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Exploring the Dynamics of Policy Diffusion: The Rise of Public Montessori Education in South Carolina

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When do governments borrow policy ideas from the private sector, and how do policy innovations spread from one jurisdiction to another? We examine these questions through a case study of public Montessori programs in South Carolina. Using a policy diffusion framework, we study the expansion of Montessori education, typically available in private schools, to public school districts. Analyzing both quantitative Cox proportional hazards models and qualitative content analyses of newspaper coverage, the study reveals South Carolina's unique position as a national leader in public Montessori adoption. Results indicate a significant role for policy entrepreneurs, including state officials and local advocates, in driving the expansion of public Montessori. While proximity to existing public Montessori districts showed no significant relationship with adoption, the presence of private Montessori schools emerged as an important factor, with districts with more private Montessori programs being more likely to adopt public Montessori. Moreover, high-spending districts and those with a smaller proportion of low-income students were more likely to implement public Montessori, suggesting a link between financial resources, student demographics, and policy innovation.The findings underscore the complex interplay of factors shaping policy diffusion in education, emphasize the importance of considering both quantitative and qualitative analyses in understanding this process, and provide support for the notion that governments look to the private sector for policy innovation.

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Introduction

The American public Montessori movement has flourished in one of the most unexpected of places, South Carolina. The state has emerged as a leader in the innovative movement with a statewide total of 52 active public Montessori schools as of 2018, second only to its much larger peer, California (Culclasure et al. 2018). Often criticized for below-average performance on factors such as educational equality and innovation (e.g., Truitt 2009), the pioneering role played by South Carolina in the expansion of this policy innovation may come as a surprise to many.

This article takes this case study as its focus, using a policy diffusion framework and a multi-method approach to examine the expansion of Montessori education, typically available in private schools, to public school districts. This study seeks to address a series of research topics, including the mechanisms of policy diffusion in the expansion of public Montessori programs in South Carolina. What role do forces and factors such as geographic proximity, budget constraints, district size, the presence of private entities, policy entrepreneurs, and institutions play in the adoption of public Montessori?

This study offers important contributions to discussions of both policy diffusion and education reform. Since the establishment of policy diffusion as a category of analytical interest (see Walker 1969 and Gray 1973), studies of the diffusion process have primarily focused on transmission across state lines or country borders (Mallinson 2018) often neglecting local or school district-level policy diffusion. [1] Previous research on policy diffusion and education reforms has also been characterized by analytical attention to particular policy innovations such as vouchers, teacher pay reforms, or charter schools (e.g., Rincke 2006; Witte, Schlomer, and Shober 2007; Zhang and Yang 2008). This study is unique in its examination of the diffusion of a pedagogical method, as opposed to a policy, across district, magnet, and charter schools. Such an analysis is particularly important given the influence school programming and pedagogy may have on educational choices made by guardians on behalf of their students. Finally, through findings on the impact of the private sector on public education policy, this article may also offer valuable contributions to the fields of policy adoption and policy diffusion.

We begin with a brief introduction to the Montessori method. Then, we use previous research to identify important mechanisms of policy enactment and diffusion, which inform our hypotheses. Our analytical approach involves both quantitative and qualitative methods to examine the spread of public Montessori in South Carolina. We employ Cox proportional hazards models and

[1] Exceptions include Witte, Schlomer, and Shober's (2007) study of charter school expansion in Wisconsin, Rincke's (2007) article on charter schools in California, and McGlynn's (2010) analysis of 47 urban school districts across the country.

content analyses of newspaper coverage to identify how the presence of private Montessori schools relates to the likelihood of having a public Montessori school in the district. We find additional evidence for the importance of a district's structural factors, like school spending, and the role of policy entrepreneurs in the adoption of public Montessori. This article concludes with a discussion of our results, an overview of the study's limitations, and why this analysis may contribute to future studies of policy adoption and diffusion.

Montessori Education

Italian child psychologist Maria Montessori created what is now called the Montessori pedagogy in the early twentieth century after years of meticulous classroom observations. An approach to pedagogy that prioritizes student autonomy, collaborative learning, intrinsic motivation, self-discipline, and creativity, the Montessori method was received with some initial skepticism in the United States. By the 1960s, however, her innovative model was being implemented across the nation (Lillard 2017). According to a census of Montessori education in the United States by the National Center for Montessori in the Public Sector (2024), there were approximately 2,900 private Montessori schools and 560 public programs. While Montessori education is primarily offered in private school settings, public Montessori programs have a rich history, and the number of such schools is growing (Debs 2019).

With the aim of nurturing traits such as self-discipline, creativity, and an intrinsic motivation for learning, the Montessori pedagogy is designed to be child-centered and heuristic (Lillard 2017). Classroom time is generally organized into three-hour periods of individual or small-group activities with students selecting their daily schedules according to their individual interests and self-determined needs. Furthermore, the classroom environment contains only child-sized materials and is strictly ordered. Students are divided into broader age ranges (typically 0-3, 3-6, 6-9, and 9-12 years old) rather than the more confining single-year grades. Montessori advocates argue that the structure and various freedoms permit students to develop more effectively at their own pace (Lillard 2017).

Theoretical Overview

A number of factors influence policy enactment at the national, state, and local levels (Berry and Berry 1990; Kingdon 1984; Walker 1969). Important policy entrepreneurs, such as interest groups, may agitate for policy action, or policymakers may respond to electoral or institutional pressures in enacting policy. Alternatively, legislators may borrow policy ideas from other jurisdictions, a method of expansion called policy diffusion (Shipan and Volden 2008).

For decades, political scientists have sought to understand both the motivation behind diffusion and the mechanisms by which it occurs. As Starke (2013) writes, "The literature on policy diffusion has increasingly moved beyond the problem of whether policies diffuse to the question as to why this is the case and through what causal mechanisms diffusion occurs" (p. 562, emphasis in the original; Karch 2007; Shipan and Volden 2008). Several such mechanisms have been identified (e.g., Gilardi 2015; Karch 2007; Maggetti and Gilardi 2016; Shipan and Volden 2008). The first established mechanism is that of learning, whereby policymakers in one jurisdiction learn from the policy successes in another (Gilardi 2015; Maggetti and Gilardi 2016). When faced with pressure to solve a policy problem, "decision-makers simplify the task of finding a solution by choosing an alternative that has proven successful elsewhere" (Berry and Baybeck 2005, 505). Learning is also shown to be a mechanism of policy diffusion outside the legislative sphere and in more bureaucratic roles in education (Smith 2022). In the context of this study, school district administrators might implement public Montessori in their district after observing that a public Montessori school in another school district is producing positive results or is popular with parents.

The second mechanism is imitation or emulation. This occurs when policymakers enact a policy to look like or "imitate" another jurisdiction. The difference between imitation and learning is subtle but meaningful. Policymakers are looking at the policy that they want to adopt itself when it comes to the learning mechanism; they study how it was adopted, if it worked, and the consequences of the policy. Meanwhile, in imitation, policymakers look at the other jurisdiction, observe what it did, and try to implement policies to mimic the other jurisdiction (Karch 2007; Shipan and Volden 2008). Previous research finds that smaller, less wealthy communities are slower to innovate than larger, wealthier communities (Shipan and Volden 2008). However, these smaller communities may eventually adopt policies from their larger counterparts in order to imitate them. We may find evidence of imitation in our study of Montessori education in South Carolina if the early adopters of public Montessori programs are in high-income, high-spending, and high-enrollment districts.

Competition is another mechanism of policy diffusion. Jurisdictions may have an economic incentive to enact certain policies because they are in competition with surrounding communities. For example, there is evidence that open enrollment policies and charter school authorizations are influenced by spatial competition factors (Witte, Schlomer, and Shober 2007). Further, public charter schools are more likely to be located in areas with a high amount of private school competition (Glomm, Harris, and Lo 2005). This is ostensibly due to the district's desire to

enhance revenue and enrollment by attracting students from those private schools, as well as homeschool students and students from neighboring school districts via open enrollment policies. Applying the competition mechanism to our study of public Montessori diffusion, one could expect that districts that are adjacent to districts that offer public Montessori programs will be more likely to provide public Montessori themselves, as they do not want to lose enrollment.

Further, in a seminal work in the field, Walker (1969) argued that governments would be most influenced by other jurisdictions that were in close geographical proximity. Proximity can affect diffusion for several reasons, including policymakers' communication networks, overlapping media markets, policymakers being more inclined to view neighboring entities as easier to emulate, and the fact that adjacent units may share similar cultures, demographics, and economies (Karch 2007). However, despite the numerous reasons why one may expect geographical proximity to have a large impact on diffusion, meta-analyses find mixed results (Mallinson 2018). A potential reason could be that technological advances in communication and transportation make proximity less important than it was in previous eras (Karch 2007). Other evidence indicates that perceived similarity between jurisdictions may be a better predictor of policy diffusion than just contiguity (Bricker and LaCombe 2021). In addition, proximity may matter less when looking at local policy diffusion because local jurisdictions may share many similarities even when located in different parts of the state, and transportation and communication are usually easier within a state than between states or countries.

Policy entrepreneurs, who could include individuals or groups, can also be a driving force behind policy diffusion or policy innovation (Wong and Langevin 2007). There is substantial evidence that policy entrepreneurs have played important roles in education policy innovation and diffusion at the state, school district, and school levels (Mintrom 1997; Mintrom 2000; Witte, Schlomer, and Shober 2007). At the local level, school board members, principals, teachers, parents, and especially superintendents can act as policy entrepreneurs (Witte, Schlomer, and Shober 2007).

In addition, several important internal and structural factors can affect policy enactment and diffusion. In their analysis of why school districts authorize charter schools, Witte, Schlomer, and Shober (2007) find that resource characteristics, such as the size of the district, district revenues, and student need, are related to district charter school decisions. Relatedly, Linkow (2011) concludes that a greater percentage of students participate in school choice programs, including magnet and charter schools, in districts with greater levels of child poverty. Further, there is some evidence that low-income parents and parents of color have different school preferences than higher-income parents

and White parents do (e.g., Weiher and Tedin 2002; Zhang and Yang 2008). Therefore, a school district's decision to provide a public Montessori program may be affected by the racial and socioeconomic makeup of the district, as well as district financial factors.

While the idea that government looks "to the private sector for public solutions is so well established as to be nearly inviolate" (Ingraham 1993, 349), the role of the private sector is often overlooked in the policy diffusion literature, as previous studies have generally focused solely on the role of the public sector (Mitchell and Petray 2016; Steidley 2018). It is possible, however, that the policy diffusion mechanisms identified by Shipan and Volden (2008) can be applied to the private sector. For example, governments may learn from successes in the private sector and try to emulate them. This may be most likely in areas in which the private sector has particular expertise or experience, such as credit card fraud detection, management, risk assessment, or pay-for-performance policies (Evans 2009; Ingraham 1993). Alternatively, public entities may adopt policies similar to the private sector for competition reasons, such as when public transportation systems adopt consumer-friendly policies like mobile ticketing or more frequent services to compete with private options, like ride-sharing companies. In the education field, while a handful of policy diffusion studies incorporate the private sector (e.g., Zhang and Yang 2008), many other analyses do not, even when private sector equivalents are available, such as in the cases of charter schools (Rincke 2006; Witte et al. 2007) and the policy diffusion of public pre-kindergarten programs (Cohen-Vogel 2022; Smith 2020). Our study directly examines how public actors could use the private sector as a source of policy innovation.

Research Question and Hypotheses

In this study, we ask what explains the expansion of public Montessori throughout the state of South Carolina and why some districts offer public Montessori while others do not. Drawing on policy diffusion theory, we examine the role of competition with both public and private entities, as well as internal structural factors, on the availability of Montessori at the district level.

We explore our research question through an analysis of four sets of hypotheses. Our first hypothesis focuses on the role of policy entrepreneurs. Previous research demonstrates that policy entrepreneurs have a big impact on policy adoption and diffusion of education policies (Mintrom 1997). When examining the story of public Montessori in South Carolina, one should focus on the roles of important individuals and organizations.

H_1: Policy entrepreneurs will meaningfully impact the methods of expansion of public Montessori.

Proximity may play a key role in the diffusion of public Montessori schools in South Carolina. Competition may be greater between proximate units, as it may be easier for individuals, groups, and industries to move shorter distances. One may also expect that competition is greater in instances in which the units of analysis are geographically smaller, such as school districts, as opposed to states or countries, as it is generally much easier to move to a different school district than it is to change states or countries. However, there are important questions about how competition might matter in the South Carolina context. While open enrollment is possible, it is not guaranteed in South Carolina state law. Both the sending and receiving districts must approve of any out-of-district open enrollment choices by families, and transportation is not provided, which limits the effect that competition might have. Nonetheless, we believe that it is a key factor to consider in the policy diffusion of Montessori programs. Districts may look to neighboring districts for learning, emulation, or competition purposes.

H_2: School districts will be more likely to adopt public Montessori if a neighboring school district has public Montessori.

The role of the private sector is a distinguishing factor in our analysis. The existence of private Montessori within a school district may affect the likelihood that the school district will adopt public Montessori. This could happen through many mechanisms. School district officials might learn about successful policies in the private sector. The competition mechanism may also play a role here, as school districts might see private Montessori students within the district as potential enrollees. Furthermore, private schools may create a pool of engaged and interested parents, teachers, and administrators that may push for the expansion of Montessori into the public sector. Lastly, private schools might consider becoming public schools in order to increase their enrollment or diversify their student body.

H_3: School districts with private Montessori schools will be more likely to adopt public Montessori programs.

The final set of hypotheses concerns internal, structural factors. These are expected to affect policy adoption. For example, enrollment trends might have a significant role in policy diffusion. Perhaps larger districts with more students may be more likely to offer alternative education like Montessori, or districts that have falling enrollments may be more likely to try new curricula such as Montessori to attract students. We also expect that districts that have greater school spending may be more likely to implement public Montessori, as wealthier jurisdictions are often early policy adopters. Lastly, student demographics may affect the adoption of public Montessori. Given that previous research indicates that students of

color and low-income students are often underrepresented in public Montessori programs (Debs 2019; Debs and Brown 2017; Fleming and Culclasure 2023), school districts with a smaller percentage of these students may be less likely to implement public Montessori.

H_{4A}: Higher levels of student enrollment will increase the likelihood a district will adopt public Montessori.

H_{4B}: Higher levels of school spending in a district will increase the likelihood a district will adopt public Montessori.

H_{4C}: A lower proportion of students of color and low-income students will increase the likelihood a district will adopt public Montessori

Data and Methodology

To conduct our research, we employed a multi-method approach. First, we created a rich quantitative dataset that includes data from several different data sources, including the U.S. Department of Education's Common Core of Data, the Private School Universe Survey, and data from the South Carolina Department of Education.[2] Our analysis includes school district-by-year observations for each of the 81 school districts in the state. [3] The dataset covers the academic years from 1995-1996 to 2016-2017. For a policy diffusion study of this type, one needs to identify which districts implement public Montessori and when implementation occurs. Dates for the initial provision of public Montessori education at the district level were sourced from the South Carolina Department of Education and the Riley Institute's evaluation of public Montessori in South Carolina (Culclasure et al. 2018; Fleming and Culclasure 2023). These data include information on the number and location of public Montessori programs in the state.

We considered how geographical proximity might influence the policy diffusion of public Montessori programs. While almost all policy diffusion studies include some measure of geographic proximity, there is no one agreed-upon definition (Maggetti and Gilardi 2016; Mallinson 2018). For this paper, we study this issue in two ways. First, we estimate the number of public Montessori programs that exist in districts that are adjacent to each South Carolina school district. Our second measure examines the percentage of adjacent districts that offer

[2] A complete list of the variables and data sources are available in Table 1 of the Appendix along with a discussion of missing data.

[3] Because some districts consolidated or changed from the 1995-1996 school year to 2016-17, we used current district lines when defining districts for the panel.

public Montessori. We used GIS to identify the number of public Montessori programs in adjacent school districts.

Our next covariate is the number of private Montessori schools in the school district. These data were gathered from the Private School Universe Survey performed by the National Center for Education Statistics from the 1995-1996 academic year to the 2015-2016 school year. The presence of a private Montessori school in a district is a signal to school officials that there is demand for Montessori within the district. Implementing public Montessori may be a method to bring these parents and students into the public-school system.

Furthermore, we considered additional internal structural factors, using longitudinal data from 1995-1996 to 2016-2017 from the Common Core of Data database created by the National Center for Education Statistics. This dataset includes information on all public schools and school districts in the country. Larger districts may have more capacity for policy innovation, so we control for student enrollment. Further, as our qualitative results below suggest, some districts used public Montessori to reverse declining enrollments in the district. To examine this possibility quantitatively, we control for the change in enrollment over the previous eight years. Given that financial factors can influence the timing of policy diffusion, we included district-level measures of per-pupil spending and average teacher salaries. These variables are in 2017 dollars. We also measure the percentage of students who qualify for free or reduced-price lunch and the percentage that have an Individualized Education Program (IEP), a measure of student disability, from 1996-2017. Not only have these factors been found to be related to policy diffusion at the district level (Witte, Schlomer, and Shober 2007), but they are also in the Montessori literature (Culclasure et al. 2018; Debs 2019). Given Montessori's popularity in private schools, it is often considered an "elite" form of education. Even in public Montessori programs, students of color and low-income students are often underrepresented (Debs 2019; Debs and Brown 2017). This has been true in South Carolina as White and higher-income students are overrepresented in public Montessori (Culclasure et al. 2018; Fleming and Culclasure 2023). The causal relationship here remains unknown. Are White and upper-income students overrepresented as a result of parental awareness of and interest in the Montessori curriculum? Alternatively, are districts with higher percentages of White and upper-income students more likely to offer public Montessori? The role of parental choice and district-level factors remains undetermined, so we examine them here.

Quantitative Analytical Methods

Our quantitative examination of the factors that influence a district's decision to implement public Montessori uses event history analysis. Over the last thirty years, event history analysis (Berry and Berry 1990) has been the conventional method by which to study policy diffusion (Karch 2007, 64) and is popular in other areas of political science as well (Box-Steffensmeier and Jones 2004). In the study of the spread of education policy diffusion specifically, event history analysis is the standard approach (e.g., Curran 2015; Li 2017; McGlynn 2010; Mintrom 1997; Witte, Schlomer, and Shober 2007). The goal of event history analysis is to model "both the duration of time spent in the initial state and the transition to a subsequent state, that is, the event" (Box-Steffensmeier and Jones 2004, 8). In our case, we can directly examine what factors impact the time it takes for a school district to adopt public Montessori. Other approaches, like ordinary least squares regression, allow for the dependent variable to be positive or negative and assume that covariates are constant, which is not the case in our study (Jones and Metzger 2019). Another challenge to traditional approaches is that the time-to-event cannot be calculated for some units, as not all observations will experience the event (Allison 2018). Event history models can account for this.

In this study, we employ a Cox proportional hazards model, which has been used extensively and has become increasingly popular in studies of policy diffusion (An et al. 2023; Mallinson 2018). These models allow for the examination of a dichotomous dependent variable in panel data and adjust for time-varying covariates, unlike logit and probit models. In Cox models, which are a form of survival models, districts remain in the analytical dataset until they adopt the policy. In subsequent years, the remaining districts become the risk set, which are those districts still "at risk" to experience the event. Any districts that have already implemented a public Montessori program are subsequently excluded from the risk set, as they are no longer at risk of experiencing the event. In the Cox models below, the event of interest is when a public Montessori program first opens in a school district. In event history parlance, this is called a "failure." The covariates included in the model can influence the likelihood that a failure occurs.

The Cox proportional hazards regression model can be written as:

$$h(x_j) = h_0(t)\, exp(x_j \beta_x)$$

where $h(x_j)$ represents the hazard rate at a given time, t, taking place; $h_0(t)$ is the baseline hazard, and x_j is a vector of time-varying covariates that can shift the hazard rate up or down (Curran 2015). β_x represents a vector of coefficients. The coefficients of the Cox proportional hazards model indicate an independent variable's relationship with the hazard of the duration ending ($h(t)$), which is like a conditional probability that a subject will experience an

event in a particular time period, given that the subject has not experienced the event yet (Jones and Metzger 2019).

The results of event history models can be challenging to interpret, so we transformed the Cox coefficients into hazard ratios, a risk-based quantity (Jones and Metzger 2019). Notice that there is no intercept. One benefit of the Cox model, a semi-parametric approach, is that it does not assume any functional form of the hazard ratio at baseline, as the baseline hazard can take any form (Cleves, Gould, and Marchenko 2016).

The models adjust for clustering by district and are estimated with robust standard errors, which account for the correlation among covariates within a district over time (Cleves, Gould, and Marchenko 2016). In the Cox models below, the independent variables were lagged by one year to account for simultaneity bias (Fernández and Lutter 2013; Miller and Richard 2010) and because district policymakers would be unlikely to use the current year's data when making decisions about opening a new Montessori program (Curran 2015; Li 2017). When multiple districts adopt public Montessori in the same year, it is called a "tie" in the Cox proportional hazards model context. We used the Efron method for tied events, as it is more accurate than the Breslow approximation, another common approach (Cleves, Gould, and Marchenko 2016, 153).

Qualitative Data & Methods

We also rely on qualitative content analyses of newspaper coverage to help us understand the expansion of public Montessori across school districts. Previous scholars of policy diffusion (e.g., Karch 2007; Starke 2013) have often noted that the quantitative approaches used in many studies have been unable to unpack the mechanisms of diffusion. For example, quantitative analyses may find evidence that school districts are more likely to get public Montessori programs if they already exist in neighboring districts. However, these models are often unable to identify which of the mechanisms outlined above—learning, imitation, or competition—is causing this behavior. We follow the call for a greater presence of qualitative research in the study of policy diffusion (Karch 2007; Starke 2013) by using qualitative data to shed light on what mechanisms may be in play in this analysis.

Using NewsBank, a database of newspapers with 74 different local newspapers across the state, we identified 433 articles that mentioned public Montessori education in South Carolina from 1992 to 2019. These articles were considered qualitatively to examine the research questions of this study. Some of these articles were not applicable to this study, as they only mentioned public Montessori in

passing or were announcing events like open houses. [4] Articles that were appropriate for our analysis were organized by research question, and content analyses on these articles were then performed. Common themes and exemplar quotes were identified to be included in this analysis. While we relied on the previous literature to develop our hypotheses for the quantitative analyses, we also used the qualitative analysis to identify additional possible explanatory factors that could also be examined quantitatively. This was most clear in our inclusion of the change in enrollment variable in our quantitative analysis. We use media coverage data to examine each of the four sets of hypotheses. Given that we are unable to directly examine the role of policy entrepreneurs using our quantitative data, we rely on our qualitative data to evaluate that hypothesis.

Results

We present our results in five subsections below. First, we tracked the growth of public Montessori in South Carolina from 1995-1996 to 2016-2017. We examined where in the state public Montessori was available and the characteristics of the school districts with public Montessori versus those districts without it. After this overview, we examine each of our hypotheses. We begin with an investigation of the role of policy entrepreneurs in the growth of public Montessori through an analysis of newspaper coverage of Montessori in the state. For the remaining hypotheses concerning proximity, the role of private Montessori schools, and structural factors, we present the results of our Cox hazard models. After reviewing the quantitative results, we provide additional context and examine mechanisms for each hypothesis through our qualitative content analyses.

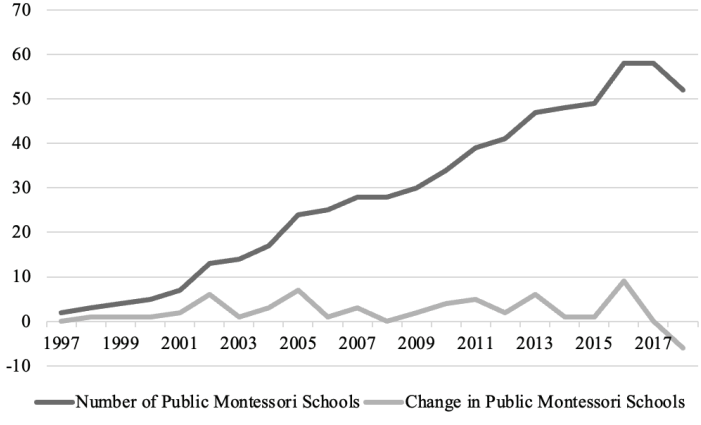
The Growth & Characteristics of Public Montessori in South Carolina

South Carolina is a national leader in the adoption of public Montessori education. South Carolina had 52 public Montessori schools as of the 2017-18 school year. It is not only the large number of public Montessori schools that makes South Carolina unique; the type of public Montessori schools that exist in South Carolina is distinctive. Montessori programs in South Carolina are much more likely to be located within regular district schools (41 programs) than within magnet (7 programs) or charter schools (4 programs). The growth in public Montessori education in South Carolina has largely occurred because of decisions by school districts, not charter schools or charter school authorizers.

[4] While content analyses of dozens of articles inform this analysis, we reference 33 different articles in the Appendix that are directly used in this study.

The number of public Montessori programs in South Carolina grew at a steady pace over the two decades of this study, as seen in Figure 1. In 1997, there were only two recorded public Montessori schools. While the state reached 58 programs in 2015-16, the total number of public Montessori programs was 52 in 2018 after some programs merged or were closed. Unlike public Montessori schools in South Carolina, the number of private Montessori schools in the state has stayed relatively constant since 1990, with the number of private programs varying between 25 to 30. By the 2009-10 school year, there were more public Montessori than private Montessori schools in the state for the first time, and this trend has continued for the rest of our available data.

Figure 1: Growth of Public Montessori Education in South Carolina (1996-97 to 2017-18)



Source: South Carolina Department of Education; National Center for Montessori in the Public Sector

Table 1 shows the changes in our variables in South Carolina from 1996 to 2017. Noticeably, in 1996, only 1% (1 of 81) of districts in South Carolina had a public Montessori school; by 2017, this number had jumped to 33% (27 of 81). With this increase, the measures of public Montessori in adjacent districts also increased. The number of private Montessori schools per district decreased over the same period. Examining the mean poverty level across the 81 school districts in South Carolina, one sees that the level

steadily increased throughout this time period from an average of 46% of students in poverty per school district to an average of 79% of students in each district in poverty.

Table 1: Change in Variables by Year

	1996	2003	2010	2017
Public Montessori in the District	0.01	0.10	0.22	0.33
	(0.11)	(0.30)	(0.42)	(0.47)
Percent Poverty	45.60	48.89	55.64	79.31
	(19.57)	(17.56)	(16.43)	(22.33)
Percent Black	45.90	47.21	45.33	42.46
	(24.89)	(25.09)	(24.74)	(25.11)
Percent Hispanic	0.51	2.13	4.27	6.82
	(0.48)	(2.09)	(3.93)	(5.93)
Percent White	51.65	49.62	48.47	46.15
	(24.86)	(24.46)	(23.72)	(25.11)
Percent with Disabilities	11.97	16.90	14.91	14.33
	(2.49)	(3.34)	(2.83)	(5.93)
Average Teacher Salary	54.97	60.33	64.13	58.22
	(3.55)	(3.51)	(5.07)	(3.87)
Student Enrollment	7.85	8.52	8.83	9.23
	(9.01)	(10.02)	(10.99)	(12.25)
Change in Student Enrollment	0.02	0.06	0.00	-0.02
	(0.10)	(0.17)	(0.17)	(0.19)
Dollars Spent Per Student	8.64	11.37	12.96	12.70
	(1.32)	(1.76)	(3.24)	(2.31)
Number of Private Montessori Schools	0.40	0.33	0.37	0.32
	(1.10)	(0.95)	(0.98)	(0.91)
% of Adjacent Districts with Public Montessori	1.82	11.09	23.25	34.90
	(5.88)	(12.67)	(18.04)	(18.76)
# of Public Montessori in Adjacent District	0.20	1.23	2.88	3.75
	(0.60)	(1.63)	(2.94)	(3.10)
N	81	81	81	81

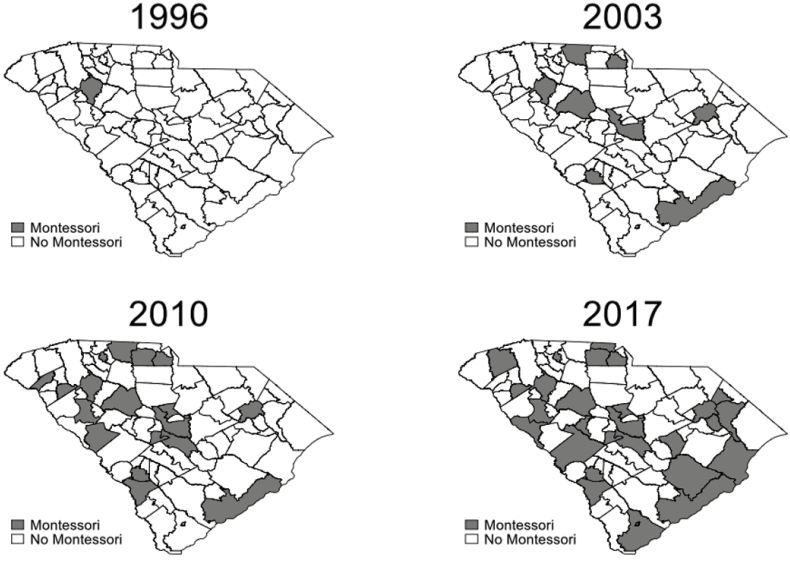
Note: Mean above and standard deviations in parentheses. Not weighted by student enrollment.

Figure 2 shows the distribution of public Montessori school districts across the state in 1996, 2003, 2010, and 2017. These maps demonstrate that public Montessori districts were spread throughout the state, including in rural and urban districts, as well as in both districts near the coast and the upstate. The districts with public Montessori schools seem to be clustered together, indicating there may be a relationship between the existence of public Montessori schools in a district and the existence of public Montessori schools in surrounding districts.

We begin our between-district analysis with a simple comparison of the structural factors between districts with and without public Montessori as of 2017 in Table 2. An overview of Table 2 demonstrates that the characteristics of public Montessori districts and those without the programs are quite similar. Montessori districts have larger enrollments, spend more per student, and have higher teacher

salaries. Montessori districts also have a higher percentage of students with a disability than non-Montessori districts. However, none of the differences are statistically significant, suggesting that there is no significant demographic or financial difference between districts that choose to create public Montessori programs and districts that do not, as of 2016-17.

Figure 2: Number of Districts with Public Montessori Over Time



Source: South Carolina Department of Education

Also included in Table 2 are the variables that represent the proximity component of policy diffusion: the percentage of adjacent districts with public Montessori and the number of public Montessori schools in adjacent districts. These results show no significant relationship between either measure of proximity and the presence of public Montessori. Importantly, there is a significant difference between districts with public Montessori and districts without public Montessori when it comes to the presence of private Montessori; the average number of private Montessori schools in districts with public Montessori schools is 0.41 higher than in districts without public Montessori.

Figure 3 presents the survival function of school districts, a common procedure in event history analysis. It represents the probability that a district will not adopt public Montessori in a given year. The survival estimate drops by approximately 37 percentage points by the end of the period, showing growth in the number of public Montessori districts over time.

Table 2: Comparison of Districts with and without Public Montessori Schools (2017)

	Districts with Montessori Mean	Districts without Montessori Mean	Difference	S.E. of Diff.
Percent Poverty	78.63	79.65	-1.03	5.30
Percent Black	42.54	42.42	0.12	5.96
Percent Hispanic	7.70	6.38	1.32	1.40
Percent White	45.07	46.68	-1.61	5.36
Percent with Disabilities	14.03	14.48	-0.45	0.66
Average Teacher Salary	59.09	57.78	1.30	0.91
Student Enrollment	11.44	8.13	3.31	2.88
Change in Student Enrollment	-0.00	-0.03	0.03	0.04
Dollars Spent Per Student	12.98	12.56	0.42	0.55
Number of Private Montessori Schools	0.59	0.19	0.41*	0.21
% of Adjacent Districts with Public Montessori	32.87	35.92	-3.06	4.44
# of Public Montessori in Adjacent District	3.74	3.76	-0.02	0.74

Note: Significance determined by bivariate t-tests. * p<.10 **p<.05 ***p<.01. Not weighted by student enrollment.

The Role of Policy Entrepreneurs

Policy diffusion of public Montessori education in South Carolina was heavily influenced by a host of policy entrepreneurs at the school, district, and state levels. South Carolina's history offers possible reasons for the state's surprising support for public Montessori. The qualitative data reveal that South Carolinian policy entrepreneurs and actors were essential to the early development of public Montessori programming. Public Montessori first arrived in the state in 1993 through the entrepreneurial energies of a single kindergarten teacher (Sponhour 1993). This teacher became a believer in the Montessori model and felt that it was important to offer every child, regardless of means, the chance to experience Montessori through the public-school system. After receiving approval from the local school district, the teacher worked to create a Montessori program for 3-, 4- and 5-year-olds in a rural community in South Carolina. The program

soon became an exemplar, and interested teachers and school officials came from across the state to observe her program. The superintendent in a nearby district was particularly interested in the program and became a fervent advocate for public Montessori implementation in his district. A review of local media coverage indicates that school district officials, principals, teachers, and parents were often drivers of the adoption of public Montessori programs.

Beyond these policy actors, we identified three additional policy entrepreneurs who had a substantial impact on the adoption and diffusion of public Montessori in South Carolina. The first of these is Jim Rex. Rex, a Democrat, was elected to serve as the South Carolina Superintendent of Education in 2006. As superintendent, Rex created the Office of Public School Choice and hired the first state-wide public Montessori coordinator in the country in 2008. Previous research has demonstrated that higher-level government intervention can support policy diffusion through actions like providing funding or granting waivers (Karch 2007). We saw this form of vertical diffusion in South Carolina. The department's state-level Montessori coordinator, who worked to help schools and districts wishing to open and implement Montessori, was strong evidence of institutional support for Montessori in the state. This office promoted innovation and facilitated communication. Given that Montessori was new to many districts and districts had limited resources, the state Montessori coordinator was able to provide much-needed expertise to districts.

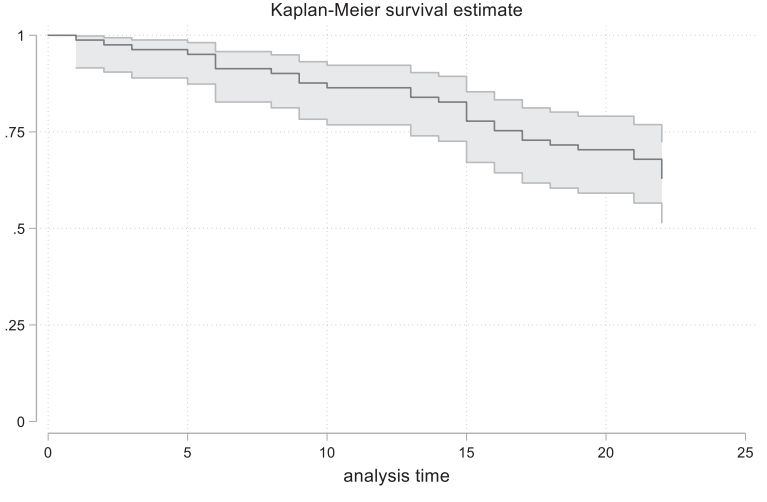
Rex used South Carolina's public Montessori programs as an example of alternative education options in the public sector, and he touted public Montessori throughout the state. These efforts were often used to combat political pressure for private school choice in the state. Public Montessori programs were a central piece of comprehensive public-school choice legislation, which Rex championed in 2007. This legislation was passed by the state legislature, but Governor Mark Sanford vetoed the bill because it did not include private school choice provisions. Rex left the superintendent's office in January 2011 after a failed bid for governor in 2010. Rex proved to be an important policy entrepreneur by being a strong advocate for public Montessori throughout the state and for creating an administrative apparatus to provide support to school districts who were considering adopting public Montessori.

Policy entrepreneurs associated with the South Carolina Montessori Alliance were also successful in expanding Montessori. This organization includes both private and public Montessori schools. Associations are critical in the formation of "policy networks," which are often connected with policy diffusion (Mintrom and Vergari 1998). In South Carolina, information sharing and guidance between pre-existing private schools and nascent public programs were critical to successful development. One assistant superintendent was quoted as saying, "This is a grass-

roots effort that sees children as the important thing and takes the dividing line of public and private and makes it the unimportant thing" (Roko 2005). Just as national organizations can facilitate policy diffusion across states (Karch 2007), state organizations can decrease transaction costs and assist in the sharing of information across school districts.

Local, private organizations and education entities also played a significant role in the growth of Montessori in South Carolina. The Self Family Foundation provided grants to help fund costly Montessori teacher certification and materials. This organization provided critical startup funds to districts that were new adopters of Montessori. The Self Family Foundation also supported the development of a master's level Montessori teaching program at Lander University. This foundation acted as a policy entrepreneur in the diffusion of public Montessori education in South Carolina. Overall, our investigation identified several important policy entrepreneurs who shaped the adoption and diffusion of public Montessori throughout the state, consistent with our first hypothesis.

Figure 3: Survival Function – Predicting a District Not Adopting Public Montessori



Adjacent Districts

Our second hypothesis considers how the presence of public Montessori in an adjacent district is related to the likelihood that a district will implement public Montessori. We begin with the results from our Cox proportional hazards models, which are presented in Table 3. We estimated two Cox proportional hazards models.[5] The first model uses the proportion of adjacent school districts with public Montessori as a measure of geographic proximity. The second model includes a covariate that equals the total number of public Montessori programs in adjacent districts. It is important to note that hazard ratios below one indicate that the covariate reduces the hazard of a district adopting public Montessori, while a value above one increases the hazard of the event occurring. The results are generally consistent across the two models. For both models, there is no evidence that having public Montessori schools in adjacent districts influences the hazard of a given district getting public Montessori.

While our quantitative analysis finds little evidence for the importance of proximity, our analysis of local media coverage suggests that proximity may matter when it comes to policy adoption in some instances. However, given the relatively small size of the state and state-level institutions that promote Montessori state-wide, the effects of proximity were limited.

When considering adopting public Montessori, district and school officials often visited other districts where public Montessori already existed. According to one principal, "I went on a visit to the Upstate and saw it being used in a classroom. I had never seen it in public school before that. I came back and told the district that I wanted that" (Rollins 2016). However, we found more evidence of these types of visits to non-adjacent districts than to adjacent districts in the newspaper coverage.

Our qualitative analysis allows us to provide some evidence of the possible mechanisms that could explain why policy adoption decisions were made. The learning mechanism states that districts will try to mimic or copy policies that have proven successful in other districts. We find some evidence of this mechanism. For example, one superintendent said that he pushed for the introduction of public Montessori after seeing the success of similar programs in Rock Hill and York. A principal in a different district mentioned learning about the positive results of public Montessori in another district; "we had heard some wonderful things about their Montessori program and wanted to pursue that" (York 1999b). The learning mechanism appears relevant to Montessori district diffusion in South

[5] A description of the diagnostics of our Cox hazard models is available in the Appendix.

We expected that competition between districts is more likely to happen between neighboring districts. We found examples of public Montessori programming used to attract suburban parents, and district officials sometimes mentioned the existence of public Montessori in neighboring districts when considering Montessori expansion in their home districts.

Table 3: Hazard Ratios from Cox Regression Models Predicting Public Montessori Adoption

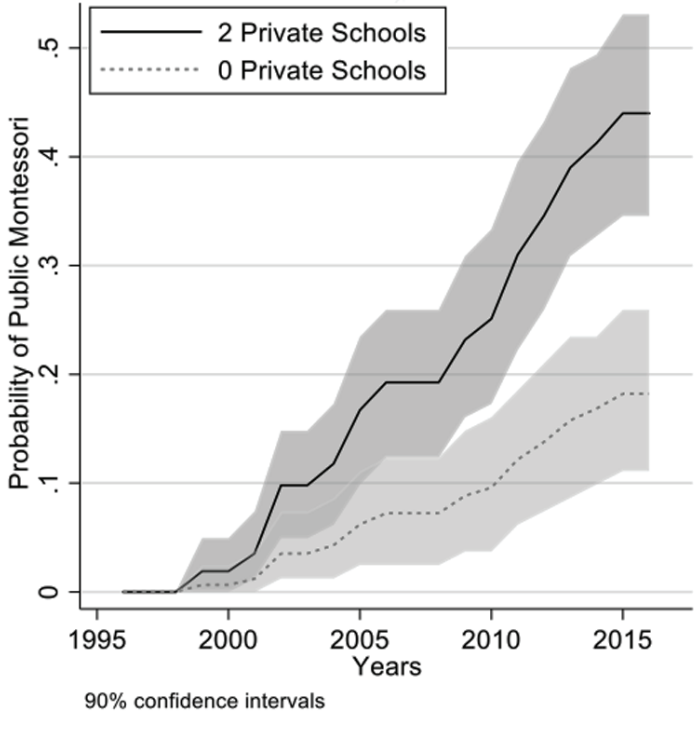
Adoption		
	Model 1	Model 2
% of Adjacent Districts with Public Montessori	0.93	
	(0.079)	
# of Public Montessori in Adjacent District		0.99
		(0.064)
Number of Private Montessori Schools	1.69**	1.72***
	(0.37)	(0.36)
Student Enrollment	0.99	0.99
	(0.018)	(0.019)
Change in Enrollment	0.080	0.085
	(0.14)	(0.15)
Dollars Spent Per Student	1.17***	1.16**
	(0.067)	(0.067)
Average Teacher Salary	1.01	1.01
	(0.014)	(0.014)
Percent Black	1.02	1.02
	(0.018)	(0.019)
Percent Hispanic	0.99	1.00
	(0.043)	(0.043)
Percent with Disabilities	0.98	0.99
	(0.045)	(0.044)
Percent Poverty	0.95**	0.95*
	(0.024)	(0.025)
N	1439	1439
bic	294.0	294.4
N_clust	80	80
N_fail	29	29

Hazard ratios with robust standard errors in parentheses. Covariates lagged one year.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Beyond these limited examples, we failed to find much evidence of the competition hypothesis driving the expansion of Montessori education in South Carolina. There are several reasons why this could be the case. First, district officials may have been wary of mentioning that competition was a reason for promoting

Montessori when discussing it publicly. Second, given that both sending and receiving districts must approve of inter-district open enrollment requests, there is a limit on how many students a district can attract from neighboring communities. Third, state-wide organizations may have worked to limit competition between districts; rather, these organizations may have promoted working together rather than a competitive mindset.

Figure 4: Transition Probabilities – Adopting Public Montessori by Number of Private Schools in District



Private Montessori Schools

Our third hypothesis stated that the presence of private Montessori schools would increase the likelihood that a school district would establish a public Montessori program. The results from our Cox models in Table 3 provide support for this hypothesis. There is evidence that the number of private schools in the district is related to the hazard of a district adopting Montessori. One way to interpret hazard ratios is to present

the results on a percentage scale ((1 - hazard ratio) *100). For Model 1, a one-school increase in the number of private Montessori schools in a district corresponds to a 69% increase in the risk of a district getting public Montessori. For Model 2, it is a 72% increase. This is evidence that the presence of private Montessori in a district may lead school officials to push for implementing public Montessori.

We estimated transition probabilities (Jones and Metzger 2019; Metzger and Jones 2018) to get a sense of the relationship between the number of private Montessori schools and the adoption of public Montessori. This method allows us to estimate the probability a district adopts Montessori given the district's Montessori status at the starting stage, the time at which the analysis begins, and a covariate profile. We use the results from Model 1. We consider two different districts: one with zero private Montessori programs and another district with two private Montessori schools. All the other covariates were held to their medians. To estimate transition probabilities, we assumed that a district starts at the beginning of our time period as a district without public Montessori and enters the analysis at baseline. The simulated transition probabilities and 90% confidence intervals are presented in Figure 4. One sees that districts with two private Montessori schools are more likely to adopt public Montessori. This difference became statistically significant around 2009. The probability that a district will adopt public Montessori by 2017 is 0.42 for districts with two private Montessori programs, while it is 0.18 for districts with no private Montessori programs.

Our analysis of newspaper coverage of public Montessori education in South Carolina found a significant role for private Montessori schools. The presence of private Montessori programs appears to affect the likelihood of public Montessori adoption in several ways. First, school districts sometimes viewed these private institutions as competitors and moved to adopt public Montessori to attract students. State Superintendent Jim Rex, a Montessori proponent, argued one of the benefits of expanding Montessori education into the public sector was to help attract and retain more parents and students in the public-school system. At the local level, multiple superintendents said that their districts were considering public Montessori in part to attract private school parents. These efforts could be successful, as one new public Montessori school attracted seventy-five students who were previously in private schools (Georgetown Times 2013).

Second, private Montessori schools created a set of policy demanders: parents who had experience with private Montessori and wanted to see it expanded into the public sector. One superintendent said that she was considering implementing public Montessori because "a lot of the parents I've heard from have had a positive experience with a Montessori school. I think they see it as an opportunity to put into a public-school setting what they have experienced in a private school setting" (York 1999b).

Third, just as policymakers can learn from successes in other jurisdictions according to the mechanisms of policy diffusion, they can also learn about successes in the private sector. One private Montessori program that was in existence for 40 years closed because of competition from public Montessori programs. The principal stated, "Our school has been our own worst enemy because of the popularity of what we are doing and the success we have had and people trying to re-create it" (Bowman 2014).

Lastly, some private schools themselves pushed to become public charter schools to increase enrollment and funding and to diversify the student body. A president of a private Montessori school board said that they were looking into becoming a public school because "as a fee-based school, we can't serve the diversity of children that we would like to" (Smith 1997b), while a private school director stated, "We knew we'd be giving up some of our freedom, but we thought it was an opportunity to diversify our student body" (Grantland 2003).

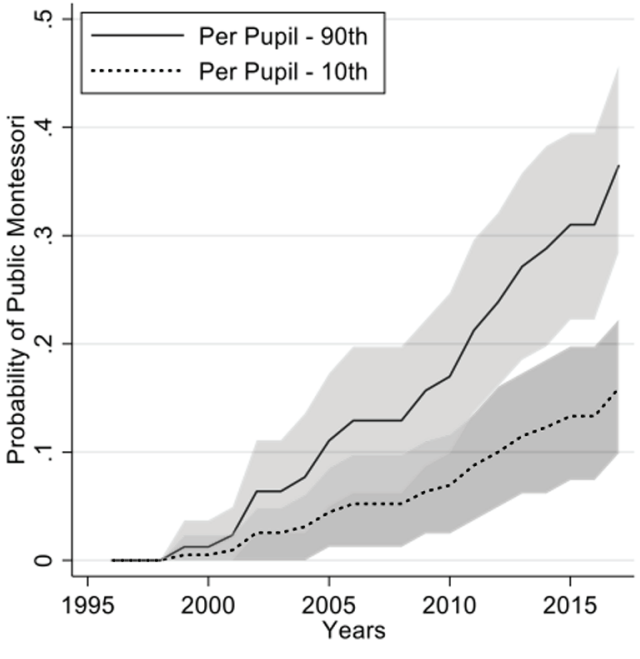
Structural Factors

Our next set of hypotheses concerned structural factors, including the enrollment in the district, the amount of school spending in the district, and the district's demographics. The Cox model results in Table 3 show that the overall enrollment in the district is not related to the likelihood that a district implements public Montessori. Our hypothesis concerning enrollment (H4A) was not supported by the quantitative data.

Our qualitative analysis highlighted that the overall trend in enrollment may be more important than district size. We found that multiple districts used Montessori to deal with declining enrollment challenges. One principal said that the district implemented public Montessori because "we see it as a way to draw people back to Whitesville. We're in a sort-of no man's land here.... We're hoping that putting this program in place will make people opt back in" (Rindge 2011). The Georgetown County School District experienced a loss of over 400 students over a five-year period, only to see a sudden increase in enrollment after the opening of a public Montessori school. Officials also viewed Montessori as one way to increase the local population, as parents may move to the district so that their children would have access to public Montessori. Multiple news articles included interviews with parents who stated that they moved to the area so that their children could attend a public Montessori program. While our qualitative data provided evidence that enrollment trends mattered, our Cox model results find no statistically significant relationship between changes in enrollment and the propensity to adopt public Montessori.

While student enrollment was not related to the likelihood a district will get public Montessori, we do find support for a statistically significant relationship between the amount that is spent per pupil in a district and the risk of getting public Montessori, as seen in Table 3. For every $1,000 increase in lagged per-pupil spending, a district experienced a 17% (Model 1) or 16% (Model 2) increased probability of adopting public Montessori. We estimated transition probabilities to examine the spending per student variable. We compared two model districts. The first district had per-pupil spending at the 10th percentile ($8,790), while the second district was a high-spending district (90th percentile: $14,940). The other variables were held at their medians for both districts. A plot of the transition probabilities is presented in Figure 5. Throughout the entire time period, high-spending districts were more likely than low-spending districts to adopt public Montessori programs. This difference became statistically significant around 2011 and continued to grow. There is a probability of over 0.35 that high-spending districts will adopt public Montessori by 2017, while the probability is only 0.15 for low-spending districts.

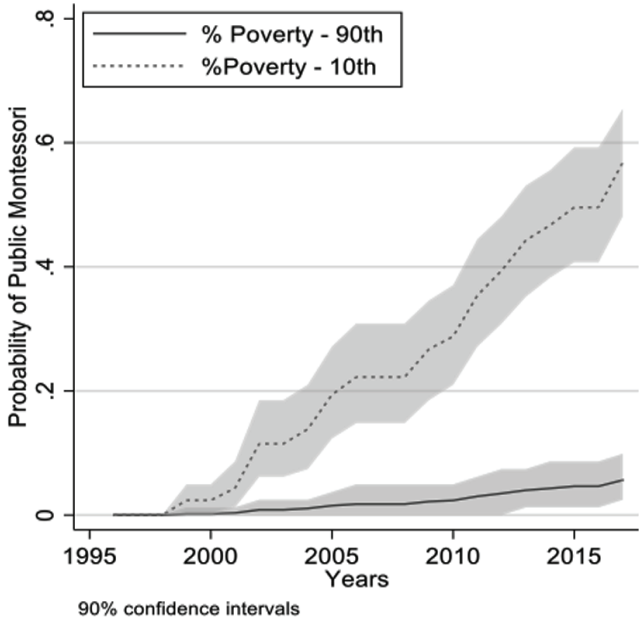
Figure 5: Transition Probabilities – Adopting Public Montessori by Per Pupil



Spending Percentile

Our qualitative data provide more support for the idea that high-spending districts would be more likely to implement public Montessori. Multiple articles mentioned the high cost of Montessori implementation. One estimate from 2007 was that establishing a new Montessori program would cost the Richland 1 school district more than $150,000. Given the large startup costs associated with Montessori education, it is not surprising that our quantitative results indicated that policy adoption was more likely in districts with greater spending, which was consistent with our hypothesis (H4B).

Figure 6: Transition Probabilities – Adopting Public Montessori by Low-



Income Percentile

The third set of structural factors that we examine is student demographics. While the percent poverty variable shows statistical significance at the $p < 0.05$ level in Model 1, it is only statistically significant in Model 2 at the $p < 0.10$ level. Controlling for the other covariates, a one percentage point increase in the percentage of students that qualify for free/reduced-priced lunch in a district will decrease the

likelihood of adopting public Montessori by 5% for both models. It should not be surprising that this is a small effect, given a one percentage point increase in the percentage of students that qualify for free lunch is a small increase. Figure 6 demonstrates that a district with student poverty at the 10th percentile is much more likely to adopt public Montessori than a school district with student poverty at the 90th percentile. We find mixed evidence for our last hypothesis (H4C), as student poverty was a significant predictor, but there is no statistically significant relationship between student race or the percentage of students with disabilities and the risk of getting public Montessori.

Our review of qualitative data also highlighted how the racial and socioeconomic breakdown of the student body may matter for public Montessori adoption. Montessori schools, including many public programs, have often served the interests of upper- and middle-class families and White students, despite the efforts of many teachers and parents of color to expand the reach of Montessori (Debs 2019). We found some evidence of this in our qualitative analysis, as White and higher-income parents seemed more attracted to public Montessori programs, which often caused controversy. One example of this was the debate regarding the implementation of public Montessori at Murray-Lasaine in Charleston County to reverse declining enrollments. Some parents and the community became divided as many White parents pushed for Montessori while many Black parents wanted the school to keep offering traditional classes.

Discussion

Our research on the factors influencing participation in public Montessori at the district level produced interesting results with important implications for education policy. Policy entrepreneurs were critical to South Carolina's exceptional participation in Montessori. State-wide associations and the Department of Education's support facilitated the expansion of public Montessori.

Our quantitative analyses examined South Carolina's public Montessori programs from 1996-2017. Using differing definitions of geographic proximity, we found no evidence that having adjacent districts with public Montessori affects a district's adoption of public Montessori. While early studies of policy diffusion argued for the importance of geographic proximity (Walker 1969; Gray 1973), recent work has found mixed support for this claim (Mallinson 2018). It is important to note that our measure of proximity was quite crude, as it only examined if districts were adjacent. Perhaps more nuanced methods that considered actual distance could lead to different conclusions than ours. Our qualitative data suggest that district officials often use the learning mechanism, but they do not limit their search for successful policy innovations to adjacent districts.

The presence of private Montessori programs was an important predictor of policy adoption. Districts with more private Montessori programs were more likely to adopt public Montessori. Our qualitative research identified possible mechanisms that could explain this finding. The presence of private Montessori increased parental awareness, and parents may mobilize to implement it in the public sector. School district administrators also saw private Montessori programs as competition and implemented public Montessori to increase enrollments. Providing public Montessori programs may be a way for school districts to attract parents who are disproportionately White and higher income (Debs 2019).

Our study highlights the role that private entities can have in policy adoption. The policy diffusion literature defines learning "as a process where policies in one unit are influenced by the consequences of similar policies in other units" (Maggetti and Gilardi 2016, 90). Our research suggests that public entities may also learn from successful programs in the private sector.

The results from our Cox models have further implications. We found that high-spending districts are more likely to adopt public Montessori. This finding is consistent with the policy diffusion literature. Jurisdictions with greater resources often demonstrate higher levels of policy innovation (Gray 1973; Walker 1969). Our results provide support for the imitation mechanism, as wealthier or higher-spending districts are more likely to be early adopters of a policy (Shipan and Volden 2008).

Our study may also shed light on the consistent finding from Montessori evaluations that low-income students are underrepresented in such programs (Culclasure et al. 2018; Debs 2019). There was a significant relationship between the percentage of students who qualify for free lunch and the adoption of public Montessori. Districts with a smaller proportion of low-income students were more likely to implement Montessori. While it is possible that low-income parents are less interested in public Montessori, another possibility is that districts with higher proportions of those families are less likely to offer Montessori in the first place. It should be noted that we did not find evidence that students' race was related to Montessori adoption, which is not consistent with previous Montessori studies (Debs 2019; Debs and Brown 2017; Fleming and Culclasure 2003). We encourage further examination of this complicated issue.

While our results reveal much about policy diffusion in the realm of education policy, the small number of districts and schools participating in the program presents unavoidable limitations to our study. We also used a limited number of covariates for the Cox Model. Student achievement data, a common covariate in education policy diffusion studies, were not available for all the years of our analysis, and the tests have changed significantly over this time period. Most

other studies of policy diffusion include explicitly political covariates (Mallinson 2018). Similar measures at the district level were not available to us. For example, over 90 percent of school boards in South Carolina are non-partisan. While we identified over 400 newspaper articles that mentioned public Montessori in South Carolina, not all local newspapers were included in the database, and there was more coverage in the later years of our analysis than in the earlier years.

This study contributes to the literature in several ways. Our study highlights policy diffusion and innovation at the local level. The mechanisms of policy diffusion examined here could aid future studies of local government, as it is unclear if the mechanisms that are important in inter-state and inter-country policy diffusion are replicable at the local level. We also include the role of the private sector in our policy diffusion analysis, as governments may co-opt policies from the private sector. Future research should consider this type of public-private learning and competition in other policy areas. Lastly, this study uses quantitative analyses to predict policy diffusion and qualitative data to examine the possible mechanisms at work. We believe that this is a powerful approach to examine policy diffusion and innovation and encourage future researchers to consider how quantitative and qualitative analyses can be used together to provide insight into the study of policy diffusion.

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Appendix

Variable	Description	Source
Montessori Year	When each district first implemented public Montessori	South Carolina Department of Education; Riley Institute's evaluation of public Montessori in South Carolina (Culclasure et al. 2018)
Public Montessori in the District	If the district has at least one public Montessori school	South Carolina Department of Education; Riley Institute's evaluation of public Montessori in South Carolina (Culclasure et al. 2018)
Dollars Spent Per Student	Total expenditures made by school districts divided by the fall membership (in thousands of 2017 dollars)	National Center for Education Statistics
Average Teacher Salary	Expenditures for gross salaries paid to regular and part-time teachers, teacher aides, homebound teachers, hospital-based teachers, substitutes, and teachers on sabbatical leave (in thousands of 2017 dollars)	National Center for Education Statistics
Student Enrollment	Total number of students as reported by each district, excluding adult education students (in thousands)	National Center for Education Statistics

Change in Student Enrollment	Total number of students as reported by each district in a given year minus total number of students in district eight years prior. This value was then divided by the total number of students in thedistrict eight years prior. $Enrollment_t$-$Enrollment_tEnrollment_{t-8}$	National Center for Education Statistics
Percent Poverty	The unduplicated number of students who are eligible to participate in the Free Lunch Program under the National School Lunch Act of 1946 divided by total student enrollment	National Center for Education Statistics
Percent with Disabilities	Count of all students having a written Individual Education Program (IEP) under the Individuals with Disabilities Education Act (IDEA), Part B divided by student enrollment	National Center for Education Statistics
Percent Black	The number of students having origins in any of the Black racial groups of Africa as reported by each school divided by total enrollment.	National Center for Education Statistics
Percent Hispanic	Number of students having Mexican, Puerto Rican, Cuban, Central or South American, or other culture or origin, regardless of race as reported by each school divided by student enrollment.	National Center for Education Statistics
% of Adjacent Districts with Public Montessori	Percentage of adjacent districts that offer public Montessori	South Carolina Department of Education; Riley Institute's evaluation of public Montessori

# of Public Montessori in Adjacent Districts	The number of public Montessori programs offered in adjacent districts	South Carolina Department of Education; Riley Institute's evaluation of public Montessori in South Carolina (Culclasure et al. 2018)
# of Private Montessori Schools	The distinct number of private Montessori schools in the school district	National Center for Education Statistics Private School Universe Survey

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Cox Hazard Model Diagnostics

Here we present evidence that examines the assumptions of the Cox model and the model fit. A key assumption of the Cox model is that all covariates have a constant effect throughout the time observed (Box-Steffensmeier and Jones 2004). An example of a violation of this assumption is if student enrollment increased the hazard rate for public Montessori adoption until 2008 but then had no effect after that (McGlynn 2010). There are model-specific tests to examine this assumption. Following Cleves et al. (2016, chap. 11), we first performed a link test, which verified that the coefficient on the squared linear predictor is not statistically significant. Both models passed this test. We then checked the proportional hazards assumption using Schoenfeld residuals. After generating these residuals, we performed the Grambsch and Therneau global test (Cleves, Gould, and Marchenko 2016). Using this test, we found no evidence that the proportional hazards assumption was violated. Lastly, we used Cox-Snell residuals to examine the model fit for both models. We plotted these residuals versus the Nelson-Aalen cumulative hazard function and found that each model fits the data (Cleves, Gould, and Marchenko 2016).

Missing Data

We used various data sources from the National Center for Education Statistics for this study. States, school districts, and schools are required to provide these data to the U.S. Department of Education. Despite the standardized methods used to collect the data, some missing data exist. However, data for the demographic and economic factors are missing for less than 1% of our observations. To mitigate the impact of these missing data on our results, we used the mean of the values from the year immediately preceding and the year immediately following the missing observation to estimate the value. This imputation was done separately for each school district with missing data. Missing data were a larger challenge for the number of private Montessori schools by district, as these data are collected on a biennial basis via the NCES's Private School Universe Survey. The remaining variables in the analysis were collected annually, so we estimated the missing data for the private Montessori school variable using the mean estimation method described above. When the analyses below are re-estimated excluding the years with missing data on the private school variable, the results are substantively the same. We have no missing data on variables on the presence of public Montessori programs in the district or adjacent districts.