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## Mapping the Profit Motive: The Distinct Geography and Demography of For-Profit Charter Schools

*W. Brett Robertson*

Washington University in St. Louis  
United States

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**Abstract:** For-profit charter schools represent a controversial new market-based education reform (Garcia, Barber, & Molnar, 2009; Conn, 2002). This essay explores how schools operated by for-profit corporations differ from those operated by non-profit organizations. Specifically, do for-profit charter schools locate in demographically distinct areas and serve different student populations than similar schools operated by non-profit providers? Research suggests that charter school operators in some districts appear to strategically locate their schools in an effort to exclude certain student populations (Lubienski, Gulosino, & Weitzel, 2009). If charter schools seek to exclude certain students, as these schools proliferate in a district or region there may be an intensifying stratification effect detrimental to the most disadvantaged students (Bifulco, Ladd, & Ross, 2009). This essay undertakes a broad comparative analysis of the neighborhood demographic and student population characteristics of charter schools operated by for-profit corporations and nonprofit organizations, using multilevel modeling and geographic information systems, to compare the two school types across dissimilar state contexts. In so doing, the study seeks to isolate the impact of a school being operated by a for-profit corporation and illuminate what impact the proliferation of for-profit schools might have on the distribution of student populations across regions.

**Keywords:** School choice; urban education; educational policy; social stratification

### **Mapeando el Afán de Lucro: La Diferente Geografía y Demografía de Las Escuelas Charter Con Fines de Lucro**

**Resumen:** Las escuelas Charter con fines de lucro son nueva y polémica reforma de la educación (García, Barber, y Molnar, 2009; Conn, 2002). Este ensayo explora cómo las escuelas operadas por empresas con fines de lucro se diferencian de las operadas por organizaciones sin fines de lucro. En concreto, las escuelas charter con fines de lucro se localizan en zonas demográficamente distintas y sirven para diferentes poblaciones de estudiantes que escuelas similares operados por proveedores sin fines de lucro. La investigación sugiere que los operadores de escuelas charter en algunos distritos parecen ubicar estratégicamente sus escuelas, en un esfuerzo para excluir ciertas poblaciones estudiantiles (Lubienski, Gulosino, y Weitzel, 2009). Si las escuelas charter buscan excluir a ciertos estudiantes, ya que estas escuelas proliferan en un distrito o región no puede ser un efecto de la estratificación de la intensificación en detrimento de los estudiantes más desfavorecidos (Bifulco, Ladd, y Ross, 2009). En este ensayo se lleva a cabo un amplio análisis comparativo de las características demográficas de los vecindarios y población estudiantil de las escuelas charter operados por empresas con fines de lucro y organizaciones sin fines de lucro, el uso de sistemas de información geográfica y los modelos multinivel, para comparar dos tipos de escuelas a través de contextos estatales disímiles. De este modo, el estudio busca aislar el impacto de una escuela operada por una corporación con fines de lucro e iluminar el impacto que la proliferación de escuelas con fines de lucro puede tener sobre la distribución de la población estudiantil en todas las regiones.

**Palabras clave:** elección de escuela; educación urbana; política educativa; estratificación social

### **Mapeando a Motivação do Lucro: A Diferente Geografia e Demografia das Escolas Charter Con Fins de Lucro**

**Resumo:** Carta escolas com fins lucrativos são uma nova e polêmica a reforma da educação (García, Barber, e Molnar, 2009; Conn, 2002). Este artigo explora como as escolas operadas por empresas com fins lucrativos diferem daquelas operadas por organizações sem fins lucrativos. Em particular, as escolas charter con fins de lucro estão localizados em diferentes áreas demográficas e servem a diferentes populações de alunos que escolas similares operadas por prestadores sem fins lucrativos. A pesquisa sugere que os operadores de escolas charter em alguns distritos parecem ubicar estrategicamente suas escolas, em um esforço para excluir determinadas populações de estudantes (Lubienski, Gulosino, e Weitzel, 2009). Se as escolas charter procurar excluir certos estudantes, que estas escolas proliferem em um distrito ou região não pode ser um efeito da estratificação de intensificação à custa dos alunos mais desfavorecidos (Bifulco, Ladd, e Ross, 2009). Este estudo realizou uma análise comparativa global, das características demográficas dos bairros e população de estudantes de escolas charter operados por empresas com fins lucrativos e organizações sem fins lucrativos, o uso de sistemas de informação geográfica e os modelos multinível para comparar dois tipos de escolas de todo contextos estaduais diferentes. Assim, o estudo visa a isolar o impacto de uma empresa com fins lucrativos e iluminar o impacto que a proliferação de escolas com fins lucrativos pode ter sobre a distribuição da população estudiantil em todas as regiões da escola.

**Palavras-chave:** escolha da escola; educação urbana; política educacional; estratificação social

## Introduction<sup>1</sup>

Private corporations are legal entities established within a paradigm of maximization of profits for those who provide the working capital of the organization, the shareholders. The directors of such corporations owe fiduciary duties of care and loyalty to the shareholders. They owe, under the law, no concomitant duties to other constituencies. (Conn, 2002, p. 129)

Kathleen Conn (2002), writing in *For-Profit School Management Corporations: Serving the Wrong Master*, notes that the pursuit of profit *legally must* guide the behavior of a for-profit corporation. Conn also explains that a corporation's shareholders are the only group to which that corporation owes any responsibility. This applies even to a for-profit corporation operating a publicly funded charter school. Conn (2002) finds these principles of corporate behavior to be at odds with the mission of public schooling. Students, teachers, parents, and community members are generally seen as constituencies to which a public school has a responsibility. Further, a central purpose for the public funding of education is the promotion of democratic knowledge and values, something that may not be a natural outcome of a profit oriented enterprise (Levin & Belfield, 2003). In short, due to the essential nature of for-profit corporations, Conn (2002) sees them as ill suited for operating publicly funded schools. For these and other reasons, for-profit charter schools represent a controversial evolution of the modern school marketplace (Garcia, Barber, & Molnar, 2009).

Burton Weisbrod's (1988) foundational analysis of different institutional forms of social service providers finds that for-profit firms may operate in a manner distinct from non-profit and government operated providers. He found that the profit motive present in for-profit operators, but restricted in non-profit and public providers, alters the way that they provide services. Specifically, for-profit providers may be more interested in cultivating a profitable customer base, through strategic location, marketing, and disproportionate investment in cosmetically appealing factors. This paper explores whether the ultimate manifestation of the profit motive in public education, for-profit corporations operating publicly funded charter schools, demonstrate distinct geographic and demographic patterns consistent with their profit-orientation.

In their overriding pursuit of profit, how might schools operated by for-profit corporations differ from those operated by non-profit organizations? More specifically, do for-profit charter schools locate in demographically distinct areas and serve different student populations than similar schools operated by non-profit providers? Research suggests that charter school operators in some districts appear to strategically locate their schools in an effort to exclude certain student populations (Lubienski, Gulosino, & Weitzel, 2009). If charter schools seek to exclude certain students, as these schools proliferate in a district or region there may be an intensifying stratification effect detrimental to the most disadvantaged students (Bifulco, Ladd, & Ross, 2009). This study explores whether for-profit charters exhibit distinct behavior in this regard. It undertakes a broad comparative analysis of the neighborhood demographic and student population characteristics of charter schools operated by for-profit corporations and nonprofit organizations, using multilevel modeling and geographic information systems, to compare the two school types across dissimilar state contexts. By doing so, the study seeks to isolate the impact of a profit orientation, and illuminate what impact the proliferation of for-profit schools might have on the distribution of student populations across

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regions. The analysis specifically focuses on one subset of charter schools, those operated by educational management organizations (EMOs), and analyzes this subset based on their for-profit/non-profit status. In this way, the analysis seeks to take schools that are similar in all ways except one, in the effort to isolate the impact of for-profit status.

The next section traces the rapid growth of charter schools, increasingly operated by EMOs, over the past twenty years. Next, research on charter school geography as it relates to student assignment and educational opportunity will be discussed. This discussion frames how the growth of charter schools has transformed many local schooling contexts, often leading to unintended consequences such as increased racial and socioeconomic stratification. After that, Burton Weisbrod's (1988) research on the different behaviors of for-profit and non-profit firms in the provision of social services will be discussed to provide a theoretical framework for considering how and why for-profit and nonprofit charter school providers may operate differently. This framework will suggest relevant research questions. From there, the geo-location and multilevel modeling methodology will be described and relevant findings presented. Finally, these findings will be summarized, and policy implications and suggestions for future research will be discussed.

## **Background**

### **The Growth of Education Management Organization Operated Charter Schools**

The first charter schools opened in Minnesota in 1992 (National Charter School Resource Center, 2012). Since then, the number of charter schools in the United States has increased at a rapid rate, and charters now educate a sizable proportion of all public school students. In the 2010-2011 school year, there were approximately 5,277 charter schools in operation, educating over 1.7 million students. Charter schools were 5.8% of all public schools nationwide in 2011-2012, and a higher relative proportion of urban schools, with over 50% of charters located in urban areas (National Alliance for Public Charter Schools, 2012). In turn, certain large urban districts have even larger proportions of charter schools. New Orleans, Detroit, and Washington, D.C., are notable for having over 40% of their public school students enrolled in charter schools.

Scott and DiMartino (2010) document how local, small-scale providers drove the initial growth of charter schools before education management organizations began to assert a larger role. An EMO is a private organization that operates publicly funded schools, primarily charter schools, generally outside of traditional public school governance structures (Molnar, Miron, & Urschel, 2010). Over time, there has been an increasing proliferation and wider dispersion of EMOs, many of them managing large numbers of schools. Since the 1990's, EMOs moved increasingly from contracting for specific services within public schools and districts to taking on a more comprehensive role in managing the operation of entire schools (Miron, 2007). The growth of EMOs is reflected in the increase in the number of EMO operated charter schools (EMOCS) between the 1999-2000 and 2009-2010 school years. The total number of EMOCS increased from 360 to 1,541 in 10 years, a 328% growth (Miron & Urschel, 2010; Molnar, Miron, & Urschel, 2010). In that time, EMOCS also increased as a proportion of the overall charter school segment, from 23% to 31% (National Alliance for Public Charter Schools Dashboard, 2013).

The growth of EMOCS has been linked to the desire of policymakers to rapidly expand the number of charter schools in particular states and districts (Scott & DiMartino, 2010). A key characteristic of EMOs, especially larger EMOs, is that they generally provide a replicable educational template that can be readily transferred across neighborhoods, districts, and states (Farrell, Wohlstetter, & Smith, 2012). This provides a quicker route to expansion of charter schools in a given district or state compared to a reliance on grassroots community based groups to open

new schools. In this way, EMOs provide a set of ready-made models for deployment by a district or state seeking to rapidly add charter schools. As the popularity of charters has grown over the past twenty years, public pressure has increased on many urban districts to quickly scale up the number and variety of charter school options they offer (Scott & DiMartino, 2010). Influential charter advocating organizations assign “low grades” to states or districts that do not offer a large number and wide variety of charter schools, putting additional political pressure on policymakers to expand the number of charters (Chi & Welner, 2007). Because EMOCS have become increasingly prevalent in the charter school segment, and considering their capacity for rapidly expanding the number of charter schools within a district, it is important to consider the potential impacts of their growth on student assignment patterns and better understand any differences within the EMOCS segment, such as that between for-profit and non-profit operators.

### **State Policy and the Uneven Distribution of EMOCS**

Charter policy is primarily determined at the state level. State policies differ significantly, and greatly impact the extent to which charter schools can and do grow in a particular state. Some states do not permit charter schools at all, while other states have continually revised their charter laws to facilitate growth in the charter school segment (Holyoke, Henig, Brown, & Lacireno-Paquet, 2009). States also differ in the types of charter schools that they allow. Researchers interviewing leaders of management organizations have found that a state’s charter laws are a significant factor when making decisions on possible expansion (Farrell, Nayfack, Smith, & Wohlstetter, 2014; Mathematica, 2012). Some states expressly do not allow for-profit charter schools. This has led to a widely uneven distribution of charter schools across the United States.

There is likewise an unequal distribution of both for-profit and non-profit EMOCS across the United States, as can be seen in Table 1 (Appendix A maps these patterns). In 2009-10, 31 states (including Washington DC) had at least one EMOCS, while 20 had none. The total number of EMOCS in a state varied widely, from a low of one (in Kansas, Oklahoma and Tennessee) to a high of 290 (in California). The relative distribution of for-profit and non-profit EMOCS varied significantly as well. Some states had large numbers of both for-profit and non-profit EMOCS, with Arizona and Ohio each having at least 70 of each type, and roughly equivalent proportions from each sector. Some states had many more of one type or the other, such as Texas with eight for-profit EMOCS and 282 non-profit EMOCS, or Florida at the opposite extreme with 141 for-profit EMOCS and 13 non-profit EMOCS. These large proportional differences in EMO type by state point to the importance of using multilevel modeling in order to control for different state policy contexts that allow or encourage different types of EMOCS. There are no strong regional patterns with regards to the proliferation of for-profit and non-profit EMOCS, suggesting that these types of providers proliferate in particular states due to a range of unique state contexts, including but not limited to state charter policy.

Table 1  
*Distribution of Non-Profit and For-Profit EMOCS By State\**

State	# Non-Profit EMOCS	% Non-Profit EMOCS	# For-Profit EMOCS	% For-Profit EMOCS	Total # Of EMOCS	Total # Charter Schools	EMOCS as % of all Charters
KS	0	0%	1	100%	1	36	2.8%
SC	0	0%	2	100%	2	38	5.3%
ID	0	0%	3	100%	3	36	8.3%
NV	0	0%	4	100%	4	28	14.3%
WI	0	0%	5	100%	5	206	2.4%
UT	0	0%	6	100%	6	72	8.3%
FL	13	8%	141	92%	154	411	37.5%
MI	23	11%	186	89%	209	240	87.1%
MO	2	13%	13	87%	15	33	45.5%
MN	1	20%	4	80%	5	153	3.3%
GA	2	25%	6	75%	8	89	9.0%
NC	2	29%	5	71%	7	96	7.3%
MA	1	33%	2	67%	3	62	4.8%
PA	12	39%	19	61%	31	134	23.1%
OH	70	44%	90	56%	160	321	49.8%
CO	10	45%	12	55%	22	158	13.9%
LA	4	50%	4	50%	8	77	10.4%
AZ	102	53%	92	47%	194	509	38.1%
IN	13	59%	9	41%	22	54	40.7%
NY	28	68%	13	32%	41	140	29.3%
MD	7	70%	3	30%	10	36	27.8%
AR	6	75%	2	25%	8	29	27.6%
DC	22	81%	5	19%	27	96	28.1%
OR	6	86%	1	14%	7	102	6.9%
CA	108	87%	16	13%	124	808	15.3%
IL	10	91%	1	9%	11	101	10.9%
TX	282	97%	8	3%	290	537	54.0%
OK	1	100%	0	0%	1	18	5.6%
TN	1	100%	0	0%	1	22	4.5%
NJ	3	100%	0	0%	3	68	4.4%
CT	4	100%	0	0%	4	18	22.2%
<b>TOTALS</b>	<b>733</b>	<b>53%</b>	<b>653</b>	<b>47%</b>	<b>1,386</b>	<b>4,728</b>	<b>29.3%</b>

\*States with no EMOCS are omitted.

Source: Miron & Urschel (2010); Molnar, Miron, & Urschel (2010); National Alliance for Public Charter Schools Dashboard (2013)

For-profit EMOCS are heavily concentrated in four states, Michigan, Florida, Arizona and Ohio, which taken together account for 509 out of 653, or 78% of all for-profit EMOCS. Non-profit EMOCS are also highly concentrated in four states, Texas, California, Arizona, and Ohio, which account for 562 out of 733, or 77% of all non-profit EMOCS. These six states (Arizona and

Ohio are listed in both groups) together account for 82% (1,131 out of 1,386) of all EMOCS<sup>2</sup>. There is evidence, which will be discussed in detail in the results section, that state policy contexts that are more conducive to charter school expansion also tend to have higher proportions of for-profit EMOCS. The next section will examine the existing research on the geography of charter schools, in order to frame the critical connections between school location and student population characteristics.

### **The Geography of Charter Schools and Stratification**

Geospatial analyses allow for connections to be made between social contexts and educational outcomes and bring to light local, regional and national patterns of stratification (Hogrebe & Tate, 2012). Geographic context influences the student population characteristics and academic performance of schools. Specifically, the average socioeconomic status in neighborhoods where charter schools are located strongly influences the average socioeconomic status of that school's student population (Jacobs, 2013). The socioeconomic status of a school's student population influences both the school's overall academic performance as well as the academic performance of individual students in that school (Rumberger & Palardy, 2005; Borman & Dowling, 2010). Charter school researchers have begun to use geographic information systems (GIS) to analyze the particular geography of charter schools in order to illuminate how their distribution across districts and regions may have implications for student sorting. As charter schools proliferate in urban districts, new charter schools open while traditional public schools close. These changes can have implications for school stratification by race, socioeconomic status and achievement. This stratification, in turn, can influence the academic opportunities and outcomes of students at schools where there is concentrated advantage or disadvantage.

Lubienski, Gulosino, and Weitzel (2009) analyzed charter school location patterns in three cities with high proportions of charter schools: Detroit, New Orleans and Washington DC. They found that despite differences in the exact patterns of charter school location in the different districts, that in each city charters "showed patterns of exclusionary strategies that schools embraced to enhance market position" (p. 601). These exclusionary strategies suggested that some charter schools were intentionally cultivating particular student populations through school location and marketing strategies. In a further analysis focusing solely on Detroit, Gulosino and Lubienski (2011) again confirm this pattern of charters locating in order to access "the opportunity to target students with less-risky socioeconomic and demographic backgrounds" (p. 20). Further analyses have indicated the unrealized potential of charter schools as vehicles for desegregation, noting that charters tend to educate students stratified by race, socioeconomic status and ability (Frankenberg & Lee, 2003; Frankenberg, Siegel-Hawley & Wang, 2011; Mickelson, Bottia, & Southworth, 2008). These studies note that the presence of charter schools in a district tends to increase racial and socio-economic between-school segregation.

Bifulco, Ladd, and Ross (2009) found that in Durham, North Carolina, charter schools were disproportionately used by relatively highly educated white families to exit from traditional public schools with large proportions of less educated and non-white families, sorting black and white students to traditional public schools and charter schools respectively. Conversely, Gulosino, and D'Entremont (2011) found that in New Jersey, charter schools tended to encircle largely African-American neighborhoods and enroll largely African-American student populations. This pattern helped to ensure that traditional public schools in racially diverse neighborhoods were

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<sup>2</sup> In Arizona and Texas, EMOs are allowed to hold charters, as opposed to the local school district. When an EMO holds a charter and operates two or more schools, the NEPC reports classify these as EMOCS, as does this paper (Miron, Urschel, Yat Aquilar, & Dailey, 2012).

disproportionately white, while charter schools had predominantly African American student populations. In both cases, clear gaps between enrollment patterns in charter schools versus traditional public schools intensified between-school segregation in districts and regions.

Miron, Urschel, Mathis, and Tonquist (2010) conducted a longitudinal analysis of how patterns of segregation are impacted by the growth of EMOCS. The authors conclude that EMOCS are “strongly racial segregative [and that] for economically challenged students, EMO-operated charter schools more strongly segregate students than do their respective local districts” (p. 3). They note that processes of both white families and non-white families exiting traditional public schools are alternatively reflected in segregative processes, as the case studies of Bifulco, Ladd, and Ross (2009) and Gulosino and D’Entremont (2011) indicate. Thus, while an examination of overall student proportions might indicate that EMOCS do not educate student populations dissimilar from traditional public schools, disaggregating by district or region seems to demonstrate that the existence of EMOCS intensifies segregation.

These analyses suggest that there is a connection between charter school geography and student stratification. While these studies examined the geography of charter schools and EMOCS, no studies have systematically compared the geography of for-profit versus nonprofit EMOCS with the degree of rigor as this study. The next section presents Burton Weisbrod’s theory of differences between for-profit and nonprofit social service providers. His work will suggest possible differences between the operation of for-profit and nonprofit EMOCS may exist. This will suggest research questions of interest.

### **Theoretical Framework: For-Profit and Non-Profit Organizations**

The extant research indicates that the growth of charter schools can lead to increased racial, socioeconomic and ability stratification. This stratification can in turn intensify academic disparities. In order to further clarify the discussion of charters and stratification, and to frame why a comparative analysis of for-profit and non-profit EMOCS is important to this task, a theory on the behavior of non-profit and for-profit EMOs is offered. Burton Weisbrod (1988) conducted an exploration into the different behaviors of for-profit and non-profit firms in the provision of social services. Weisbrod’s (1998) theoretical framework and empirical findings will inform this analysis. Weisbrod’s (1988) study centers on an investigation of nursing homes and long-term mental health care facilities. However, the framework of his analysis and the nature of the services provided offer insights into the nature of charter schools.

Weisbrod (1988) distinguishes between those qualities of institutions that are superficial and easy to evaluate, called type-1 criteria, from those that are more fundamental and difficult to evaluate, called type-2. He provides the following example: “the location of a nursing home” is a type-1 attribute, while “[t]he extent to which a nursing home actually provides ‘an atmosphere of love, courtesy and understanding’” (Weisbrod, 1988, p. 48) is a type-2 attribute. Type-1 characteristics are generally cheaper and easier to address compared to type-2 characteristics. Also, because type-1 characteristics are more superficially obvious, they may have an outsize impact in influencing customer choices. Thus, profit-maximizing firms may see an interest in investing in type-1 criteria such as location over type-2 characteristics such as fostering an atmosphere of love, courtesy and understanding.

Weisbrod’s (1988) research demonstrates that for-profit organizations are more likely than nonprofit organizations to disproportionately invest in type-1 characteristics over type-2 characteristics. Weisbrod (1988) attributes this to a differentiation between a profit-orientation and a mission-orientation. Nonprofits are limited by the nondistribution constraint; “This restriction on



the right of managers and directors to share in their organization's profits blunts their incentives to seek profits, which decreases their incentives to take advantage of underinformed consumers" (p. 158). An underinformed consumer in the charter school market may be more likely to evaluate a school based on location than on academic performance measures, which may be unavailable or not widely accessible (Levin & Belfield, 2003). Nonprofits are more likely to have a mission-orientation, which makes them more likely to prioritize educating the lowest performing students (Weisbrod, 1988). This in turn may make them more likely to locate in more socioeconomically disadvantaged areas.

Lubienski (2007) finds that charter school marketing is designed in a manner not well suited for illuminating type-2 core school quality measures. He finds that charters do not generally market themselves based on claims of educational effectiveness, but instead that "emotional themes and images dominate school marketing strategies, with implications for ethnic and socioeconomic sorting within diverse but competitive climates" (p. 118). Lubienski notes that this is connected to strategies of cultivating a student population more likely to perform better instead of a strategy focused on improving the educational outcomes of struggling students. In other words, it seems that many charter schools are actively avoiding disclosure of the very kind of important type-2 attributes that would allow families to make the best decisions when selecting between possible schools. There can be a range of intended and unintended consequences resulting from these information asymmetries (Lubienski, 2005; Lubienski & Weitzel, 2010). With school quality being obscured by marketing, location becomes a key component of parent's school choices. Jacobs (2013) found that parents tend to choose proximally close charter schools, which in turn "reinforces de facto segregation patterns found within that neighborhood" (p. 460). With location playing a key role in parent's selection of charter schools, charters attempting to maximize profit may focus on selecting school locations farther from the most disadvantaged student populations.

The theoretical framework suggests that for-profit operators of charter schools may make different choices than non-profit operators. For-profit operators may be more likely to seek to locate in more privileged neighborhoods in order to have easier access to students that are likely to demonstrate higher academic outcome measures. They may be less likely to serve higher-need student populations, being driven more by a profit-orientation than by a mission orientation. The study will now seek to determine whether there are demonstrable differences in the geo-demography and student population characteristics of for-profit versus non-profit EMOCS. The next section describes the design of the study, including the specific research questions that will explore these hypothesized differences.

## **Study Design**

### **Data Sources and Variables**

This study analyzes 1,386 charter schools operated by EMOs across the United States. The National Education Policy Center produces annual reports profiling for-profit and non-profit educational management organizations and the schools they operate. These reports from the 2009-10 school year were used to identify schools that were EMOCS and whether they were operated by for-profit or non-profit EMOs (Miron & Urschel, 2010; Molnar, Miron, & Urschel, 2010). These reports profiled 1,542 EMO run schools. Of these, 813 schools, educating approximately 237,591 students were run by non-profit EMOs. Another 729 schools, educating 353,070 students were run by for-profit organizations. These reports reflect the authors' efforts to identify all EMO run schools, and they note that "while it is still possible that we have not identified all EMOs operating nationally, we are confident that we have now identified and profiled the great majority of all EMOs

in this report” (Molnar, Miron, & Urschel, 2010, p. 3). From the 1,542 schools in these reports, 1,455, or 94% of these schools were successfully matched to the Common Core of Data. Another 69 schools were eliminated because they were district (non-charter) schools operated by EMOs, bringing the total number of schools in the analysis to 1,386.

The list of schools from the NEPC report was cross-referenced with the 2009-10 National Center for Education Statistics’ Common Core of Data (National Center for Education Statistics, 2012), which provides detailed information about student population characteristics, and the geographic data necessary for geo-locating the schools. The decennial United States census provides a wide range of information about the population of the US at various geographic levels. Shape and data files from the 2010 U.S. Census (United States Census, 2010) were utilized to connect demographic information about the census block group in which the schools were located with the school data. Census Block Groups (or CBGs), generally consisting of between 600 – 3,000 people, are the smallest geographic area for which demographic information is publicly available (Geographic Areas Reference Manual of the U.S. Census Bureau, 1994), making them useful for describing local demographic characteristics. This information was used to analyze the racial and socioeconomic demographics of the areas where each EMOCS was located.

## Methodology

For this analysis, a number of univariate regression analyses were conducted. The methodology utilized was logistic multilevel regression, also called hierarchical linear modeling (HLM) or mixed-effects modeling (Luke, 2004). Logistic regression is used to determine the probability that a given outcome variable is one or another of two binary options, given one or more predictive variables. In this study, each model tests the probability that a particular EMOCS is run by an EMO that is either for-profit or non-profit, given certain demographic, academic and policy indicators. The null hypothesis is that the demographic characteristics of a census block group, student population characteristics, student achievement levels and state policy are not statistically predictive of whether a school is operated by a for-profit or non-profit EMO. The alternate hypotheses are that these characteristics have some statistically significant influence on the likelihood that an EMOCS is run by a for-profit or non-profit EMO.

Multilevel modeling is utilized because it allows for the disaggregation of variance to multiple levels. For this study the models separate within-state, school-to-school variance from variance across states. This is especially important due to the broad differences between states in terms of charter school policy and demographic contexts. For a detailed discussion see Raudenbush and Bryk (1986). Multilevel regression models nested phenomena and more accurately determines the significance of a relationship across widely differing contexts. All of the analyses utilize multilevel modeling (with the exception of model 5), with schools as the level-1 unit of analysis and states as the level-2 unit. This data structure is utilized because of the demonstrated importance of state-level charter school policy in determining the degree to which charter schools proliferate in given states (Holyoke, Henig, Brown, & Lacireno-Paquet, 2009).

All modeling was performed in “R”, an open-source statistical software package (The R Foundation for Statistical Computing). The supplementary packages lme4 or “Linear Mixed-Effects Models Using S4 Classes” (Bates, Maechler, & Bolker, 2011) and nlme or “Linear and Nonlinear Mixed Effects Models” (Pinheiro, Bates, DebRoy, Sarkar, & R-Core, 2012) were utilized for the multilevel analyses. All geo-location and mapping was performed in ArcGIS 10 (Esri, 2012), a proprietary geographic information system software. For all analyses, an  $\alpha$ -level of 0.05 is used to determine significance.

Equation Form:

The following general equation form is used in each of the analyses to follow:

$$Y_{ij} = \beta_{0j} + \beta_{1j} X_{ij} + \dots + \epsilon_{ij}$$

Where:

$Y_{ij}$  = The probability that EMOCS “i” in state “j” is operated by a for-profit EMO.

$\beta_{0j}$  = The variable intercept for the given state “j”.

$\beta_{1j}$  = The value representing the overall slope of the relationship between the given explanatory variable  $X_{ij}$  and the dependent variable  $Y_{ij}$  for state “j”.

$X_{ij}$  = The value of the given explanatory variable for school “i” in state “j”.

$\epsilon_{ij}$  = The error term for school “i” in state “j”.

Table 2

Summary of Models

<b>MODEL 1: Multilevel Log Regression of % White in CBG On For-Profit Status</b>				
FIXED EFFECTS	Estimate	Stand. Error	z value	pr>z
Intercept	-0.161	0.376	-0.428	0.669
% White in CBG	0.503	0.287	1.753	0.080
RANDOM EFFECTS		Variance	Std. Deviation	
District	Intercept	2.853	1.689	
AIC = 1,251				
<b>MODEL 2: Multilevel Log Regression of % White Student Pop. On For-Profit Status</b>				
FIXED EFFECTS	Estimate	Stand. Error	z value	pr>z
Intercept	0.047	0.358	0.131	0.896
% White Studs.	0.180	0.263	0.684	0.494
RANDOM EFFECTS		Variance	Std. Deviation	
District	Intercept	2.928	1.711	
AIC = 1,320				

Table 2 (Cont'd)  
Summary of Models

<b>MODEL 3: Multilevel Log Regression of % Homeownership On For-Profit Status</b>				
FIXED EFFECTS	Estimate	Stand. Error	z value	pr>z
Intercept	-0.539	0.375	-1.437	0.151
% Homeowner.	1.493	0.328	4.561	$5 \times 10^{-06}$ ***
RANDOM EFFECTS		Variance	Std. Deviation	
District	Intercept	2.871	1.694	
AIC = 1,232				
<b>MODEL 4: Multilevel Log Regression of Title I Eligibility On For-Profit Status</b>				
FIXED EFFECTS	Estimate	Stand. Error	z value	pr>z
Intercept	-0.072	0.356	-0.201	0.841
TITLE I Eligible	0.689	0.214	3.215	0.001**
RANDOM EFFECTS		Variance	Std. Deviation	
District	Intercept	3.329	1.825	
AIC = 1,301				
<b>MODEL 5: Log Regression of CER State Rank on EMOCS' For-Profit Status</b>				
	Estimate	Stand. Error	z value	pr>z
Intercept	0.736	0.021	36.28	$2 \times 10^{-16}$ ***
CER GPA	-0.021	0.001	-16.41	$2 \times 10^{-16}$ ***
R <sup>2</sup> : 0.162				

\*\* = significant at  $\alpha = 0.01$ \*\*\* = significant at  $\alpha = 0.001$ 

This analysis does have some notable limitations. Because the analysis focuses on national trends it cannot characterize specific district and state level conditions. As Miron et al. (2010) discuss, studying EMOCS at a national level can tend to make them seem like monolithic entities when in fact they can fill different niches in diverse local contexts. An analysis that studied EMOCS in particular markets would be better able to describe the particular impact of for-profit and non-profit EMOCS in that particular local context. Additionally, the cross-sectional nature of the data studied makes it impossible to determine how overall levels of stratification were affected by increases in for-profit and/or non-profit EMOCS. The variables used in this analysis were also not ideal. Homeownership is an imperfect measure of socioeconomic status, and census block groups do not necessarily accurately represent natural community boundaries. Title-I eligibility does not directly indicate the proportion of low-income students or the average income levels of families in a particular school. These weaknesses are an outgrowth of the nature of the data used.

An additional limitation is the use of the dichotomous variable for-profit/non-profit to characterize EMOCS. Weisbrod (1988) notes that not all non-profit firms are pure “bonificers” that operate in the public interest, and that some non-profit firms actually operate so much like for-profit firms that they are essentially “for-profit in disguise” (p. 11). For purposes of this analysis, profit status is treated as dichotomous, even though in practice, the extent to which non-profit firms function distinctly from for-profit firms varies. In the realm of charter schools, it has been noted that formally non-profit charter schools do not always behave in bonificing ways (Lubienski, 2013).

Despite the limitations of the study, it offers insight into important factors that might differentiate various types of charter schools and helps to point the way forward to more nuanced research on the connections between charter policy, stratification and academic outcomes.

## Research Questions and Results

### Race and Profit Status

The research questions for testing the relationship between race and profit status were as follows: Does the racial composition of the census block group where an EMOCS is located predict the likelihood that it is operated by a for-profit or non-profit EMO? Similarly, does the racial composition of the student population of an EMOCS predict the likelihood that the school is run by a for-profit or non-profit EMO?

In order to test these questions, two analyses were conducted. First the percent of white residents living in the CBGs where the schools were located were regressed on the for-profit status of each school (Model 1). This model showed no statistically significant relationship between the racial composition of the CBG where a school is located and the likelihood that it is for-profit or non-profit. Next the school's percentage of white students was regressed on for-profit status (Model 2). As with the CBG analysis, no statistically significant relationship was discovered. Similar analyses were conducted using Black population in CBG and Black student population, again without statistically significant results (models not shown). EMOCS operated by for-profit or non-profit providers do not demonstrate statistically significantly different racial compositions nor do the CBGs in which they are located.

While there are no statistically significant relationships between racial composition and profit status across the nation, this could be the result of state-by-state patterns that alternatively segregate (1) white students into for-profit EMOCS and non-white students into non-profit EMOCS and (2) non-white students into for-profit EMOCS and white students into non-profit EMOCS. Please see Appendix B for state-by-state regressions of the relationship between white student percentage and for-profit status.

### Socio-Economic Indicators and Profit Status

The research questions for testing the relationship between socio-economic indicators and profit status were as follows: Do the rates of homeownership in a census block group where an EMOCS is located impact the likelihood that the school is operated by a for-profit or non-profit EMO? Likewise, does the Title-I eligibility of an EMOCS impact the likelihood that it is operated by a for-profit or non-profit EMO?

The US census provides information on the percentages of owner occupied properties for census block groups. Homeownership is one measure of socioeconomic status known to be an important indicator of likely academic success (Zhan & Sherraden, 2003). Family asset ownership is positively correlated with student academic success, and homes are generally the most valuable asset a family has. Higher homeownership in a CBG indicates that a higher proportion of families have significant assets. All other factors being equal, we would expect a CBG with a higher percentage of owner-occupied properties to have higher mean wealth than a CBG with lower percentages of ownership. This characteristic was found to be a significant predictor of whether an EMOCS was likely to be for-profit or non-profit (Model 3). Figure 1 provides a visual representation of the overall relationship between rates of homeownership and predicted probability an EMOCS is operated by a for-profit EMO. The model demonstrates a non-significant intercept value, likely due to widely divergent property ownership and vacancy rates in the areas where EMOCS are located

across states. Because of this, the intercept value cannot be interpreted directly. However, there is a clear significant relationship between higher levels of property ownership in a CBG and higher probability that an EMOCS located in that CBG is for profit. As homeownership rates increase from 0% to 100% in a given CBG, the likelihood that an EMOCS is operated by a for-profit increases by over 30%. In other words, as we move from CBGs with lower to higher rates of homeownership, there is a steadily increasing probability that an EMOCS located in that CBG would be operated by a for-profit EMO. Likewise, as we move from CBGs with higher to lower rates of homeownership, there is a steadily increasing probability that an EMOCS located in that CBG would be operated by a non-profit EMO.

### Homeownership & Profit Status

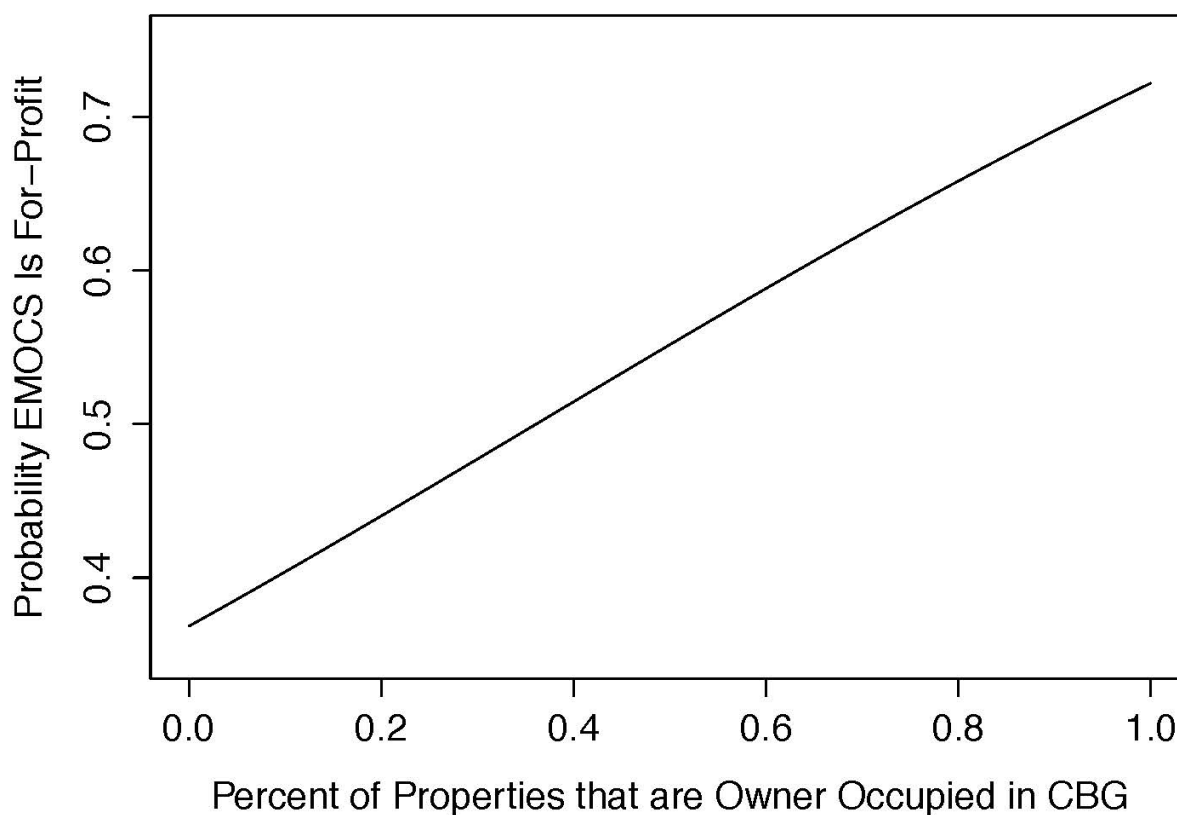


Figure 1. Predicted probability of for-profit status based on homeownership rates.

The Title I eligibility of a school is also a significant predictor of whether that school is operated by a for-profit or non-profit EMO (Model 4). Title I is a federal program that provides supplementary funding to schools or districts that educate large proportions or numbers of students from low-income families (Title I Program Description, 2012). Because of this, schools designated as Title I eligible are known to serve high numbers or proportions of low-income students, making it a useful proxy measure for determining the likelihood that a particular school serves predominantly low-income students. This study examines Title I eligibility rates because they approximate the rate at which for-profit and non-profit EMOs in practice serve high proportions of low-income students. The majority of both for-profit and non-profit EMOCS are Title I eligible,

indicating that both types of schools educate lower socioeconomic status students, but there is a significant gap. Overall, 96 out of 726 (13%) of non-profit EMOCS are not Title I eligible, while 144 out of 631 (23%) of for-profit EMOCS are not Title I eligible. The available information suggests that for-profit and non-profit EMOCS may educate socioeconomically different populations, although further research would be necessary to substantiate these relationships.

### **State Policy Contexts and Profit Status**

States differ significantly in terms of their charter school policies. Some states still do not allow charter schools at all, while others have continually revised their laws in order to encourage a rapid expansion of charters. There are relationships between particular policy approaches and the relative proliferation of for-profit or non-profit charters in a state. Chi and Welner (2007) note that many different organizations publish ideologically driven charter law state report cards. The Center for Education Reform (CER) is one such group rating state charter school policies (Consoletti, 2012). CER advocates for the expansion of charter schools, and their ratings largely reflect the ease with which charter schools can begin and sustain operations in a given state. CER does seem to have a clear, consistent and transparent system for ranking states, even as the rankings they provide reflect a pre-existing pro-charter bias. Holyoke, Henig, Brown, and Lacireno-Paquet (2009) have utilized CER scores to measure the flexibility of charter school policy and found it be a consistent, valid and reliable metric for this purpose.

Each of CER's ranking criteria might also be of particular interest to for-profit firms. CER provides higher rankings to those states that offer multiple paths to charter authorization, specifically routes that are independent of government. More favorable grades are given to states that have high numbers of charters allowed, or preferably, no caps on the number of charter schools and total enrollment allowed in the charter segment in a state. Both of these factors contribute to ease of entry and expansion for EMOs in a given state. CER assigns favorable grades to states that allow charters to operate more autonomously, reducing the need of EMOs to expend resources tailoring their approach on a state-by-state basis. Finally, CER grades states highly where charters receive equal or close to equal per pupil funding compared to traditional public schools, a direct factor in the potential profitability of an EMOCS. Combining these four criteria, CER provides ordered rankings (1-42) for each state's charter policy (including DC, please note that nine states do not allow charter schools and thus do not receive rankings). Holyoke, Henig, Brown, and Lacireno-Paquet (2009) describe the calculation of CER scores in greater detail.

CER state rankings were regressed on the for-profit status of EMOCS to determine if state level policy contexts influenced the relative distribution of for-profit and non-profit schools in each state (model 5) (methodological note: multilevel modeling was not used here due to autocorrelation effects from the state level variable used in analysis). State rankings were utilized instead of raw scores because they can be more readily understood by the wider public as an indicator of how charter-friendly a state's policy is. Because of the widespread popularity of charter schools, state policymakers may feel pressure to be at the top of the CER state policy rankings. There was a statistically significant relationship between CER state charter policy rankings and the percentage of a state's EMOCS that are operated by for-profit organizations. Higher state rankings were associated with a higher relative percentage of for-profit EMOCS. The results can be seen visually in figure 2. A particular EMOCS located in a state with a rank of 1 would be predicted to have a greater than 70% probability of being operated by a for-profit EMO, while an EMOCS located in a state with a rank of 42 would be predicted to have a less than 10% probability of being operated by a for-profit EMO. The  $R^2$  value of 0.162 indicates that while CER rankings are significantly predictive of the likely for-profit/non-profit ratios in a state, most of the variance remains unexplained by the CER

rankings. However, the explanatory value provided by this analysis is an indication that state level charter school policy can influence the relative proliferation of for-profit or non-profit EMOCS. Those states with more favorable policy towards charter schools may be more likely to have higher proportions of for-profit charter schools in the EMOCS sector. The attractiveness of fewer restrictions and greater per-pupil funding is correlated with an increased proliferation of for-profit instead of non-profit EMOs. It may also be that for-profit providers are more likely to target states with more charter-friendly policies, as they perceive them to offer fewer barriers to rapid expansion. Further research that isolates specific policy differences is necessary to determine what specific measures are most likely to encourage the proliferation of for-profit EMOCS.

**CER State Rank and For-Profit Status**

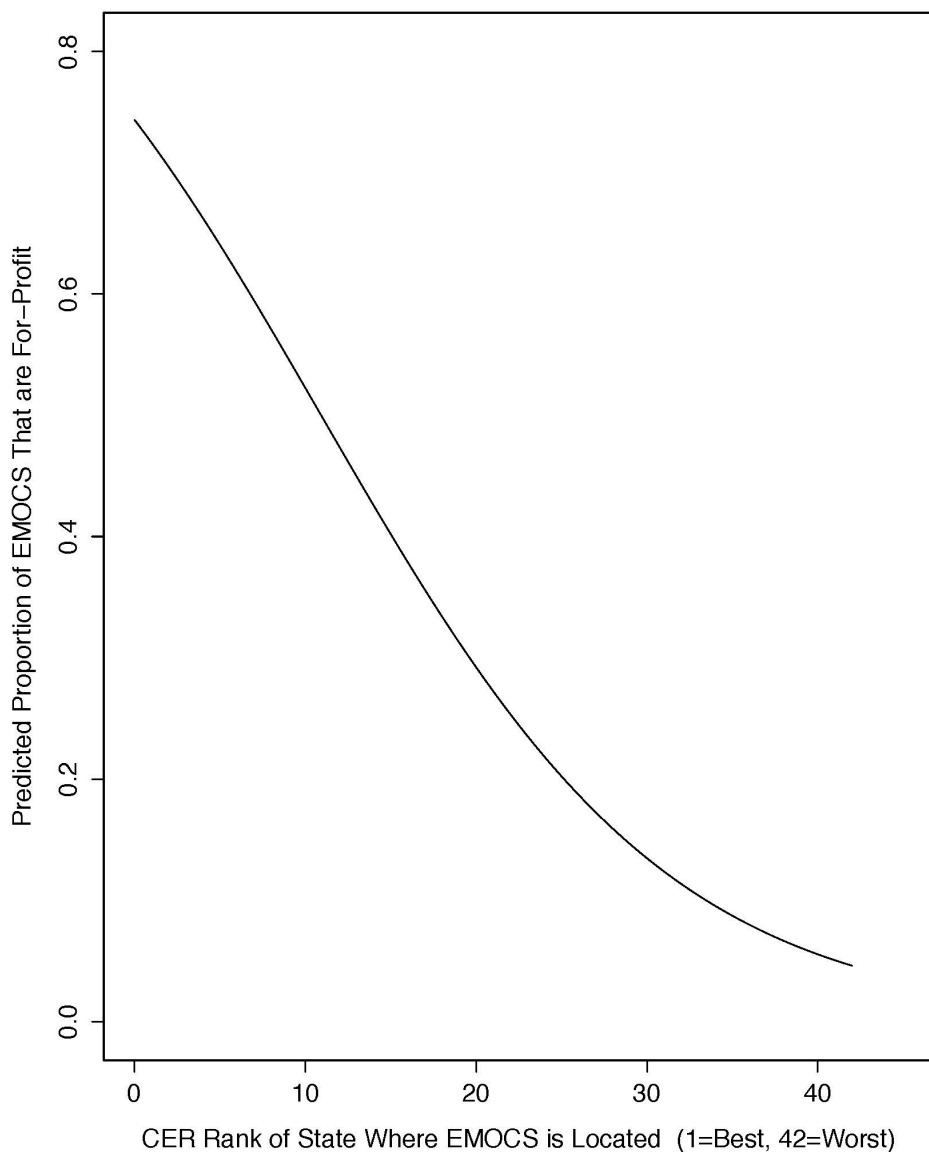


Figure 2. Predicted probability of for-profit status based on CER.



## Summary, Policy Implications and Directions for Future Research

The analyses in this study compare for-profit and non-profit EMOCS in order to better understand the position of for-profit providers in the educational marketplace and to frame further questions about the impact of new institutional forms in public education. By comparing these two school types, similar in all ways but one, the intent was to isolate the impact of one factor; for-profit status. Thus the results provide insights into what may be distinctive about charter schools operated by for-profit providers. The analysis found that certain socioeconomic and state policy indicators influence whether an EMOCS is likely to be operated by a for-profit or non-profit EMO. Rates of homeownership are higher where for-profit EMOCS are located than where non-profit EMOCS locate. For-profit EMOCS are less likely than non-profit EMOCS to be Title-I eligible. Finally, state policies that are favorable to charter school growth increase the likelihood that a state will have higher proportions of for-profit EMOCS.

### Policy Implications

State charter school policies have clear impacts on the number and types of charter schools in particular states. Further research is needed to determine what factors influence the concentration of 82% of all EMOCS in just six states (Michigan, Florida, Arizona, Ohio, Texas, and California). The construction of these policies, and the types of schools that predominate as a result, may also have impacts on the educational effectiveness of the charter schools in these states. Policymakers that see charter schools as a useful tool for improving public education should be mindful of how particular policy choices may impact the stratification of these outcomes by race and/or class. Further, states that expand charter schools in order to provide additional choices to families must also ensure that parents have access to high-quality school performance data that allows families to make decisions with the best possible information.

The availability of better information on school performance is unlikely to eliminate class-based differences in parent's school choice decisions (Ball, Bowe, & Gerwitz, 1995). However, this information may help to reorient charter school marketing, and by extension allocation of resources, towards academic performance. Weisbrod (1988) found that when critical type-2 information is unavailable, markets break down. Firms that focus on superficial type-1 measures of quality, such as school location, have a greater opportunity to dominate over those firms that invest more heavily on core type-2 factors of quality. Without readily available data on academic performance, there is a critical lack of information and families will be unable to make informed choices, violating a key precept necessary for properly functioning markets. Identifying best practice state policies and better communication of school performance data could mitigate many of the possible problems presented by ineffective or unscrupulous charter school providers. Further research into the particularities of for-profit providers, including closer analysis of for-profit virtual charter schools would be beneficial.

### Discussion

Allowing for-profit firms to provide public education is a controversial educational reform (Conn, 2002; Garcia, Barber, & Molnar, 2009). Whether for-profit firms are able to provide comparable or better educational results than government or non-profit providers is not known. However, the growth of new institutional forms such as EMOCS and particularly for-profit EMOCS, emphasizes the need for a commitment to rigorous data collection and to wide public distribution of clear, contextualized information on school performance. This analysis provides insights into some factors influencing the geographic location, student composition and academic performance of the for-profit and non-profit EMOCS segments.

This study indicates that for-profit EMOCS are less likely than nonprofit EMOCS to educate large proportions of the most socioeconomically at-risk student populations. Is this an outgrowth of their responsibility to shareholders to maximize profit (Conn, 2002)? It is known that schools with a higher average family socioeconomic status will, all else being equal, demonstrate better academic outcomes (Borman & Dowling, 2010; Rumberger & Palardy, 2005). Charter schools focused on profit maximization may view targeting higher socioeconomic status students as a way to maximize their return in terms of academic outcomes on investment in resources. If for-profit EMOs do target students of a higher socioeconomic status, districts with high proportions of for-profit EMOCS may experience an intensification of existing socioeconomic stratification, with students from wealthier families concentrated in for-profit EMOCS, and students from less wealthy families concentrated on other schools. This stratification could in turn intensify educational inequalities in districts and regions, undermining the ability of public education to facilitate an equality of opportunity.

Conn (2002) notes that for-profit corporations operating charter schools have a legal duty to prioritize profit over all else. Prioritizing profit may incentivize avoidance of harder to educate student populations. It is beyond the scope of this analysis to determine whether differences in the socioeconomic geography and student population characteristics between for-profit and nonprofit charters is due to an explicit effort to maximize profit. However, policymakers and stakeholders would do well to be aware of the potentially stratifying effects of the growth of for-profit schools. If for-profit EMOs are allowed to operate charter schools, policies must be enacted to ensure that they do so in ways that are responsive to all public school constituencies and that socioeconomic stratification is not exacerbated by their proliferation.

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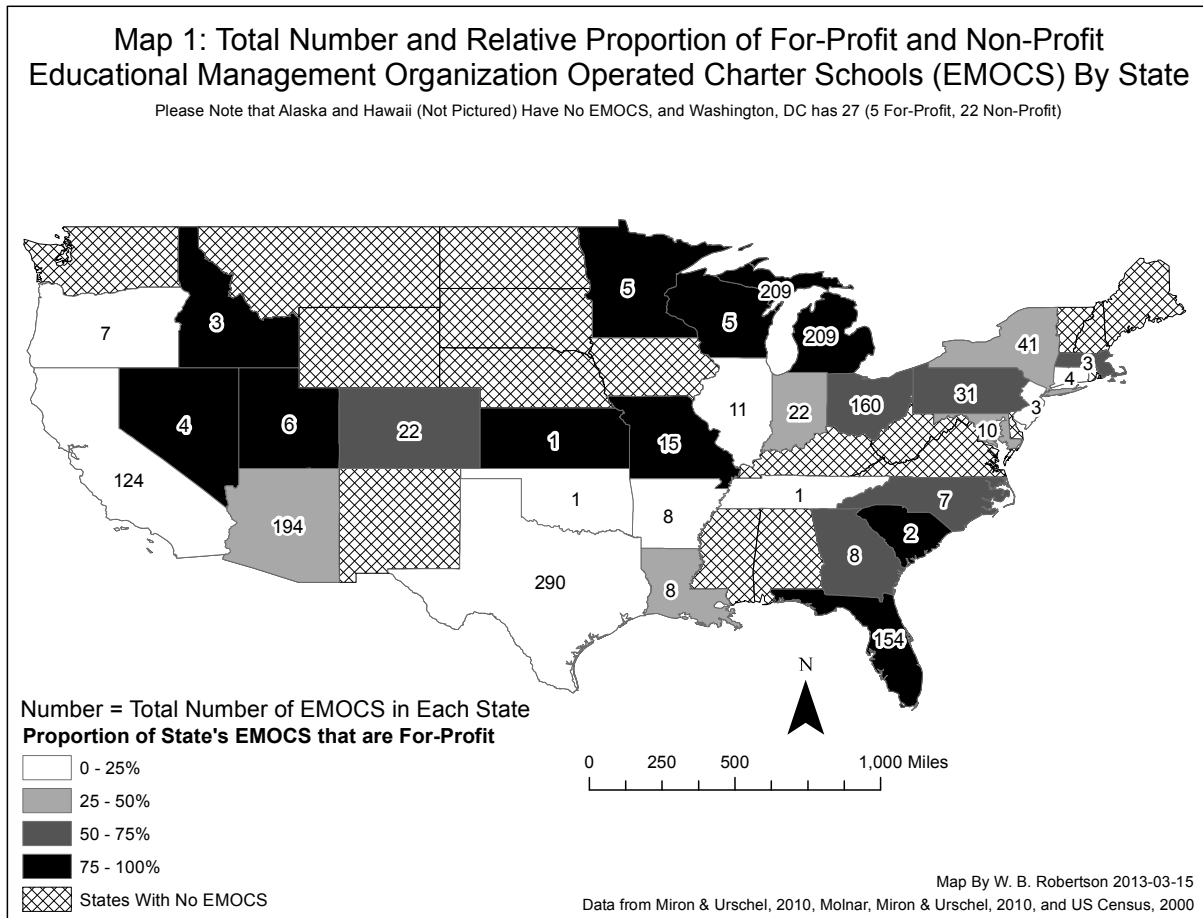
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APPENDIX A

Map of Distribution of EMOCS by State and Type





## About the Author

### W. Brett Robertson

Washington University in St. Louis

[wbrobertson@wustl.edu](mailto:wbrobertson@wustl.edu)

W. Brett Robertson is a doctoral candidate in Education and Lynne Cooper Harvey Fellow in American Culture Studies at Washington University in St. Louis. His dissertation research examines the impacts of school choice on racial and socio-economic stratification at multiple spatial scales. His broad research interests explore the geography of racial and socioeconomic stratification within the urban political economy.

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