OPENING THE DOOR? HOW CONTEMPORARY SCHOOL CHOICE POLICY IN ALABAMA OPERATES IN AN EDUCATIONAL LANDSCAPE MARRED BY HISTORIC RACIAL TENSIONS

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ABSTRACT

Private school choice programs provide students with financial support to help reduce the costs of a private school education. In doing so, they often allow for a more diverse group of students to access private schools. In Alabama, the Alabama Educational Scholarship Program (AESP), a tax-credit scholarship program, allows students meeting income requirements to attend a participating private school of their choice.

Across the nation, there is a limited supply of participating private schools. This fact inspired my first two research questions. First, I ask, do private school racial demographics impact the likelihood of participation in a school choice program? Past studies have found that administrators think about the impact of participation on their schools' identities, and I argue that racial homogeneity may be a part of that identity for some schools. I find evidence that the most exclusively White schools are less likely to participate in the AESP; however, the effect is non-linear. My results show that schools that are 94% or more White are significantly less likely to participate than schools that are less than 85% White. I also ask whether the racial identities of potential "choice" students impact the likelihood of participation in a school choice program? I predict that schools will be influenced not only by their displayed preferences for diversity, but also by the racial diversity of potential choice students; however, I do not find support for this hypothesis.

Finally, I ask, what impact does participation in a private school choice program have on levels of private school segregation? In the past researchers have found evidence that choice leads to increased levels of racial and socioeconomic segregation; however, these patterns have

been primarily observed in public and charter schools. I find evidence of increased levels of racial isolation and decreased levels of exposure to White students for both Hispanic and Black students; however, I was not able to confirm that participation in the AESP was the cause of these changes. Ultimately, my findings expand our understanding of the relationship between choice and race, while also revealing potential avenues for new research.

DEDICATION

This dissertation is dedicated to my grandmother, Lillian Hughes. Though she passed away a few months before I got accepted into the program, and did not get to see me begin, and finish, my PhD journey, I know that she would be so proud. She pushed my mom, my sister, and me to study and work hard in school, and for that I will be forever grateful. I love you, Granny.

LIST OF ABBREVIATIONS AND SYMBOLS

AAA	Alabama Accountability Act
ACS	American Community Survey
AESP	Alabama Educational Scholarship Program
AL	Alabama
DiD	Difference in Difference
FRPL	Free and Reduced-Price Lunch
ISSR	Institute for Social Science Research
LSP	Louisiana Scholarship Program
NCES	National Center for Education Statistics
PSS	Private School Universe Survey
SGO	Scholarship Granting Organization
U18	Under Eighteen Years of Age
U.S.	United States
M	Mean: the average for a given variable, calculated by dividing the sum of all observations by the number of observations
SD	Standard Deviation: describes the dispersion of observations about the mean. It is calculated by squaring the variance.
p	Probability that the given test statistic would be observed if the null hypothesis were true.
*	Used to denote statistical significance at the $p < .05$ level.
**	Used to denote statistical significance at the $p < .01$ level.

OR	Odds ratio: used in the reporting of results from a logistic regression model.
>	Indicates that the figure that comes before the symbol is greater than the figure that comes after the symbol.
<	Indicates that the figure that comes before the symbol is less than the figure that comes after the symbol.
=	Indicates equivalency of two figures.

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Chapter 1: Introduction

School choice has existed in America since the late 1800s; however, the practice has expanded greatly in the past 30 years. In 1991, Wisconsin implemented the first modern, state-sponsored voucher program (the Milwaukee Parental Choice Program) while Minnesota started the first charter school program (Wong and Langevin 2007). Today, 16 states and Washington, DC have voucher programs, 19 states offer tax credit scholarships, and 45 states and Washington, DC allow charter schools (Rafa et al. 2020; Ewin, Brixey, and Syverson 2021). Both vouchers and tax-credit scholarship programs are considered types of private school choice. In private school choice programs, states offer students financial support, either directly (through vouchers) or indirectly (through tax-credit scholarships), so that the students can attend a private school of their or their parents' choice. Alternatively, charter schools, though they receive state funding, operate outside of traditional public school systems and provide students with a choice outside of their regularly zoned traditional public school. Other forms of choice such as magnet schools, public school choice, education savings accounts, and homeschooling also exist in today's school choice marketplace, though they are less common.

School choice programs have the potential to, and arguably already have, changed the face of American K-12 education. Many trace the origins of the modern school choice movement back to Chubb and Moe (1990), whose book *Politics, Markets, and America's Schools,* proposed that educational choice could be used to "bring about the kind of transformation that, for years, reformers have been seeking to engineer in myriad other ways" (217). Chubb and Moe (1990),

like other proponents of the "market theory of choice", argue that school choice programs can provide much needed increases in the productivity and quality of educational outputs by introducing competition to the current system (Hoxby 2003). Advocates of the market theory of choice often point to the poor performance of traditional public schools as a justification for the need of school choice.

Critics of school choice policies often raise concerns about the ability of choice to increase educational quality alongside concerns about the impact of such policies on equity. Orfield (2013) suggests that an educational marketplace would necessarily "produce losers and winners" while noting that such markets "do nothing to guarantee equity of opportunity or outcomes" (49). Furthermore, scholars believe that education may be a good for which a truly competitive marketplace could not be realized due to limited choices and a lack of knowledge on the part of parents (Lubienski 2008; Orfield 2013). If parents cannot, or do not, choose schools based on academic quality, then there is no guarantee that academic competition would be a result of choice. Indeed, parents often select schools based on demographics and religious affiliation (Wrinkle, Steward, and Polinard 1999; Saporito, Yancey, and Lewis 2001; Billingham and Hunt 2016) or even location (Mann and Rogers, nd). Scholars have also noted that a low supply of choice schools, or open seats in choice schools, in an area can also limit choices and therefore competition (Stuit and Doan 2013; Egalite 2015). The effects of these limits on the marketplace may, at least partially, explain why studies have found mixed results on the impacts of school choice programs on academic achievement.

A second equity issue associated with school choice policies is segregation. School choice policies have been shown to increase both racial (Saporito 2003; Bifulco and Ladd 2006a; Bifulco, Ladd, and Ross 2008; Mickelson, Bottia, and Southworth 2008; Frankenberg, Kotok,

Schafft, and Mann 2017; Wilson and Bridge 2019; Shaffer and Dincher 2020) and socioeconomic (Saporito 2003; Bifulco, Ladd, and Ross 2008; Mickelson, Bottia, and Southworth 2008; Marcotte and Dalane 2019) segregation in American schools. Increased segregation can in turn have numerous negative effects on students, who are denied the opportunity to work and learn with students from diverse backgrounds. School segregation is often associated with an unequal distribution of resources (funding, teachers, etc.) that can lead to widening achievement gaps between students in different racial or socioeconomic groups, with wealthy and White students having better opportunities than those who are poor or belong to racial minority groups (Clotfelter 2004; Ladd 2008; Condron et al. 2013; Wells, Warner, and Grzesikowski 2013; Mordechay and Orfield 2017; Ayescue, Frankenberg, and Siegel-Hawley 2017). On the other hand, students who attend integrated schools have higher test scores and graduation rates (Mordechay and Orfield 2017), higher levels of educational attainment (Wells and Crain 1994) and are able to develop diverse friendships (Clotfelter 2004).

This dissertation focuses on two major problems identified in the school choice literature – the creation of competitive choice marketplaces and the impacts of choice on racial segregation. To do this, I focus specifically on private school choice programs which offer financial aid to help facilitate choice by reducing the costs of private schooling. Such programs depend on participation from private schools to generate a competitive choice marketplace; however, private schools are notably more segregated than their public counterparts. The study is motivated by a desire to understand, first, what motivates private schools to accept scholarship/voucher students, and second, what impacts their participation has on segregation levels within the schools.

Research Questions

The research conducted for this dissertation will explore two different, yet related, components of school choice. My first analysis focuses on the supply-side of school choice. In it, I explore the factors that influence private school participation in a private school choice program. This investigation is important as many private school choice programs fail to garner even 50% participation (Stuit and Doan 2013). Though program regulations differ by state (and at times within states), participating schools generally must (1) agree to accept scholarship/voucher students and (2) agree to comply with program regulations which could include standardized testing, progress reporting, and tuition caps to name a few. Regulations have consistently been shown to be a deterrent of participation within the supply-side of school choice literature (Omand 2004; Stuit and Doan 2013; Austin 2015; Kisida, Wolf, and Rhinesmith 2015; DeAngelis and Hoarty 2018; Egalite et al. 2018; DeAngelis, Burke, and Wolf 2019).

One important factor that could impact a school's participation decision that has not yet been investigated is student racial demographics. Private schools in the United States have historically been whiter than their public school counterparts (Betts and Fairlie 2001; Fairlie and Resch 2002; Clotfelter 2004), and in fact many private schools in the U.S. were created to maintain segregation after public school systems were ordered to integrate (Nevin and Bills 1976; Clotfelter 2004; Bagley 2018). Today, private schools continue to contribute to segregation in American education[1]. I argue that this history should be considered alongside contemporary evaluations of school choice programs.

[1] According to the NCES's comparison of private and public school student characteristics, in 2015, 69% of private school students were White, while only 50% of public school students were White. Alternatively, only 9% of private school students were Black, while 15% of public school students were Black.

School choice programs are often marketed as ones that will increase educational choice options for poor and minority students, thereby potentially generating a new demand for private school from a more diverse student population. If these programs do have the potential to increase private school diversity, then school administrators or other decision makers may consider the impact that participation might have on their schools' racial demographics when deciding whether to participate in a private school choice program. This study contributes to the literature by exploring how race impacts private school participation in school choice programs, using data from the state of Alabama, where less than 50% of private schools are participating in the state's tax credit scholarship program. The first two research questions for this study are:

1. Do private school racial demographics impact the likelihood of participation in a school choice program?
2. Do the racial identities of potential "choice" students impact the likelihood of participation in a school choice program?

After examining the factors that influence participation in private school choice programs, with a special focus on the role played by race, I turn to an evaluation of the impact of participation on segregation levels private schools. There is a significant existing body of literature that evaluates the impact of school choice on segregation (both racial and socioeconomic); however, scholars often focus on charter and public school segregation. My study adds to our understanding of the impact of choice on school segregation by looking at the effects of participation on segregation levels in private schools. I argue that participation presents the opportunity for integration but does not guarantee that it will occur. In fact, in a similar study, Egalite, Mills, and Wolf (2017) find that the Louisiana Scholarship Program led to slightly increased levels of segregation in Louisiana private schools. While Egalite, Mills, and Wolf

(2017) minimize the importance of this finding, I will argue that the potential increased segregation in private schools should be seen as a concerning possible unintended consequence of choice policies. The desire to better understand how private school choice programs impact segregation in private schools leads to the final research question for this study:

3. What impact does participation in a private school choice program have on levels of private school segregation?

Importance of the Study

This study contributes to the school choice literature by examining three important questions about the interaction of race and choice. These questions, at their core, are ones that inquire about the impact of school choice on educational equity. Furthermore, the answers to these questions will speak to the potential impacts of choice on school segregation levels. School segregation is problematic for numerous reasons. First, the isolation of minority students in majority minority schools is often associated with unequal distributions of resources. Researchers have found that schools with high concentrations of minority students are more likely to have lower quality teachers (Ladd 2008), higher teacher turnover rates (Wells, Warner, and Grzesikowski 2013; Mordechay and Orfield 2017), higher concentrations of poverty (Wells, Warner, and Grzesikowski 2013), larger classrooms, higher dropout rates (Mordechay and Orfield 2017), and lower test scores (Carlson and Schmidt 2014). Predominately White schools on the other hand, typically have better resources, curriculums, and teachers, all of which can lead to higher achievement levels. Ultimately, these inequities can compound to contribute to achievement gaps between poor students of color and their wealthier, White, peers (Clotfelter 2004; Ladd 2008; Condron et al. 2013; Wells, Warner, and Grzesikowski 2013; Mordechay and Orfield 2017; Ayescue, Frankenberg, and Siegel-Hawley 2017).

Segregated schools also prevent students from receiving the benefits associated with integrated learning environments. Integration has been tied to higher test scores and graduation rates for Black students (Mordechay and Orfield 2017), which can then increase access to higher education and better occupational opportunities (Wells and Crain 1994). This all comes at no cost to the achievement of White students in integrated schools (Clotfelter 2004).

In addition to the equalizing effects that integration can have on student achievement, integration can also have significant positive effects on society as a whole. According to contact theory, "prejudice… may be reduced by equal status contact between majority and minority groups in the pursuit of common goals. The effect is greatly enhanced if this contact is sanctioned by institutional supports…and if it is of a sort that leads to the perception of common interests and common humanity between members of the two groups" (Allport 1954, 281). Schools can foster the formation of positive racial attitudes (Clotfelter 2004) and cross-ethnic friendships when they encourage students to cooperate and work together (Slavin 1985; Merlino, Steinhardt, and Wren-Lewis 2019). This potential societal benefit of integrated schools is highly desirable today, where racial tensions are high, and our country's history of systemic racism has been brought into the spotlight by the Black Lives Matter movement. The research conducted in this dissertation will not only contribute to the existing literature, but it will also inform policy makers about the effects of choice on segregation.

Plan of Study

In the chapters to follow, I will summarize all relevant literature, present my theory and hypotheses, describe the case and data that will be used to answer the primary research questions, summarize the findings of my research, and then draw overall conclusions. In Chapter 2, I will begin by discussing the literature that will be used to inform the theory and hypotheses

presented later in the dissertation. Two key bodies of literature will be consulted. First, I will focus on the supply side of school choice literature. This body of literature explores school administrators' justifications for participation, and non-participation, largely using survey and interview data. The supply side literature will show that administrators in participating schools often value the potential for new students and financial resources that participation brings, as well as the opportunity to expand their schools' missions and provide alternative (ex. religious) learning environments to more students. The literature also reveals that school administrators in non-participating schools often report that their decisions were largely influenced by the potential loss of autonomy (often as the result of regulations) and changes to the schools' identities that could be brought on by participation.

Despite these findings, an important gap in this body of literature remains. Supply-side scholars have not yet explored how the potential for choice to increase diversity, and alter school racial demographics, might influence participation decisions. This omission may be due to the current nature of inquiry, as administrators would likely not respond openly (or honestly) to questions about how considerations of student racial demographics influences their participation choices. I will attempt to fill this gap by taking a new methodological approach that does not require me to explicitly ask school administrators what role the impact of participation on their schools' racial demographics plays in their participation decisions.

After I review the supply side of choice literature, I will then turn to the school choice and segregation literature. Scholars in this area of research have spent a good deal of time uncovering the effects of school choice on segregation. Their findings typically show that school choice programs are often associated with increased racial and socioeconomic segregation in schools. Thus far, scholars have primarily focused on segregation levels in traditional public and

public charter schools; however, as private school choice becomes more widespread, it is important that segregation in these schools be studied as well. This dissertation will do just that, thereby adding to the existing school choice and segregation literature.

In Chapter 3, I will develop theories to explain both (1) why we should expect race to play a role in private school administrators' participation decisions, and (2) why we should expect private school choice programs to impact segregation levels in private schools. In order to develop a theory to explain participation decisions, I looked to the supply-side literature. The existing literature lacked a theoretical focus, likely because many of the studies were published as policy briefs rather than academic articles. Still, the findings from this literature were useful as a tool to develop a new theory explaining private school choice decisions. I will argue that, when making participation decisions, private school administrators consider their specific policy and school contexts, how participation will impact their schools' identities, how participation would the impact their schools' autonomy and finances, and if participation is congruent with their schools' missions. I will then argue that changing demographics could directly affect the school's identity, if the school considers racial homogeneity as part of its identity, and indirectly affect the school's finances if current parents choose to withdraw their children based on those changes.

In addition to developing a theory to help explain private school administrator's participation decision making strategies, I also present a theory about the impact of participation on segregation levels. In this theory, it is parental decisions, rather than that of administrators, that influence the outcome. I will argue, largely based on findings from the past literature, that segregation in private schools can be expected to increase if choosing parents make self-

segregating choices. Evidence of self-segregating choices has been seen across racial groups, and thus could lead to students of each race being sorted into increasingly segregated schools.

Though my theories of participation and the impact thereof seem to be contradictory, I will argue that they need not be. In the participation decision, school administrators will likely be considering how they *expect* parents to respond to their decisions, but their expectations could be inaccurate. This is possible because, on their face, many choice programs appear to have the potential to increase racial diversity. If administrators are not aware that the potential could be unmet, it is reasonable to assume that they will continue to consider increased diversity as a very real possibility.

In Chapter 4, I narrow in on Alabama as a case in which to answer the primary research questions of this study. Alabama can be seen as a "most likely" case, where one would expect race to be an especially salient consideration in school choice decisions. If the results of the study are not as expected, then, they will reveal a need for past theories to be revisited. Segregation in Alabama lasted long after the USSC's ruling in *Brown*, largely due to the state's stalling tactics. One such tactic was the use of a private school voucher program that benefitted White families who hoped to attend exclusively White private schools, rather than integrating public schools. Alabama was one of only seven states to implement a program like this at the time (Hershkoff and Cohen 1992). Of the deep south states with current private school choice programs[2] Alabama, had the largest number of segregation academies and the highest number of students enrolled in segregation academies, followed by Georgia and then Louisiana (Porter, Howell, & Hempel 2014). Today, many of these segregation academies still exist, and some even participate in the state's present-day private school choice program, the Alabama Educational

[2] That are not only available to special needs students.

Scholarship Program (AESP). It is important to study the impacts of contemporary school choice programs in states like Alabama to ensure that they are not having the same segregative effects that earlier policies had.

Chapter 5 marks a shift towards the empirical focus of the dissertation. In it, I describe the primary data sources used in the dissertation and provide a broad overview of the variables, how they are used, and how they are measured. Though I use data from the same sources (primarily the PSS and ACS) for both of my empirical analyses, the data sets for each analysis differs. In my analysis of participation, I use a cross-sectional data set with observations from single iterations of the PSS and ACS. This type of data is appropriate for answering my participation questions, as I am not interested in changes over time. In the second analysis, however, I am interested in changes over time and therefore utilize a panel data set that spans five iterations of the PSS. Because the two data sets are not identical, I chose to describe the samples used for analysis in the individual empirical chapters, rather than in this larger data chapter.

In Chapter 6, I set up and conduct my first empirical analysis, which will be used to answer research questions one and two. In order to determine whether race plays a role in school participation decisions, I will employ a logistic regression model with a dependent variable that indicates whether the school was participating by the 2020-2021 school year. For the student demographics, I chose to use data from the 2011-2012 PSS, as this was the last iteration of the PSS that would not be influenced by the influx of participating students, which began during the 2013-2014 school year. Ultimately, I will show how current student demographics, segregation academy status, and the demographics of potential choice students influence school administrators' decisions regarding participation in the AESP.

In Chapter 7, I complete the second empirical analysis of this dissertation to answer my third and final research question. To determine the impact of participation in the AESP on private school segregation levels, I first will measure levels of racial isolation and exposure in Alabama private schools over time. I will use these measures to describe any changes in racial isolation or exposure for White, Black, or Hispanic students that have occurred since the AESP was implemented. After describing these trends and how they should be interpreted, I will then set up a two-way fixed effects model to determine whether participation in the program can be labeled as a cause of segregation changes. Finally, I will discuss my findings and the implications that they have for the study of the impacts of private school choice on private school segregation levels.

In Chapter 8, the final chapter of this dissertation, I will begin by revisiting the purpose of the dissertation and reflect on the answers to my primary research questions. Next, I will describe the major contributions made by my research. Afterwards, I will also discuss the implications of my findings, and how they can be used to spur future research.

Chapter 2: Literature Review

Soon after school choice programs spread across the United States, a broad school choice literature developed. Within this literature, scholars have been interested in several aspects of school choice including the impact of choice on academic achievement (Howell et al. 2002; Green and Winters 2007; Wolf et al. 2009, 2013; Jeynes 2014), the impact of choice on school segregation (Saporito 2003; Clotfelter 2004; Bifulco and Ladd 2006ab; Bifulco, Ladd, and Ross 2008; Mickelson, Bottia, and Southworth 2008; Orfield 2013; Frankenberg, Kotok, Schafft, and Mann 2017; Wilson and Bridge 2019; Shaffer and Dincher 2020), and how parents choose (Saporito and Lareau 1999; Weiher and Tedin 2002; Billingham and Hunt 2016).

More recently, education policy scholars have become interested in a new line of research that focuses on the supply side of school choice. This small but growing subset within the school choice literature seeks to understand what motivates schools to participate, or refrain from participating, in school choice programs. Scholars have pointed to low participation on the part of choice schools, both charter and private, as a serious hinderance to the success of school choice (Stuit and Doan 2013; Egalite 2015; McShane 2015), and they have suggested that policy design may have significant impacts on the supply of choice schools.

The school choice literature answers important questions about the effectiveness, efficiency, and equity of choice programs. To answer these questions, scholars have looked at how school choice operates in various locations and under many different policy contexts. Perhaps because school choice programs vary so widely, findings in this literature are rarely

unanimous, suggesting that every program should be evaluated to ensure that tax dollars, which otherwise would be allocated to public schools[3], are being spent wisely. Furthermore, evaluations should also be conducted regularly to ensure that such programs are not exacerbating existing inequities within the realm of education policy.

In this chapter, I will summarize key findings from past research while also indicating how this dissertation will build on the current literature. In the first half of the chapter, I will discuss the existing supply side of school choice literature, playing close attention to key findings as well as the questions the current literature leaves unanswered. Studies of the supply side of school choice frequently use surveys of school administrators to uncover reasons for participation or the lack thereof on the part of private schools. Scholars have learned that schools are often deterred from participation by regulations and perceived threats to school's autonomy, whereas they are motivated to participate when doing so aligns with their school missions or would benefit the school financially (Stuit and Doan 2013; Austin 2015; Kisida, Wolf, and Rhinesmith 2015; Egalite et al. 2018). I will argue that the impact of participation on school racial demographics may be another important consideration in the participation decision, though it has not been studied yet. The supply side of school choice literature will be used to inform the theory of participation developed in Chapter 3.

In the second half of the chapter, I will discuss the literature examining the impacts of school choice on school segregation levels. Numerous studies have been conducted on the impacts of charter schools on levels of school segregation, often concluding that charter schools worsen levels of school segregation (Bifulco and Ladd 2006a; Frankenberg et al. 2017; Marcotte

[3] Voucher and charter school policies directly transfer a portion of students' allocated education spending to facilitate choice. Tax credit scholarships, on the other hand, do not involve the direct transfer of taxpayer dollars and instead reduce overall tax revenues. In any case, public schools still lose money under tax credit scholarship programs.

and Dalane 2019). Though the research on the impact of private school choice on segregation levels is far less extensive than the charter school literature, it also supports the conclusion that choice contributes to increased segregation levels (Egalite, Mills, and Wolf 2017). Through the empirical analysis conducted in Chapter 7, I will expand on the relatively small literature examining the impacts of choice on private school segregation levels.

Supply Side of School Choice

Scholars who study the supply-side of school choice explore various reasons why private schools do or do not participate in private school choice programs. This pursuit is an important one because, in the words of Anna Egalite (2015), "school supply problems have the potential to become the biggest limitation of the school choice movement" (163). Since competition is one of the primary mechanisms expected to improve school performance under the market theory of choice, it is easy to see why having ample choices is a desirable characteristic of school choice programs. Thus far, scholars have primarily used interviews and surveys of school administrators to determine the reasoning behind schools' decisions to participate in private school choice programs. However, at times, scholars will also supplement their qualitative reports with data from the National Center for Education Statistics' (NCES) Private School Universe Survey (PSS).

Though scholars have also pointed to supply-side issues for charter schools, most studies of choice school participation have focused on private school participation, and thus this review will do the same. At present, scholars have examined private school participation in school choice programs (voucher and tax credit scholarships) across twelve states and Washington, DC. It is common to see both single and multi-state analyses in this literature. In multi-state analyses, scholars are better able to see differences in participation based on varied policy contexts,

whereas in single-state studies scholars take a more detailed look at how individual policies encourage or restrict participation. Ultimately, both types of studies work to identify common themes amongst school leaders' justifications of their decisions to participate, or not participate, in a given program.

Characteristics of Participating and Non-Participating Schools

Schools that participate in private school choice programs differ from those that do not participate in many ways. One of the most common findings across the supply side literature is that Catholic schools participate in private school choice programs at much higher rates than other schools (Omand 2004; Stuit and Doan 2013; Austin 2015). Omand (2004) suggests that this could be the result of both the history and institutional structure of Catholic schools. In terms of history, Omand (2004) notes that Catholic schools were born out of an opposition to the Protestant culture being taught in public schools, rather than the curriculum. Today, Catholic schools often offer a similar curriculum to public schools and pride themselves on providing a high-quality and disciplined learning environment. Because of this, Catholic schools may not be as concerned as other private schools would be with curriculum or standardized testing requirements. Another factor that could contribute to the high participation rates is the institutional organization of Catholic schools. Unlike most other private schools, Catholic schools operate within their own systems (Omand 2004). Their organizational structure allows for more uniform decision making which could also help explain why Catholic schools participate at "nearly universal rates" (Austin 2015, 376).

Adding to the historical and institutional explanations for high participation on the part of Catholic schools, Stuit and Doan (2013) also note that there may be financial and mission-related reasons for high levels of participation on the part of Catholic schools. Stuit and Doan (2013)

provide evidence that enrollment in Catholic schools has declined over the last 50 years. Because of this, Catholic school leaders may see participation in choice programs as an opportunity to increase their student populations and keep their doors open. While there is obviously a financial benefit to bringing in new students, doing so also aligns with the Catholic church's mission to serve the poor. In this way, participation may serve dual purposes for Catholic schools. In addition to high participation on the part of Catholic schools, scholars have also found that Christian schools, more generally, participate at higher rates than other schools (Kisida, Wolf, and Rhinesmith 2015; Egalite et al. 2018). It is possible that the participation of Christian schools also connects back to the religious missions of the schools.

In their study of Milwaukee Parental Choice Program and the Ohio Educational Choice Scholarship Program, DeAngelis and Hoarty (2018) find that participating schools are of "lower quality" than non-participating schools. In the study, they use tuition costs and Great Schools Review ratings as proxies for quality. In their probit models, when controlling for other factors such as school size and grades covered, they find that both variables have significant negative effects on the likelihood of participation, concluding that current policy designs may deter "high quality" schools from entering the marketplace, thereby limiting these programs' potential for success.

Austin (2015), in her study of Indiana private schools, finds that participating private schools are also larger, on average, than non-participating schools. Austin suggests that the lower participation rates amongst small schools may be related to their specialized missions. Stuit and Doan (2013) find similar patterns; however, they suggest that small schools may be less likely to participate because they may lack the administrative capacity to comply with program requirements and regulations. While it may be difficult to parse out which of these explanations

best explains the finding, both point to the conclusion that larger schools are more likely to participate in choice programs.

Each of the descriptive accounts discussed thus far identifies important characteristics that differentiate participating private schools from those that do not participate. First, Catholic schools are overrepresented in private school choice programs. Second, participating private schools are often ranked lower and charge less tuition than non-participating private schools. Finally, participating schools are generally larger than non-participating schools. While these descriptions are useful tools for understanding what the current supply of private schools looks like, they cannot, on their own, explain why these schools participate while others do not. To address the "why" question with more certainty, scholars have employed surveys and interviews of school administrators.

Reasons for Participation

Most of the research on the supply side of school choice has been conducted through surveys and interviews. School administrators report that they have the most influence on the participation decision, followed by school boards (Stuit and Doan 2013). Noting the power held by private school administrators, they have been the primary target population for supply side surveys. Fortuitously, the survey questions used by supply side scholars are quite similar overall, allowing for a good deal of comparison to be made across studies.

One of the first things that stands out amongst all the studies is that, across the states, the top reason for participation reported by school administrators is uniform in 75% of the studies that asked this type of question. School administrators consistently report the desire to help disadvantaged (Kisida, Wolf, and Rhinesmith 2015; Egalite et al. 2018) or needy (Stuit and Doan 2013) children in their communities as a strong justification for participation. Austin (2015)

found that helping needy children was one of the top three reasons for participation; however, the top reason cited for participation in her study was the desire "to expand [the school's] mission to a large community" (367). Overall, these findings reveal that a desire to help the needy and serve the larger community is an important motivator for participating schools. This may, in part, relate to the fact that participating schools are more likely to be affiliated with the Catholic or other Christian churches, both of which have missions that drive them to serve.

School administrators also commonly reported that a desire to help existing families (those attending the school already) who qualified for the voucher was also an important driver of participation. Stuit and Doan (2013), Austin (2015), and Kisida, Wolf, and Rhinesmith (2015) each found that a desire to help existing families was listed as an important consideration by the second largest group of administrators, while Egalite et al. (2018) found that it was one of the top five most commonly cited important reasons for participation. The desire to help existing families might, like the desire to help disadvantaged students, be related to the schools' missions. Alternatively, it could reflect parental preferences that have been transferred to the school administrators. It is easy to imagine that qualifying parents who are already paying private school tuition would see the possibility for vouchers as desirable because it would reduce the cost of sending their child[ren] to private schools. Parents might then encourage administrators to opt-in to choice programs. It is important to note, however, that not all programs allow students previously enrolled in private schools to receive vouchers, so it is possible that this justification might be context specific.

Private school administrators also report that the impact of participation on their schools' finances is an important consideration in the participation decision. Stuit and Doan (2013) and Austin (2015) both found that administrators described the desire to "strengthen [the] school's

financial situation" and to "fill open seats" as important. Further administrators who responded to the surveys of Kisida, Wolf, and Rhinesmith (2015) and Egalite et al. (2018) reported that a desire to "provide extra revenue to the school" was a significant factor in their participation decisions. Though the surveys used slightly different wording, each of the responses discussed here reveal that participating administrators saw participation in their respective choice programs as a financially beneficial decision.

Finally, some school administrators report that they saw participation as an opportunity to provide an alternative learning environment for students. Administrators who responded to the surveys of Kisida, Wolf, and Rhinesmith (2015) and Egalite et al. (2018) revealed that they saw participation as an opportunity to provide an alternate curriculum (as opposed to that offered in public schools) and a religious learning environment to choice students. These options were not included in the surveys of Stuit and Doan (2013) or Austin (2015). Ultimately, each of these justifications for participation makes sense, as they point to participation as a way for private schools to expand their missions and teachings to a larger group of students. Doing so not only allows the schools greater reach, but also more financial resources. Still, not all private schools participate, and thus it is important to examine why this is the case.

Reasons for Non-participation

In order to fully understand the supply side of school choice, it is imperative to explore reasons for non-participation in addition to the reasons for participation on the part of private schools. Interestingly, when surveyed, administrators from non-participating schools have used reasoning that is markedly different from that of administrators in participating schools to justify their decisions to not participate. Some have argued that the primary difference between participating and non-participating schools is that the former see the benefits of participation as

outweighing the costs, whereas the latter see the costs of participation as outweighing the benefits (Egalite et al. 2018).

One of the primary costs of participation identified by non-participating schools is a reduction in school autonomy. Private schools largely operate outside of the normal rules and regulations that govern public schools and their curriculum; however, if they decide to participate in a choice program, they stand to lose at least some of their valued independence. One mechanism through which autonomy can be reduced is through regulations, which are consistently found to deter participation. Stuit and Doan (2013) found that an unwillingness to comply with regulations was one of the top three reasons given to explain non-participation. Similarly, Egalite et al. (2018) found that a fear of regulations associated with participation was identified as a "major concern" by the largest percentage of non-participating North Carolina schools. Finally, Kisida, Wolf, and Rhinesmith (2015) found that a fear of regulations was the most common concern of non-participating private schools in Florida, Indiana, and Louisiana.

Though she did not find that regulations amongst the top fears of non-participating schools in her study, Austin (2015) did find that concerns about autonomy were significant in Indiana schools. Specifically, Austin (2015) found that the top two reasons cited as the "single most important reason" for not participating in the Indiana Choice Program were (1) a desire to remain free to provide a religious education and express religious beliefs and (2) a desire to maintain the school's autonomy from the government. Ultimately, these concerns and the fear of regulations by non-participating schools indicate that highly regulated and restrictive programs may see limited participation. Still, regulations are necessary to ensure that participating schools are fulfilling their obligations and providing a quality education, leading Stuit and Doan (2013)

to recommend that policymakers should "seek the bare minimum [level of regulation]" that allows them to say, "this program is in the public interest" (5).

Though regulations, generally, are a deterrent to participation, scholars have found that some are seen as more prohibitive than others. Non-participating schools appear to be particularly concerned with regulations that require open enrollment policies, those that allow students to opt-out of religious instruction, and those that require the use of state curriculums or mandate participation in state standardized testing (Stuit and Doan 2013; Austin 2015). Furthermore, in an experimental study marketing hypothetical choice programs with varying regulations, DeAngelis, Burke, and Wolf (2019) found that open enrollment policies and testing requirements significantly deterred participation.

It is possible that schools oppose regulations that require open enrollment and standardized testing because such requirements could alter the school's identity and standards, both of which are also concerns of non-participating schools (Stuit and Doan 2013; Austin 2015; Kisida, Wolf, and Rhinesmith; Egalite et al. 2018). For example, if a religious school was required to adopt an open enrollment policy, it might alter the student population such that many students no longer subscribe to the schools' stated religious affiliation, thereby altering the school's identity. Alternatively, if a school that advertised as a top-tier educational institution was required to accept all students, regardless of academic ability, it might lead to lowered academic standards, which is yet another concern voiced by non-participating school leaders. Finally, by requiring that participating schools administer standardized tests, choice programs may lead administrators and teachers to feel obligated to use a curriculum like that used by the state, rather than their usual curriculum.

A final important concern of non-participating schools is the level of demand generated by the program. Stuit and Doan (2013) found that the "single most important reason for not participating" listed by school administrators was "not enough voucher-eligible families" (24). Many school choice programs limit the availability of vouchers to students meeting certain requirements, often income related. Though the intent behind limiting vouchers to low-income students or those with special needs is to provide more equitable access to education, some suggest that doing so may limit educational options. This finding, as well as the findings regarding regulations for schools, indicate that policy design can significantly impact the supply of participating private schools.

Gap in the Literature

At present, we have a broad understanding of the differences between participating and non-participating schools. Overall, past studies indicate that participating schools are more likely to have a religious affiliation than non-participating schools (Stuit and Doan 2013; Austin 2015; Egalite et al. 2018). Furthermore, Catholic schools have been shown to participate at "nearly universal rates" (Austin 2015, 376). Studies have also shown that participating schools are larger than their non-participating counterparts (Stuit and Doan 2013; Austin 2015). Finally, research has shown that schools that participate are more likely to have lower tuition rates than non-participating schools, leading Sude, DeAngelis and Wolf (2018) and DeAngelis and Hoarty (2018) to conclude that participating schools are of "lower quality" than those who refrain from participation.

The current literature also provides descriptive data showing the important factors considered by each group when they make participation decisions. Participating schools appear to be driven by desires to help disadvantaged students in their own communities, to help their

own students who would qualify for a voucher, and to provide an alternate learning environment for students. Additionally, schools consider their own finances and often see participation as a way to boost revenue and fill empty seats in the classroom (Stuit and Doan 2013; Austin 2015; Kisida, Wolf, and Rhinesmith 2015; Egalite et al. 2018). Participating schools appear to place a high value on the potential to expand their mission and generate new financial resources made possible by choice programs.

Despite the benefits that participation could bring to private schools if they decided to participate in a choice program, many schools still abstain from participation. Survey data from private school administrators has revealed that non-participating schools fear that participation will limit their autonomy. One mechanism through which this can occur is regulation, which has been shown to negatively impact the likelihood of participation. Non-participating schools are particularly deterred by regulations requiring open enrollment, which limits discretion over admissions; those requiring schools participate in standardized testing, which can limit the school's discretion over curriculum decisions; and those that require schools to allow students to opt-out of religious instruction.

Though scholars have made great headway in exploring the supply side of school choice, there is still more to learn. In this dissertation, I will add expand the current understanding of the supply side of school choice in two important ways. First, I will use a large-n study with school and county-level controls, which will allow me to examine how different factors such as religious affiliation, location, and school size impact the likelihood of participation while controlling for the other factors. This will allow me to compare the effect size for these different variables that have been shown to be important in past studies. Thus far, the supply-side studies

have used survey data and primarily[4] provide descriptive statistics on reported reasons for participation. This approach provides a good deal of insightful information; however, it prevents scholars from being able to test the impact of multiple predictors at the same time. Because past studies have been largely descriptive in nature, scholars have not yet modeled participation decisions using a comprehensive set of predictors.

Second, and perhaps more importantly, I will examine a new factor that may influence the likelihood of participation – race. In the past school administrators voiced concern about the impact of participation on their school's "character or identity", a broad concern (Austin 2015; Kisida, Wolf, and Rhinesmith 2015). Private school identities could be formed around religion, special programmatic focuses (ex. Montessori schools, all girl schools, international schools), and academic excellence, to name a few. It is also possible, however, that private school identities may also be formed around the school's racial compositions. Understanding that private schools have long contributed to overall levels of school segregation (Clotfelter 2004), and that race is an especially salient factor in other school choice decisions, it is important to see if race also plays an important role in the supply of private schools in school choice programs. In the next section of this chapter, I will elaborate more on the large role that race plays in other school choice decisions and how choice contributes to segregation.

School Choice and School Segregation

Prior to *Brown v. Board of Education (1954)*, segregation in American schools was legal and often mandated. White students and Black students attended separate schools across the country, preventing them from learning and growing together. In their ruling for *Brown* (1954),

[4] Stuit and Doan (2013) do present data with some controls, for example examining the impact of regulations on participation while controlling for school religious affiliation; however, this is only a minor part of their study. In their primary models, where they test the impact of regulatory burden on participation, they include state-level controls for program differences, but not school level controls.

the United States Supreme Court's (USSC) ruled that "separate educational facilities [we]re inherently unequal"[5]. The ruling was justified based on new knowledge that segregation in schools could have detrimental psychological effects on Black children, thereby violating the equal protection clause of the 14th amendment.

Despite the USSC's good intentions, and their acceptance of the negatives of segregation as presented to them by social scientists, the process of integration in American schools has been a long and slow one. Initially, *Brown* did not carry the force needed to move states to action, and indeed many states stalled and opposed the ruling. By 1968, the percentages of Black students in 90-100% minority schools finally began to drop significantly throughout the United States (excluding the Northeast, where it was on the rise) (Clotfelter 2004; Orfield and Frankenberg 2014; Reardon and Owens 2014). These trends peaked in the 1980s, after which trends of Black student isolation increased across the nation (Orfield and Frankenberg 2014).

In part, the resegregation of American schools has occurred due to a disinvestment in integration as a major policy goal. This disinvestment can clearly be seen in the numerous USSC rulings that weaken the key integration rulings[6] that helped make the promise of *Brown* (1954) a reality. For example, in *Milliken v. Bradley* (1974) the Court effectively ended desegregation across school district lines (inter-district desegregation plans), arguing that if school district

[5] Brown v. Board of Education of Topeka, 347 U.S. 483 (1954).

[6] Rulings that strengthened *Brown* include *Brown v. Board of Education of Topeka (2)* (1955), which required school districts to "make a prompt and reasonable start toward full compliance" (use "all deliberate speed") with the *Brown* (1954) ruling and providing for a condition of court review of plans "to effectuate a transition to a racially nondiscriminatory school system"; *Green v. County School Board of New Kent County* (1968), which allowed the courts to require school boards to "formulate a new plan" when their current plans were not disbanding dual school systems (in this case, freedom of choice plans were deemed unacceptable); *Alexander v. Holmes County Board of Education* (1969), which overturned the "with all deliberate speed" standard and instead ordered all districts to "terminate dual school systems at once and to operate now and hereafter only unitary [racially balanced] schools"; and finally, *Swann v. Charlotte-Mecklenburg Board of Education* (1971) which allowed for the use of bussing to achieve unitary schools in areas where school segregation resulted from neighborhood segregation. Coupled together, these cases had a profound impact on integration. In 1968, 78% of Black students still attended 90% majority minority schools; however, by 1972, that percentage dropped to 25% (Clotfelter 2004).

boundaries were not drawn with the intent of creating segregated school systems, multi-district desegregation plans were not necessary. The USSC retreated from its proactive interest in integration yet again in *Board of Education of Oklahoma City Public Schools v. Dowell* (1991), where it ruled that once a school district had reached unitary status, it could be freed from a mandatory desegregation order. Justice Marshall, dissenting, noted that the majority's ruling did not align with the court's views in *Brown.* Finally, another significant step back came with *Parents Involved in Community Schools v. Seattle School District No. 1* (2007), where the USSC ruled that using racial classifications to assign students to schools, even if done in the interest of integration and achieving racially balanced schools, was unconstitutional in a school that had never been legally segregated or had been declared unitary.

While the USSC's retreat from the goals set forth in *Brown* (1954) has surely contributed to resegregation, the Court is not solely to blame. Another important factor that has encouraged resegregation is school choice. While not all forms of school choice increase segregation levels[7], overall, the growth in the school choice movement and an increased reliance on the school choice marketplace has also been shown to increase both racial (Saporito 2003; Bifulco and Ladd 2006a; Bifulco, Ladd, and Ross 2008; Mickelson, Bottia, and Southworth 2008; Frankenberg, Kotok, Schafft, and Mann 2017; Wilson and Bridge 2019; Shaffer and Dincher 2020) and socioeconomic (Saporito 2003; Bifulco, Ladd, and Ross 2008; Mickelson, Bottia, and Southworth 2008; Marcotte and Dalane 2019) segregation in American schools. Many choice advocates propose that choice can reduce inequalities and promote integration; however, research has shown that this outcome has yet to be realized.

[7] Magnet schools, which expressly seek to integrate, are often seen as a model for non-segregating school choice (Frankenberg et al. 2019).

Wilson and Bridge (2019) conducted an expansive literature review of school choice articles from across the globe and found that, even at the international level, school choice was associated with both racial and socioeconomic segregation. These findings strongly suggest that when choices are made available, parents will often use the opportunity to send their children to schools with students who look like them and come from families with similar economic backgrounds. Interestingly, though the results of choice programs are often similar, Wilson and Bridge (2019) note that the causal mechanisms are often contextual, and thus they recommend that any policy solutions consider the specific dynamics of a system of interest. In the sections to follow, I will summarize the findings on the impact of choice on segregation and expand on how this dissertation will contribute to this literature.

Charter Schools

Many scholars that have examined the impact of school choice programs on segregation have focused on charter schools as their key programs of interest (Bifulco and Ladd 2006a; Frankenberg et al. 2017; Kotok et al. 2017; Marcotte and Dalane 2019). This interest in charter schools may relate to the relative newness of the schools - the first charter school was created in 1991 in Minnesota (De Luca and Wood 2016). Alternatively, a strong interest in the charter movement could relate to its size, which has grown dramatically over time. Starting with a single charter school in a single state, the movement, as of 2016, spanned 42 states and Washington, DC (De Luca and Wood 2016). With charter schools becoming such a widespread phenomenon, it is important that policy makers understand the impact of these new educational institutions. Unfortunately, while the schools offer a promise of innovation and opportunity, they have been shown to negatively impact student achievement (Bifulco and Ladd 2006b) and segregation (Bifulco and Ladd 2006a; Frankenberg et al. 2017; Marcotte and Dalane 2019).

In their study of North Carolina students, Bifulco and Ladd (2006b) found that students in public charter schools made smaller achievement gains than their peers in public school, leading them to conclude that the students who chose charters were left worse off than they would have been if they stayed in their assigned public school. In a separate study utilizing the same data set, Bifulco and Ladd (2006a) found evidence that, in addition to the lower achievement, charters were more segregated than their traditional public counterparts. Perhaps most concerning, however, was their finding that charters had a larger negative effect on Black student achievement than they had on White student achievement, leading to a widening achievement gap between the two groups.

Bifulco and Ladd's (2006ab) findings are not unusual. Frankenberg et al. (2017), in a study of Pennsylvania charter schools, found that when Black and Latino students transferred from traditional public schools (TPS) to charters, the students found themselves in more racially isolated settings "than the already segregated TPS they left" (13). Additionally, they found that White students were most likely to transfer schools that were at least 60% White, while Black students were most likely to transfer to schools that were between 40-60% Black. Frankenberg et al. (2017) note that this is especially troubling given the existing segregation in the public school system and argue that there is a need for improved policy designs (such as the use of weighted lotteries) that could help mitigate the segregating effects of unfettered choice.

The findings of Kotok et al. (2017) reinforce the those of Frankenberg et al. (2017). Kotok et al. (2017) studied the impact of transfers to brick and mortar and virtual charter schools on school segregation levels, finding that "charter schools actually limit equity by segregating students by race and poverty" (435). Moreover, they found that Black and Hispanic students were especially likely to experience increased socioeconomic segregation when they transferred

to charter schools. Interestingly, transfers to cyber charters, rather than brick and mortar charters, were shown to have student demographics that largely reflected those of the state. One potential reason for this is that students that attend the same cyber school do not necessarily ever interact, and thus motivations for choice may be quite different for parents choosing virtual schools.

In addition to these single-state studies, Marcotte and Dalane (2019) examined the effects of charter schools on socioeconomic segregation across the urban United States[8]. Using a dissimilarity index that measured the concentration of students who were eligible for free lunches within a single school to the expected concentration based on school district characteristics as a measure of socioeconomic segregation, Marcotte and Dalane (2019) found that socioeconomic segregation increased across the country between 1998 and 2015, and that charter school enrollments contributed to the increase.

Studies of charter schools and segregation clearly show that students who choose charters often find themselves in more segregated settings than those from which they came (Bifulco and Ladd 2006a; Frankenberg et al. 2017; Kotok et al. 2017). While this finding is discouraging, scholars have provided some room for hope. Some scholars have proposed that if charter programs (or even individual schools) were designed with integration as an explicit goal, the balance might change and the potential for charters to promote integration could be realized (Kotok et al. 2017).

Private Schools

While there is a relatively large and growing literature on the effects of choice on segregation, the more specialized literature on the effects of private school choice programs on segregation in private schools is less extensive. Instead, scholars are often more interested in the

[8] They exclude all counties with less than 25,000 residents from their data set, as well as Alaska and Hawaii.

impact of such programs on student achievement. This line of research is indeed important, as it is often used to determine whether tax dollars spent on private school scholarships are a good investment, but it also important to look at the impact of these programs on segregation, especially in the South where public support helped create a White, private school system (Hafter and Hoffman 1973).

Historically, private schools have been much "whiter" than their public counterparts (Clotfelter 2004; Fairlie 2006). While some of the oldest private schools in the nation, Catholic schools, were created to provide an alternate religious learning environment (Omand 2004); many private schools in the United States were created as White havens following desegregation (Clotfelter 2004; Frankenberg et al. 2017; Bagley 2018). These schools have been called "segregation academies" based on their history, and many still exist today. Today, there are many different types of private schools, and though some are integrated, overall, the sector remains segregated. In a study of resegregation, Clotfelter (2004) found that "segregation in schools would have been less severe[9] if private schools had not existed" (122).

Private school choice programs have the potential to bring integration into a historically segregated education sector; however, very little research has been done on the topic. In theory, private schools have always been "choice schools" as parents with the means and will have always been able to choose them for their children. This explains, in large part, why private schools have been and remain segregated. On the one hand, research has found that White parents often choose private schools when their public options are "too diverse" (Lankford and Wyckoff 2006). The effect of this segregating choice is compounded by the reality that White

[9] It is important to note that Clotfelter (2004) is not concluding that private schools are the only factor that limit interracial contact in schools, but instead are one of many. In his book he also finds that interdistrict, intradistrict, and within-school segregation all limit interracial contact in American public schools.

parents are more likely to have the financial means to choose private schools for their children than Black or Latino parents (Lankford and Wyckoff 2006). Private school choice programs, both vouchers and tax credit scholarships, have the potential to remove, or reduce the prevalence of, the second mechanism through which private schools remain segregated. By offering financial assistance to low-income students, these programs can help make private school attendance less[10] cost prohibitive.

Gap in the Literature

Though the impact of private school choice programs on segregation in private schools has not been analyzed often, there are a few studies that provide preliminary evidence on the topic. Studies of voucher programs in Milwaukee, Cleveland, and Washington DC have shown that participating private schools are less segregated than nearby public schools; however, these studies do not explore how participation impacts segregation levels (Forster 2006a; Forster 2006b; Green and Winters 2007). It is possible that participating private schools are diverse prior to participation rather than because of participation.

Egalite, Mills, and Wolf (2017) investigate the Louisiana Scholarship Program (LSP), focusing on the impact of a student's choice on both the school they leave (sending school) and the school they choose (receiving school)[11]. They find that transfers lead to marginal increases in racial stratification at the "receiving" private schools, whereas they reduce stratification in the "sending" public schools. More specifically, they find that 82% of transfers reduced stratification in the public, sending, school while 55% of transfers increased stratification in the private,

[10] Vouchers and scholarships often do not cover the full cost of private school attendance and thus many families may still not be able to afford private schooling.

[11] For every transfer, they look at whether or not the student leaving brings the sending school's demographics closer to that of the core-based statistical area (CBSA), and whether or not the student's transfer brings the receiving school's demographics closer to that of the core-based statistical area (CBSA). If a transfer makes leaves a school demographically closer to what would be expected based on the CBSA demographics, it is labeled as stratification-reducing, if it does not, it is labeled as stratification-increasing transfers.

receiving, school. The impact of transfers varied by race. For White students, most transfers increased stratification – 76% of the time in sending schools and 72% of the time in receiving schools. Black student transfers, on the other hand, reduced stratification in sending schools for the most part (92%), but increased stratification in receiving schools most of the time (55%). Finally, the majority of Hispanic student transfers reduced segregation in both sending and receiving schools (Egalite, Mills, and Wolf 2017).

The authors note that "the LSP appears to have been designed in ways that all but assure that its effect on traditional public schools will be to better integrate them racially" (Egalite, Mills, and Wolf 2017, 289); however, the use of the term "integrate" may be a bit misleading. The phrase *integrate* is typically used to refer to an active mixing together or incorporating (Merriam-Webster *n.d.*), as in replacing group members that are overrepresented with new members from underrepresented groups. In Louisiana, however, public schools are becoming less racially stratified as students from overrepresented groups leave them[12]. Later, Egalite, Mills, and Wolf (2017) conclude, more accurately, that there have been "large positive reductions in racial stratification in public schools…and small increases in racial stratification in private schools" (290).

Egalite, Mills, and Wolf's (2017) findings about increasing private school segregation due to the LSP point to the need for more research on the topic. Private schools, though they currently only educate about 10% of American children (NCES 2021), stand to greatly expand their rosters as more states opt to support private school choice. Furthermore, because private schools accepting voucher or scholarship students are utilizing public funds, it is important to

[12] For example, if a school had 99 Black students and 1 White student, and 9 Black students left, and the ratio of 91:1 moved the school closer to what would be expected based on the CBSA, Egalite, Mills, and Wolf (2017) would label this as the school becoming "more integrated".

carefully evaluate them. This dissertation will both contribute to the school choice and segregation literature and provide important information to policy makers about the impacts of private school choice on school segregation. By presenting information that details the impact of private school choice on private school segregation levels, this dissertation will help create a more thorough understanding of how choice programs impact segregation levels, not only in public and public charter schools, but in private schools that receive public funds as well.

Conclusion

The studies cited in this chapter will be used to inform the empirical work that follows. In the first empirical study, I will utilize the supply side of school choice literature to inform a model of private school participation. By taking variables, such as school size and religious affiliation, that have been shown to be important in past studies and including them alongside new variables, I will be able to see whether my key variables of interest (measures of student demographics) significantly impact the likelihood participation, even when controlling for other relevant factors. This investigation will utilize different methods than the majority of the supply-side of choice literature. Ultimately, the work will help expand our knowledge of the factors that influence the supply of private schools in private school choice programs, while also adding to our understanding of the relationship between race and choice.

In the second, and final, empirical study, I will explore the impact of a private school choice program on private school segregation. This type of study is warranted because in the one other study that has attempted to address the question, choice was shown to increase private school segregation levels. This is especially troubling given that we already know that private schools are more segregated than their public counterparts.

As private school choice programs become more widespread it will be critical to understand whether the schools that participate in them are becoming more or less segregated.

Chapter 3: Theory and Hypotheses

This dissertation centers around three key questions. First, do private school racial demographics impact the likelihood of participation in a school choice program? Second, and relatedly, do the racial identities of potential "choice" students impact the likelihood of participation in a school choice program? And finally, does participation in a private school choice program impact levels of private school segregation? These three questions focus on private school behaviors within a private school choice program and investigate the precursors of school participation decisions as well as the ultimate impact of participation. Overall, the three questions, together, represent an inquiry into the relationship between race and private school choice decisions.

To make predictions about the behavior of private schools and the impacts of participation, I will begin by discussing the decision-making structure of private schools. I will argue that private school administrators are the key decision makers in the participation decision-making process; however, I also note that they likely respond to predictions about how parents will respond to their decisions. Schools must consider the reactions of current parents when considering significant changes, as parents are the primary customers of private schools. Once schools decide to participate in a choice program, I argue that the focus should shift to parents as the primary decision-makers for choice students. Whereas school administrators influence the supply of schools, choosing parents will influence the demand for particular schools. Predictions about parental choices, then, can help inform hypotheses about the impact of participation on

choice schools. Ultimately, this discussion will lead to several key hypotheses that will be tested in subsequent chapters.

Private School Decision Making

Private schools differ from their public counterparts in numerous ways. They are typically less diverse (Ee, Orfield, and Teitell 2018), have smaller class sizes, and experience less violence than their public counterparts (Wang, Rathbun, and Musu 2019). Furthermore, private schools often have more rigorous curriculums; however, their teachers are paid less and have lower levels of education than public school teachers, on average (Taie and Goldring 2020). The funding sources for each type of school differs as well, with public schools depending on governmental support and private schools depending on tuition payments from parents and occasional grants or donations.

There is also a significant difference in the perceptions of control over school decisions amongst private and public school principals, with private school principals reporting higher levels of autonomy over key school decisions. For example, according to Merlin (2021), the percentage of principals who reported having a great deal of influence over decisions about curriculum, the content of professional development, student performance standards, and discipline policies was higher amongst private school principals than it was amongst public school principals. The difference in perceived influence was largest for decisions about curriculum. Approximately 69% of private school principals reported that they had a major influence over establishing curriculums while only 39% of public school principals did, a difference of 30 percentage points.

Because private school principals wield a great deal of control over their schools, scholars studying the supply side of school choice have conceptualized administrators as the key

decision-makers tasked with determining whether a school will participate in a choice program or not (Stuit and Doan 2013; DeAngelis, Burke, and Wolf 2019). Despite this power, though, private school principals are still beholden to parents because they largely rely on tuition payments to keep their schools running (NCES 1997). When making a decision that could introduce a new and diverse group of students to the school, principals will likely consider how well current parents and students, the school's primary stakeholders, would react. If they predict that current parents would not respond favorably to participation and the potential changes associated with it, then they may be reluctant to opt-in to a choice program. This type of behavior is influenced by the competitive nature of school choice marketplaces, which encourage choice schools to compete for students and the money (public or private) they bring to the school in an environment where "every kid is money" (Jabbar 2015, 643)[13].

The supply side of choice literature provides a broad overview of the important types of considerations that influence participation decisions. These scholars have conceptualized private school administrators as rational decisions makers who allow their schools to participate in choice programs if and only if they see participation as one in which the benefits of participation outweigh the costs (Austin 2015; Egalite et al. 2018; DeAngelis and Hoarty 2018; DeAngelis, Burke, and Wolf 2019). Supply-side authors list regulatory burdens as one of the primary costs associated with participation and financial gains as a primary benefit; however, no single study provides a comprehensive overview of the costs and benefits to be weighed in the decision.

[13] Jabbar's (2015) findings are based on interviews with charter school administrators; however, I expect that private schools will have similar concerns over the loss/gain of students associated with choice. Jabbar (2015) finds evidence of schools "cream skimming" and "cropping" in order to bring in students seen as acceptable and push out those that were "not a good fit" for their school. This indicates that administrators are cognizant of how choice students fit within their schools and may base competitive decisions on that knowledge.

By using the survey data presented by the supply side of school choice literature, I was able to categorize the different types of factors considered by administrators during the participation decision-making process. I began by recording survey questions from the instruments used in the four survey-based supply side studies. In total, this gave me 69 items to categorize; 30 of the items were from surveys of participating principals while 39 were from surveys of non-participating principals. Next, I went through each survey item and listed the broader theme to which the item spoke. For example, I labeled "not willing to comply with regulations" a policy concern, while I labeled "concerned it [participation] would lower academic standards" as a school identity concern. Ideally, I would have conducted a factor analysis to confirm that the factors I labeled as "going together" truly did represent aspects of single construct; however, without the original data this was not possible. Moreover, because I am using these themes to inform a theory of private school decision-making, rather than an empirical model, the use of factor analysis is less critical. Ultimately, I was able to group the 69 survey items into 6 broader categories: autonomy, finances, policy context, school context, school identity, and school mission. Each category represents a class of factors that private school administrators have labeled as an "important" to the participation decision. A detailed description of the categories, along with examples, can be found in Table 3.1.

To summarize, past research suggests that private school administrators consider several types of factors when making participation decisions. One important factor that is considered is the impact of participation on autonomy. Private schools, their teachers, and their administrators are significantly more autonomous than their public counterparts; however, were they to participate in a choice program they might lose some of that autonomy. For example, if participating schools are required to use state standardized tests, they may feel pressured to alter

their curriculums. Administrators often also consider their school's finances as an important factor in the participation decision. If a school is struggling, has many open seats, or in an extreme case, is on the brink of closure, they may place a high value on the financial incentive of participation. A third important consideration is the policy context. In addition to thinking about how the program might impact their autonomy, schools consider specific aspects of the policy context such as the level of demand that has been created and what the program requires of them. Alongside considerations of the policy context and their environments, administrators also consider contextual details about their own schools, such as whether they would be eligible to participate or have open seats for choice students. Administrators also consider the potential impact of participation on their school's identity. Participation, which often brings socioeconomic, racial, and academic diversity to private schools could alter the school's identity and thus this must also be considered. Finally, administrators consider their school's missions, and whether participation aligns with that mission. Oftentimes, this is cited as a primary reason for participation. Once an administrator has considered each of these factors, likely accepting input from key stakeholders in the process, he or she can then make the decision that they think would be best for their school moving forward.

TABLE 3.1. Important considerations from private school participation decisions.

Factor	Number of Survey Items	Description	Example
Autonomy	7	Concerns about the impact of participation on the school's "autonomy", "independence", or "freedom" or control.	"Desire to maintain freedom to teach religious beliefs" (Stuit and Doan 2013; Austin 2015). "Effect on school's independence" (Egalite et al. 2018).
Finances	16	Financial considerations about the impact of participation. Participation was largely seen as a financial benefit.	"Prevent the school from being closed or consolidated" (Stuit and Doan 2013; Austin 2015). "Provide additional revenue for the school" (Kisida, Wolf, and Rhinesmith 2015, Egalite et al. 2018).
Policy Context	17	Concerns about policy requirements or the policy environment.	"Not willing to comply with regulations" (Stuit and Doan 2013; Austin 2015). "Concerns about testing requirements" (Kisida, Wolf and Rhinesmith 2015; Egalite et al. 2018).
School Context	6	Concerns about the school's ability to accept new students or meet other requirements for participation.	"Not enough capacity for new students" (Stuit and Doan 2013; Austin 2015; Kisida, Wolf, and Rhinesmith). "Not eligible because of accreditation status" (Stuit and Doan 2013).
School Identity	9	Concerns about how participation would impact the school's culture, standards, or identity.	"Concern it would lower academic standards" (Stuit and Doan 2013; Austin 2015). "Effect of participation on school's character or identity" (Egalite et al. 2018).
School Mission	14	Considerations of the alignment between participation and the school's mission or goals.	"Help needy children in the community" (Stuit and Doan 2013; Austin 2015). "To expose more students to a religious learning environment" (Kisida, Wolf, and Rhinesmith 2015; Egalite et al. 2018).

Catholic schools may be an exception to the general model of private school decision making. Catholic school principals, like public school principals, are less autonomous than other private school principals. According to Baker, Han, and Broughman (1996), Catholic schools are more similar to public schools than other types of private schools. This is likely because Catholic schools are governed by hierarchical diocesan systems and often must answer to their school's pastor, school boards, and the diocese (Polka et al. 2016). Because Catholic principals have many "masters", they may have less individual control over school decisions. When decisions are made at higher levels, such as by regional dioceses, individual school considerations may become less important parts of the participation decision. This being the case, Catholic schools may serve as a unique class of private school and may not behave in the same ways as other private schools.

The Role of Student Demographics in Participation Decisions

In the previous section, I discussed several factors that private school administrators consider when making participation decisions. Next, I will argue that the effect of participation on school racial demographics may be an additional consideration. Private school choice programs often are described as ones that will offer increased educational freedom for low income and minority students. In theory, then, this would suggest that participation in a private school choice program would present schools with the opportunity for increased racial and socioeconomic diversity. The increased diversity would likely be welcomed by some, but not all, private schools.

Racially homogenous private schools may be particularly reluctant to increase diversity in their classrooms. Administrators at these schools may consider increased diversity as a threat to their school's identity. Though school racial identities have not been explicitly discussed in

the supply side literature, surveys have shown that administrators are concerned about the impact of participation on their schools' identities. These administrators often justify decisions not to participate by citing concerns that doing so would change their schools' identities by, for example, lowering academic standards or creating discipline problems (Stuit and Doan 2013; Austin 2015; Kisida, Wolf, and Rhinesmith 2015; Egalite et al. 2018). School racial identities could be equally important, causing exclusively or majority white schools to refrain from participation out of fear that participation might change their identities. This may be especially true for historic segregation academies, which were founded as (and grew popular because of) their identities as exclusively white schools. The potential for participation to change a school's identity may be a doubly important concern because such changes could negatively affect school finances.

Private schools must compete for students. Choice proponents often assume, and argue, that schools will seek to offer academic excellence as the result of competition; however, this is not always the case. In fact, Chubb and Moe (1990) reveal that private schools simply need to "find their niche" (55). They go on to state that private schools can target various non-academic value dimensions such as "discipline, religion, theories of learning, the socioeconomic and ethnic make-up of the student body, school or class size, athletics and other extracurricular activities, perspectives on personal growth, sensitivity to particular cultures and languages" and any another educational concerns parent may have (Chubb and Moe 1990, 55). Past research shows that while parents, and White parents in particular, value academic rigor and safety in schools, they also value "Whiteness" (Saporito and Lareau 1999; Hess and Leal 2001; Saporito, Yancey, and Louis 2001; Billingham and Hunt 2016). Parental preferences then influence their decisions about which school is the best fit for their child(ren). School administrators will likely consider

how parents will respond to a change in their school's identity because a negative response on the part of parents could negatively impact the school's finances.

White Flight

If a school's racial identity were to change because of participation in a choice program, parents might respond by removing their children from the school. The white flight hypothesis predicts that White families leave integrating schools as the percentage of minority students or residents rises. The phenomenon was largely recognized following the desegregation of public schools, when White parents moved their children out of public schools an into private, White, schools. Since that time, scholars have found evidence of white flight from schools (Coleman 1975; Clotfelter 1976, 2001, 2004; Hess and Leal 2001; Fairlie and Resch 2002; Betts and Fairlie 2003; Renzulli and Evans 2005; Fiel 2013; Orfield 2013; Bagley 2018; Zhang and Ruther 2021) and neighborhoods (Frey 1979; South and Crowder 1998; Crowder 2000; Holme 2002; Crowder and South 2008) with high concentrations of minority students/residents.

Scholars generally agree that there is strong evidence in support of the white flight hypothesis; however, there is some disagreement over the motivations of such flight. In the context of education, some scholars believe that poor performing public schools motivate parents to leave, and that, in the presence of a school choice marketplace, parents will select schools based on academic quality, thus promoting academic competition, and thereby increasing educational quality (Chubb and Moe 1990). Conversely, other scholars theorize that parents will leave the public system based on personal preferences and will then select schools based on their preferences such as those pertaining to religion and race (Wrinkle, Steward, and Polinard 1999; Saporito, Yancey, and Lewis 2001; Billingham and Hunt 2016).

Wrinkle, Steward, and Polinard (1999) test the two competing perspectives in Texas and find that parents who leave public schools are primarily motivated by their religious and racial preferences, rather than by the academic quality of schools. They note that parents appear to be highly motivated by their preferences for religious education, religious homogeneity, and a desire to avoid public schools in districts with high percentages of Black students. Similarly, Saporito, Yancey, and Louis (2001) found that parents who left public schools for private ones appeared to be doing so "primarily as a way of physically and socially distancing themselves from people who they perceive to be of lower social status (i.e., minorities and the poor)" (268). white flight is not a new phenomenon and can occur in the absence of choice programs (for example through residential mobility); however, scholars fear that choice programs may make flight easier by lowering the cost and increasing the possible school options (Hess and Leal 2001). Typically, white flight is seen as a mechanism through which increases in private school enrollment occur; however, school choice programs could change this relationship. If private schools that participate in choice programs become increasingly diverse, it is possible that White parents might respond by removing their children and selecting a new, whiter private (or public) school.

White Avoidance

The white avoidance hypothesis, though not as frequently or explicitly explored in the literature, predicts that "other things being equal, Whites prefer schools and classrooms that are all-White or predominately White" (Clotfelter 2004, 92). While the white flight hypothesis makes predictions about when students (or residents) will leave a school (or neighborhood), the white avoidance hypothesis can be used to predict where they will go. Additionally, because it reveals preferences, the white avoidance hypothesis can help explain white flight. Evidence of

white avoidance has, like evidence of white flight, been found at the school (Saporito and Lareau 1999; Clotfelter 2004; Ledwith and Clark 2007; Billingham and Hunt 2016) and neighborhood (South and Crowder 1998; Crowder and South 2008; Andersen 2016) levels.

The white avoidance hypothesis can be used to predict which schools White parents will select for their children. Saporito and Lareau (1999) conceptualize private school enrollment decisions as occurring in two steps. In the first, parents look at social characteristics and exclude schools that do not meet their desired criteria (race is important). Then, only as a second step, do they begin to look at other characteristics like school quality. Their findings, that White parents do not select schools that are more than 90% Black regardless of quality, support this theory.

It is often hard to disentangle school performance from school demographics, as performance can often be a function of the resources that students bring with them; however, Billingham and Hunt (2016) are able to do so in their experimental study of parental school enrollment decisions. Parents were asked if they would likely enroll their children at hypothetical schools based on a description of the school's facility quality, safety precautions, test scores, and student demographics. Ultimately, the results showed that the percentage of Black students enrolled in the hypothetical school negatively impacted the likelihood of parents reporting that they would send their child to the school, even when controlling for the other factors. While parents did consider things like test scores and whether a school had been renovated recently, school racial composition had an independent and significant effect on the likelihood that they would send their children to the hypothetical school.

Ultimately, the studies discussed in this section reveal that parents, especially White parents, consider student demographics an important factor when selecting new schools for their children. School administrators of racially homogenous private schools may consider how

participation might impact their school's racial identity. In doing so, they can contemplate whether the potential increase in diversity associated with participation would prompt white flight and cause the school to lose students, or trigger white avoidance and prevent new, White, parents from selecting the school.

Hypotheses: Private School Participation

Past research has shown that private school administrators consider many different factors when deciding whether to allow their schools to participate in private school choice programs. These important considerations include the impact of participation on the school's autonomy, finances, and identity; specific details of the policy and school contexts; and whether participation would align with the school's mission. Though not explicitly considered in the past literature, I argue that administrators may also consider the impact of participation on their schools' racial demographics, as they may consider those demographics a part of their schools' identities. Furthermore, they may also consider the potential financial impacts of a changed school identity when making important participation decisions.

Based on their historic functions as White havens during the time of desegregation, and their continued exclusivity, it is reasonable to assume that many private schools still prefer to remain exclusively or primarily White institutions. There could be two potential reasons for this. First, past findings of white flight (Coleman 1975; Clotfelter 1976, 2001, 2004; Hess and Leal 2001; Fairlie and Resch 2002; Betts and Fairlie 2003; Renzulli and Evans 2005; Fiel 2013; Orfield 2013; Bagley 2018; Zhang and Ruther 2021) would suggest that if primarily White private schools become "too" diverse, White parents may respond by exiting the schools. Alternatively, the white avoidance literature (Saporito and Lareau 1999; Clotfelter 2004; Ledwith and Clark 2007) would suggest that diverse private schools may also have trouble

attracting new, White students. Private schools can be expected to be responsive to these parental preferences because they are, at their very core, businesses who depend on their customers (parents and students) to survive.

If schools are concerned about their ability to maintain current White enrollments by ensuring their student populations remain relatively homogenous, they may be reluctant to participate in choice programs that could bring increased diversity. Conversely, schools that value or seek to increase racial and socioeconomic diversity in their classrooms may see participation as a valuable opportunity. This would be consistent with Austin's (2015) finding that participating private schools saw increased diversity as a "positive change" (375). To determine which schools are most likely to see racial diversity as a threat to their racially homogenous identities, I argue that we should look to the schools' racial demographics at the time of their participation decisions. The current demographics can then be used as a proxy measure for the school's displayed preference for racial diversity. Because private schools are intentional communities, where parents have selected and agreed to pay a fee for service, it can be expected that they are either purposely diverse or segregated. Administrators at diverse schools may not need to fear white flight, as any White parents attending the school have already chosen to do so. Alternatively, administrators in segregated schools may see participation and the potential diversity it could bring as a something that might displease current parents and prompt them to make different choices for their children's schooling. The potential for a loss of current families could serve as a financial threat that would prevent administrators in segregated schools from opting-in to a choice program. This understanding leads to the following hypothesis:

Hypothesis 1: Maintaining White Exclusivity Hypothesis: There will be a negative relationship between the size of a school's White student body population and the school's likelihood of participation, controlling for other factors.

In addition to viewing student demographics as a proxy for a school's preference for diversity, there is another factor that could reveal a school's implied preference for diversity. Following the USSC's ruling in *Brown* and other subsequent decisions that helped spur integration, private schools grew in popularity. These new private schools that opened in the late 1950s through the early 1970s are now commonly referred to as "segregation academies" because of their histories. Early on, segregation academies received state support not only in the form of tuition grants, but also through donations of buildings, textbooks, and teachers from public schools (Champagne 1973; Nevin and Bills 1976). Given their history as exclusively White havens for students seeking to avoid desegregated public schools (Bagley 2018), it may be safe to assume that segregation academies value White exclusivity as well and will be reluctant to participate in a school choice program if they fear it will lead to increased diversity. This leads to the following hypothesis:

Hypothesis 2: Maintaining White Exclusivity in Segregation Academies Hypothesis: Segregation academies will be less likely to participate in private school choice programs than schools that are not segregation academies, controlling for other factors.

Furthermore, private school participation decisions might be impacted by race in a second and related way – by the demographics of potential students. It is possible that private schools may view participation as a greater threat to their White exclusivity when they are located in areas with high concentrations of minority youth. Conversely, if a school has a potential student population that is primarily White, they may not see participation as having the potential to introduce diversity in their schools. This leads to an additional hypothesis:

Hypothesis 3: The Impact of the Potential Student Population Hypothesis: The size of the minority youth (under 18) population in a county will be negatively related to the likelihood of participation, all else equal.

Due to the extensive history of anti-Black racism throughout the United States, it is possible that schools may not respond to the size of the total nonwhite youth population in the same way that they would respond to the size of the Black youth population. Many private schools in the state were explicitly opened as havens for White parents who did not want their children to attend schools with Black students. Furthermore, studies of white flight often find that White parents are particularly responsive to the size of the Black student population at a school (Wrinkle, Stewart, and Polinard 1999; Ledwith and Clark 2007). Therefore, one could predict an alternative version of Hypothesis 3:

Hypothesis 3(a): The Impact of the Potential Student Population Hypothesis: The size of the Black youth (under 18) population in a county will be negatively related to the likelihood of participation, all else equal.

The Impact of Participation on Private School Segregation Levels

Once school participation decisions have been made, schools that have chosen to participate in a private school choice program can begin accepting voucher or scholarship students. In the last section, I argued that schools may consider how participation could impact their school's diversity levels when making participation decisions, with the most racially homogenous White schools preemptively declining to participate in order to maintain their preferred level of racial homogeneity. Next, I will make predictions about the results of participation. When private schools participate in choice programs, there is a potential for, but not a guarantee of, increased diversity. Private schools often have high levels of racial homogeneity, thus when they enter a choice program where a high percentage of beneficiaries are nonwhite, there is a potential to reduce levels of White isolation in the private schools.

According to Wang, Rathbun, and Musu (2019), 69% of private school students were White, 11% were Black, and 6% were Hispanic in 2016. This is a contrast to public school

demographics where only 49% of students are White, 15% are Black, and 26% are Hispanic (Wang, Rathbun, and Musu 2019). Though there is not a comprehensive summary of the demographics of choosing students, individual state reports show that students from minority groups are most likely to use vouchers and tax credit scholarships. For example, in Alabama, 65% of tax credit scholarship recipients in the program's first year were Black (Barth and Quenneville 2016) and in Louisiana, 80% were Black (Egalite, Mills, and Wolf 2017). In Florida, Hispanics made up the largest share of scholarship users (38%) followed by Blacks (29%) (Florida Department of Education 2021). Ultimately, this suggests that choice students will often be more racially diverse than the non-choice students already enrolled in private schools.

Despite the high percentage of nonwhite students receiving school choice vouchers and scholarships, there is no guarantee that private school choice programs will decrease levels of segregation in private schools. If new students were sorted into private schools[14] with the goal of increasing school-level integration, we would likely see decreases in segregation levels. Alternatively, if choice students were randomly sorted into private schools, we might also see decreased segregation. In reality, though, students are sorted into private schools based on their (or their parents') personal preferences, which suggests that choice will reduce segregation in private schools only if the parents of choosing students make non-segregating choices.

Segregating Choices

Past research suggests that when parents make educational choices for their children, often, the resulting impact is increased segregation (Henig 1990; Wrinkle, Steward, and Polinard 1999; Saporito, Yancey, and Lewis 2001; Weiher and Tedin 2002; Clotfelter 2004; Lankford and

[14] One way to do this would be to assign students to schools with integration in mind.

Wyckoff 2006; Billingham and Hunt 2016). This is not to say that parental choices are completely based on racial preferences, as studies have shown that parents also consider academics, school location, and safety to name a few. Still, even when parents have the best intentions, they often forgo their stated value of diversity in the name of the "best school for their child" (Mann and Rogers, nd). Because choice plans value and promote parental choices, it can be expected that demographic changes in participating private schools will be driven primarily by choosing parents.

When White parents choose schools, they typically avoid schools with high concentrations of minority students (Wrinkle, Steward, and Polinard 1999; Saporito, Yancey, and Lewis 2001; Clotfelter 2004; Lankford and Wyckoff 2006; Billingham and Hunt 2016). In the past, White parents have been able to flee from diverse schools by moving or conceding to pay the costs of private schooling; however, not all White parents have the means to bear the costs of choice on their own. These patterns feed into a long-held fear that choice programs will facilitate white flight by allowing lowering the cost of choice for White families. Ultimately, these fears have not been unfounded as many White families have made segregating choices (Lankford and Wyckoff 2001; Bifulco, Ladd, and Ross 2008).

The segregating choices of White parents have been tracked extensively; however, there is less agreement about *why* White parents prefer whiter schools. Some believe that White parents have non-racial preferences that cause them to choose whiter schools. For example, schools with high percentages of White students often have more resources, better teachers, and better academic performance, thus enticing new students (Ayescue et al. 2017; Clotfelter 2004; Ladd 2008; Mordechay and Orfield 2017). It is easy to see why parents would value a high performing school with great teachers and plentiful resources, but studies have shown that these

are not the only things White parents value, and that they do in fact value Whiteness, sometimes above the traditional characteristics of a "good school". Saporito and Lareau (1999) show that White parents prefer "White" schools and will reject schools with high percentages of Black students, even if the school is high performing and resource rich.

It is often hard to get White parents to reveal their racial preferences for schools, but that does not mean they do not have or act on those preferences. In an inventive study that tracked parental school search habits Schneider and Buckley (2002) found that parents spent a great deal of time searching for school demographics when looking at potential schools. After careful analysis, they concluded that "parents do care about academics, but they also care very much about school demographics – something they will not admit to verbally" (Schneider and Buckley 2002, 141). Like Schneider and Buckley (2002), Billingham and Hunt (2016) also used an innovative design that allowed them to measure the impact of racial preferences without having to ask about preference outright, which would likely have been ineffective as responses would be influenced by social desirability bias. Billingham and Hunt's (2016) experimental study showed not only that White parents prefer schools with lower percentages of Black students, but also that the effect was especially strong for White parents with high levels of anti-Black attitudes. This leads them to conclude that race is a salient factor, and one that is independent of school quality, in the school choice decision for White parents.

Though the choices of White parents are often segregating ones, White parents are not the only ones afforded with choice under school choice programs. Therefore, to make predictions about the impact of parental choices on school segregation levels, it is important to also consider the effects of choices made by nonwhite parents. In a study of charter school transfers, Weiher and Tedin (2002) found that Black and Hispanic parents, like White parents, tended to select

charter schools where students of their child[ren]'s races comprised a larger majority than they did in the public school from which they transferred. This pattern leads Weiher and Tedin (2002) to conclude that "race is a powerful predictor of the schools children [will choose to] attend" (91). The findings of Henig (1990) were similar, suggesting that parents of all races seek schools where their children will not be in the racial minority. Other studies of charter school attendance patterns reveal that, Black students, in particular, choose to attend charter schools that are more segregated than the traditional public schools they left (Bifulco and Ladd 2006a; Frankenberg et al. 2017; Marcotte and Dalane 2019).

Hypothesis: Impact of Participation on Private School Segregation

When schools participate in private school choice programs, especially programs where a large percentage of the beneficiaries are nonwhite, they open their doors to potential diversity. If choice students are randomly sorted into participating schools, we could likely expect that they would bring increased diversity to private schools, which have higher percentages of White students than public schools, on average. This type of sorting would support choice proponents view that choice can be used as a mechanism to alleviate segregation caused by such schools; however, past research suggests that when given the choice, parents will choose a school where their child[ren] will not be in the racial minority. If parents are selecting schools where students of their child[ren]'s race are already overrepresented, then it can be expected that private school choice will result in increased levels of segregation in private schools.

Hypothesis 4: The Segregating Choices Hypothesis: Participation in private school choice programs will be associated with increased levels of segregation in the participating private schools.

Conclusions

In this chapter, I have presented theories that can help explain both the participation decisions of private schools and the decisions of "choosing" parents. When a private school choice program is created and implementation begins, private schools must make decisions about whether they will participate and accept scholarship/voucher students, or not. This decision is important as it will influence the size of the choice marketplace. In accordance with the past literature, I have conceptualized private school administrators as the key decision makers for participation decisions.

Administrators take a variety of factors into consideration including the impact of participation on their schools' autonomy and finances, specific policy and school contexts, how participation will impact their schools' identities, and if participation is congruent with their schools' missions. Within the policy context, administrators often consider the regulations associated with the program and whether their school would be able or willing to comply with them. This likely relates to autonomy, but the two appear to be separate concerns based on past survey data. Administrators also consider their schools' unique circumstances, such as whether they have the capacity to accept new students. School missions also appear to be important, with administrators deciding to participate when doing so would help further their schools' missions, to help the needy, for example. Finally, schools consider how participation will impact their finances and their school's identity.

I have argued that the latter two considerations may be connected, and that they may be more complex than past research suggests. Currently, most label participation as a large financial benefit for schools; however, it is possible that under specific circumstances participation could be a detriment. Specifically, if participation causes a school's identity to change, and causes current parents to leave, it could negatively impact the school financially. Participation presents

the possibility of increased racial, socioeconomic, and academic diversity, all of which could result in changes to a school's preferred identity. Of the three, changes to the schools' racial identities may be the most troubling. Studies consistently show that White parents value "Whiteness" in their child[ren]'s schools, a finding that may be especially true for private school parents, who may have selected private schools based on that preference. If school administrators fear that participation would bring increased diversity to their halls, and that current parents would be opposed to this change, they may be reluctant to participate in choice programs.

Interestingly, though choice programs may, on their faces, look like opportunities for increased diversity, I have predicted that increased diversity in practice may be unlikely. Within private school choice programs, administrators may determine which schools are present in the pool of choices for students, but it is parents who ultimately decide which schools their child[ren] will attend. It is this decision that is likely to limit the potential for integration, as studies have shown that parents have strong race-based preferences for schools (Schneider and Buckley 2002; Billingham and Hunt 2016). While this preference is most pronounced for White parents, studies have also found that Black and Hispanic parents also favor schools where their children will not be in the racial minority (Henig 1990; Weiher and Tedin 2002). If parents are selecting schools where their child[ren]'s race is already overrepresented, the likely impact is increased segregation, rather than integration.

Ultimately, these two decision-making processes may seem incongruent, as it would be unlikely for administrators to refrain from participating if they knew that integration was not as likely as it seemed. One important factor that could explain the disconnect is information availability. Administrators make participation decisions prior to seeing scholarship applications. Because of this, they must base their decisions on the demographics of the choice students and

their *predictions* about how the admittance of these students will impact their school. If a racially exclusive White school knows that most choice participants are nonwhite, they may expect that the likely impact of participation will be increased diversity. If they are opposed to that, they may decline to participate. While the literature suggests that parents of all races will make segregating choices, schools may not be aware of these findings. Furthermore, proponents of choice programs often advertise the programs as a solution to inequalities and a tool to increase integration. The information provided to administrators at the time of decision-making then, suggests that diversity is a likely impact of participation. Therefore, it is possible for schools to refuse to participate, in part out of a fear of increased diversity, even if such diversity is an unlikely effect.

Chapter 4: The Case: Alabama

This dissertation uses data from the state of Alabama to answer the three primary research questions. Research focusing on a single state is common within the school choice literature, as choice policies vary widely, thereby creating unique policy conditions. Furthermore, because my primary interest is not in the impact of policy characteristics that vary from state to state, such as regulations, a multi-state analysis is not necessary. Alabama is a particularly important state in which to study the interaction of race and school choice due to its history of racism, segregation, and discrimination. During the Civil Rights Movement, Alabama was home to numerous significant events including the Montgomery Bus Boycott, the march from Selma to Montgomery, and Martin Luther King Junior's letter from a Birmingham Jail, to name a few. However, while brave activists were fighting for racial equality in the state, Alabama students continued to attend schools that were racially segregated, even after the USSC handed down their ruling that separate was inherently unequal in *Brown v. Board of Education* (1954).

After seeing that public schools faced imminent integration following *Brown*, Alabama enacted a tuition grant policy[15] in 1955 that provided White students with the opportunity to leave public schools altogether (Hershkoff and Cohen 1992). Alabama's original tuition grant policy allowed parents who thought that public school attendance would be "detrimental" to their child[ren]'s physical or mental health to select a private school alternative (Hershkoff and Cohen

[15] Six other states including Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Virginia enacted similar policies.

1992, 7). The state then provided tuition payments to the selected private schools on the parents' behalf. A portion of the funding for the program came from the state legislature; however, Alabama Governor George Wallace also solicited donations from the public to help supplement the state's contributions and ensure that alternative schools would be available as the state witnessed the "destruction of their public schools" (Bagley 2018, 106). The tuition grant program helped spur the creation of many exclusively White private schools or "segregation academies" throughout the state, funding tuition for over 11,000 students attending segregation academies in the Black Belt (Bagley 2018).

Tuition supports were not the only benefits afforded to the newly created segregation academies, though. Segregation academies were often allowed to use public buildings as well as teachers and textbooks from public schools (Hafter and Hoffman 1973; Champagne 1973; Nevin and Bills 1976; Hershkoff and Cohen 1992). Non-secular segregation academies also benefitted from church support and enjoyed tax-exempt statuses (Hafter and Hoffman 1973). In some communities, local school systems allowed segregation academies to use their athletic facilities and gymnasiums (Nevin and Bills 1976).

Even with support from the state, local governments, parents, and donors, the quality of segregation academy facilities, and the educational services they provided, were often less than exceptional. After visiting several different segregation academies across the state, Nevin and Bills (1976) noted that "the new schools range from structurally adequate at the top of the line down to places that don't deserve the name school. Most of the new schools are dilapidated, worn, a little dirty, short on supplies and materials, cramped, offering few opportunities for enrichment. They are in short the very sort of places that would enrage taxpayers if offered to

children by the public schools" (52). Despite their shortcomings, segregation academies appealed strongly to White parents who valued the Whiteness of schools above all else.

Ultimately in 1967, Alabama's tuition grant program[16] was deemed unconstitutional in *Lee v. Macon County Board of Education.* In their ruling, the U.S. District Court for the Middle District of Alabama stated that the tuition grant statute was "but another attempt of the State of Alabama to circumvent the principles of *Brown* by helping to promote and finance a private school system for White students not wishing to attend public schools also attended by Negroes"[17]. Noting this, the Court ordered the state to cease the offering of tuition grants and other grants-in-aid to private schools throughout the state.

In 2013, Alabama lawmakers passed the Alabama Accountability Act (AAA), which brought private school choice to the state once again. This law, unlike the one struck down in the 1960s, was motivated by the poor performance of public schools and requirements of the federal government's No Child Left Behind. Though the stated intentions of the two policies is different, it is important to evaluate the contemporary policy against the backdrop of the past, especially when students today are still receiving scholarships to attend segregation academies. The findings of this study will reveal important details about how a modern school choice policy operates in an educational landscaped marred by historic racial tensions.

In addition to being an interesting case based on its history, Alabama is also a theoretically interesting case. In the investigation of the interactions between school choice and racial segregation, Alabama could be considered a "crucial" or "critical" case. Crucial cases can take one of two forms – a most or least likely case. Least likely cases are those in which the

[16] Tuition grants in Alabama were challenged, revised, and recreated prior to 1967; however, their impact was largely the same.
[17] *Lee v. Macon County Board of Education* 267 F. Supp. 458 (1967).

researcher would not expect to see a given phenomenon, thus making finding evidence of the phenomenon in that case quite important. Alternatively, most likely cases are those in which one would expect to find evidence of a phenomenon, thereby making the absence of such phenomenon intriguing. The most likely case follows the logic, "if [the theory] cannot make it here, [the theory] cannot make it anywhere" (Levy 2008, 12). Crucial cases are particularly useful in that they can be expected to yield a great deal of information about a phenomenon (Patton 2015).

Alabama is a state in which race has been, and still is, especially salient. An entire group of private schools were built out of a desire to keep Alabamian students separated by race. Because of this, Alabama is a state in which we would expect race to be a particularly important factor in parental choice decisions, thus allowing it to be considered a most likely and crucial case. If race is to matter in schooling anywhere in the United States, it can be expected to matter in Alabama. If the results of this study show that race does not play the important role in school choice that it can be expected to, this could significantly impact our understanding of the interaction between race and choice.

The Alabama Accountability Act and the Alabama Educational Scholarship Program

On March 14th of 2013, then Alabama governor Robert Bentley signed the AAA into law. The AAA, which was first introduced in the Alabama House of Representatives in early February of 2013, was proposed as a policy that could bring innovation to education in the state by allowing schools and school districts increased flexibility and autonomy. In addition to encouraging innovation in Alabama public schools, the policy also set plans for the creation of a private school choice program, the Alabama Educational Scholarship Program (AESP). The AESP allows parents of low-income students, those making up to 185% of the Federal Poverty

Level, to receive scholarships to attend the non-public school of their choice[18]. However, students participating in the AESP can only use scholarship funds to attend private schools that have agreed to participate in the program. The goals of this program are to (1) create flexibility in the educational system in order to better meet diverse needs of students, (2) improve school performance, (3) encourage innovation in school systems, and (4) facilitate parental choice by providing financial assistance in the form of income tax credits and tax credit scholarships (AAA 2015). Since its inception in 2013, nearly 30,000 scholarships have been awarded through the program.

Program Overview

Income tax credits are available to parents directly and are intended to defray the costs of transferring a child from a public to a private school. Tax-credit scholarships are funded through tax-deductible donations made to scholarship granting organizations (SGOs) by individual Alabama taxpayers or corporations. SGOs, once they receive donations, then redistribute the donations in the form of scholarships to eligible students who apply for assistance. During the first two years of the program, there were a total of eight SGOs; however, that number has fluctuated over the years from the high of eight in 2013 and 2014, to a low of five in 2016. As of July 2021, there are total of seven SGOs offering scholarships for the 2021-2022 school year (Alabama Department of Revenue 2021).

Alabama restricts SGO designation to non-profit organizations. To become an SGO, organizations must submit an application through the Alabama Department of Revenue. Once a hopeful SGO's application has been approved, they can begin accepting donations which they

[18] Though the policy itself states that one of the purposes of the AAA was to help students "enrolled in or assigned to attend a failing school" transfer to a choice school, only about 28% of students who participated between 2013 and 2017 would have otherwise attended a failing school. This combined with the income eligibility requirement suggests that the program can more accurately be described as a program for low-income Alabama students.

will ultimately redistribute to students. SGOs administering tax-credit scholarships shoulder a good deal of responsibility under the AESP, as they are responsible for collecting and reporting donations, reviewing student scholarship applications, and distributing scholarship funds to schools on behalf of students. Furthermore, SGOs are required to submit quarterly and yearly reports that include information pertaining to their finances, the number and dollar amount of scholarships distributed, and the names of schools receiving scholarship students, to name a few.

Tax-credit scholarships are set a maximum of $6,000 for elementary school students, $8,000 for middle school students, and $10,000 for high school students (AAA 2015). For the 2020-2021 school year, the average value of a tax credit scholarship for any grade level was approximately $4,759 (Alabama Department of Revenue 2021), more than $2,000 less than the average cost of private school tuition in the state, which was $7,050 (Hanson 2021)[19]. As of the 2020-2021 school year, a total of 29,706 scholarships have been awarded through the AESP. See Table 4.1 for yearly summary of scholarships awarded.

Students wishing to receive a tax-credit scholarship must submit applications to a SGO for eligibility determination. SGOs are prohibited from discriminating based on gender, race, or disability status. Students who are zoned for failing schools are given preference; however, most students utilizing the tax-credit scholarships are from non-failing schools. Students can only receive scholarships to attend schools where they have been accepted, and the scholarship value cannot exceed the cost of tuition and fees at the selected school. Additionally, student choices are limited to participating private schools, which have opted-in to the AESP and agreed to accept scholarship students.

[19] $7,050 is the average tuition cost for all private schools in the state; however, it is possible that the average tuition costs in participating private schools varies from this average. If the cost of tuition at participating schools is lower than the state average, parents may not see significant differences between the value of their scholarships and the costs of tuition.

TABLE 4.1. Scholarships awarded through the AESP, by year.

Year	Number of Scholarships Awarded	Total Amount of Scholarships Paid
2013	20	$73,790.00
2014	5,792	$23,598,233
2015	851	$2,341,095
2015-2016	4,132	$21,457,117
2016-2017	4,092	$22,373,593
2017-2018	3,668	$21,544,464
2018-2019	4,000	$24,612,863
2019-2020	4,195	$26,855,237
2020-2021	2,956	$14,066,988
All years	29,706	$156,923,380.00

Note: All figures were taken from the Alabama Department of Revenue's SGO reports. SGO reports shifted from using the calendar year to academic years beginning in AY 2015-2016. Figures from 2013 and 2014 are reported for the calendar year beginning Jan 1 and ending Dec 31. For 2015, figures are reported from Jan 1- June 30. The entry for 2015-2016 begins using the academic year format, which runs from July 1- June 30. The reduced number of scholarships awarded during the 2020-2021 school year may relate to the global COVID-19 pandemic.

In order to participate in the program and be eligible to accept scholarship students, private schools must first contact the Alabama Department of Revenue and notify them of their intent to participate. Next, schools must show proof of accreditation by an accepted regional accreditation agency. If a school is not accredited at the time of their application but has been in operation for at least three years and meets all of the state's requirements, they can participate and will have three years to become accredited. During the three-year period, the school will have to comply with various regulations. If the school does not gain accreditation in the allowed time frame, they will no longer be able to accept scholarship students.

All schools that participate in the AESP must also demonstrate compliance with the requirements set forth in the AAA. These include: (1) complying with health and safety codes, (2) holding occupancy permits where required, (3) complying with nondiscrimination policies, (4) conducting background checks on employees, (5) demonstrating compliance with the Child Protection Act of 1999, (6) administering state achievement or nationally recognized norm-referenced tests, (7) reporting the results of these tests to parents, and (8) reporting the results of these tests, along with scholarship student demographics and graduation rates to the Alabama Department of Revenue on a yearly basis (AAA 2015).

During the 2020-2021 school year, a total of 152 Alabama private schools participated in the AESP. Sixty-two of these schools began participating in the program's first year, while another 51 schools began participating in the program's second year. The remaining 39 schools began participating in the program's third year, or later. The 152 participating schools represent about 36% of Alabama's 423 private schools (Koplowitz 2021). This small percentage of participating private schools in the state is concerning, as it limits the options available to students while also restricting the program's ability to create a competitive choice marketplace.

Characteristics of Scholarship Recipients

Though the State of Alabama does not publish detailed records of scholarship recipient demographics, an independent evaluator that has been tasked with reviewing the program shares aggregate data as part of their biennial reports (2014-2015; 2016-2017; 2018-2019). For the 2014-2015 school year, most scholarship recipients identified as Black/African American (66%). The next largest racial group was White/Caucasian (18%), followed by Hispanic/Latino (8%). The remaining 8% identified as some other race or did not provide information. Fifty-one percent of the recipients were females and 49% were male. Finally, most students were low

income, with 98% of students qualifying for free or reduced-price lunches (FRPL) (Barth and Quenneville 2016).

The student demographics remained similar for the 2016-2017 school year. Students identifying as Black/African American were still in the majority (65%), followed by those identifying as White/Caucasian (19%), and those identifying as Hispanic/Latino (10%). Equal proportions of male and female students received scholarships for the 2016-2017 school year. Nearly 80% of scholarship students had previously received at least one scholarship award. Most students receiving scholarships qualified for FRPL; however, the number was down eight percentage points from the previous report (90% rather than 98%) (Barth, Steele, and Quenneville 2018).

Student demographics for the 2018-2019 remained similar, yet again, suggesting that the demographics of program targets have been consistent over time. Students identifying as Black/African American remained in the majority (68%) for the 2018-2019 school year, followed again by those identifying as White/Caucasian (16%), and those identifying as Hispanic (12%). Fifty percent of these students were female, and 50% were male. Most students (91%) were eligible for FRPL, and 71% previously received a scholarship through the program (Steele and Barth 2020). A summary of the program demographics, averaged across the three school years for which data is available, can be found in Table 4.2.

TABLE 4.2. Aggregate demographics of AESP participants.

Demographic Characteristic	Percentage of Students
Race	
Black/African American	66.28
White/Caucasian	17.72
Hispanic/Latino	10
Other	6.01
Gender	
Male	50
Female	50
FRPL Eligible	93

Note: The percentages in this table utilize the data from 2014-2015, 2015-2017, and 2018-2019 evaluation reports. Samples have been aggregated so that percentages reflect the percentage of recipients in each category over the course of each evaluation.

Current Program Evaluations

The AAA requires that the AESP be evaluated by an independent evaluator every two years. The evaluations utilize test score data provided by the SGOs to measure scholarship student progress. The Institute for Social Science Research at the University of Alabama has conducted three biennial evaluations since the program's inception. Each evaluation fulfills two important purposes – first, they describe the academic achievement of scholarship students, and second, they compare the achievement of scholarship students to the achievement of Alabama public school students[20] (Barth and Quenneville 2016; Barth, Steele, and Quenneville 2018; Steele and Barth 2020). The latter two evaluations fulfill an additional third purpose by assessing changes in scholarship student achievement over time (Barth, Steele, and Quenneville 2018;

[20] The external evaluators provide data for all public school students and all impoverished public school students. The poverty group was deemed the most appropriate comparison as scholarship students are largely low-income. In the comparisons that follow, I reported the results for scholarship students versus impoverished AL public schools students.

Steele and Barth 2020). The evaluators utilize standardized test scores to measure student achievement.

In the first evaluation of the AESP, Barth and Quenneville (2016) found that, overall, scholarship students did not make any significant achievement gains during their time in the program. It should be noted; however, that this report was conducted using data from the 2014-2015 school year, when over 75% of students were first time scholarship recipients. Scholarship students performed below national averages for grade level progress on norm-referenced tests and did not meet the appropriate benchmarks on criterion-referenced tests. When compared to Alabama students attending public schools, the results showed that there was little noticeable difference between scholarship and public school student achievement. Furthermore, the report showed that for both groups, there was only one subject (10^{th} grade English) where more than 50% of students in either group met proficiency standards, suggesting that Alabama students, both those attending choice schools and those attending public schools, were not performing at desired levels. The results led the evaluators to conclude that there was "no compelling evidence to suggest that scholarship recipients as a group performed differently than their counterparts attending public schools" (Barth and Quenneville 2016, 17).

The 2016-2017 report was conducted using similar methods, and again found that scholarship students, like Alabama public school students, failed to meet benchmarks in a variety of subjects. For this report, approximately 78% of students had received at least one previous scholarship award, allowing the evaluators to track their progress over time. As in 2014-2015, Barth, Steele, and Quenneville (2018) found that for the 2016-2017 school year, most scholarship students performed below the U.S. average on norm referenced tests and failed to meet grade level proficiency on criterion-referenced tests. Scholarship students also continued to

perform at a similar level to their public school counterparts overall, though patterns did vary by grade level and subject. Finally, when the researchers looked at performance over time, they did not see a significant improvement in the test scores of scholarship students; however, public school student test scores showed a similar lack of improvement, leading them to conclude that the scholarship program was not likely the cause of the pattern. Overall, the first two reports suggest that the scholarship program has not yet benefitted students academically, at least in terms of standardized test performance (Barth, Steele, and Quenneville 2018).

In the most recent report from the ISSR, Steele and Barth (2020) found no significant improvement in academic achievement for scholarship students over time once again. For the 2018-2019 school year, student performance on norm-referenced tests varied based on the test used, with students performing below national averages on the IOWA Assessment, similar to national averages on the Terra Nova test, and above national averages on the Stanford Achievement Test. For the first time, the majority of scholarship students met benchmarks for English on criterion-referenced tests; however, they continued to fail to meet benchmarks for Math and Reading. Additionally, they found that Black students, in particular, performed worse than White students in all subjects. Scholarship students continued to perform similarly to their public school counterparts, with most students in both groups still failing to meet grade level benchmarks. Finally, the report found that there were still no significant gains in achievement due to participation in the AESP, five years after the program's inception (Steele and Barth 2020).

When taken together, the three independent evaluations conducted thus far suggest that participation in the AESP has not been associated with significant academic gains for scholarship students, and that scholarship students are no better off academically than their public school

counterparts. There is one major caveat to these findings. The ISSR researchers note that their achievement data comparisons are limited by the variation in standardized tests used. While the AAA requires that private schools participating in the AESP conduct yearly standardized testing, they do not require each school to take the same standardized test. This policy choice limits sample sizes and makes comparisons difficult at times. Still, the ISSR researchers take this limitation into consideration, making their findings more reliable.

Conclusions

In the empirical analysis that follows, I will use the state of Alabama as a case in which to answer the primary research questions. The desegregation of Alabama schools was a slow process, as integration efforts were met with resistance by policy makers and parents alike. Following *Brown v. Board of Education,* Alabama utilized school choice measures to prevent the integration of public schools. Alabama was one of only seven states that enacted a tuition grant program, which provided public money to White students wishing to attend segregated private schools. The early program allowed for the proliferation of segregation academies throughout the state, many of which still exist today. Alabama's history makes it an especially important case for evaluation, as it is critical to understand whether current choice is working to perpetuate the past, or to promote a more integrated future.

In 2013, school choice returned to Alabama through the AAA. The AAA created a tax-credit scholarship program, the AESP, which provides scholarships to cover private school tuition for low-income Alabamian students. The program has offered nearly 30,000 scholarships since its inception. Student scholarships are accepted at 152 Alabama private schools. Participating private schools are in the minority, representing only about 36% of all Alabama private schools. To receive a scholarship, students must submit applications to SGOs, which then

determine their eligibility. Once the student is deemed eligible, and has been admitted to a participating private school, the SGO will distribute scholarship money to assist with the cost of tuition and mandatory fees. Parents are responsible for the remaining portion of their child's tuition. Participating private schools are required to administer yearly standardized tests, and the results are used to evaluate the academic progress of scholarships students. Thus far, independent evaluators have found no evidence of the AESP positively impacting student achievement.

In the past, Alabama has largely been ignored by the school choice literature, despite its relevance. This study remedies that absence in the literature and helps provide a more complete understanding of choice in the deep south, which has also been understudied. The AAA requires independent evaluations of the program's impacts on achievement be conducted biennially, but the state has not yet required any evaluation of the program's impact on segregation. This is troubling as choice has previously been used to promote segregation. School segregation can have significant negative impacts on students, and thus it is important to ensure that current programs are not worsening segregation levels. Current evaluations reveal that most scholarship recipients are Black, suggesting that there is a potential for integration in majority White private schools. If this potential is realized, it should be considered a significant strength of the program; however, if the program is shown to have segregating effects, this would indicate a need for policy reform.

Chapter 5: Data Sources, Variables, and Measurement

Two of the primary research questions for this dissertation center around private school demographics. Question one explores the impact of student racial demographics on the likelihood of participation in a private school choice program, while question three evaluates the impact of participation in a choice program on levels of private school segregation. School-level data from private schools is collected biennially by the National Center for Education Statistics (NCES) as a part of their Private School Universe Survey (PSS). The PSS was first conducted during the 1989-1990 school year, with the most recently published survey being from the 2017-2018 school year. Though the PSS does not garner a 100% response rate on the part of private schools, it is the best source available for this project and it does reach many Alabama schools. The PSS data set contains information about student racial demographics, the total number of students, school religious affiliation (if any), and school location, as well as other school-level descriptors. This data has been used frequently in the supply-side of choice literature (Stuit and Doan 2013; Austin 2015; DeAngelis and Hoarty 2018; DeAngelis, Burke, and Wolf 2019). To supplement the data set with information specific to the AESP, I also use data from the Alabama Department of Revenue and the individual schools, when possible.

The second research question for this dissertation focuses on the impact of the racial demographics of potential students. Following the lead of Porter, Howell, and Hempel (2014) I have conceptualized the county as a private school's "district". In their analysis of southern school districts, Porter, Howell, and Hempel find that 68% of school districts in the South span a single county, suggesting that, in the south, counties can give good estimates of public school

districts as well. Private schools (typically) do not provide transportation to students and thus travel distances often limit the pool of potential students. Because of this, we can expect private schools to draw students primarily from the county in which they reside. I use county-level data from the Census Bureau's American Community Survey (ACS), which "provides information about the social and economic needs of your community every year" (U.S. Census Bureau 2020, 13). Though the ACS presents both 1- and 5-year estimates, I have chosen to use the 5-year estimates. The 5-year estimate data has larger sample sizes, narrower margins of error, and is considered more reliable than the 1-year estimate data. Additionally, 1-year estimates are not available for all Alabama counties, as more than half of the counties have populations under 65,000[21]. To combine the ACS and PSS data, I recorded the county and identifying fips code for each school, and then merged the two data sets using the fips code as the matching variable.

For the remainder of the chapter, I will discuss each of the variables that will be used in the empirical analyses as well as how they are measured. I will also discuss the importance of the variable and justify its inclusion in my models. Finally, I will discuss any limitations associated with the data in this chapter. A full list of variables and their sources can be found in Table 5.1.

[21] The ACS does not produce 1-year estimates for geographic areas with populations less than 65,000.

TABLE 5.1. Summary of variables and data sources.

Variable	Variable Source
NCESid (School ID)	PSS
Total Number of Students	PSS
School Percent Black	PSS
School Percent White	PSS
School Percent Hispanic	PSS
School Percent Nonwhite	PSS
School Location	PSS
School Religious Affiliation	PSS
Segregation Academy	PSS, School Websites
Participation Status	AL Department of Revenue
Participation Year	AL Department of Revenue
Participation Date (DD/MM/YYYY)	AL Department of Revenue
Failing School in County	AL Department of Revenue
County U18 Percent Black	ACS 5-year Estimates
County U18 Percent White	ACS 5-year Estimates
County U18 Percent Hispanic	ACS 5-year Estimates
County U18 Percent Nonwhite	ACS 5-year Estimates
County Median Household Income	ACS 5-year Estimates

Note: PSS Data was collected for the following school years: 2009-2010; 2011-2012; 2013-2014; 2015-2016; 2017-2018. ACS 5-year estimates were collected for the following calendar years: 2009; 2011; 2013; 2015; 2017. Alabama Department of Revenue data on participating schools was collected based on 2020 reports, which provide information dating back to the start of the program.

School-Level Data

The empirical models used in this dissertation use individual schools as the primary level of analysis. While I do not have access to school-level data for all Alabama private schools, the PSS allows me a large sample that should be considered largely representative of the total population. My data set includes schools of varying sizes, religious affiliations, racial demographics, grade-levels, and locations. There is no apparent benefit, or consequence, of completing the PSS, thus I do not expect that there are any significant biases in the sample.

For my analysis, I exclude schools that primarily offer Pre-K services, as Pre-K is not a grade in which students are eligible to apply for a tax-credit scholarship under the AESP. Exclusively or primarily pre-k schools were identified using PSS data, which details the grades offered by a school, the total number of students enrolled, and the total number of K-12 students. By taking the difference between the total number of students and the total number of K-12 students, I was able to calculate the total number of Pre-K students. If the total number of Pre-K students represented more than half of the students in the school, the school was considered primarily Pre-K and excluded from the analysis. No primarily Pre-K private schools participated in the AESP, suggesting that either the schools themselves, or the students attending them, are ineligible for the program. For all private schools that did not primarily serve Pre-K students, I collected data reflect the schools' racial demographics, religious affiliations, locations, sizes, participation statuses, and segregation academy statuses.

I also exclude data from schools that have closed during the time period of interest. Because my data set begins with the 2009-2010, I had to account for the possibility that a school would have closed some time between the 2009-2010 and the 2017-2018 school year. I used web searches of the schools to search for closure notices, and then excluded any schools that closed

during the time period of interest. This is important as a school that no longer exists cannot accept scholarship students or participate in the AESP, nor will it continue to provide updated data through the PSS. Finally, I also exclude the few homeschools that respond to the PSS, as these schools also are ineligible to participate in the AESP. This leads me with a data set that includes Alabama private schools that were in operation in 2017-2018 and did not primarily serve pre-k or homeschool populations.

Student Racial Demographics

School racial demographics are key to both of my empirical analyses. When schools respond to the PSS, they are asked to list the number of students who identify as White, Black/African American, Hispanic/Latino, Asian Native Hawaiian/Pacific Islander, American Indian/Alaskan Native, or two or more races. Most schools in Alabama have very low concentrations of students who identify as Asian, Native Hawaiian/Pacific Islanders or American Indian/Alaskan Natives, and thus I have chosen to focus only on the three most common racial groups – White, Black/African American, and Hispanic/Latino. This is a common practice in other studies of race in educational contexts. In addition to the raw counts of student in each racial group, I was also able to draw the percentages of students in each group from the PSS data.

In my models, I use this data in three different ways. First, I created a continuous variable for each of the three primary racial groups that indicates the percentage of students in a school identifying as that race. Next, I used the continuous variable to create a second, ordinal, variable that divides schools into four categories based on the percentage of students of *x* race at the school. This was especially useful for the variable representing a school's percentage of White students, one of the key independent variables in my models of participation. I utilized quartiles to determine cut points, giving me four categories with nearly equal numbers of observations in

each for the ordinal version of the school percent White variable. Finally, I also used school racial demographic data to create isolation and exposure indices to measure school segregation levels.

Racial Isolation

In the empirical analysis of school segregation changes, I first measure racial isolation. The isolation index ranges from 0 (no isolation) to 1(completely isolated) and reflects "the extent to which minority members are exposed only to one another," (Massey and Denton 1988, 288). This type of measure allows researchers to say things like, on average a student of race *a* attends school with *x* percent of students of the same race. I calculated isolation indices based on school racial demographics using a STATA segregation indices calculation package created by Sean Reardon. While isolation is but one of many different measures of segregation, it is commonly used in studies of school segregation. It is a particularly relevant measure for tracking changes in private school segregation as private schools have historically had high levels of racial isolation (primarily for White students). By tracking changes in White racial isolation in private schools, I will be able to demonstrate the presence (or lack thereof) of changes in segregation levels for these schools.

Exposure

To supplement my analysis of changes in levels of school segregation, I also track changes in student exposure. Exposure indices provide another way of looking at student segregation, and allow researchers to say things like, on average, a student of race *a* attends a school that has *x* percentage of students of race *b*. Like the isolation, exposure is measured on a scale of 0 to 1, with 0 indicating that the average student of race *a* has no exposure to students of race *b*. Exposure indices were also created in STATA using the Reardon segregation package.

By using the exposure indices, I will be able to show any changes in the exposure of students to students of other races (for example, White student exposure to Black students) that have occurred since the AESP began. Together, the data on changes in isolation and exposure will provide a comprehensive view of private school segregation over time.

School Religious Affiliation

Many, but not all, private schools are religiously affiliated. In the state of Alabama, private schools come from a variety of religious backgrounds including Catholic, Protestant, Jewish, and Islamic. There are also many non-sectarian schools that do not identify with any particular religion or church. Past research has suggested that religious schools, especially Catholic schools, are more likely to participate in private school choice programs (Egalite et al. 2018; Kisida, Wolf, and Rhinesmith 2015), often because participation aligns with their school's mission. I have included school religious affiliation as a control variable in each of my models to account for differences in school missions and school practices. I use a categorical variable to identify the religious affiliation of each school. It is coded 0 for non-sectarian schools, 1 for Protestant schools, 2 for Catholic schools, 3 for Islamic schools, and 4 for Jewish Schools. School religious affiliations were assigned based on the self-identification[22] of the school on the PSS.

School Location

The NCES assigns urban-centric locale codes to private schools based on population size[23] and proximity to an urban area. The locales are divided into four categories – City, Suburb, Town, Rural. Within each category, there are three additional subdivisions. For cities and

[22] The PSS allows for sub-categories within the Protestant label (ex. Methodist); however, I have placed all school that are religious but not Catholic, Islamic, or Jewish into the Protestant category.
[23] Town and rural classifications only consider distance from urban areas.

suburbs, the subcategories are determined by population size, resulting in possible classification as small, midsize, or large city/suburb. The town and rural classifications are subdivided by distance from an urban area and are classified as either fringe, distant, or remote town/rural. Each locale provides a unique educational context. For example, the suburbs have historically been white flight havens, with White children leaving inner-city public schools for less diverse public schools in the suburbs. In rural areas, there are often fewer public options and thus private schools are the primary destination of white flight. To control for the impact of differing place-based contexts, I include a categorical variable indicating the location of the school. I have chosen to use only the primary classifications of City, Suburb, Town, and Rural to maximize the number of observations in each group while still providing important geographic context.

School Size

Private schools can range significantly in size, from a handful of students to a thousand (or more). To control for any differences that school size may have on my dependent variables, I have also included a continuous variable that indicates the size of the school based on the total number of students. I only include the number of students in grades K-12, as these are the only students that racial demographics are reported for. Because I have excluded all schools that primarily serve Pre-K students from the data set, there are only minor differences between the total Pre-K-12 and total K-12 populations for each school. The inclusion of this variable is warranted because past studies of the supply side of choice have shown that larger schools are more likely to participate in choice programs than smaller ones (Stuit and Doan 2013; Austin 2015).

School Participation Status

The variable indicating a school's participation status at the time of the study serves as a key dependent variable in my models of participation, and a key independent variable in my models of segregation changes. The Alabama Department of Revenue reports participation dates precisely, using the day, month, and year that a school opts-in to the AESP. After careful examination, it became clear that though there was variation in the days and months in which schools began participating, there was much less variation in the years of initial participation. The large majority of participating schools began doing so in the program's first two years, and thus, while I have retained the years of participation for descriptive analysis, I have utilized a dichotomous indicator of participation in my statistical models. All schools participating as of the 2020-2021 school year were coded as 1s, while non-participating schools were coded as 0s.

For the purposes of evaluating the impact of participation on changes in segregation, I used an additional indicator of participation that indicated participation by year. This allowed me to track changes in segregation in participating and non-participating schools, by year, with each school only moving to the "participating" group in the year that they began participating. Once a school began participating, they were labelled as participating in each remaining year. Schools that never participated remained in the non-participating group for the duration of the panel.

Segregation Academy Status

The variables described thus far are all derived directly from the PSS or Alabama Department of Revenue Data; however, to identify segregation academies, I had to establish a research-based definition and then identify segregation academies individually. Segregation academies are understudied, and, worse, poorly defined. Many studies on segregation academies were conducted in the 1970s, shortly after the schools became common (Champagne 1973; Nevin and Bills 1976; Mader 1978). These early studies were often qualitative and largely

descriptive in nature, providing invaluable first-hand accounts of the academies. Unfortunately, few scholars have compiled comprehensive lists of segregation academies, or established a sound definition on which such a list could be created. In one of the best attempts to date, Porter, Howell, and Hempel (2014) provide a four-part identification schema that they then used to track enrollment trends in private segregation academies up until the 1990s. In their study, they classify segregation academies as those that (1) were founded between the "era of formal desegregation" 1954-1976, (2) whose student bodies during the time of study (the 1993-94 school year) were at least 95% White, (3) are not affiliated with any recognized religious accreditation agency, and (4) are located in an area where white flight is likely (Porter, Howell, and Hempell 2014).

I argue that Porter, Howell, and Hempell (2014) have the clearest definition of segregation academies to date; however, I also contend that their definition can and should be improved upon. I maintain the primary component of Porter, Howell, and Hempel's (2014) definition, time of school opening, within my own definition of a segregation academy. The initial cycles of the PSS included school establishment dates; however, more recent issues of the survey have not. I drew out the data on school establishment dates from the earliest PSS, and then merged that data with the data from the PSS surveys utilized in my analysis. This gave me establishment dates for the majority of schools in my data set, but not all of them. For the schools that did not have establishment dates listed in the early PSS datasets, I turned to other sources. First, I looked through individual school websites for establishment dates, which was largely successful. Many schools either post their establishment dates in the school seal, or on a "school history" section of their website. For those schools that did not list an establishment date on their

websites, I then had to consult other sources. For example, I was often able to find their establishment date through the website of their accrediting body.

Porter, Howell, and Hempel (2014) include as one of their criteria, that a school must be 95% or more White to be considered a segregation academy. I do not include this criterion in my own definition because doing so would exclude the possibility of change. I conceptualize segregation academies as historic institutions, and define them based on their origins, rather than current functions. In doing so, I allow for the possibility of growth and change in these historically discriminatory schools. After examining the set of schools that I have identified as segregation academies, I was able to determine that a select few have in fact grown more diverse over the years. It is quite possible that the schools started as White havens and evolved over time to value things like academics, college preparedness, or even sports over "Whiteness".

To ensure that these now diverse schools truly were established as segregation academies and had not been misidentified, I looked to the school's early yearbooks to determine student demographics at the time of opening. I was able to access yearbooks from about 50% of the schools, and my investigations revealed that each of the schools did indeed begin as an all-White institution. To explore more, I looked through yearbooks from later years, and did not see evidence of nonwhite students until after the mid-to-late 1970s. Overall, this investigation led me to conclude that it is quite possible for a school that began as a segregation academy to be less than 95% White today; therefore, I excluded Porter, Howell, and Hempel's (2014) second criterion from my own definition.

I use a modified version of Porter, Howell, and Hempel (2014)'s third criterion, excluding Catholic schools, as opposed to schools associated with any religious accrediting body, from the list of potential segregation academies. Porter, Howell, and Hempel (2014) note

that their religious exclusion criterion "could be debated", and I would agree. In their first-hand account of the development of segregation academies, Nevin and Bills (1976) note that both "secular" and Christian schools were developed in response to *Brown.* While I do not exclude religious schools altogether, I do omit Catholic schools from the class of schools that can be called segregation academies, no matter their establishment date.

Catholic schools are amongst some of the oldest schools in our nation, and they were not a new phenomenon occurring only in response to desegregation orders. Further, church leaders led the way in many places, including Alabama, for desegregation (Moore 2007). Because of the Catholic Church's support of desegregation efforts, it seems very unlikely that the schools would be opened as havens for white flight out of public schools, and if they were not opened for these purposes, it would be unfair to label them as segregation academies.

Finally, I exclude Porter, Howell, and Hempel's (2014) fourth criterion from my definition for reasons not unlike those used to justify the exclusion of the second criterion. Porter, Howell, and Hempel (2014) also stipulate that only schools located in areas where at least one public school district in the county has a minority student enrollment of 30% or more can identified as possible segregation academies. Again, they utilize current demographic data to identify historic schools, which I think is unwise. It is quite possible that the county demographics have changed since the schools were established, and thus this classification might misidentify historic segregation academies. To avoid this, I exclude the county demographic criteria from my definition altogether.

These decisions result in me retaining two of Porter, Howell, and Hempel's (2014) criteria – one completely and one partially. To code schools by segregation academy status, I

first identified all schools opened between 1954 (following *Brown*) and 1976[24]. Any schools established outside of this range were automatically coded as non-segregation academies. Next, I identified any Catholic schools established during the time period of interest and exclude them as possible segregation academies as well. Finally, though minor, I also excluded schools with mental health or other medical components from the potential list of segregation academies. These schools, which are often only available to students with specific mental or physical disabilities, have clear medical, rather than segregationist, origins and thus should not be labeled segregation academies.

Ultimately, I identified segregation academies as private schools that do not have specific medical components, are not affiliated with the Catholic Church, and were opened between the years of 1954 and 1976. A dichotomous indicator was used to distinguish between schools that were identified as segregation academies and those that were not. This variable serves as a key independent variable in each of my models.

County-Level Data

Private schools, like their public counterparts, are strongly influenced by their locations. Theoretically, students participating in the AESP can attend any participating private school in the state, as students are not required to choose schools in specific locations. In reality, though, choices are often limited by location, as transportation is not provided by the program. The parents of scholarship students are tasked with getting their children to and from their choice schools each day, and thus are likely to select schools that are geographically proximate to their homes. I have conceptualized the county as a private school's district, and I have included county level variables to control for location-based differences in potential student populations.

[24] The end cut point of 1976 was chosen because it was in that year that the USSC ruled, in *Runyon v. McCrary*, that the federal government could regulate racially discriminatory policies, even in private schools.

Though this measure is not perfect, it provides a good estimation of the potential student population for each private school. In Alabama, many public school districts span entire counties[25], suggesting that the county can be used as a reasonable estimation of private schools' districts as well. I have included several county-level variables in my data set including county racial demographics and median household income. I also include information by county indicating whether there is at least one failing school in the county.

County Racial Demographics

County racial demographics serve as key independent variables in the models of participation and as controls in the models of school segregation. As with the school racial demographics, I have chosen to focus on the three most prevalent racial groups – White, Black/African American, and Hispanic/Latino. At times, I collapse the minority group demographics and include a "nonwhite" variable. Because I am interested in the potential student population demographics, I have chosen to focus only on the racial demographics of the youth in a given county, operationalized as the under 18 population. This resulted in the creation of four continuous variables which each measure the percentage of youth from each racial group (White, Black/African American, Hispanic/Latino, Nonwhite) in each county.

County Economic Status

County economic variables are important because they help estimate the demand for AESP scholarships. The program primarily serves low-income students, who must verify their income eligibility to SGOs, which suggests that areas with higher concentrations of low-income residents will have higher numbers of scholarship-eligible students. To estimate the level of

[25] There are county-wide school districts in approximately 1/3 of Alabama's counties.

demand based on economic factors, I have included a continuous variable indicating the median household income in all of my models as a control.

Failing School Presence

An additional factor that could influence the demand for AESP scholarships within a county is the presence of a failing school. Though the policy does not require that all scholarship students be zoned for failing schools, it does give preference to these students. Furthermore, if a student is zoned for a failing school, there is likely more motivation on their part (or their parents' part) to seek out an alternative school. In order control for this important demand factor, I consulted the Alabama Department of Revenue's list of failing schools, which has been published yearly since 2013. Because I used this control variable primarily in the models of participation, I chose to use the 2013 failing list, which would have been published around the time that most schools began participating in the program. If participating private schools are motivated by the presence of failing schools in their counties, a variable indicating the presence of nearby failing schools at the time of the decision is most appropriate. Because the number of failing schools is largely dependent on the sizes of school districts and number of schools in each county, which can vary widely, I chose to measure the presence of failing schools using a dichotomous indicator, coded as 0 if there were no failing schools in the county, and 1 if there was at least one failing school in the county.

Chapter 6: Participation Analysis

For the empirical portion of this dissertation, I first examine participation in the AESP. Private schools in the United States have historically been whiter than their public school counterparts (Fairlie and Resch 2002; Clotfelter 2004), and in fact many private schools in the U.S. were created to maintain segregation after public school systems were ordered to integrate (Nevin and Bills 1976; Clotfelter 2004; Bagley 2018). Today, private schools continue to contribute to segregation in American education. This history should be considered alongside contemporary evaluations of school choice programs.

School choice programs are often marketed as ones that will increase educational choice options for poor and minority students, thereby potentially generating a new demand for private school from a more diverse student population. If these programs do have the potential to increase private school diversity, then school administrators or other decision makers may consider the impact that participation might have on their schools' racial demographics when determining whether to participate in a private school choice program. This study contributes to the literature by exploring how race impacts private school participation in school choice programs, using data from the state of Alabama, where far less than 50% of private schools are participating in the state's tax credit scholarship program. The two primary research questions for this study are:

1. Do private school racial demographics impact the likelihood of participation in a school choice program?

2. Do the racial identities of potential "choice" students impact the likelihood of participation in a school choice program?

Theory and Hypotheses

Despite the promise of financial benefit, many schools still do not participate in private school choice programs. When only a portion of the private schools in a state accept scholarship students, choice can be limited significantly, by for example, limited numbers of seats, possible choice deserts, and a potentially less competitive marketplace. While the current study focuses on schools in the state of Alabama, it is expected that the reasons for participation uncovered by this study will be generalizable to other states with similar programs and histories.

Past research on the supply side of school choice has shown that regulations (Omand 2004; Stuit and Doan 2013; Austin 2015; Kisida, Wolf, and Rhinesmith 2015; DeAngelis and Hoarty 2018; Egalite et al. 2018; DeAngelis, Burke, and Wolf 2019), a desire to reach new students (Austin 2005; Kisida, Wolf, and Rhinesmith 2015; Egalite et al. 2018), and finances (Austin 2005) are important considerations in the participation decision making process. However, I argue that race may also be an important factor. To justify this expectation, I will draw from the white flight and white avoidance literatures.

Many private schools began as, and remain, exclusively white institutions. These schools may wish to remain racially homogenous for two key reasons. First, the white flight literature reveals that White parents often leave schools as they become "too diverse" (Coleman 1975; Clotfelter 1976; 2001; 2004; Hess and Leal 2001; Fairlie and Resch 2002; Betts and Fairlie 2003; Renzulli and Evans 2005; Fiel 2013; Orfield 2013; Bagley 2018; Zhang and Ruther 2021). Though in the past white flight has primarily been from integrating public schools, it is possible that private school parents might respond the same way if their children's private schools became

more integrated. Alternatively, the white avoidance literature reveals that white parents often avoid schools with high concentrations of non-white students (Saporito and Lareau 1999; Clotfelter 2004; Ledwith and Clark 2007). This could mean that if a private school were to become too diverse, it might also be unable to attract new white parents. Ultimately, we can expect school administrators to consider these possible parental reactions, as private schools depend on the support of parents and students (via tuition payments) to survive.

If schools are concerned about their ability to maintain current White enrollments by ensuring their student populations remain relatively homogenous, they may be reluctant to participate in the AESP. Currently, most students who participate in the AESP are Black, and thus private schools who chose to participate in the AESP accept (or perhaps welcome) the potential to diversify. For schools that are already diverse, as some Alabama private schools are, the potential for added diversity may not be seen in a negative light. This would be consistent with Austin's (2015) finding that participating private schools saw increased diversity as a "positive change" (375). White parents who send their children to diverse schools have chosen an integrated educational setting for their children and thus may not be concerned about the potential impact of new students on school demographics. Conversely, in schools where diversity is kept to a minimum or is non-existent, parents may be less welcoming to diversity. Parents at those schools likely took demographics, amongst other things, into account when choosing the school (Billingham and Hunt 2016). If they value racial homogeneity, they might protest the admission of diverse students and participation in the AESP. In extreme cases, parents might even remove their children from a school if participation leads to increased diversity. To prevent these reactions from current consumers (parents), private schools may opt out of the program all together.

In order to estimate a schools' implied preference for diversity, I will be using the schools' student demographics from the 2011-2012 school year. Because the AESP was not enacted until the following year, the demographics from 2011-2012 will be unaffected by the admission of new scholarship students in participating schools. Since private school demographics are not the result of chance, but rather the result of parental preferences, admission policies, location, and costs, it could be argued that segregated private schools are purposely segregated, thus displaying a low preference for diversity. In schools with diverse student bodies, the opposite would be true. Furthermore, if segregated private schools wish to remain so, as findings from the white flight and white avoidance literatures would predict, then they may be less likely to participate in the AESP to avoid the potential increase in diversity that participation could bring. This leads to the following hypothesis:

Hypothesis 1: Maintaining White Exclusivity Hypothesis: There will be a negative relationship between the size of a school's White student body population and the school's likelihood of participation, controlling for other factors.

In addition to looking to the school's current demographics as a measure of its preference for diversity, I also looked at school histories to determine which were opened during the period of desegregation following *Brown* to determine which could be classified as segregation academies. I define segregation academies as those private schools that do not have specific medical components, are not affiliated with the Catholic Church, and were opened between the years of 1954 and 1976. In total, I was able to classify 273 schools as either segregation academies (77 schools) or non-segregation academies (196 schools).

During the 1950s and 1960s segregation academies received state support not only in the form of tuition grants, but also through donations of buildings, textbooks, and teachers from public schools (Champagne 1973; Nevin and Bills 1976). Given the segregationist history of

these schools, I contend that segregation academies value White exclusivity as well and will be reluctant to participate in the AESP out of a fear of increased diversity. This leads to the following hypothesis:

Hypothesis 2: Maintaining White Exclusivity in Segregation Academies Hypothesis: Segregation academies will be less likely to participate in private school choice programs than schools that are not segregation academies, controlling for other factors.

In addition to their current school demographics, private school participation decisions might be impacted by race in a second way – by the demographics of potential students. It is possible that private schools may view participation as a greater threat to their exclusivity when they are located in areas with high concentrations of minority youth. Conversely, if a school has a potential student population that is primarily White, they may not see participation as having the potential to introduce diversity in their schools. This leads to an additional hypothesis:

Hypothesis 3: The Impact of the Potential Student Population Hypothesis: The size of the minority youth (under 18) population in a county will be negatively related to the likelihood of participation, all else equal.

Due to the extensive history of anti-Black racism within the state of Alabama, it is possible that schools may not respond to the size of the total nonwhite youth population in the same way that they would respond to the size of the Black youth population. Many private schools in the state were explicitly opened as havens for White parents who did not want their children to attend schools with Black students, and thus one could predict an alternative version of Hypothesis 3:

Hypothesis 3(a): The Impact of the Potential Student Population Hypothesis: The size of the Black youth (under 18) population in a county will be negatively related to the likelihood of participation, all else equal.

Sample

The sample of schools for this analysis was drawn from the 2011-2012 PSS. To align the county-level data with the school-level data, I used the 2011 ACS. The PSS is conducted over school years, while the ACS is conducted using the calendar year, accounting for the slight differences in time frames. I have chosen to use this version of the survey for my participation analysis as it contains school demographic data prior to the passage and implementation of the AESP. This data should give the best estimate of school demographics at the time when schools first began making participation decisions. Data from later cycles of the survey could be influenced by participation, and thus allow for the possibility that the demographics reflect the results of participation, rather than the motivation for participation. To account for the possibility of school closure prior to the time of study, I cross-checked the schools and removed any that had permanently closed. After also excluding schools that primarily serve Pre-K students, I was left with a reasonably large and representative sample of 290 schools. The 290 schools (representing about 68% of Alabama private schools) vary in religious affiliation, location, racial demographics, and size. Descriptive statistics for all variables can be found in Table 6.1.

The key dependent variable for this analysis is a dichotomous indicator of participation in the AESP. I define participating schools as all schools that are currently participating in the program as of the 2020-2021 school year, according to the Alabama Dept. of Revenue's published list of participating private schools[26]. Because my dependent variable is dichotomous,

[26] This list of participating private schools does not include those schools that were participating at a given time and dropped out. I have taken the state's lead and only labeled schools as participating if they were participating at the time of study. Those that were removed from participation were considered non-participating. The primary reason for excluding these schools from the "participating" category is that it is unclear what caused the ceased participation based on the information available to the public. Many schools were likely removed from participation due to lack of accreditation; however, some schools on the "removed from participation" list are accredited, suggesting that schools might have been removed for various reasons. If one of those reasons is that the school itself

logistic regression was used. This method is appropriate for modeling the factors that impact the likelihood of participation in the AESP. In total, 130 of the 290 schools in my data set were participating in the AESP at the time of study (2020). Schools could begin participating in the 2013-2014 school year when the program was first implemented. Most schools began participating in the programs first two years.

TABLE 6.1. Descriptive statistics for all variables.

Variable	Mean	Std. Dev	Min	Max
Participating	0.45	0.50	0	1
School Percent White	70.44	33.54	0	100
Total Student Population	194.21	252.85	3	1881
Segregation Academy	0.28	0.45	0	1
Religious Affiliation: Non-Sectarian	0.23	0.42	0	1
Religious Affiliation: Protestant	0.63	0.48	0	1
Religious Affiliation: Catholic	0.13	0.33	0	1
Religious Affiliation: Islamic	0.01	0.10	0	1
Religious Affiliation: Jewish	0.01	0.08	0	1
Location: City	0.41	0.49	0	1
Location: Suburbs	0.21	0.41	0	1
Location: Town	0.09	0.29	0	1
Location: Rural	0.28	0.45	0	1
Failing School in County	0.68	0.46	0	1
County U18 Percent Black	36.45	18.99	0.97	89.95
County U18 Percent Hispanic	4.84	2.76	0	22.59
County U18 Percent Nonwhite	49.24	17.26	10.97	89.95
Median Household Income (2011 Dollars)	44,677	9,422	21,964	68,883

decided to stop participating, there may be unique and interesting motivations that apply to this special class of school. To ensure that the labeling of these schools as "not-participating" did not bias my results, I chose to run supplementary analyses on the data set with these schools removed from the sample. The results, which can be seen in Appendix A, are very similar to the results for the models presented in the body of this paper, which consider the schools as not participating. Due to the ambiguity about the causes of ceased participation, I do not feel comfortable labeling these schools as "participating".

To ensure that the admittance of new scholarship students in participating schools did not influence the estimated preferences for diversity, I used school demographic data from immediately prior to the implementation of the AESP (2011-2012 school year). The 130 participating schools account for approximately 45% of the schools in my sample, and approximately 85% of the 152 participating schools in the state.

The primary independent variables of interest are, the percentage of White students at the school, segregation academy status, the percentage of Black students in the county, the percentage of Hispanic students in the county, and the percentage of Nonwhite students in the county. Within my data set, schools ranged from 0-100% White, and the average percentage of White students in a private school was 70.44%. The median for the variable was 84.89%, suggesting that the data was negatively skewed. Approximately 28% of schools in the data set were identified as segregation academies. On average, about 87% of students in segregation academies were White, while only about 65% of students were White, on average, in non-segregation academies. This suggests that segregation academies, even if they are no longer 100% White, are still whiter than other private schools, on average. At the county level, the average size of the Black youth population was 36.45%, the size of the average Hispanic youth population was 4.84%, and the average size of the nonwhite youth population was 49.24%.

The models also include school-level controls for school size, religious affiliation, and location and county level controls for median household income and the presence of other failing schools in the county. Schools in my sample range significantly in size, with the largest school having 1,881 students while the smallest had a mere 3 students. The average school size was about 194 students. Nearly 63% of schools in my sample identified as Protestant, making it the most common religious affiliation. Non-sectarian schools, with no formal religious affiliation,

made up the second largest group – 22.76% of schools. Approximately 13% of schools identified as Catholic, making this the third most common religious affiliation. Less than 1% of schools identified as Islamic, and 1.03% identified as Jewish.

About 41% of schools in my data set were located in the city, making this the most common school location for the sample. The next most common school location was rural, with about 28% of schools being identified as rural. Approximately 21% of schools were located in the suburbs, and only about 9% of schools were located in towns. The majority of schools (68.28%) in my data set were located in counties with at least one failing school. Overall, these descriptive statistics show that my sample includes a great deal of variation for the key independent and control variables.

Analysis and Results

To test hypotheses 1-3(a), I utilized three different specifications of a logistic regression model. In Model 1, I included continuous variables for both school and racial demographics. In Model 2, I replaced the continuous variable measuring the percentage of White students in a school with an ordinal version to allow for the potential of a non-linear effect of the school's White student body population. This approach is useful as one might expect that there is a threshold that must be passed after which a school would no longer be considered open to diversity. Model 2 performed better than Model 1, with a higher pseudo R-squared. Because the models utilize the same data and predict the same outcome, the pseudo R-squared is an appropriate statistic for comparison (UCLA: Statistical Consulting Group 2011). Finally, in Model 3, I replaced the county-level demographic variables with ordinal versions as well, to allow for the potential of non-linear effects of these variables as well. Model 3 performed the best out of the three models, and thus in my discussion of the results, I will primarily reference

the findings from Model 3. The results of each model, however, can be found together in Table 6.2.

TABLE 6.2. Results from Models 1-3, logistic regression models of participation.

Variable (n=273)	Model 1 Odds Ratio (SE)	Model 2 Odds Ratio (SE)	Model 3 Odds Ratio (SE)
Total Student Population	1.003 (.001)*	1.002 (.001)*	1.002 (.001)**
Segregation Academy	1.81 (.72)	1.87 (.74)	2.16 (.85)
School Percent White	.99 (.005)	...	...
Reference Category: 94-100% White			
< 60% White	...	2.25 (1.03)	2.71 (1.33)*
60-84.99% White	…	2.26 (.94)*	2.61 (1.11)*
85-93.99% White	...	1.40 (.59)	1.67 (.73)
County U18 Percent Hispanic	.98 (.06)	.98 (.06)	...
Reference Category > 6.09% Hispanic			
0-2.79% Hispanic	...	...	1.39 (.80)
2.8-4.89% Hispanic	...	...	.69 (.42)
4.9-6.089% Hispanic	...	...	1.08 (.77)
County U18 Percent Black	.98 (.01)	.98 (.01)	...
Reference Category: > 49% Black			
< 21% Black	...	...	.47 (.22)
21-40.99% Black	...	...	.36 (.27)
41-48.99% Black	...	...	.55 (.33)
Religion: Reference Category Non-sectarian			
Protestant	1.58 (.54)	1.60 (.54)	1.68 (.57)
Catholic	16.33 (10.40)**	15.54 (9.91)**	17.11 (11.36)**
Islamic	3.52 (5.86)	4.47 (7.03)	6.14 (8.48)
Jewish	2.69 (3.63)	3.65 (4.72)	4.96 (6.43)
Locale: Reference Category Suburbs			
City	1.90 (.78)	1.83 (.75)	1.57 (.69)
Town	1.26 (.82)	1.38 (.90)	.92 (.68)
Rural	2.69 (1.26)*	2.78 (1.34)*	2.24 (1.17)
Median Household Income	1.002 (.02)	1.001 (.02)	1.00 (.02)
Failing School in County	2.70 (1.26)*	2.55 (1.16)*	2.96 (1.47)*
_cons	.19 (.29)	0.08 (.12)	.07 (.10)
Pseudo R^2	.1797	.1887	.1966

Note: Results are from a logistic regression model. Results are reported using odds ratios for ease of interpretation, and robust standard errors are used.
* $p < .05$
** $p < .01$

Hypothesis 1 predicted that the size of a school's White student body population would be negatively related to the likelihood of participation. This prediction was based on findings from the white flight and white avoidance literature, which suggest that when faced with the prospect of increased diversity, schools might opt out of the program to maintain their White exclusivity and White parental support. In Model 1, I used a continuous form of the variable school percent White. The continuous form of the variable measuring the percentage of White students at a school had a negative impact on participation; however, the impact was not statistically significant. After careful consideration, I began to think that that the relationship between the two variables might not be linear. Because of this, I used an ordinal version of the variable school percent White to allow for threshold effects in Models 2 and 3. Quartiles were used to determine cut points such that each category would contain roughly 25% of the observations. The four groups represent schools that were less than 60% White; 60-84.99% White; 85 to 93.99% White; and 94% or more White.

Both Model 2 and 3 support the conclusion that there is a nonlinear relationship between the percentage of White students in a school and the likelihood of participation. When considering that this variable used to operationalize a school's preference for diversity, the presence of a nonlinear effect is reasonable. The results of Model 3 show that schools that while schools that are 94% are less likely to participate than other schools; however, they are only significantly less likely to participate than schools that are less than 60% White or between 60 and 84.99% White. A school where less than 60% of the students are White is 2.71 times more likely to participate than one that is 94% or more White (p=.042), controlling for other factors. A school where 60-84.99% of the students are White is 2.61 times more likely to participate than a school that is 94% or more White (p=.023), holding other factors constant. Both findings suggest

that the most exclusively White private schools, which account for about 25% of my sample, are significantly less likely to participate in the AESP than the most diverse private schools in Alabama. Figure 6.1 utilizes predicted probabilities to depict this trend.

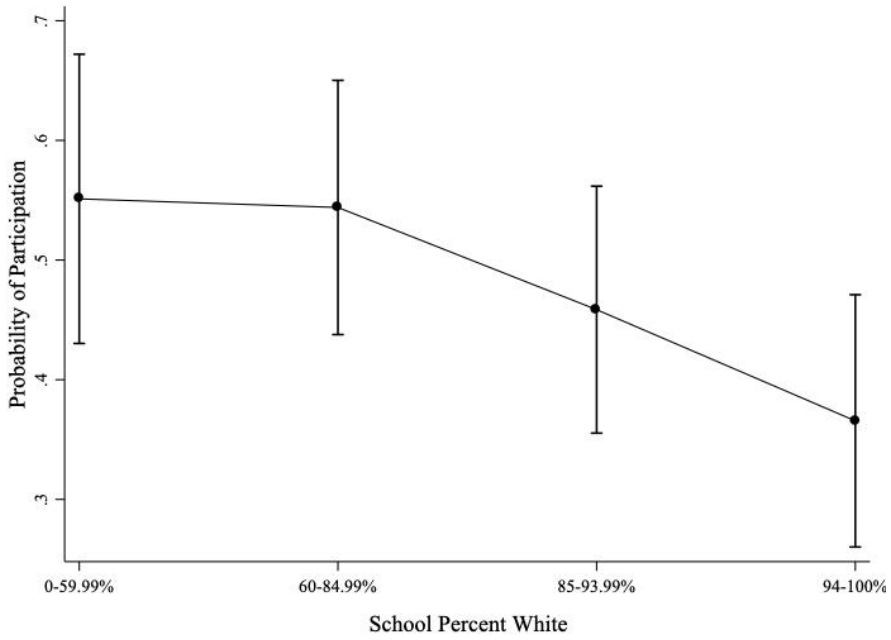

Figure 6.1. Predicted probability of participation by school percent White.

Next, to determine if schools that were identified as segregation academies were less likely to participate than other schools, a variable indicating segregation academy status was included. In Models 1 and 2, there is a positive, yet insignificant, relationship between segregation academy status and participation. In Model 3, the effect remains positive and becomes marginally significant (p=.052). None of the models support Hypothesis 2, which predicted that segregation academies would be less likely to participate in the AESP, and in fact suggest that the opposite may be true.

This finding is interesting and could indicate that historic segregation academies are now more open to diversity than they were in the past. When looking at the descriptive statistics,

segregation academies that participated in the AESP and those that did not had nearly identical percentages of white students (M=86.60; M=87.46). This suggests that participating segregation academies do not display a significantly higher preference for diversity than those who do not.

A second alternative explanation for the high rates of participation on the part of segregation academies could be that segregation academies see the program as a lifeline for survival. In the past few years, there have been closures of some Alabama segregation academies such as Sumter Academy and Marengo Academy in West Alabama. One way to estimate a school's threat of closure is to look at the total number of students they serve. On average, participating segregation academies were larger than those that did not (M=290.33; M=246.52), suggesting that these schools would be no more likely to participate as a survival mechanism than other segregation academies.

Unfortunately, there is also another possible explanation for this finding. Segregation academies have had markedly different relationships with tuition grant programs than other schools. In fact, it was a tuition grant program that allowed them to grow and flourish in the years following *Brown*. Schools have discretion over which scholarship students they admit, thus it is possible that segregation academies do not see participation as an action that will lead to increased diversity.

Because of their legacies of segregation, nonwhite students may be reluctant to apply to segregation academies. Parents of nonwhite students may not want to bear the costs[27] of applying to a segregation academy, out of fear of discrimination in the admissions process. Alternatively, nonwhite parents may be reluctant to apply to segregation academies out of fear that their child

[27] Costs of applying to private schools include the time required to complete the application, an application fee, and any costs associated with transferring records and transcripts.

would be discriminated against or unsafe if admitted. The history and norms that surround segregation academies could make their participation decisions unique.

Finally, to examine the impact of the racial demographics of potential students on school participation decisions, variables indicating the size of the county's Black and Hispanic youth populations were included. In Models 1 and 2, a continuous form of both variables was used; however, in Model 3, ordinal forms of both variables were used. I determined cut-points for the ordinal variables using quartiles, resulting in roughly the same number of observations in each category. Hypothesis 3 predicted that there would be a negative relationship between the size of the potential minority youth population and participation and Hypothesis 3(a) predicted that the size of the potential Black student population would also be negatively related to the likelihood of participation. Because Black and Hispanic youth make up the largest portions of the nonwhite U18 population in the state, I chose to focus on those two groups. The results showed that while both there was a negative relationship between the size of the Black and Hispanic youth populations in a county and the likelihood of a school in that county participating in the AESP, it was not statistically significant in any of the models. The statistical insignificance of these two variables could be the result of small sample sizes; therefore, in the future, it would be beneficial to evaluate the impact of county demographics using a multi-state study with a larger sample size and increased variation. It is also possible that private school administrators are not as keenly aware of county demographics as they are their own schools' demographics, and thus may not consider their school's specific context when making participation decisions. Instead, they may be more responsive to the overall policy narrative, that the program will primarily help poor and minority students.

In addition to the results for the key independent variables of interest, two control variables had interesting and note-worthy impacts on the odds of participation that were not sensitive to model specification. First, the controls for school religious affiliation revealed that Catholic schools were significantly more likely to participate in the AESP than non-sectarian schools ($p<.01$). Referencing Model 3, Catholic schools were 17.11 times as likely to participate in the AESP as non-sectarian schools. This finding is consistent with past findings in the supply-side of school choice literature, and could relate to the mission of Catholic schools, which often seek to serve the poor and needy. While the odds ratios for each of the other types of religious schools indicated that they were more likely to participate than non-sectarian schools, the effect was not statistically significant in any of the models. This shows that the desire to offer a religious education to more students, especially amongst Catholics, may very well be an important predictor of participation.

Secondly, the results showed that there was a strong positive relationship between the presence of a failing school in the county and the likelihood of participation ($p=.029$). This result was also not sensitive to model specification. Schools located in a county with a failing school were 2.96 times as likely to participate than those who were not. This result is encouraging and suggests that private schools may also be responsive to the level of demand for their services. Though students do not have to be zoned for a failing school to receive a scholarship through the AESP, those that are could be said to have a higher need for the program.

Alternative Specifications

To ensure the robustness of my findings for Hypothesis 1, I used an additional model allowing for a non-linear relationship between the percentage of White students in a school and participation. The results of this model, Model 4, can be found in Table 6.3. Model 4 includes the

squared term of the variable measuring the size of a school's White population and shows that there is a significant negative relationship between the percentage of White students in a school and the likelihood of participation once a school passes a tipping point of approximately 50% White (p=019). These results support the conclusion from Model 3, that race matters, but only in the most exclusively White schools, which are significantly less to participate in the AESP. To visualize this relationship, I employed predicted probabilities again. The results can be seen in Figure 6.2.

Table 6.3. Results from Model 4, a logistic regression model of participation.

	Model 4
Variable (n=273)	Odds Ratio (SE)
Total Student Population	1.03 (.01)*
Segregation Academy	1.94 (.78)
School Percent White	1.03 (.02)
School Percent White Squared	0.99 (.0002)*
County U18 Percent Black	0.98 (.01)
County U18 Percent Hispanic	0.98 (.06)
Religion: Reference Category Non-sectarian	
Protestant	1.77 (.64)
Catholic	17.92 (10.95)**
Islamic	4.86 (7.33)
Jewish	3.71 (4.64)
Locale: Reference Category Suburbs	
City	1.92 (.80)
Town	1.40 (.90)
Rural	2.88 (1.40)*
Median Household Income	1.001 (.02)
Failing School in County	2.45 (1.06)*
_cons	0.14 (.21)
Pseudo R^2	.1915

Note: Robust standard errors were used.
* p < .05
** p < .01

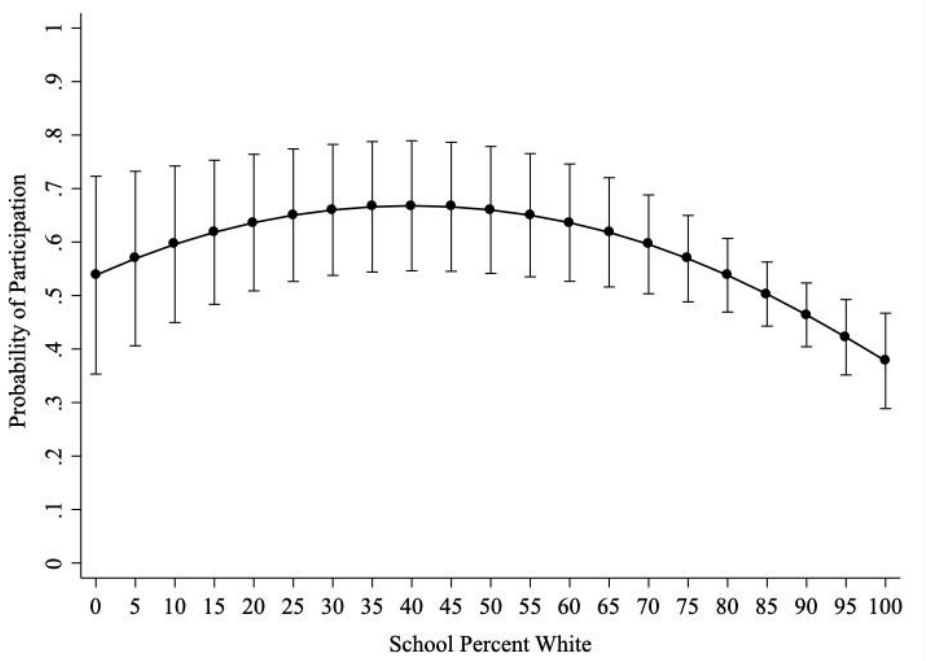

Figure 6.2. Predicted probability of participation by school percent White, polynomial specification.

I also ran additional models to allow for the potential of an interactive effect between the independent variables of interest. These models allow for the possibility of conditional effects of the variable measuring the percentage of White students in a school. Originally, I hypothesized that a school's displayed preference for diversity and the diversity of potential choice students would each have independent effects on the likelihood of participation. However, there is another possibility. It is also reasonable to think that there would be interactive effects between the school and county demographic variables. The impact of a school's preference for diversity on participation could be moderated by the perceived threat to the school's diversity. For example, an exclusively White school located in a county where most of the students are White might not see participation as a threat to their diversity in the same way that school in a majority Black or Hispanic county would. If this is the case, testing for an interaction between the two types of variables is an important task. There may also be interactive effects between the variable

measuring the percentage of White students in a school and segregation academy status. To account for these possibilities, four additional models were used.

In Tables 6.4, 6.5, 6.6, and 6.7 I present data from four additional models utilizing interactive effects. In Model 5, I include an interaction term between the variable representing the percentage of White students in a school and the binary indicator of segregation academy status. The inclusion of this interaction term allows for the possibility that the effect of the percentage of White students in a school on participation might depend on a school's segregation academy status. The results of the model do not provide support for this, however, and instead show that there is no significant interactive effect between the two variables. These results can be seen in Table 6.4.

In Model 6, I included an interaction between the percentage of White students in a school and the percentage of Black youth in the county. Though the variable measuring the percentage of Black youth in the county was not significant in Models 1-4, it is possible that there will be a significant interaction between it and the percentage of White students in a school if the former moderates the latter. The results from Model 6, which can be found in Table 6.5, revealed that the interaction coefficient was not statistically significant and thus do not provide evidence of an interactive effect between the two variables.

Table 6.4. Results from Model 5, a logistic regression model of participation.

	Model 5
Variable (n=273)	Odds Ratio (St. Err.)
Total Student Population	1.002 (.001)*
Segregation Academy	0.90 (1.19)
School Percent White	0.99 (.01)
Segregation Academy x School Percent White	1.01 (.02)
County U18 Percent Black	.98 (.01)
County U18 Percent Hispanic	0.99 (.06)
Religion: Reference Category Non-sectarian	
Protestant	1.61 (.55)
Catholic	16.64 (10.73)**
Islamic	3.64 (6.06)
Jewish	2.74 (3.68)
Locale: Reference Category Suburbs	
City	1.92 (.78)
Town	1.24 (.81)
Rural	2.60 (1.26)
Failing School in County	2.76 (1.16)*
Median Household Income	1.002 (.02)
_cons	0.19 (.29)
Pseudo R^2	0.1804

Note: Robust standard errors were used.
* $p < .05$
** $p < .01$

Table 6.5. Results from Model 6, a logistic regression model of participation.

	Model 6
Variable (n=273)	Odds Ratio (St. Err.)
Total Student Population	1.002 (.001)*
Segregation Academy	1.82 (.72)
School Percent White	1.001 (.01)
County U18 Percent Black	0.99 (.03)
School Percent White x County U18 Percent Black	0.99 (.0003)
County U18 Percent Hispanic	0.98 (.06)
Religion: Reference Category Non-sectarian	
Protestant	1.52 (.53)
Catholic	15.33 (9.62)**
Islamic	3.50 (5.83)
Jewish	2.67 (3.55)
Locale: Reference Category Suburbs	
City	1.88 (.77)
Town	1.23 (.81)
Rural	2.70 (1.30)*
Failing School in County	2.88 (1.26)*
Median Household Income	1.002 (.02)
_cons	0.12 (.21)
Pseudo R^2	0.1805

Note: Robust standard errors were used.
* $p < .05$
** $p < .01$

In Model 7, I used an additional specification to probe the interaction between the percentage of White students in a school and the percentage of Black youth in the county. In this model, I used a binary variable rather than a continuous variable for the county percent Black, indicating whether the majority of the U18 population in the county was Black, or not. This specification allows for the possibility that only especially high concentrations of Black youth in the county will moderate the effects of a school's displayed preference for diversity. As in previous models, though, the interaction term is still insignificant, providing additional support

for the conclusion that school participation decisions are not significantly influenced by considerations of county demographics. The results of Model 7 can be found in Table 6.6.

Table 6.6. Results from Model 7, a logistic regression model of participation.

	Model 7
Variable (n=273)	Odds Ratio (Std. Err.)
Total Student Population	1.002(.001)*
Segregation Academy	1.86 (.73)
School Percent White	0.99 (.01)
Majority Black County	0.52 (.54)
School Percent White x Majority Black County	1.01 (.01)
County Percent U18 Hispanic	1.02 (.05)
Religion: Reference Category Non-Sectarian	
County U18 Percent Hispanic	1.80 (.61)
Protestant	20.00 (12.36)**
Catholic	4.01 (6.44)
Jewish	2.86 (4.05)
Locale: Reference Category Suburbs	
City	2.07 (.83)
Town	1.27 (.82)
Rural	2.63 (1.24)*
Failing School in County	2.88 (1.26)*
Median Household Income	1.79 (.02)
_cons	0.07 (.21)
Pseudo R^2	.1805

Note: Robust standard errors were used.
* $p < .05$
** $p < .01$

Finally, to see if there was an interactive effect between the variable measuring the percentage of White students in a school and the size of the county Hispanic youth population, I ran an additional model, Model 8, with an interactive term for the two variables. A significant coefficient for the interaction term would suggest that the effect of the percentage of White students at a school on participation is moderated by the size of the county's Hispanic youth

population. The results of the model, which can be found in Table 6.7, revealed that there was no such significant interaction.

Table 6.7. Results from Model 8, a logistic regression model of participation.

	Model 8
Variable (n=273)	Odds Ratio (Std. Err.)
Total Student Population	1.003 (.001)*
Segregation Academy	1.81 (.71)
School Percent White	1.003 (.01)
County Percent U18 Hispanic	1.16 (.87)
School Percent White x County Percent U18 Hispanic	.99 (.003)
School Percent Black	.98 (.01)
Religion: Reference Category Non-Sectarian	
County U18 Percent Hispanic	1.64 (.57)
Protestant	17.16 (11.03)**
Catholic	3.54 (5.90)
Jewish	2.83 (3.83)
Locale: Reference Category Suburbs	
City	1.86 (.77)
Town	1.27 (.80)
Rural	2.54 (1.23)
Failing School in County	2.68 (1.12)*
Median Household Income	.99 (.02)
_cons	.10 (.18)
Pseudo R^2	0.1811

Note: Robust standard errors were used.
* p < .05
** p < .01

The findings from each of these alternative models provide additional context and suggest that the effect of a school's displayed preference for diversity is not contingent on other factors. This finding is unexpected; however, it may suggest that private school administrators have limited knowledge about the racial demographics of the potential students in their county. It

could also suggest that administrators are more influenced by the threat of diversity related to the policy narrative than they are to the specific context surrounding their schools. Alternatively, it is possible that the results are limited by low levels of variation in county-level demographics. In the future, a larger-scale multi-state study would be one way to determine which of these possible explanations is most accurate.

Limitations

In my models of participation, I have shown the impact of student racial demographics on school participation decisions. The AESP has the potential, though, to bring two types of diversity into private schools. It is important to note that participation in the AESP will also likely bring increased socioeconomic diversity to participating private schools, as the program is targeted at families with incomes below 185% of the federal poverty level. Ideally, I would be able to model the impacts of both socioeconomic and racial diversity; however, data limitations do not currently allow for this. While the NCES publishes socioeconomic data from public schools, such as the percentage of students qualifying for free or reduced-price lunches, they do not publish disaggregated socioeconomic data for private schools. In the future, if this data is collected or made available, it would be beneficial to include it in models of participation as well.

Discussion

The overarching question for this set of models is, do racial demographics impact private school participation in school choice programs. In particular, I examined how the racial demographics of students and potential students, as well as school segregation academy status, impacted the likelihood of participation. As part of this effort, I proposed four different hypotheses, and found evidence in support of one. The logistic regression model showed that the

most racially exclusive private schools, those that are more than 94% White, are least likely to participate in the program, and were significantly less likely to participate than schools that were less than 85% White. This result was not mediated by either county demographics or school segregation academy status. It is likely that the schools that are more than 94% White, and extremely racially homogenous, see racial homogeneity as a strong part of their school's identities. Participation, then, may be seen as a threat to their identity because it brings the potential for diversity. Rather than participating and becoming more diverse, or actively discriminating against students of color that might apply, these schools may opt-out of the program altogether to safeguard their status as a racially exclusive school.

The results of this study, considered in conjunction with other studies of the impact of school choice programs on school segregation, are troubling. While, to the best of my knowledge, no other study has examined the questions addressed in this paper, numerous scholars have found that school choice programs often lead to increased levels of racial segregation in schools (Saporito 2003; Bifulco and Ladd 2006a; Bifulco, Ladd, and Ross 2008; Mickelson, Bottia, and Southworth 2008; Frankenberg et al. 2017; Wilson and Bridge 2019). School segregation has been associated with an unequal distribution of resources, such has larger classrooms, increased turnover, lower-quality teachers, and higher teacher-student ratios (Ladd 2008; Condren et al. 2013; Mordechay and Orfield 2017). The unequal distribution of resources can then contribute to the Black-White achievement gap seen in schools (Clotfelter 2004; Ladd 2008; Mordechay and Orfield 2017; Ayescue et al. 2017). Integrated schools, on the other hand, can be a great setting for children to work and learn with students from different backgrounds, which can lead to decreased stereotyping and bias, as well as more diverse friendships (Slavin

1985; Wells and Crain 1994; Ayescue et al. 2017; Eberhardt 2019; Merlino, Steinhardt, and Wren-Lewis 2019).

The findings of this study add to our understanding of how race and school choice interact, showing that some schools, especially those that are more than 94% White, may avoid the potential for increased diversity by opting-out of school choice programs all together. The findings also add to the previously established reasons, such as a fear or regulations, for non-participation outlined in the supply side of choice literature. My findings suggest that racial homogeneity may be considered an important part of the "identities" non-participating schools express a will to protect. Though past surveys have indicated that non-participating schools fear participation will impact their identities, the details about those identities have not, and likely could not, be revealed using survey data. In the next chapter, I will investigate the impact of participation on school segregation levels in order to evaluate whether the AESP is currently alleviating, or contributing to, existing levels of segregation in Alabama private schools.

Chapter 7: Impact Analysis

Private school choice programs, especially those that target low-income students like the AESP, represent an opportunity for diversity in what have historically been segregated institutions. Private schools enroll disproportionate numbers of White and wealthy students when compared to public schools. For the 2017-2018 school year, approximately 67% of private school students in the United States were White, 11% were Hispanic, and 9% were Black (Broughman, Kincel, and Peterson 2019). In public schools, on the other hand, only 47% of students were White while 27% were Hispanic and 15% were Black (National Center for Education Statistics 2021). Even starker differences exist between the socioeconomic demographics of private and public school students. For the 2015-2016[28] school year, only 9% of private school students in the United States were considered low-income[29]; whereas 50.9% of public school students were (Ee, Orfield, and Teitell 2018).

In Alabama, these differences are even greater. According to a report from the UCLA Civil Rights Project, Alabama is one of the top ten states with the highest level of private school segregation in the United States. About 76.3% of Alabama private school students are White, 15.5% are Black, and about 2.8% are Hispanic. The enrollment differences are not merely a

[28] The most recent year available.
[29] Low-income students are those that qualify for free or reduced priced lunches.

reflection of demographic patterns in the general population, but instead reflect historic practices and societal inequalities (Ee, Orfield, and Teitell 2018).

The historic function of private schools as havens for white flight following desegregation is likely one important explanation of continuing segregation in the schools today. If certain private schools have, for years and years, attracted large numbers of White students, they may develop a reputation of being "White" schools and attract new White students because of it. This may be especially true for segregation academies, which still educate many White students throughout the state. In addition to the reputation of the schools as "White" being a potential selling point for White parents seeking a segregated learning environment for their children, it may also serve to discourage diverse families. Even if the schools earnestly practiced nondiscrimination in their admittance practices, parents from minority backgrounds might see these schools as unwelcoming and even hostile environments for their nonwhite children. These dynamics could explain, at least in part, why private schools continue to enroll disproportionate numbers of White students.

Persistent economic inequalities in the U.S. offer another important explanation for the low enrollment of nonwhite students in private schools. Private schools charge tuition for attendance, and high costs can make such schools unaffordable for many families. In Alabama, private school tuition costs $7,050 per year, on average, though the most expensive schools in the state charge more than $20,000 per year (Hanson 2021). Economically, White families are better equipped, on average, to pay these costs because they have significantly higher median household incomes than Blacks or Hispanics. Specifically, in Alabama, the median household income for Whites in 2019 was $55,690, much higher than the median household income for Blacks ($32,188) or Hispanics ($38,314) (Alabama Possible 2020).

The AESP has the potential to remedy at least one of these two potential causes of low minority enrollment in Alabama private schools - the costs. By offering scholarships, the program greatly reduces, and in some cases removes, the cost of private schooling. In doing so the AESP allows more socioeconomically and racially diverse students to choose private schools. Data collected on scholarship recipients thus far shows that the majority of students participating in the AESP were Black (65% for 2014-2015, 62 % for 2016-2017, and 63% for 2018-2019). Since Black students are a minority in Alabama private schools, it is possible that their utilization of scholarships from the AESP could work to reduce racial isolation in these schools. If this were happening, it would represent a great success for the AESP. To date, few researchers have systematically explored the effects of private school choice on private school segregation, and no researchers have examined the impact of the AESP on racial segregation, representing a gap in the literature. In order to fill that gap, and inform scholars and policy makers alike, I seek to answer the question *what impact does participation in a private school choice program have on levels of private school segregation?*

If my analysis shows evidence of increased segregation in private schools, it would be concerning for two key reasons. First, segregated education settings have been shown to contribute to achievement gaps, with poor and minority students at a disadvantage compared to their whiter, wealthier peers. Researchers have found that these achievement gaps are most often attributed to an unequal distribution of resources, which leads to schools with high concentrations of minority students often having lower quality teachers, higher turnover rates, and less general resources than whiter schools (Ladd 2008; Wells, Warner, and Grzesikowski 2013; Mordechay and Orfield 2017). Though these trends are normally seen in public school settings; they are likely applicable to private schools as well. Like public schools, private schools

can differ greatly in their tuition costs and the total student populations, and these differences could greatly impact school resources. Because of this, we could expect segregated private schools to contribute to achievement gaps and inequalities in the same way that segregated public schools do. It is important, then, that we are cognizant of the impacts of choice on private school segregation so that we can better understand the relationship between the two and try to mitigate any negative effects that may arise.

Secondly, if choice leads to increased segregation, it can also prevent students from reaping the benefits of an integrated education. When minority students attend integrated schools, they may see increased academic achievement and career prospects (Wells and Crain 1994; Mordechay and Orfield 2017). Equally, or perhaps more, importantly, when students attend integrated schools, they are more likely to develop interracial friendships and positive racial attitudes, both of which benefit the students and society as a whole. In a nation where racism is still pervasive, something as simple as having students attend racially diverse schools can go a long way to reduce stereotypes and racist beliefs (Slavin 1985; Clotfelter 2004; Merlino, Steinhardt, and Wren-Lewis 2019).

Theory and Hypothesis

Today, 68 years after the Court's ruling in *Brown*, Black students are still frequently isolated in schools with students primarily of their own race. One prominently cited cause of resegregation is the federal government's disinvestment in integration. For a short period after *Brown*, the USSC handed down a number of other rulings[30] that strengthened their call for the integration of public schools; however, it was not long before the Court began to issue decisions

[30] Rulings that strengthened *Brown* include *Brown v. Board of Education of Topeka (2)* (1955), *Green v. County School Board of New Kent County* (1968), *Alexander v. Holmes County Board of Education* (1969) and *Swann v. Charlotte-Mecklenburg Board of Education* (1971).

"that would effectively put the brakes on government efforts to desegregate schools" (Clotfelter 2004, 30). In addition to the negative effects of the Supreme Court's disinvestment in integration, an increased reliance on the school choice marketplace has been shown to increase both racial (Saporito 2003; Bifulco and Ladd 2006a; Bifulco, Ladd, and Ross 2008; Mickelson, Bottia, and Southworth 2008; Frankenberg et al. 2017; Wilson and Bridge 2019; Shaffer and Dincher 2020) and socioeconomic (Saporito 2003; Bifulco, Ladd, and Ross 2008; Mickelson, Bottia, and Southworth 2008; Marcotte and Dalane 2019) segregation in American schools. This is particularly concerning as we see more states, and even the federal government, become increasingly open to school choice as a policy alternative.

Due to the significant benefits that integration can have on a student's education and their relationships with people from different racial groups, it is critical that we remain diligent in our study of the factors that impact racial isolation in American schools. White students have historically been isolated in private schools; however, it is possible that private school choice programs might reduce this isolation by making private education more affordable for a more diverse group of students. In Alabama, over 70% of private school students are White; however, less than 20% of scholarship students were. Still, the program will only lead to reduced racial isolation if choosing students don't self-segregate into their new schools.

Past research suggests that, despite the known benefits of integration, parents will continue to select racially segregated learning environments for their children. In their study of another southern state, Louisiana, Egalite, Mills, and Wolf (2017) found that the majority of student transfers to private schools led to increased racial stratification (measured as dissimilarity) in private schools. This finding was especially strong for White student transfers. Similarly, Green, Mills, and Buck (2010) found that voucher transfers worsened segregation in

both public and private receiving schools in their study of the Milwaukee Parental Choice Program. These findings are not unexpected if one is familiar with the literature on parental choices.

Studies of white flight suggest that White parents will exit schools with high concentrations of nonwhite students, while studies of white avoidance reveal that White parents will select schools with low concentrations of nonwhite students for their children (Wrinkle, Steward, and Polinard 1999; Saporito, Yancey, and Lewis 2001; Clotfelter 2004; Lankford and Wyckoff 2006; Ledwith and Clark 2007; Billingham and Hunt 2016). Furthermore, studies have found that this trend is not simply the result of parents responding to factors that may serve as a proxy for, but are not definitively related to, race[31] (Billingham and Hunt 2016). Instead, parental choices appear to be solely race-motivated (Billingham and Hunt 2016). Weiher and Tedin (2002) found that this trend of selecting same race schools holds not only for White parents but also for Black and Hispanic parents as well. Based on the past literature, then, I would predict that:

Hypothesis 4: The Segregating Choices Hypothesis: Participation in the AESP will be associated with increased levels of segregation in participating private schools.

Defining Segregation

Education policy researchers typically focus on two primary types of segregation. The first, de jure segregation, or segregation by law or by policy, was common during the pre-*Brown* era (Clotfelter 2004). After *Brown*, segregation remained, but it was termed *de facto* because it existed without formal support of the state. Today, scholars often consider the lines between the two types of segregation to be blurred, as public policies can influence private decisions in such

[31] These factors include levels of security and school ranking.

a way that they lead to segregative outcomes (Rothstein 2017). Contemporary school choice policies (including the AESP) have the potential to be the type of policies that blur the lines between the two types of segregation if they lead to increased segregation in schools.

Studies of contemporary school choice programs face a challenge when deciding how to measure segregation (or integration). Scholars have developed a multitude of ways to measure segregation, often focusing on a specific dimension of segregation. The dimensions of segregation most often studied at the school-level include evenness and exposure. Those interested in evenness explore how evenly distributed populations are within a set group of schools (such as a district). One common method used to measure the evenness of population distribution is the dissimilarity index. The dissimilarity index ranges from 0-1[32] and, after taking into account the distribution of members from two racial groups, reveals what percentage of individuals from one group would have to move in order to achieve balance (Massey and Denton 1988; Iceland, Weinberg, and Steinmetz 2002; Forest 2005). At the school level, if schools within a given geographic area had a dissimilarity of .50, this would reveal that 50% of students would have to switch schools in order to achieve a racially balanced distribution of students across schools.

Whereas measures of evenness focus on the distribution of students and how closely it reflects larger demographic patterns, measures of exposure "measure the degree of potential contact, or possibility of interaction, between minority and majority group members" (Massey and Denton 1988, 287). Exposure is often operationalized using either the isolation index or the exposure index. These measures are particularly useful in showing students' lived experiences of segregation (Iceland, Weinberg, and Steinmetz 2002).

[32] A dissimilarity index with a value of 0 reflects a perfectly even distribution of students, whereas a dissimilarity index with a value of 1 would reflect complete segregation.

The exposure index estimates the probability that a student of race *y* will interact with (or be exposed to) students of race *z* in their schools (Clotfelter 2004). The exposure index ranges from 0 to 1; however, the range for a given population is dependent on the "distribution of ethnic groups and on the proportion of minorities in the city" (Forest 2005, 2). If the White/Black exposure index for a given school was .50, you could interpret this to mean that the average White student attends a school where 50% of the students are Black. It is important to note that the exposure index is used to reflect the experiences of the average student of race *x*. These experiences are not necessarily symmetrical, though, and the exposure of the average White student to Black students in their school can be different than the exposure of the average Black student to White students in their school[33]. To calculate exposure of a given group *x* to a given group *z*, I use the following equation:

$$\text{Exposure} = \sum_{i=1}^{n} \left(\frac{n_{ix}}{N_x}\right)\left(\frac{n_{iz}}{n_i}\right)$$

In the equation, n_{ix} represents the number of students from race *x* in a given school *i*; N_x represents the number of students of race *x* in the total population of schools; n_{iz} represents the number of students from race *z* in a given school *i*; and n_i represents the total number of students in a given school *i*.

The isolation index measures the extent to which students of race *x* are exposed to students of their own race (Massey and Denton 1988). The isolation index, like the dissimilarity and exposure indices ranges from 0 to 1, with a value of 0 representing no isolation and 1 representing complete isolation. If the calculated isolation for White students in a given set of

[33] Example. It is possible to have a Black/White exposure rate of .5 and a White/Black exposure rate of .7. This would mean that the average White student attends a school where 70% of students are Black while the average Black student attends a school that is 50% White. It may be helpful to imagine these "average students" as actual students whose experiences can differ if they attend different types of schools, on average.

schools is .7, you could say that the average White student attends a school where 70% of the students are White. I calculated isolation levels using the following equation:

$$\text{Isolation}=\sum_{i=1}^{n}\left(\frac{x_i}{X_T}\right)\left(\frac{x_i}{t_i}\right)$$

In the equation, n is the number of schools; x_i is the population of students of a given race (White, Black, or Hispanic) in a given school i; t_i is the total population of students in school i; and X_T is the total population of students of a given race in the larger group of private schools[34].

In the analysis that follows, I will focus on examining changes in both exposure and isolation levels in private schools. I have measured isolation for Black, White, and Hispanic students, as these groups make up the largest share of private school students in the state. I also calculate the exposure rates for each of these groups to each other (White/Black, White/Hispanic, Black/White, Black/Hispanic, Hispanic/White, and Hispanic/Black). Increases in isolation or decreases in exposure would both indicate an increase in segregation for Alabama students. Alternatively, decreases in isolation and increases in minority/White or White/minority exposure would reflect reduced segregation in Alabama private schools. I have selected to focus on isolation and exposure, rather than dissimilarity, because they give a better estimation of the segregation experienced by students. Furthermore, dissimilarity seems to be more appropriate for measuring public school segregation levels, as school zones and government action plays a large role in the way that students are sorted into schools. In these cases, it would be important to understand both the lived experiences of students, as well as the direct impact of policies that determine how students are sorted into public schools. In private schools, since the government

[34] The larger groups I use are (1) all Alabama private schools in my sample and (2) participating/non-participating private schools.

is not responsible for, and cannot control, the sorting of students into schools it is more important to focus on any changes in the exposure and isolation of students.

Sample

In order to track changes in segregation levels over time, I constructed a panel data set. I pulled data from the 2009-2010, 2011-2012, 2013-2014, 2015-2016, and 2017-2018 iterations of the PSS. I selected these years because they represent a reasonable span that includes both the pre- and post- treatment time periods. The middle year of the panel, the 2013-2014 school year, represents the first year of the AESP. In total I was able to get data from 387 schools after removing the few majority PreK and homeschool focused schools, as well as those that had closed since they responded to the survey. The full panel with 387 schools was not strongly balanced because some schools failed to respond to the PSS consistently, and thus I had to drop observations to achieve balance. I completed this process three times and developed three balanced panels. The descriptive statistics for each panel can be found in Appendix B.

The most conservative panel included only schools (n=131) that responded to all five rounds of the PSS. For the remaining two panels, I used interpolation to estimate the missing student demographic data. I did not have to interpolate the data that was constant over time (ex. school religious affiliation) or the county-level controls. For the next most conservative panel, I included all schools that responded to at least four rounds of the PSS and did not fail to respond in either the first or last year of the panel. This process allowed me to increase my sample size to a total of 168 schools and required the interpolation of 37 observations. The 37 interpolated observations represent approximately 4.4% of the 840 total observations in that panel. In the last panel, I included schools that responded to at least 3 rounds of the PSS and did not fail to respond in either the first or last year of the panel. By including these additional schools for

which the interpolation of bounded missing data was possible, I was able to increase the sample size to a total of 183 schools. The interpolation process for this panel led to 67 additional observations, approximately 7.3% of the 915 observations in the panel. Though this panel had the highest percentage of interpolated observations, it was descriptively closest to the full, unbalanced panel and thus I have chosen to use this as my primary panel for analysis.

There were significant levels of attrition in the sample over the panel's time span, and this attrition led to a few small descriptive differences between the full unbalanced panel and the balanced panel used for analysis. These differences can be observed in Table A.1. Some of the largest differences between the two include participation rates, the average percentage of Black students in a school, and the average total population of students in a school.

Attrition has led to an over-representation of participating schools in the sample used for analysis. Specifically, attrition led to a sample where approximately 57% of schools were participating, up approximately 11 percentage points from the participation rate in the full sample. Attrition also led to schools in the analysis sample having slightly lower percentages of Black students and higher percentages of white students than those in the full sample. Schools in the reduced sample had student populations that were19.72% Black, while those in the full sample had student populations that were 24.04% Black. Finally, attrition led to the schools in the sample used for analysis being larger, on average, than those in the full sample. Schools in the reduced sample had an average of about 225 students, while those in the full sample had an average of 208 students. Attrition did not result in noticeable differences in the sample makeup based on school religious affiliation, segregation academy status, or school location. Despite the slight differences in the samples, I do not expect attrition to significantly bias my findings.

I will first use the panel to describe trends in segregation Alabama private schools over time, focusing primarily on changes that have occurred since the AESP was implemented. This descriptive analysis will utilize calculations of both racial isolation and exposure. The use of these measures will allow me to describe the changes in experienced segregation for Alabama private school students, both overall, and by participation status. Though this approach will provide important contextual information, it does not allow me to draw any conclusions about the causes of any changes and thus must be supplemented with additional testing.

TABLE 7.1. Descriptive statistics for all variables.

Variable	Mean	Std. Dev	Min	Max
Participating	0.57	0.49	0	1
School Percent White	71.50	31.01	0	100
Total Student Population	225.88	235.89	3	1860
Segregation Academy	0.31	0.46	0	1
Religious Affiliation: Non-Sectarian	0.21	0.41	0	1
Religious Affiliation: Non-Catholic Religious	0.62	0.49	0	1
Religious Affiliation: Catholic	0.16	0.37	0	1
Location: City	0.41	0.49	0	1
Location: Suburbs	0.19	0.40	0	1
Location: Town	0. 10	0.29	0	1
Location: Rural	0.33	0.47	0	1
County U18 Percent Nonwhite	45.55	17.20	10.09	90.75
Median Household Income	44,557	9,444	20,451	74,063

Note: The full panel data set included data from 183 schools. The total number of school-year observations was 915.

In order to determine whether or not participation in the AESP is causing changes in segregation levels in private schools, I will also estimate a difference in difference (DiD) specification using a two-way fixed effects model. The two-way fixed effects model is more appropriate for my data than a traditional DiD because it allows for a variation in treatment timing (Goodman-Bacon 2021). In a traditional DiD model, cases are sorted into the treatment

and control groups at the same time; however, in my data set, some cases are exposed to the treatment longer than others. Alabama private schools had the opportunity to opt into the AESP beginning in the 2013-2014 school year, but not all schools chose to participate in the first year. Instead, some began participating as late as 2017. To account for this possibility, the key independent variable in this analysis was a dichotomous indicator of participation by a school in the given year. Thus, a school that began participating at the beginning of the 2015 school year would be coded as 0 in 2013, prior to the start of their participation, but a 1 for the 2015-2016 and 2017-2018 school years. In the two-way fixed effects model, all variables that do not change over time, like religious affiliation or segregation academy status, are controlled for by school-level fixed effects.

The dependent variable in the two-way fixed effects model is a measure of the percentage of White students in a school. I have selected this measure as a proxy for school segregation levels because private schools already have remarkably high percentages of White students. If participation is associated with an increase in the "Whiteness" of private schools, this could be interpreted as an increase in segregation. This measure does not capture segregation levels as precisely as the segregation indexes do; however, segregation indexes reflect segregation within groups of schools, rather than in single schools, and cannot be used as a dependent variable in this type of modeling. By pairing the two methodological approaches, I will be able to provide a comprehensive analysis of segregation changes.

Analysis and Results

In order to determine whether participation in the AESP leads to increased segregation in participating private schools, I will first examine descriptive changes in racial isolation and exposure. Increases in isolation or decreases in exposure, should both be interpreted as an

increase in levels of segregation experienced by private school students. Isolation and exposure will be calculated for the three major racial groups present in Alabama private schools – White, Black, and Hispanic/Latino. Since each isolation and exposure calculation describes the experiences of an average student of a given race, it is possible that segregation changes may differ across groups. To provide additional context to the school-level findings, I have also included information about exposure and isolation changes at the county level in Appendix C. At the county-level, racial isolation and exposure trends have generally remained consistent between 2009 and 2017. Additionally, levels of White isolation in Alabama counties are much lower than they are in private schools. This suggests that changes occurring in private schools are not merely the result of demographic changes at the county-level.

After I track the changes in racial isolation and exposure that have occurred since the AESP was implemented, I will turn to modeling the impact of participation on segregation levels. To do this I will first describe the two-way fixed effects model specification and then present the results from that analysis. Afterwards, I will interpret the results of the model and discuss how they fit together with the findings about changes in isolation and exposure to draw conclusions about the accurateness of my hypothesis. Next, I will present alternative model specifications to further test my primary hypothesis. Finally, I will discuss the limitations of the analysis.

Changes in Overall Levels of Segregation

In the discussion that follows, I describe changes in both isolation and exposure rates between the 2011-2012 school year, which was the last year in my data set prior to the AESP's implementation, and the 2017-2018 school year. First, I focus on changes in racial isolation in Alabama private schools. The isolation levels for each racial group, by year, can be found in

Table 7.2. The changes seen with those values will reflect changes in private school segregation levels as a whole. Secondly, I measured isolation for participating and non-participating schools in order to see if there were differences in segregation changes based on participation status. The isolation levels for each racial group in both participating and non-participating schools, by year, can be found in Table 7.3. Though any difference found between the two will not imply that participation is the cause, it will provide a useful information about how segregation is changing within the two groups of schools.

Next, I measured levels of exposure for each racial group. The exposure rates for each racial group, by year, can be found in table 7.4. After measuring overall exposure, I also measured exposure in both participating and non-participating private schools to see if the changes in exposure differed based on school participation status. The changes in exposure in participating and non-participating private, by race and year, can be found in Table 7.5.

Isolation

The results presented in Table 7.2 show that isolation levels for students in all Alabama private schools have changed since the AESP was implemented; however, the changes are not uniform across racial groups. Figure 7.1 depicts the overall changes in isolation for each racial group. Overall, White students attended schools that were slightly less isolated during the 2017-2018 than they were during the 2011-2012 school year, on average. White student isolation decreased 2.95 percentage points between the 2011-2012 school year and the 2017-2018 school year, with the average White student attending a school was is 84.81% White during the 2017-2018 school year, compared to a school that was 87.76% White in the 2011-2012 school year. This suggests that overall segregation has decreased for White private school students since the AESP was implemented.

TABLE 7.2. Isolation in all Alabama private schools, by race and year.

Year	Overall White Isolation	Overall Black Isolation	Overall Hispanic Isolation
2009	0.8878	0.4921	0.0568
2011	0.8776	0.5008	0.0589
2013	0.8676	0.5305	0.1652
2015	0.8572	0.5586	0.1484
2017	0.8481	0.5325	0.1971

Note: Years in table represent school years, 2009-2010, 2011-2012, 2013-2014, 2015-2016, 2017-2018.

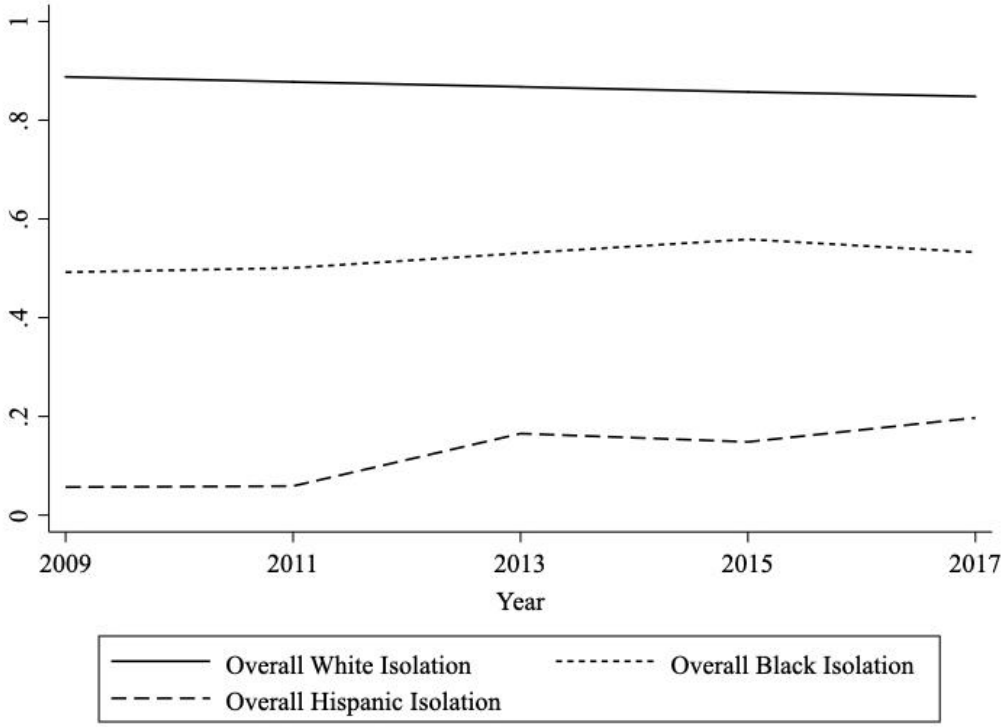

Figure 7.1. Overall changes in racial isolation levels in Alabama private schools.

On the other hand, Black students attended schools that were slightly more isolated in the 2017-2018 school year than they were in 2011-2012 school year, on average. Since the 2011-2012 school year, Black student isolation has increased by 3.17 percentage points. During the 2017-2018 school year, the average Black student attended a school that was 53.25% Black,

whereas the average Black student attended a school that was only 50.08% Black in the 2011-2012 school year, suggesting that Black private school students are experiencing heightened segregation since the AESP has been in place.

Hispanic students were also more isolated during the 2017-2018 school year than they were during the 2011-2012 school year, on average. The change in isolation for Hispanic students was greater than the change was for White or Black students. Since the 2011-2012 school year, Hispanic student isolation has increased by 3.19 percentage points. During the 2017-2018 school year, the average Hispanic student attended a school that was 19.71% Hispanic, whereas they attended schools that were only 5.89% Hispanic during the 2011-2012 school year. The findings for changes in racial isolation in all private schools reveal that while the average White student attended a less isolated school during the 2017-2018 school year than the average White student during the 2011-2012 school year did, the average Black and Hispanic student both attended more isolated schools.

When looking at the changes in isolation for White, Black, and Hispanic students in participating and non-participating schools, which can be seen in Table 7.3, the trends remain the same. The trends, for participating and non-participating private schools can be found in Figures 7.2 and 7.3, respectively. White student isolation decreased in both participating and non-participating private schools; however, the decrease was larger in participating schools. White student isolation decreased 4.72 percentage points between the 2011-2012 and 2017-2018 school years in participating schools, but only by 1.8 percentage points in non-participating schools over the same period of time. This suggests that while White students in both types of schools have seen a decrease in segregation, the effect has been greater for students in participating private schools. Furthermore, it is important to note that White students in non-participating schools

started off with a higher level of isolation, and thus since the AESP the gap between White isolation levels in the two types of schools has increased.

TABLE 7.3. Isolation in participating and non-participating private schools, by race and year.

Year		White Isolation	Black Isolation	Hispanic Isolation
2009				
	Participating	0.8731	0.528	0.0501
	Not Participating	0.9124	0.3784	0.0745
2011				
	Participating	0.8731	0.5514	0.0653
	Not Participating	0.9036	0.3131	0.0564
2013				
	Participating	0.8551	0.565	0.1448
	Not Participating	0.8878	0.4153	0.1979
2015				
	Participating	0.8388	0.587	0.1596
	Not Participating	0.8871	0.4498	0.1228
2017				
	Participating	0.8259	0.5517	0.2139
	Not Participating	0.8856	0.4495	0.1599

Note: Years in table represent school years, 2009-2010, 2011-2012, 2013-2014, 2015-2016, 2017-2018.

For Black students, levels of isolation increased in both participating and non-participating private schools; however, the change has been much greater in non-participating private schools. Black student isolation increased by a mere .03 percentage points between the 2011-2012 and 2017-2018 school years in participating schools but increased by 13.64 percentage points in non-participating private schools. Though Black student isolation was lower in non-participating schools during the 2011-2012 school year than it was in participating schools, isolation levels in the two groups has been converging over time. The large increase in

Black student isolation within non-participating schools, paired with the negligible increase in participating schools suggests that the overall increase in Black student isolation in Alabama private schools is likely driven by changes in non-participating schools.

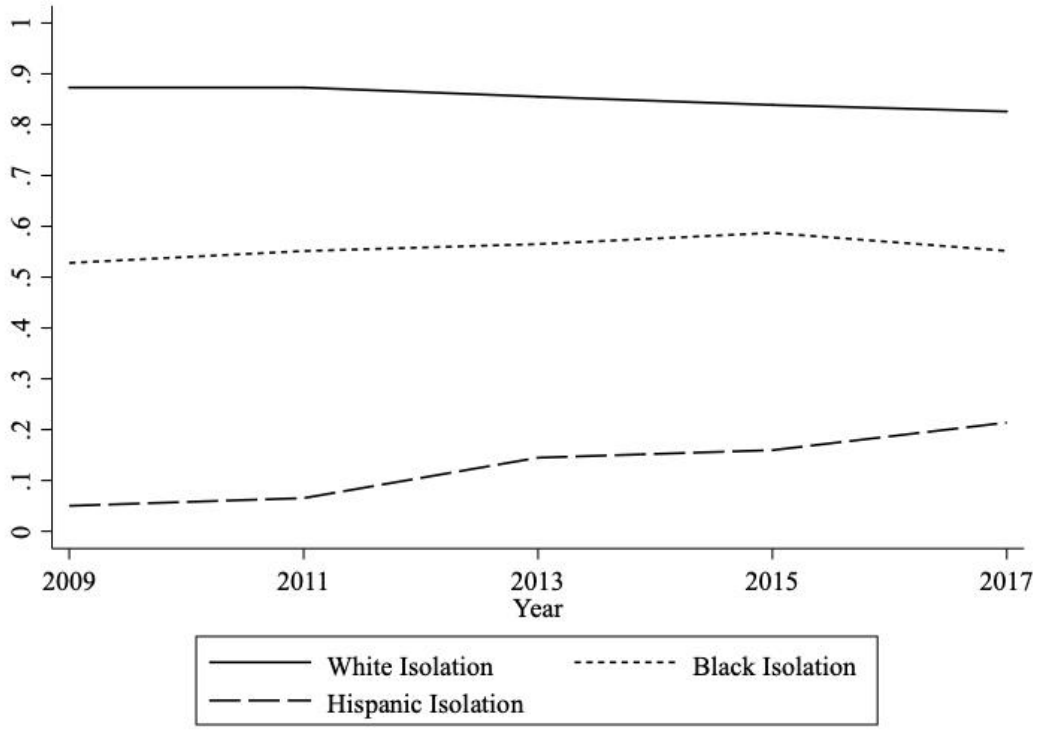

Figure 7.2. Changes in racial isolation in participating Alabama private schools.

Hispanic student isolation increased at a higher rate than Black or White isolation in both participating and non-participating private schools. Isolation levels in the two groups of schools was similar for the 2011-2012 school year but increased by 14.86 percentage points in participating schools and 10.35 percentage points in non-participating schools by the 2017-2018 school year. The high increases in both types of school suggest that the overall increases Hispanic isolation can be attributed to changes in both participating and non-participating schools.

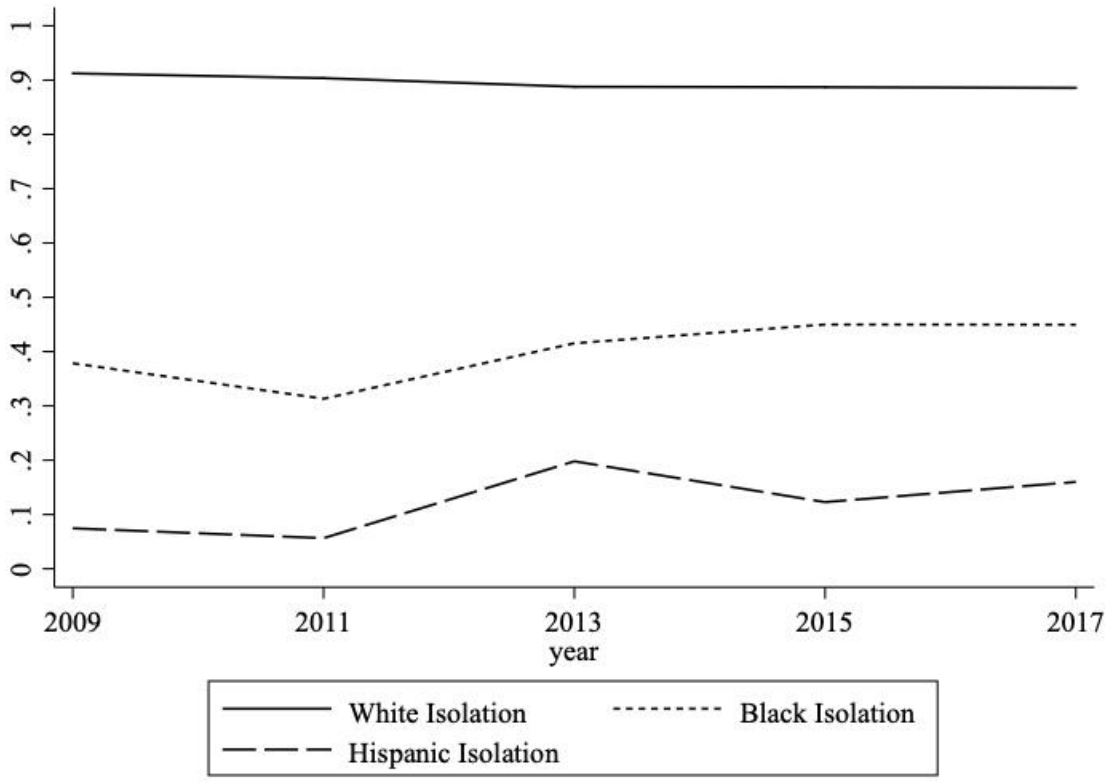

Figure 7.3. Changes in racial isolation in non-participating Alabama private schools.

Exposure

Alabama private school students have also experienced changes in their exposure to students of different races since the AESP was implemented. Figure 7.4 depicts the changes in exposure for each racial group. Overall, the average White student experienced higher levels of exposure to Black and Hispanic students following the implementation of the AESP; however, the average Black and Hispanic students both experienced lower rates of exposure to White students and higher rates of exposure to other minority students. While these trends may appear as counterintuitive at first glance, it is important to remember that changes in exposure are not necessarily parallel. The average White student can attend a more diverse school while the average Black and Hispanic students do not, all within the same set of schools if they are attending schools that, on average, have different racial compositions.

White students' exposure to Black and Hispanic students in their schools has increased since the 2011-2012 school year. During the 2011-2012 school year, the average White student attended a school where 6.89% of the students were Black and 1.08% of students were Hispanic. By the 2017-2018 school year, the average White student attended a school where 7.58% of students were Black and 3.03% of students were Hispanic. This suggests that White students have seen more integrated schools since the AESP was implemented.

Though the average White student's school was more integrated during the 2017-2018 school year than it was during the 2011-2012 school year, the same was not true for Black students. The average Black student attended a school with less White students during the 2017-2018 than they did in 2011-2012 school year. Specifically, the average Black student attended a school that was 45.67% White during the 2011-2012 school year, but a school that was only 37.46% White for the 2017-2018 school year. In addition to attending schools with fewer percentages of White students, on average, by the 2017-2018 school year, Black students also attended schools with higher percentages of Hispanic students. Black/Hispanic exposure increased by 2.7 percentage points between the 2011-2012 and 2017-2018 school years.

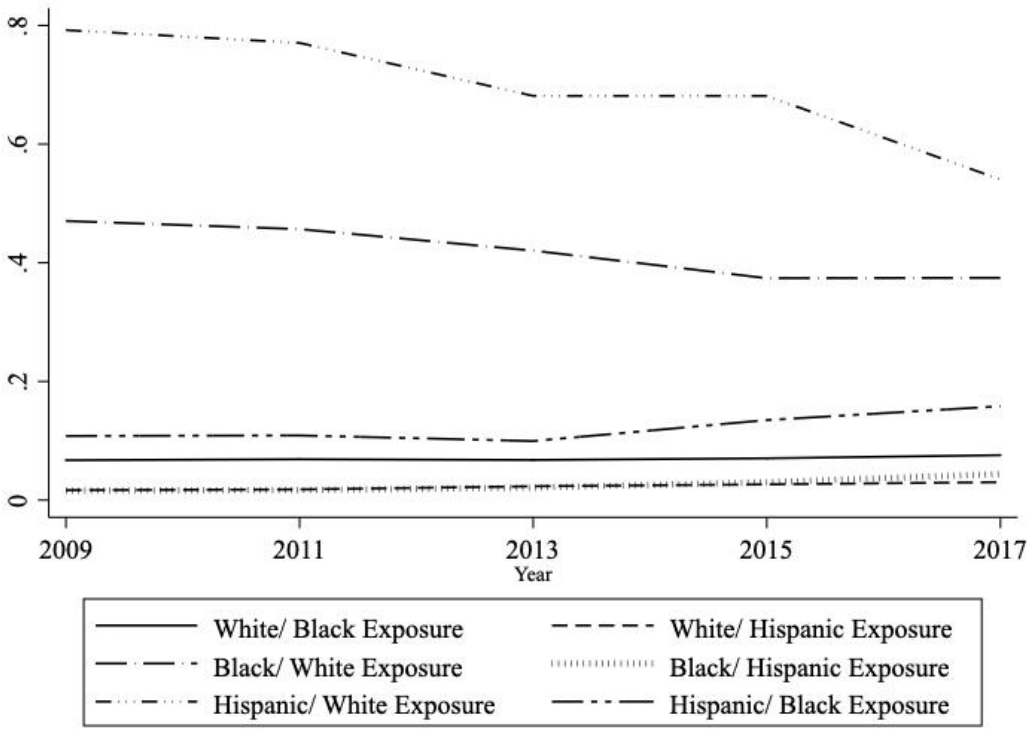

Figure 7.4. Overall changes in interracial exposure for White, Black, and Hispanic students in Alabama private schools.

Like Black students, the average Hispanic student attended a school with a lower concentration of White students and a higher concentration of Black students during the 2017-2018 school year than they did during the 2011-2012 school year. During the 2017-2018 school year, the average Hispanic student attended a school where 54.02% of the students were White, a decrease of 23.04 percentages points, from the 79.22% of White students in the school of an average Hispanic student during the 2011-2012 school year. The school of the average Hispanic student during the 2017-2018 school year was 15.82% Black, 4.93 percentage points more than the 10.81% of students who were Black in the average Hispanic student's school during the 2011-2012 school year. Considered alongside each other, the racial exposure changes for White, Black, and Hispanic students that occurred between the 2011-2012 and 2017-2018 school year reveal that while the average White private school student has experienced increased exposure to

both Black and Hispanic students, the average Black and Hispanic students have only experienced increased exposure to one another.

TABLE 7.4. Interracial exposure in Alabama private schools, by race and year.

Year	White/ Black Exposure	White/ Hispanic Exposure	Black/ White Exposure	Black/ Hispanic Exposure	Hispanic/ White Exposure	Hispanic/ Black Exposure
2009	0.0672	0.0168	0.4705	0.016	0.7922	0.1081
2011	0.0689	0.018	0.4567	0.0169	0.7706	0.1089
2013	0.0676	0.0233	0.4204	0.0211	0.6812	0.0995
2015	0.0705	0.0265	0.374	0.0302	0.6812	0.1349
2017	0.0758	0.0303	0.3746	0.0439	0.5402	0.1582

Note: Years in table represent school years, 2009-2010, 2011-2012, 2013-2014, 2015-2016, 2017-2018.

The changes of exposure within participating and non-participating private schools, which can be seen in Figures 7.5 and 7.6, resemble those in the overall sample, with one exception. White students in participating private schools experienced increased exposure to Black students between the 2011-2012 and 2017-2018 school years, while those in non-participating private schools have experienced decreased rates of exposure to Black students.. That being said, the overall change rate in participating and non-participating schools was small, with participating schools see a 1.47 percentage point increase in White/Black exposure while those in non-participating schools saw a .47 percentage point decrease. The average White student's exposure to Black students in both types of school also remained relatively low, with the average White student in participating private schools attending a school that was 9.33% Black and the average White student in non-participating schools attending a school that was

4.62% Black during the 2017-2018 school year. White student exposure to Hispanic students increased by nearly identical margins in both participating and non-participating schools, suggesting that, especially in participating schools, White students had more integrated school experiences during the 2017-2018 school year than they did in the 2011-2012 school year.

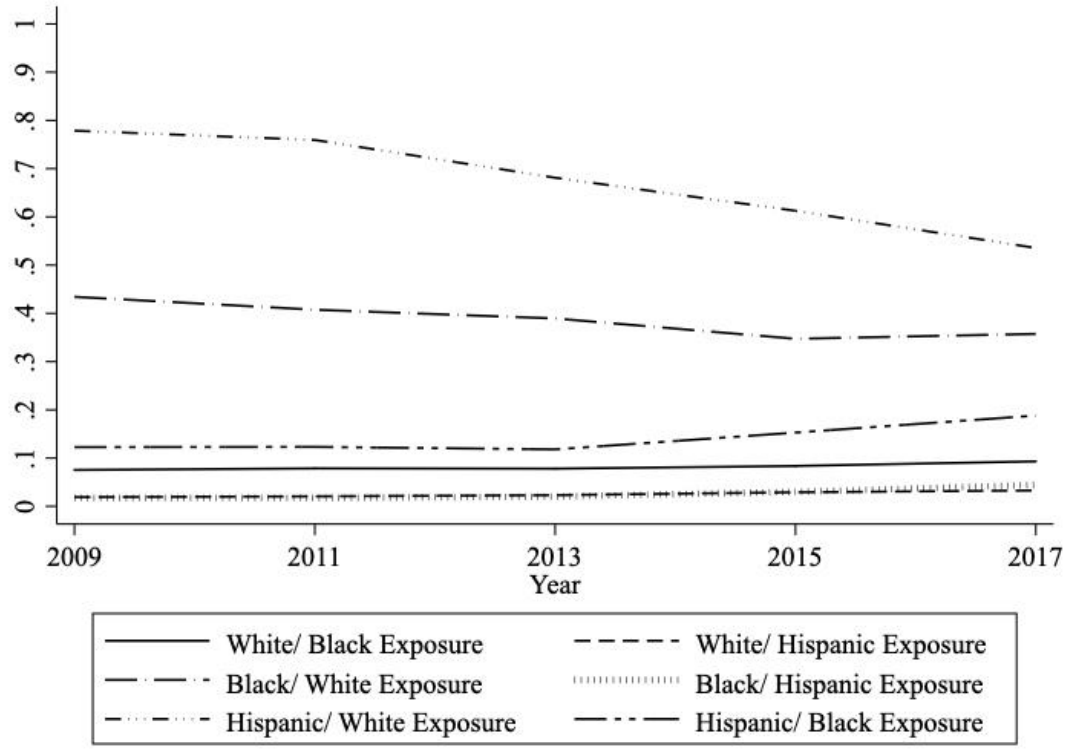

Figure 7.5. Changes in interracial exposure for White, Black, and Hispanic students in participating Alabama private schools.

The changes in exposure rates of Black students to White and Hispanic students in participating and non-participating schools were in the same direction as the overall trends. Black student exposure to White students decreased in both types of schools; however, the decrease was larger in non-participating schools. In participating private schools, Black student exposure to White students decreased by 3.21 percentage points, whereas it decreased by 7.46 percentage points in non-participating schools. Black student exposure to Hispanic students

increased by similar amounts in both participating and non-participating schools. These trends reveal that Black students in both participating and non-participating schools have experienced increased segregation, with lower exposure to White students and higher exposures to Hispanic students since the AESP was implemented.

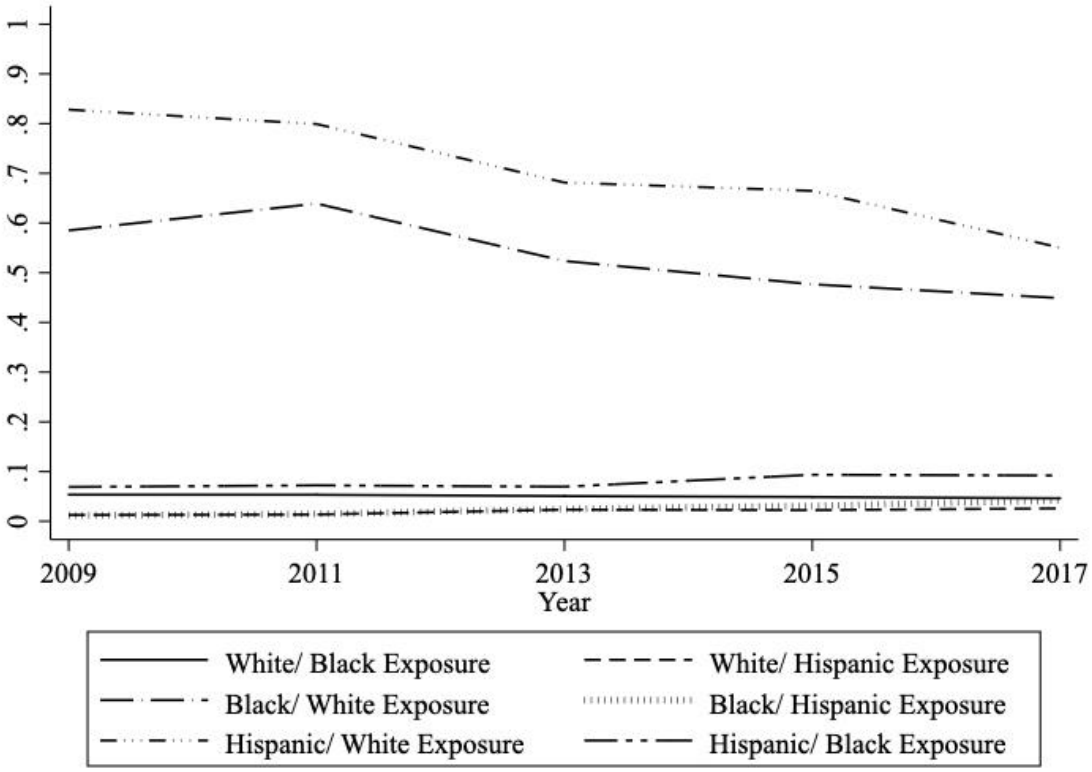

Figure 7.6. Changes in interracial exposure for White, Black, and Hispanic students in non-participating Alabama private schools.

The changes in exposure of Hispanic students to White and Black students in participating and non-participating private schools also mimics the overall changes in exposure for the groups. In both participating and non-participating schools, Hispanic students' exposure to White students decreased a good deal between the 2011-2012 and 2017-2018 school years. At the same time, Hispanic students in both participating and non-participating schools experienced increased exposure to Black students, though this change was greater in participating schools.

These findings reveal that, like Black students, Hispanic have experienced increased levels of segregation since the AESP was implemented.

TABLE 7.5. Interracial exposure in participating and non-participating private schools, by race and year.

Year		White/ Black Exposure	White/ Hispanic Exposure	Black/ White Exposure	Black/ Hispanic Exposure	Hispanic/ White Exposure	Hispanic/ Black Exposure
2009							
	Participating	0.0754	0.0192	0.4343	0.0174	0.7787	0.1227
	Not Participating	0.0536	0.0128	0.5851	0.0117	0.8281	0.069
2011							
	Participating	0.0786	0.0207	0.4075	0.0174	0.7594	0.1232
	Not Participating	0.0534	0.0136	0.639	0.0148	0.7991	0.0723
2013							
	Participating	0.0781	0.0232	0.3895	0.0201	0.6811	0.1181
	Not Participating	0.0507	0.0234	0.5236	0.0246	0.6814	0.0696
2015							
	Participating	0.0837	0.0291	0.3473	0.0301	0.6126	0.1529
	Not Participating	0.0489	0.0224	0.4767	0.0307	0.6648	0.0936
2017							
	Participating	0.0933	0.0329	0.3574	0.0443	0.5356	0.1881
	Not Participating	0.0462	0.0259	0.449	0.0421	0.5504	0.092

Note: Years in table represent school years, 2009-2010, 2011-2012, 2013-2014, 2015-2016, 2017-2018.

The Impact of Participation in the AESP

The findings reported in the previous section show that there have been changes in the experienced levels of segregation for White, Black, and Hispanic students in Alabama private schools. These changes have been integrative, largely, for the average White student, but segregative for the average Black or Hispanic student. In fact, descriptive statistics also showed that there has been an increase in majority-minority schools between the 2009-2010 and 2017-2018 school years[35]. One thing that is still not understood, though, is whether or not the changes in segregation can be attributed to participation in the AESP, which is another central interest of this study. To explore that question, I will now turn to the two-way fixed effects model in an attempt to uncover the causal impact, if there is any, of participation in the AESP on private school segregation levels.

In Model 1, the primary dependent variable is a measure of the percentage of students in a school that is White. Because White students continue to comprise the majority in private schools, factors that negatively impact it can be seen as integrative factors, while those that positively impact it can be considered as segregative. The primary independent variable in the model is an indicator of participation, which is coded as 1 for a school if they are participating in the AESP in the given year, and 0 if they are not. As stated earlier, this coding allows for variation in the treatment timing and makes the two-way fixed effects model more appropriate than a traditional DiD.

In addition to the fixed effects controls for years and schools, I also include additional controls for county-level factors that are time-variant. These controls include county racial demographics (the U18 nonwhite population shares) and economic characteristics (median

[35] The most recent available.

household income). It is important to control for the county racial demographics because they can serve as a proxy for the potential student population of a given school. Additionally, because the AESP has income-limits, controlling for the median household income in a county serves as a partial control for program demand. Finally, I also control for one time-variant school characteristic, the total population of students in the school. The results of the model can be found in Table 7.6.

TABLE 7.6. Results from Model 1, a two-way fixed effects model of segregation changes.

	Model 1		
Variable (n=915)	Coef.	(SE)	
Participation	-0.40	(1.33)	
Total Population of Students	-0.0002	(0.02)	
Year			
2011	-0.49	(0.90)	
2013	-1.48	(1.63)	
2015	-2.97	(1.69)	
2017	-4.32	(3.17)	
Percent U18 Nonwhite	-0.58	(0.45)	
Median Household Income	-0.0002	(0.001)	
_cons	112.42	28.87	**

Note: Standard errors were clustered by county. These models were repeated for each of the other two balanced panels, and the results can be found in Appendix D. The results are consistent across panels.
* $p < .05$
** $p < .01$

Hypothesis 4 predicted that participation in the AESP would lead to increased levels of racial segregation, despite the influx of racially diverse scholarship students, because of self-segregating parental choices. In the past, scholars have consistently found that parents appear to prefer to send their children to schools where they will not be in the racial minority (Wrinkle,

Steward, and Polinard 1999; Saporito, Yancey, and Lewis 2001; Weiher and Tedin 2002; Clotfelter 2004; Lankford and Wyckoff 2006; Ledwith and Clark 2007; Billingham and Hunt 2016). The results of the model do not provide support for this hypothesis and reveal that participation in the AESP does not have a significant impact on the dependent variable, school percent White.

Though this null finding did not align with my hypothesis, there is an alternative explanation that could provide added context. Previously, in the participation analysis, I found that the most racially exclusive white schools were the significantly less likely to participate than the most diverse private schools. These exclusively white schools would have the largest potential for integration in a program where the majority of scholarship students are nonwhite. Unfortunately, because these schools have opted out of the program at high rates and thereby are not opening their doors to scholarship students, the program's ability to influence integration may be limited. Understanding this, the null result of participation on segregation is reasonable.

The findings from the descriptive analysis of segregation changes provide additional context in which to understand the insignificance of participation as a predictor of segregation changes. In almost all cases, the trends in segregation shown by the descriptive analysis were very similar across participating and non-participating schools, and in only one instance was there a non-parallel change between the two groups. Still, even if we cannot point to participation as a cause of changes in segregation levels, it is important to note that there have been changes in the levels of exposure for White, Black, and Hispanic students since the 2011-2012 school year. It is also important to note that the AESP is still a relatively new program, and with more time these results could change. In the future, I recommend that the program's impact on segregation be re-evaluated as new data is published. The most recent publicly available

iteration of the PSS is from the 2017-2018 school year; however, it can be expected that the 2019-2020 data will be released in the near future, as it has already been collected. Once that data is available, it can be incorporated into the panel and additional tests can be run.

Finally, I would like to note that the null finding from this model should not be considered uninformative. Firstly, because this study is examining the effects of choice on a type of segregation that is understudied, and because the findings are inconsistent with theoretical predictions, it suggests that more work should be done in this area to refine our expectations about the impacts of choice on private school segregation, specifically. Taken alongside my earlier findings that exclusively white private schools are often reluctant to even participate, my null findings may suggest a new and important theoretical consideration. If the schools that are most likely to integrate as a result of participation in private school choice programs refuse to participate, the inability of private school choice programs to promote integration may have unique causes that do not mirror those in public charter or traditional public schools which do not have the same ability to make participation decisions, and therefore may be subjected to different impacts of choice.

Secondly, the null findings can also inform conversations about the potential impacts of choice. Two ideal impacts of private school choice programs include increased student achievement levels and increased diversity in a historically segregated sector of American education. Currently, the AESP has not been shown to do either. Evaluations of the program's impacts on achievement, as well as this evaluation of the program's impact on school segregation, have both come to the same conclusion. Choice students do not appear to be any worse off than non-choice students, but they also do not appear to be any better off either, which

is discouraging. In the future, policy makers will need to think critically about why this policy is failing to generate positive effects, and if there are options for constructive changes.

Alternative Specifications

To ensure that the null findings from Model 1 were robust, I specified additional models. First, in Model 2, I decided to include a variable measuring the percentage of Black students in a private school, rather than the percentage of White students, as the dependent variable. The results of Model 2 can be seen in Table 7.7. While I originally conceptualized segregation changes as largely being seen through changes is the percentage of White students in a school, changes in the percentage of Black students in a school due to participation would also be important. If participation is positively related to the percentages of Black students in private schools, it would reveal that participation is contributing to overall increases in diversity in this sector. As with Model 1, the results presented in Model 2 do not provide support for Hypothesis 4 and reveal that the variable indicating participation in the AESP does not significantly predict changes in the percentage of Black students in a school, when controlling for other factors.

In Model 3, I decided to allow for the possibility that participation might impact the percentage of nonwhite students in a school, rather than only the percentage of Black students. The results of Model 3 can be found in Table 7.8. Black students comprise the largest group of minority students in Alabama private schools; however, they are not the only minority students. If participation were to positively impact the portion of nonwhite students in Alabama schools, this could also be seen as a reduction in segregation. The results of Model 3 are consistent with the results of Models 1 and 2 and again show that participation does not have a significant effect of school racial demographics.

TABLE 7.7. Results from Model 2, a two-way fixed effects model of segregation changes.

	Model 2
Variable (n=915)	Coef. (St. Err.)
Participation	-1.19 (1.36)
Total Population of Students	0.001 (.01)
Year	
2011	-0.06 (.77)
2013	1.05 (1.79)
2015	1.46 (1.51)
2017	1.94 (2.19)
Percent U18 White	-0.24 (.40)
Median Household Income	0.0001 (.0002)
_cons	28.72 (27.41)

Note: Standard errors were clustered by county.
* p < .05
** p < .01

TABLE 7.8. Results from Model 3, a two-way fixed effects model of segregation changes.

	Model 3
Variable (n=915)	Coef. (Std. Err.)
Participation	.36 (1.32)
Total Population of Students	.99 (.02)**
Year	
2011	.48 (.90)
2013	1.49 (1.64)
2015	3.07 (1.68)
2017	4.29 (3.16)
County Percent U18 White	-.57 (.45)
Median Household Income	.0003 (.0005)
_cons	-55.35 (29.34)

Note: Standard errors were clustered by county.
* p < .05
** p < .01

Though participation did not have any significant, independent effects on levels of school segregation in Models 1-3, it is possible that that the effect of participation is influenced by other factors. County demographic variables, in particular, could significantly impact the potential for

participation to affect school segregation levels. I have used the county U18 demographics as a proxy for the demographics of potential choice students, and it is reasonable to expect that the demographics of potential choice students might interact with participation and influence its ability to impact segregation levels. For example, in counties with very low percentages of nonwhite students, the potential for integration into majority White private schools would be much lower than it would be in a county with a very high nonwhite population.

To see if the effect of participation on the percentage of White students in private schools is moderated by the racial demographics of potential choice students, I have included three additional model specifications with interactions. In Model 4, which can be found in Table 7.9, I include an interaction between participation and a variable measuring percentage of Black youth in the county. Next, in Model 5, which can be found in Table 7.10, I include an interaction between participation and a variable measuring the percentage of Hispanic youth in the county. Finally, in Table 7.11 I present the results from Model 6, where I include an interaction between participation and a variable measuring the percentage of nonwhite youth in the county. Ultimately, none of the interactions were significant, suggesting that the impact of participation is not moderated by the size of the nonwhite youth in the county. This finding provides further support for the conclusion that, at least at present, participation in the AESP has not significantly impacted segregation levels in Alabama private schools. As with Model 1, it is possible that these null findings are the result of the relative newness of the AESP, which may limit its potential to significantly impact segregation levels.

TABLE 7.9. Results from Model 4, a two-way fixed effects model of segregation changes.

	Model 4
Variable (n=915)	Coef. (Std. Err.)
Participation	-1.25 (2.29)
County Percent U18 Black	-0.26 (.47)
Participation x County Percent Black	0.02 (.05)
Total Population of Students	-0.001 (.02)
Year	
2011	-0.78 (.80)
2013	-2.19 (1.38)
2015	-3.99 (1.42)
2017	-5.66 (2.93)
Median Household Income	-0.0003 (.001)
_cons	96.90 (27.30)*

Note: Standard errors were clustered by county.
* p < .05
** p < .01

TABLE 7.10. Results from Model 5, a two-way fixed effects model of segregation changes.

	Model 5
Variable (n=915)	Coef. (Std. Err.)
Participation	0.86 (2.28)
County U18 Percent Hispanic	0.45 (.99)
Participation x County U18 Percent Hispanic	-0.23 (.40)
Total Population of Students	-0.0003 (.02)
Year	
2011	-0.94 (.89)
2013	-2.54 (1.62)
2015	-4.46 (1.77)
2017	-6.16 (2.92)
Median Household Income	-0.0003 (.0004)
_cons	85.30 (18.50)

Note: Standard errors were clustered by county.
* p < .05
** p < .01

TABLE 7.11. Results from Model 6, a two-way fixed effects model of segregation changes.

	Model 6
Variable (n=915)	Coef. (Std. Err.)
Participation	-0.69 (2.87)
Percent U18 Nonwhite	-0.57 (.43)
Participation x Percent U18 Nonwhite	0.006 (.06)
Total Student Population	-0.0002 (.02)
Year	
2011	-0.49 (.88)
2013	-1.49 (1.60)
2015	-2.99 (1.67)
2017	-4.35 (3.16)
Median Household Income	-0.0003 (.0005)
_cons	111.94 (27.77)

Note: Standard errors were clustered by county.
* p < .05
** p < .01

Limitations

Data limitations play a larger role in this analysis than they did in the participation analysis. Though SGO's collect data including the demographics of choice students and the schools that the ultimately choose, the data is accessible to the public. After meetings with a representative from the ISSR, the organization responsible for evaluating the AESP, I was encouraged to request access to the data from the Alabama Department of Revenue. My proposal for access, despite being thorough, was denied. The Department of Revenue stated that the data, by law, could only be used for evaluations of the AESP on achievement. It is my hope that in the future researchers will be able to use this data to evaluate the program's impact on segregation in a more direct way; however, I do believe the data that I have used for the project is the best alternative and can provide reasonable estimates of the program's impacts.

Another limitation of this analysis is that I am unable to evaluate the impacts of the program on levels of socioeconomic segregation in private schools. This again is due to data availability problems, as student socioeconomic status data is not collected by the PSS. The NCES collects socioeconomic data for public schools but not private schools, and it is unclear why that is the case. In the future, adding questions about student socioeconomic status to the PSS would create great opportunities for continued research.

Discussion

In this chapter, I sought to answer one important question – *does participation in the AESP impact levels of segregation in Alabama private schools?* To answer this question, I use a panel data set with biennial school year observations beginning with the 2009-2011 school year and ending with the 2017-2018 school year. Participating schools were able to opt-in and accept scholarship students beginning in the 2013-2014 school year. In order to evaluate changes in segregation, I used a two-pronged approach. I first examined descriptive trends in segregation levels by measuring racial isolation and exposure within all Alabama schools, participating Alabama schools, and non-participating private schools over time. In terms of isolation, the data revealed that White students in Alabama private schools are becoming less isolated over time; but at the same time, Black and Hispanic students are becoming more isolated. Alongside the decrease in isolation, White students in Alabama private schools saw increases in exposure to Black and Hispanic students in their schools, on average. Together, these findings reveal that the average White private school student has experienced an increasingly integrated learning environment in the past several years. Unfortunately, the same cannot be said for Black and Hispanic students, who both have become increasingly segregated in schools with less White and more nonwhite students. This type of trend has also been observed in the charter school

literature. Frankenberg et al. (2017), in a study of Pennsylvania charter school transfers, found that Black and Hispanic students found themselves in increasingly isolated, high minority, charter schools after transferring out of traditional public schools.

After tracking these descriptive changes, a common strategy in the choice literature, I sought to test the causal impact of participation using a two-way fixed effects model. Ultimately, the results of that model, which produce estimates similar to a DiD approach, proved insignificant. This result was unexpected but could potentially be the result of a relatively short treatment period. Once the program has been in effect for a longer period of time, it will be important to revisit this modeling strategy and test the original hypothesis again.

Despite the null nature of the statistical findings, the results of my analysis can still provide valuable information to Alabama policy makers. The results show that while the AESP is not worsening segregation (at this time), it is not alleviating it either. Considered alongside the null effects of the program on student achievement, this finding raises questions about the current function of the program and indicates a need for policy change if the program is to successfully bring about positive changes through integration or academic success. Additionally, more research should be done to uncover an explanation for the changing rates of isolation and exposure for Alabama students across the board. If the AESP cannot be cited as the cause of increased minority student isolation and decreased minority/White exposure, what is? This is an important question for future research.

Finally, the results of this study represent an important early look into the impacts of choice on private school segregation, a topic that has not received much attention in the literature yet. The descriptive findings that segregation levels have changed in private schools since the AESP was implemented suggest a need for more research on the causes of these changes.

Commonalities seen with the charter school and segregation literature suggest that it can be a useful starting ground for developing more theories about the impact of choice on private school segregation. Ultimately, I hope that the findings in this study spark continued and more expansive research on the topic.

Chapter 8: Conclusions

This dissertation was motivated by a desire to better understand how race and choice interact in a private school choice program. There is a significant body of literature that focuses on school choice and segregation, generally; however, less is currently known about private school choice and segregation. This study fills that gap by exploring, first, how student racial demographics influence the supply of private schools, and second, how participation in a choice program influences levels of school segregation. There were three primary research questions in this dissertation. First, do private school racial demographics impact the likelihood of participation in a school choice program? Second, do the racial identities of potential "choice" students impact the likelihood of participation in a school choice program? And third, what impact does participation in a private school choice program have on levels of private school segregation? These questions are important because segregation can negatively impact students' academic achievement levels and their ability to form interracial friendships (Clotfelter 2004; Mordechay and Orfield 2017; Ayescue, Frankenberg, and Siegel-Hawley 2017; Merlino, Steinhardt, and Wren-Lewis 2019).

To answer these questions, I chose to use Alabama as a case. Single state studies are quite common in the school choice literature, as programs can differ greatly from state to state. Furthermore, because my primary interest was not in policy design elements such as regulations,

a multi-state analysis with variation in policy designs was not necessary. Due to its history of racism and segregation, Alabama should be seen as a most likely case, where race can be expected to be especially salient. Focusing on Alabama also allows me to study the role of segregation academies in contemporary choice programs. Alabama has an especially high number of segregation academies, and approximately 30% of the private schools in my data set were identified as segregation academies. Finally, Alabama's Educational Scholarship Program has not been included in other studies of school choice, despite its relevance. The findings of this study should not only broaden our knowledge of the relationship of choice and race, but also will provided a much needed evaluation of the AESP's impact on segregation, which has not yet been done.

For this dissertation, I used data from a few different sources. First, I drew school-level data on student demographics, locations, and religious affiliations from the National Center for Education Statistics' Private School Survey. The PSS is conducted biennially, and I collected data from the 2009-2010, 2011-2012, 2013-2014, 2015-2016, and 2017-2018 rounds of the survey. There is significant variety amongst the characteristics of the schools that respond to the survey, which allows for a diverse sample. I drew data on participation status from the Alabama Department of Revenue, which manages the AESP. Finally, I drew county-level data from the American Community Survey's 5-year estimate tables. I primarily gathered youth demographic and economic variables from the ACS to use as controls.

For the remainder of this chapter, I will first summarize my key findings and their implications for both theory and practice. Afterwards, I will highlight how this study contributes new information to our understanding of the relationship between choice and race. Finally, I will conclude by touching on some potential avenues for future research. It is my hope that the

findings of this dissertation can spur additional research that continues to grow our understanding of two previously understudied topics.

Key Findings and Implications

For my first and second research questions, I sought to understand how student racial demographics, both those of current and potential students, impact the likelihood of participation. Drawing from the past literature on the supply side of school choice, which primarily uses surveys of school administrators to uncover their reasonings, I was able to develop a theory to help explain participation decisions. The past literature supported a theory of decision making in which private school administrators, the primary decision makers, consider their school and policy contexts, as well as how participation would impact their autonomy, finances, school identity, and school mission (Stuit and Doan 2013; Austin 2015; Kisida, Wolf, and Rhinesmith; Egalite et al. 2018). Administrators appear to be rational decision makers, who then only agree to participate if they expect the benefits to outweigh the costs (Egalite et al. 2018).

Considerations about how participation will affect a school's racial composition, I argue, are also considerations about how participation will influence a school's identity. Many private schools have been, and continue to be, havens for white flight from more diverse schools, and thus "Whiteness" may be seen as a part of their identity. Administrators may fear changing this identity could cause them to lose current students or fail to attract new White students. Because of this, they may be reluctant to participate in school choice programs where most scholarship students are nonwhite out of fear that their acceptance would lead to increased diversity and a change in the identity of the school. If a private school is already diverse, however, they may not see participation as a threat to their school's identity. To account for this, I chose to use the

percentage of students in a school that were White, prior to the participation decision, as a proxy for the school's openness to diversity.

I predicted that the variable measuring the percentage of White students in a school would be negatively related to participation, with the most exclusively White schools declining to participate. Additionally, I predicted that segregation academies, which explicitly consider racial homogeneity part of their identities, would also be less likely to participate for the same reasons. Finally, I predicted that schools might also be sensitive to the size of the threat to their identity posed by potential choice students. For example, a majority White school in an all-White county might not fear that participation would bring diversity, while a majority White school in a county that is 90% Black would.

To test my hypotheses, I used a logistic regression model and found support for Hypothesis 1, but not Hypotheses 2 and 3. I found a consistent negative relationship between the size of the White student population and participation; however, the relationship was not statistically significant using a continuous version of the variable school percent White. When I used an ordinal version of the variable instead, I found that schools that were 94% White were significantly less likely to participate than those that were less than 85% White. This finding suggests that the most racially exclusive schools may decline to participate in choice programs when faced with the potential for increased diversity. There were no significant impacts of the size of the U18 nonwhite population in a county or segregation academy status.

With regards to my first research question, my findings imply that student racial demographics and a school's openness to diversity do appear to matter in the participation decision, but only for the most exclusively White schools. Approximately 25% of the schools in my data set were more than 94% White, suggesting that their failure to participate could

significantly impact the supply of choice schools. Past studies of the supply side of choice, which have not considered this variable, often suggest that decreased program regulations would be one way to increase the supply of schools (Stuit and Doan 2013; Kisida, Wolf, and Rhinesmith 2015); however, my findings suggest that there are characteristics of the school's themselves that may prevent them from participating, even in a policy context where regulations are relatively low. If policy makers wish to bring these schools into the supply, then, they may have to think of other strategies.

For my third research question, I sought to uncover the impacts of participation in the AESP on private school segregation levels. While much is known about the impact of school choice on public and charter school segregation, less is known about the impacts of choice on private school segregation. Historically, private schools have been segregated due to parental choices; however, school choice programs that offer financial assistance to cover the cost of private schooling open up choice to more parents, especially those that might not otherwise be able to afford to send their child to private school. Most of the students participating in the AESP are nonwhite (66% Black, 10% Hispanic, 7% other races), and thus the program has the potential to bring increased diversity to the already segregated Alabama private schools.

Despite the potential for increased diversity, I hypothesized that the program would bring about increased levels of segregation. I argued that even the influx of diversity would not bring about integration if parents self-selected their children into racially segregated schools. This prediction was based on findings from the past literature, which reveals that choice often leads to segregation (Saporito 2003; Clotfelter 2004; Bifulco and Ladd 2006ab; Bifulco, Ladd, and Ross 2008; Mickelson, Bottia, and Southworth 2008; Orfield 2013; Frankenberg, Kotok, Schafft, and Mann 2017; Wilson and Bridge 2019; Shaffer and Dincher 2020). Scholars who have studied

student-level movements between schools in choice programs find that parents, both White and nonwhite, appear to select schools where their child[ren] will not be in the racial minority (Lankford and Wyckoff 2001; Bifulco, Ladd, and Ross 2008). I did not expect Alabama parents to be any different.

To test my hypothesis, I took a two-pronged approach. First, I measured racial isolation and exposure in Alabama private schools over time in order to identify trends of segregation in Alabama private schools. I was able to track both trends for the group of private schools as a whole and those within participating and non-participating private schools. Overall, I found that since the 2011-2012 school year, the average White student has become less isolated in their school and is experiencing increased exposure to their Black and Hispanic peers, marking a decrease in segregation for White students. The experiences of the average Black and Hispanic students, though, were different. The average Black and Hispanic students have both experienced increased levels of racial isolation, and decreased exposure to White students in their schools. This suggests that the school experiences of Black and Hispanic students have become more segregated since the 2011-2012 school year. These trends were relatively consistent across both participating and non-participating schools.

After measuring isolation and exposure in Alabama schools, I next modeled the impact of participation itself on segregation levels. Using a two-way fixed effects model, I tested the impact of participation on the percentage of students in a school that were White. Because private schools in the state had such high concentrations of White students, on average, prior to the implementation of the AESP, I consider a reduction in the average percentage of White students in a school a reduction in segregation. The results of the model were insignificant and thus did not provide support for my hypothesis. Further testing revealed that the impact of

participation was consistent across multiple model specifications, adding confidence to the accurateness of the null findings.

When contemplating the implications of the statistical modeling, I found them to be quite interesting despite the non-significance. Had the results shown that participating schools were becoming more segregated, it would suggest a need for policy reform; whereas, if they had shown that schools were becoming more integrated it would have revealed that the program was positively influencing students by creating more diverse learning environments. Because the results were insignificant though, it suggests that while we cannot say the program is harming private school students, we cannot say it is helping them either. Coupled with the evaluations from the ISSR (2016, 2018, 2020) that reveal the program is also having null effects on achievement, the findings imply that the program is not benefitting students in the way we would hope. It is also important to note that, while we cannot say that the AESP is the cause, minority students have become more segregated in Alabama private schools since the AESP was implemented. This trend is worthy of continued explanation.

Contributions

This dissertation contributes to our understanding of race and school choice in two key ways. First, by using a new methodological approach to study the supply of choice schools, I was able to illuminate the relationship between schools' displayed preferences for diversity and the likelihood of participation in a choice program, while also controlling for other important factors. Secondly, my study is one of the first to examine the impact of choice on private school segregation, and thus can help expand our knowledge of the impacts of choice on segregation. My findings should also contribute to policymakers' understandings of the effects of private school choice programs.

In the past, scholars have articulated many factors, including the strictness of regulations, a school's need to fill seats, or the school's mission to help the poor that influence school administrators' participation decisions (Henig 1990; Bifulco and Ladd 2006a; Frankenberg et al. 2017; Marcotte and Dalane 2019). To date, I have not found another study that proposes student racial demographics as a factor that could influence these decisions as well. A review of the methodology of the supply side literature can give some insight as to why this is the case. Most supply-side scholars have sought to understand why some schools participate and others don't by surveying or interviewing private school administrators. In doing so, these scholars have uncovered a wide range of factors that affect the participation decision.

One factor that this type of methodology will not likely uncover, though, is how considerations of increased racial diversity might influence participation decisions. That being said, administrators have acknowledged that they are concerned with how participation might affect their schools' identities, and I argue that, for some schools, racial homogeneity may be a part of their identities. Any given private school might be known for offering an excellent college prep education, winning sports programs, alternative teaching methods, or a religious learning environment, but some may also be known for offering a "White" educational experience. Admitting a new and diverse group of scholarship students then, could be seen as a threat to some schools' identities, thereby discouraging them from participating.

In order to determine whether or not a desire to remain racially homogenous also influences participation decisions, I chose to break with the methodology commonly used in this area of study and turned to a new approach. I used a large-n quantitative approach, rather than a smaller qualitative approach which allowed me to not only test for the impact of a school's displayed preference for diversity, but to also control for other potentially important factors at

the same time[36]. In doing so, I was also able to show how a school's preference for diversity, independent of other things like location and religious affiliation, impacted the likelihood of participation. Because I had a large and varied sample, I believe that my findings should be generalizable to other states with similar levels of regulation. Additionally, the methods used in my study could be replicated in other single or even multi-state studies.

In addition to contributing to our understanding of the factors that influence the supply-side of school choice and the methods available to evaluate them, this dissertation also contributes to the school choice and segregation literature. We currently know a good deal about the impacts of choice on public and charter school racial and socioeconomic segregation levels, but few have focused on private school segregation trends. Egalite, Mills, and Wolf (2017) touch on the impacts of choice on private school segregation in their evaluation of the Louisiana Scholarship Program; however, they seem to brush off their findings that student transfers to private schools often increased segregation in the private schools. Instead, they were more concerned with the effects of those transfers on the public schools students left.

While understanding school segregation in public schools is crucial, I also think that changes to segregation levels in private schools is important as well. It is possible that because segregation in private schools has been normalized and is out of the state's control in the absence of discrimination, scholars have been less concerned with tracking it. With the introduction of private school choice programs like the AESP, though, private school segregation deserves a closer look. It is important for policy makers to fully understand the impacts of choice programs on segregation in all types of affected schools. Though my analysis did not yield any significant

[36] Stuit and Doan. (2013) also use a large-n approach, but they do not publish their results for control variables and were focused on the impact of regulation rather than the potential for racial diversity.

results, and I am not able to say conclusively that the program has impacted segregation yet, I think my work still points to the need for these trends to be evaluated periodically.

My statistically insignificant findings can also contribute to discussions about the ability of private school choice programs to have integrative effects. Many argue that increased diversity is a positive potential benefit of private school choice programs, but my findings suggest the claim may unfounded. While participating schools have not seen significant increases in segregation, they did not see significant increases in integration either. It is quite possible, however, that this finding would change given more time and an increase in the number of scholarships, and thus the work should be revisited in the future.

Recommendations for Future Research

This dissertation highlights numerous avenues for future research; however, there are three that stand out. First, while this dissertation has focused only on racial segregation in schools, it would be fruitful to also study the interaction between choice and socioeconomic segregation in the future. Next, it would be beneficial to study how race impacts participation decisions in other states, or across multiple states, as my dissertation was the first to study it in this way. Finally, I believe that my null findings about the impact of participation on school segregation levels may be influenced by the short time span that has occurred since the AESP was implemented. In order to remedy that, I would recommend the study either be repeated in Alabama in 5-10 more years or repeated in other states with similar, but older programs to determine whether the effect might change over time.

In the future, it would be interesting to study the relationship of choice to socioeconomic as well as racial segregation in private schools. While I have focused exclusively on racial segregation, it is important to note that levels of socioeconomic segregation in private schools

are likely the same as or greater than the levels of racial segregation. Additionally, we know that socioeconomic segregation can have effects that are similar to those of racial segregation on student achievement (Betts, Reuben, and Danenberg 2000; Fahle and Reardon 2018). Furthermore, studies have shown that choice increases socioeconomic segregation in charter schools (Saporito 2003; Bifulco, Ladd, and Ross 2008; Mickelson, Bottia, and Southworth 2008; Marcotte and Dalane 2019), and it could reasonably be expected to do the same in private school choice programs.

Scholars interested in studying the effects of school choice on socioeconomic segregation in private schools will likely need access to data from outside of the PSS. The PSS does not provide any data about the socioeconomic status of private school students, but the information may be accessible through the state or the schools themselves. Another caveat to those wishing to pursue this line of research is that race and socioeconomic status are often related in ways that make it hard to distinguish between the two.

My next recommendation for future research is that the scale of my participation evaluation be expanded in order to discover whether considerations about the potential for diversity to influence participation are important in some places but not others. Race is particularly salient in Alabama, and thus it would be interesting to test its affect in another state where one would not expect race to be as important. If student racial demographics could be shown to matter in a "least likely" case, it would increase the validity of my results. Another way to test the generalizability of my participation results would be through the use of a larger, multi-state study. One difference between the two is that in a multi-state study additional controls for state policy context would be needed. Ultimately, with more time and resources, this type of expansion is a very realistic venture.

My final recommendation for future research is that my impact analysis be replicated either after more time has passed in Alabama, or in another state (or states) with a program that is older. I am hesitant to say that my finding that participation has not yet increased or decreased private school segregation levels significantly would hold over time. The current evaluations of the AESP's impacts on student achievement have also found null results, suggesting that perhaps with more time and an increased number of scholarship students attending private schools, things could change. I also hope the arguments presented in this dissertation have shown that understanding the impact of choice on private school segregation is a topic worthy of further inquiry, thereby sparking a potential new subset of the school choice and segregation literature.

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Appendix A: Participation Analysis Using Alternate Sample

TABLE A.1. Descriptive statistics from alternate sample.

Variable (n= 263)	Mean	Std. Dev	Min	Max
Participating	0.49	0.50	0	1
School Percent White	71.65	32.31	0	100
Total Student Population	205.10	261.31	3	1881
Segregation Academy	0.28	0.45	0	1
Religious Affiliation: Non-Sectarian	0.23	0.42	0	1
Religious Affiliation: Protestant	0.60	0.48	0	1
Religious Affiliation: Catholic	0.14	0.33	0	1
Religious Affiliation: Islamic	0.01	0.10	0	1
Religious Affiliation: Jewish	0.01	0.08	0	1
Location: City	0.41	0.49	0	1
Location: Suburbs	0.21	0.41	0	1
Location: Town	0.09	0.29	0	1
Location: Rural	0.29	0.45	0	1
Failing School in County	0.67	0.47	0	1
County U18 Percent Black	35.80	18.59	0.97	84.09
County U18 Percent Hispanic	4.77	2.54	0	22.59
County U18 Percent Nonwhite	44.53	17.01	10.97	89.99
Median Household Income (2011 Dollars)	44,951	9,631	21,964	68,883

Note: Descriptive statistics reflect data after the 27 schools that once participated and then stopped have been removed. Because the reasoning for ceased participation and length of participation are both ambiguous, these schools may have unique reasons for stopping/starting participation that are not generalizable to other schools. In the future, a qualitative analysis of these schools, their justifications for participation, and their explanations for ceased participation should be conducted.

TABLE A.2. Results from logistic model of participation with alternate sample.

Variable (n=273)	Model 1 Odds Ratio (SE)	Model 2 Odds Ratio (SE)	Model 3 Odds Ratio (SE)
Total Student Population	1.002 (.001)*	1.002 (.001)*	1.002 (.001)*
Segregation Academy	2.74 (1.14)*	2.80 (1.18)*	3.40 (.85)**
School Percent White	.99 (.01)	...	...
Reference Category: 94-100% White			
< 60% White	...	2.35 (1.15)	2.97 (1.58)*
60-84.99% White	…	2.00 (.88)	2.49 (1.13)*
85-93.99% White	...	1.57 (.73)	1.99 (.94)
County U18 Percent Hispanic	1.06 (.08)	1.06 (.08)	...
Reference Category > 6.09% Hispanic			
0-2.79% Hispanic	...	...	1.84 (1.15)
2.8-4.89% Hispanic	...	...	.74 (.47)
4.9-6.089% Hispanic	...	...	1.84 (1.46)
County U18 Percent Black	.99 (.01)	.99 (.01)	...
Reference Category: > 49% Black			
< 21% Black	...	...	.30 (.16)*
21-40.99% Black	...	...	.34 (.28)
41-48.99% Black	...	...	.59 (.41)
Religion: Reference Category Non-sectarian			
Protestant	1.96 (.68)	1.98 (.69)*	2.13 (.75)*
Catholic	23.92 (16.97)**	22.59(15.94)**	24.55 (18.19)**
Islamic	3.76 (6.17)	4.36 (6.57)	6.00 (8.17)
Jewish	2.52 (3.43)	3.02 (3.93)	4.37 (5.67)
Locale: Reference Category Suburbs			
City	2.09 (.93)	2.10 (.94)	1.83 (.87)
Town	1.02 (.70)	1.08 (.75)	.63 (.52)
Rural	2.49 (1.30)	2.56 (1.36)	2.14 (1.25)
Median Household Income	.99 (.02)	.99 (.02)	.99 (.023)
Failing School in County	3.08 (1.26)*	2.77 (1.35)*	3.95 (2.19)*
_cons	.18 (.29)	0.06 (.10)	.07 (.10)
Pseudo R^2	.2016	.2059	.2240

Note: Results are from a logistic regression model. Results are reported using odds ratios for ease of interpretation, and robust standard errors are used.
* $p < .05$
** $p < .01$

Appendix B: Descriptive Statistics Across Panels

TABLE A.3. Descriptive statistics from panels 1-4

Variable	Panel 1	Panel 2	Panel 3	Panel 4
Participating	0.57	0.59	0.62	0.47
School % White	71.5	73.21	73.82	68.10
School % Black	19.72	18.69	17.59	24.04
School % Hispanic	3.42	3.39	3.76	3.25
Segregation Academy	0.31	0.34	0.34	0.33
Catholic	0.16	0.17	0.18	0.14
Non-Catholic Religious	0.62	0.60	0.59	0.63
Non-Sectarian	0.21	0.23	0.23	0.23
Total Population of Students	225.88	232.20	238.91	207.95
City	0.41	0.37	0.38	0.41
Suburb	0.19	0.19	0.17	0.19
Town	0. 10	0.09	0.09	0.09
Rural	0.33	0.35	0.36	0.31

Note: I have reported the means for each of the key school-level variables for comparison. Panel 1 was the panel used for analysis, it has data from 183 schools and the maximum number of years interpolated for a school was two. Panel 2 includes 168 schools and has a maximum of one year interpolated per school. Panel 3 includes only those schools that responded to the PSS for five years and has no interpolation. Finally, Panel 4 is the full unbalanced panel that includes data for all 387 schools that responded to the PSS at least one year during the time of analysis.

Appendix C: County-level Changes in Racial Isolation and Exposure, 2009-2017

TABLE A.4. County-level isolation changes, 2009-2017.

Year	White Isolation	Black Isolation	Hispanic Isolation
2009	0.5362	0.4568	0.0523
2011	0.5318	0.4546	0.0565
2013	0.5254	0.4511	0.0625
2015	0.5211	0.4437	0.0663
2017	0.5172	0.441	0.0699

Note: Data was drawn from the 2010, 2011, 2013, 2015, and 2017 ACS 5-year estimates.

TABLE A.5. County-level exposure changes, 2009-2017.

Year	White/ Black Exposure	White/ Hispanic Exposure	Black/ White Exposure	Black/ Hispanic Exposure	Hispanic/ White Exposure	Hispanic/ Black Exposure
2009	0.3776	0.0467	0.465	0.0426	0.5224	0.3869
2011	0.3762	0.0505	0.4616	0.0462	0.5174	0.3858
2013	0.3739	0.0556	0.4563	0.051	0.5104	0.3834
2015	0.3698	0.0594	0.4546	0.0547	0.5059	0.3791
2017	0.3651	0.0631	0.4471	0.0585	0.4984	0.3773

Note: Data was drawn from the 2010, 2011, 2013, 2015, and 2017 ACS 5-year estimates.

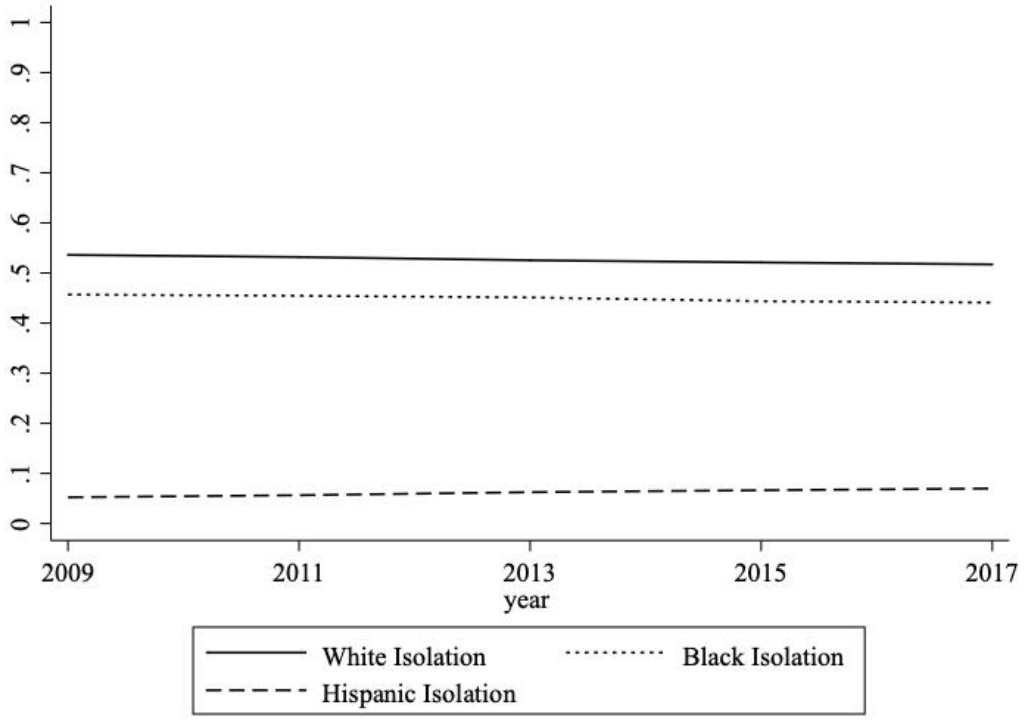

Figure A.1. Overall county-level changes in racial isolation levels in Alabama.

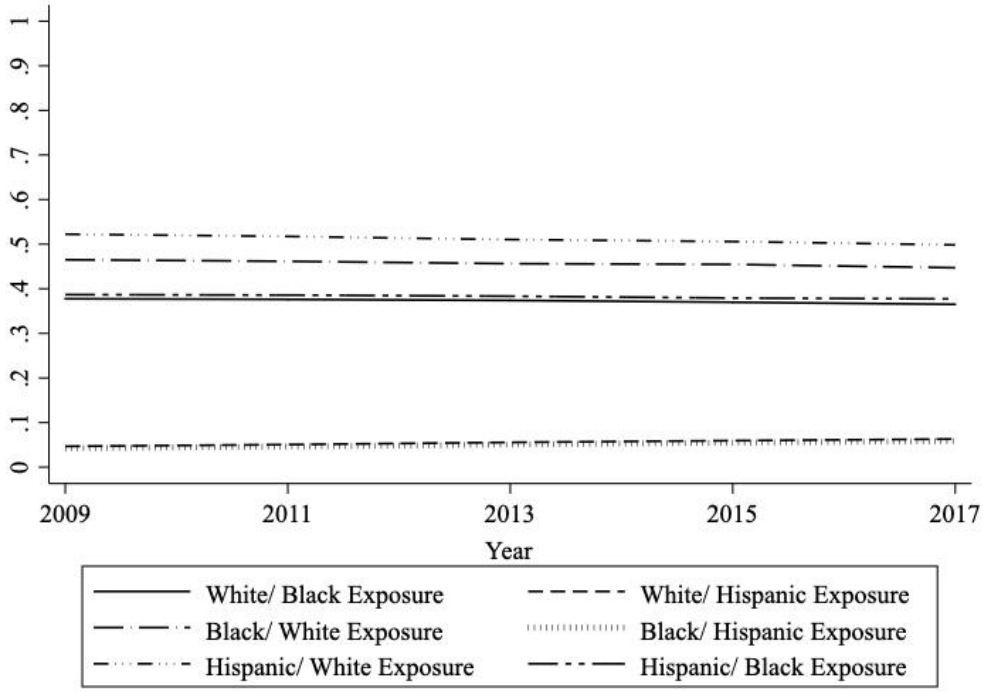

Figure A.2. Overall County-level changes in interracial exposure in Alabama.

Appendix D: Results from the Two-way Fixed Effects Model of Segregation Changes Across Panels

TABLE A.6. Results from Model 1, a two-way fixed effects model of segregation changes using Panels 1, 2, and 3.

	Panel 1		Panel 2		Panel 3	
Variable	Coef.	(SE)	Coef.	(SE)	Coef.	(SE)
Participation	-0.40	(1.33)	-0.07	(1.47)	-0.93	(1.68)
Total Population of Students	-0.0002	(0.02)	-0.01	(0.02)	-0.01	(0.02)
Year						
2011	-0.49	(0.90)	-0.56	(0.89)	0.10	(0.96)
2013	-1.48	(1.63)	-1.52	(1.78)	0.45	(1.73)
2015	-2.97	(1.69)	-2.76	(1.82)	-1.45	(2.14)
2017	-4.32	(3.17)	-3.80	(3.28)	-2.30	(3.60)
Percent U18 Nonwhite	-0.58	(0.45)	-0.56	(0.47)	-0.85	(0.58)
Median Household Income	-0.0002	(0.001)	-0.0002	(0.0004)	-0.0003	(0.001)
_cons	112.42	28.87**	111.99	(29.11)**	131.15	(34.52**)

Note: Robust standard errors were clustered by county. No results are presented for the unbalanced panel.
* $p < .05$
** $p < .01$