

SCHOOL CHOICE AND STUDENT ACHIEVEMENT
IN FLORIDA'S K12 PUBLIC SCHOOLS

A Thesis
submitted to the Faculty of the
Graduate School of Arts and Sciences
of Georgetown University
in partial fulfillment of the requirements for the
degree of
Master of Public Policy
in Public Policy

By

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Washington, DC
April 12, 2019

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ABSTRACT

Florida's K-12 public education system is considered to be one of the most open and accepting to charter school choice. Starting in the 2017-2018 school year, the state's controlled open enrollment policy allowed charter schools to access additional capital investment funds and allowed families to choose among any of the schools in the state. In this study, I examine the correlation between school choice and student achievement by comparing counties in Florida that have experienced widespread school choice for years with those that have just been granted additional choice for the first time. My regressions show consistent and statistically significant correlation between school choice and overall student achievement on Math and ELA exams, as well as learning gains within the lowest quartile of students. I recommend several policy implications for parts of the state that are new to widespread school choice, as well as recommendations for less open states that could benefit from a freer marketplace of options for students and their families.

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SECTION I: INTRODUCTION

In this thesis I study the relationship between the availability of school choices for students in Florida and the learning outcomes at traditional public schools in the state. Focusing on the state's pre-kindergarten through 8th grade system, I use the Florida Department of Education school and district level data to analyze the reading and math assessment scores in areas where there are school choice options for students and families outside of a traditional public school where attendance is determined solely by place of residence.

My hypothesis is that the existence of alternative options for students and families is correlated with higher student outcomes overall than in areas where there is only one school option available. While the availability of school choice options may divert teacher resources and funding away from traditional public schools, I hypothesize that the competition for student enrollment and the ability to specialize instruction for the diverse needs of students may be factors that contribute to a healthy marketplace of school options that ultimately benefits student outcomes.

Overview

The Florida State Legislature has supported pro-school-choice policies for most of the last 20 years, creating a consistent environment for me to study the relationship between the availability of alternative school options and the outcomes of traditional public schools. In addition to being the third most populous state, Florida is also an extremely

diverse state regionally with areas of vast rural communities, as well as dense urban ones; this creates unique opportunities for non-traditional public schooling options to add value, but also poses questions about how to continue to support traditional public schools in those areas if funding and resources are diverted towards charter or alternative schools.

Students and families in Florida are also extremely diverse, making it a very interesting state for analysis. While 41 percent of the state's student population is white, some 31 percent of students come from Hispanic families, many learning English as a Second Language (ESL), and 22 percent of the population is African-American. This diversity allows me to parse out the student outcomes in different subgroups that may be affected by the availability of charter and alternative school options.

Beginning in the 2017-2018 school year, the state moved to one of the most open school-choice environments statewide that exists anywhere in the country. In the new Controlled Open Enrollment policy (Florida Statutes, Section 1002.31), parents can enroll their student at any public or charter school as long as it has not reached capacity. One year in, it is unclear how the policy affects lower performing schools or schools that haven't historically had alternative options available nearby. My analysis leverages the existence of school choice options in various parts of the state that have existed in some cases for over a decade to draw meaningful conclusions about the correlation between the availability of alternative public school offerings and the performance on key assessments at traditional public schools.

Next, I will discuss the background of the school choice movement nationally and more recently in Florida. I then turn to the existing literature about the impacts of school choice for students, schools, and districts that will inform my own approach to the research. In Section 3, I discuss the theoretical model, which assumes that school choice, demographics, and the quality of teaching are all involved in student achievement. Then, in Section 4 I examine the empirical model and the expected relationships between each of the independent variables available in the data. I then describe the comprehensive dataset of school performance across the entire state in the two most recent school years. In Section 6, I present the findings of the three model specifications, and conclude by offering policy recommendations based on the results.

SECTION II: BACKGROUND AND LITERATURE REVIEW

Roots of the National School Choice Movement

School choice in public education and more recently the charter school movement have become hotly debated topics in American politics in recent years. However, in its origins, recommendations for more teacher and family empowering school options were less political and more of a philosophical and intellectual exercise among academics. Most scholars point to Milton Friedman's *The Role of Government in Education* (1955) as the seminal founding document of the philosophical underpinnings that still undergird the school choice movement today. In his piece, Friedman discussed how a lessening role of government and an increase in free market competition in public education would allow for innovation and more student achievement in the essential areas needed for the nation's overall economic development. He drew a line between governmental *financing* and *administering* of public education, and argued that the government had become too involved in the latter, which was preventing the forces of free enterprise from shaping and improving the operation of schools. Friedman concluded that "a great widening in the educational opportunities open to our children [...] would bring a healthy increase in the variety of educational institutions available and in competition among them." The widening of opportunities that he alluded to would include various public, private, and religious options that through competition for limited enrollees and resources, would push the needle on the level of education and achievement for students and families. The realization of the principles laid out in his essay were not realized until decades later, but the framework that he laid out is still invoked by the school choice proponents today.

Friedman's essay painted a vision for choice with broad strokes, naming only a few of the types of options that would later be made available in states across the country. It wasn't until 1974 that the term 'charter' would be introduced into academia by Ray Budde, a University of Massachusetts Amherst professor and former educator and principal. He first used the term to describe a new type of contracting agreement that would allow teachers to have greater control over the curriculum and design of not only their own classrooms, but also how the entire school would be operated (Finn 2018). The concept of charter schools would not be popularized until after the next galvanizing event almost a decade later, when a federal report on the state of American public education caught many researchers by surprise.

In 1983, President Reagan's *National Commission on Excellence in Education* issued its report on the risks that lay ahead if our public education system wasn't dramatically reformed. The 30-page report detailed a blistering critique of the level of literacy and mathematics competency among young people in the United States, and called for immediate reforms in order to avoid falling behind in the world economy. Twenty-three million adults were functionally illiterate, the report stated, and as many as 40 percent of minority youth were in the same category (US 1983). It pointed to downward trends over a 20-year period in the College Board's Scholastic Aptitude Tests (SAT), in addition to national science scores. Most foreboding, perhaps, was the report's quotes from the Department of the Navy, who said that at least 25 percent of its recruits were unable to read at the ninth grade level, which was the minimum needed to simply understand written safety instructions. The report's release alarmed the nation, and excited education

researchers and reformers, leading to a slew of new policy recommendations at the local, state, and federal levels.

Five years later, Professor Ray Budde's once novel 'charter school' idea re-emerged as a viable solution, or at least a way for educators to break from the norm and create laboratories of innovation for other districts to replicate. In '*Education by Charter: Restructuring School Districts*,' Budde laid out his roadmap for how individual charter schools could be imagined, launched, evaluated, and reproduced (1988). Budde's ideas grabbed the attention of Al Shanker, the president of the American Teachers Federation (ATF), who cited them in a speech at the National Press Club and later in a *New York Times* column. In it, he praised the idea that teachers would be charged with fostering entirely new types of learning environments for students, and where "Parents could choose which charter school to send their children to, thus fostering competition." Although Budde's writings did not focus on the prospect of parental choice of a school for their child from a menu of school options and rather on the opportunity for innovation to occur, Shanker seemed to invoke Friedman's earlier writings about the ability of market competition to create better environments throughout the public education landscape.

These ideas eventually reached Minneapolis, where the Citizens League authored a report on its School Structure Committee that called on the Minnesota state Legislature to "authorize creation of chartered schools by the Minneapolis and St. Paul School Districts in 1989 and by the State Department of Education by 1992," (Rollwagen & McLellan

1988). The extensive report drew on the need for better education offerings, specifically for minority and impoverished children throughout the state, but especially in its struggling urban communities. Democratic State Senator Ember Reichgott went on to introduce and help pass the nation's first state law that would allow a path towards the large-scale authorization for charter schools and the availability of school choice to parents.

Along its way to passage, Reichgott's bill faced fierce opposition from the state's two strong teachers' unions. However, it also eventually gained support from the D.C. based Progressive Policy Institute (PPI), which published a piece that praised the liberal Democratic governor Rudy Perpich who helped pave the way for school choice in Minnesota with an open enrollment policy that was proposed in 1985. The PPI report, titled *Beyond Choice to New Public Schools Withdrawing the Exclusive Franchise in Public Education* went on to argue for the [introduction of "the dynamics of choice, competition and innovation into America's public school system, while at the same time ensuring that new schools serve broad public purposes," (Kolderie 1990). Notably this pivotal moment in the school choice and charter school movement were championed by left-leaning Democrats who saw an opportunity to expand educational equity among poor and disenfranchised parts of the country. Because of its roots in free enterprise principles from the likes of Friedman, it wasn't long before it garnered support from political conservatives as well.

The Minnesota bill finally passed in 1991 when Republican Governor Arne Carlson supported Senator Reichgott's amended proposal from across the aisle, making it the nation's first charter school law. A little over a year later, City Academy became the first charter school to open in St. Paul, while California became the second state to pass a law authorizing charter schools.

Today, 43 states and Washington, D.C. have charter school laws in place, representing the rapid growth in the movement that only began to see legislation as recently as 1991 (Howard 2017). Additionally, 27 states and Washington, D.C. offer an iteration of a publicly-funded private education, or voucher program, which is another element of school choice that has not garnered as much bipartisan support. And while the charter school movement has expanded into all but seven states as of 2019, only about 3.1 million students attend the more than 7,000 charter schools around the country, accounting for 5 percent of the national K-12 public school enrollment (Prothero 2017). Hundreds of charter schools open and close each year as low-performing schools lose their charter and high-performing ones are allowed to open new campuses. Florida, which is the focus of my research, nears the top in both measures, with the second most school closings last year of any state, and the third most openings. While some point to the high number of charter schools opening and closing each year as a cause for worry and disruption, other consider it the mark of a healthy marketplace where the best schools thrive and underperforming schools close. Next, I will focus in on the relatively short background of statewide school choice initiatives in Florida.

Florida’s School Choice Landscape

School choice in Florida began in 1996 and was created in the wake of the national school choice movement described earlier. Like many states, before any kind of large-scale charter school legislation was considered in the state, there were targeted initiatives serving particularly vulnerable populations of students. The original law led to the creation of a handful of charters in school districts that approved their creation, beginning with Liberty City Charter School in Miami (O’Connor 2011). While charters continued to expand throughout the state, choice was also expanded through several voucher and scholarship programs. The next year, the Florida Department of Education provided a grant to Orange and Alachua counties to establish a virtual public high school, which grew into the Florida Virtual School (FLVS), which is now the largest program of its kind in the country. The program serves around 250,000 students through part-time or full-time course loads, most of whom attend virtual classes from their homes (Hunt 2015). These FLVS’s have received state funding since 2003, but in a “pay for performance” formula that only allocates funds for students who successfully complete their courses rather than funding based on total enrollment. This system has largely been judged to be a success for high school participants who performed more than 15 percentage points higher than the state average on all four End-of-Course exams (Algebra 1, Geometry, Biology, and U.S. History).

In 1999, Governor Jeb Bush signed the Opportunity Scholarship Program into law in the same year that the state legislature established the McKay Scholarship program; the former allowed students at perennially failing public schools to transfer to higher

performing schools, and the latter provided private school scholarships to students with disabilities.

Two years later the Florida Tax Credit Scholarship Program was erected to provide tax credits on corporate income taxes for donations made to scholarship funding organizations. In 2014, the Florida state legislation created the Personal Learning Scholarship Account Program, which replicated Arizona's Empowerment Scholarship Accounts, making it the second state in the country to create "education savings account." In the program, families that have children with disabilities have access to Personal Learning Scholarship Accounts (PSLAs) that are funded by the state and can be used towards education expenses including private, religious, or home education programs.

Finally, Florida updated an existing controlled open-enrollment law in 2016 with a policy that allows students to attend any school in the state that has not reached capacity, provided that the student's parents are able to provide transportation. The newest law, which went into effect last fall for the 2017-2018 school year, also provides charter schools with a new formula for capital funding to be able to build and maintain school buildings and provide educational resources, funds that were previously held at the will of each of the local school districts throughout the state. The debate surrounding the consideration and later passage of this Florida Statute permeated the entire state because of the groundbreaking move to allow the state's 650 charter schools to have access to additional capital funding, and for expanding choice even within the traditional public

school ecosystem. This new wide-spread open enrollment policy makes this research particularly interesting; prior to this law, nearly a quarter of school districts in the state had not experienced large scale choice outside of the FLVS system. Now, parents and students will have the opportunity to leave public schools that they are not happy with, forcing all schools to compete for student enrollment, which determines funding. The new system creates an even broader marketplace of school choice for students and families, and while the first year under the statute has not seen a great deal of movement between public schools, it is fair to predict that as more families learn about the options available to them, the effects of school choice across the state will be magnified.

Related Literature

There exist many studies from just the past decade that analyze the effects of the school choice movement on student outcomes, school quality, and the availability of high performing school options for families. Beginning with the philosophical and political roots of the movement, Logan's (2018) historical and political analysis of the modern school choice movement points to the ideas popularized by Milton Friedman in the 1950's that cherished free markets, competition, and limited government. She also notes, however, that open enrollment measures allowing students to attend the public school of their family's choice have also been championed by progressive liberals who viewed them as a means to social equity and equal opportunity. Logan's paper reflects on the origins and expansions of the school choice movements since the pivotal 1954 *Brown* ruling, and concludes that the future of school choice will continue to include challenges to the systemic barriers that perpetuate inequity in educational opportunity.

There are several ways that school choice is realized in various federal, state, and local policies, including the availability of charter schools (as this research focuses on), but also vouchers, state funded scholarships, and tax credits that allow students to attend private schools. Many parts of the country have also experimented with open enrollment policies allowing choice between traditional public school options. In a far-reaching overview of the private-school choice landscape, Wolf et al. (2018) found that voucher and tax-credit programs produced measurable benefits for both student achievement and attainment. The paper included a meta-analysis of 16 experimental studies that found that “these programs increased student achievement by an average of .13 standard deviations by the fourth year after the study started.” In a different policy arena, Babington and Welsh (2017) studied a panel dataset from Minnesota school districts to evaluate the effects of open enrollment policies on student achievement and found that students leaving a traditional public school for a different option actually improve subsequent reading test scores.

In another study native to Florida, Figlio et al. (2013) looked at the effects that state accountability has had on traditional public elementary schools over a five-year span and found that “schools facing accountability pressure changed their instructional practices in meaningful ways, and that these responses can explain a portion of the test score gains associated with the Florida school accountability system.” Greater accountability and visibility into how schools are performing has also invited research on how parents engage with that information and make choices about where to enroll their students.

Lovenheim & Walsh (2018) examined more than 100 million individual searches on the nation's largest school-quality website, GreatSchools.org, and found that the growth of charter schools has incentivized parents to seek out and use available information on school ratings. Their research focused on the number of schools eligible for 'transfers' under the federal No Child Left Behind Act and found that when the availability of school choice increases by 10 percentage points, the number of searches for public school quality data increases by 7.2 percent.

There has been a particular focus on how the availability of choice impacts students and families of color. Researchers Waitoller and Super (2017) from the University of Illinois at Chicago looked at how racial minority families with disabilities selected charter schools in Chicago and found that the 'politics of desperation' play a large role above and beyond basic school performance information that was made available to them. In other words, some of the most at-risk students end up in a particular charter school, not because of superior school performance on assessments, but instead due to parents' exhaustion from a culmination of negative experiences with Chicago Public Schools.

Studies of Choice and Public School Achievement

Finally, there are several studies that look at the issue of focus in this paper; namely, the effect of charter school availability on the traditional public schools that they inevitably compete with for students and funding. A similar study to the present one was conducted by Maranto and Vasile (2018) in Arizona this year, finding that the "charter sector seems to have promoted innovation, teacher and parent empowerment, and modest improvement

in traditional public schools.” The study also found that parents of students enrolled in charter schools viewed their school much more favorably than their counterparts in traditional public schools. Although the authors noted innovation in curriculum and governance brought about by charters in the state, there was little evidence that those innovations had spread to Arizona’s traditional public schools.

Most similar to the analysis in this paper was a series of studies conducted by Hoxby (2003). She looked at specific schools within Milwaukee Public Schools that were particularly affected by the availability of school choice and found that elementary schools with the highest number of students that left the traditional public school to take advantage of a voucher option saw the highest gains in student achievement in math, science, social studies, language, and reading assessments. The most-affected schools saw an annual change of 6.3 to 7 percentage points on assessments in Math and Science, respectively, whereas unaffected schools saw only a 3.5 and 2.3 percentage point annual change, signaling a statistically significant positive correlation between competition and achievement in traditional public schools. Hoxby went on to study a similar trend in Michigan public schools, and found that traditional public school districts that attracted charter competition increased in their student achievement at a faster rate than districts that did not attract charter competition. The study found that productivity rose by 1.6 (scale points per thousand dollars spend) in reading and by 1.4 in mathematics. Finally, she identified the same trend in Arizona charter schools following the enactment of the state’s law that allowed for competition with traditional public schools.

A similar study from New York City examined the performance of individual students at public schools that experienced dropping enrollment from charter school competition (Winter 2012). Surprisingly, the model showed that students at schools with the most exposure to charter school competition were either unaffected or slightly benefited in both math and English scores. This study was particularly interesting because it utilized student-level data and a very direct measure of the pressure of charter school competition rather than simply employing geographic measures of the availability of choice.

Finally, a 2012 analysis of the Ohio charter school experience following the No Child Left Behind sanctions placed on schools in the state also found that the existence of a charter option actually increased performance at traditional public schools (Gary 2012). After controlling for the sanctions related to NCLB, the researchers found that a school would gain approximately 1.7 percentage points in fourth grade math if there was competition posed by a charter school option. The author went on to build out a claim that public schools, at least those in Ohio, reacted as expected to incentives and threats and that the benefits for students and families might be observed in other states where school choice is allowed.

SECTION III: THEORETICAL MODEL

My research examines the relationship between student achievement and school choice in order to evaluate the effects of widespread choice in some parts of the state for nearly a decade, and few or no choices outside of traditional public schools in other parts of the state. Because student level data are difficult to obtain and work with for privacy reasons, I rely on school and district level data, which provide aggregated and averaged student performance on the state's various end-of-course assessments.

The overall mathematical relationship that I assume is:

$$\textit{Student Achievement} = f(\textit{Choice}, \textit{Demographics}, \textit{Teaching}, \textit{error}) \quad (1)$$

Student achievement, or the level of performance on summative assessments in a particular subject and at a grade level, depends on many factors both internal and external to individual students. The first factor and the focus of this research is on the existence of a free enterprise of public school options for students. I assume that the availability of choice impacts, either positively or negatively, the overall environment of the public schools within a defined geographic area. For example, if there is no choice, families send their children to their designated school, and the student receives whatever inputs that school has determined; including curriculum, teaching style, classroom size, etc. On the other hand, if there is choice, parents evaluate the inputs and available performance data from the schools that are available to them, and choose the one that is most

preferable. This choice deprives any other school that was not chosen of the additional enrollment and accompanying funding according to the state's per pupil formula. The threat of competition for student enrollment should force *all* schools within that defined geographic area to stay alert to the inputs and performance of neighboring schools, and seek to improve their own. This market competition should, then, create higher student achievement on average than an area that does not have choice.

Conversely, another theory of how choice impacts student achievement says something quite different. This opposing viewpoint assumes that when parents have a choice of where to send their students, only the parents with higher than average resources and knowledge will take advantage of the information made available to them. Other parents who are unable or unwilling to properly evaluate their options will stay with the default school assignment, perhaps the school nearest to their home. This type of reality would further exacerbate existing inequity in public education that is caused by the concentration of poverty, and only provide benefits for families that are already privileged.

Outside of choice, the theoretical model also includes demographics. Student specific factors like their previous performance in earlier grade levels, learning disabilities, and level of attendance surely impact their performance in any particular course. But many of the factors that shape academic achievement are in the school, family, and geographic environment surrounding each student.

The familial, socioeconomic, and racial factors that impact student performance are not at the center of this research, although there exist extensive papers on those topics. Overall, these factors can either help or hurt student achievement by creating an environment in which a student is either supported and encouraged, or distracted and discouraged from achieving their highest academic potential. Students from high-income families more often have the resources to support students' overall health and wellness, as well as additional support in the form of tutors and instructional enrichment outside of the classroom. Conversely students from lower-income households sometimes struggle with having their basic needs met at home, which impacts their ability to perform in the classroom.

Finally, student achievement is unsurprisingly dependent on the quality and type of teaching that students receive. Students that attend schools with experienced, committed, highly-educated, teachers that are content experts and able to connect and inspire their students will have higher student achievement than students who attend schools with poorly trained, low-paid, and consistently low-performing teachers. Measuring teacher effectiveness is difficult, but effective school leaders are able to do so in order to recruit, incentivize, and reward high performing teachers in order to maximize student achievement, and ultimately academic attainment, which also encompasses things like graduation, job placement, and income.

SECTION IV: EMPIRICAL MODEL

The four specific models that I will estimate look at two closely related measures in each of two important subject areas. The first measure, *student achievement*, captures the percentage of students at each school that are meeting or exceeding the state's passing grade on end of year assessments. The second measure looks at the *learning gains* of the lowest quartile of students, representing the percentage of that specific population of struggling students who made a full year's worth of academic progress. These two measures serve as the dependent variables, and I examine them in the two core subject areas of English & language arts (ELA) and mathematics. The variations of the model include:

$$\begin{aligned} ELAAchievement = & \beta_0 + \beta_1 CharterInGradeLevelInCounty + \beta_2 CharterSchool + \\ & \beta_3 \%MinorityStudents + \beta_4 \%EconomicallyDisadvantaged + \beta_5 Year \dots + u \end{aligned} \quad (2)$$

$$\begin{aligned} ELAGainsLowestQuartile = & \beta_0 + \beta_1 CharterInGradeLevelInCounty + \beta_2 CharterSchool + \\ & \beta_3 \%MinorityStudents + \beta_4 \%EconomicallyDisadvantaged + \beta_5 Year \dots + u \end{aligned} \quad (3)$$

$$\begin{aligned} MathAchievement = & \beta_0 + \beta_1 CharterInGradeLevelInCounty + \beta_2 CharterSchool + \\ & \beta_3 \%MinorityStudents + \beta_4 \%EconomicallyDisadvantaged + \beta_5 Year \dots + u \end{aligned} \quad (4)$$

$$\begin{aligned} MathGainsLowestQuartile = & \beta_0 + \beta_1 CharterInGradeLevelInCounty + \beta_2 CharterSchool \\ & + \beta_3 \%MinorityStudents + \beta_4 \%EconomicallyDisadvantaged + \beta_5 Year \dots + u \end{aligned} \quad (5)$$

The dependent variable in each of the models will refer to end of year grade that each school earned on either the ELA or Math measure. These school level scores vary dramatically across the more than 3,000 diverse public and charter schools across the state, so I expected there to be a lot of significant variation on each of the variables.

The first and most important independent variable captures the amount of choice available to families at each school. I create a new variable that captures choice by indicating whether or not there is a charter school option available for the same grade level. For example, if a particular middle school has a charter middle school in the same county, I assume that there is choice available to that family. However, if there is only a charter elementary or high school, then I assume that the middle school is not faced with competition. Also, if there is no charter option available in any grade level in a particular county, I assume that there is no choice.

Altogether, there are 74 school districts in Florida that align with each of the state's counties. Because each district or county has a contiguous and reasonably small geographic area (on average, 28 miles wide and 28 miles long), so I assume that the availability of one or several charter schools in a particular grade level within a district affords families in those districts with school choice, as opposed to families that live in the 27 districts that do not have any charter schools, or the many districts that do not have charter schools available in every grade level. I expected that the coefficient on the school choice variable would be positive, representing the positive correlation between free market competition among schools and the student achievement at those schools.

Next, I represent whether each school is or is not a charter school. I expected the coefficient on this variable to be positive because many argue that more educated and involved parents will seek out the best alternative school option that is available to them, thus representing something of a selection bias among those enrolled at charter schools. Surprisingly, my findings point to a difference in sign depending on whether the model includes the entire school's achievement or if it includes just the gains of the lowest quartile of students.

I also include a variable that captures the percentage of minority students at each school. Although, sadly, there is often a correlation between students having a disadvantaged background and coming from a racial minority, it is important to separate the two in order to see their combined effect in two different coefficients. There is a large canon of research looking at the obstacles facing students of color, as well as students learning English as a second language (ESL), so I expect this coefficient to also be negative.

Then, I include a socioeconomic measure of poverty by looking at the percentage of students from economically disadvantaged households. I expected the coefficient on this variable to be negative, capturing the additional obstacles that schools with high levels of poverty face when trying to attain high levels of student achievement on state standards.

Finally, I complete the model with a variable for the school year. This is important because the data spans before and after the state's new open enrollment policy took effect in the 2017-2018 school year. While early reports show that the policy's first year saw

very little effects on how many families took advantage of the ability to attend a different public school, it is necessary to control for the differences in school performance from year to year in order to examine the correlation between school performance and the existence of choice over a longer period of time, which is as long as a decade in some counties.

SECTION V: DATA AND DESCRIPTIVE STATISTICS

I use data that are made publicly available by the Florida Department of Education, specifically the Florida State Assessment ‘Grades’ that measure summative performance at the school and district level annually dating back to 1999. The data can be found at:

<http://www.fldoe.org/accountability/accountability-reporting/school-grades/index.shtml/>

The reporting includes a large number of variables, but my analysis focuses on a subset of measures. At the school level, I look at whether each school was classified as a Title I school, which is a proxy for the socioeconomic makeup of the particular school because it indicates if a school is receiving federal aid for impoverished students. Even more granularly, I included the percent of minority students and percent of disadvantaged students. I also look at whether each school was a charter school or a traditional public school. Most importantly at the school level, I look at the achievement ‘grade’ (out of 100) for English and Language Arts and Mathematics, as well as the learning gains for the lowest quartile]of learners in each subject.

At the school and district level, I examine the overall ELA achievement over a 2-year span, as well as a dummy variable for whether the district includes charter schools in a given grade level, which serve as proxies for the availability of accessible school choice to families.

TABLE 1: SUMMARY STATISTICS

VARIABLES	Obs	Mean	Std. Dev.	Min	Max
ELAAchievment	6,576	55.112	17.063	0	100
ELAGainsLowestQ	6,394	48.373	11.906	0	100
MathAchievement	6,577	48.804	17.346	0	100
MathGainsLowestQ	6,390	48.641	13.680	0	100
CharterInGradeLevelInCounty	6,520	.825	.380	0	1
CharterSchool	6,640	.161	.367	0	1
%MinorityStudents	6,640	62.200	26.834	1.3	100
%EconomicallyDisadvan	6,640	70.434	27.030	0	100
Year	6,640	2017.5	.500	2017	2018

Overall there are 73 public school districts in the state of Florida, 47 of which contain charter schools. About 16 percent of all public schools are charter schools, with 295,000 students enrolled in charter schools out of 2.8 million K-12 public school students statewide. Of those students, 36 percent were White, 34 percent Hispanic, and 23 percent Black. Within the charter schools only, the race/ethnicity breakdown was comparable, except a larger percentage (43 percent) were Hispanic and a slightly lower percentage were White. Overall, 15 percent of students in the total population identified as English language learners (ELL), while only 10 percent of the charter population did. Finally, 62 percent of the student population classifies as economically disadvantaged, which is comparable to 55 percent of the charter school population.

The most important measures are those capturing achievements and gains for students. Overall, 55.72 percent of students passed the ELA portion of the FSA in the 2017-2018 school year with an average of 54.49 percent gains throughout the year. For Mathematics,

48 percent of students passed the assessment with an average of 48.64 percent gains among the lowest quartile of students. In the next section, I present my results.

SECTION VI: RESULTS

The results across the two model specifications, fixed effects and OLS, yield several surprising patterns. First, although the more statistically rigorous of the models (FE), did not yield many statistically significant results, perhaps because of very little variation across the panel, I observe mixed results about the correlation between choice and school performance. Both models ultimately show that charter schools record higher rates of learning gains among the lowest performing students, but they differ in their findings about overall achievement. My findings also may uncover some positive trends about charter schools' ability to boost math performance, particularly with struggling students. Ultimately, the OLS model contains highly statistically significant results that likely warrant further analysis of the relationship between school choice and school performance, and several important policy considerations as a result of these initial findings.

TABLE 2: FIXED EFFECTS

VARIABLES	(1) ELA Achievement	(2) ELAGainsLowestQ	(3) Math Achievement	(4) MathGainsLowestQ
CharterInGradeLevelInCounty	-0.568 (0.468)	0.351 (1.058)	0.168 (0.589)	-1.216 (1.101)
CharterSchool	3.784 (2.622)	18.787 (16.192)	16.054* (8.326)	19.838*** (2.856)
%MinorityStudents	-0.152 (0.105)	-0.061 (0.134)	-0.088 (0.070)	-0.179 (0.147)
%Economically Disadvan	-0.019 (0.013)	0.020 (0.024)	0.006 (0.015)	0.020 (0.032)
Year	0.987*** (0.131)	-1.460*** (0.281)	1.313*** (0.153)	-0.560* (0.324)
Constant	65.250*** (6.460)	48.415*** (8.765)	60.422*** (4.687)	56.629*** (9.377)
Observations	6,457	6,275	6,458	6,271
R-squared	0.033	0.014	0.037	0.004
F	16.62	8.22	21.71	13.86
Prob > F	0.000	0.000	0.000	0.000
Number of UniqueSchoolID	3,347	3,253	3,351	3,256

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

I first report the most rigorous model specification with fixed effects and find inconsistent correlation between the dependent and control variables. I expected the two achievement variables to be moving in the same direction as each other, but surprisingly the correlation between **CharterInGradeLevelInCounty** and **ELA Achievement** is

negative, while **MathAchievement** is positive when holding the control variables constant. This would indicate that the existence of school choice in a particular county would be correlated with more students passing the ELA standards and simultaneously fewer students passing the Math standards. This relationship does not align with what I logically expected; that at a macro level, looking at thousands of schools over multiple years, high performing schools would include high percentages of students passing both core standards and low performing schools would include high percentages of students failing both core standards. The magnitude of each of these divergent coefficients is relatively small, however, referring to only a fraction of a percentage point of students passing the core standards and most importantly, neither is statistically significant.

The knowledge gains of the lowest performing quartile offer similarly vexing results. There appears to be a positive correlation between the availability of charter school options and ELA gains for the bottom quartile of learners, while the opposite is observed for the math gains of the lowest quartile. The magnitude of the **MathGainsLowestQ** is also surprising, indicating that when there is school choice in a particular county, it correlates with 1.2 percentage points less of low performing students making a learning gain each year. However, these learning gains coefficients are not statistically significant, even at the 90 percent level of certainty.

Interestingly, the **CharterSchool** variable does have a consistent pattern across the dependent variables, indicating that charter schools correlate with higher achievement and gains, even at a statistically significant level for the math variables. In this particular

model, holding all else constant, charter schools are correlated with 16 and 19 percentage points higher in math achievement and learning gains for low performers, respectively. If true, this would potentially point to several important policy implications around charter schools' observed ability to maintain high performance in math scores, in particular. Ultimately the fixed effects results, although the most rigorous model specification, are not highly significant, so it seems appropriate to consider additional specifications. The fixed effects approach included here is really a difference in difference analysis because I only include two years of data; further research including a longer panel could yield interesting findings in the future.

TABLE 3: OLS MODEL

VARIABLES	(1) ELAAchievement	(2) ELAGainsLowestQ	(3) MathAchievement	(4) MathGainsLowestQ
CharterInGradeLevelInCounty	2.435*** (0.343)	1.715*** (0.381)	2.268*** (0.460)	0.789* (0.456)
CharterSchool	-0.609 (0.500)	2.421*** (0.463)	-3.493*** (0.611)	1.730*** (0.561)
%MinorityStudents	-0.035*** (0.008)	0.092*** (0.007)	-0.043*** (0.009)	0.052*** (0.008)
%EconomicallyDisadvan	-0.451*** (0.007)	-0.120*** (0.007)	-0.363*** (0.008)	-0.163*** (0.008)
Year	2.683*** (0.286)	-0.993*** (0.291)	2.768*** (0.350)	-0.040 (0.333)
Constant	85.903*** (0.480)	49.951*** (0.519)	84.388*** (0.607)	56.111*** (0.621)
Observations	6,457	6,275	6,458	6,271
R-squared	0.548	0.085	0.349	0.087
F	1515.24	109.61	681.24	103.29
Prob > F	0.000	0.000	0.000	0.000

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Using the OLS model, I find perhaps the most interesting results across the variables of interest. First of all, there appears to be a consistent positive correlation between the existence of charter school choice and all four of the achievement and gains measures, holding the control variables constant. The coefficients on the ELA variables are both statistically significant at the 99 percent level of confidence, and indicate that the existence of choice correlates with 2.4 percentage points higher ELA achievement and 1.7 percentage points higher learning gains for low performers over counties that do not have school choice. The same trend appears in the measures of math performance,

although at a slightly smaller magnitude, and a lower level of statistical significance for the math gains of lower performers. Most importantly, though, I am surprised to observe such consistent and significant positive correlation between these important school measures and the existence of charter school choice.

The results of this model are even more interesting when looking at the **CharterSchool** variable. Looking first at the achievement coefficients, it is somewhat surprising that both are negative. The **MathAchievement** coefficient is particularly strong in magnitude and is statistically significant at the 99 percent level of confidence, indicating that holding all else constant, the charter schools in the state have nearly 3.5 percentage points less of students meeting math standards. One potential explanation for this trend is that charter schools may attract families whose students are not performing at the standard of their traditional public school and are therefore seeking an alternative in hopes of a better learning outcome for their students. Conversely, high performing students may stick with the traditional public school setting that they have been excelling in, creating public schools that perform at a higher level than charter schools around the state.

Beyond the trend that I see on the achievement variables, there is also something very interesting happening with the learning gains measures as it relates to charter schools. For the lowest performing quartile of students in ELA and math, charter schools observed 2.4 and 1.7 percentage points higher scores, respectively, than their traditional public school counterparts. This seems to indicate that although charter schools observe lower percentages of students that are meeting the state standards, they are doing a better job of

producing learning gains for the most vulnerable students in the bottom quartile for ELA and math.

There is also something potentially important happening across the **%MinorityStudents** coefficients. While there is a negative correlation between achievement scores and schools that have high percentages of minority students, the opposite is true for the learning gains of the lowest quartile performers. At the 99 percent level of confidence, there appears to be a small bump in the learning gains for low performers at schools with high concentrations of minority students. Without assuming any type of causation, this does raise a further research question worth exploring about how well some homogenous schools with very few minority students are doing at helping their lowest performing students succeed each year.

The other control variables also contain consistent and statistically significant trends across the four dependent variables, but do not include any unforeseen trends in the data. Holding all else constant, schools with a higher **%EconomicallyDisadvan** correlate with lower performance across the achievement and gains metrics. The **Year** variable indicates overall achievement from 2017 to 2018 appears to have raised by about 2.7 percentage points, but this is not consistent across all models.

TABLE 4: OLS MODEL FOR PUBLIC SCHOOLS ONLY

VARIABLES	(1) ELAAchievement	(2) ELAGainsLowestQ	(3) MathAchievement	(4) MathGainsLowestQ
CharterInGradeLevelInCounty	2.814*** (0.343)	1.684*** (0.385)	2.775*** (0.459)	0.624 (0.460)
o.CharterSchool	-	-	-	-
PercentofMinorityStudents	-0.040*** (0.008)	0.096*** (0.008)	-0.057*** (0.009)	0.062*** (0.009)
PercentofEconomicallyDisadvan	-0.490*** (0.007)	-0.133*** (0.008)	-0.385*** (0.009)	-0.180*** (0.009)
Year	2.662*** (0.286)	-1.126*** (0.310)	2.558*** (0.353)	-0.339 (0.348)
Constant	88.732*** (0.466)	50.683*** (0.546)	86.574*** (0.604)	56.972*** (0.649)
Observations	5,399	5,332	5,401	5,329
R-squared	0.607	0.072	0.405	0.085
F	2349.98	99.95	967.08	112.92
Prob > F	0.000	0.000	0.000	0.000

Robust standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Finally, I report the same model specification as the previous OLS regression, this time including only the scores for public schools. After the charter schools are removed from the equation, the direction and magnitude of the control variables remains mostly unchanged. However, looking specifically at the **ELAAchievement** and **MathAchievement** coefficients, there is a slightly stronger correlation between school choice and student performance. This seems to indicate the opposite phenomena of the one predicted around a potential selection bias. Instead of observing lower performance by the students who remain with their traditional public school, there appears to be stronger results of competition and choice particularly within the 2,700 traditional public schools in the state.

Overall, the Ramsey RESET Test for each of the four dependent variables in the OLS models produce highly statistically significant F statistics, so there is almost certainly additional variation that could be explained if additional variables were to be added into the model. However, the OLS model as displayed, containing the four essential measures of interest (the existence of choice, the charter vs. traditional status, the percent minority, and percent disadvantaged) paints the overarching picture that I set out to observe. To further substantiate the finding that there is a positive pattern in school performance where choice exists, the same analysis could to be repeated over additional years in both directions; previously, when there was less widespread choice, and in future years, where choice will be experienced essentially statewide. Using these results alone, however, there are several important policy ramifications that should be explored. I next turn to discussing those ramifications.

SECTION VII: POLICY RECOMMENDATIONS

In this research, I sought out to measure the correlation between school choice and student achievement in the state of Florida. The 2017-2018 school year represented a momentous shift in the school choice landscape of the state, allowing for controlled open enrollment among public schools and lower barriers to entry for charter schools. It will take multiple years of additional school and district level data to understand the full impact of these new policies, but my research identifies trends from the parts of the state that have had greater access to choice over the past several years. Similar research has been conducted in much smaller samples in specific school districts or cities around the country, but the widespread of availability of choice in Florida allowed my research to cover a large sample of more than 3,000 diverse schools over two school years. The regression results show a significant and consistent correlation between the availability of school choice for parents and higher student achievement, which bodes well for the state as it moves into a new era of expanding options for families who choose to take advantage of the new open enrollment policy. There are several potential ramifications of these findings for education policymakers at several levels of government.

First, acknowledging the limitations of this study, researchers at the state Department of Education should conduct further analysis of the years preceding the 2016-2017 and 2017-2018 school years, as well as in the subsequent years as the new open enrollment policy becomes more well-known and utilized by families throughout the state. It will be interesting to observe whether the correlation between choice and performance continues

even when the choice is between traditional public schools instead of a charter school. If the relationship does persist, this will have meaningful implications for other states with less of a charter infrastructure. Instead of waiting for more charter operators to come to those states, they could consider implementing a controlled open enrollment policy statewide in order to take advantage of the positive effects of choice.

In addition to more and better data, districts that experience high levels of both choice and student achievement should be further examined to uncover the additional support systems that can be replicated in other areas. Approaches to creating a healthy ecosystem of school choice varies greatly in different districts. Additional ethnographic research of the strongest performing counties might uncover facts about the various policy levers that state and local officials can encourage, like information campaigns for parents through events including school fairs or student shadow days. These types of activities might help parents better evaluate the options that are available to them, so that they can find the best fit for their students and prevent the problem of uninformed parents opting out of their opportunity to choose.

Third, I expect that districts with the least amount of choice historically to need additional support from the Florida Department of Education and other non-profit stakeholders to adapt to the new reality of additional choice through the new controlled open enrollment policy. Traditional public schools in those areas now will have to mitigate the negative impacts that often come with additional choice like student turnover, drops and spikes in enrollment, and additional pressure on teachers. These types

of districts that have not had charter schools historically but will now likely have both newly opened charter schools and other traditional public schools to compete with for students and resources. District leaders, principals, and school boards in those counties should be encouraged to collaborate with their peers in parts of the state that have been more accustomed to school choice over the last two decades.

Fourth, I recommend that policymakers in other large, diverse states consider similar policies that promote widespread school choice appears. Over the past 20 years Florida has consistently passed incremental expansions to choice, and with the most recent school choice package of legislation, it is now perhaps the furthest along towards a free market of school options for families. States like California, New York, and Illinois, all with tightening state budgets and pressure to improve student outcomes for diverse learners should consider policies that make it easier for charter schools to open their doors by giving them access to capital funds for infrastructure and by providing similar levels of per pupil funding across traditional public and charter schools. States that have restricted their school choice programs to a limited number of urban or rural districts should take notice of the results of Florida's approach and consider introducing legislation that opens enrollment or provides for lower barriers to entry for new charter schools.

Finally, there could be a federal role in incentivizing other states or large districts to expand school choice through competitive grants that are made to proposals that incorporate information from the Florida model. Grants could include components of

funding for things like capital investment for charter schools in states that do not yet allow for equal funding formulas for charter and traditional public schools. A potential federal grant program could also include a component supporting the information campaigns that will likely need to follow additional choice in areas that have not experienced it before to better equip parents to understand their choices. Federal grants could help state departments of education to create more expansive ‘online school portals’ to allow parents to compare their alternatives and make informed choices about where to enroll their student. Overall, federal grants could play a powerful role in promoting innovation in this type of technology and information infrastructure in states that need support.

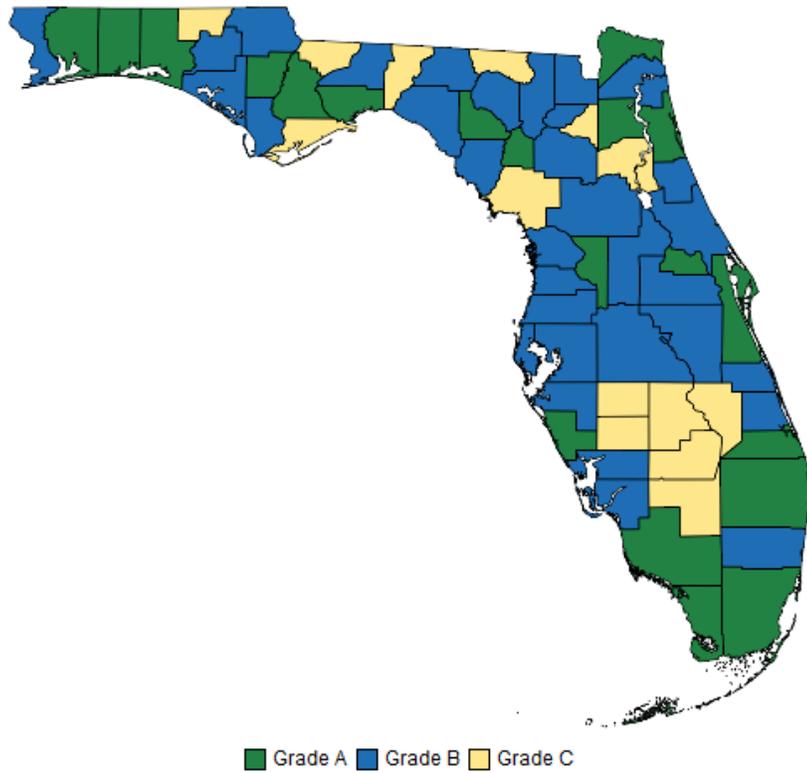
SECTION VIII: CONCLUSION

Over the past thirty years of the school choice movement, charter schools have become the most palpable, bipartisan solution to creating additional educational opportunities outside of traditional public schools. Their rapid growth around the country and in Florida have started to eclipse calls for more voucher or scholarship programs which would lead to more private school enrollment. In states like Florida, charter schools are becoming so interwoven into the greater public school landscape that they are realizing what many of their earliest proponents hoped: laboratories for innovation and opportunities for families to choose the environment that best suits and supports the needs of their children. I expect the results of this study to point to a reality where greater choice, albeit with some newfound competition among public schools, does in fact create a tide that raises all ships. And while there will inevitably be schools that struggle with changes in enrollment or the makeup of their student populations, there will be models to draw from and replicate.

APPENDIX A: FLORIDA DISTRICT MAP WITH OVERALL GRADES

District Grades, 2017-18

User Tip: Click on a District to see the District Grades Report



Source: Florida Department of Education, 2018

APPENDIX B: SCHOOL AND DISTRICT GRADES DEFINED

2018 School Grades Overview

Each school is graded based on the components for which it has sufficient data.

School grades provide an easily understandable way to measure the performance of a school. Parents and the general public can use the school grade and its components to understand how well each school is serving its students. Schools are graded A, B, C, D, or F.

Components: In 2017-18, a school's grade may include up to eleven components. There are four achievement components, four learning gains components, a middle school acceleration component, as well as components for graduation rate and college and career acceleration. Each component is worth up to 100 points in the overall calculation.

Four Achievement Components: The four achievement components are English Language Arts (ELA), Mathematics, Science, and Social Studies. These components include student performance on statewide standardized assessments, including the comprehensive assessments and end-of-course (EOC) assessments. The component measures the percentage of full-year enrolled students who achieved a passing score.

Four Learning Gains Components: These components are learning gains in English Language Arts and Mathematics, as well as learning gains for the lowest performing 25% of students in English Language Arts and Mathematics. These components include student performance on statewide standardized assessments including the comprehensive assessments and EOC assessments for the current year and the prior year. The components measure the percentage of full year enrolled students who achieved a learning gain from the prior year to the current year.

English Language Arts (FSA, FSAA)	Mathematics (FSA, FSAA, EOCs)	Science (NGSSS, FSAA, EOCs)	Social Studies (EOCs)	Graduation Rate	Acceleration Success
Achievement (0% to 100%)	Achievement (0% to 100%)	Achievement (0% to 100%)	Achievement (0% to 100%)	4-year Graduation Rate (0% to 100%)	High School (AP, IB, AICE, Dual Enrollment or Industry Certification) (0% to 100%)
Learning Gains (0% to 100%)	Learning Gains (0% to 100%)				
Learning Gains of the Lowest 25% (0% to 100%)	Learning Gains of the Lowest 25% (0% to 100%)				Middle School (EOCs or Industry Certifications) (0% to 100%)

Middle School Acceleration: This component is based on the percentage of eligible students who passed a high school level EOC assessment or industry certification.

Graduation Rate: The graduation rate is based on an adjusted cohort of ninth grade students and measures whether the students graduate within four years.

College and Career Acceleration: This component is based on the percentage of graduates from the graduation rate cohort who earned a score on an acceleration examination (AP, IB, or AICE) or a grade in a dual enrollment course that qualified students for college credit or earned an industry certification.

School Grades Calculation: The number of points earned for each component is added together and divided by the total number of available points to determine the percentage of points earned.

School Grading Scale: A = 62% of points or greater, B = 54% to 61% of points, C = 41% to 53% of points, D = 32% to 40% of points, F = 31% of points or less

Percent Tested: Schools must test 95% of their students.

Source: Florida Department of Education, 2018

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