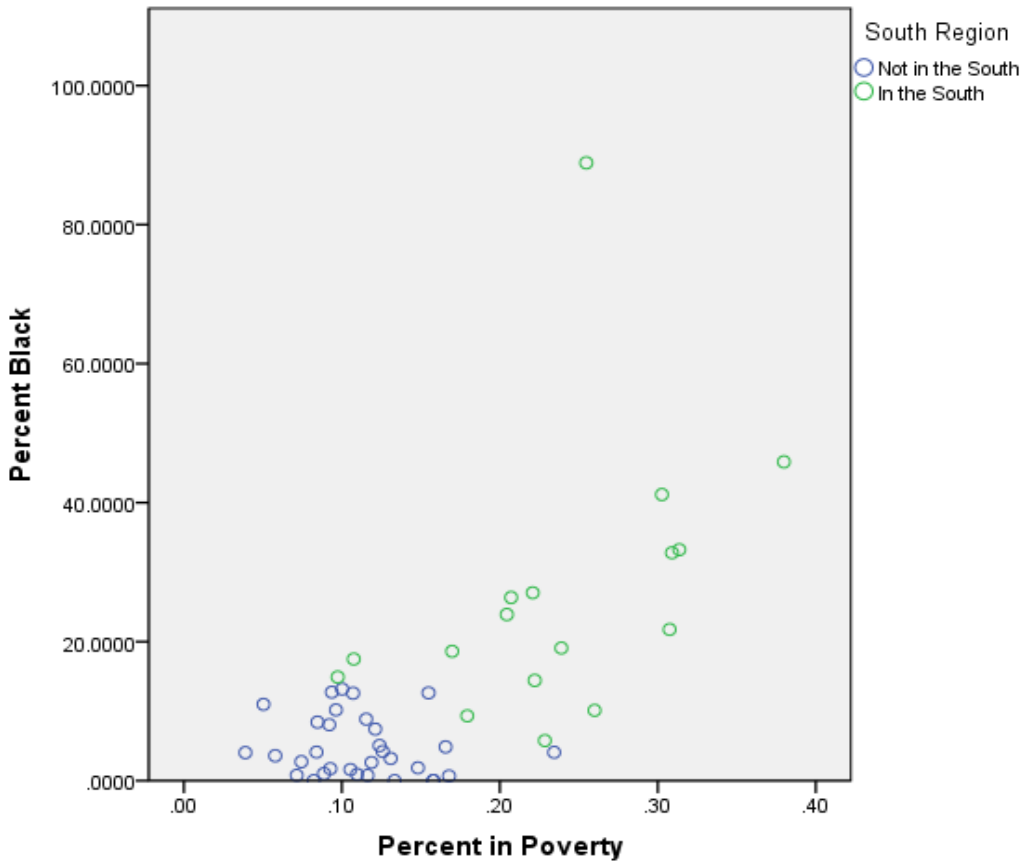
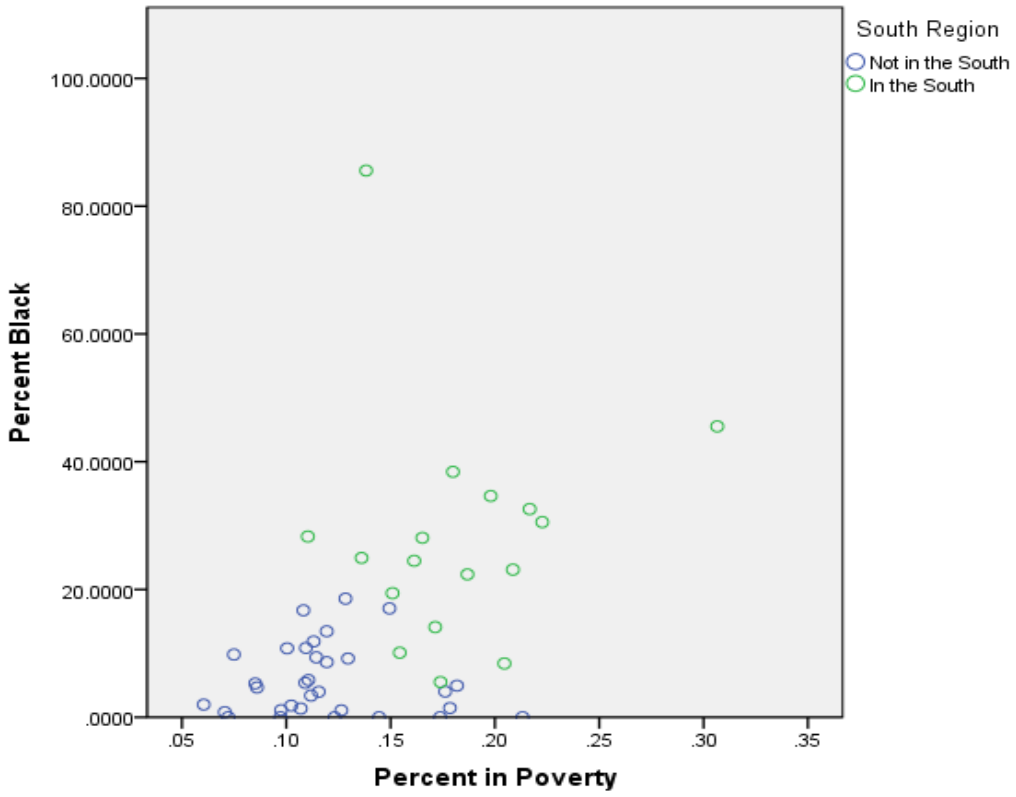


Figure 2 displays a similar pattern for 1970. The states with the largest black populations seem to have the largest poor populations as well. The vast majority of states with either large poor populations or large black populations are in the South. States outside the South tend to be clustered together with a much smaller range in both poverty and race. It seems notable that several of the poorer southern states do not have extremely large black populations. Only one state outside the South has a poverty rate of higher than 20 percent.

Figure 3, displayed on the next page, reveals a pattern that looks quite similar in appearance to Figure 2. The one difference is that some southern states have lower poverty levels than in prior samples. Once again, the clear pattern emerges that poorest states and the states with the largest black populations are located in the South.

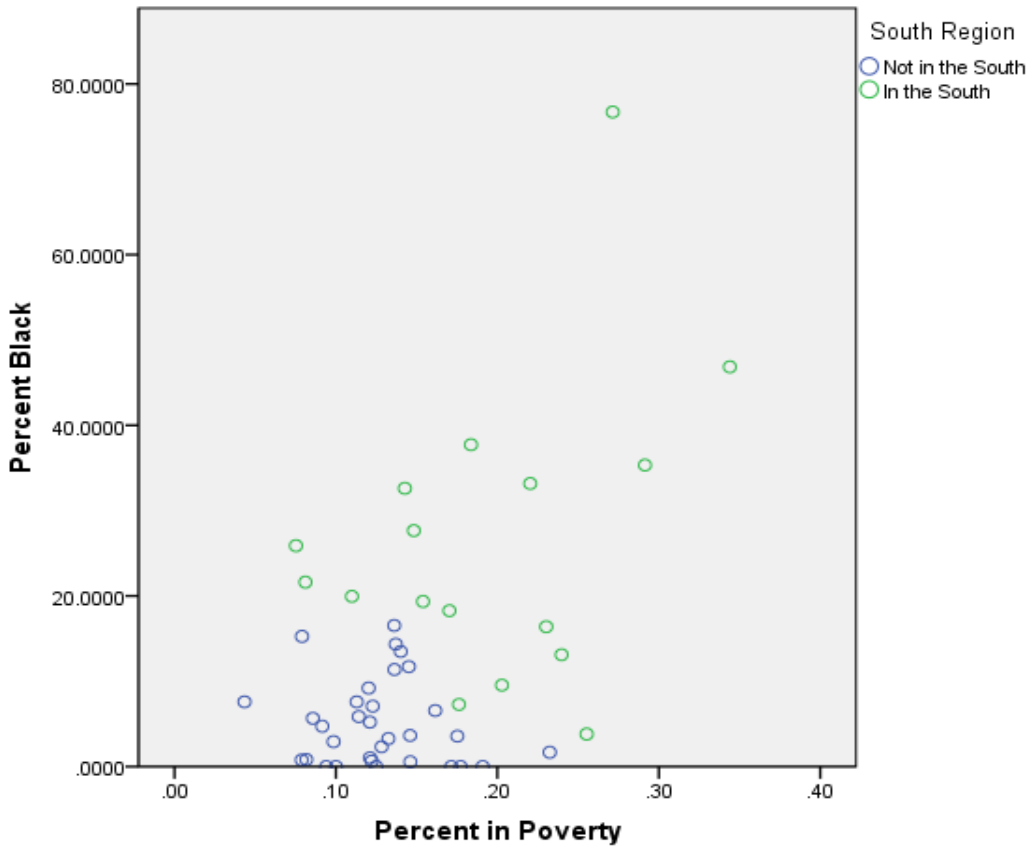
Figure 4: State Level Poverty and Black Population in 1980



The pattern for the 1990 sample that appears in Figure 4 on page 74 looks remarkably similar to past scatterplot patterns reported here. Consistent with these past patterns, the states with the largest black populations are all located in the South and all but one state with a poverty rate of greater than 20 percent are also in the South region. However, one feature in this sample seems to distinguish itself from past charts. Several of the poorer southern states do not appear to have large black populations while some states with larger black populations have relatively lower rates of poverty among the sampled respondents, suggesting that another factor is at play in these

states aside from a large black population that keeps a significant segment of the population in poverty. States such as Arizona, New Mexico, Maine, Montana, Rhode Island, and West Virginia had above average poverty in 1980 (see Appendix, Table A3), despite having smaller relative black populations. Obviously, Latino populations in the Desert Southwest contribute to this and West Virginia has been traditionally poor due to its extraction based economy, but the other states appear to be anomalous in this regard.

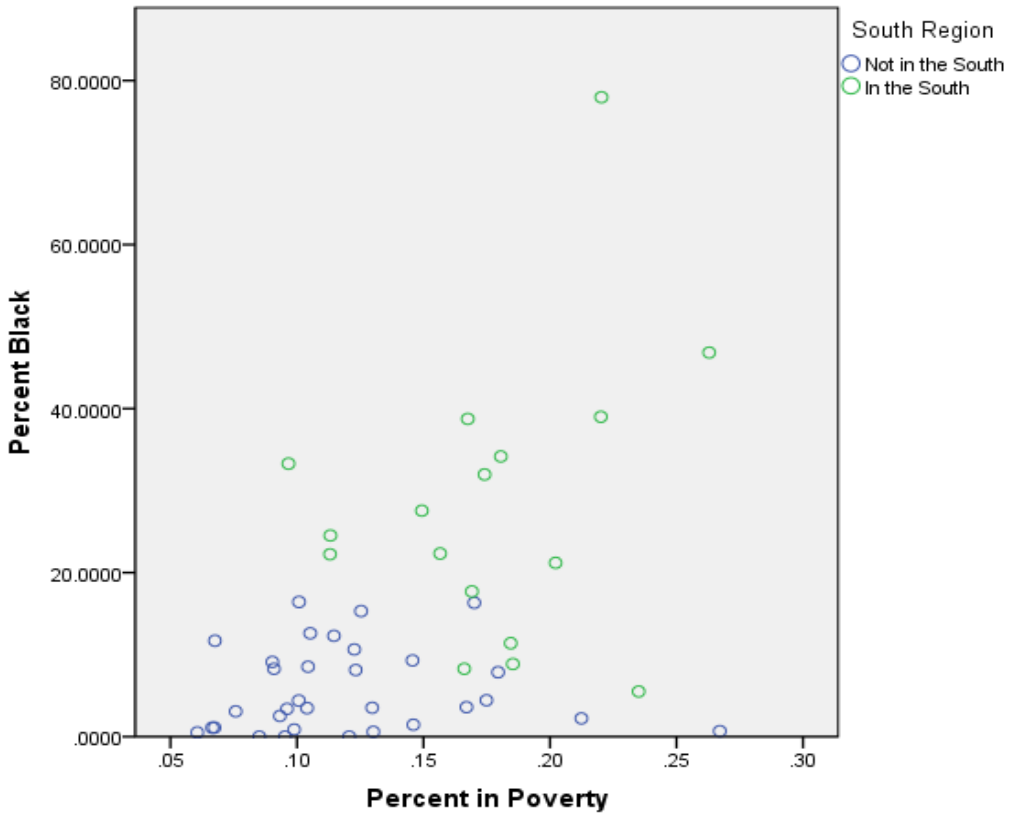
Figure 5: State Level Poverty and Black Population in 1990



The chart for the 2000 sample (Figure 5) once again provides evidence of the persistent pattern of higher poverty and larger black populations in the South and remains relatively consistent with the evidence from ten years earlier. For the most part, the poorest states tend to have the largest black populations and are in the South. Nonetheless, the pattern does not hold to

be universally standard. No state outside the South has a black percentage of greater than 20 percent, but several states outside the South do have larger poor populations. In fact the state with the highest poverty rate among sampled seventeen-year-olds in the year 2000 was not in the South region. Though concentrated there, it does appear clear that poverty is neither uniformly distributed amongst the states with large black populations, nor is it entirely confined to the South.

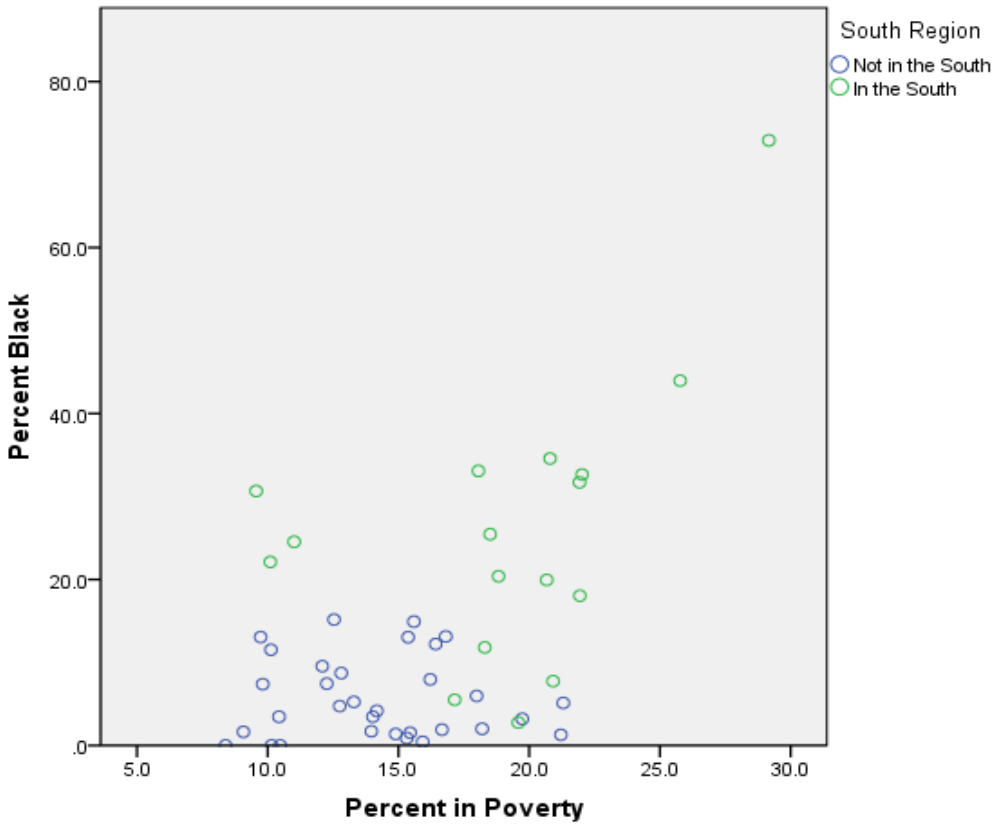
Figure 6: State Level Poverty and Black Population in 2000



The pattern evident in the chart displayed in Figure 6 does not differ substantially from the pattern in the chart above. The poorest states tend to have larger black populations. The southern states are distributed widely across the right half of the graph, while states that are located outside the South tend to be clustered much more tightly on the left side of the graph. Some exceptions do appear, but the pattern is remarkably consistent. Southern states generally tend to be poorer

regardless of the size of the African American population. The key question that remains to be from these charts is why this remarkable consistency appears throughout the region in spite of the obvious explanation that larger black populations lead to larger poor populations due to the failure of government and society to adequately compensate for past inequities that continue to plague the black community.

Figure 7: State Level Poverty and Black Population in 2010



Once again, the dispersion of observations appears to increase from 2000 to 2010 while mean attainment improves overall. In 2010, state poverty was a significant predictor of attainment and black population was not. It does remain clear despite this finding that among the states with attainment rates below .9, more than two-thirds of them have black populations greater than 10% and a substantial majority have poverty rates greater than 15%. The greater dispersion, however,

indicates that some high poverty states do have higher performance rates, though none of those have high black populations. A conclusion that can be drawn from these figures is that some degree of interaction between the two variables appears to be at work here. It seems probable that living in higher concentration of poverty tends to drag down overall attainment and that effect is in turn exacerbated in situations where it is also observed in conjunction with the presence of higher concentrations of blacks.

The explanation for this result and many others discovered in this chapter will be discussed in greater detail in the chapter that follows as the dissertation closes with a more detailed synthesis of all of the information presented up to this point.

Chapter 5

Discussion

The purpose of this chapter is to discuss the information presented in the previous four chapters, synthesize it, analyze it, and explain its importance. In the end, the goal is for the dissertation to contribute to the wider field of research on poverty and education with special attention given to other important areas, such as urban education and educational and social service policy. It is hoped that this will help future researchers and consumers of this research alike to better understand the value and justification for the use of the state level in future topical analyses related to the subject matter at hand.

Patterns

Poverty and Educational Attainment

The findings presented in the previous pair of chapters provide evidence of a number of clear patterns. These results in particular provide a reasonable amount of support for the implication that at the individual level, one of the most important predictors of educational attainment for high school age students is the family poverty level. In fact, along with the family size measure, poverty status was one of only two variables to reveal a statistically significant negative effect on the seventeen-year-old attainment outcomes in all six of the examined census years. The effect was also quite consistent in strength over the period of time studied with coefficients in the range from near -.292 to near -.514 for the entire time period studied. A reliable pattern follows from that evidence indicating that living below the poverty level is associated with a strong reduction in comparison to other correlated measures in the likelihood that an individual will complete the tenth grade benchmark achievement target and continue to remain in school at

the age of seventeen throughout the studied time period. While this is neither new nor unexpected, it is always useful to add to the body of research on a topic to support the evidence already discovered.

The finding seems to follow with the consensus of research in the field that has linked either poverty or related measures of low socioeconomic status, such as receiving free or reduced lunch, to a myriad of negative educational consequences ranging from poor test performance to retention to dropout. What is more important to note, given this information, is that with this result comes the ability to conclude that the system has made little or no progress toward improving educational attainment outcomes for individuals who live in poverty. In fact, the poverty coefficient was weakest at -.292 in 1980, then stronger at -.333 by 2000. By 2010, that coefficient was the strongest reported during the entire term of the study, yielding a coefficient result of -.514, suggesting a very strong impact from poverty after controlling for other factors. This may be due to the fact that attainment rates overall were so much higher in this sample than in prior years, but it does raise concern. Researchers must use caution in attempting to make comparisons across time using different samples, as statistical trends cannot be reasonably inferred from such evidence. However, one might speculate that lower coefficients that resulted through 1980 occurred in an era during active desegregation and the war on poverty, and these efforts by the government may have contributed to weaker effects in that time period before the Reagan administration began to roll back welfare programs in the 1980s. This does appear consistent with evidence that the graduation rate remained virtually unchanged from 1991 to 2002. (Greene and Winters, 2005). The notable move backward may have been caused by resegregation, which increased in the 1990s (Orfield, 2001). Since some of the factors related to dropout, a key measure of attainment, may be reduced by desegregated schools (Saatcioglu, 2010), it follows that

resegregation must account for some of this trend. It may also be partly explained by trends toward more conservative poverty policy, but these inputs are difficult to measure quantitatively due to differences in policy between the states and the lack of data for individuals at this age. Welfare reform was nonetheless not found to reduce the dropout rate for the whole population (Hao and Cherlin, 2004). Evidence that suggests that higher AFDC populations in schools relates to higher dropout rates (Fetler, 1989) may be deceptive. Since individuals who receive AFDC are more likely to be in poverty, this measure works as a substitute for other more common poverty measures and does not help to determine attainment differences comparing students in poor families receiving welfare assistance with students in poor families not receiving welfare assistance. What does seem evident is that the increase here looks relatively obvious from the appearance of the results since 1990 and many would have to view it as either a failure of the educational system or the result of cumulative effects of a general reduction in support for anti-poverty programs after the conservative movement took control of the government agenda in the early 1980s. It also sets forth a clear agenda for future research to further explore the direct impact of the war on poverty through the use of different instruments that might be able to identify these effects more specifically.

At the state level, a degree of compatibility appeared in the results. In fact, in three of the six census samples, state level poverty appears to be a statistically significant negative predictor of attainment after controlling for the individual and other state level factors, 1980, 2000, and 2010. This not only supports the hypothesis that as poverty becomes more concentrated, even at a level as wide as the state, but also suggests that this trend has started to come about more recently. It could be explained by better measurement techniques in recent samples that reduced missing data helped to produce an effect where none was found in older samples, but it may also be

reflective of an emerging trend in the data that in fact state poverty is more important than previously realized. One might expect this effect to be even stronger and more easily identified at a smaller level 2 unit. Perhaps a smaller study of a single state employing subject assessment test data between districts would be advisable as an avenue for testing the effect of the concentration of poverty within an area on a specific performance outcome. It must also be noted, however, that in the isolated models in which state poverty is the only variable entered at level 2, the impact of this variable is statistically significant at the .001 level and negative in five of the six samples. The implication may arise due some of the variability being explained by other variables not included in these smaller models, most specifically, black population, which has a significant negative effect in two of the other three samples where the mean poverty effect was not statistically significant. The enhanced depictions provided in Figures 1 through 6 help to clarify this relationship and provide some support for the fact that a nexus of these two variables seems to play an important role in the prediction of lower average attainment. Perhaps the effect of the culture of poverty is stronger in the African American community than in other parts of society. The fact that African Americans are the ones who are largely exposed to greater concentration of urban poverty is perhaps the biggest reason for this. African Americans do appear to be significantly more likely to be in poverty than non-Hispanic Whites, and because the effects of poverty on performance are so strong, weaker educational performance disproportionately affects the minority students.

The scatterplots do add some context to this, helping to depict the condition in which the most significant levels of poverty lie in the southern United States. As mentioned in the literature review, the segregation of Americans on the basis of race leads to higher levels of concentrated poverty (Quillian, 2012). Given that the states with the largest concentrations of blacks lie in the South, the higher levels of poverty in these states come as no surprise. Institutionalized racism

may have played some part in keeping African Americans in poverty toward the earlier years of this study span. Discrimination was found to keep black wages down (Reimers, 1983).

State government response toward poverty may play a role in the institutionalization of poverty in the South. In the earlier portion of the time span of this study, southern politicians were generally hostile toward issues that might be perceived as friendly towards blacks. Poverty is naturally one of those issues. States with large black populations were found to be less likely to participate in anti-poverty policy programs, in contrast, states with greater concentrations of poverty in urban areas rather than rural areas were more likely to participate (Cowart, 1969). Social welfare legislation in the postwar South was often designed in ways that ensured whites and blacks were treated unequally (Williams and Johnson, 2000). To some degree, the lack of an impetus toward the acceptance of anti-poverty policy in the South may come from ideological beliefs. Southerners are generally more inclined to adhere to an individualistic belief set that favors personal achievement than a structural belief set that relies much more on institutional forces (Nilson, 1981). These factors in combination would seem to work against the idea that anti-poverty policy would be implemented in the South because it is naturally vulnerable to these effects. Not coincidentally during this same time frame, areas with more robust civil rights movements were able to procure better anti-poverty program benefits, while in areas with greater resistance, less desirable outcomes were achieved (Andrews, 2001). Even today there seems to be hostility towards social welfare policy in the South. More than half of the states in the South have refused to adopt the recent Medicaid expansion, while a majority of non-southern states have implemented the program (National Conference of State Legislatures, 2016). An expectation that follows from that is that states in the South might spend less on education than other states. While the South did correlate negatively with education expenditures on a basic bivariate level in the

early years studied in this examination, the South does not correlate with lower educational expenditures in any year after 1980. Thus, the presence, or at least the statistical significance of this relationship seemed to disappear after the republican movement took control in the South. Thus, there is no reasonable way to conclude, based on the quantitative evidence presented here, that there is any broad agenda exclusive to the South to withhold funds from educational services.

Nonetheless, depth of poverty in the South, despite being higher on average than the rest of the country actually declined relative to the rest of the country during the time span studied. In fact from 1970 through 2010, depth of poverty, as displayed in Table 9 in the last chapter, in states outside the South increased, while it remained stable in the southern states. In essence, it remained stable in the South even after the republican realignment, which also contradicts suggestions that republican leadership would create difficult conditions for those who do live in poverty. An interesting topic for future research would be to examine the trend toward deeper poverty outside the South and identify the explanations for it. Perhaps it is explained in part by an increased concentration of poverty in the central cities in the North, a migration of African Americans to the Middle Atlantic and Upper Midwestern states due to increased opportunities in manufacturing, or the influx of Latin immigrants, a phenomenon that has affected other regions disproportionately relative to the Deep South.

However, even in the southern states with smaller black populations, there was a clear trend toward higher average poverty than in non-southern states. Thus, race is not the only factor in the South that seems to contribute to more intense poverty. Perhaps the most significant factor besides race is the set of industries that provides the employment and economic base of the area. Many rural southern counties have economies based on agricultural or other natural resources. The

presence of extractive industries in an area contributes to the degree of poverty intensity in those areas (Friedman and Lichter, 1998). Migration from these depressed areas yielded a significant decrease in the likelihood of remaining in poverty for both whites and blacks (Bacon, 1973). Unfortunately, more poor families move into these areas while non-poor families tend to migrate out (Nord, 1998). Thus, it would appear clear that there is at least some regional impact here aside from race that keeps southerners in poverty. This is perhaps why the regional control variable was deemed irrelevant for this particular statistical model. It would seem that the effect of the South region exerts itself on poverty, not directly on educational attainment outcomes, where it would appear that other variables compensate for that effect. As reported in the correlation matrices in Chapter 4, the positive correlation between the South and deep poverty was found to be strong to moderate and statistically significant in all six samples.

Positive Correlates of Attainment

One of the most prominent patterns revealed by the data in the study relates to the importance of gender. With an effect size that ranges from .429 to .578, the coefficient for the log odds of meeting the attainment targets is throughout the models the strongest for gender. In statistical terms, it is quite notable that females can be expected to outperform males in all six of the sampled census years by such a large margin. It falls in line with the data that indicate that female attainment rates are measured to be several percentage points higher than males in each of the census years. It buttresses evidence that suggests that males are far less likely to graduate from their secondary education program by the expected age and at the same time are much more likely than females to drop out of school. One can identify several reasons why that trend seems to be so powerful and it might tend to relate to generic social adjustment issues or perhaps motivation.

For example, males are more prone to self-sabotage while females tend to be more motivated on several different measures better able to focus their skills toward completion of their assigned tasks despite higher anxiety (Martin, 2004).

In relation to what had been mentioned earlier with respect to the presence of strong correlations with family income, so too is it abundantly clear that the parental cultural capital measures all tend to have weak to moderate positive relationships with meeting attainment expectations. Both the total educational attainment of the father and of the mother in years completed indicate positive effects on attainment in all six census samples. The result comports with the literature that suggests that parental education is a robust predictor of the eventual educational attainment level of the child. It also strongly reinforces capital reconversion theories postulated by Bourdieu (1984) and by Bourdieu and his coauthor Passeron (1977). Father's occupational prestige, strongly correlated with income as noted earlier, is also a predictor of the likelihood of meeting expected attainment levels by age seventeen in all six census samples. This follows with research regarding the importance of parental occupation on achievement (White, 1982).Mother's occupational prestige appears only to have an effect in the three most recent census samples but had no effect in the earlier three samples. An explanation for that might be that female parents, both single and married, have joined the workforce in far greater numbers over the last thirty years in comparison to the earlier years of the second half of the twentieth century (Grogger, Karoly, and Grogger, 2009).

Farm status is the only other demographic variable to correlate positively with meeting the attainment goals in at least three of the six census samples after controlling for other predictors. The clearest explanation for it is that parents in farm families despite a tendency to earn a lower

income were inclined in the past to take a more active role in the enforcement of good educational values at home. Children in these households may have tended to be more disciplined and attuned toward the requirements expected of them at school because of the way parents choose to become more engaged in the process. Parents' expectations were more affected by academic performance in farm households than in rural non-farm households (Seginer, 1983). Additionally, these students may receive more one-on-one attention when in school than their other less advantaged counterparts in urban schools because they attend class in rural areas where teacher to pupil ratios are significantly lower. In somewhat of an anomaly, in the last studied sample year the coefficient for farm status appeared to be negative. The indication was toward a strong negative effect of living on a farm on meeting attainment targets. Perhaps time demands of students in farm families have created new burdens that outweigh any of the aforementioned values benefits that were once important in the past. In the average farm household, a total of nineteen hours a week are spent on farm work (Kim and Zepeda, 2008). There is also a possibility that boys, in particular, based on evidence from abroad, may see the chance to work on the family farm as an alternative to going to school (Tansel, 2002). In any case, it remains difficult to draw concrete conclusions here because of a lack of available domestic literature on this particular finding. This variable is underused in education research perhaps because data is not collected on this question in most surveys.

Asian and Pacific Islander racial identification is the one other independent individual level variable that with consistency predicts an increase in the odds that a student will be meeting the tenth grade minimum attainment goal at the time of the census survey, relative to non-Hispanic Whites, and after controlling for other predictors in the model. In two of the six census samples, the model reflects a positive odds ratio coefficient for the variable and only once, in 1980, an unexplained result, inconsistent with the literature, indicates the presence of a negative adjusted

odds ratio. The evidence leads to the natural conclusion that Asian and Pacific Islander students consistently outperform relative to their counterparts due to an increased importance placed on educational success in Asian families. That is consistent with evidence that suggests that Asian parents have higher expectations than parents than Anglo parents (Schneider and Lee, 1990). Parental pressure can be an important catalyst of motivation for Asian students (Eaton and Dembo, 1997).

Negative Correlates of Attainment

Aside from poverty, the majority of individual level variables in the model that produce consistent effects tend to indicate positive odds ratios on the dependent attainment outcome measure. Of the variables that do reveal negative effects, many yield no trends across the years studied. The number of people in the family, in contrast, is the only predictor besides family poverty status that yields a negative coefficient in all six of the integrated models. It happens also that these two variables are correlated with one another (-.033, $p < .001$), although the calculated coefficient measures the effect of the individual predictor with the other one controlled. The conclusion is that the attainment expectation for an average student who lives in a poor but small family would be greater than the same expectation for a student from a larger poor family. Much like poverty status, larger numbers of people in the family are a trait common to minority families to a greater extent than non-Hispanic White families. In 2010, the mean household size for whites was 3.93, for Hispanics, 4.61, for blacks, 4.10, and for Asians, 4.43. It still remains unwise to consider the variable as a proxy for minority status and instead the logical explanation and the one most consonant with educational theory is that parents in families with more children will have

less time to spend with each child and will thus reduce the amount of attention paid to the individual children.

Another individual trait, Hispanic origin, reveals a pattern of a negative effect on whether or not a student meets the attainment target by age seventeen in the first three census years. The effect becomes positive in 1990 and then disappears thereafter. That Hispanics are expected to be worse performers than non-Hispanic White students, once their other demographic characteristics are controlled, is thus not a proper conclusion from the information. Instead, at one time in the United States, it was the case, and the pattern of results was persistent for at least twenty years from 1960 through 1980, in the multilevel models, and perhaps before. That effect, however, has not only disappeared, but perhaps even reversed given the evidence of a positive coefficient for the sample in 1990, though it did not persist into 2000 or 2010. There does not appear to be any clear explanation for why coming from a Hispanic family would have had a negative effect in the past, and not today, nor is there any clear anomaly in the data that would indicate a reason for the reversal, other than the growth of bilingual education. It could be proposed that the addition of English language courses for non-native speakers into school curricula, first required for districts serving large Hispanic populations by the federal government in the 1970s (Davies, 2002), might have moderated the negative effects of being Hispanic on the ultimate completion of expected school attainment levels because it has increased comprehension of information, allowing these students to become more comfortable with the material presented in their courses and keep up with native English speakers. That would appear to conform to the finding that English language acculturation improves educational outcomes for Hispanic students (Salamonson, Everett, Koch, Andrew, and Davidson, 2008).

Analysis

The study, as must be the case with any research undertaking, has a number of faults as well as strengths that are worthy of mention in the section that follows. The first notable strength of the study that requires mention is the ability to test the hypotheses on more than one measurement occasion through the use of census data. Because the Census Bureau has collected the data in increments of ten years and generally has made an effort to keep the questions and answers roughly similar from decade to decade, the data for the dependent variable and all the primary predictors at level 1 are available for the entire time span of the study, from 1960 until 2010. It enhances the internal reliability of the results reported in the study because the variable definitions and the manner of measurement remain the same for each of the six census samples. In essence, the repetition of research practices breeds an increased level of confidence in the evidence that is presented in the study. Not only does it improve reliability, but the consistency in sample data over time allows for an increased ability to perceive trends from within the data. Repetition, in turn, aids in the identification of patterns, inconsistencies, and anomalies that all allow for superior depth to the findings in such a way that the understanding of the results is increased to an immeasurable extent.

Another of the strengths of the study, again with gratitude owed to the Census Bureau who collect the data, is the ability to examine data in large national samples. Each sample, though only one percent in total of the U.S. population, includes an enormous subset of the population. Once trimmed to include only the seventeen-year-olds sampled in that one percent, the sample becomes by a rather impressive margin, smaller and more manageable. With that given, the sample is still large enough by a substantial margin to produce adequate statistical power at level 1 to yield

statistically significant results with a very low probability of the occurrence of either Type I or II error. That fact taken in conjunction with the first strength can give the researcher a strong sense of confidence in the fact that if an adjusted log odds ratio for an independent variable does not yield a statistically significant coefficient in any of the six samples, the probability that the particular predictor has any measurable effect on the attainment outcome is so low that any reasonable educational scientist would consider it irrational to further entertain a thesis that suggested the opposite unless, at a minimum, the study operated with a different set of methods or control variables.

The third and most obvious strength of the study buries itself within the design of the project built specifically to provide answers to the questions posed by the hypotheses. The use of these rather basic hierarchical generalized linear models allows for the tests to extend from the individual level outward to an additional level of data, the state, aided by the fact that the data are nested within mutually exclusive level 2 units. The design allows for the researcher to test an entirely separate set of hypotheses that pertain in particular to whether or not certain state level factors can help to predict whether or not the odds of achieving higher levels of individual education increase or decrease when they are measured. In a dramatic increase in the scope of the study, it further allows for the researcher to determine whether or not any variability in the attainment outcomes between the states is statistically significant. Using multilevel analysis and other similar techniques, one can discover if the same factors affect students in the same ways nationwide if the effects differ significantly between the states. Researchers would be able to test none of the possibilities discussed herein if they were to use any of a myriad of less complicated methods of analysis.

The last strength of the study lies in its ability to use data that covers educational attainment, family and parental characteristics, and demographic data. Many datasets that provide detailed measurement of individual performance in school add precious little demographic information and often no legitimate detail measures that are acceptable for describing family and household considerations, such as whether or not the child is living with married parents, or the educational level and job quality of the parents. The fact that the data includes that information makes it quite unique and advantageous for the examination of research questions that with similarity in structure would tend to follow in kind. It is only through the addition of more control variables that researchers can provide more precise explanations of the causes of differences in the attainment of educational outcomes.

The first weakness that requires mention addresses the measurement of the selection variable, which for the study equates to age in number of years, as it relates to the dependent variable. The problem with the use of only seventeen-year-old subjects and a single attainment outcome is that the natural expected attainment level of students of a given age is different depending on the time of the survey and the specific time of year of that the student was born. For example, two seventeen-year-old students who were interviewed for the census in March of 1970 might have dramatically different expected educational outcomes if for instance one had been born in April of 1952 and the other in February of 1953. Assuming the two students were of approximately equal academic aptitude that both had started school at the same age and that neither had ever been retained to repeat a grade, one would naturally expect the first student to have completed one full year more of education than the second despite the fact that they are both the same age in years. The study has no mechanism to compensate for the inadequacy and as a consequence the only acceptable solution is to use the tenth grade minimum standard, a level that

many would consider to be at the lower end of the acceptable attainment range for respondents of that age.

Also of note, pure attainment measured in the number of years of school that a respondent has completed does not measure the educational aptitude of a given individual because it provides only an indication of continued enrollment and lends no insight into whether or not that student will succeed. Other measures are not only more precise in their ability to gauge acquisition of specific skills that have been mastered at the time of assessment. Unfortunately, for these samples, this particular variable remains the optimal operationalization. It is nonetheless widely regarded in the field of educational research as an excellent measure of the ability of an individual to complete educational objectives.

School quality is not uniform across the nation and even within the states. Pupil to teacher ratio is used as a common indicator of school quality (Boozer, Krueger, and Wolkon, 1992; Bratsberg and Terrell, 2002). Pupil to teacher ratios range from 10.0 in Vermont to 22.6 in Michigan (NEA, 2015). In reality, to state definitively that two students in two hypothetical school districts in different states who have completed the same grade level are equals in terms of their educational attainment might be true in pure factual terms. But at the same time, such a statement might reflect a complete misrepresentation of the abilities of these students when considered relative to one another. A sacrifice in precision, nevertheless, becomes a requirement when the need to capture the more detailed family and background characteristics arises in order to ensure the presence of adequate controls to test the hypotheses. Only census and other questionnaire driven data are able to procure the level of essential detail for measures of characteristics not collected by the school districts for use with their student level achievement and assessment data.

One rather serious weakness is inherent in all studies that use quantitative data. Many would consider it commonplace and regard it as not even necessary to mention given that it does not encumber the researcher from achieving the purpose of the study. It seems to be a problem with quantitative data that beyond the pure abilities to accept and reject a hypothesis with statistical confidence, little or no explanation for the reasons for those results is presented from the data. In other words, it can be answered if or if not an effect occurs, but the study will provide no rational explanation for why it occurs, what makes it occur, and what might make it stop occurring in the future. Through the use of reference to literature, researchers can make a partial attempt to combat the weakness, but it will continue to be a topic of debate between researchers whose loyalties remain within one side of the argument. This weakness becomes even more glaring in a study such as this one that uses the same variables measured in different samples on multiple occasions. Distinct differences appear from sample to sample, often without any clear rationale to explain why such outcomes occur.

The weakness that seems to have been most damaging to the results of the study is the relative size of the level 2 units. The outcome of the results of the models that measure effects of the state level predictors on the attainment intercepts indicates that none of the modeled variables at that measurement level produce any effects with consistency throughout the time period for all six samples. The lack of consistency prevents the identification of trends with explanations rooted in history, but does perhaps lend itself to informed discussion relative to important national policy intervention and the timing of it. The state does in any event remain an important unit as the natural next level in a national study and a good deal of the results do have contextual importance as noted in the previous chapter. Furthermore, all but one of the models suggested that the state level predictors accounted for a large proportion of the variability attainment intercepts. The

fraction in those samples was greater than half in four of the samples. To ignore the between-state variance then would be imprudent, but to count on that level for reliable predictive results in a study with similar methods for research on achievement-driven outcomes at the individual level might be more optimistic than realistic.

Not only are each of the states vastly different from one another in many ways, such as in area, population, and composition, but they also contain a high degree of variation within themselves that manifests itself because of the size of the population of the states. In spite of that fact, the concentration of poverty, although it does vary at the state level, and the study proves that it does have some effect on education. This variable varies far more at the local level, which could be measured at the school district level if data were available. The ability of the effect to be measured, in turn, has not been optimized when the second level unit of interest has not been able to adequately capture the extent of the variation that lies between the units that could have been discovered had narrower level 2 units been used. The obvious conclusion from these results is that if a study seeks to create a similar multilevel model, and receive more interpretable results from the variables used, the second level might be narrower than the state, but still have quantifiable distinctions from which to compare any one unit to another, such as the city, county, or school district. The latter could be the most effective unit since state departments of education tend to provide researchers with means of access to district level data. A study that examined a smaller sample could implement that strategy with simplicity. It seems to be a subject that could be explored in future studies and could be made more valuable if perhaps researchers were able to decrease the scale of the study from a nationwide sample to a single state sample that might make the analysis of data from the smaller units more feasible.

The fact that the relative degree of poverty, at the state level appeared to be of no consequence in three of the models, and statistically significant in the negative in the other three does not mean that the concentration of poverty within lower level units would not be important in predicting educational outcomes, even after controlling for individual level poverty and other predictors at both levels. That said, it would be advantageous for any researcher who sought to attempt a similar study to keep in mind the rewards that multiple sample occasions provided.

One ultimate conclusion that results from the study is that in spite of its many inadequacies, it does produce a remarkable amount of quality evidence to add to the body of research into the factors that help to predict educational outcomes beyond basic individual characteristics. The evidence makes it clear that the presence of higher levels of poverty within a state serves as a natural drag on the expectations of completion of targeted educational levels by the appropriate age, seventeen for the current example, especially recently. With replicable evidence, such as this, it would be difficult to deny the existence of such a relationship, especially when considered in conjunction with the fact that the conformity between the results discovered in this document and the literature seems to be rather extraordinary on that particular point. The one rather obvious piece that detracts from what would otherwise be an entirely convincing affirmation of the hypothesis is the lack of any reliable consistency between all six of the samples to indicate the presence of a correlation between the state level poverty variable and educational attainment over the full course of the study. The pattern, or absence thereof, reveals another common problem in quantitative research and is indicative of the reason why many studies find different results when different samples are studied. Even when the same or comparable methods are used, every sample remains different, but given that the result occurs at least half the time in this study, the implications are great that some effect is clearly happening.

The systemic issue at the state level appears to be less consistently measured than any micro level consideration that has an effect on the student at a narrower level. Still, if poverty in the states does matter, it would seem that the states would have some interest in equalizing poverty. If a high poverty state could reduce the level of poverty within it to bring it closer to a lower poverty state, it could, in theory, compensate for this effect. In essence, if all states had equal levels of poverty, there would be no reason to study its impact. Some evidence does suggest that states do not operate welfare programs equally. As mentioned earlier, some degree of competition exists between the states and their competitive neighbors in terms of the ways they administer a variety of public welfare programs, and that would seem to be one disincentive to increase welfare outputs, as higher outputs might increase migration by individuals seeking public services.

Other variations exist as well. In particular, programs that grant greater flexibility in finance distributions to the states, such as cash assistance, have a high degree of variation between the states in the adequacy of benefits provided (Bruch, Meyers, and Gornick, 2016). Beginning with amendments to the Social Security Act in 1962, states received permission to seek waivers from certain AFDC provisions, and requests for these waivers increased after receiving support from the Reagan, Bush, and Clinton administrations, leading to substantive variations in welfare reform that encouraged a variety of restrictions on the receipt of benefits (Fording, 2003). The result of such flexibility, however, was not necessarily negative, as waivers appeared to decrease poverty rates (Blank, 2004).

Many of the most significant changes occurred in the late 1990s after the passage PRWORA. In total, the number of welfare recipients decreased by nearly half, but in some states, the drop was between 60 and 80 percent (Neubeck and Cazenave, 2001). States with larger

percentages of African American residents offer lower welfare benefit payments (Johnson, 2003). Such action would seem to intensify the problem given that African Americans tend to be in poverty at higher rates than other groups and that poverty tends to be higher in these same states. Substantial variability remains in the way the states distribute funds under the highly flexible TANF block grant, with twenty percent of states, mostly in the South, spending less than ten percent of TANF funds on basic assistance (Schott, Pavetti, and Floyd, 2015). Less than half of the states have implemented family caps and sanctions-based reductions to Medicaid and food stamps, while more than half of the states have implemented requirements for immediate work activity (Gais and Weaver, 2002). Unemployment benefits vary greatly between the states as well. In 2002, fourteen states provided unemployment benefits that left the family at or near the poverty level, and half of those states were in the South (Emsellem, Goldberg, McHugh, Primus, Smith, and Wenger, 2002).

One might conclude that higher level financial contributions that could be implemented by the federal government and directed toward the improvement of the educational systems operated by the states to alleviate the effects of poverty on education in the poorest states could be another mechanism through which to affect a reasonable degree of improvement, if the funds were appropriated disproportionately to the states with higher poverty levels. This would follow a pattern akin to the one used in the 1970s when ESAA funds were directed toward desegregating school systems. However, even though the effects poverty would be expected to have on the average individual would be predictable, the idea of blanket national programs designed to bring about improved performance through the provision of monies to the states for distribution to the schools to combat individual level disadvantages may not be the most effective strategy for the optimal outcome to be achieved. This conclusion follows from the result found in the study that

the state level educational expenditures did not serve to predict whether or not students meet attainment expectations on any consistent basis over the term of the study.

The other state level predictors yield similar results. All that comes about from the analysis for the many other state level variables, population density, and the Asian and Hispanic percentage breakdowns is a lack of reliable evidence to support the hypothesis that these other state factors matter despite the knowledge that suggests that a significant amount of variability between the states in the attainment log odds ratios remained unexplained even after controlling for all the measured individual level factors.

Since the rationale indicates that the most suitable solution for the education system lies at a narrower level, even though the problem exists at both levels, the means to address the problems posed by the evidence would need to be directed toward more intimate levels than states. Multiple steps in the research process must occur before these would be identified. The research has been able to find that attending poorer schools with less funding is a significant predictor of lower school performance (Payne and Biddle, 1999). So further study could isolate the factors present in those districts besides higher poverty that might be present and seek to implement solutions designed to reduce the impact of performance differences beyond the obvious allocation of additional funding. In that case, it would be possible to determine if special programs built to attack problems within particularly poor districts would be effective in a general reduction in the effect of living amongst the poor on performance.

However, it is important to look even beyond the school and district level where the field demands more research. Instead, since it requires no further research to indicate said effect, and it is obvious that individual level poverty matters, it must be determined how the school can be

better equipped to resolve differences between the poorest students and those who live in the most advantaged families. That is the true micro-level of solution-driven intervention. Government authorities must try to find ways that the schools can reduce the size of performance gaps between individuals of different income backgrounds in a way that seeks to improve performance for targeted individuals at the same time that it would minimize any perceived differences between these students and the ones who do not require further intervention. If the schools could pay particular attention to those who are most in need and determine how to make support more widely available in areas where the family is unable, then it could be possible to reduce the impact that those poor family environments appear to have on the performance of these students in school. Reduction of class size is one area that would likely have some effect on performance (Glass and Smith, 1979), so too would investing in higher quality teachers (see p. 58). Summer school programs could have promise as well (Borman and Dowling, 2006).

Head Start and similar programs allow for the poorest of children to attend pre-elementary programs that might otherwise be too cost prohibitive for their parents to afford. Unfortunately, only about a third of children in poverty actually participate in a Head Start program (Child Trends Databank, 2015). Even for those who do complete the program, they must still overcome the obstacles that are endemic to poor children. For example, the lack of parental engagement among poor families remains an issue with which the schools must cope. Poor parents participate less in their children's education at school (Cooper, Crosnoe, Suizzo, and Pituch, 2009). This becomes problematic because parental engagement correlates positively with total attainment (Barnard, 2004). Efforts to compensate for a lack of family support of schooling are necessary for not only the early elementary age group, but throughout the formative years. Unless the schools can devise a system that can help the absentee or disinterested parent from engaging in their child's education,

the reality for these poor children is that they will find it difficult to catch up with students who receive constant education both in school and home when the only training they receive comes from the teacher in the classroom where one-on-one attention can be rare, especially in the poorest school districts where resources are scarce and classrooms are full. The consequence is that by the time they get to high school, poor students are performing well behind their less poor counterparts. And in turn, the choices they face as a result are far from the ones many of them envisioned when they entered the system and first began to model their lives after their role models, imagine their future career opportunities, and set goals.

If society intends to solve the problem of weaker performance of poorer students in school it has to look to solve it from outside the school itself, where it begins. Attack the problem at its source, poverty. Rothstein (2004) suggests that a reduction in the income gap between "lower- and middle-class parents could be one of the most important educational reforms we could consider," (p. 133). Since it is known that students in poverty perform worse than students who are not poor, then it must be assumed, on the basis of logic, that if fewer students were poor, then fewer students would be performing at these low levels. The rationale sounds circular, but in fact it is simple deduction, and the implication is clear. From what the research in this paper and throughout the field suggests, this argument must be considered to be the simplest of all. If the goal is for students to all get the most out of their schooling, then the society must find a way to make the people more equal of themselves. The distinction within this argument does not stand to express pure advocacy of social wealth redistribution programs in a political sense, but instead it proposes to the society to examine itself in much the same way that Bourdieu and Passeron (1977) have done in their analysis.

These great thinkers have suggested that for a society to serve the goal of the preservation of the class system only makes itself less equal the longer it continues. What will result will be a complete devolution of the social fabric of the poorest classes and a reduction in the number of people who are wealthy. Those who do possess the wealth, however, will possess more of it than the members of the same class that held it in generations before. The results of this appear throughout society as many Americans have begun to hold in contempt those associated with extreme wealth. Movements such as Occupy Wall Street will gain favor with the less fortunate as long as this trend persists. The solution could be twofold. First, due to the high poverty rate, it might become necessary to begin to implement taxes on accrued wealth once it reaches excessive levels in order to ensure that money is reinvested into the economy rather than stored for posterity without end. Dugger (1990) argues that a wealth tax would help reduce the budget deficit, decrease the concentration of wealth, and improve the overall distribution of wealth. Several European countries have already imposed these types of taxes, however, the rates are too low and the required wealth levels are too high to have any significant impact on the distribution of wealth (Kessler and Pestieau, 1991).

The second solution could be that rather than to suggest that redistributive policies are the only way to address universal differences, while they may be one of the most effective options for the temporary resolution of severe poverty, perhaps it might turn out to be even more useful to redirect acceptable practices from strategies that serve only those who possess certain specific skills in selection for opportunities, to instead favor stronger growth and to foster the ability to learn. Such practices in professional selection processes might help to produce more optimal outcomes for the whole of the populace. For example, the use of internships in libraries may be an effective path to increase the number of minority individuals working in the library science

profession (Asher and Alexander, 2006). That approach, with a greater emphasis on these vocational apprenticeships implemented widely, might allow for those who do come from disadvantaged socioeconomic backgrounds to gain relative to others in such a way that would encourage a more appropriate balance in contrast to the system that exists now that tends to engender greater levels of inequity.

Directions for Future Policy Initiatives

The evidence presented in the study provides clear support for the theory that poverty at multiple levels puts negative pressure on educational attainment. The consequence of said knowledge is that in order to reduce the impact of that pressure, it would serve the people for the government, through implementation of effective policy, to encourage a reduction in family poverty. This would serve the purpose of pulling individuals out of poverty and in turn raise mean poverty levels as well. In order to determine what type of policy to adopt, politicians could look at the evidence from history to gauge the programs that have succeeded and those that have failed.

Since the data informs us that the greatest reduction in poverty in the time period studied here came in the 1960s, the wise suggestion would be to look at the programs from that decade to divine from evidence the most productive policy alternatives. Between 1960 and 1972, the number of families who received AFDC more than tripled and the total cost of that had increased sixfold, helping to lift millions out of poverty (Katz, 1989). When one considers that the dramatic reduction in the number of people in poverty coincides with a large increase in the number of welfare recipients, the obvious conclusion is that welfare works and future policy initiatives ought to take that into account. The research indicates that social insurance, such as social security, federal pensions, and unemployment benefits, not including welfare, have the greatest effect in

lifting large numbers of people out of poverty (Iceland, 2006). Thus, greater amounts of funds awarded to the agencies that provide funding to these programs might also serve a critical benefit. While increasing funding towards entitlement programs is a costly solution, it might have value. Directed allocations of these funds to states with the highest need might help equalize poverty levels between the states. By making the states more even in that regard, any impact of state level poverty could be reduced. Given, however, that individual poverty matters more, the equalization of the states would still seem to be a secondary priority for the federal government, at least in terms of distributions, and there is no guarantee that states would use the money in the intended manner, as the states have proven that when given broad discretion in the use of program funds, they will take it. More punitive measures could be implemented instead to prevent states from setting excessive restrictions on welfare recipients. Highway funds, for example, could be withheld from states that refuse to meet minimum welfare equivalency standards. Standards could be set at an achievable level that would help to keep families from falling too far below the poverty level.

Other related programs that appear to have been successful at helping people to increase their incomes to levels above poverty are the Earned Income Tax Credit, food stamps (and similar types of sustenance funds), and housing assistance (Iceland, 2006). It seems difficult to justify any decreases in funding to these programs, despite conservative efforts in the 1980s and 1990s to do just that, given their record of effectiveness. Child care, adult education, and child support subsidies also can be expected to reduce child poverty (Zedlewski, Giannarelli, and Wheaton, 2010). It is not clear, however, how far out of poverty a family might be lifted due to social insurance programs. Being lifted from slightly below the poverty level to slightly above it might be worthwhile from a statistical point of view, but could be viewed as less significant from the practical perspective.

An additional focus on the continuation of educational reforms could have some impact as well. In 2010, the last sampled year, students achieved by far the highest rates on the attainment outcome. The only significant national policy change in education in the decade prior was the implementation of No Child Left Behind. This study cannot isolate the cause of that increase to state that the introduction of strict accountability policies in the public schools had a positive impact on the total performance of students overall because of the research design. However, this would be a worthwhile subject for further research to examine. While the specific impact of living in poverty actually worsened in that same time frame, it still remains notable that such tremendous gains were made for the entire sample of students.

One final possibility is to increase government efforts to help people to find people jobs, train individuals to learn skills that qualify them to perform certain higher paying technical jobs, and to make vocational rehabilitation assistance more widely available. Some such programs could be coordinated through the schools. Instead of forcing students to adapt to the school system, it might be wise to adapt the system to the students. Students who struggle in traditional courses might find it easier to engage in vocational courses and thus be more inclined to pursue further education or even a career in a related field. Rothstein (2004) suggests that minorities and families who earn lower incomes could benefit from a commitment to low unemployment. Greater attention toward individual and corporate employment incentives might help in that regard. Tax relief toward companies that made an active effort to increase employment for lower income individuals might be one way to promote job growth. In a more controversial step, greater enforcement of existing limits on the amount of time an individual can receive certain welfare benefits might also help encourage individuals to obtain gainful employment.

No evidence in particular gives any indication that these programs discussed here will be effective, especially when one considers that most attempts to reduce income inequality in the United States have not been able to produce track records of proven success since the 1960s. With that given, at least the suggestions provide a blueprint for focused improvement directed specifically at members of the lowest social class. These plans do still need extensive testing in order to determine whether or not they would be effective, but a minimum level of implementation would be required before any period of evaluation could be undertaken. That is the natural problem with policy and often why consensus in politics can be difficult to achieve. With no controlled environment to provide an adequate venue for testing, all policy requires implementation prior to testing. It requires a leap of faith, by people in government accepting that change is necessary and agreeing to put the change into practice, even knowing that the program may not provide any measurable benefit.

These are only the simple suggestions of one person from his own reasoning based on the available evidence from the past. And others, of course, will envision different ideas, better ones, that are more revolutionary and based on far greater technical abilities. But when society has a problem, the only way to fight it is through ideas. No solution has ever come about without first an identification of the problem, its cause, and a plan to address it in a way that moderates its impact. These are the building blocks of problem solving. Since it seems the many efforts to reform the schools have not yet been able to make the classes equal, and poorer students continue to disproportionately underachieve, the effort to look for ideas for solutions that lie outside the fabric of the schools might be the only last hope for the poor children of America. Without an effort to look deeper at the troubles of society, the odds are against them

Appendix

Important Relationships Between State Level Variables

Given the evidence presented in Chapter 4 based on the scatterplots that indicates that there seems to be a concentration of higher poverty states in the South, it becomes important to look at how deep that poverty appears to be, meaning it seems important to know how poor on average, the families of the sampled individuals are. This evidence is intended to help to accentuate the additional regional differences that help the South to stand out from the rest of the country and indicate any trends that might be visible from examination of the data. The evidence reported in the table below helps to make that overall picture a bit clearer.

Table A1: Regional Comparison of Depth of Poverty

	1960	*1970*	*1980*	*1990*	*2000*	*2010*
Depth of Poverty (Rest of U.S.)	56.101	43.074	48.834	50.929	45.959	44.690
Depth of Poverty (South)	50.184	48.460	52.360	51.721	46.466	46.183

While poverty remains deeper outside the South today, the actual depth of poverty outside the South is deeper than in the South in every year since 1970, though it was much less deep in 1960. The year with the deepest poverty in the South is 2010, while the deepest poverty outside the South occurred in 1970. It must be noted that it is difficult to use this data to identify trends because it is not a longitudinal sample, but rather a series of cross-sectional samples. Even so, it is very difficult to identify any sort of pattern in the data, other than to suggest that since 1970, the deepest poverty appears to occur outside the South region. It is important to keep in mind that this simply means that the average state poverty level of those individuals sampled for this study in a given state appears to be higher in states that are outside the South. It remains possible that some of this variation arises from reporting error, meaning that some individuals may be more likely

than others to report other forms of income, such as state support on the actual census survey when questioned.

Table A2: 1960 State Level Variable Correlation Matrix

Variable	*Hisp*	*Black*	*Asian*	*Ed Exp*	*Density*	*Poverty*	*South*	*Depth*
Hispanic Population	1	-.135	.124	.158	-.029	-.055	-.126	-.080
Black Population	-.135	1	.066	-.398**	.519**	.617**	.746**	-.486**
Asian Population	.124	.066	1	.232	.359*	-.208	-.115	-.139
Education Expenditures	.158	-.398**	.232	1	.173	-.795**	-.594**	.341**
Population Density	-.029	.519**	.359*	.173	1	-.046	.182	-.019
Mean Poverty	-.055	.617**	-.208	-.795**	-.046	1	.746**	-.541**
South Region	-.126	.746**	-.115	-.594	.182	.746**	1	-.458**
Depth of Poverty	-.080	-.486**	-.139	.341**	-.019	-.541**	-.458**	1

**$p < .01$, *$p < .05$

The table above reports the correlation matrix for the state level variables for the 1960 sample. Some clear strong correlations are discovered that help provide context for many of the results found in the initial analysis. Not surprisingly, poverty and depth of poverty are strongly correlated with each other. Black population correlates highly with the poverty measures and the South region. It also is positively correlated with population density, suggesting that smaller black populations are most likely to be found in more rural states outside the South. In addition, education expenditures are negatively correlated with black population, the South region, and mean state poverty measures, and correlated positively with depth of poverty (which is expected to be positive because lower depth of poverty scores suggest deeper poverty).

Table A3: 1970 State Level Variable Correlation Matrix

Variable	*Hisp*	*Black*	*Asian*	*Ed Exp*	*Density*	*Poverty*	*South*	*Depth*
Hispanic Population	1	-.156	.232	.051	-.090	.048	-.167	.005
Black Population	-.156	1	-.148	-.104	.702**	.641**	.664**	.251
Asian Population	.232	-.148	1	.215	-.064	-.219	-.229	-.358*
Education Expenditures	.051	-.104	.215	1	.296*	-.647**	-.458**	-.259
Population Density	-.090	.702**	-.064	.296*	1	.129	.181	.054
Mean Poverty	.048	.641**	-.219	-.647**	.129	1	.741**	.480**
South Region	-.167	.664**	-.229	-.458**	.181	.741**	1	.434**
Depth of Poverty	.005	.251	-.358*	-.259	.054	.480*	.434**	1

$^{**}p < .01$, $^{*}p < .05$

The results from Table 11 do provide some information of value. There appears to be significant difference between the 1960 results and those reported here for the sample taken after the passage of ten years. There is a strong correlation between the two poverty measures, but in a direction that is in the opposite direction of expectations, such that depth of poverty in 1970 has a positive relationship with overall state mean poverty, which means deeper poverty correlates with lower mean poverty. At the same time, the South region is also correlated to a high degree with Black population, mean poverty, and less deep poverty. There is also a strong negative correlation between the South and education expenditures. Mean poverty also correlates with lower education expenditures. Black population is correlated with poverty and population density, but not depth of poverty. While there was a negative correlation between black population and education expenditures in 1960, that result does not reappear here. In essence, an adjusted conclusion might

suggest that southern states and poor states spend less on education without regard for the size of the black population.

Table A4: 1980 State Level Variable Correlation Matrix

Variable	*Hisp*	*Black*	*Asian*	*Ed Exp*	*Density*	*Poverty*	*South*	*Depth*
Hispanic Population	1	-.154	.316*	.047	-.074	.071	-.154	-.222
Black Population	-.154	1	-.106	.081	.676**	.432**	.683**	.374**
Asian Population	.316*	-.106	1	.211	-.081	-.135	-.178	-.118
Education Expenditures	.047	.081	.211	1	.417**	-.357*	-.346*	.034
Population Density	-.074	.676**	-.081	.417**	1	-.026	.181	.210
Mean Poverty	.071	.432**	-.135	-.357*	-.026	1	.617**	.381**
South Region	-.154	.683**	-.178	-.346*	.181	.617**	1	.342**
Depth of Poverty	-.222	.374**	-.118	.034	.210	.381**	.342**	1

**$p < .01$, *$p < .05$

The matrix for 1980 differs from the one from 1970 in a few small, but not insignificant ways. Educational expenditures are now correlated positively with population density, in addition to negative correlations with the South region and state poverty, suggesting that more densely populated states tend to spend more on education. Perhaps this is due in part to the higher cost of living, and thus the need for greater expense, since the states with densest populations tend to be found on the eastern seaboard. This would make it difficult to draw any policy conclusion from that finding. The South region in turn continues to have a high positive correlation with black population and state poverty. Black population, consistent with expectations, also appears to correlate with the South region and the state mean poverty measure, just as it has in the previous

two sampled decades. One other new finding appears in this model. Asian population is correlated positively with Hispanic population. This is an interesting result, but one that adds little to the analysis other than to indicate the existence of some apparent developing migration patterns. Depth of poverty correlates positively with the South, state mean poverty, and black population, which is counterintuitive.

Table A5: 1990 State Level Variable Correlation Matrix

Variable	*Hisp*	*Black*	*Asian*	*Ed Exp*	*Density*	*Poverty*	*South*	*Depth*
Hispanic Population	1	-.124	.471**	-.018	.027	.159	-.166	-.148
Black Population	-.124	1	-.037	.172	.636**	.498**	.683**	.044
Asian Population	.471**	-.037	1	.212	.018	-.156	-.150	-.176
Education Expenditures	-.018	.172	.212	1	.539**	-.387**	-.223	.013
Population Density	.027	.636**	.018	.539**	1	.214	.181	-.014
Mean Poverty	.159	.498**	-.156	-.387**	.214	1	.523**	-.086
South Region	-.166	.683**	-.150	-.223	.181	.523**	1	.072
Depth of Poverty	-.148	.044	-.176	.013	-.014	-.086	.072	1

**$p < .01$, *$p < .05$

These results satisfy expectations in terms of persistent trends. Black population is a positive correlate of population density, poverty, and the South region. The mean poverty variable also indicates a positive correlation with the South region. Education expenditures are expected to increase with higher population density, and decrease with higher poverty. Asian and Hispanic populations continue to correlate with each other and correlation is stronger than in the previous sample. No variables are correlated with depth of poverty.

Table A6: 2000 State Level Variable Correlation Matrix

Variable	*Hisp*	*Black*	*Asian*	*Ed Exp*	*Density*	*Poverty*	*South*	*Depth*
Hispanic Population	1	-.127	.425**	-.075	.022	.185	-.177	.062
Black Population	-.127	1	-.047	.201	.636**	.443**	.695**	-.062
Asian Population	.425**	-.047	1	.264	.036	-.089	-.227	.044
Education Expenditures	-.075	.201	.264	1	.540**	-.259	-.204	-.078
Population Density	.022	.636**	.036	.540**	1	.170	.183	-.125
Mean Poverty	.185	.443**	-.089	-.259	.170	1	.521**	.205
South Region	-.177	.695	-.227	-.204	.183	.521**	1	.035
Depth of Poverty	.062	-.062	.044	-.078	-.125	.205	.035	1

$^{**}p < .01$, $^{*}p < .05$

Once again, the same patterns seem to hold true from model to model, although a notable change between this model and the one from 1990 has appeared. The correlations between education expenditures and state poverty does not reappear in this model. Population density does remain a positive predictor of expenditures in this model. Consistent with the past models, a state's black population has a positive relationship with the state level mean poverty measure, the South region, and population density. The presence of a state in the South region also correlates with higher mean poverty. Meanwhile, the positive correlation between Asian population and Hispanic population continues to persist into the year 2000. None of the variables are correlated with the depth of poverty measure, just as was the case in the model for 1990, suggesting there is no pattern that helps us to identify where we would expect to find a higher volume of individuals living in deeper poverty.

Table A7: 2010 State Level Variable Correlation Matrix

Variable	*Hisp*	*Black*	*Asian*	*Ed Exp*	*Density*	*Poverty*	*South*	*Depth*
Hispanic Population	1	-.219	.455**	-.183	-.080	.051	-.214	.110
Black Population	-.219	1	-.041	.242	.639**	.530**	.683**	.060
Asian Population	.455**	-.041	1	.131	.023	-.219	-.187	-.079
Education Expenditures	-.183	.242	.131	1	.577**	-.209	-.152	-.263
Population Density	-.080	.639**	.023	.577**	1	.338*	.187	-.109
Mean Poverty	.051	.530**	-.219	-.209	.338*	1	.503**	.339*
South Region	-.214	.683**	-.187	-.152	.187	.503**	1	.141
Depth of Poverty	.110	.060	-.079	-.263	.109	.339*	.141	1

$^{**}p < .01$, $^{*}p < .05$

The 2010 model looks very similar to the model reported in Table 14. The same variable correlations are present with one additional new finding unique to this model. This model reveals a positive correlation between population density and state level poverty. There is an implication here that poverty is occurring in more concentrated areas in the twenty-first century. It must be noted, however, that the 2010 Census was taken in the aftermath of the financial crisis, and some improvement may have occurred since that time. The positive correlation between education expenditures and population density continues to persist in 2010, as does the correlation between the Asian and Hispanic populations in the state. African American population continues to correlate positively with the South region, state level poverty and population density. There is a positive correlation between state mean poverty and depth of poverty, meaning deeper poverty

correlates with lower overall poverty levels. The South region also predicts higher scores on the state level poverty measure.

State Level Data Tables

This appendix reports the state level data for key variables used in the analysis. The green text indicates that a state's score on the particular variable is one of the five highest for that sample. The red text indicates one of the five lowest scores, and ties.

Table A8: 1960 State Level Sample Characteristics

State	*Percent in Poverty*	*Black Population*	*Hispanic Population*	*Education Expenditures*	*Attainment Percentage*
Alabama	47.90	30.80	0.17	$241.00	45.41
Arizona	20.40	2.93	20.98	$404.00	51.99
Arkansas	47.60	20.25	0.00	$225.00	52.89
California	14.40	4.64	12.52	$424.00	55.18
Colorado	22.90	1.69	10.55	$396.00	55.34
Connecticut	7.40	4.60	0.77	$436.00	55.81
Delaware	20.60	11.76	1.47	$456.00	55.94
District of Columbia	25.90	59.09	2.27	$431.00	56.61
Florida	27.20	16.40	2.30	$318.00	56.86
Georgia	46.80	33.72	0.15	$253.00	61.38
Idaho	20.70	0.00	1.75	$290.00	61.46
Illinois	13.90	9.18	1.62	$438.00	62.25
Indiana	15.30	6.02	0.84	$369.00	64.20
Iowa	20.50	0.22	0.45	$368.00	64.31
Kansas	19.80	3.44	1.72	$348.00	64.68
Kentucky	44.50	5.88	0.57	$233.00	64.91
Louisiana	44.50	32.90	0.74	$372.00	66.11
Maine	23.20	0.00	0.62	$283.00	68.30
Maryland	16.60	19.14	0.62	$393.00	68.97
Massachusetts	10.30	1.57	0.13	$409.00	70.32
Michigan	14.60	8.37	0.73	$415.00	70.59
Minnesota	20.00	0.99	0.39	$425.00	71.72
Mississippi	62.80	48.01	0.23	$206.00	72.07
Missouri	27.60	8.43	0.50	$344.00	72.34

Montana	20.50	0.00	0.85	$411.00	73.84
Nebraska	17.90	1.37	1.37	$337.00	74.04
Nevada	17.00	4.08	6.12	$430.00	74.20
New Hampshire	10.10	0.00	0.00	$347.00	74.28
New Jersey	11.00	8.80	2.33	$388.00	74.93
New Mexico	29.10	1.91	37.58	$363.00	75.41
New York	12.20	6.82	5.80	$562.00	76.09
North Carolina	48.90	27.21	0.00	$237.00	76.43
North Dakota	37.80	0.00	0.00	$367.00	76.45
Ohio	15.80	8.39	0.47	$365.00	76.47
Oklahoma	35.10	9.07	0.78	$311.00	76.72
Oregon	14.40	0.36	0.36	$448.00	77.16
Pennsylvania	17.20	7.76	0.28	$409.00	77.86
Rhode Island	13.20	1.65	0.00	$413.00	78.46
South Carolina	49.50	37.85	0.00	$220.00	78.48
South Dakota	39.80	0.00	0.00	$347.00	79.29
Tennessee	46.80	16.50	0.17	$238.00	81.33
Texas	37.20	12.55	19.47	$332.00	81.49
Utah	18.70	0.00	1.20	$322.00	82.14
Vermont	24.60	0.00	0.00	$344.00	82.67
Virginia	35.80	21.09	0.43	$274.00	82.68
Washington	13.10	0.68	1.80	$420.00	83.19
West Virginia	39.40	5.31	0.00	$258.00	84.26
Wisconsin	19.10	0.64	0.48	$413.00	84.40
Wyoming	19.60	0.00	0.00	$450.00	86.32

Table A9: 1970 State Level Sample Characteristics

State	*Percent in Poverty*	*Black Population*	*Hispanic Population*	*Education Expenditures*	*Mean Attainment*
Alabama	31.36	33.24	0.15	$544.00	68.30
Arizona	16.56	4.86	20.97	$720.00	81.00
Arkansas	30.75	21.75	0.28	$568.00	72.10
California	12.12	7.43	16.14	$867.00	86.30
Colorado	12.59	4.21	13.32	$738.00	83.80
Connecticut	3.89	4.04	2.69	$951.00	84.20
Delaware	9.73	14.91	0.88	$900.00	77.90
District of Columbia	25.47	88.89	0.00	$1,018.00	49.10

Florida	16.98	18.62	6.38	$732.00	75.60
Georgia	22.08	27.05	0.34	$588.00	65.00
Idaho	15.79	0.00	1.96	$603.00	81.60
Illinois	9.36	12.73	2.32	$909.00	81.30
Indiana	8.46	8.42	1.29	$728.00	79.70
Iowa	10.97	0.91	0.54	$844.00	87.40
Kansas	12.38	5.06	1.61	$771.00	87.10
Kentucky	26.00	10.12	0.15	$545.00	66.70
Louisiana	30.90	32.78	1.38	$648.00	69.80
Maine	15.79	0.00	0.00	$692.00	78.40
Maryland	10.75	17.50	0.42	$918.00	77.70
Massachusetts	5.78	3.59	0.80	$859.00	80.30
Michigan	10.02	13.18	1.24	$904.00	82.50
Minnesota	8.87	1.02	0.51	$904.00	91.10
Mississippi	37.98	45.88	0.00	$501.00	65.00
Missouri	15.48	12.64	0.69	$709.00	77.50
Montana	16.78	0.68	0.68	$782.00	86.00
Nebraska	13.09	3.20	1.78	$736.00	89.50
Nevada	11.54	8.86	3.80	$769.00	79.50
New Hampshire	7.14	0.78	0.78	$723.00	75.40
New Jersey	5.04	10.99	4.44	$1,016.00	84.10
New Mexico	23.44	4.08	32.14	$707.00	79.20
New York	10.70	12.58	8.02	$1,327.00	81.40
North Carolina	20.71	26.36	0.10	$612.00	71.00
North Dakota	13.33	0.00	0.00	$690.00	82.50
Ohio	9.62	10.18	0.76	$730.00	82.10
Oklahoma	17.94	9.33	0.81	$604.00	79.80
Oregon	10.54	1.61	1.61	$925.00	86.70
Pennsylvania	9.20	8.06	0.81	$882.00	84.30
Rhode Island	8.39	4.11	0.00	$891.00	74.80
South Carolina	30.26	41.17	0.38	$613.00	67.20
South Dakota	11.63	0.76	0.00	$690.00	88.40
Tennessee	23.89	19.08	0.28	$566.00	70.70
Texas	22.21	14.43	20.36	$624.00	69.30
Utah	11.87	2.63	1.75	$626.00	91.30
Vermont	8.22	0.00	1.33	$807.00	86.30
Virginia	20.44	23.91	0.71	$708.00	72.80
Washington	9.26	1.72	1.15	$915.00	82.40
West Virginia	22.85	5.77	0.00	$670.00	76.10
Wisconsin	7.43	2.73	1.07	$883.00	89.90

Wyoming	14.81	1.85	9.26	$856.00	87.00

Table A10: 1980 State Level Sample Characteristics

State	*Percent in Poverty*	*Black Population*	*Hispanic Population*	*Education Expenditures*	*Mean Attainment*
Alabama	22.27	30.55	1.30	$1,612.00	87.19
Arizona	17.61	4.03	22.16	$1,971.00	89.93
Arkansas	18.68	22.37	1.08	$1,574.00	88.49
California	12.96	9.21	23.23	$2,268.00	92.85
Colorado	11.56	3.99	15.78	$2,421.00	92.91
Connecticut	7.49	9.82	5.01	$2,420.00	92.91
Delaware	16.13	24.49	1.02	$2,861.00	86.08
District of Columbia	13.83	85.57	1.03	$3,259.00	76.19
Florida	15.09	19.42	11.28	$1,889.00	89.87
Georgia	19.80	34.63	0.78	$1,625.00	85.29
Idaho	12.64	1.09	5.98	$1,659.00	91.67
Illinois	12.84	18.57	6.63	$2,587.00	91.90
Indiana	11.44	9.38	2.20	$1,882.00	88.77
Iowa	9.75	1.12	0.90	$2,326.00	92.21
Kansas	8.60	4.68	2.67	$2,173.00	91.34
Kentucky	20.45	8.42	0.92	$1,701.00	88.16
Louisiana	21.67	32.59	2.35	$1,792.00	85.13
Maine	17.37	0.00	0.00	$1,824.00	91.43
Maryland	11.03	28.30	1.10	$2,598.00	90.26
Massachusetts	11.06	5.84	3.03	$2,819.00	90.61
Michigan	11.94	13.46	2.00	$2,640.00	91.92
Minnesota	10.24	1.83	0.71	$2,387.00	95.88
Mississippi	30.66	45.53	0.62	$1,664.00	78.98
Missouri	11.31	11.87	1.73	$1,936.00	88.77
Montana	21.32	0.00	0.00	$2,476.00	88.89
Nebraska	10.91	5.40	1.08	$2,150.00	93.31
Nevada	11.94	8.63	7.19	$2,088.00	91.35
New Hampshire	6.04	1.99	0.00	$1,916.00	91.94
New Jersey	10.82	16.74	8.79	$3,191.00	91.67
New Mexico	17.84	1.45	45.45	$2,034.00	92.82
New York	14.95	17.04	10.90	$3,462.00	88.16
North Carolina	16.52	28.09	0.56	$1,754.00	86.32

North Dakota	14.44	0.00	1.09	$1,920.00	92.77
Ohio	10.04	10.80	1.37	$2,075.00	89.69
Oklahoma	15.44	10.10	2.44	$1,926.00	90.72
Oregon	10.69	1.37	2.93	$2,692.00	93.48
Pennsylvania	10.94	10.85	1.54	$2,535.00	91.75
Rhode Island	18.18	4.95	1.98	$2,601.00	94.87
South Carolina	17.99	38.42	2.23	$1,752.00	85.50
South Dakota	12.32	0.00	0.00	$1,908.00	93.28
Tennessee	20.86	23.12	1.11	$1,635.00	83.78
Texas	17.14	14.12	24.81	$1,916.00	84.78
Utah	7.05	0.80	3.59	$1,657.00	97.10
Vermont	7.22	0.00	0.00	$1,997.00	95.45
Virginia	13.61	24.95	1.22	$1,970.00	85.66
Washington	11.19	3.40	4.49	$2,568.00	91.48
West Virginia	17.39	5.52	0.31	$1,920.00	83.52
Wisconsin	8.51	5.30	1.24	$2,477.00	93.18
Wyoming	9.72	0.00	4.00	$2,527.00	90.38

Table A11: 1990 State Level Sample Characteristics

State	*Percent in Poverty*	*Black Population*	*Hispanic Population*	*Education Expenditures*	*Mean Attainment*
Alabama	22.04	33.17	0.65	$3,327.00	80.76
Arizona	17.52	3.57	23.74	$4,053.00	80.09
Arkansas	23.03	16.40	1.61	$3,485.00	85.86
California	16.15	6.57	35.79	$4,391.00	83.39
Colorado	12.10	5.22	19.27	$4,720.00	84.02
Connecticut	4.34	7.59	10.38	$7,837.00	89.80
Delaware	8.11	21.62	0.00	$5,799.00	81.08
District of Columbia	27.14	76.71	8.22	$8,955.00	79.41
Florida	15.39	19.36	14.63	$4,997.00	79.95
Georgia	14.27	32.61	0.93	$4,275.00	76.08
Idaho	9.40	0.00	4.00	$3,078.00	86.58
Illinois	13.61	16.54	8.49	$5,118.00	86.09
Indiana	11.29	7.59	3.25	$4,606.00	84.75
Iowa	8.17	0.83	1.67	$4,453.00	88.73
Kansas	13.25	3.28	3.88	$4,752.00	83.43
Kentucky	20.28	9.54	0.20	$3,745.00	81.73

Louisiana	29.14	35.33	3.31	$3,903.00	79.27
Maine	14.61	0.56	1.12	$5,373.00	80.90
Maryland	7.52	25.89	2.54	$6,275.00	85.79
Massachusetts	9.15	4.73	5.14	$6,237.00	87.95
Michigan	13.71	14.35	2.51	$5,546.00	85.66
Minnesota	12.21	0.65	1.62	$4,971.00	89.74
Mississippi	34.40	46.84	0.73	$3,094.00	80.20
Missouri	14.51	11.71	1.29	$4,507.00	83.26
Montana	19.09	0.00	5.26	$4,736.00	90.91
Nebraska	11.42	5.86	4.96	$4,842.00	87.67
Nevada	12.03	9.20	10.43	$4,117.00	78.98
New Hampshire	7.87	0.78	0.78	$5,304.00	85.83
New Jersey	7.90	15.26	12.11	$8,139.00	84.98
New Mexico	23.25	1.68	46.22	$3,515.00	81.14
New York	14.01	13.49	12.06	$8,062.00	86.37
North Carolina	14.82	27.66	1.54	$4,290.00	80.42
North Dakota	17.72	0.00	1.27	$4,189.00	89.87
Ohio	13.62	11.37	1.91	$5,045.00	86.71
Oklahoma	17.62	7.29	4.45	$3,508.00	86.04
Oregon	12.83	2.33	3.88	$5,474.00	82.37
Pennsylvania	12.28	7.07	2.94	$6,228.00	87.19
Rhode Island	8.57	5.66	6.60	$6,368.00	78.10
South Carolina	18.37	37.72	0.60	$4,082.00	80.49
South Dakota	17.14	0.00	1.89	$3,731.00	83.81
Tennessee	17.03	18.27	0.29	$3,664.00	78.75
Texas	23.98	13.11	33.58	$4,150.00	78.22
Utah	12.11	1.03	5.84	$2,764.00	89.93
Vermont	12.50	0.00	0.00	$6,227.00	85.00
Virginia	10.99	19.95	1.60	$4,672.00	83.65
Washington	14.59	3.64	6.07	$4,702.00	84.28
West Virginia	25.53	3.81	1.69	$4,360.00	80.00
Wisconsin	9.85	2.92	1.46	$5,524.00	92.49
Wyoming	10.00	0.00	5.71	$5,577.00	92.86

Table A12: 2000 State Level Sample Characteristics

State	*Percent in Poverty*	*Black Population*	*Hispanic Population*	*Education Expenditures*	*Mean Attainment*
Alabama	17.41	31.97	2.68	$5,758.00	83.81

Arizona	17.49	4.44	33.19	$5,478.00	80.11
Arkansas	20.22	21.19	4.19	$5,628.00	89.41
California	17.95	7.86	40.12	$6,401.00	89.13
Colorado	10.40	3.49	22.66	$6,702.00	82.66
Connecticut	6.76	11.70	12.16	$10,122.00	89.49
Delaware	11.32	24.53	4.72	$8,809.00	82.69
District of Columbia	22.03	77.97	10.17	$11,935.00	85.71
Florida	15.66	22.33	18.94	$6,383.00	83.55
Georgia	18.05	34.17	5.77	$6,903.00	81.66
Idaho	12.06	0.00	12.36	$5,644.00	83.98
Illinois	12.53	15.31	14.00	$8,084.00	86.06
Indiana	9.03	9.11	3.62	$7,652.00	83.87
Iowa	6.65	1.09	2.63	$6,925.00	92.63
Kansas	10.07	4.40	6.85	$6,962.00	88.34
Kentucky	18.53	8.86	1.53	$6,784.00	82.32
Louisiana	22.01	39.01	2.14	$6,256.00	82.29
Maine	13.02	0.58	0.58	$8,247.00	83.93
Maryland	9.66	33.29	4.89	$8,273.00	89.59
Massachusetts	10.44	8.53	9.35	$9,375.00	87.50
Michigan	11.46	12.29	3.64	$8,886.00	84.87
Minnesota	9.61	3.39	3.01	$7,499.00	89.17
Mississippi	26.29	46.84	1.27	$5,356.00	81.00
Missouri	12.27	10.64	2.66	$6,764.00	86.13
Montana	26.71	0.68	4.05	$6,990.00	82.98
Nebraska	9.32	2.52	5.36	$7,360.00	87.70
Nevada	14.57	9.30	24.03	$6,148.00	84.86
New Hampshire	6.06	0.51	1.52	$7,082.00	87.69
New Jersey	10.08	16.43	18.23	$10,903.00	87.03
New Mexico	21.24	2.23	53.18	$5,835.00	83.17
New York	17.01	16.33	16.18	$10,957.00	86.60
North Carolina	14.94	27.56	6.62	$6,505.00	84.10
North Dakota	9.52	0.00	3.13	$6,078.00	88.00
Ohio	10.53	12.61	2.21	$7,816.00	85.46
Oklahoma	16.61	8.28	7.12	$5,770.00	80.13
Oregon	16.70	3.60	10.23	$8,129.00	87.96
Pennsylvania	12.32	8.13	3.22	$8,380.00	86.67
Rhode Island	9.09	8.27	13.53	$9,646.00	80.15
South Carolina	16.75	38.75	2.46	$6,545.00	83.47
South Dakota	14.60	1.46	0.73	$6,037.00	86.67

Tennessee	16.91	17.70	2.55	$5,837.00	87.39
Texas	18.45	11.39	36.85	$6,771.00	82.61
Utah	9.89	0.87	7.63	$4,692.00	89.76
Vermont	8.51	0.00	2.11	$8,799.00	88.30
Virginia	11.31	22.24	5.51	$6,491.00	86.81
Washington	12.98	3.53	9.04	$6,914.00	88.56
West Virginia	23.51	5.51	0.39	$7,637.00	85.89
Wisconsin	7.58	3.09	4.94	$8,299.00	92.50
Wyoming	6.74	1.10	7.69	$7,944.00	91.01

Table A13: 2010 State Level Sample Characteristics

State	*Percent in Poverty*	*Black Population*	*Hispanic Population*	*Education Expenditures*	*Mean Attainment*
Alabama	22.00	32.70	2.90	$9,508.00	88.58
Arizona	21.30	5.10	36.30	$8,401.00	90.49
Arkansas	21.90	18.00	7.00	$9,907.00	89.22
California	18.00	6.00	46.10	$9,927.00	94.43
Colorado	13.30	5.20	26.80	$9,527.00	92.95
Connecticut	10.10	11.50	16.40	$16,757.00	94.94
Delaware	11.00	24.50	3.60	$13,047.00	84.55
District of Columbia	29.20	72.90	4.20	$22,321.00	83.33
Florida	18.80	20.40	23.90	$9,461.00	89.38
Georgia	18.10	33.10	8.60	$10,069.00	88.35
Idaho	15.90	0.40	19.80	$7,579.00	94.71
Illinois	12.50	15.20	13.70	$12,530.00	92.55
Indiana	16.20	8.00	6.40	$10,118.00	88.96
Iowa	9.10	1.60	5.20	$10,405.00	94.59
Kansas	14.20	4.20	8.90	$10,645.00	92.19
Kentucky	20.90	7.70	2.20	$9,561.00	90.19
Louisiana	20.80	34.60	3.40	$11,423.00	84.67
Maine	19.70	3.20	0.60	$13,370.00	95.51
Maryland	9.60	30.70	7.00	$14,952.00	92.00
Massachusetts	9.80	7.40	10.20	$14,897.00	93.04
Michigan	16.40	12.20	4.10	$11,151.00	92.15
Minnesota	10.40	3.50	4.20	$11,384.00	94.87
Mississippi	25.80	44.00	1.80	$8,650.00	90.49
Missouri	16.80	13.10	4.10	$10,376.00	90.24

Montana	15.40	1.50	3.80	$11,278.00	86.15
Nebraska	14.00	1.70	12.00	$12,104.00	91.88
Nevada	12.80	8.70	34.10	$8,941.00	91.83
New Hampshire	8.40	0.00	3.20	$13,953.00	96.20
New Jersey	9.70	13.10	18.10	$18,551.00	95.02
New Mexico	21.20	1.30	51.90	$10,269.00	86.70
New York	15.60	14.90	17.60	$19,392.00	91.27
North Carolina	18.50	25.50	7.10	$8,779.00	87.65
North Dakota	10.50	0.00	4.60	$11,229.00	91.67
Ohio	15.40	13.00	3.90	$11,980.00	92.04
Oklahoma	17.10	5.50	9.30	$8,464.00	90.11
Oregon	18.20	2.00	17.10	$9,893.00	92.57
Pennsylvania	12.10	9.50	5.30	$13,587.00	92.25
Rhode Island	12.30	7.50	14.90	$15,716.00	89.44
South Carolina	21.90	31.70	4.60	$9,692.00	87.32
South Dakota	15.30	0.90	0.90	$9,628.00	93.75
Tennessee	20.70	20.00	3.90	$8,665.00	92.29
Texas	18.30	11.80	41.30	$9,380.00	90.21
Utah	14.90	1.40	12.80	$6,888.00	96.52
Vermont	16.70	1.90	1.90	$16,723.00	97.14
Virginia	10.10	22.10	6.70	$11,309.00	92.14
Washington	14.00	3.50	14.60	$10,138.00	92.42
West Virginia	19.60	2.80	1.20	$12,568.00	90.55
Wisconsin	12.80	4.70	5.90	$12,283.00	94.63
Wyoming	10.10	0.00	8.50	$16,259.00	95.77

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