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School District Governance and Corpoduction: An Exploration of Parent and Nonprofit Coproduction in Schools

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ABSTRACT

SCHOOL DISTRICT GOVERNANCE AND COPRODUCTION: AN EXPLORATION OF PARENT AND NONPROFIT COPRODUCTION IN SCHOOLS

BY

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The structure of educational institutions has frequently been at the center of education reforms in recent years. Beginning with the school choice movement, advocates of market-based approaches have infused school systems with policy tools that aim to increase the efficiency and effectiveness of schools while also satisfying consumers (parents and families). School choice, contracting, and performance management are major features of these systems. However, schools in the United States traditionally doubled as neighborhood centers connecting community members to each other. This dissertation explored the relationships between market-based district governance approaches and the levels of engagement and coproduction exhibited by a school community. I used three different datasets to empirically investigate these relationships. The first dataset included national data from the 2017-18 National Teacher and Principal Survey (NTPS) to explore principal perceptions of parent behaviors. The second two datasets were created from the National Center for Charitable Statistics (NCCS) IRS 990 data to measure levels of coproduction from school-supporting nonprofits. I found that, in general, levels of coproduction are no different between districts with traditional and market-based

governance models. However, different types of schools and nonprofits behave differently in these contexts.

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BY

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ACCEPTANCE

This dissertation was prepared under the direction of the candidate's Dissertation Committee. It has been approved and accepted by all members of that committee, and it has been accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Public Policy in the Andrew Young School of Policy Studies of Georgia State University.

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Dedication

For Andrew, thank you for being with me every step of the way.

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Chapter I: Introduction to Market-Based Reforms

Civic engagement is the cornerstone of a healthy democracy: an engaged citizenry works to hold the government accountable for meeting the needs of the public. In a vibrant democracy, citizens are also able to organize around special issues and projects that may bring benefits to otherwise unnoticed groups within a community. Scholars tried to address the factors that encourage the cooperation of individuals to form governments, abide by laws, and implement public services (Axelrod, 1984). To accomplish such publicly oriented projects, trust and shared reciprocity are needed, which then leads individuals to feel either willing or obligated to participate in projects for the common good. According to theories of cooperation, trust and reciprocity are developed through ongoing interactions that demonstrate the reliability and goodwill of others (Axelrod, 1984). Relationships and cooperation among citizens exist on a broad spectrum that includes informal social networks on one end and highly organized nonprofit organizations on the other. Education is a particularly important venue in which to explore collective action because it is a public institution that touches nearly every citizen's life. Furthermore, children's receipt of a quality education influences personal and societal economic stability and success. Policymakers also employ policy tools and governance approaches that may help or hinder cooperation amongst their stakeholders.

In recent decades there was a steady increase of neoliberal reforms and the marketization of many areas of service provision for public goods. The debate about the need and extent for these kinds of reforms is ongoing and often strikes at the very core of the beliefs people hold about the government and its responsibilities to the public. Our democratic system is founded on the participation of citizens and the belief that they may influence elected officials. Private groups, be they for-profit or nonprofit organizations, are more removed from the influence of

citizens and instead focus on the influence of customers. Salamon (2002) described this shift as representative of the "new governance" that prioritizes tools that promote performance and efficiency. Implicit in this approach are assumptions about the government's capacity to provide public services, as well as the motivations of the bureaucratic officials who administer government programs. The tools that policymakers often select as part of these reforms are "indirect" tools that incorporate third-party providers and may include market forces that allow for consumers of public services to express preferences (Salamon, 2002). Scholars argued that marketization enables the public to provide more direct feedback to service providers and avoid overly bureaucratic processes (Chubb & Moe, 1990). On the other hand, critics of neoliberal policies contended that these indirect public-service systems become even more complicated and the means of citizen influence even more opaque (Dahl & Soss, 2014; Salamon, 2002). Regardless, the use of market-based reforms flourished in recent decades.

As in other areas of public administration, education policymakers are frequently turning to neoliberal, market-based approaches to education provision. In brief, proponents of market-based reforms believe that schools would operate more efficiently if they were managed at the school level and if schools were responsible for attracting students to attend (Chubb & Moe, 1990). State legislatures passed voucher and charter school legislation increasing choice options for parents and students. However, the performance of some charter schools showed that competition and choice do not always lead to effective schools (Bifulco & Ladd, 2007; Davis & Raymond, 2012; Hanushek, 2007; Zimmer et al., 2012).

More recently, some charter school researchers argued that, while there is not a one-size-fits-all approach to school operational models, districts should provide greater oversight in school performance evaluation than in a pure open-market system. In other words, districts

should operate as the gatekeeper to determining the school options that parents may access (Hill et al., 2009). Some districts and states began implementing Portfolio Management Models (PMMs) that provide students and parents with options curated by districts that, in theory, are best tailored to the needs of distinct communities and student bodies (Hill et al., 2009). In their most basic form, PMMs are systems of diverse providers, meaning that a district governs a diverse portfolio of schools "including charter, autonomous, magnet, and privately managed schools" (Bulkley & Henig, 2015, p. 54). In this quasi-market approach, a school board or other governing entity oversees the various providers through performance measurements defined in contracts (Bulkley & Burch, 2015). Proponents believe that diverse providers allow the district to select school managers based on their strengths in improving academic outcomes. On the other hand, opponents believe that the growth in market-based reforms signals the intrusion of a national political agenda and private interests on local schooling that erodes equity for the most disadvantaged students (Ladd, 2019). These neoliberal forces may also impact levels of civic engagement (Dahl & Soss, 2014).

In this dissertation, I examined the differences in forms of collective action between PMMs and traditional districts. I focused on the levels, and types of market forces as being key distinctions between these types of districts. In this first chapter, I discuss the market-based reforms in education to establish the institutional logic of school choice, contracting, and performance management embedded in PMM approaches. I also describe collective action, problems that may arise from market-based reforms. In the next chapter I narrow my focus to the market-based reform at hand, PMMs. I discuss the models in greater detail and discuss how issues of collective action might be evident in coproduction within a school district. I also discuss the gaps in current literature and how the essays following in this dissertation address

some of those gaps. These first chapters lay the foundation for the research questions that are addressed in the empirical chapters in the dissertation. The empirical chapters measure different forms of collective action and coproduction in school districts that opted for specific market-based reforms.

1.1 Theories of Policy Design

The selection of certain types of policy tools can impact implementation, public perception, and the political feedback process (Mettler, 2018; Mettler & Sorelle, 2014; Schneider et al., 2014). Policy tools make certain assumptions about target populations impacted by the policy. These assumptions are often based on social constructions. As Schneider et al. (2014) explained, "social constructions of target groups are important political attributes that are used in political arguments and rationales and not only impact the materials welfare of target groups but also influence their social reputations, political attitudes, and participation patterns" (p. 105). Engaging in reforms that target governance and the restructuring of traditional operating systems, policymakers may disenfranchise communities who benefitted from or participated in the traditional system. Additionally, sweeping reforms to systems that alter the rules of interaction make assumptions about the preferences and capacities of a community of people. If the changes alter participation or foment distrust for the government, these new patterns of interaction may become embedded in future policies and internalized by impacted citizens. Therefore, it is important to carefully consider the design features of a policy as part of what will cause variation in policy outcomes.

As mentioned previously, market-based reforms are an "indirect" form of government. In the most common form of privatization or market-based approach, the government allocates responsibility for the provision of public goods to a third-party contractor (Salamon, 2002). The

formal arrangements made between the government and the service provider are outlined in contracts. Contracts are commonly used across many agencies and services within government. While contracting out has become *politically popular* (Van Slyke, 2007) to both liberal and conservative ideologies, they may come at the cost of oversight and run the risk of mismanagement by third party operators. Depending on the contract, service providers may also be interpreters of public policy and implementers of public service (DeHoog & Salamon, 2002). This phenomenon is more likely to occur in complex service provision, like human services. Some scholars recommended additional research and theory building pertaining to management of public-private partnerships (O'Leary & Vij, 2012; Salamon & Toepler; 2015; Van Slyke, 2007). Henig (2010) argued that contracting arrangements were often evaluated through the lens of cost-effectiveness. Due to the complicated nature of human service contracting, including education, measuring performance can be problematic; therefore it is difficult to "reward and punish contractors" (DeHoog & Salamon, 2002). Many of the described benefits and deficiencies of the market reforms have also been present in the education reforms of the past few decades. Below I describe these market-based reforms in education in greater detail.

1.1.1 Neoliberalism and Market-Based Reforms

Due to lagging economic growth, political leaders turned to a laissez-faire approach to government services in numerous spheres of public management (Kuttner, 2019). This movement towards free markets and government downsizing was defined as neoliberal. The essence of neoliberalism is a belief that private solutions are superior to public or government solutions (Bulkley & Burch, 2011). Therefore, neoliberal approaches favor free markets with little government intervention. The government, neoliberals assert, is overly bureaucratic and inefficient and subject to special interest capture (Kuttner, 2019). Furthermore, neoliberals

contended that redistributive policies alter incentives to favor those who do not produce or achieve effectively. Although neoliberals favor free markets, due to the nature of public goods, many government services cannot operate as true free markets. Therefore, service provision in the government realm adapted to include quasi-markets, increased contracting or privatization, and a focus on performance management (Dahl & Soss, 2014; Lubienski, 2009). While proponents argued these changes improved the operations of the government, some scholars of public management contended that market-based reforms diminish democratic processes and have decreased the quality and value of services to the public (Dahl & Soss, 2014; Kuttner, 2019). In areas where the government's responsibility to the public is the greatest (i.e., foster care, education, health), market reforms are especially contentious.

In general, market reforms can be problematic due to the nature of third-party contracting and principal-agent problems. In theory, a principal-agent relationship occurs when one entity engages another to act on its behalf or as its representative (Ross, 1973). Since both actors in this relationship act independently, the agent is free to make their own choices. This can become problematic in areas where goals may not be aligned, or conditions are ambiguous, and an agent must make decisions on behalf of the principal (Ross, 1973). All contractual relationships, from government-contractor to employer-employee, are principal-agent relationships. In practice, this can lead to implementation issues and failures to meet the interests of the public. Although a market advocate might argue that the agent may be more responsive to the public, critics point to the diminished role of the public as a citizen in public services managed through markets (Lubienski, 2003). Aligning public values (e.g., equity and equality) in contracting relationships was an ongoing challenge in public administration (Brown et al., 2006). The degree to which an organization is responsive to public value, or "publicness," varies depending on the service

context as well as the extent to which an organization experiences "social control" or pressures from the government, interest groups, citizens, etc. (Moulton, 2009). As described by other scholars (i.e., Thomas, 2012), the public's role as a citizen or consumer may impact the kinds of activities they pursue and relationship with the government entity. Dahl and Soss (2014) contended that the public is seen as a consumer with some power through consumption, but the ability to sway policy or providers is inaccessible. In their description of the power problem, Dahl and Soss asserted that power in a market system is moved and then consolidated in private entities and political elites that created a reinforcing policy feedback cycle that continues to promote the markets as policy options. As will be discussed further, these shifts in roles and power dynamics may impact the way communities organize and participate in governance.

1.1.2 Collective Action

Collective action can be defined as individuals voluntarily joining together to solve problems benefitting the greater community (Ostrom, 2000). Collective action can take many forms including neighborhood associations, advocacy groups, and nonprofit organizations. As Ostrom (2000) asserted, a governing body can either facilitate or hinder collective action. As scholars, particularly in the field of economics, explored collective action, several theories explain its occurrence (Olson, 1971; Ostrom & Ostrom, 1977; Parks et al., 1981; Heckathorn, 1996). Collective action problems are often described through the lens of a Prisoner's Dilemma. The classic game is dependent upon cooperation and is resolved through an approach that highlights long-standing interaction that develops trust and reciprocity (Axelrod, 1984; Heckathorn, 1996). Barriers to collective action include "free riding," non-contributing individuals benefitting from the efforts of contributors, and "start-up," group members not seeing the benefit of acting unless there is a critical mass (Heckathorn, 1996). Another barrier to

collective action is self-efficacy or believing that the work of the group will succeed (Heckathorn, 1996). The norms necessary for collective action are best developed in small groups that are cohesive and more homogenous. However, larger groups can achieve collective action by developing strategic interactions that formalize incentives and punishments (Parks et al., 1981). Some collective action scholars maintained that government decentralization allows for small groups of individuals to build trust and work collectively to solve public problems (Parks et al., 1981). Indeed, this reasoning is used by proponents of school choice and charter schools when promoting market-based reforms in education. On the other hand, Dahl and Soss (2014) suggested that neoliberal governance reforms influence collective action by limiting the influence of the citizenry on the delivery of public goods due to decentralization of service provision resulting in more limited access to decision-makers. These scholars indicated that decentralization removes the government, and in-turn elected officials, from more direct interactions with citizens meaning that complaints or advocacy efforts are potentially a step, or two, away from individuals who can resolve citizen concerns and influence policy (Dahl & Soss, 2014). Decentralization is discussed further when I examine the connection between market reforms and collective action.

The benefits of collective action may be both tangible and intangible. Collective action can lower the costs of providing services through the cooperation of citizens (Parks et al., 1981). Citizens can self-monitor and volunteer to aid in the provision of public goods. They may also advocate as a group for certain policies or programs to better meet the needs of a diverse community. From an intangible perspective, social capital provides individuals with a larger network of support and connection with the broader community. If collective action is successful, the connectedness individuals feel through civic engagement may deepen community

ties to institutions and foster positive citizen-government relations. In general, these relationships and attitudes may lead to a healthier democracy. Thus, government institutions must encourage collective action and provide avenues for its input when possible.

1.1.3 Market Reforms and Collective Action

Market reforms alter the functioning of traditional school districts from highly centralized, bureaucratic institutions to more decentralized operations. Proponents of market reforms believe that decentralization not only leads to efficiency and innovation but that it also allows parents and communities to feel more connected to their schools. Ostrom (2000) contended that decentralization leads to greater opportunities for participation because decision-making occurs at more local levels. Citizens and stakeholders can define rules and systems that work best for their context, which in turn gains buy-in from participants and fosters collective action. However, there are reasons to believe that neoliberal reforms might come at the expense of democratic participation and social equity (Dahl & Soss, 2014; Kuttner, 2019).

In markets, firms are responsive to profit and the consumer, not public value. Thus, private firms may not pursue initiatives that would ensure equity for the public if they are costly. They also do not have to respond to the complaints of consumers if they are reaching their desired market share. Furthermore, although decentralization efforts might create smaller schools with flatter hierarchies, community members may lose the power of a collective if it is diffused between different providers. The reinforcing power relationships and contract regimes between school districts and contractors may further diminish incentives for district leadership to be attentive to the needs of the community (Dahl & Soss, 2014; Henig, 2010). Finally, the public takes on the role of customer in a market-oriented system as opposed to a citizen in a democratically oriented system (Thomas, 2012). These roles have differing expectations for the

types of interactions the public will have with the government. The public as customers may be less inclined to collectively advocate for systems changes or to coproduce services if they view their role as recipients of a purely transactional service. If public voice and influence are diminished in market reforms, trust in the government may also be eroded. This causal chain could have ripple effects on forms of collective action locally.

There are diverging arguments about how a market-based policy design may impact civic engagement. Proponents of market-based reforms maintain that privatization is more efficient and removes confusing bureaucracy, making it easier for citizens/customers to directly approach the service provider. In contrast, DeHoog and Salamon (2002) highlighted that the complicated nature of contracting creates additional layers of oversight and performance management that confuse citizen approaches to expressing their concerns or needs. As Dahl and Soss (2014) reiterated, the decentralized nature of market-based reforms means that collective action against a specific entity is difficult. A citizen's voice may become diffused through a complicated network of providers, contracts, managers, and politicians, and it may not be clear at which level the problem should be addressed.

The education system poses unique questions about how market-based reforms may impact collective action. Schools serve a variety of populations and there are multiple beneficiaries to public education. Furthermore, there is not always agreement on the goals of public education. Are they academic achievement in core content areas, the cultivation of an engaged citizenry, or the development of a ready workforce? On the one hand, education has individual benefits and students and families may prioritize outcomes that align with their personal values. On the other hand, school funding primarily comes from state governments and local taxpayers who may want tangible returns on their funding. Regardless, citizen support of

public education is essential to the success of students and communities. Scholars of school governance and education market reforms have expressed the need for further research into civic participation under educational market-based reforms (Bulkley & Burch, 2011).

1.2 Education Reforms and Indicators of Collective Action

As previously mentioned, market-based reforms tend to alter the role individuals play with public institutions. The more market-like the institutional landscape is, the more that an individual acts as a customer instead of as a citizen. This shift could have profound impacts on the levels of involvement parents may have with a school. In a traditional market, consumers can readily choose what businesses to support. However, in a quasi-market, like education, parents may not be able to easily switch education providers if they are dissatisfied (Henig, 2010). There may not be ample choices or parents may not possess the means to make a choice feasible (i.e., transportation). Democratic institutions, on the other hand, rely on the expression of preferences through voice including advocacy efforts and elections. Thus, if education is considered a public good, we should be concerned about levels of collective action demonstrated by education stakeholders.

Changes to institutional arrangements may affect collective action by parents and other stakeholders. Notably, institutional changes may alter the infrastructure necessary to support coproduction efforts. This would be a change to the technical feasibility as defined by Parks et al. (1981). In the case of education, the starting or restarting of schools may eliminate existing avenues of parent and stakeholder participation such as local school councils and parent-teacher associations. Furthermore, as mentioned previously, decentralization may make it more difficult for stakeholders to navigate district relationships and participate in decision-making or service

production. The staff at school may be new and, in the case of charter schools, layers of management may render pathways for communications and grievances unclear.

Institutional arrangement may also influence trust in government. If market reforms increase performance in the provision of public goods, then the government may also benefit from increased citizen satisfaction. It is possible that people may have more positive associations with private providers than they do with the government (Van Slyke & Roch, 2004). However, if market reforms are ineffective or if the voice of citizens is ignored, satisfaction could decrease, which would then diminish trust in government. Putnam (2001) argued that trust in government is a building block for social capital which further drives civic engagement and the democratic process. Ostrom (1990) also maintained that trust is a necessary ingredient for collective action. Thus, the effects of market-based reforms on civic engagement are important for policymakers to monitor.

The term collective action may sometimes be ambiguous referring to problems ranging from the consumption of natural resources to prisoner's dilemma scenarios (Ostrom, 2010). Public education as a collective action problem involves parents, community members, education leaders, and policymakers. In this dissertation, I exclusively examine parent engagement behavior for evidence of collective action including the participation in non-profits that support both the management and finances of public schools. Within this research context, I draw on the concepts of social capital and coproduction. Social capital is both necessary for and enhanced by collective action. Coproduction is a type of collective action where citizens jointly produce services with the government.

1.2.1 Social Capital and Engagement

The term *social capital* is often defined in ways that may impart different meanings depending on the usage. Scholars from sociology, economics, and political science attempted to define the concept to measure its effects on societies, economies, and politics. On the one hand, it identifies the "networks of reciprocity and trust" that citizens develop and maintain. It also means a society's ability to self-organize "to promote and coordinate efforts for collective action" (Kapucu, 2006). There is an intangible character to social capital relative to other forms of capital (Portes, 1998). Social capital is correlated with demographic factors such as age, education, race, and income, but it can also be developed and fostered by public-minded organizations (Kapucu, 2006; Putnam, 2001). The concept was also theorized to be a contributor to healthier, more efficient, and more democratic societies (Woolcock, 1997). For a community to organize collectively, individuals must possess some social capital, some connectedness, which enables them to influence each other. As Portes (1998) explained, "The consensus is growing in the literature that social capital stands for the ability of actors to secure benefits by membership in social networks or other social structures" (p. 6).

The prevalence or decline of social capital is argued as having both economic and democratic repercussions. Traditional economists argued that certain levels of "manners, morals, and education" are necessary to build the necessary societal levels of trust and compliance that make commerce possible (Portes, 1998; Woolcock, 1997). From this perspective, social capital confers its beneficiaries with greater access to jobs and economic capital that can be used for entrepreneurial endeavors. From a civic perspective, social capital is related to a group's ability to organize and participate in democratic institutions. The connectedness, trust, and reciprocity associated with social capital enable groups of individuals to work together on civic projects.

These groups may work to create more equal and just societies that serve a diverse set of interests. In the case of education, parents involved in school associations or connections to those associations may be able to advocate for curriculum or school programming that would benefit their children (Noguera, 2001). Additionally, researchers consistently demonstrated that children receive academic benefits from having more involved parents (Wilder, 2014). Although there are differences in the conceptualization of the purpose and benefits of social capital, most agree that higher levels of social capital benefit both the individual and society.

Scholars from differing fields conceptualize and measure social capital differently (Portes, 1998), and as such, it is important to define social capital in a way that is relevant and measurable in the context of this study. Some scholars measured social capital as participation in civic organizations and social connectedness (see Putnam, 2000). Others tried to measure social networks and their densities (see Portes, 1998). I adopted the definition from the political science literature that social capital is an individuals' participation in groups and interactions with others that engender "norms of trust and reciprocity" (Putnam, 2000). Research on education-related social capital operationalized the concept as types of parent involvement or engagement, such as PTA participation, volunteering, and attending school events (Cox & Witko, 2010; Schneider et al., 1997; Tedin & Weiher, 2011). In this study, I followed previous scholars' methods and measured social capital by exploring attendance and participation in events and groups outside of the home as perceived by principals in a school. While this approach may lack definitive insight into how individuals interact with their network and benefit from connections, it provided a glimpse into how connected people may be to institutions in their community.

When measuring social capital as outlined above, it is important to keep in mind the influence of individual and community characteristics on levels of social capital. For example,

education was identified as one of the most significant predictors of social capital (Putnam, 2000). Furthermore, because the development and maintenance of social capital and civic engagement rely on the participation of groups of people, areas with higher concentrations of education and wealth typically also have higher levels of social capital (Putnam, 2000). However, as Putnam (2000) and other scholars (e.g., Keele, 2007) documented, it has steadily been on the decline in the United States. There are many reasons for this decline, but we know little about what kinds of government arrangements may encourage social capital development. Social capital plays an important role in civic life. It can be nurtured and reinforced as infrastructure and networks are deepened over time and new membership. In this sense, it is both a prerequisite and a consequence of collective action activities and coproduction.

1.2.2 Coproduction

As ideas about the public's role in service provision changed in public administration, the public as partner view gained greater attention (Thomas, 2012). Theories of coproduction view the public as a partner in service provision and emphasize the government's role in managing networks and fostering collaboration. Coproduction defines situations "where government joins with nongovernmental entities, including members of the public, to produce services that the government might have formerly produced on their own" (Thomas, 2012, p. 26). Thus, coproduction is a particular form of collective action with citizens working cooperatively in the production of public goods.[1]

In many cases of public good provision, coproduction is seen as a necessary ingredient for successful services. Coproduction brings private resources in the form of time, skills, and money to bear on public goods. It also more heavily involves the citizenry in decision-making

[1] Coproduction may occur at an individual level as well (Thomas, 2012; Uzochukwu & Thomas, 2018). The focus of this investigation on collective action necessarily focuses my coproduction discussion on group efforts.

(Bifulco & Ladd, 2006). Many coproduction theorists believed that the government should be more decentralized to promote small groups of decision-makers that can influence services and make them more effective (Ostrom & Ostrom, 1977). The benefit of coproduction is not only in the form of high citizen compliance and additional resources, but there can be a measure of cost-savings to the government as well. For example, when citizens separate their recycling the cost of recycling services decreases and there are cost-savings to the government that may free up money for other projects (Thomas, 2012). It is possible that coproduction also provides a higher level of perceived legitimacy to the service. For example, Van Slyke and Roch (2004) found that citizens were more likely to mistakenly attribute the government as a service provider when they were dissatisfied with the service. This suggests there may be a general lack of confidence or mistrust of government provision of services. It is possible that coproduction may foster citizen buy-in and satisfaction with public services.

Scholars also suggested that coproduction occurs because of "technological, economic, and institutional influences"- meaning that government institutions can play a role in encouraging or discouraging coproduction (Parks et al., 1981, p. 2). However, coproduction, like social capital, is also influenced by societal and individual demographics as well. With respect to characteristics such as education, income, and race, the influence of individual characteristics matters depending on the context and nature of participation (see Uzochukwu & Thomas, 2018). Therefore, the collaborative strategies employed by governing institutions may be particularly relevant to encourage group coproduction.

Coproduction can occur between the government and individuals, groups, or formal private organizations - including nonprofits. Thus, theories related to the development and growth of nonprofits are also relevant to consider. Often, the development and sustainability of

nonprofits are attributed to government failure. The failure being that the government unable to meet all the needs of a diverse group of constituents (Matsunaga &Yamauchi, 2004). As a result, the government often opts for generic policy solutions that will serve the average individual or voter (Lecy & Van Slyke, 2013). Naturally, some constituents are not appropriately served by policies and programs and citizens may work collectively to address these gaps. If the demand is great enough, professional organizations such as nonprofits may be formed to sustain the work. Government failure theory then favors community heterogeneity of need as an impetus for collective action (Lecy & Van Slyke, 2013). However, as Paarlberg and Gen explained, "our theoretical understanding of the factors that influence the development of the nonprofit sector, such as population heterogeneity and community need, may be opposite to the factors that support civic engagement – population homogeneity and human capital" (p. 392). Thus, government practices could benefit from a greater understanding of the determinants of coproduction and civic engagement.

In the field of education, coproduction was studied through the lens of Parent-Teacher Associations (PTAs) and other school-supporting nonprofits (Bifulco & Ladd, 2006; Nelson & Gazley, 2014; Paarlberg & Gen, 2009). PTAs and other parent organizations provide support through volunteering, participating in school decision-making, and fundraising. Although the national level PTA may conduct advocacy efforts, the function of PTAs at the school level is focused directly on school support. As some scholars noted, funds raised through the PTA were used to pay for teachers' salaries in cash-strapped districts (Mackevicius, 2022). The presence and size of parent organizations may be significant indicators of levels of resources and equity as well as community support for the school district initiatives. I adopted the approach used by prior scholars and measured levels of financial coproduction as the revenue size of school-supporting

nonprofits. I investigated a variety of parent-led nonprofits, including PTAs, PTOs, and booster clubs, as well as community-led nonprofits and foundations. Coproduction occurring these particular venues represents what Bovaird and Loeffler (2012) have classified as co-managing or co-financing. PTAs provide both governance through input on school priorities as well as financials support through fundraising for school activities.

It is obvious that some indicators of coproduction overlap with social capital. Therefore, it is necessary to clearly define how these concepts are related and where the divergence of these concepts occurs. In my upcoming analysis of principal perceptions, I distinguish activities related to social capital such as participation in events or workshops from coproduction activities, which encompass formal activities like budget participation and governance. When examining nonprofit activity, my indicators of coproduction are at the organization level and focus on fundraising activity levels of nonprofits. As mentioned previously, these groups are formalized nonprofit organizations that include parents and school staff in planning and fundraising for the benefit of the school. Thus, I argue that we can consider these groups to be an appropriate indicator of formalized collective action as opposed to just engaged individuals.

In the next chapter, I describe PMM models more fully and discuss in greater detail the effects that PMMs may have on types of collective action.

Chapter II: Market Reforms in Education

One of the earliest arguments for school choice was made by the economist Milton Friedman (1955) who believed that free markets were more efficient than government bureaucracy. Since then, advocates for school choice argued that market-based reform would allow for greater innovation, better school-family fit, and smaller more cohesive schools that could tailor their programs to the school community (Chubb & Moe, 1990). Market-based reforms flourished with most states expanding charter school legislation and voucher programs (Lubienski, 2009). These market reforms are best understood as quasi-markets where the government asserts some level of control over the market to ensure that public goals such as equity and stability are met. In the case of education, state legislatures or boards of education provide guidance on who can enter the education marketplace, how their performance is evaluated, and if their contract for service provision can be revoked.

Market-based reforms were also promoted by national education policy (Bulkley & Burch, 2011). The accountability-focused measures of No Child Left Behind (NCLB) increased the school and district need for support from outside organizations. Furthermore, the provisions in NCLB requiring that districts provide alternative options for students zoned for chronically failing schools increased school choice options within districts (Lubienski, 2009). The economic recovery policies and education programs during the Obama Administration, such as the American Recovery and Reinvestment Act (ARRA) and Race to the Top, also provided incentives for states and school districts to adopt market-based approaches to boost innovation and achievement in school districts (Bulkley & Burch, 2011). Finally, the state takeover and mayoral control programs have increased the use of market-based reforms as the operations of

schools are often contracted out to for-profit or nonprofit organizations and new charter schools are opened (Bulkley & Burch, 2011).

Although these policies and political contexts have promoted market reforms, the result has been the creation of a multitude of quasi-markets at the state and district levels that vary in their level of openness and centralization. The school choice movement, in its most idealized form, tends to the open market side of the spectrum, while diverse provider models exercise more centralized control. In the sections below I discuss these two educational reforms to highlight similarities and differences.

2.1 The School Choice Movement

In the mid-90s school choice began to take root as an alternative to the traditional assigned neighborhood schools. The premise was that families should be able to choose a school of their preference and, most importantly, leave a school that did not meet their needs. School choice includes policy choices such as charter schools and vouchers with the former gaining a strong foothold in most states in recent decades. Charter schools are public schools that have applied to operate a publicly funded K-12 school. If granted a charter, the organizations are required to meet specified levels of achievement to maintain their contract. In exchange, charter schools are provided with greater flexibility in practices such as hiring and firing, teacher certification, school hours, and calendar year, to name a few (Bulkley & Wohlstetter, 2004; Malloy & Wohlstetter, 2003). Proponents of charter schools, and school choice more generally, argued that the increased competition to attract students in an open market will lead to all schools improving (Wells et al., 1998). If the charter school does not meet the goals outlined in its contract, its charter may be revoked (Wells et al., 1998). By opting for charter schools, the public and the government are hoping that the nonprofit or for-profit organization can bring higher

levels of innovation with minimal oversight while still delivering on the goals of a public good (Hassel, 1999). At their core, charter schools offer a "decentralized alternative to the centralized and bureaucratic delivery of education services" (Bifulco & Ladd, 2006, p. 554). The school choice movement and charter schools specifically ignited enthusiastic debates about the privatization of schools and the pitfalls of education reform. The debates are ongoing because when compared to traditional public schools, the results of charter schools do not offer a clear answer to one model's superiority.

Researchers identified positive academic outcomes in charter schools, while others found no difference or even negative effects of charter school attendance (Abdulkadiraglu et al., 2011; Bifulco & Ladd, 2006; Davis & Raymond, 2012; Dobbie & Fryer, 2011; Hanushek et al., 2007; Zimmer et al., 2012). In terms of nonacademic outcomes, there is evidence that charter schools may locate themselves in areas where there are more engaged parents and the presence of charter schools may lead to more segregated schools (Bifulco & Ladd, 2006; Booker et al., 2015; Ladd et al., 2017; Renzulli & Evans, 2005). Additionally, several researchers found that charter schools are less likely to have formal structures for parent participation in governance even though parent engagement in student-centered activities is higher (Hamlin, 2017; Murray et al., 2019).

While charter schools are accountable to meet the performance goals outlined by their authorizing body, the formal structures for oversight of charter schools are often weak and authorizing bodies rarely close low-performing charters (Hill et al., 2009; Lake & Hill, 2009). The ones that close or have their charter revoked do so due to financial reasons or operations mismanagement (Consoletti, 2011 as cited in Gilblom & Sang, 2019). Parents, however, may keep selecting under-performing charters because they lack performance information or because

they prioritize other characteristics of the school environment (Hill et al., 2009). Charter schools can operate outside of a bureaucracy, which enables the schools to be more responsive to students and families. Some charter schools operate under a year-round calendar or extend the school day or other flexible learning options. Although charter schools offer promising innovations, they have not transformed public education as expected. As previously mentioned, they also tend to be limited in the number and types of students they could serve, leaving an entire population of students at chronically failing schools. Innovations remain in one school or network of schools and fail to infiltrate the public school system (Hill et al., 2009). As a result, policymakers turned to a more systemic way to incorporate the benefits of charter schools and school choice models into the framework of a traditional public school district. The diverse-provider or portfolio management model approach attempts to capitalize on the strengths of charter schools while correcting for shortcomings through more formalized district oversight in a process that, in theory, is uniform for all traditional and charter schools.

2.2 Portfolio Management Models

The diverse provider model, originally envisioned and described by Hill et al. (2009) in their book *Reinventing Public Education*, draws from theories of market-based and school choice reforms, systemic reforms, and contracting. Portfolio Management Models (PMMs), as they have come to be known, involve a system of providers (education management, charter organizations, and district schools) managed by the district using clear performance management guidelines. The district may also choose to operate magnet programs in addition to the contracted schools, and school choice may be encouraged throughout the district menu of schools. In theory, a PMM promotes school choice while placing greater responsibility on the district as an

intermediary client that manages options so that parents only have the highest quality ones available (Hill et al., 2009).

In a review of a subset of PMM districts, Bulkley and colleagues (2020) explained that at its core the PMM approach contains:

> Five interlocking policy mechanisms: increased central office *planning* around what schools will operate within the system alongside performance-based *oversight* of those schools; broad-based *school choice*; and emphasis on increasing school-based *autonomy*; greater flexibility around *human capital* practices including hiring, retention, and compensation; and a more extensive set of *school support* organization, from which schools can select options that meet their needs. (p. 4, emphasis in text)

These mechanisms blend elements of performance management and markets to provide a managed market within a school district. A fundamental policy tool of the PMM is the contract (Henig, 2010). As part of the management of the diverse providers, the district sets clear performance measures that all schools must meet to operate. Schools that consistently fail to meet student achievement objectives are closed or restarted, typically as a contract charter school. The reasoning behind these administrative changes is that (a) the current operational structure of schools is broken and only a complete restructure of the school can bring change and (b) marketplace competition will lead to improved academic achievement and increased innovation in education (Gill et al., 2007, Lubienski, 2003).

A PMM also promotes school-level decision-making at both charter organizations and traditional schools. Building on theories of efficiency and innovation, PMM advocates suggest that the only way for schools to operate effectively is for school leaders and educators to have increased control over the decision-making for their schools. These decisions may include

curriculum, hiring, school calendar and schedule, and special themes or programs offered at the school (Hill et al., 2009). They propose that this autonomy will enable principals to cater to the market and attract quality teacher talent and students. Hill et al. (2009) admitted that most schools will not appeal to all parents, but that parents can find at least one school within the district that closely aligns with the educational priorities they have for their children.

Despite promoting autonomy, the oversight PMMs utilize is intended to diminish principal-agent problems by creating an appropriate set of incentives to align the school district and school operators towards common goals (Bulkley et al., 2020). The performance-based contracts are intended to establish a clear set of goals that school-based education leaders can meet in innovative ways. Thus, the PMM approach is purely situated at the institutional level and does not prescribe specific curriculum or activities to which school must adhere. Unlike prior approaches, such as the charter school movement, it does not circumvent a centralized office, but restructures the norms of operations such that reform is possible (Bulkley et al., 2015; Bulkley et al., 2020). This does not mean that school communities do not feel the impact of this approach. In contrast, as part of performance management, schools can be closed, reconstituted, and assigned management to charter organizations (Hill et al., 2009; Hill & Jochim, 2019). In practice, this can mean families must change schools after a closure, that there is a huge turnover in staff in reconstituted schools, and changes to school norms under new management.

The adoption of a PMM governance approach is no small undertaking, but districts may have support from national as well as local actors (Bulkley et al., 2020; Henig et al., 2019; Reckhow, 2015). Locally, PMM advocates promoted candidates aligned with the market-based reforms. This was particularly crucial for the sustainability of these models in the long-term (Welsh & Hall, 2018). At a national level, large advocacy groups, such as Democrats for

Education Reform and the TFA, supported state and local policies that promote PMMs (Bulkley et al., 2020; Bulkley & Henig, 2015). Large foundations, such as the Walton Family Foundation or the Laura and John Arnold Foundation, put their money behind the expansion of PMMs (Reckhow, 2012; Reckhow, 2015).

The prominence of this reform strategy at the national level may distort its salience at the local level. Particularly in the cases of district takeovers, many policy decisions are made in a top-down fashion and may not include the voice and preferences of local communities (Welsh, 2019; Welsh & Williams, 2018). In fact, as researchers followed the dynamics of implementing these vast reforms, disconnection with parents and the community at-large repeatedly surfaced (Bulkley et al., 2020; Glazer & Egan, 2016; Hill & Jochim, 2019). Community leaders reported little discussion or influence on school closures that may disrupt neighborhoods (Campbell et al., 2017; Glazer & Egan, 2016; Hill & Jochim, 2019). Furthermore, the complexity of enrollment processes and transportation issues may reinforce equity issues within a district with only certain groups within a district able to take full advantage of school choice (Bulkley et al., 2020)

Despite the daunting political and implementation factors associated with PMMs, the types of districts that adopt the practices may be particularly suited to or in need of these kinds of reforms. Below I describe PMM districts generally and discuss the factors that may influence the adoption of a PMM approach.

2.3 PMM Districts

PMM districts are primarily large and urban with histories of low academic performance. Table 1 includes a list of districts that fully implemented a PMM approach along with their characteristics. Urban districts in general face a number of challenges to successful outcomes for

Table 1. Portfolio Management Model Districts

PMM Districts	Initial PMM Year	City Population	Student Enrollment	Median Household Income
Camden	2013	73,562	14,975	$27,070
Cleveland	2012	381,009	55,600	$29,068
New Orleans	2009	390,144	43,948	$39,576
Tulsa	2016	401,190	38,628	$41,849
Oakland	2009	433,031	49,600	$68,428
Kansas City	2016	495,327	24,740	$41,202
Atlanta	2016	506,811	51,927	$55,279
Memphis- Shelby County	2010	651,073	105,254	$41,953
Boston	2014	692,600	65,461	$65,883
District of Columbia	2013	705,749	87,344	$82,604
Denver	2010	727,211	92,331	$63,793
Indianapolis	2012	876,384	150,145	$35,376
San Antonio	2016	1,547,253	325,569	$33,813
Philadelphia	2010	1,584,064	194,557	$43,744
Houston	2009	2,320,268	579,609	$52,654
Chicago	2015	2,693,976	381,349	$55,198
Los Angeles	1990s	3,979,576	664,774	$57,607
New York City	2005	8,336,817	1,308,212	$60,762

students. They serve a disproportionate number of students living in poverty and are often faced with large achievement gaps associated with poverty and race/ethnicity. Schools in urban districts also have high levels of turnover and fewer certified teachers in classrooms. Due to these issues, some urban districts were taken over by the state or through an act of mayoral control (Bulkley et al., 2020; Campbel et al., 2017; Hill & Jochim, 2022). PMMs were a favored

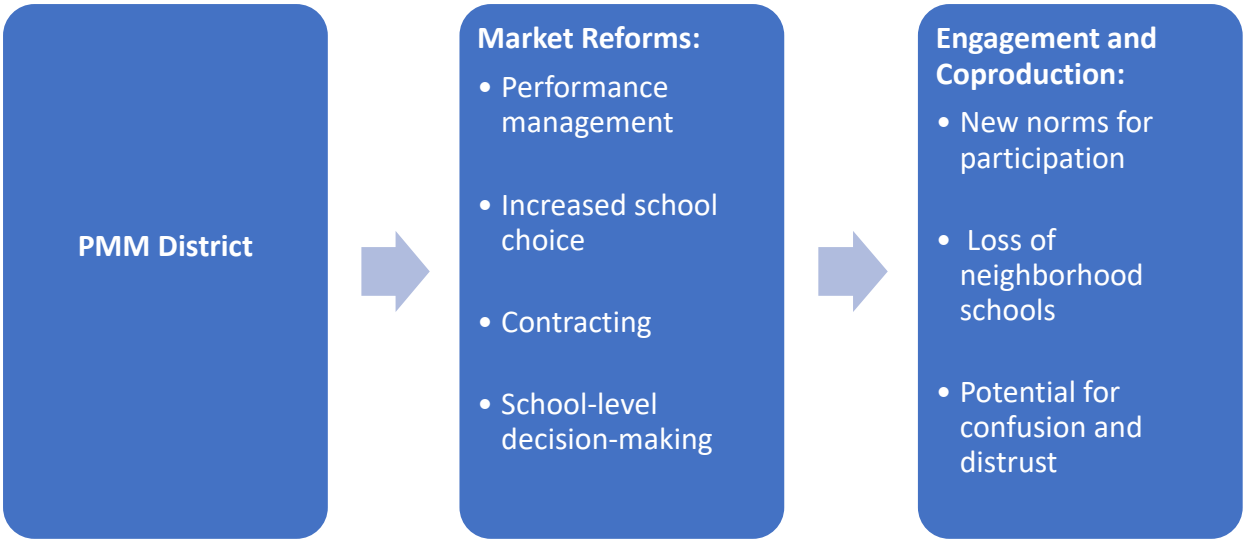
model of state and mayoral office takeovers. New Orleans is a well-known example of state control occurring after Hurricane Katrina through the Recovery School District (RSD). Although the RSD had been in place since 2003 and New Orleans schools were riddled with scandal and poor performance, it wasn't until local government was weakened in the aftermath of Katrina that the state initiated a take-over (Bulkley et al., 2020). The RSD enlisted a portfolio of charter schools and charter management organizations to reopen and run schools in the city. Based on enrollment data in 2022, over 90% of New Orleans students are enrolled in charter schools (NAPC, 2023).

The prevalence of charter schools in New Orleans also highlights another factor influencing the adoption of PMM governance. Bulkley and colleagues (2020) pointed out that many districts that adopted PMMs also have existing high market shares of charter enrollment. The prevalence of charter schools may place institutional pressures on traditional school districts due to loss of enrollment and revenue. Districts may feel pressure to adopt a broader governance model that could work with existing and new charter schools to appeal to parents who have left or are considering leaving the district. This may alleviate further enrollment losses, and, as a result, stabilize funding levels in the district. Parents seeking alternatives to traditional schools may select district-managed charter schools that meet their educational preferences. In many PMM districts, the district controls the authorization of charter schools to some extent (Bulkley et al., 2020). Thus, a governance model incorporating them into system operations could prove beneficial for funding and creating a managed approach to school choice.

PMMs present a unique opportunity for districts to fundamentally alter the structure of relationships from the central office to the schools. They alter the options available to families and provide schools the flexibility to pursue innovations responsive to the needs of students and

parents. PMM adopters represent a unique set of large and visible districts that contend with educational, institutional, and political challenges. Education reform in these districts may have broader consequences than just academic outcomes. Figure 1 below depicts my conceptualization of the changes in operations and potential effects on engagement due to a PMM. A PMM approach includes a number of large changes in how districts operate. Performance management means that under-performing schools will be closed or converted. District leaders may bring charter organizations to manage schools. These institutional changes alter the landscape for parent participation by dismantling established venues and norms. Increased school choice can also diminish the connections that parents and the community have with their neighborhood school. These changes to long-standing establishments can breed distrust in the community and decrease motivation for engagement or coproduction.

Figure 1. PMM Changes in Operations and Effects on Engagement and Coproduction



2.4 Avenues of Investigation

The differences in governance under traditional school districts and market-oriented school districts could affect civic participation in the provision of education. As already

discussed, civic participation is fundamental for a well-functioning democracy particularly as it may help promote policies that may benefit a diverse range of constituents not necessarily represented by the "median voter." My research was driven by the following question: do PMMs affect levels of engagement and coproduction in schools? Additionally, are schools in PMM districts more like charter schools or traditional public schools in their levels of parent involvement and coproduction? Previous researchers indicated that communities may have been excluded from conversations surrounding school management and that some parents struggled with choice processes within a district (Bulkley et al., 2020; Hill & Jochim, 2019); however, thus far, these views are anecdotal, and it is unclear if and how they have translated to parent and community behaviors.

As mentioned previously, these changes in governance and management may either promote or hinder community collective action (Ostrom, 2000). Therefore, it is necessary to understand how these changes influence coproduction as well as equity within underperforming schools that are typically serving a high proportion of disadvantaged students. The traditional bureaucratic model, school choice model, and portfolio model all assign different levels of agency to parents and their relationship with their child's school, which may influence levels of engagement with the school. Prior research on the effects of school choice on social capital presents mixed findings on whether the choice approach or institutional features may promote parent involvement (Cox & Witko, 2010; Schneider et al., 1997; Tedin & Weiher, 2011) and do not include models like PMMs that are a hybrid of school choice and traditional management. Additionally, literature on coproduction as indicated by PTAs focused on the characteristics of schools and districts that are associated with PTAs (Murray et al., 2019; Nelson & Gazley, 2014; Paarlberg & Gen, 2009) and has not considered the influence of governance models. The essays

in this dissertation contribute to understanding how social capital and coproduction may be fostered through the practices of institutions.

In the subsequent chapters, I provide my empirical analyses. I focus first on social capital and engagement as indicated by parent involvement in schools. I use cross-sectional data from a national survey of principals to gauge differing levels of parent involvement by district and school type. The next chapter explores parent-led nonprofits in a sample of school districts. The final empirical chapter uses panel data of nonprofits in school districts to examine the growth of school-supporting nonprofits. Although this analysis is exploratory, these chapters provide insight into how governance and school type can influence the development of social capital and coproduction.

Chapter III: PMMs: Parent Involvement and Levels of Coproduction

There is an overwhelming consensus that parent involvement is associated with improved academic outcomes (Epstein & Dauber, 2001; Smith & Wohlstetter, 2009). A foundation of student success, increased parent involvement in schools is often a key initiative in the turnaround of struggling schools. In many ways, parent involvement forms the foundation of a coproduction relationship with a school (Marschall, 2004). Parents attending events and conferences on behalf of their child may further increase their commitment and desire to be involved with coproduction activities, such as volunteering and governance. As mentioned previously, coproduction can raise the quality of services for the beneficiaries and their satisfaction with those services (Bifulco & Ladd, 2006; Marschall, 2004). Furthermore, parent involvement can provide benefits to individual consumers as well as the collective school community and increase the efficiency of service delivery (Brandsen & Honingh, 2016; Hamlin, 2017). Many scholars argued that coproduction should be encouraged by institutional structures and policies that foster participation (Ostrom & Ostrom, 1977; Parks et al., 1981). Some scholars even believe that participation in coproduction may benefit the citizen through increased opportunities to develop social networks and participation skills (Marschall, 2004). Using data from the 2017-2018 NTPS, in this chapter I examine principal perceptions of parent involvement and coproduction in their schools. This cross-sectional data provides insight into the relationship of PMMs and coproduction, which may indicate how well PMMs are fulfilling their goals of community involvement and accountability.

Prior literature exploring parent involvement often focused on how characteristics of schools and parents drive levels of involvement. In examining school characteristics, previous researchers explored differences between charter and traditional public schools (e.g., Bifulco &

Ladd, 2006). Some recent research examine differences between charter schools managed by for-profit and nonprofit organizations (Hamlin, 2017). These studies found explanations for differences based on where charter schools are located, the levels of autonomy, and the selection process into a charter school (Bifulco Ladd, 2006; Hamlin, 2017). While there is evidence of how school characteristics might influence parent involvement, the introduction of a PMM may alter many of these factors even within the charter market. The extent of parent involvement is important to consider in PMMs. As mentioned previously, these models rely on a combination of market-forces and contracting to guide the management and replication of successful schools. Traditional research often viewed PMMs as part of a market-based, school choice reform. While elements of these reforms are present in PMMs, it is important to acknowledge the role of the school district as primary consumer and gatekeeper of parent options (Henig, 2010). Additionally, the school districts that chose PMMs are comprised of underperforming, low-income schools with high-minority populations, and may have even been taken over (or threatened with takeover) by the city or state government (Bulkley et al., 2010). They are districts and schools desperately in search of solutions to turn around chronically failing schools.

As a result of this level of intervention, there are a few key issues to consider when examining the relationship between PMMs and parent involvement. In theory, a PMM approach should focus on community and parent voice in schools as well as the district (Bulkley et al., 2020). However, changes in operations and less centralized school management may dampen parent participation (Hamlin, 2017). On the other hand, district and school policies focusing on building parent involvement may encourage greater participation as some researchers noted (Epstein & Dauber, 2001; Marschall, 2004). Thus, my underpinning research questions are as follows: Do parents feel more involved and invested in school districts that are attempting to turn

around their schools? Or do they feel a loss of control and connection to their schools attributable to district governance policies?

In this essay, I explore the effects of a PMM model on parental involvement as reported by school principals. The data used for this study are from the 2017-2018 National Teacher and Principal Survey conducted by the National Center for Education Statistics. I take advantage of questions asking about different forms of parent involvement within the school. As there may be some differences between different types of parent involvement and coproduction (Brandsen & Honingh, 2016; Epstein, 1984), I categorized parent involvement based on the levels of commitment required and the allocation of benefits to individuals or the student body. I then compared the responses of principals from schools in traditional and PMM districts in my empirical models. This approach contributes to the literature on coproduction and parent involvement by exploring the influence of district governance policies on important forms of citizen participation. It also contributes to the literature on PMMs by examining the relationship of this model to parent engagement – a key emphasis of the approach.

I proceed by providing the theoretical framework surrounding parent involvement and coproduction in education, which guides my research questions. Next, I address the current literature on PMMs and outline my main hypotheses. In the following sections, I describe the data and models and present my findings. I conclude with a discussion of the findings, the implications for my research as well as public policy more broadly.

3.1 Parent Involvement and Coproduction

Parent involvement in education has a long tradition within the United States where schools are often under local control and by extension reflect the local values of the community (Gordon & Louis, 2009). School operations are often guided by varying levels of democratic

participation from parents and community members typically through school boards, local school councils or parent-teacher organizations (Gordon & Louis, 2009). According to Epstein (1987), there were two main philosophical views of parent involvement. The first takes the view that parents and schools operate best as separate institutions due to inherent incompatibility, competition, and conflict. The other, and currently more dominant philosophical view, emphasizes the benefits of coordination and collaboration between schools and parents. Under the cooperation paradigm, schools, and teachers developed strategies to intentionally engage parents. From a federal perspective the importance of these efforts was cemented in policies, such as Title I, that provide funding to support parent involvement activities.

Parent involvement takes many forms. Some parents are engaged in communicating with teachers, attending parent-teacher conferences, or participating in sports events. Some scholars (e.g., Epstein 1995; Epstein & Dauber, 2001, Marschall, 2004) include parent engagement with a child's learning at home as an indicator of parent involvement. There are also avenues for deeper engagement for parents that are more akin to civic engagement than parental support of their own children. These avenues include governance organizations such as PTAs or local school councils, fundraising bodies such as booster clubs, and school or classroom volunteering. Parents involved in these types of activities influence school operations in ways that not only benefit their children, but the entire school community as well.

As defined in prior chapters, coproduction occurs when individual or collective citizens work collaboratively with government to produce public services (Ostrom & Ostrom, 1977; Parks et al., 1981). Scholars studying coproduction often included many of the parent involvement activities listed above as examples of coproduction (Brandsen & Honingh, 2016; Marschall, 2004). While there may be an arguments for considering parent assistance on

homework as coproduction of education (the parent is supporting the work of the teacher in the home environment to further their child's education), I adopt a more narrow definition as proposed by Brandsen and Honingh (2016) who stated: "Coproduction is a relationship between a paid employee of an organization and (groups of) individual citizens that requires a direct and active contribution from these citizens to the work of the organization" (p. 431). This definition would exclude some forms of parental involvement because they are passive and there is no relationship involved. For example, attending a sports event requires no input or activity from the parent to produce the service. On the other hand, parent-teacher conferences may involve more active participation and the development of a relationship with a teacher; however, there is great variation in parent approaches to conferences. Furthermore, the teacher can continue to provide education services even if parents do not attend conferences. Thus, in using Brandsen and Honingh's definition, I would exclude conferences as well. For the purposes of this paper, I include participating in governance activities (input on budget, operations, and instruction), fundraising, and volunteering as coproduction due to the levels of activity and coordination between parents and school staff. These activities would also be defined as co-managing (Bovaird & Loeffler, 2012). Therefore, I distinguish between involvement and coproduction in my analysis. My classification of parent involvement includes the coproduction activities, academic involvement (i.e., parent teacher conferences, school math nights), and parent workshops. However, much of the literature available on parent involvement considers all these activities simultaneously. Thus, the terms are interchangeable in the following review of the literature.

3.2 Factors Influencing Parent Involvement and Coproduction

Levels of parental involvement are thought to be influenced by the characteristics of parents and the institutional contexts of schools (Bifulco & Ladd, 2006; Lee & Bowne, 2006; Park & Holloway, 2018). A well-established body of research explored parent involvement utilizing theories ranging from social capital to institutional frameworks. Though scholars may differ in their approaches, the results point to the importance of social capital and school initiatives to build effective parent-school relationships.

3.2.1 Parent Factors

Research focusing on parent-level factors influencing levels of parent participation in schools highlights the differences in participation attributed to socioeconomic levels. In general, low-income, ethnic or racial minority, and immigrant parents participate less often in schools (Lee & Bowen, 2006; Wong & Hughes, 2006). Low-income families often face tangible barriers to participation such as inflexible work schedules and resource constraints, such as transportation and childcare, which may prevent them from attending school-based events (Reynolds et al., 2015). Scholars developed theories and frameworks to better understand the mechanisms of these differences. For example, Lee and Bowen (2006), following Bourdieu's definition of social capital, found that families from different economic classes differ in their understanding of and orientation towards involvement, which leads to parents involving themselves differently in schools. Parents from diverse cultures and lower education levels may feel less confident in interacting with school staff (Lee & Bowen, 2006). There may also be a disconnect between understanding the parental roles preferred in American schools compared with cultural norms in other countries.

Other scholars approached these differences from the lens of internal orientations towards involvement that are tied to feelings of self-efficacy, role construction, and belonging (Anderson & Minke, 2010; Park & Holloway, 2018). Feelings of self-efficacy may be closely related to an individual's level of social capital. How successful parents may be in navigating different scenarios is related to education and experience that is often afforded to middle-class White Americans (Lee & Bowen, 2006). However, Park and Holloway (2018) pointed out that parents take cues from the schools about their role and how welcome their participation is within schools. Thus, school initiatives and polices may influence parental participation by providing welcoming environments and culturally relevant ways for parents to be involved (Anderson & Minke, 2010; Boylan et al., 2021; Epstein et al., 2009).

3.2.2 School Factors

There is evidence that traditional public schools present barriers to parent involvement (Smith & Wohlstetter, 2009). As mentioned previously, at the school-level, communication and involvement opportunities may promote or hinder parent participation. Schools may lack the necessary staff and resources to provide robust parent involvement communication (Kim, 2009). Additionally, parents may feel stigmatized by teachers' perceptions of them as disinterested or ineffective if parents are unable to meet involvement expectations, which may further discourage their participation with schools (Lee & Bowen, 2006; Kim, 2009; Park & Holloway, 2018). However, researchers found positive relationships between school efforts to bring in families and parental involvement (Anderson & Minke, 2010; Epstein et al., 2009; Park & Holloway, 2013). Communication efforts and welcoming environments encourage greater parent involvement, particularly for parents from racial and ethnic minorities (Park & Holloway, 2013). However, Lee and Bowen (2006) pointed out that parents with less education, lower income, or who are

members of an ethnic or racial minority group, may respond to these efforts differently than parents of a higher SES.

In addition to the school policies and efforts, the context of the school environment, including its surrounding neighborhood, may play a role in levels of parent involvement. Schools that are in high crime areas, for example, may present unsafe environments for parents and children to attend activities outside of school hours (Bryk et al., 2010). Staff turnover and changes in leadership may also require bridges to constantly be rebuilt instead of maintaining solid relationships. Additionally, negative perceptions of the school or district and lower levels of trust within the community can also dampen involvement (Adams & Christensen, 2000; Hoover-Dempsey et al., 2005).

3.2.3 Institutional Contexts

Traditional charter schools boasted higher levels of parent involvement than traditional district schools. Part of these increased levels can be attributed to the school-choice process where parents actively seek and select a school that meets their preferences (Chubb & Moe, 1990; Smith & Wohlstetter, 2009). It is reasoned that parents who engage in the selection of their school may be more invested in their child's education and then be further invested in the schools they select because the schools may be a better cultural and pedagogical fit for the family (Bifulco & Ladd, 2006). Additionally, charter schools may be more responsive to parents because of the nature of market forces (Miron, 2010). There is also evidence that schools of choice have traditionally been in urban areas that may already have high levels of parent involvement (Bifulco & Ladd, 2006; Hoxby, 1999). However, the introduction of these charter schools may draw more involved parents away from traditional schools (Bifulco & Ladd, 2006).

In addition, many charter schools have institutional arrangements that may further facilitate parental involvement at the school level. Charter schools are often smaller and more democratically run institutions with greater autonomy from the district and unions, which may ease the participation of parents in school leadership (Mowen, 2013). This allows the schools to operate more creatively and enforce policies that would be infeasible at a traditional public school. For example, many charters require that parents sign a parental involvement contract committing them to participate in specified ways with the school (Bifulco & Ladd, 2006; Boylan et al., 2021). These efforts may result in higher levels of volunteering as well as other forms of parent involvement (Buckley, 2007; Hamlin, 2017; Oberfield, 2020). Additionally, when considering parent involvement through the lens of public (group benefit) and private (individual benefit) Boylan et al. (2021) found that charter parents were involved at greater levels in both types of involvement.

Although charter schools may report higher levels of some types of parental involvement, there is evidence suggesting that traditional public schools developed and honed organizations and processes, which enable parents to participate in school decision-making (Bifulco & Ladd, 2006). Local school councils and PTOs became prolific governance bodies present in many traditional public schools (Hamlin, 2017). In many urban settings, these bodies may reflect and give voice to the desires of the community. These organizations often embody years of ongoing collaboration with the local community (Sugrue, 2014; Wilson, 2012). In a recent study of parental involvement in Detroit city schools, Hamlin (2017) found that traditional public schools had higher levels of parental involvement in school-level decision-making when compared to charter schools, regardless of charter management type.

3.2.4 Parent Involvement and Coproduction in PMMs

To date, there has been no empirical exploration of parental involvement in PMMs. Thus, I draw on case studies of parent perceptions of PMMs and characteristics of PMMs that may influence parent involvement to develop my hypotheses. While smaller schools and charter models may be associated with higher levels of parental involvement, it is possible that the dynamics of district governance inherent in a PMM may alter the levels of connection parents feel with their child's school. As Henig (2010) noted, thinking of PMMs as synonymous with school choice and market-based reforms fails to acknowledge that the district as contractor is the direct consumer of charter services. PMM districts are a mix of independent charters, contracted or converted charters, and traditional public schools with varying levels of school choice. These schools are managed by the school district, which predetermines the school options for families based on performance records. Community stakeholders may feel disenfranchised from the school district decision-making process and in-turn disenfranchised from their schools (Glazer et al., 2016). Case studies in several PMM districts reported conflict between school districts and community members over the closing or conversion of schools (Glazer et al., 2016; Levin et al., 2010; Menefee-Libey, 2010). Additionally, several PMM districts received attention for the large numbers of teachers and school leaders dismissed during the initiation of reforms. Some communities felt that African American teachers from the community were being fired and replaced with less experienced teachers from outside of the community (Glazer et al., 2016; Osborne, 2015). Disruption to the community may foster distrust in local schools or the district itself and dampen parents' desire to participate in the school.

3.3 Hypotheses

To draw on this diverse body of literature to develop my hypotheses, it is important to first synthesize the key relationships found in prior work. First, at the individual level, SES is a strong predictor of levels of parent involvement (e.g., Lee & Bowen, 2006). PMM districts are primarily urban districts that have a substantial number of families who are lower income, immigrant, and from ethnic and racial minority groups. Second, school culture and institutional contexts also influence parent involvement. Charter schools seem to have higher levels of parent involvement in both public and private good oriented activities (Boylan et al., 2021). PMM districts contract with charter providers to operate traditional public schools. There may be benefits to parent involvement for charter schools in both traditional and PMM districts; however, political turmoil, teacher and principal turnover, and festering distrust that has been experienced in some districts may dampen any positive effects that charter schools may provide to PMM districts. Finally, about half of PMM districts have been taken over or were at risk of takeover about a state or mayoral body (Hill & Jochim, 2022; Bulkley et al., 2015; Bulkley et al., 2020; Campbell et al, 2017). In many PMM districts, schools have closed and converted to charters with new leadership and staff (Bulkley et al., 2020). These changes may contribute to a loss of parental connection and trust with the school system. Therefore, I developed and tested the following hypotheses in my analysis:

H1: Principals in schools in PMM districts will perceive lower levels of academically oriented parent involvement than principals in traditional charter schools and traditional public schools.

H2: Principals in schools in PMM districts will perceive lower levels of parent coproduction than principals in traditional charter schools and traditional public schools.

I also developed a further hypothesis about the relationship between different types of parent involvement. Parent involvement includes a wide range of activities that provide a range of engagement and commitment (Epstein, 1987). At its most basic, parent involvement can be simple communication between the school and parents potentially requiring little action on the part of parents. Schools often define parent involvement in academic activities as attendance at parent-teacher conferences, school open houses, and academic events (Marschall & Shah, 2020). A parent's decision of *how* to be involved may be more complex.

Hoover-Dempsey and Sandler (1995) outlined a model for parents' decision-making process about involvement. At the first level, a parent's decision to become involved is based on the general opportunities and invitations from the school. Their choice of involvement becomes more refined in the second level as they receive more specific invitations to participate and their ability to contribute becomes evident. Epstein (1995) also classified parent involvement in a typology, which increases the degree of school, home, and community connection with each stage. The sixth and final stage is "Collaborating with community." Thus, participation in a PTA could be viewed as the next level of commitment requiring parents to be present regularly, participate in fundraising, and vote on aspects of school operations. I expected that other forms of parent involvement could act as a steppingstone for more committed coproduction activities. I hypothesized:

H3: Schools with higher levels of academic involvement will have higher levels of coproduction as perceived by principals.

3.4 Data and Methodology

I used data from the National Teacher and Principal Survey (NTPS) for the school years 2017-2018. The National Center for Education Statistics (NCES) administers the NTPS, which

includes a nationally representative sample of public schools across all 50 states and the District of Columbia. The sample was constructed from the Common Core of Data and was based on a stratified probability proportional to size sample. I also weighted the data to account for representativeness of the responses and I included the final sampling weights and replication weights at the school level within my models. These weights adjust for nonresponse and oversampling. From the NTPS sample, I removed observations that had no response on my key dependent and independent variables[2]. My final sample included 5090[3] principals. When weighted, this sample is equivalent to 64,000 principal observations. The list of all the variables appears in Table 2.

Table 2. Variables for Models on Parent Coproduction

Variables	Indicator
Dependent Variables	
3-2 Last school year (2016-17) what percentage of students had at least one parent or guardian participating in the following events?	
a) Open house or back-to-school night	Academic Parent Involvement
b) All regularly scheduled schoolwide parent-teacher conferences	
c) Special subject-area events	
d) Involvement in school instructional issues	Parent Coproduction
e) Involvement in governance	
f) Involvement in budget decisions	
g) Volunteer in the school as needed or on a regular basis	
Independent Variables	
1-7 What is the highest degree you have earned?	Principal Education
1-8 Which of the following best describes the highest degree you have earned?	
1-9 Do you currently hold a license or certification in "school administration"?	
1-1 Before you became principal how many years of experience did you have at the elementary, middle, or secondary teaching experience did you have?	Principal Experience

[2] About 800 total observations were dropped for missing responses.
[3] Sample sizes are rounded to the nearest 10th as requested by the NCES.

Table 2. Variables for Models on Parent Coproduction (continued)

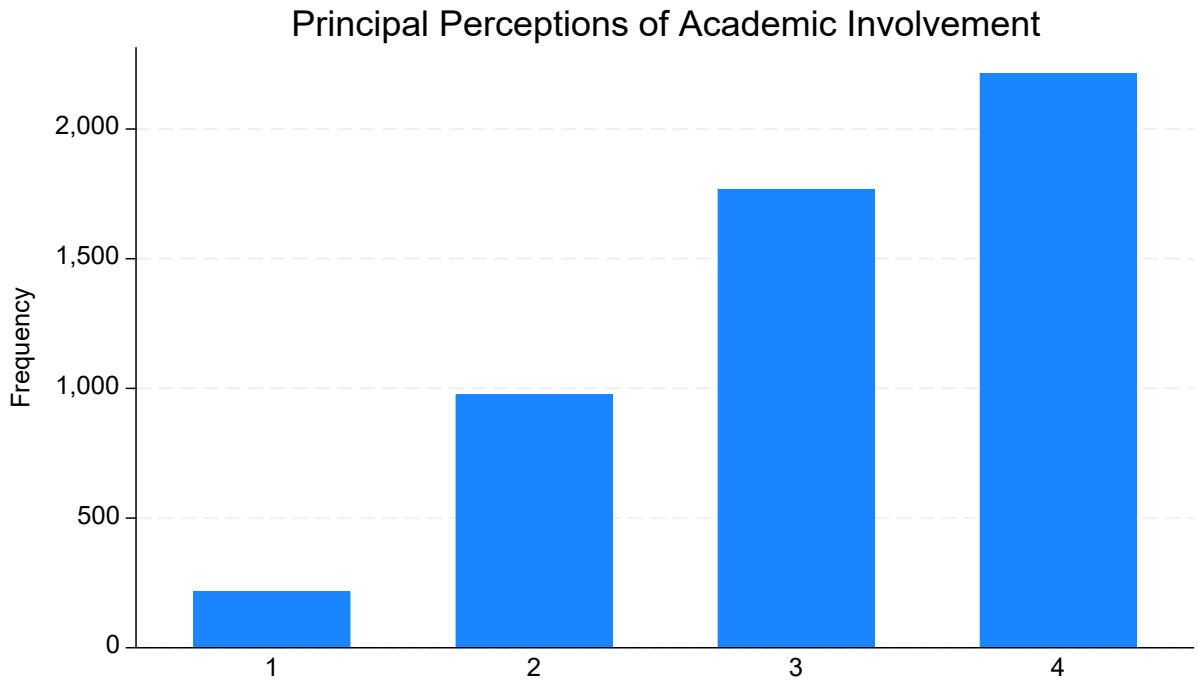
Variables	Indicator
Independent Variables	
1-2 Before you became a principal, did you participate in any district or school training or development program for aspiring school principals?	Principal Experience (continued)
1-3 Prior to this school year, how many years did you serve as the principal of this or any other school?	
1-4 Prior to this school year, how many years did you serve as the principal of this school?	
9-1 Are you male or female?	Principal Demographics
9-2 Are you of Hispanic or Latino origin?	
9-3 What is your race?	
9-4 What is your year of birth?	
Racial Match (Principal Race matched with the dominant (>51%) student racial group)	
Do you hold a degree in education?	
Do you hold an administrative license?	
3-2 Last school year (2016-17) what percentage of students had at least one parent or guardian participating in the following events? a) Signing of a school-parent compact	Parent Involvement Activities
Parent education workshops or courses	
District Type (PMM or Traditional)	School Characteristics
School in High Choice District	
School Type (Traditional, Charter and MO)	
Enrollment	
FRL	
ELL	
Student Teacher Ratio	
Racial Homogeneity Index	
3-2 Last school year (2016-17) what percentage of students had at least one parent or guardian participating in the following events? b) Signing of a school-parent compact c) Parent education workshops or courses	Parent Involvement Activities
District Type (PMM or Traditional)	School Characteristics
School in High Choice District	
School Type (Traditional, Charter and MO)	
Enrollment	
FRL	
ELL	
Student Teacher Ratio	
Racial Homogeneity Index	

3.4.1 Dependent Variables

My dependent variables focus on responses to question 3-2 on principal perceptions of parental involvement. For these questions, principals indicate the frequency with which parents are involved in certain aspects of the school. The principal responses include observations about participation in the following: (a) open house or back-to-school nights, (b) parent-teacher conferences, (c) special subject area events, (d) instructional decisions, (e) governance, (f) budgetary decisions and (g) volunteering. I used these seven items to create indices to capture different types of parent involvement. In a study using the SASS (the predecessor of the NTPS), Bifulco and Ladd (2006) used indices for parent involvement in school events and parent involvement in school operations. I utilized a similar formulation but distinguished between what I call academic involvement and coproduction. I made this distinction because, as mentioned previously, I considered coproduction to be characterized by active input and involvement in the design and implementation of services (Brandsen & Honing, 2016). Academically oriented involvement includes principal observations on parent participation in open house or back-to-school nights, parent-teacher conferences, and special subject area events. The Cronbach's alpha for this composite variable was .82 and considered acceptable for scale reliability (Takavol & Dennick, 2011). I also created a composite variable for coproduction which included observations of involvement in instructional issues, governance, budget decisions, and volunteering. This variable had a Cronbach's alpha of .83 which also indicates reasonable reliability. I ran models with the academic and coproduction indices as dependent variables. I also ran models using each individual item from the scales as a dependent variable to determine what factors may be driving differences in the academic involvement and coproduction models. The individual measures as well as the indices were coded 1-3. A response of 1 indicates that 0-

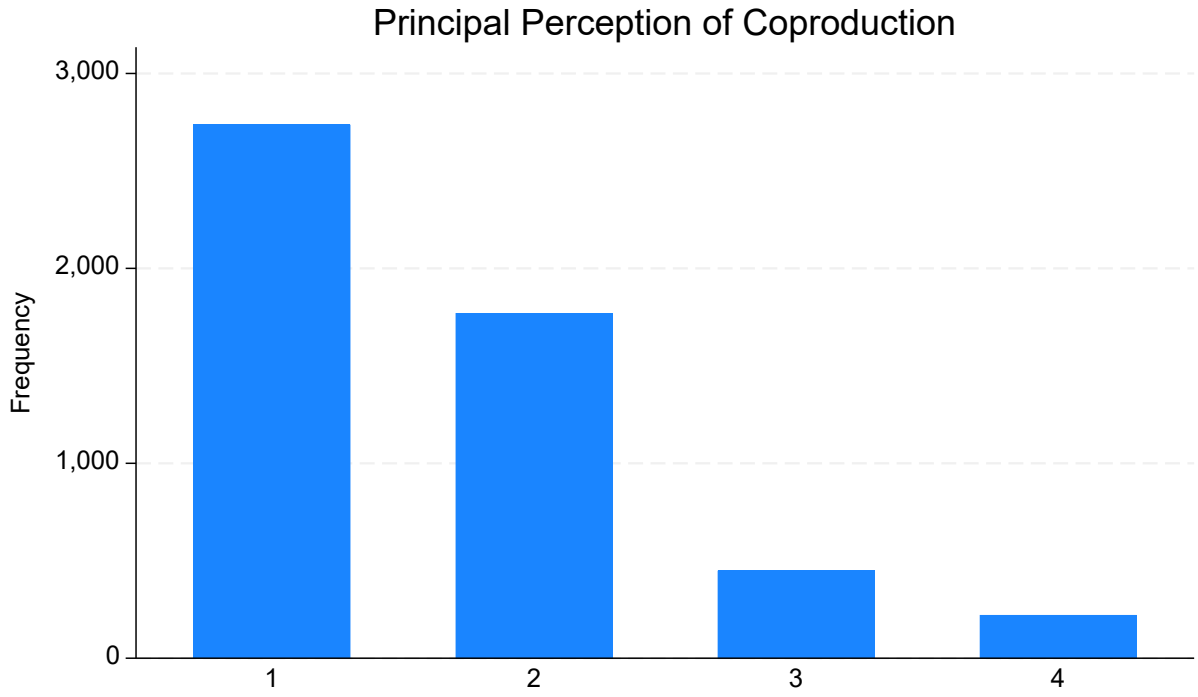
25% of students' parents participated in the events or activities, 2 is 26-50%, 3 is 51% and higher or a majority of parents.

Figure 2. Principal Perception of Academic Involvement



Note. From the NTPS 2017-2018 Principal Survey. Academic involvement was coded 1 for less than 25% participation, 2 for 25-50% participation, 3 for 50-75% participation, and 4 for 75% and higher.

Figure 3. Principal Perception of Coproduction



Note. From the NTPS 2017-2018 Principal Survey. Academic involvement was coded 1 for less than 25% participation, 2 for 25-50% participation, 3 for 50-75% participation, and 4 for 75% and higher.

3.4.2 Independent Variables

My key variables of interest were whether the schools are within a PMM district, a traditional district, or are designated a traditional charter school. I based the initial composition of the PMM variable on the list of districts identified by the Center for Reinventing Public Education (CRPE) as well as districts compiled by Bulkley and Henig (2015). Based on these lists, I included 18 districts as PMM districts, including a variety of districts such as Los Angeles Unified, Chicago Public Schools, Camden Public School District, and Memphis-Shelby County in Tennessee. The full district list can be found in Table 1 in Chapter 1. According to the CRPE website, they selected their PMM district based on a level of intentionality and adherence to the PMM principles including school choice, multiple education providers, and accountability. Their PMM list identified school districts which are pursuing district-wide school choice policies, contracting with charter organizations to provide school management, and closing, or transferring management, of schools that are not meeting target performance goals. Thus, these districts are actively utilizing a full PMM approach. The districts identified in this sample are used throughout my empirical chapters.

School choice and charter schools are also prominent features of PMM districts; however, school districts may have a higher number of charter schools and charter enrollment, but not be PMM districts as they do not follow a governance approach of contracting and performance management. Thus, I included another key variable accounting for the market share of charter schools within a district. The school choice variable was constructed utilizing the National Alliance for Public Charter Schools list of the top 100 school districts with the highest charter enrollment. I used these data to create an indicator variable for whether a school is within a district that has 30% or higher charter school enrollment. This hopefully captured any effects

on principal perception that may be related to a more competitive school choice environment. I also included a variable indicating whether the principal is at a charter school.

In addition to my key set of variables, I controlled for a variety of principal and school characteristics from the NTPS. At the principal level, these characteristics include principal education, experience, tenure, licensure, age, and race. The educational background and experience of a principal may provide foundational beliefs and orientations to the role of parents in schools. Administrative licensure is also an indicator of the degree to which they were trained as school administrators. Licensure is required for educators to serve in a principal role; however, many states do not require charter school principals to hold licensure (Ni et al., 2015; Sun & Ni, 2016). Therefore, licensure may also be an indicator of a career path through traditional schools or charter schools. I also created a variable to capture racial match between the principal and the most dominant student racial group (> 51%). Following theories of representative bureaucracy, the racial match between principal and parents may encourage more parent involvement as parents may feel more comfortable being involved with a principal of the same culture (Vinopal, 2018).

School characteristics include the size of the school, the proportion of free-and-reduced lunch participants, the proportion of English Language Learners (ELL), and the student-teacher ratio, as well as the racial homogeneity of the student population. The formula for the homogeneity index is presented below.

$$Homogeneity = \sum_{i=1}^{k} \left(\frac{n}{N}\right)^2$$

In this formula k is the number of racial groups, n is the population of racial group i, and N is the total population of all racial groups (Paarlberg & Gen, 2009). Thus, the homogeneity

index ranges from 0 to 1 with homogeneity increasing as values get closer to 1. I also included variables indicating whether a school is a charter school, and, if so, whether they are part of a management organization (MO). Charter schools under MO management were found to have less teacher and principal autonomy (Bulkley, 2005; Roch & Sai, 2015), which may contribute to the degree to which they engage in parent involvement initiatives and facilitate a welcoming school culture.

Finally, I controlled for the level of participation with a school compact as this has been indicated as a predictor of parent involvement (Boylan et al., 2021). I also included workshops as an independent variable. Workshops are defined by the NTPS as parent education workshops or courses. Participation in these events may indicate higher levels of social capital and personal connection to the school. Therefore, they may also predict other types of involvement. I also controlled for academic involvement in my coproduction model to investigate if there is a relationship between these types of involvement.

3.4.3 Analysis

I ran multiple models using ordered probit regression to estimate the effects of a PMM district on academic involvement and coproduction. I presented the means of my dependent and independent variables as well as the results of Wald Test of significant differences between means in Tables 3 and 4. There are some interesting differences in principal characteristics observed in Table 3. First, principals in traditional districts racially match their students at a higher proportion than PMMs (61% compared with 44%). There are also higher proportions of Hispanic and Black principals in PMMs, but lower proportions of White principals, although White principals are still in the majority in PMMs. Finally, 98% of principals in TDs held administrative licenses compared with 94% in PMMs. This difference may be attributable to

characteristics at the school level, particularly the prevalence of charter schools (Ni et al., 2015: Sun & Ni, 2016). Principals in PMM districts also rated parent involvement in the areas of budget and instruction as well as parent attendance at workshops more highly on average than principals in TDs. Figures 1 and 2 show the frequency of principal ratings of academic involvement and coproduction, respectively. Interestingly these figures are mirrors of each other with academic involvement being rated at 75% or higher by approximately half of the principals, while half of the principals rated coproduction at less than 25% for parent participation rates.

Table 3. Descriptive Statistics of Principal Characteristics and Perceptions of Parent Involvement

Variable	Schools in Traditional School Districts	Schools in Districts Governed by Portfolio Management Models	Wald Test
Parent Involvement Perceptions			
Coproduction (Cronbach's alpha – 0.83)	1.670	1.697	6.10*
Academic (Cronbach's alpha – 0.82)	3.234	3.036	3.78
Budget	1.228	1.327	22.46***
Governance	1.395	1.437	0.31
Instruction	1.482	1.450	5.51*
Volunteer	1.585	1.572	0.32
Special Events	2.541	2.400	3.77
Parent/Teacher Conference	3.043	3.019	0.33
Open House	3.091	2.959	6.28*
School Compact	3.124	2.984	0.13
Workshops	1.647	1.811	43.58***
Principal Characteristics			
Age	47.87	48.01	0.06
Male	0.456	0.389	3.33
Hispanic	0.099	0.236	13.92***
White	0.880	0.641	45.32***
Black	0.100	0.283	35.22***

Note. N = 5090 schools (rounded to the nearest 10th). Data are from the 2017-2018 NTPS Principal Survey.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3. Descriptive Statistics of Principal Characteristics and Perceptions of Parent Involvement (Continued)

Variable	Schools in Traditional School Districts	Schools in Districts Governed by Portfolio Management Models	Wald Test
Principal Characteristics			
Principal Racial Match	0.612	0.441	22.52***
Education Degree	0.828	0.878	2.42
Years Principals	6.503	5.577	2.42
Administrative License	0.975	0.943	7.60**
N	4940	240	

Note. $N = 5090$ schools (rounded to the nearest 10th). Data are from the 2017-2018 NTPS Principal Survey.
* $p < .05$. ** $p < .01$. *** $p < .001$.

As seen in Table 4, PMM schools have a mean FRL rate of 81% while traditional schools have an average rate of 58%. Additionally, about 94% of PMM schools are in urban areas while only 26% of traditional schools are found in these locales. According to the NCES (2023), the distribution of high poverty schools varies by school locale. For example, in 2021 36% of students in urban areas attended high poverty schools, which is at least double the proportion of students in suburban, rural, or rural schools (NCES, 2023)[4]. Schools in PMMs also have higher free-reduced lunch rates, 58% in TDs and 81% in PMMs. Additionally, schools in PMMs also have more English Language Learners and are far more likely to be in urban areas (94% of PMMs compared with 26% of TDs). The school choice variable also shows that only about 2% of schools in traditional districts have high charter enrollment while about 45% of schools in PMM districts have charter enrollment at 30% or higher.

[4] https://nces.ed.gov/programs/coe/indicator/clb/free-or-reduced-price-lunch?tid=4

Table 4. Descriptive Statistics for School Characteristics

Variable	Schools in Traditional School Districts	Schools in Districts Governed by Portfolio Management Models	Wald Test
Enrollment	628.26	593.21	1.97
Student-Teacher Ratio	14.96	15.11	0.26
Elementary Schools	0.599	0.609	0.10
Middle Schools	0.176	0.097	13.75***
High Schools	0.171	0.193	0.65
Combined Schools	0.054	0.101	6.50*
Free-Reduced Lunch Rate	0.575	0.813	143.06***
English Language Learners	0.118	0.183	29.91***
Racial Homogeneity	0.553	0.604	4.62*
Charter Schools	0.058	0.180	41.47***
Mos	0.021	0.089	25.69***
Urban	0.255	0.936	1262.03***
Attendance	0.933	0.908	6.95**
School Choice District	0.016	0.445	70.86***
N	4940	240	

Note. $N = 5090$ schools (rounded to the nearest 10th). Data are from 2017-18 NTPS Principal Survey
* $p < .05$. ** $p < .01$. *** $p < .001$.

Tables 5 and 6 include the results of my models using the *academic* and *coproduction* scales[5]. In Tables 5 and 6, Model 1 shows the bivariate results between the PMM variable and the relevant parent involvement measure. Model 2 includes principal characteristics, Model 3 adds school characteristics, and Models 4 and 5 include additional variables to control for other forms of parent involvement. As mentioned previously, the school compact controls for the level of communication and commitment that is outlined in the compact, while the workshops variable indicates participation in parent-oriented events signaling levels of connection to the school

[5] I also run models using the scale items as the dependent variables. These results are summarized in Table 6 and full models are presented in Tables 7 through 14.

community. The coproduction models include a control for the academic results to test my hypothesis that the levels of parent involvement in academic (or personally motivated) activities might influence levels of involvement in coproduction. As predicted in Hypothesis 3, academic involvement may be a precursor to more intensive involvement as exemplified by the coproduction scale items.

3.5 Findings

Table 5 includes the marginal effects of my independent variables on principal perceptions being 50% or higher for *academic involvement*. In the binary models, the total effect of a PMM district lowers the likelihood that a principal will rate academic involvement at 50% or higher by nearly 7 percentage points ($p < .05$). After including controls, this relationship disappears, but the coefficient remains negative in all the models. The other key variables provide no significant association with levels of perceived academic involvement in any of the models. Finding no effect from traditional or PMM charter school principals aligns with findings in prior research indicating that charter school parent involvement only differs from traditional schools in areas related to coproduction like volunteering (Oberfield, 2020).

There are also several interesting findings in the control variables worth highlighting. First, before adding in the school controls, males and non-White principals are less likely to perceive higher levels of academic involvement while years as a principal, time at their current school, and a racial match between the principal and student body are positively associated. These relationships diminish when school controls are included. The exception being years as a school principal, not dependent on tenure at the current school, was significantly ($p > .01$) associated with higher perceived levels of academic involvement.

Table 5. Marginal Effects from Ordered Probit Models Measuring Differences in Principal Perceptions of Academic Involvement – 50% or Greater

Variables	(1)	(2)	(3)	(4)	(5)
Key Variables					
School in PMM District	-0.0674**	-0.0482	-0.0351	-0.0272	-0.0536
	(0.0331)	(0.0355)	(0.0345)	(0.0358)	(0.0373)
School Choice		-0.0554	-0.0346	-0.0362	-0.0559
		(0.0380)	(0.0340)	(0.0358)	(0.0342)
Charter School				0.0319	0.0313
				(0.0197)	(0.0247)
PMM*Charter				0.0689	0.0289
				(0.0421)	(0.0501)
Principal Characteristics					
Male			-0.112***	-0.0170	-0.0163
			(0.0118)	(0.0120)	(0.0147)
Education Degree			0.0196	0.0103	0.00995
			(0.0161)	(0.0129)	(0.0155)
Administrative License			-0.0251	-0.0254	-0.00553
			(0.0323)	(0.0291)	(0.0370)
Years as Principal			0.00373***	0.00274**	0.00414***
			(0.00135)	(0.00120)	(0.00156)
Years at Current School			0.00403**	0.00242	-0.00116
			(0.00189)	(0.00161)	(0.00203)
Minority Principal			-0.0441***	0.0118	-0.00322
			(0.0138)	(0.0123)	(0.0145)
Racial Match			0.0552***	0.0166	0.0125
			(0.0119)	(0.0141)	(0.0166)
Age			-0.00118	0.000174	0.000987
			(0.000828)	(0.000768)	(0.000928)
School Characteristics					
MO				0.00874	0.0342
				(0.0318)	(0.0345)
Enrollment				1.53e-05	4.37e-05***
				(9.48e-06)	(1.15e-05)
Attendance				0.127***	0.0552
				(0.0429)	(0.0461)
FRLP				-0.264***	-0.229***
				(0.0213)	(0.0260)

Note. Standard errors in parentheses. Data are from the NTPS 2017-2018 administration. Observations include 5,180 schools with 240 schools in PMM districts. Numbers are rounded to the nearest 10th according to NCES guidelines. *** $p < .01$. ** $p < .05$. * $p < .10$.

Table 5. Marginal Effects from Ordered Probit Models Measuring Differences in Principal Perceptions of Academic Involvement – 50% or Greater (continued)

Variables	(1)	(2)	(3)	(4)	(5)
School Characteristics					
ELL				0.0518**	0.0576**
				(0.0255)	(0.0268)
Student/Teacher				0.000411	0.000594
				(0.000960)	(0.00106)
Racial				-0.0363	-0.0373
Homogeneity					
				(0.0308)	(0.0371)
Urban				-0.0239*	-0.0215
				(0.0132)	(0.0151)
Middle				-0.192***	-0.133***
				(0.0171)	(0.0209)
High				-0.435***	-0.381***
				(0.0168)	(0.0216)
Combined				-0.218***	-0.181***
				(0.0249)	(0.0288)
Parent Involvement					
School					0.0379***
Compact					
					(0.00521)
Workshops					0.194***
					(0.0122)

Note. Standard errors in parentheses. Data are from the NTPS 2017-2018 administration. Observations include 5,180 schools with 240 schools in PMM districts. Numbers are rounded to the nearest 10th according to NCES guidelines. *** $p < .01$. ** $p < .05$. * $p < .10$.

When I added the variables for school characteristics, Model 4 shows a positive relationship with school attendance and proportions of ELL students, while free-and-reduced lunch participations and school levels with higher grades are associated with lower perceived rates of participation. After adding in the controls for school compact and parent workshop participation, enrollment was positively associated with perceived academic involvement. The marginal effect of enrollment is that for every 1000 additional students, the probability of perceiving high academic involvement increases by 4 percentage points. Proportions of ELL students also still have a positive association with perceived levels of academic involvement. This association is counter-intuitive but may be due to extra efforts at communication and

connection that schools with higher proportions of ELL undertake to reach immigrant families. Free-and-reduced lunch rates are associated with a large negative relationship with parents being involved in academic activities at their child's school. The relationship with school level remained although the coefficients decreased with the inclusion of parent involvement controls. The default group in these models are elementary schools and each of the higher school levels has a negative and significant coefficient as compared with the default. Finally, the presence of a school compact and participation in parent-focused education workshops increase parent academic involvement. The use of a school compact increases the probability of perceived parent participation in academics by 4 percentage points while an increase in the level of parent participation in workshops increases the probability of perceived academic involvement by 19 percentage points.

Next, I turn to the results of my models with coproduction as a dependent variable. These estimates are found in Table 6. In these models neither the PMM variable nor school choice variables are significant, so I cannot determine any differences between PMM districts, high charter enrollment districts or traditional districts. However, holding all else constant, principals in charter schools are 4 percentage points more likely to perceive parent coproduction levels as greater than 50% of the school population when compared to traditional public schools in my full models. There were no significant difference between traditional charters and charter schools in PMM districts in the PMM-Charter interaction term. Based on the coefficients of the variables, a PMM Charter would have a 5 percentage point increase in perceptions of coproduction compared to traditional schools. However, I could not confirm this relationship due to the lack of significance on the interaction term coefficient.

Table 6. Marginal Effects of Ordered Probit Models Measuring Principal Perceptions of Coproduction – 50% or Greater

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Key Variables						
School in PMM District	-0.00442	-0.00265	-0.0108	0.00424	-0.0176	-0.0128
	(0.0202)	(0.0199)	(0.0197)	(0.0206)	(0.0221)	(0.0224)
School Choice		-0.00587	-0.00290	-0.0127	-0.0241	-0.0242
		(0.0312)	(0.0331)	(0.0322)	(0.0224)	(0.0221)
Charter School				0.0767***	0.0399**	0.0385**
				(0.0202)	(0.0160)	(0.0156)
PMM*Charter					0.0279	0.0211
					(0.0385)	(0.0376)
Principal Characteristics						
Male			-0.0447***	-0.0210***	-0.000312	-0.000674
			(0.00777)	(0.00788)	(0.00817)	(0.00817)
Education Degree			-0.00407	-0.00472	-0.000300	-0.00279
			(0.00971)	(0.00912)	(0.00936)	(0.00959)
Administrative License			-0.0152	0.0185	-0.0263	-0.0148
			(0.0265)	(0.0229)	(0.0277)	(0.0256)
Years as Principal			0.00269***	0.00215**	0.00238***	0.00195**
			(0.000823)	(0.000838)	(0.000833)	(0.000837)
Years at Current School			-7.45e-05	-0.000715	-0.00111	-0.00125
			(0.00125)	(0.00123)	(0.00129)	(0.00128)
Minority Principal			0.0396***	0.0901***	0.0466***	0.0463***
			(0.0106)	(0.0126)	(0.00966)	(0.00958)
Principal Racial Match			0.0322***	0.00170	0.00273	0.00107
			(0.00723)	(0.00983)	(0.00888)	(0.00906)
Age			0.000276	0.000604	0.000546	0.000437
			(0.000531)	(0.000537)	(0.000529)	(0.000524)

Note. Standard errors in parentheses. Data are from the NTPS 2017-18 administration. Observations include 5,180 schools with 240 schools in PMM districts. Numbers are rounded to the nearest 10th according to NCES guidelines. *** $p < .01$. ** $p < .05$. * $p < .1$.

Table 6. Marginal Effects of Ordered Probit Models Measuring Principal Perceptions of Coproduction – 50% or Greater (continued)

Variables	(1)	(2)	(3)	(4)	(5)	(6)
School Characteristics						
MO				-0.0308	-0.0106	-0.00883
				(0.0193)	(0.0190)	(0.0190)
Enrollment				3.04e-06	1.29e-05	9.98e-06
				(8.22e-06)	(8.74e-06)	(8.63e-06)
Attendance				0.0842**	0.0484	0.0443
				(0.0358)	(0.0406)	(0.0396)
FRLP				-0.182***	-0.117***	-0.0854***
				(0.0158)	(0.0156)	(0.0157)
ELL				-0.0739***	-0.0719***	-0.0816***
				(0.0239)	(0.0208)	(0.0213)
Student/Teacher				-0.000170	0.000952	0.000680
				(0.000766)	(0.000861)	(0.000866)
Homogeneity				-0.0270	-0.0352*	-0.0436**
				(0.0224)	(0.0200)	(0.0210)
Urban				0.00218	0.00375	0.00359
				(0.00875)	(0.00881)	(0.00882)
Middle				-0.0786***	-0.0353***	-0.0181*
				(0.00835)	(0.00900)	(0.0100)
High				-0.0791***	-0.0500***	-0.00793
				(0.00840)	(0.00935)	(0.0127)
Combine				-0.00151	-0.00832	0.0125
				(0.0150)	(0.0134)	(0.0148)
Parent Involvement						
School Compact					0.0202***	0.0138***
					(0.00390)	(0.00402)
Workshops					0.137***	0.117***
					(0.00643)	(0.00623)
Academic						0.0560***
						(0.00635)

Note. Standard errors in parentheses. Data are from the NTPS 2017-18 administration. Observations include 5,180 schools with 240 schools in PMM districts. Numbers are rounded to the nearest 10th according to NCES guidelines. *** $p < .01$. ** $p < .05$. * $p < .1$.

Before controlling for school characteristics, male principals are less likely to report high levels of parent coproduction while racial match and minority principals both increase the selected levels of parent coproduction. Like academic involvement, tenure as a principal has a positive relationship with perceived levels of participation. This relationship does not exist for

principals who were at the same school for longer amounts of time. After adding in the controls for school characteristics, we see that higher proportions of students receiving free-and-reduced lunch and ELL students decrease perceived levels of coproduction. This result is in direct contrast with the results from academic involvement, although it may be more intuitive. Immigrant parents may not understand the norms of American involvement in public institutions, they may have language barriers, and there may also be fewer resources, such as translation services, to help parents participate in these kinds of activities (Lopez, 2013). Interestingly, the racial homogeneity variable is also negative and significant. A one unit increase in homogeneity is expected to decrease the probability of rating coproduction at 50% or greater by 4 percentage points. Finally, all the parent involvement controls are again positive and significant. My sixth model included academic involvement as an independent variable, and it is also associated with higher levels of coproduction.

I also ran a series of models using each involvement variable as an individual dependent variable to identify measures that might be driving results found in the indices. Table 7 includes a summary of the PMM, charter school, and the PMM-charter interaction term coefficients from models with the individual measures as dependent variables using the full panel of controls. Because of the interaction term, the coefficients represent the difference between traditional public schools in traditional districts and the respective variable category. For example, the PMM variable compares non-charter PMM schools with traditional schools in traditional districts. When compared to traditional public schools, PMMs do not have a significant effect on any of the parent involvement measures except for special subject-area events. Principals in PMM districts are about 9 percentage points ($p < .05$) less likely to perceive 50% or higher participation rates in these types of events. Principals in traditional charter schools are more

likely to perceive higher levels of parent participation in instruction as well as volunteering after controlling all principal and school-level characteristics. The differences between charter schools and traditional public schools found in the analysis of involvement in instruction and volunteering may be driving the results for the model using coproduction scale as a dependent variable. As previously reported in Table 5, principals in charter schools perceived higher levels of parent involvement in coproduction. However, there were no differences between charter and traditional schools in the areas of budgeting and governance.

Table 7. Summary of Marginal Effects for Key Variables from Ordered Probit Models Using Individual Parent Involvement Measures as Dependent Variables

Measure	Variable	Marginal Effects of PMM
Coproduction		
Budget Decisions	PMM	0.00224
		(0.0164)
	Charter	-0.00394
		(0.00959)
	PMM*Charter	0.0215
		(0.0400)
Governance Activities	PMM	-0.0220
		(0.0238)
	Charter	0.0191
		(0.0154)
	PMM*Charter	0.0232
		(0.0467)
Instruction	PMM	-0.00804
		(0.0186)
	Charter	0.0334**
		(0.0165)
	PMM*Charter	-0.0366
		(0.0237)

Note. N = 5090 principals rounded to the nearest 10th. Data are from the 2017-2018 NTPS Principal Survey.
t statistics in parentheses.
* $p < .10$. ** $p < .05$. *** $p < .01$.

Table 7. Summary of Marginal Effects for Key Variables from Ordered Probit Models Using Individual Parent Involvement Measures as Dependent Variables (continued)

Measure	Variable	Marginal Effects of PMM
Volunteer Activities	PMM	-0.0124
		(0.0258)
	Charter	0.0632***
		(0.0211)
	PMM*Charter	0.0578
		(0.0532)
Academic Involvement		
Open houses	PMM	-0.0428
		(0.0407)
	Charter	0.0341
		(0.0292)
	PMM*Charter	0.0432
		(0.0486)
Parent-Teacher Conferences	PMM	-0.0107
		(0.0383)
	Charter	0.0462*
		(0.0279)
	PMM*Charter	0.0175
		(0.0552)
Special Subject-Area Events	PMM	-0.0924**
		(0.0459)
	Charter	0.0178
		(0.0325)
	PMM*Charter	0.0322
		(0.0666)

Note. $N = 5090$ principals rounded to the nearest 10^{th}. Data are from the 2017-2018 NTPS Principal Survey.
t statistics in parentheses.
* $p < .10$. ** $p < .05$. *** $p < .01$.

For further exploration, the results of the full models are also offered in tables 8-14. Another finding of interest is the result on the MO variable in Tables 8 and 9. Being in an MO also affects principal perceptions for items in the coproduction scale. Principals at MOs are about 3 percentage points less likely to perceive higher levels of participation in budgeting and governance. This could be unique to charters with management organizations that are associated

with greater rigidity in policy and curriculum (Scott & DiMartino, 2010) in their structures and may provide fewer opportunities for parent influence in this area.

Table 8. Marginal Effects of Ordered Probit Models Measuring Principal Perceptions of Parent Involvement in Budget Decisions – 50% or greater (Coproduction)

Variables	(1)	(2)	(3)	(4)	(5)
Key Variable					
School in PMM District	0.0311	0.0251	0.00980	0.00867	0.00224
	(0.0218)	(0.0174)	(0.0144)	(0.0158)	(0.0164)
School Choice		0.0146	0.0132	0.0126	0.0119
		(0.0223)	(0.0222)	(0.0214)	(0.0228)
Charter School				0.00866	-0.00394
				(0.0107)	(0.00959)
PMM*Charter				0.00953	0.0215
				(0.0364)	(0.0400)
Principal Characteristics					
Male			-0.00913*	-0.00540	0.00589
			(0.00500)	(0.00488)	(0.00575)
Education Degree			-0.00240	-0.00195	-0.00249
			(0.00662)	(0.00653)	(0.00828)
Administrative License			0.00635	0.00987	-0.0493*
			(0.0149)	(0.0150)	(0.0273)
Years as Principals			0.000998*	0.000959*	0.00125**
			(0.000582)	(0.000574)	(0.000625)
Years at Current School			0.00103	0.000919	0.000447
			(0.000807)	(0.000795)	(0.000856)
Minority Principal			0.0491***	0.0599***	0.0329***
			(0.00798)	(0.00950)	(0.00688)
Racial Match			0.00250	-0.00175	-0.00436
			(0.00509)	(0.00689)	(0.00682)
Age			0.000383	0.000345	0.000577
			(0.000420)	(0.000420)	(0.000423)
School Characteristics					
MO				-0.0249**	-0.0250**
				(0.00961)	(0.0110)
Enrollment				2.63e-06	1.07e-05
				(6.65e-06)	(7.04e-06)
Attendance				0.0308	0.0423
				(0.0275)	(0.0339)
FRLP				-0.0301***	-0.000878
				(0.00982)	(0.0104)
ELL				-0.00640	-0.0147
				(0.0130)	(0.0155)

Note. Standard errors are in parentheses. Data are from the NTPS 2017-2018 administration. Observations include 5,180 schools with 240 schools in PMM districts. Numbers are rounded to the nearest 10th according to NCES guidelines.
*** $p < .01$. ** $p < .05$. * $p < .1$.

Table 8. Marginal Effects of Ordered Probit Models Measuring Principal Perceptions of Parent Involvement in Budget Decisions – 50% or greater (Coproduction) (continued)

Variables	(1)	(2)	(3)	(4)	(5)
Student/Teacher				0.000252	0.000791
				(0.000587)	(0.000645)
Homogeneity				0.00500	-0.00607
				(0.0168)	(0.0165)
Urban				0.00228	-0.00693
				(0.00614)	(0.00633)
Middle				-0.0199***	-0.000834
				(0.00532)	(0.00746)
High				-0.0164**	-0.00366
				(0.00677)	(0.00955)
Combined				0.0291*	0.0247**
				(0.0158)	(0.0115)
Parent Involvement					
School Compact					0.0113***
					(0.00290)
Workshops					0.0709***
					(0.00589)

Note. Standard errors are in parentheses. Data are from the NTPS 2017-2018 administration. Observations include 5,180 schools with 240 schools in PMM districts. Numbers are rounded to the nearest 10th according to NCES guidelines.
*** $p < .01$. ** $p < .05$. * $p < .1$.

Table 9. Marginal Effects from Probit Models Measuring Principals Perceptions of Parent Involvement in Governance Activities – 50% or greater (Coproduction)

Variables	(1)	(2)	(3)	(4)	(5)
Key Variable					
School in PMM District	0.00237	0.00211	-0.00254	0.00606	-0.0220
	(0.0223)	(0.0211)	(0.0214)	(0.0253)	(0.0238)
School Choice		0.000828	0.00643	-0.00118	-0.00823
		(0.0341)	(0.0362)	(0.0372)	(0.0252)
Charter School				0.0384**	0.0191
				(0.0162)	(0.0154)
PMM*Charter				0.0483	0.0232
				(0.0575)	(0.0467)
Principal Characteristics					
Male			-0.0374***	-0.0227***	-0.00273
			(0.00774)	(0.00761)	(0.00854)
Education Degree			-0.00407	-0.00266	0.00517
			(0.00919)	(0.00883)	(0.00931)
Administrative License			0.0150	0.0294	-0.00950
			(0.0222)	(0.0212)	(0.0220)
Years as Principal			0.00172**	0.00127	0.00251***
			(0.000849)	(0.000876)	(0.000890)
Years at Current School			0.000543	9.69e-05	-0.00182
			(0.00122)	(0.00120)	(0.00129)
Minority Principal			0.0376***	0.0815***	0.0453***
			(0.0106)	(0.0127)	(0.0101)
Racial Match			0.0266***	0.00214	-0.00280
			(0.00723)	(0.00979)	(0.0102)
Age			0.000864*	0.00114**	0.00127**
			(0.000487)	(0.000477)	(0.000516)
School Characteristics					
MO				-0.0409***	-0.0342**
				(0.0155)	(0.0172)
Enrollment				2.36e-05***	2.60e-05***
				(8.80e-06)	(9.47e-06)
Attendance				0.0767**	0.0494
				(0.0377)	(0.0450)
FRLP				-0.153***	-0.102***
				(0.0158)	(0.0153)

Note. Standard errors in parentheses. Data come from the NTPS 2017-18 administration. Observations include 5,180 schools with 240 schools in PMM districts. Numbers are rounded to the nearest 10th according to NCES guidelines.

*** $p < .01$. ** $p < .05$. * $p < .1$.

Table 9. Marginal Effects from Probit Models Measuring Principals Perceptions of Parent Involvement in Governance Activities – 50% or greater (Coproduction) (continued)

Variables	(1)	(2)	(3)	(4)	(5)
School Characteristics					
ELL				-0.0515**	-0.0742***
				(0.0250)	(0.0261)
Student/Teacher				-0.000661	0.000358
				(0.000797)	(0.000899)
Homogeneity				-0.0134	-0.0167
				(0.0229)	(0.0234)
Urban				0.00284	0.00438
				(0.00905)	(0.0100)
Middle				-0.0569***	-0.00826
				(0.00845)	(0.0107)
High				-0.0631***	-0.0366***
				(0.00867)	(0.0113)
Combined				0.00376	0.0151
				(0.0163)	(0.0172)
Parent Involvement					
School Compact					0.0196***
					(0.00398)
Workshops					0.126***
					(0.00626)

Note. Standard errors in parentheses. Data come from the NTPS 2017-18 administration. Observations include 5,180 schools with 240 schools in PMM districts. Numbers are rounded to the nearest 10th according to NCES guidelines.
*** $p < .01$. ** $p < .05$. * $p < .1$.

Table 10 also includes results indicating that schools in districts with high charter enrollment (school choice) have lower levels of perceived volunteering in schools. If higher levels of charter enrollment within a district are associated with new charter schools, this result may be related to findings from Murray et al. (2020) that indicate the newly formed schools have lower levels of parent involvement. Homogeneity is also weakly negative for volunteering in the full model.

Table 10. Marginal Effects from Ordered Probit Models Measuring Principal Perceptions of Parent Involvement in Instruction – 50% or greater (Coproduction)

Variables	(1)	(2)	(3)	(4)	(5)
Key Variable					
School in PMM District	0.0162	0.00676	-0.00299	0.0113	-0.00804
	(0.0224)	(0.0187)	(0.0172)	(0.0214)	(0.0186)
School Choice		0.0288	0.0273	0.0202	0.00623
		(0.0305)	(0.0300)	(0.0299)	(0.0246)
Charter School				0.0511***	0.0334**
				(0.0168)	(0.0165)
PMM*Charter				-0.0306	-0.0366
				(0.0277)	(0.0237)
Principal Characteristics					
Male			-0.0256***	-0.00977	0.00353
			(0.00663)	(0.00700)	(0.00748)
Education Degree			0.00557	0.00709	0.00863
			(0.00861)	(0.00781)	(0.00796)
Administrative License			-0.00336	0.0189	0.00382
			(0.0211)	(0.0180)	(0.0180)
Years as Principal			0.000798	0.000436	0.000649
			(0.000774)	(0.000770)	(0.000849)
Years at Current School			0.000992	0.000750	-0.000584
			(0.00103)	(0.00103)	(0.00112)
Minority Principal			0.0432***	0.0658***	0.0370***
			(0.00967)	(0.0120)	(0.00923)
Racial Match			0.0238***	0.0134	0.00587
			(0.00653)	(0.00858)	(0.00843)
Age			0.000124	0.000291	0.000557
			(0.000484)	(0.000487)	(0.000506)
School Characteristics					
MO				-0.00592	0.0120
				(0.0170)	(0.0216)
Enrollment				1.04e-05	1.17e-05
				(8.20e-06)	(9.13e-06)
Attendance				0.0630*	-0.00761
				(0.0367)	(0.0368)
FRLP				-0.0682***	-0.0410***
				(0.0146)	(0.0142)
ELL				-0.0273	-0.0331
				(0.0194)	(0.0219)
Student/Teacher				-0.000285	9.27e-05
				(0.000734)	(0.000872)
Homogeneity				-0.00859	-0.0182
				(0.0209)	(0.0193)

Note. Standard errors in parentheses. Data are from the NTPS 2017-2018 administration. Observations include 5,180 schools with 240 schools in PMM districts. Numbers are rounded to the nearest 10th according to NCES guidelines. *** $p < .01$. ** $p < .05$, * $p < .1$.

Table 10. Marginal Effects from Ordered Probit Models Measuring Principal Perceptions of Parent Involvement in Instruction – 50% or greater (Coproduction) (continued)

Variables	(1)	(2)	(3)	(4)	(5)
School Characteristics					
Urban				-0.00400	0.000532
				(0.00809)	(0.00866)
Middle				-0.0423***	-0.0104
				(0.00742)	(0.00933)
High				-0.0596***	-0.0294***
				(0.00662)	(0.00989)
Combined				0.0110	0.00895
				(0.0157)	(0.0136)
Parental Involvement					
School Compact					0.0183***
					(0.00355)
Workshops					0.112***
					(0.00633)

Note. Standard errors in parentheses. Data are from the NTPS 2017-2018 administration. Observations include 5,180 schools with 240 schools in PMM districts. Numbers are rounded to the nearest 10th according to NCES guidelines. *** $p < .01$. ** $p < .05$, * $p < .1$.

Table 11. Marginal Effects from Ordered Probit Models Measuring Differences in Principals Perceptions of Parent Involvement in Volunteer Activities – 50% or greater (Coproduction)

Variables	(1)	(2)	(3)	(4)	(5)
Key Variables					
School in PMM District	-0.00650	-0.00267	-0.00386	0.00692	-0.0124
	(0.0207)	(0.0205)	(0.0207)	(0.0257)	(0.0258)
School Choice		-0.0125	-0.0105	-0.0200	-0.0473**
		(0.0310)	(0.0327)	(0.0331)	(0.0201)
Charter School				0.0781***	0.0632***
				(0.0224)	(0.0211)
PMM*Charter				0.0372	0.0578
				(0.0593)	(0.0532)
Principal Characteristics					
Male			-0.0560***	-0.0202**	-0.00266
			(0.00837)	(0.00871)	(0.00934)
Education Degree			-0.000439	0.000224	0.00997
			(0.0119)	(0.0108)	(0.00972)
Administrative License			-0.0369	0.00382	-0.0210
			(0.0304)	(0.0244)	(0.0313)
Years as Principal			0.00221**	0.00138	0.00132
			(0.00106)	(0.00104)	(0.00108)
Years at Current School			0.000904	0.000144	-0.00104
			(0.00142)	(0.00137)	(0.00142)
Minority Principal			0.0214*	0.0847***	0.0520***
			(0.0110)	(0.0132)	(0.0116)
Racial Match			0.0415***	3.44e-05	0.00358
			(0.00850)	(0.0107)	(0.0109)
Age			9.41e-05	0.000573	0.000799
			(0.000626)	(0.000626)	(0.000601)
School Characteristics					
MO				-0.0199	-0.00843
				(0.0247)	(0.0235)
Enrollment				1.02e-05	8.68e-06
				(9.62e-06)	(9.19e-06)
Attendance				0.0850**	0.0662
				(0.0385)	(0.0459)
FRLP				-0.234***	-0.147***
				(0.0159)	(0.0170)
ELL				-0.0809***	-0.0909***
				(0.0267)	(0.0256)
Student/Teacher				0.000811	0.00216**
				(0.000862)	(0.000936)
Homogeneity				-0.0175	-0.0441*
				(0.0254)	(0.0224)

Note. Standard errors in parentheses. Data come from the NTPS 2017-18 administration. Observations include 5,180 schools with 240 schools in PMM districts. Numbers are rounded to the nearest 10th according to NCES guidelines. *** $p < .01$. ** $p < .05$. * $p < .1$.

Table 11. Marginal Effects from Ordered Probit Models Measuring Differences in Principals Perceptions of Parent Involvement in Volunteer Activities – 50% or greater (Coproduction) (continued)

Variables	(1)	(2)	(3)	(4)	(5)
				(0.00950)	(0.00994)
Middle				-0.106***	-0.0621***
				(0.00835)	(0.01000)
High				-0.114***	-0.0795***
				(0.00891)	(0.00982)
Combine				-0.0333**	-0.0210
				(0.0156)	(0.0164)
Parental Involvement					
School Compact					0.0197***
					(0.00438)
Workshops					0.135***
					(0.00633)

Note. Standard errors in parentheses. Data come from the NTPS 2017-18 administration. Observations include 5,180 schools with 240 schools in PMM districts. Numbers are rounded to the nearest 10th according to NCES guidelines. *** p < .01. ** *p* < .05. * *p* < .1.

Table 12. Marginal Effects from Ordered Probit Models Measuring Differences in Principal Perceptions of Parent Involvement in Open Houses – 50% or Greater (Academic Involvement)

Variables	(1)	(2)	(3)	(4)	(5)
Key Variables					
School in PMM District	-0.0638**	-0.0470	-0.0322	-0.0143	-0.0428
	(0.0322)	(0.0358)	(0.0355)	(0.0369)	(0.0407)
School Choice		-0.0499	-0.0281	-0.0219	-0.0543
		(0.0423)	(0.0383)	(0.0413)	(0.0444)
Charter School				0.0331	0.0341
				(0.0253)	(0.0292)
PMM*Charter				0.0934**	0.0432
				(0.0422)	(0.0486)
Principal Characteristics					
Male			-0.137***	-0.0446***	-0.0355**
			(0.0121)	(0.0120)	(0.0151)
Education Degree			0.0296*	0.0260**	0.0263
			(0.0151)	(0.0131)	(0.0181)
Administrative License			-0.0515	-0.0664**	-0.0721**
			(0.0344)	(0.0308)	(0.0361)
Years as Principal			0.00515***	0.00396***	0.00388**
			(0.00140)	(0.00129)	(0.00167)
Years at Current School			0.00459**	0.00286	0.000285
			(0.00205)	(0.00177)	(0.00225)
Minority Principal			-0.0481***	0.0169	0.0129
			(0.0150)	(0.0139)	(0.0178)
Racial Match			0.0795***	0.0189	0.00623
			(0.0126)	(0.0144)	(0.0192)
Age			-0.00202**	-0.000398	0.000561
			(0.000818)	(0.000771)	(0.000913)
School Characteristics					
MO				-0.0116	-0.00101
				(0.0370)	(0.0417)
Enrollment				4.72e-05***	7.26e-05***
				(1.03e-05)	(1.31e-05)
Attendance				0.141**	0.0829
				(0.0582)	(0.0711)
FRLP				-0.289***	-0.230***
				(0.0237)	(0.0304)
ELL				-0.00819	0.0150
				(0.0247)	(0.0264)
Student/Teacher				-9.98e-05	-0.000705
				(0.00113)	(0.00130)
Homogeneity				0.0214	0.0110
				(0.0314)	(0.0414)

Note. Standard errors are in parentheses. Data are from the NTPS 2017-18 administration. Observations include 5,180 schools with 240 schools in PMM districts. Numbers are rounded to the nearest 10th according to NCES guidelines.

*** $p < .01$. ** $p < .05$. * $p < .1$.

Table 12. Marginal Effects from Ordered Probit Models Measuring Differences in Principal Perceptions of Parent Involvement in Open Houses – 50% or Greater (Academic Involvement) (continued)

Variables	(1)	(2)	(3)	(4)	(5)
Urban				-0.0390***	-0.0361**
				(0.0144)	(0.0166)
Middle				-0.169***	-0.106***
				(0.0176)	(0.0221)
High				-0.458***	-0.393***
				(0.0167)	(0.0228)
Combined				-0.244***	-0.185***
				(0.0261)	(0.0297)
Parental Involvement					
School Compact					0.0411***
					(0.00586)
Workshops					0.173***
					(0.0110)

Note. Standard errors are in parentheses. Data are from the NTPS 2017-18 administration. Observations include 5,180 schools with 240 schools in PMM districts. Numbers are rounded to the nearest 10th according to NCES guidelines.
*** $p < .01$. ** $p < .05$. * $p < .1$.

Table 13. Marginal Effects of Ordered Probit Models Measuring Principal Perceptions of Parent Attendance at Parent-Teacher Conferences – 50% or greater (Academic Involvement)

Variables	(1)	(2)	(3)	(4)	(5)
Key Variable					
School in PMM District	-0.0175	-0.0118	-0.00449	0.00499	-0.0107
	(0.0336)	(0.0368)	(0.0375)	(0.0373)	(0.0383)
School Choice		-0.0190	-0.00970	-0.0465	-0.0578
		(0.0423)	(0.0398)	(0.0418)	(0.0377)
Charter School				0.0492**	0.0462*
				(0.0233)	(0.0279)
PMM*Charter				0.0487	0.0175
				(0.0620)	(0.0552)
Principal Characteristics					
Male			-0.122***	0.00167	0.00611
			(0.0139)	(0.0137)	(0.0168)
Education Degree			0.0117	0.00435	0.00135
			(0.0184)	(0.0146)	(0.0184)
Administrative License			-0.0314	-0.0328	-0.0340
			(0.0370)	(0.0315)	(0.0353)
Years as Principal			0.00285*	0.00135	0.00234
			(0.00161)	(0.00137)	(0.00181)
Years at Current School			0.00563***	0.00434**	0.000266
			(0.00203)	(0.00178)	(0.00228)
Minority Principal			-0.0425**	0.0129	-0.00685
			(0.0165)	(0.0155)	(0.0185)
Racial Match			0.0339**	0.00356	-0.00682
			(0.0136)	(0.0154)	(0.0183)
Age			-0.00118	0.000103	0.000919
			(0.000925)	(0.000849)	(0.00107)
School Characteristics					
MO				-0.0438	-0.0102
				(0.0397)	(0.0397)
Enrollment				-1.00e-05	2.53e-05*
				(1.14e-05)	(1.52e-05)
Attendance				0.107*	0.0581
				(0.0552)	(0.0714)
FRLP				-0.292***	-0.238***
				(0.0239)	(0.0295)
ELL				0.0984***	0.0955**
				(0.0343)	(0.0385)
Student/Teacher				0.00167	0.00212
				(0.00130)	(0.00160)
Homogeneity				-0.0346	-0.00456
				(0.0347)	(0.0418)

Note. Standard errors are in parentheses. Data are from the NTPS 2017-18 administration. Observations include 5,180 schools with 240 schools in PMM districts. Numbers are rounded to the nearest 10th according to NCES guidelines.
*** $p < .01$. ** $p < .05$. * $p < .1$.

Table 13. Marginal Effects of Ordered Probit Models Measuring Principal Perceptions of Parent Attendance at Parent-Teacher Conferences – 50% or greater (Academic Involvement) (continued)

Variables	(1)	(2)	(3)	(4)	(5)
Urban				0.00243	0.00983
				(0.0141)	(0.0160)
Middle				-0.258***	-0.190***
				(0.0187)	(0.0233)
High				-0.494***	-0.420***
				(0.0174)	(0.0245)
Combined				-0.220***	-0.180***
				(0.0241)	(0.0283)
Parental Involvement					
School Compact					0.0432***
					(0.00584)
Workshops					0.176***
					(0.0120)

Note. Standard errors are in parentheses. Data are from the NTPS 2017-18 administration. Observations include 5,180 schools with 240 schools in PMM districts. Numbers are rounded to the nearest 10th according to NCES guidelines.
*** $p < .01$. ** $p < .05$. * $p < .1$.

Table 14. Marginal Effects from Ordered Probit Models Measuring Differences in Principal Perceptions of Parent Attendance at Special Subject Area Events – 50% or Greater (Academic Involvement)

Variables	(1)	(2)	(3)	(4)	(5)
Key Variables					
School in PMM District	-0.111***	-0.117***	-0.0948**	-0.0959**	-0.0924**
	(0.0382)	(0.0413)	(0.0426)	(0.0468)	(0.0459)
School Choice		0.0211	0.0477	0.0385	0.0136
		(0.0450)	(0.0415)	(0.0429)	(0.0411)
Charter School				0.0241	0.0178
				(0.0309)	(0.0325)
PMM*Charter				0.113*	0.0322
				(0.0668)	(0.0666)
Principal Characteristics					
Male			-0.115***	-0.0298**	0.000327
			(0.0140)	(0.0149)	(0.0158)
Education Degree			0.0224	0.0177	-0.00474
			(0.0193)	(0.0177)	(0.0185)
Administrative License			-0.0316	-0.0273	0.00800
			(0.0445)	(0.0437)	(0.0417)
Years as Principal			0.00532***	0.00411***	0.00450***
			(0.00167)	(0.00154)	(0.00158)
Years at Current School			0.00536**	0.00371*	0.000803
			(0.00218)	(0.00203)	(0.00208)
Minority Principal			-0.0462***	0.0265*	0.00987
			(0.0163)	(0.0142)	(0.0164)
Racial Match			0.114***	0.0368**	0.0291
			(0.0133)	(0.0179)	(0.0201)
Age			-2.37e-05	0.00105	0.00156
			(0.000974)	(0.000908)	(0.000994)
School Characteristics					
MO				-0.0492	-0.00412
				(0.0427)	(0.0416)
Enrollment				2.09e-05	2.80e-05*
				(1.33e-05)	(1.44e-05)
Attendance				0.170***	0.0540
				(0.0547)	(0.0607)
FRLP				-0.347***	-0.243***
				(0.0251)	(0.0268)
ELL				0.0196	0.0332
				(0.0343)	(0.0330)
Student/Teacher				-0.00149	0.00122
				(0.00123)	(0.00145)
Homogeneity				0.0486	0.00556
				(0.0388)	(0.0428)

Note. Standard errors are in parentheses. Data are from the NTPS 2017-18 administration. Observations include 5,180 schools with 240 schools in PMM districts. Numbers are rounded to the nearest 10th according to NCES guidelines.

*** $p < .01$. ** $p < .05$. * $p < .1$.

Table 14. Marginal Effects from Ordered Probit Models Measuring Differences in Principal Perceptions of Parent Attendance at Special Subject Area Events – 50% or Greater (Academic Involvement) (continued)

Variables	(1)	(2)	(3)	(4)	(5)
				(0.0161)	(0.0172)
Middle				-0.189***	-0.123***
				(0.0192)	(0.0210)
High				-0.361***	-0.274***
				(0.0151)	(0.0193)
Combined				-0.117***	-0.124***
				(0.0283)	(0.0274)
Parental Involvement					
School Compact					0.0364***
					(0.00709)
Workshops					0.268***
					(0.00873)

Note. Standard errors are in parentheses. Data are from the NTPS 2017-18 administration. Observations include 5,180 schools with 240 schools in PMM districts. Numbers are rounded to the nearest 10th according to NCES guidelines.
*** $p < .01$. ** $p < .05$. * $p < .1$.

3.5.1 Sensitivity Analyses

Due to the differences in locale and free-and-reduced lunch rates, I also tested my models in a restricted sample. I reduced the sample to schools in urban areas and then schools in urban areas with 75% or higher free-and -reduced lunch rates for the coproduction and academic involvement variables. These models reveal no significant differences from my primary models, so I will not discuss their results, but the marginal effects are provided in Appendix A.

3.6 Discussion

My empirical models reveal some interesting differences between schools and levels of parent involvement and coproduction. In the bivariate model, schools in PMM districts have lower levels of academic involvement. After controlling for principal and community characteristics, the significance in this relationship disappears. However, it is important to take note of the bivariate result as these districts have higher free and reduced lunch rates when compared to traditional districts. These characteristics may contribute to the relationships in the

bivariate results and continue to create barriers to parent involvement in PMM districts. In the full model for academic involvement, principal tenure as well as student body demographics seem to influence levels of academic involvement at a school. As I expected PMM schools to be associated with lower levels of academic involvement, this finding does not support my first hypothesis (*H1*).

When examining coproduction, the coefficient on the PMM variable is negative, but it is not statistically significant. Thus, *H2* is also not confirmed. Interestingly, traditional charter schools are associated with higher levels of coproduction involvement, but not with academic involvement. This may be a result of academic involvement being rated highly in general. It also suggests characteristics of charter schools like smaller communities, decentralized governance, and parent selection that may positively affect parent coproduction. Furthermore, academic involvement is positively and significantly correlated with higher levels of coproduction, which confirms *H3*. Additionally, these findings suggest that building a culture of engagement is important to developing coproduction in schools. Prior research has pointed to the importance of school-level parent involvement initiatives (Hamlin & Cheng, 2016; Park & Holloway, 2013; Oberfield, 2020) and my results confirm that this still remains the case even after controlling for district-level factors.

When exploring the individual parent involvement items, PMMs have a negative association with parent participation in special subject area events. This finding is surprising in the absence of other significant relationships and raises some questions about the nature of these events and why traditional schools in PMMs may have lower participation in them. Unlike other areas of academic involvement, special subject area events may not be related as directly to one's own child. Park and Holloway (2013) distinguish between private good and public good

involvement where private good involvement has a direct benefit to the family and public good benefits are distributed among the school population. If this is the case, this finding may indeed point to a lack of bonding between parents in PMMs and the school community at large.

Finally, the negative influence of homogeneity on coproduction is interesting given the theoretical frameworks of collective action and coproduction that point to cohesion, trust, and social networks to drive civic engagement (Putnam, 2001). However, it may be that more diverse communities promote involvement in schools through intentional outreach to diverse communities that seek to connect parents and build social relationships through the school.

3.6.1 Limitations and Contributions

The results of this investigation reveal important lessons for school districts as well as suggesting lines of inquiry for future research. Parent involvement, and specifically coproduction, are an important component of the production of education services. Schools and districts intent on improving education performance are often focused on what policies and strategies work best to increase this involvement. Although some case studies point to disenfranchisement of parents in a PMM (e.g., New Orleans and Memphis), the relationships in this data suggest that PMMs are often no different than traditional schools but may have lower levels of parent connection to the broader school community when parents are asked to participate in certain types of events. While this result on its own might point to a weakness in the PMM model, it is beyond the capacity of this data to identify why this is occurring and whether the relationships are correlational or causal. Thus, future research should seek to identify the mechanisms that diminish the relationships between schools and parents. Do parents feel less connected to PMM schools because of upheaval in staff and structure? Could this finding change over time as PMMs are more established? Ideally a longitudinal dataset showing change over

time might shed light on the causal nature of the district policies. Furthermore, qualitative and case studies may be necessary to provide details of the particular practices engaged in each PMM district. Future research should explore parent awareness and perceptions of PMMs in greater detail to shed light on how they impact parent involvement motivation. Given the null results on many of the district level variables and principal characteristics (in the full models), it may be that parent involvement is influenced more by school-level factors.

There are key limitations to this research that temper the conclusions I can make. First, the data are cross-sectional, which means that I am only able to speculate on the occurrence of certain types of relationships in the data, but I cannot determine the causal nature of PMMs on these relationships. The NTPS also captures perceptional data that may not accurately reflect the levels of parent engagement and participation in coproduction. Additionally, I do not have concrete information from the data on the kinds of activities the schools or districts are pursuing as well as the kinds of parents who are most often involved in the school. This limitation again affects my ability to draw conclusions about why these relationships may be occurring. Finally, there may be selection bias due to certain kinds of principals being drawn to or hired in PMM districts. While researchers found differences between TPS and Charter school principals (Ni et al., 2015), there is no current research to identify potential differences between PMM and traditional districts. As a result, methods that could create balanced comparison groups are not feasible as there are no clear characteristics that determine selection (Heinrich et al., 2010). Future research should further investigate characteristics that may predispose principals to lead schools in reform environments.

Despite these limitations, this paper contributes significant findings to the literature on PMMs and parent involvement and coproduction. My findings confirm the importance of school-

level initiatives to increase parent involvement. School compacts, attendance, and other types of involvement can lead to more complex levels of involvement such as governance or PTA participation. Although there are no relationships between traditional PMM schools and my involvement scales, the differences in involvement between charter schools and PMM charters suggest that a PMM district may decrease some of the positive parent involvement effects associated with charter schools.

This chapter explored coproduction from the lens of parent involvement in a wide range of school activities. The following chapters extend this research to investigate the relationship between PMMs and more formal methods of coproduction such as financial coproduction through non-profit organizations.

Chapter IV: PTAs and Portfolio Management Models- Evidence of Financial Coproduction

The prior chapter explored the levels of various types of parent involvement in a school as reported by principals. In this chapter, I explore parent-led organizations. As explained previously, parent involvement within a school may take on many forms ranging from personal interactions with teachers and administrators (i.e., parent-teacher conferences) or civic interaction that may be more community oriented (i.e., fundraising for school support). Researchers distinguished between these types of parent involvement as a private-good parent involvement and public-good parent involvement (Boylan et al., 2021; Park & Holloway, 2017). Private-good involvement can be defined as activities that "primarily benefit the involved parents' own child" (Boylan et al., 2021, p. 2). Examples of private-good involvement include parent-teacher conferences or attending a child's school performance.

Public-good parent involvement, on the other hand, comprises activities that may benefit the school at large such as volunteering, fundraising, and participation in budget or instructional decisions. Parent organizations, specifically, represent a more formal modality for parent involvement as they offer the opportunities for parents to directly support schools through governance and financial support (Schaller & Nisbet, 2019). Parent organizations include PTAs that are affiliated with the National PTA, as well as unaffiliated parent-teacher organizations, and booster clubs. These organizations are parent-led and provide venues for parents to communicate and work with school leaders. Parents may work collaboratively to fundraise, volunteer, and participate in strategic decisions. The support these organizations provide to schools affects parents personally, via services for their children, as well as school communities at large.

Parent involvement in general was promoted through several federal policies including No Child Left Behind and Race to the Top (Park & Holloway, 2017) with the idea being that

increased parent involvement, particularly in schools with lower socioeconomic status, will improve student achievement. PTAs in particular were identified as one mechanism where parents promote opportunities for their children by advocating and fundraising for materials or activities to enhance education at the school (Cucchiara, 2013; Murray et al., 2019; Posey-Maddox, 2013). Additionally, PTAs[6] are increasingly becoming essential supports for K-12 public schools. They offer services that assist schools in their objective of improving student achievement including extracurricular, academic support programs, professional development, and fundraising services. In some cases, where budgets were reduced, PTA funding may even be used to provide funds for school staffing (Schaller & Nisbet, 2020). On the other hand, researchers found that PTAs may exacerbate inequities by allowing schools in wealthier communities to tap into unrestricted sources of funding to support major innovations at schools (Murray et al., 2019; Schaller & Nisbet, 2020). In fact, some districts enacted policies to pool funds raised by PTAs and distribute them equally among district schools (Nisbet, 2021; Schaller & Nisbet, 2020).

Regardless of how the funding is being used or distributed, the existence of PTAs represents a fundamental achievement of collective action for the benefit of community good. Collective action in the form of coproduction may be less present in communities with lower levels of social capital. Coproduction occurs when "government and the public both contribute to the production of public services" (Thomas, 2012 p85). Coproduction is particularly relevant to education in America as the system of education has been developed and managed at local levels involving key stakeholders such as parents, the business community, teachers, and politicians.

[6] For the purposes of the following two chapters, I group all school-supporting parent organizations including traditional parent-teacher associations, parent-teacher organizations, and parent-teacher-student organizations under the term PTAs.

Schools in urban areas, or in areas with high concentrations of poverty, may have lower levels of parent coproduction due to lower levels of human and social capital (Paarlberg & Gen, 2009). Due to the emphasis placed on parent involvement by the federal government as well as the documented benefits, investigating the relationship between governance models and management structures and evidence of parent coproduction is key to understanding the impact these reforms may have on a community. As different communities explore education reforms, it is important to understand the effects that policy design can have on community coproduction. School reform efforts such as PMMs involve contracting out the management of some district schools to education management organizations as well as emphasizing performance management practices in education (Bulkley et al., 2010). These policies may affect the levels of involvement parents have with their child's school. I explore the following research questions in this chapter:

1. Are there differences in PTA activity in PMM and traditional school districts?
2. What factors influence the activity of PTAs in PMM districts?

This essay explores the dynamics of PTAs in school districts nationally. PTAs can be considered to engage in both co-managing and co-financing (Bovaird & Loeffler, 2012). Their presence and fundraising levels potentially demonstrate the extent to which parents engage with management and financial coproduction within PMM districts. I investigate the activity levels of PTA organizations based on the school district model while controlling for nonprofit and community characteristics. I focus my analyses on parent-led organizations using data from the 2018 National Center for Charitable Statistics (NCCS) Business Master Files combined with publicly available data from the American Community Survey (ACS) and the National Center for Education Statistics (NCES) Common Core of Data (CCD) to investigate these relationships

overtime. To date, a handful of researchers examined the characteristics of school communities and the levels of fundraising in parent-teacher-organizations (Murray et al., 2019; Nelson & Gazley, 2014; Paarlberg & Gen, 2009). However, these studies often focus on a narrow geographic scope and they do not consider methods of school reform. This paper contributes to the literature in two significant ways. First, it describes the relationship district governance may have on the levels of coproduction of education. Prior research on PMMs focused primarily on performance results as measured by academic achievement (see Bulkley et al., 2010). While this is a necessary lens for evaluation, there are other effects to consider as well. Additionally, the analysis continues and furthers investigation into coproduction in public schools through formal organizations and the infusion of private funds into public schools. By utilizing more nationally focused data, I can compare district characteristics and test previous findings in the context of an expanded population.

In the next sections I discuss the literature describing coproduction through PTA organizations and then discuss the literature on the activity levels of PTAs. I also provide detailed information about the development of the sample for this analysis as well as some more detailed discussion of the districts included in the sample. I then discuss my methods and results and conclude with a discussion about the limitations and implications for this study.

4.1 Factors influencing Coproduction

Understanding who participates in coproduction is central to developing hypotheses on coproduction in PMMs. However, the literature about who coproduces and where coproduction occurs is thin. Scholars tended to draw upon theories of political participation to investigate factors influencing coproduction (Marschall, 2004; Uzochukwu & Thomas, 2018). Coproduction is often associated with the characteristics of individuals, the context of the community, the

relationships between people within the community and the levels of trust they have in government institutions, and the feelings of efficacy citizens possess about their efforts (Jakobsen & Andersen, 2013; Marschall, 2004; Uzochukwu & Thomas, 2018). In general, individuals with higher SES were more active in coproduction (Marschall, 2004; Putnam, 2000). Income and education level are associated with greater levels of civic involvement. Higher income and education could provide individuals with more resources to offer civic organizations as well as elevated interpersonal skills necessary for collaboration. As these characteristics are aggregated to the community level, coproduction is more evident in higher SES communities. In addition to greater resources, communities with higher SES may be more stable with lower levels of mobility, higher homeownership, greater public order, and quality of life (Marschall, 2004).

Citizens' feelings of efficacy, relationships within their community and trust in the government may also be a determining factor in desire to coproduce (Alford, 2002; Marschall, 2004; Marschall & Stolle, 2004; Putnam, 2001). In the case of policing, Scott (2002) found that increased access to police through community policing programs promoted the collective action of citizens by building trust and relationships. Additionally, desires to belong and encouragement from neighbors or friends may also spur individuals to participate in coproduction to "feel a part of a community" (Uzochukwu & Thomas, 2018, p. 516). Additionally, Jakobsen and Andersen (2013) posited that lower levels of education may also "reduce service users' understanding of the relationship between their own contributions and ultimate outcomes" (p. 707), which would, in turn, reduce feelings of efficacy.

Neighborhood and community context may also influence levels of coproduction. Neighborhoods experiencing elevated levels of crime or chronic poverty may lack trust,

cohesion, and stabilizing infrastructure that would generate the social capital necessary for coproduction (Bryk et al., 2010; Jakobsen & Andersen, 2013; Marschall, 2004).

I now turn to reviewing the literature on PTA activity, as a form of coproduction, in public schools and districts.

4.2 Parent Teacher Associations

In some regards, PTAs are fixtures of an American style of education. The first PTAs were formed in the early 20th century. Scholars associate the emergence of these organizations as an outlet for parent voice as school systems became more centralized and bureaucratized (Boylan et al., 2020). They provide a formal mechanism for parents to express opinions, raise funds, and build relationships with teachers and other parents (Bryk et al., 2010). These parent-led organizations increased in number as well as dollars contributed to school districts across the country in recent decades. Between 1995 and 2010, the number of PTAs increased by 166.7% and their revenue increased by 228.7% during the same period (Nelson & Gazley, 2014). Thus, these organizations represent a significant expression of civic participation.

As mentioned previously, there are a limited number of studies that explored the fundraising activity of parent-teacher organizations. Table 15 summarizes the literature from three key studies that explored financial coproduction in school-supporting nonprofits. Like research on coproduction and political participation, this literature finds relationships with the characteristics of the school community and the activity levels of PTAs. Factors such as school size, racial composition, community wealth, and school finances all have a relationship with fundraising in PTA organizations. Community cohesion and trust are important foundations for civic participation (Putnam, 2000).

Table 15. Findings from Previous Studies Exploring School-Supporting Nonprofit Coproduction

Authors and Focus	Theories Used	Sample	Finding
Paarlberg & Gen, 2009 Financial Activity and Magnitude	Social Heterogeneity Beneficiary Integration Human and financial capital	San Francisco Bay Area – 10 counties that surround the bay area: PTAs only	FRLP – negative for both College Educated – positive for both ELL – positive for financial activity Homogeneity – negative for financial activity Homogeneity – positive for magnitude ELL – positive for magnitude
Nelson & Gazley, 2014 Magnitude	Government Failure	National	State revenues – negative Property tax revenues – negative Enrollment – negative Proportion minority - negative Unemployment - negative College degree – positive Median household income - positive
Murray et al., 2019 Financial Activity	Social Capital – Trust and Diversity Social Reproduction: Resource Hoarding	Elementary Schools in North Carolina; Presence of High Revenue PTAs	FRLP – negative Diversity - negative (in some models) Enrollment – positive Percent Black and Percent Hispanic - negative

These conditions are more evident in homogenous communities, while heterogeneity in a community may dampen individuals' desire to participate in collective action (Paarlberg & Gen, 2009). Interestingly, Paarlberg and Gen (2009) found that homogeneity is negative when examining the *presence of financial activity* in the Bay Area, but positive when examining the *magnitude of funds raised*. Thus, PTAs in more racially and ethnically diverse schools and districts may lack the cohesion necessary to form strong relationships that can sustain school fundraising. Paarlberg and Gen also explored theories of beneficiary integration and human

capital as frameworks for understanding coproduction in PTAs. They defined beneficiary integration as the extent to which the enrollment at a particular school matches the racial composition in the population overall (Paarlberg & Gen, 2009). Beneficiary integration and human capital are positively related to volunteering, philanthropic giving, and civic engagement.

In prior research, scholars explored levels of coproduction by examining the degree of financial activity of the PTA organizations. Throughout the body of literature, the amount of funds raised by PTAs was associated with both district and community characteristics. At the school or district level, higher levels of enrollment are associated with increased financial activity. For example, Paarlberg and Gen (2009) explored school coproduction in the San Francisco Bay Area by matching PTA data with schools in the districts. They found that larger schools were more likely to have a financially active PTA. Using school-level data from North Carolina, Murray et al. (2019) observed a similar relationship in elementary schools with large, more homogenous schools being more likely to have a financially active PTA than smaller, more diverse schools. Using district level data, Nelson and Gazley (2014) also found that districts that were larger in size were more likely to be supported by multiple school-supporting nonprofits.

The size and activity level of these organizations, as determined by revenue, are also driven by community characteristics like the presence of White, affluent, and college-educated parents and citizens in the school community (Nelson & Gazley, 2014; Paarlberg & Gen, 2009). This suggests that as human and social capital increases in a community, the levels of resources allocated to coproduction also increase. Furthermore, the financial resources available to a district or school often reflects the capacity of parents to contribute financially to a PTA.

In a study using national, longitudinal data encompassing all types of school-supporting nonprofits, Nelson and Gazley (2014) found that districts that received more federal funding and

more revenue from local property taxes (wealthier districts) also had school-supporting nonprofits that raised more money. Median household income and proportion of college educated residents were also positively associated with higher levels of fundraising activity in school districts (Nelson & Gazley, 2014). These findings suggest that while PTA revenues may be higher in larger districts, financial coproduction is dependent on access to financial resources and the necessary skills to organize. As a result, PTAs are less likely to be financially active in disadvantaged communities (Paarlberg & Gen, 2009).

The literature specific to PTAs highlights the influence of contextual factors in nonprofit fundraising; however, it does not address motivational factors that may also play a role in PTA activity. Since my research question centers on how an institutional structure may discourage or encourage coproduction, I briefly highlight findings from this literature that may be relevant for determining how a PMM may, or may not, motivate community coproduction. Individuals become involved with organizations because "they believe in the mission or causes of the group" (Wang & Graddy, 2008, p. 29). Many models exploring intrinsic motivations for philanthropy or volunteering identify a "warm glow" benefit from altruism (e.g., Clotfelter, 1997). However, other researchers identified the importance of social networks, connection to and trust in one's community, and identification with the organization's core values to increasing nonprofit donations (Brown & Ferris, 2007; Feiler et al., 2014: Schervish & Havens; 1997; Wang & Graddy, 2008). Parents' involvement in PTAs may also be influenced by these contextual factors depending on their perception of the school and their relationship with the school community.

Although this literature provides important insights into the dynamics of school-supporting nonprofits and coproduction, there are gaps. First, except for Nelson and Gazley (2014), the other authors utilized smaller geographic contexts that may not be as generalizable

(Murray et al., 2019; Paarlberg & Gen, 2009). Key findings held across these studies, but replication with more recent data is important to further develop theory. When considering the coproduction literature more generally, the breadth of research in this area is also lacking. Many studies utilized survey data, which offers the ability to connect participant perceptions and intention but does not provide the empirical evidence that leads to greater generalization. Finally, Elinor Ostrom (1996) not only developed a theory of coproduction, but she also proposed that institutional structures could encourage or impede collective action. Thus, testing of relationships between governance models can further theory in this area. In fact, the existence of PTAs may provide the necessary opportunities for relationship and trust building that engenders more coproduction efforts.

4.3 Hypotheses

In this analysis, I focused on describing the relationships between PMM status and PTA fundraising efforts as a measurable form of coproduction. Though there is variation within PMM districts, most tend to be in larger, diverse, and urban areas. These locales may be associated with having higher levels of poverty and lower levels of education. Additionally, PMM districts may have a history of chronic low-performance and disenfranchisement from the community (Glazer et al., 2019) that may be further exacerbated by school operational changes. In theory, PMMs place a strong emphasis on parental involvement (Hill, 1997; Hill et al., 2009), but it is unclear whether districts would be able to build cohesive relationships with community members in a performance management-style governance. However, the community and parents may feel more or less committed to the schools depending on factors related to their level of trust and commitment to the school or district (Oberfield, 2020). As mentioned in my introductory chapters, levels of trust in the community as well as formal and informal relationships may be

altered by PMMs and nonprofit researchers identified these factors to be important determinants of individual nonprofit donations (Brooks & Ferris, 2007; Wang & Graddy, 2009). There is evidence that suggests that parents in schools that are restarted may feel more disenfranchised due to a lack of influence on the school selection process and the subsequent restructuring and staff changes at the school (Glazer et al., 2019). When considering state takeovers (which often adopt PMM strategies) in particular, scholars suggested that the takeover process "targets and disempowers minority groups" and that they may also "attenuate participatory democracy and local deliberation" (Glazer & Egan, 2018, p. 929). About half of PMM districts have been taken over or were at risk of takeover by a state or mayoral body (Bulkley et al., 2020; Campbell et al., 2017; Hill & Jochim, 2022). Takeovers in particular may be associated with large numbers of school closures or conversions (Hill & Jochim, 2022). Due to the variety of structural changes in a PMM district, trust and commitment may be affected by a PMM operating model. Therefore, I hypothesize that PMM districts will be less likely to have active PTAs and PTA income will be lower in comparison to traditional districts:

H1: PTAs in PMM districts will be less likely to be financially active than traditional districts.

H2: PTAs in PMM districts will have lower revenues than traditional districts.

Prior research on PTAs indicates that these organizations are more likely to occur in large diverse areas, but that districts with larger proportions of affluent and educated families have more financially active PTAs (Murray et al., 2019; Nelson & Gazley, 2014; Paarlberg & Gen, 2009). I developed hypotheses to test whether these relationships hold once I control for school governance models. I also hypothesize that the relationships identified in prior literature will continue to be evident in my data.

H3: PTAs located in districts with higher proportions of local revenue will be more likely to be financially active and have higher revenues.

H4: PTAs located in districts with higher per pupil spending will be more likely to be financially active and have higher revenues.

H5: PTAs located in districts with higher levels of homogeneity will be more likely to be financially active and have higher revenues.

H6: PTAs located in districts with more highly educated populations will be more likely to be financially active and have higher revenues.

4.4 Data and Methodology

For this study, I grouped all parent-led, school-supporting nonprofits together and refer to them as PTAs (parent teacher associations). This grouping includes parent-teacher organizations that are not members of the national PTA organization as well as booster clubs. This also aligns with how prior research examined this subgroup of education nonprofits (Murray et al., 2019; Nelson & Gazley, 2014; Paarlberg & Gen, 2009). I used data from the NCCS Core Files and the Business Master Files (BMF) from 2018 to conduct my analysis. The BMF is a cumulative file that contains basic organizational information from IRS forms for all active and registered non-profits. To be considered an active organization by the IRS and retain tax-exempt status, organizations are required to file a 990-N (e-Postcard) at least once every three years (NCCS, 2013). In contrast to the NCCS Core Files (used as the data source in the next chapter), the BMF captures data about small organizations – ones that may not be required to file a full 990. As many PTAs may be small, this inclusivity allows me to better estimate the activity of PTAs in school districts.

4.4.1 Sample Creation

I developed my sample by first identifying school districts appropriate for this study. A comparison of the means of characteristics of PMM school districts and traditional districts reveals differences between the average PMM district and the average traditional district. I dropped New York City, Los Angeles, and Chicago from the PMM district pool because they were outliers in terms of size and revenue and there were no satisfactory comparison districts. Thus, my initial pass of the data examines 15 PMM districts and 9,756 traditional districts. As seen in Table 16, PMM districts have an average of 63,271 students compared with 4,340 students in traditional districts. Additionally, the average district revenue for a PMM district hovers around $1 billion dollars, but the average traditional districts revenue is only about $60 million. Additionally, expenditures per pupil and proportion of minority students are vastly different. There is a difference of just over $4,000 in the expenditures per pupil between the two types of districts with PMM districts having a significantly higher expenditure. Minority students comprise over 80% of the student population in PMM districts while the average traditional district has only about 26% of minority students in the student body. Finally, the NCES measures locale on a scale from 1 to 12 with 1 being the most urban (i.e., metropolitan cities) and 12 being the most rural (i.e., remote, fringe districts). PMM districts are clearly located in large urban areas with a mean of 1.13 while the mean for traditional districts is 7.91 indicating that they are more likely to be in small towns or rural areas.

As it is clear PMM districts may be different than the average district in the United States, I reduced bias in my sample by pre-processing and matching traditional districts to PMMs based on key characteristics (Ho et al., 2007; Rubins, 1973). Since PMMs are all located in urban districts and average between approximately 10,000 and 1 million students, I removed all rural

Table 16. PMM and Traditional Means of District Characteristics Pre and Post Matching

Variable	PMM Districts	Traditional Districts Pre-Matching	Traditional Districts Post Matching
District Characteristics			
Total Students	63271	4340	17729
Teacher Student Ratio	15.19	15.34	18.86
District Revenue	1.10e+09	6.03e+07	2.70e+08
Expenditure Per Pupil	20318	16252	21467
Proportion Non-White Students	0.825	0.263	0.814
Locale	1.13	7.91	1.33
N	15	9756	63

districts, which also eliminated a substantial portion of the smaller districts. After this step, 5,291 districts remained. Using coarsened exact matching (Iacus et al., 2012), I identified districts matching on student population size, proportion of minority students, revenue and per pupil expenditures to generate a treatment and control sample that are near exact matches. The benefit of CEM as a pre-processing approach is that it allows for matching on multiple covariates without over-reducing the sample. Matching at this stage also ensures that my analyses are not overly dependent on my model reducing bias that may be found in an unbalanced sample (Iacus et al., 2012). My remaining sample includes 78 traditional districts. For a comparison of the district level descriptive statistics pre and post matching refer to Table 8 in the appendix.

I also review the districts matched with PMMs to minimize the likelihood that they may have interventions in place that could be considered a PMM. Education policy in school districts may change rapidly with changes in superintendents and the school board. Therefore, there is the possibility that my list of known PMMs did not include all PMMs. I reviewed all matched district websites for indication of PMM initiatives in place. Specifically, I analyzed online

sources for references to contracts with charter schools to run district schools. I found no evidence of contracting in my comparison school districts.

I identified the PTAs through their National Taxonomy for Exempt Entities (NTEE) codes used by the IRS. Each subsector within the nonprofit sector is assigned a subsector code and then an organization type code. For education, the subsector code is B. PTAs are coded B94. I first processed the data by limiting the sample to these organizations. The NCCS data are often reviewed for accuracy; however, the data are still self-reported and the unfamiliar IRS codes may be completed inaccurately. This requires that as part of my data process, I manually reviewed the entries using keyword searches to exclude organizations that may support religious organizations, universities, and private schools. The keywords that I used are *foundation*, trust, *college*, *university*, and *campus* as well as words associated with religious organizations. To ensure the appropriate organizations are included, I also manually reviewed the organizations.

After identifying the appropriate organizations, I utilized FIPS codes to match the organizations with the districts. This reduced my sample to focus on the organizations in the same geographical area as my districts. However, districts, particularly ones in urban areas, may be densely located and there may be multiple districts utilizing the same FIPS code. I then utilized address matching through ArcGIS software to ensure that the included organizations were in my identified district sample. Figure 4 displays the distribution of organizations throughout the country. The final sample includes 1392 organizations from 75 districts. There are 1178 organizations in traditional districts and 214 in PMM districts. Despite the inclusivity of the BMF dataset, there were three districts that did not have any parent organization on record with the IRS. For example, the Orleans Parish District, which serves New Orleans, Camden School District in New Jersey, and Pittsburgh School District in Pennsylvania did not have any

associated PTAs with or without revenue associated with their district in the time of the data. Two of these districts are PMM districts and one is a traditional district. Since the focus of my analysis is on activity levels, thus necessitating PTAs being present, I dropped these three districts that do not have any PTAs decreasing the original 78 districts to 75.

In addition to the NCCS data, I also utilized data from the NCES School Finance files to control for per-pupil spending at the district level. Finally, I included variables from the American Community Survey to control for a variety of community characteristics that may influence nonprofit size and levels of coproduction within a community including the proportion of citizens with a college degree, median household income, and the total population for the district (Nelson & Gazley, 2014; Paarlberg & Gen, 2009).

Figure 4. PTA Matched Sample Distribution

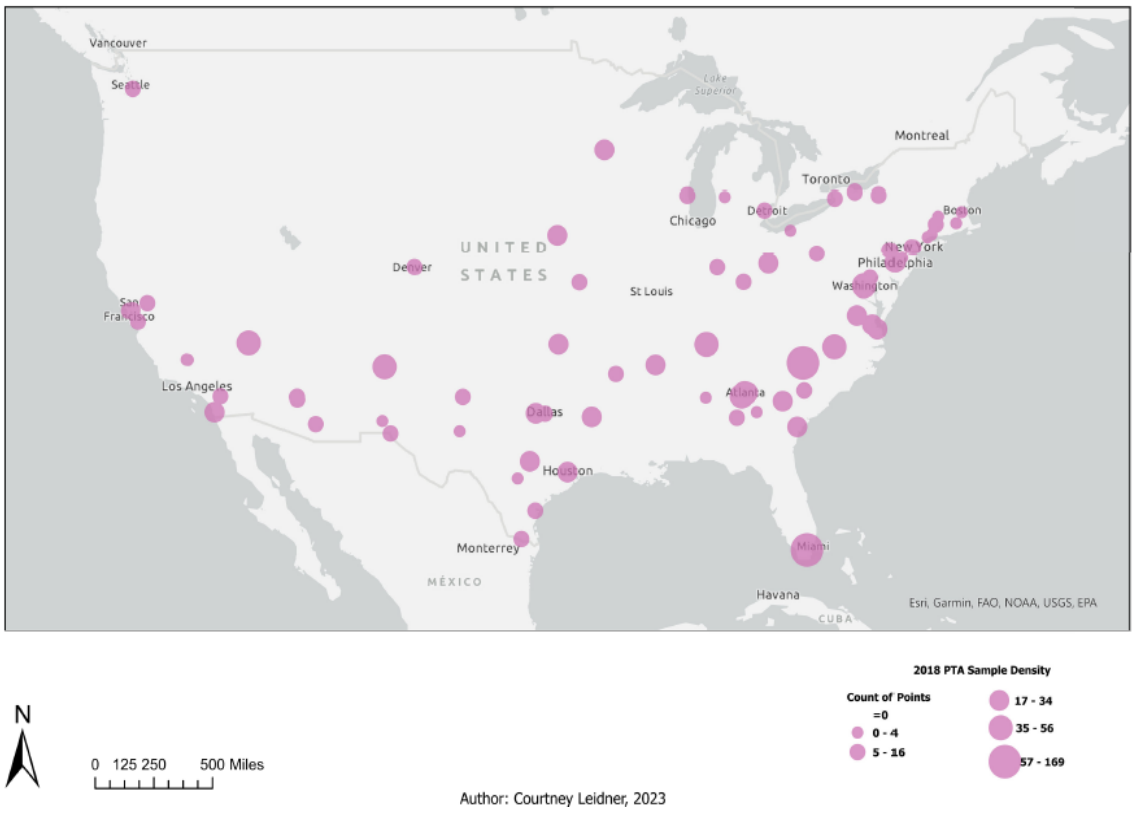


Table 17. Identified PMM Districts

PMM District	Year PMM	City Population	Student Population
Camden	2013	73,562	14,975
Cleveland	2012	381,009	55,600
New Orleans	2008	390,144	43,948
Tulsa	2016	401,190	38,628
Oakland	2009	433,031	49,600
Kansas City	2016	495,327	24,740
Atlanta	2016	506,811	51,927
Memphis	2010	651,073	105,254
Boston	2014	692,600	65,461
District of Columbia	2013	705,749	87,344
Denver	2012	727,211	92,331
Indianapolis	2012	876,384	150,145
San Antonio	2016	1,547,253	325,569
Philadelphia	2010	1,584,064	194,557
Houston	2009	2,320,268	579,609

Table 18. Dependent and Independent Variables by Source

Variable	Description
Dependent Variables	
Financial Activity	Binary Variable=1 if PTA has any reported income in the NCCS BMF Files
Log of PTA Income	Natural log of reported PTA income in the NCCS BMF Files
Independent Variables	
PMM	Binary Variable=1 if district is PMM
NCES CCD	
Enrollment	Total student enrollment for district. (Log and Ordinal)*
Proportion of Charter Schools	Variable created by dividing the number of operational charters in the district by the number of total schools. (Continuous and Ordinal)**
Student/Teacher Ratio	Average district ratio of students to teachers in the classroom. (Continuous and Ordinal)
Homogeneity Index	Index created using the Homogeneity Formula found in Paarlberg and Gen (2009). (Continuous and Ordinal)
Proportion of ELL	Proportion of ELL students in the student population. (Continuous and Ordinal)
Expenditure per Pupil	Average district expenditure per pupil (Log and Ordinal)
Proportion of Local Revenue	Variable created by dividing local revenue by total district revenue. (Log and Ordinal)
ACS	
County/District Population	Total population found within the district boundary as estimated by ACS. (Log and Ordinal)
Proportion with College Degree	Variable created by adding the count of populations with a bachelor's degree or above. (Continuous and Ordinal)
Median Household Income	Median income within the district boundary as estimated by ACS. (Log and Ordinal)

Note. * Ordinal variables were created with the same coding scheme: 0=1 standard deviation below the mean, 1 = the mean, 2 = 1 standard deviation above the mean, 3 = 2 or more standard deviations above the mean. **Proportion of Charter Schools is the one exception to the scheme. Due to its distribution, it is coded, 0-2 where 0 = below the mean, 1 = mean, 2 = high.

4.4.2 Dependent Variables

I used two dependent variables in my analyses. My first dependent variable captures the level of activity of the PTA as indicated by the reported income. Prior research utilizing the BMF determined the level of coproduction by creating a dichotomous variable that identifies if an organization has any reported income (Paarlberg & Gen, 2009). This method has two distinct advantages. First, the range of income levels is quite large and not normally distributed. A dummy variable allowed me to determine the likelihood that an organization has any reported income. As shown in Table 19, about 28% of PTA organizations in PMM districts are financially active compared to 23% in the matched sample of traditional districts. Figure 5 depicts the geographical distribution of financially active PTAs. Another benefit is that instead of comparing the size of organizations, which would bias more wealthy areas, the presence of fundraising activity can indicate coproduction within a school community. Even if an organization is not raising substantial amounts of money, positive income would indicate that the PTA is actively meeting and providing financial support to the school.

My second dependent variable is the log of PTA income as reported on the IRS 990 forms. The sample for analysis using this dependent variable was restricted to only those organizations reporting income. About a third of the full sample had reported income. I used this variable to test hypotheses related to the level of financial activity for PTA organizations. Table 5 shows the mean PTA income in both PMM and traditional districts. The PMM average PMM income is about $67,000 while comparable traditional districts have a mean income of about $29,000.

Table 19. Descriptive Statistics of Organization and Community Variables

Variables	PMM District	Traditional District
PTA and Community Characteristics		
PTA Income	66802.11	28764.42***
Total Population	862925.63	854676.84
Median Household Inc.	58467.22	55709.66***
Proportion with College Degree	.46391	.42994***
Financial Activity	.2757	.2250*
N	214	1178

Note. A two tailed *t* test was used to test the difference between means.
*** = $p < .01$. ** = $p < .05$. * = $p < .10$.

4.4.3 Independent Variables

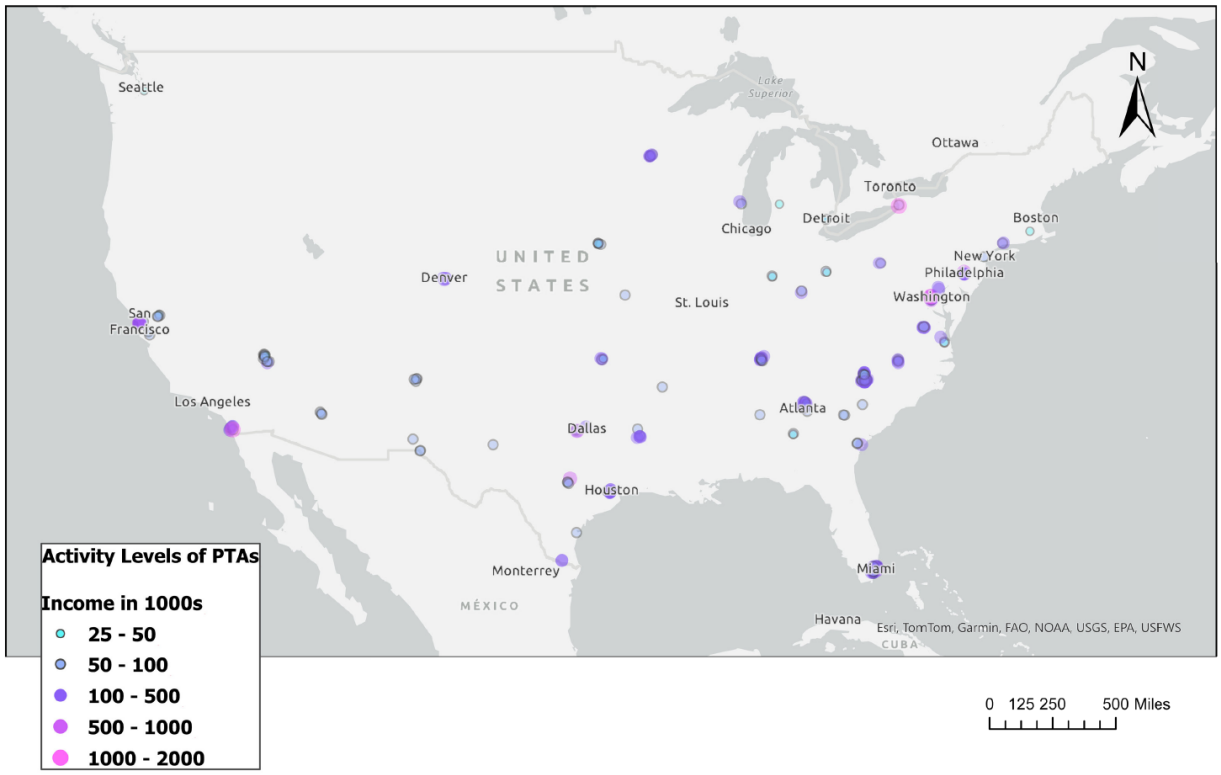
My key variable is the district governance designation – whether the district is a PMM or not. The variable for this analysis is a dichotomous variable coded 1 if the district is a PMM district is identified as PMM district by the CRPE. PMM districts are identified by the CRPE as those that have specific policies in place to promote the portfolio model including diverse providers, school choice, and school-level decision-making. There are 18 listed on their website[7]. CRPE chose to focus on these 18 cities because they are the most similar in their policies and intentionality of their implementation. I used this list for my identification of PMMs for the same reasons. A full list of these districts with some characteristics was provided in Chapter II. About 18% of my sample organizations reside in a PMM district.

I also included district and community characteristics related to the activity levels of PTA organizations. The variables at the district level are: (a) student enrollment, (b) proportion of charter schools, (c) proportion of local revenue, (d) expenditure per pupil, (e) student/teacher

[7] www.cpre.org

ratio, (f) homogeneity index, and (g) proportion of ELL students. In my models, I use the log of enrollment, proportion of local revenue and expenditure per pupil. The coding and scales for these variables are provided in Table 18.

Figure 5. Distribution of Financially Active PTAs



Author: Courtney Leidner, 2023

As in the previous chapter, the homogeneity index was calculated using a formula to capture racial homogeneity where:

$$Homogeneity = \sum_{i=1}^{k} \left(\frac{n}{N}\right)^2.$$

The homogeneity index ranges from 0 to 1 with homogeneity increasing as values get closer to 1 (Paarlberg & Gen, 2009). Table 20 includes comparisons of means between PMM districts and comparable traditional districts for the community characteristics. The means were tested using a

two tailed *t* test to determine if there was a statistically significant difference between the means. PMM districts have higher expenditure per pupil than the matched traditional districts by about $3,000 on average. They also have higher proportions of charter schools and higher proportions of local revenue. Though not found significant in the test of means, PMM districts have higher proportions of ELL students, but lower student/teacher ratios, on average.

The community characteristics included control for the total population of the district, the median household income, and the proportion of district residents that hold a bachelor's degree. These characteristics were demonstrated to affect the size of nonprofits (Lecy & VanSlyke, 2013; Nelson & Gazley, 2014). As with the district variables, for ease of analysis and interpretation in my logit models, the population and income variables were log transformed using the natural log. Although the populations of PMM and comparable traditional districts are similar, PMM districts have a slightly higher median household income. This difference is significant at the .01 level. The proportion of the population that has a college degree is also about 3.5 percentage points higher in PMM districts.

4.4.4 Analysis

To test my hypotheses, I ran two models. The first used the *financial activity* variable as the dependent variable and uses logistic regression since the dependent variable is dichotomous. The second tests the relationship between income and my independent variables in OLS regression. The regression equations for my models can be conceptually conceived as follows:

Equation 1

$$Financial\ Activity_j = PMM_j + District\ Characteristics_j + Community\ Charateristics_j$$

Equation 2

$$Income_j = PMM_i + District\ Charactertistics_i + Community\ Characteristics_i$$

District characteristics include the district revenue, expenditure per pupil, student enrollment, teacher student ratio, and the proportion of non-White students. Community characteristics include the county population, the median household income, and the proportion of college educated residents. I ran three sets of models for each equation first testing the binary relationship, then adding in the district characteristics before adding in the community characteristics for my full models. The models testing the relationship between income and district and community characteristics were restricted to the organizations that reported income.

Table 20. Descriptive Statistics for Categorical Variables

Variable	PMM Districts	Traditional Districts
District Characteristics		
Total Students	2.16	2.49***
Teacher Student Ratio	2.26	2.52***
District Revenue	2.43	2.54
Expenditure Per Pupil	3.07	2.33***
Proportion Non-White Students	2.87	2.49***
Community Characteristics		
Total Population	2.33	2.37
Median Household Income	2.69	2.38***
Proportion with College Degree	2.73	2.53**

Note. Two tailed *t* test was used to test the difference between means.
*** = $p < .01$. ** = $p < .05$. * = $p < .10$.

4.5 Findings

4.5.1 Financial Activity

I now turn to testing the influence being in a PMM district may have on PTAs being financially active. Table 21 includes the results of the logit regression with financial activity as the dependent variable. The coefficients reported are odds-ratios. My key variable of interest in this model was the PMM variable and the binary relationship is reported in the first column, Model 1. The odds of a PTA reporting financial activity increase about 30% ($p <= .1$) in PMM

districts. The subsequent model included variables about the school district characteristics. In this model, the PMM relationship is still positive, but no longer significant. However, enrollment, levels of homogeneity, and the proportion of local revenue have an effect on financial activity in the population. As total enrollment increases by one threshold (to the mean and higher), the odds of financial activity increase 34%. Higher levels of local revenue are also expected to increase the odds of financial by 28% per level. On the other hand, an increase in the homogeneity index, the odds that a PTA has any financial activity decreases by about 24%. After I added the controls for community population, median household income, and proportion of the population with a college degree, the PMM variable again became significant with a slightly larger effect. The odds of being financially active increase by 38% for organizations in a PMM district. Higher proportions of charter schools have a negative and significant effect on financial activity.

An increase in the proportion of ELL students also had a positive and significant relationship, but homogeneity was no longer significant with the added controls. The student/teacher ratio also has an association with financial coproduction with a 36% increase as the ratio increases by one threshold. This means that the likelihood of financial activity in PTAs increases as students are in larger classrooms. Turning to the relationships found between my community controls, a more educated population increases the odds of being financially active by more than 50% as the level of college degree holders increases from one threshold to the next.

4.5.2 Income

In my exploration of the effects of PMM status on the amount of PTA income, I found some similar relationships, but with some important differences. Table 22 presents my findings

Table 21. The Odds of PTAs Reporting Financial Activity

Variable	Model 1 (Binary)	Model 2 (District Controls)	Model 3 (Community Controls)
Key Variable			
PMM District	1.311*	1.275	1.378*
District Characteristics			
Proportion of Charter Schools (Ordinal)		.951	.836*
Enrollment (Ordinal)		1.340***	1.398***
Homogeneity Index (Ordinal)		.757***	.973
ELL (Ordinal)		1.095	1.199**
Expenditure per Pupil (Ordinal)		1.097	1.042
Local Revenue (Ordinal)		1.276**	1.112
Student/Teacher Ratio (Ordinal)		1.082	1.355***
Community Characteristics			
Population (Ordinal)			.953
Median Household Inc. (Ordinal)			1.016
College Degree (Ordinal)			1.523***
Constant	.290***	.170***	.047***

*** = $p < .01$. ** = $p < .05$. * = $p < .10$.

for the regression models with income as a dependent variable. Again, this analysis was restricted to the 324 organizations reporting any income in 2018. PMM status was positively associated with increased fundraising, but it is only significant in the binary model. In the other

models, enrollment, expenditure per pupil and the proportion of local revenue were positively related to financial coproduction. When I added community controls, the proportion of residents with a college degree increased the amount of reported income. The log of income increased by 2.91 as the proportion with a college degree increased by 1. Enrollment and expenditure per pupil still have positive and significant relationships. However, the proportion of local revenue was no longer significant.

4.6 Discussion

In this chapter I explored the association between the activity levels of PTAs and district governance. Coproduction was posited to have a number of benefits in the production of public goods including increased quality of goods and satisfaction with services (Marschall, 2004; Ostrom, 1996; Pestoff, 2006). PTAs are a tangible example of coproduction in school systems and it is their activity levels can be a key indicator to engagement and motivation for partnership within a community. The unique sample of organizations I created allowed me to test the relationships between district and community characteristics and parent-led, financial coproduction while controlling for bias through more balanced treatment and control groups. I found a positive association with PTA financial activity and PMM districts in my full model. Therefore, my hypothesis (*H1)* was incorrect. However, I also found no indication in the data that PMM status was associated with increased PTA income *(H2).* These findings indicate that the governance reform may be linked to higher levels of activity, but not increased financial resources, when comparing similar school districts. Turning to my hypotheses testing prior relationships between PTAs and school district characteristics in the literature, I found support

Table 22. Regression Models on PTA Income

Variable	Model 1 (Binary)	Model 2 (District Controls)	Model 3 (Community Controls)
Key Variable			
PMM District	.367***	.018	.088
	(.131)	(.177)	(.187)
District Characteristics			
Charter Schools		.435	.172
		(.717)	(.728)
Log of Enrollment		.232***	.220*
		(.076)	(.118)
Homogeneity Index		-.257	.389
		(.407)	(.578)
ELL Students		-.707	-.215
		(.707)	(.798)
Log of Expenditure per Pupil		.487**	.443*
		(.243)	(.254)
Local Revenue		.762**	.563
		(.335)	(.382)
Student/Teacher Ratio		-.015	.030
		(.023)	(.031)
Community Characteristics			
Log of Population			.011
			(.125)
Log of Median House Inc.			-.616
			(.538)
College Degree			2.908**
			(1.195)
Constant	11.434***	4.201	9.070
	(.056)	(2.908)	(5.960)

*** = $p < .01$. ** = $p < .05$. * = $p < .10$.

for the hypotheses that higher levels of local revenue and more educated populations are associated with greater coproduction (*H3* and *H6*). However, districts with higher levels of per pupil funding were associated with increased reported income, but not necessarily being

financially activity versus no activity (*H4*). Finally, higher homogeneity levels are negatively associated with financial activity but show no significant association with income *(H5*). In addition to the relationships identified through the literature, I also found significance with two variables not previously explored in the literature. Higher proportions of ELL students and higher teacher student ratios had a positive effect on being financially active in my full models. Although proportions were previously controlled for (Paarlberg & Gen, 2009), there is no prior relationship established with this variable. These results suggest there are factors at play in PMM districts that may alter relationships between coproduction and district characteristics established in prior studies.

These findings contribute to a general understanding about factors that influence coproduction through parent-led nonprofits. District governance explains some of the activity-level of PTAs while controlling for a variety of district and community characteristics. However, there are limitations to the data used in my analysis that affect the strength of my conclusions. First, the NCCS BMF dataset uses information from various forms of the IRS 990. These forms are filled out and self-reported by organizations and may contain inconsistencies and discrepancies (Gordon, Khumawala, Kraut & Meaded, 2007). While this dataset is still considered appropriate for studying nonprofit financial activity, my conclusions need to be cautious. Additionally, the data used in this study are cross-sectional and do not support causal inference to draw more definitive conclusions. Future research could expand the dataset to include additional years to observe the interactions of these variables over time. Additionally, investigations could also be conducted at the school-level to identify variations within a district. A school-level analysis would also more precisely define the inception and conditions of education reform by restricting analysis to several districts, while expanding observations

through the numbers of schools in a district. These additional parameters would then be conducive to utilizing quasi-experimental design approaches such as regression discontinuity or difference in difference approaches that could better isolate the effect of a policy change such as a new governance approach.

In addition to the questions in the causal nature between PMM status and PTA coproduction, questions remain about the mechanisms that underpin the relationships observed in this study. First, do PMMs alter levels of coproduction overtime? Is there a change in inactivity level that builds, or declines, with the longevity of the PMM initiative? Answering these questions is key to better understanding how a governance model may impact education stakeholders in a community. Additionally, the current analysis does not include other types of philanthropic organizations that support school districts. Education foundations and other support organizations also engage in financial coproduction with school districts. These organizations operate differently than PTAs and thus governance models may not have the same effects on their activity levels. For example, school and district education foundations may have different priorities than parent-led groups and may have a different view of education reforms (Nisbet, 2018; Schaller & Nisbet, 2020).

Some of the questions remaining can be answered with the inclusion of additional data in my analysis. In the next chapter, I build on my initial dataset to address some of these limitations. I add more years and types of organizations to understand what different types of coproduction what might look like in PMM districts over time. These data provide a more nuanced understanding of nonprofit coproduction in different types of school districts.

Chapter V: School Supporting Organizations and Portfolio Management Models

In the previous chapter, I examined the relationship between parent-led nonprofit organizations and district governance using cross-sectional data from 2018. Building on that analysis, this chapter expands the dataset to include additional organization types as well as multiple years of data to further our understanding of how district factors might influence collective action via coproduction at both the parent and community levels. I created a panel of organizations located in my previously identified sample of districts to explore the associations between district governance models and types of coproduction. As mentioned previously, coproduction can include a wide range of participants and types of activities (Alford, 2014; Brandsen & Honingh, 2019; Nabatchi et al., 2017). Scholars such as Brudney and England (1983) created typologies to better define who is coproducing (individuals, informal groups, or nonprofit organizations), the activities of coproduction, and the beneficiaries of coproduction. These frameworks categorize types of coproduction by the coproducer and the beneficiaries of coproductive activities. I continue my exploration of the effects of institutional structures on involvement and civic engagement by broadening the sample of organizations to include "Friends of" and local education foundations both of which support education but are not necessarily organized by parents (though some participants may be parents).

Following the theory of coproduction developed by Ostrom (1996), the structure of school district governance and the types of interventions employed by the district may impact the motivation of parents and community members to work together for the improvement of their school. A key tenet of the governance model, PMMs strongly emphasize parental involvement (Hill et al., 2009). The market-style approach of a PMM prioritizes school performance and customer (parent) satisfaction through performance management methods and increased school

choice. Although school choice might provide opportunities for greater parent commitment, PMM districts may have a history of chronic low performance and disenfranchisement from the community (Glazer et al., 2018) that may be further exacerbated by school operational changes. Public education capitalizes on the connections that parents and the broader community have to schools and student achievement. However, the community and parents may feel more, or less, committed to the schools depending on factors related to their level of trust and commitment to the school or district (Oberfield, 2020). Evidence suggests that parents in schools that are restarted may feel more disenfranchised due to a lack of influence on the school selection process and the subsequent restructuring and staff changes at the school (Cucchiara et al., 2008; Cucchiara & Horvat, 2009; Glazer et al., 2018). Local education foundations (LEFs) and other philanthropic organizations may have more formal partnerships with schools and districts as they often provide funding that supports essential activities like teacher salaries and capital projects. Although not necessarily directly involved in governance, the size of some of the organizations, as measured by revenue, suggests that they may have a considerable influence on district and school leaders (Nisbet, 2018). Cuatto (2003) highlighted a specific case of an LEF included in a revenue line item for a school budget. Due to the variety of structural changes in a PMM district, parent and community coproduction may be affected by a PMM operating model. If there are differences between parent-led and philanthropic nonprofit organizations' interaction with schools and districts related to a PMM model, the association could be indicative of a more pervasive disconnect between parent voice and school governance.

This chapter further explores the relationship between PMM governance models and the prevalence and activity levels of parent and community organizations. Throughout this investigation, the following research questions guide my analysis:

1. Do school district governance models districts impact size (revenue) and growth of school-supporting nonprofit organizations?

2. If there is an effect, does the governance model impact school-supporting nonprofits heterogeneously for different types of organizations?

3. Have school-supporting nonprofits districts grown or become more active following the introduction of a PMM model?

To answer these questions, I explored the relationship between school district governance, district and community characteristics and nonprofit revenue over time. I used a unique panel dataset created by combining nonprofit 990 data, school district data, and community demographics to explore the relationships between school district governance and coproduction. This essay examines the prevalence and growth of education supporting nonprofits in school districts throughout the country. I investigated size as the value of reported revenues, and the variation of these outcomes over time based on the school district governance model while controlling for nonprofit and community characteristics. I used data from the 2014 - 2018 National Center for Charitable Statistics (NCCS) Core Files and Business Master Files combined with publicly available data from the American Community Survey (ACS) and the National Center for Education Statistics (NCES) Common Core of Data (CCD) to investigate these relationships over time.

This paper contributes to the literature on education nonprofits and coproduction in two significant ways. First, I describe the relationship that district governance may have on the coproduction of education. Prior research on PMMs focused primarily on performance results as measured by academic achievement (see Bulkley, 2010). While this, of course, is a necessary lens for evaluation there are other effects to consider as well. For example, does a district

management style affect collaboration and coproduction differently for parent-led nonprofits compared with larger fundraising organizations? Prior research on school-supporting nonprofits (Nelson & Gazley, 2014; Paarlberg & Gen, 2009) examined the relationship between these organizations and school or district demographic characteristics, but not district management type. Secondly, I differentiate between the types of school-supporting nonprofits – parent-led (PTAs, PTOs, booster clubs), community-driven ("Friends of" groups), and professional (local education foundations). Organizations like PTAs are often examined separately (e.g., Murray et al., 2019; Paarlberg & Gen, 2014) or grouped with other types of school supporting nonprofits (e.g., Nelson & Gazley, 2014). Therefore, this analysis provides insight into how district governance might have heterogeneous effects on diverse types of nonprofits.

In the following section, I discuss the literature on the additional organization types that are included in my analysis. I then discuss types of coproduction related to organized support of schools and districts, specifically group coproduction and collective coproduction (Nabatchi et al., 2017). I propose my hypotheses and explain the sample and analytical methodology I used to test these hypotheses. I present my findings and conclude with a discussion of implications for policy and future research.

5.1 Types of School-Supporting Organizations

In recent decades, school-supporting nonprofits have experienced substantial growth (Nelson & Gazley, 2014). For example, Nelson and Gazley (2014) found that the revenues of school supporting nonprofits totaled about $880 million nationwide in 2010. School-supporting nonprofits include PTAs, PTOs, booster clubs, "Friends of" groups, and local school or district education foundations. As the designation suggests, school-supporting nonprofits operate to support schools and districts through a variety of fundraising and partnership activities. For

example, PTAs may host school events and fundraise for student extracurriculars, while LEFs may assist with school supplies or textbooks. At times, these organizations may provide thought leadership as well as funds for essential school functions like staff salaries unfunded by decreasing school budgets (Nisbet, 2022).

Although these nonprofits share a common mission to support education at the local level, there are key characteristics that differentiate these organizations from each other. On the one hand, PTAs (and related organizations) have a membership that strictly encompasses members of a school community. While parent-led, these organizations are convening points for communication between parents and school staff. Therefore, PTA groups are often involved in governance activities in addition to fundraising for extracurricular events such as field trips or music equipment (Mackevicius, 2022). “Friends of” groups, on the other hand, can include broad community membership with no direct connection to the school (Good & Nelson, 2020). They can fundraise more broadly and gather support for school initiatives from the community at large.

Similarly, LEFs are established to fundraise for schools and districts at a large scale. They may represent donors with large sums of money as well as undertake more comprehensive grant-writing efforts in partnership with the school or district (Cuatto, 2003). As a result, they are larger organizations and may even provide critical funding for basic school functions. These school-supporting nonprofits differ in their participants and the scope of the resulting benefits. Thus, their coproductive activities can be distinctly classified.

5.2 Types of Coproduction

Coproduction occurs when “government and the public both contribute to the production of public services” (Thomas, 2012, p85). Coproduction is a form of collective action where

individuals work together to design, manage or finance public services. Public education has often been considered a prime example of coproduction. Like other areas of public management and government services, education institutions were called upon to do more with less fostering citizen involvement with development and delivery of education (Nabatchi et al., 2017). In the case of education, coproduction occurs with the involvement and support of community stakeholders and parents. The community participates in coproduction through participation in advisory councils, school board meetings, as well as business support of schools and the provision of student support services through nonprofits. Additionally, local education foundations "seek to use fundraising as way to supplement tax-generated revenues" often in collaboration with a district or school (Weston et al., 2015, p. 5). As mentioned previously, these types of activities generally fall into co-managing or co-financing categories of coproduction (Bovaird & Loeffler, 2012). These collaborative partnerships potentially provide societal value by increasing democratic governance, increase satisfaction of services, and offer greater transparency and accountability of government services (Nabatchi et al., 2017).

As coproduction research evolved, scholars sought to understand coproductive activities based on the characteristics of the collaborative relationship, the actors involved, or the beneficiaries of services (Alford, 2014; Brandsen & Honingh, 2016; Brudney & England, 1983; Nabatchi et al., 2017). These lines of research furthered theories of coproduction as more nuanced than original conceptions of straightforward production functions between government and the public (Brandsen & Honingh, 2016). For the purposes of this chapter, I utilize a typology based on the types of actors, paired with conceptualization of the beneficiaries of coproductive services as first conceived by Brudney and England (1983) and developed further by Nabatchi et al. (2017). This particular typology adds dimensions to the exploration of co-financing by

considering the actors and beneficiaries of coproduction. Table 23 includes an adaptation of the typologies provided in Nabatchi et al. paired with the distinct types of school-supporting nonprofits.

Table 23. Coproduction Typology and Education Examples

Level of Coproduction	Role of Lay Actors	Types of Benefits	Education Examples
Individual	Client, customer	Personal Benefits (spillover may generate social benefits	Parent-teacher conferences, Helping child with homework
Group	Clients, customers	Personal benefits Social benefits	PTAs, booster clubs
Collective	Citizens	Social benefits (spillover may generate personal benefits)	"Friends of" organizations Education foundations

Note. *Adapted from Nabatchi et al., 2017, p. 766.

As discussed previously, one example of coproduction in education is through parent-teacher organizations where parents have organized themselves to aid their child's school through the formation of PTAs and similar organizations. A major function of these organizations is fundraising. PTAs and other similar nonprofits may also focus on "engaging and empowering" the community as part of their mission. Based on the work of Brudney and England, Nabatchi et al. (2017) characterized this type of coproduction as "group coproduction" where a group sharing a similar interest or characteristics (i.e., residing in the same school zone) work with a government representative to design or deliver services. Local education foundations and "Friends of" organizations represent "collective coproduction" where stakeholders working with government representatives to identify problems and find solutions (Nabatchi et al., 2017). In contrast to "group coproduction," the stakeholders involved in "collective coproduction" are focused more on social benefits than personal benefits, although they may experience positive spillover (Nabatchi et al., 2017). "Friends of" organizations may involve community members outside of the local school and education foundations may even

have paid staff. These differences in nonprofit composition and benefits may shift priorities for these organizations as well as altering the effects that district governance and characteristics may have on fundraising as a measure of coproductive activity.

5.3 School Supporting Nonprofits and Coproductive Activity

The characteristics of schools and districts may influence the size and activity levels of school-supporting nonprofits. Prior studies examining school-supporting nonprofits approached the challenge of measuring coproductive activity differently and their results are mixed, especially concerning the effects of school size and racial composition. Paarlberg and Gen (2009) investigated PTA organizations, booster clubs, and local school foundations at the school level across multiple counties in the San Francisco Bay Area. They found that increased financial activity in school-supporting nonprofits was associated with schools that were smaller and more homogenous with higher proportions of residents with a college degree. Additionally, the per capita income was also positively associated with financial activity in these organizations. Interestingly, large proportions of students who were English Language Learners (ELL) also increased the magnitude of financial activity in PTAs. Therefore, according to their findings, financial coproduction may be related to the demand of diverse groups but is developed and sustained by the availability of resources, or human capital, within a community.

In another prominent example, Nelson and Gazley (2014) investigated a national sample of school districts over time to determine the associations between school finances and local coproduction in PTAs, booster clubs, and LEFs. Like Paarlberg and Gen (2009), they grouped all school-supporting nonprofits together and do not distinguish between the organizations in their analysis. They explored the relationship between district characteristics and nonprofit size (revenue) over a 15-year period and found that local property tax revenues, median household

income, and levels of education in the community population were positively associated with nonprofit revenues while larger districts and higher proportions of minority students have a negative association.

Taking a different approach, Murray et al. (2019) explored the size of PTA organizations at elementary schools in North Carolina. Their sample did not include multiple types of organizations like some prior studies. They found negative relationships between levels of financial activity, proportions of minority students, levels of diversity and the level of unemployment in a community. In contrast to Paarlberg and Gen (2009), they found positive associations between size of the school and increased PTA revenues. Murray et al. also found that new schools are more likely to have high-revenue PTAs than established schools after their first year in operation suggesting that some level of trust and relationship development is necessary to form these organizations.

Taken together these studies indicate that the composition of schools and communities affects levels of coproduction. At the school-level, increased financial activity is associated with homogeneity and more White student bodies. However, greater proportions of ELL students were also associated with increased financial activity in two of studies (Nelson & Gazley, 2014; Paarlberg & Gen, 2009). When examining community characteristics, higher levels of income and education were positively associated with greater financial coproduction through school-supporting nonprofits. However, findings may vary based on the types of organizations included in the nonprofit sample as well as by the school or district level.

5.4 Hypotheses

5.4.1 Size

PMMs are found in large urban districts that may have large numbers of low-income and under-educated populations as compared to ex-urban or suburban districts. They have historically had lower academic performance (Bulkley et al., 2015; Glazer et al., 2019), which may indicate an initial lack of community involvement. Due to this low performance, about half of PMM districts have been taken over by a state or municipality and have government appointed boards (Bulkley et al., 2020; Campbell et al., 2017). In many districts, schools have been closed or converted to charters with new leadership and staff (Bulkley et al., 2020). These changes may contribute to a loss of parental connection and trust with the school system. Also, even though large national foundations have contributed to funding of PMM districts (Bulkley et al., 2020; Reckhow, 2015), there is no evidence to suggest that this funding altered giving at the local level. Therefore, I believed there would be lower levels of school-supporting nonprofit financial activity and growth in PMM districts when compared with comparable traditional districts. I also believed I would see similar relationships as indicated in prior research.

H1: School-supporting organizations in PMM districts will have smaller revenues than organizations in comparable traditional districts.

*H1a***:** PTAs in PMM districts will have smaller revenues than organizations in comparable traditional districts.

H1b: "Friends of" Groups in PMM districts will have smaller revenues than organizations in traditional districts.

*H1c***:** Education Foundations in PMM districts will have smaller revenues than organizations in comparable traditional districts.

H2: School-supporting organizations in districts with larger student enrollments will have smaller revenues.

H3: School-supporting organizations in districts with higher enrollments of minority students will have smaller revenues.

H4: School-supporting organizations in districts with higher proportions of local revenue will have larger revenues.

5.4.2 Growth

Prior research exploring school-supporting nonprofits typically focused on revenue as a dependent variable and has not explored growth. Given that there was a consistent rise in education nonprofits in recent decades (Nelson & Gazley, 2014), I also hypothesized that I would continue to see an increase during the period for this data as well. I believed that the relationships between nonprofit organizations and district and community characteristics will similarly affect how much they grow. Thus, I hypothesized that organizations in PMMs would have lower levels of growth due to the larger populations and lower incomes in these districts.

H5: School-supporting organizations in PMM districts will have lower levels of growth than organizations in comparable traditional districts.

5.5 Data and Methodology

For my analysis, I constructed a dataset using three different sources of data. The primary nonprofit data I used for my analyses was from the National Center for Charitable Statistics. For my size and growth models, I compiled a dataset using the NCCS Core Files from the year 2014-2018. The Core Files provide IRS 990 data from nonprofit organizations and foundations that is moderately cleaned and reviewed by the NCCS (Urban Institute, n.d.). This dataset had several advantages. First, the NCCS uses NTEE codes to categorize nonprofits, so that I could filter to

school supporting education organizations. Secondly, since organizations that file 990s are reporting their assets and revenue, organizations that had no revenue were excluded, meaning that I avoided an overabundance of zeros in my dependent variables.

In addition to the NCCS data, I merged data from the NCES Common Core of Data Financial Files. This dataset provides information on the school districts including their size, demographics, and financial information. Finally, I included variables from the American Community Survey of the same year to control for community characteristics that may influence nonprofit presence and size, and levels of coproduction within a community.

5.5.1 Sample Identification

I began constructing my sample by first identifying PMM districts. I used the same sample of districts as discussed previously in Chapter 4. This sample includes 78 districts that were pre-processed and matched on characteristics like student enrollment, district revenue, and student demographics to reduce selection bias (Ho et al., 2017). I drew data from the CCD for the year 2016 to match districts. I continued to exclude New York City, Los Angeles, and Chicago school districts as being outliers that are too large in size and revenue to create a good comparison group.

After determining the districts included in my sample, I moved to the identification of organizations. For this study, I grouped all parent-led, school-supporting nonprofits together and referred to them as PTAs. Unlike my prior chapter, this group includes parent teacher associations and related organizations as well as booster clubs that support specific extracurricular programming in schools. This grouping approach aligns with how prior researchers examined this subgroup of education nonprofits (Murray et al., 2019; Nelson & Gazley, 2014; Paarlberg & Gen, 2009). As mentioned above, the NCCS uses National

Taxonomy for Exempt Entities (NTEE) codes to identify nonprofits in subsectors. Each subsector within the nonprofit sector is assigned a subsector code and then an organization type code. For education, the subsector code is B. PTAs and other parent organizations are coded B94. Booster clubs, education foundations, and "Friends of" organizations are typically coded B11 or B12. I began my data processing by limiting the sample to these organizations.

The next step in my sample creating process was to ensure the organizations are in the districts of interest. I matched based on FIPS codes. However, several districts can be in one FIPS county code, so I used geographic data and ArcGIS software to match organizations to districts. I then conduct key word searches to exclude organizations supporting higher education, professional associations, private schools, and private trusts. Some examples of keywords that I used are *university*, *Christian*, and *trust*. I also performed reverse searches to identify appropriate organizations. Here I use keywords indicating my target groups such as *parent teacher association*, *parent teacher organization*, *booster*, *friends of*, and *education fund*. I also manually reviewed my organizations to ensure they were appropriate for my specifications. I only included organizations that are associated with a school or district and excluded any organizations that may fall within the boundaries but represent state or national priorities. Finally, I matched the organizations to create a panel across all the years for my data. After this final review and matching across all the data years for the panel, I had a sample of 212 organizations in 48 districts over five years combining to equal a total of 1060 observations. The number of districts represented by the organizations is lower in this sample due to the NCCS Core file only representing organizations that report income on a 990 form ($25,000 of income or higher).

5.5.2 Dependent Variables

My hypotheses included propositions about the levels of parent and community coproduction in a school district. For the purposes of this study, I measured coproduction through financial variables at the organization level.

Nonprofit Revenue. My first dependent variable is nonprofit size as measured by nonprofit revenue. This dependent variable is a line item in the NCCS Core Files. Revenue typically reflects the activity levels of the nonprofits and can indicate how active they are in supporting education. Using the NCCS Core Files dataset means that my sample was necessarily restricted to organizations with $25,000 or more in reportable income (i.e., those that are required to file with the IRS). Therefore, these organizations represent large, active organizations. District-level education foundations may be quite large with revenues in the millions. Therefore, I computed the natural log of revenue to use as the dependent variables in my models.

Growth. The second dependent variable measures growth in PTAs over the period of my data. This variable is generated by subtracting an organization's 2014 reported income from their 2018 reported income and then calculating the proportion of growth based on the 2014 income level.

5.5.3 Independent Variables

My key variable of interest is a district's governance model in which the nonprofit operates: traditional or PMM. This variable is called PMM and was coded 1 if the district is identified as PMM district by the CRPE. As mentioned previously, PMM districts are identified by the CRPE as those that have specific policies in place to promote the portfolio model including diverse providers, school choice, and school-level decision-making. There are 18

listed on their website[8]. CRPE selected to focus on these 18 cities because they are the most similar in their policies and the intentionality of their implementation. I used this list for my identification of PMMs for the same reasons. I dropped districts due to the size of the district proving to be an extreme outlier in size or revenue. New York, Los Angeles, and Chicago fell into this elimination. My final sample included 15 PMM districts.

Since my data are longitudinal, I included variables to control for the effects of time. The first set of variables are dichotomous variables for each year to control for the reporting year for the nonprofit revenue and the second is a variable to control for the duration of the PMM. The PMM length variable increased with every year that a district enacted a PMM model. Some districts in the sample were PMM prior to the sample, while others implemented a PMM model during the sample.

In addition to the effect of the governance model at the school district, I was also interested in exploring how this governance model may have heterogenous effects on different types of school-supporting nonprofits. According to the coproduction typology (see Table 23; Nabatchi et al., 2017), "Friends of" groups and LEFs provide a collective or community benefit, though there may be some personal benefit to members. Additionally, donors may be from the community at large as opposed to just the school community. The organizations may participate less in school events and functions but may be more involved in guiding school priorities that are funded by the organizations (Cuatto, 2003; Good & Nelson, 2020). Therefore, I created the variable Collective Organization to capture an organization whose benefit orientation is towards the collective, or community, when coproducing with schools and districts. The default for this dummy variable is PTA and parent-led organizations. I created two dummy variables for

[8] www.cpre.org

"Friends of" groups (reference group is PTAs and LEFs) and LEFs (reference group is PTAs and "Friends of" groups) to model these organizations separately as well.

At the district level, I included variables to account for total student enrollment, teacher-student ratio, student demographics, as well as local revenue and expenditures per student. I also controlled for community characteristics such as population, education, and income levels. These characteristics affect the density and size of nonprofits (Lecy & VanSlyke, 2013; Nelson & Gazley, 2014).

5.5.4 Analytical Approach

In addition to reporting descriptive statistics, the primary analytical approach will be statistical analysis using ordinary least squares regression. There are two dependent variables that characterize the nonprofits in the sample: total revenue and growth (in revenue). For the total revenue regressions, there are two sets of regression models with varying model specifications. In the first set of regression models, the most inclusive model specification for the regressions on total revenue is conceptually defined here:

$$\textit{Log of Total Revenue} = \textit{PMM} + \textit{Year} + \textit{PMM Length} + \textit{Collective Organization} + \textit{District Controls} + \textit{Community Controls} + \textit{Constant} + \textit{SE}$$

In my analysis, I clustered my standard errors at the district level to account for serial autocorrelation of the error term resulting from the structure of the dataset due to the treatment variable residing at the district level (Wooldridge, 2013). The second dependent variable investigated with regression analysis is the growth rate of revenue for the nonprofit. For this analysis I compared the total growth of the organization from the onset of the data to the final year. These models utilized the full set of organizations in the data, but with only one

observation providing a final dataset of 212 organizations. The regressions for this dependent variable utilized the same regression model specifications as the total revenue regressions.

5.6 Findings

Table 24 includes the descriptive statistics for the variables of interest grouped by the two types of districts: Traditional Districts and PMM Districts. The sample size for each type of district is 138 in Traditional Districts and 74 in PMM districts for a total of 212 organizations in the panel. There are 35 Traditional Districts and 13 PMM Districts represented. The number of organizations per districts ranged from 1 to 15. As the districts were matched prior to analysis, many of the characteristics used for matching, such as enrollment, proportion of non-White students, and revenue, are similar across the district types. There are, however, a few differences of note. Specifically, PMM districts had smaller student-teacher ratios with a mean of 15.95 to 16.44 in comparable traditional districts. Expenditure per pupil was also higher in PMMs with average spending over $18,000 compared to under $16,000 for traditional districts.

Additionally, all the districts were from urban or ex-urban school districts, which is observable in the total population variable, where the minimum was 101,188 for traditional districts and the minimum was 275,465 in PMM districts. The impact of educational foundations was also apparent in the nonprofit characteristic variable total revenue. Average total revenues of $2.6 million in traditional districts and $4.4 million in PMM districts indicates the sample included large education foundations, which tend to increase the mean total revenue for nonprofit organizations in these districts. PMM districts had greater total revenues and greater measured total revenue growth rates. PMM districts exhibited an average of 15% growth in total revenue, whereas traditional districts exhibited an average of 2.3% growth in total revenue over the study period from 2014 to 2018. These differences can be observed in Figures 6 and 7. Figure 2

includes the mean levels of revenue by organization and district type averaged over the span of the dataset. This figure elaborates on the size of Education Foundations that contribute to the higher total revenues that we see in both districts. Additionally, Figure 8 depicts the mean nonprofit revenue by organization and district type from 2014 to 2018. Organizations in both districts experienced growth; however, PMM districts had a higher level of growth than traditional districts in recent years. This distribution is why I logged nonprofit revenue for my dependent variable. The regression results are discussed next.

Table 24. Descriptive Statistics of Nonprofit Organizations in Matched Districts by District Type

	Traditional Districts	PMM Districts
Variables	Mean	Mean
District Characteristics		
Student Enrollment	81,686	82,301
Teacher Student Ratio	16.44	15.95
Expenditure Per Pupil	15,940	18,858
Proportion of Non-White Students	0.817	0.820
Proportion of English Language Learners	0.184	0.184
Proportion of Local Revenue	0.386	0.367
Nonprofit Characteristics		
Total Revenue	2,458,000	4,370,000
Growth	2.363	15.33
Community Characteristics		
Total Population	1,002,000	1,161,000
Median Household Income	62,309	61,413
Proportion with College Degree	0.431	0.455
Number of Organizations	138	74
Number of Districts	35	13

Figure 6. Frequency of Organization Type by District Type

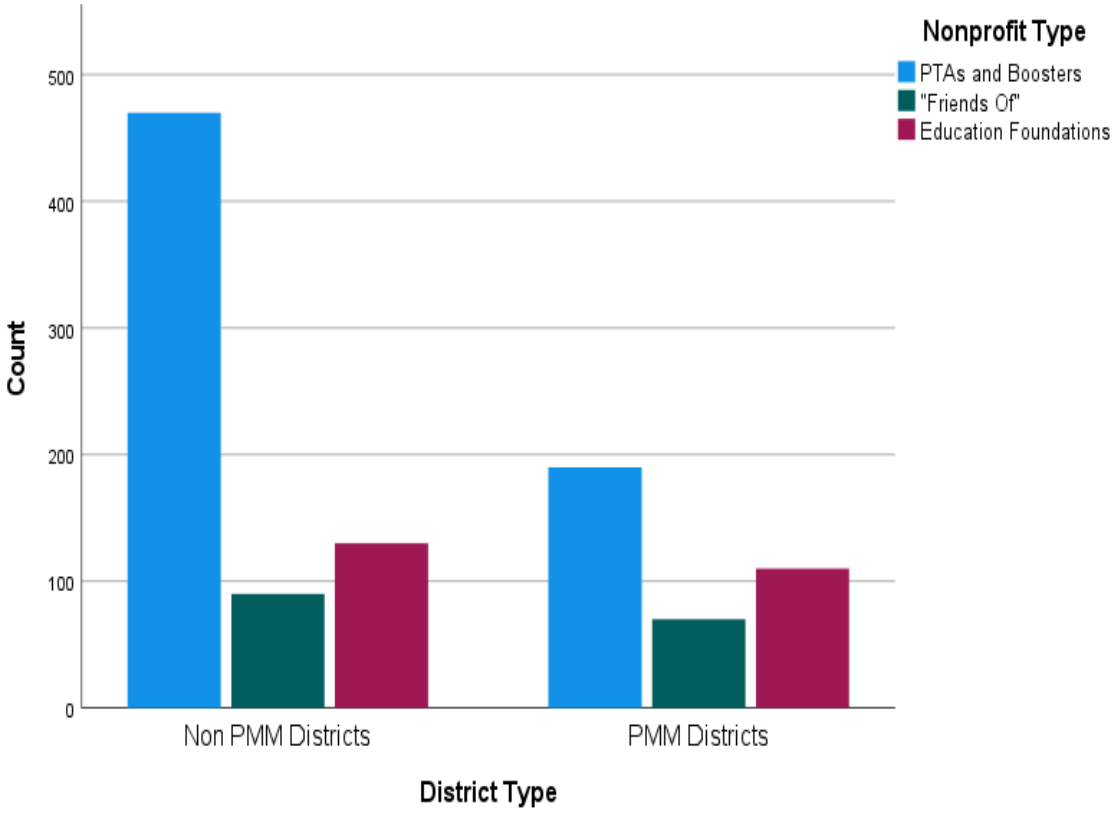


Figure 7. Mean of Total Revenue by Organization Type

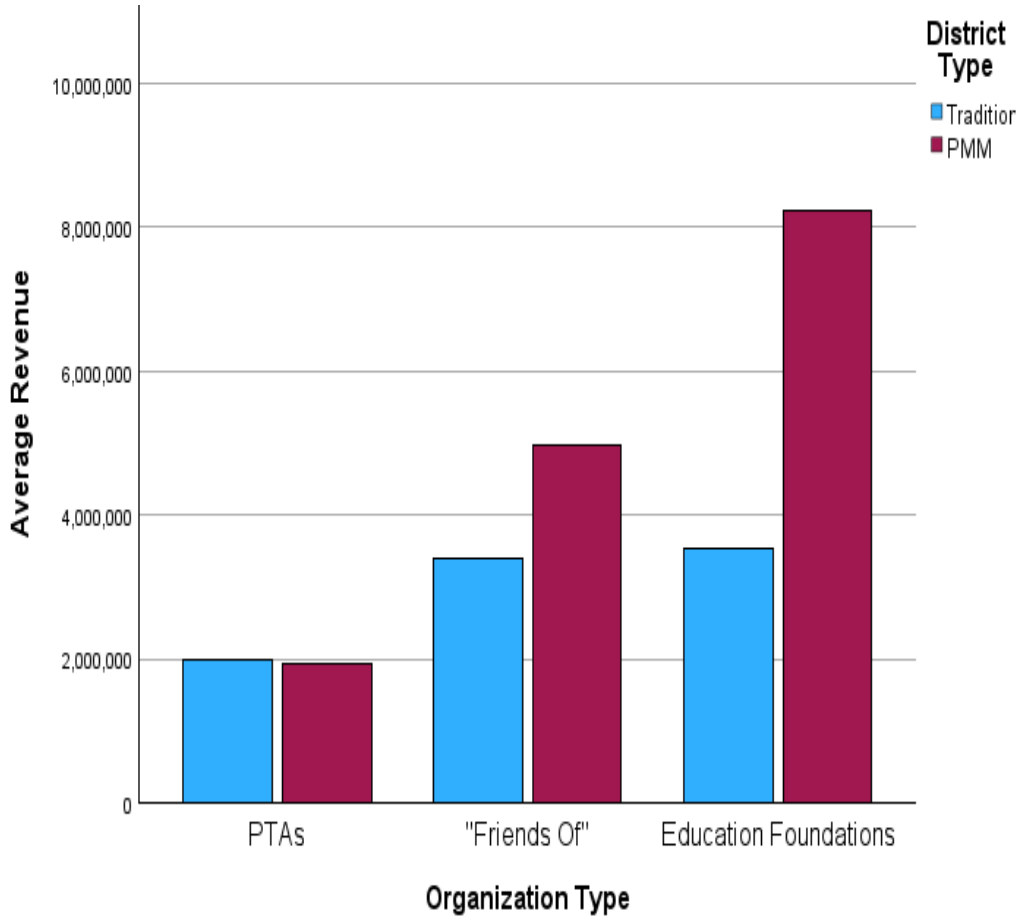
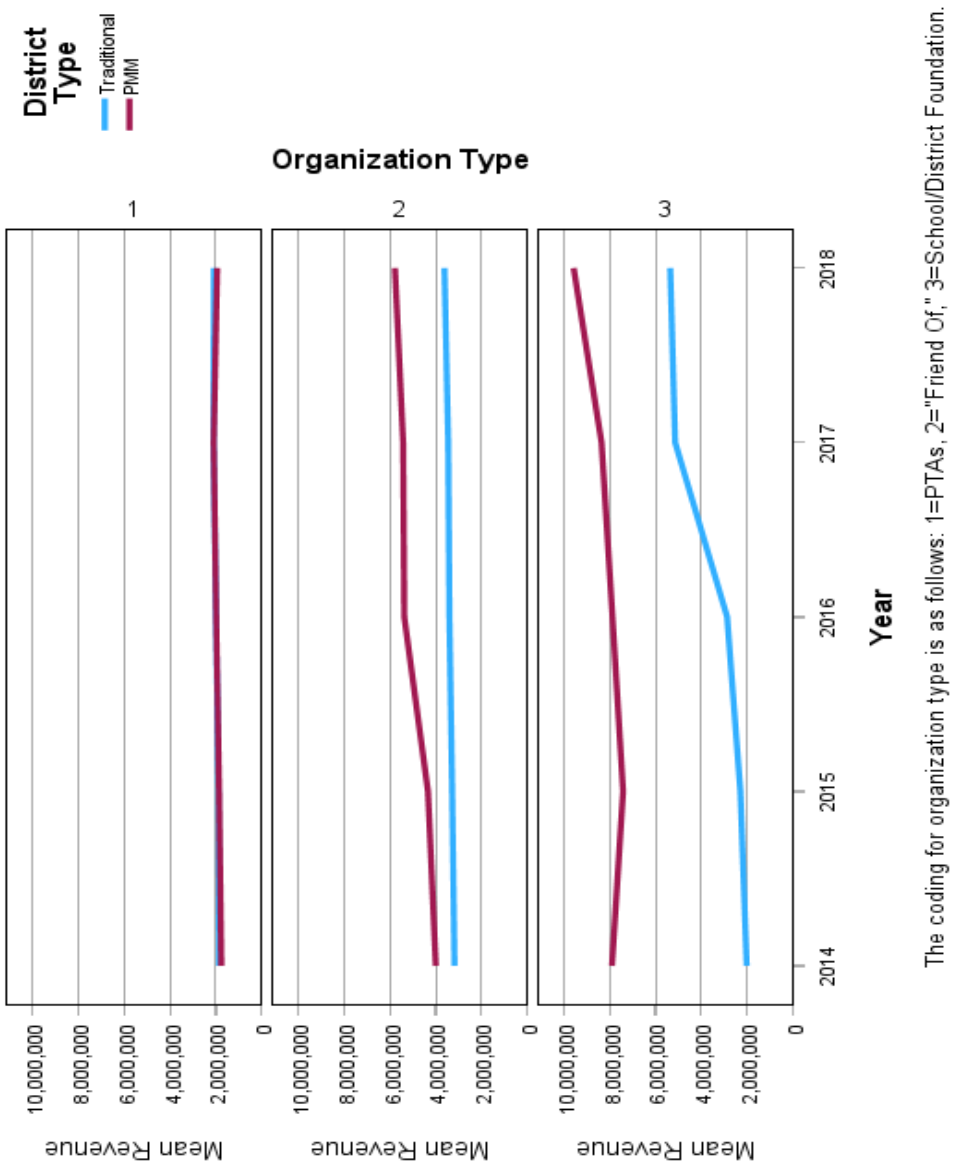


Figure 8. Mean Nonprofit Revenue from 2014 – 2018 by District Type



5.6.1 Total Revenue

I provide the results of my regression models in Table 25. I built my models by first running a bivariate regression to capture the total effect and then layering in controls related to time and organization, then the district characteristics, followed by community characteristics. When the Collective Organization variable was added, PTAs became the reference group. In the binary model, the coefficient on PMM is positive but insignificant. In the subsequent models the effect of the PMM variable became smaller in my sample and negative in the last two models, but never reached a significance level that would enable me to draw conclusions about the relationship between PMMs and revenue in the population. When I added in the district level controls in Model 3, the duration of a PMM had a positive and moderately significant relationship with nonprofit revenue. Additionally, proportion of local revenue has a strong positive relationship effect on nonprofit revenue increasing the log of revenue by 1.4 with every percentage increase in the proportion of local funds in the district revenue when holding all other variables constant. However, these relationships disappeared in the final model. Once the controls for district are included in my model, the only relationship that can be determined is for collective organizations. Being a collective organization increases the log of revenue by 0.48. This finding aligns with what was seen in the descriptive statistics: collective organizations tend to be larger than PTAs.

Interestingly, a number of variables that were significant in other studies did not produce any effects in my models. Prior literature found that district level characteristics including student enrollment and racial composition of the district are associated with the levels of financial coproduction in school districts (Murray et al., 2019; Nelson & Gazley, 2014; Paarlberg & Gen, 2009). Additionally, community characteristics such as the level of education and

Table 25. Regression Models for Nonprofit Revenue

Variables	(1) Model 1	(2) Model 2	(3) Model 3	(4) Model 4
Key Variable				
PMM	0.507	0.211	-0.232	-0.247
	(0.339)	(0.528)	(0.427)	(0.383)
PMM Length		0.0589	0.132*	0.117
		(0.0916)	(0.0761)	(0.0765)
Organization Controls				
Collective Organization		0.215	0.321	0.468*
		(0.277)	(0.299)	(0.278)
District Controls				
Student Enrollment			-0.516	0.182
			(0.595)	(0.552)
Student-Teacher Ratio			-0.0770	-0.102
			-0.516	0.182
Proportion Non-White			-0.742	-0.260
			(1.268)	(1.236)
Proportion of ELL			-0.346	-1.081
			(2.752)	(3.019)
Total District Revenue			0.467	-0.270
			(0.583)	(0.595)
Proportion of Local Revenue			1.380***	0.899
			(0.444)	(0.536)
Expenditures Per Pupil			-1.38e-05	2.28e-06
			(1.57e-05)	(1.47e-05)
Community Characteristics				
Total Population				2.43e-07
				(3.56e-07)
Proportion with College Degree				3.338
				(4.144)
Median Household Income				4.80e-06
Year Controls				
2015		-0.0972	-0.148	-0.124
		(0.164)	(0.163)	(0.158)
2016		0.147	0.222	0.212
		(0.148)	(0.159)	(0.166)
2017		0.296	0.142	0.231
		(0.181)	(0.157)	(0.162)
2018		0.209	-0.00949	0.109
		(0.212)	(0.185)	(0.205)
Constant	13.42***	13.24***	10.84*	16.41**
	(0.209)	(0.209)	(6.220)	(6.541)
Observations	1,060	1,060	1,060	1,060
R^2	0.011	0.020	0.053	0.068

Note. Robust standard errors in parentheses. *** $p < .01$. ** $p < .05$. * $p < .1$.

median income were also linked to levels of financial activity in these nonprofits (Nelson & Gazley, 2014). I ran models without my PMM-related variables to determine if the relationships returned after this control was removed. The coefficients on the district and community controls were unchanged in these models. Therefore, my results may be related to the smaller sample size of my data.

5.6.2 Sensitivity Tests

I also ran models separating out the districts to determine if there was any variation within district types that may highlight differences in coproduction. Tables 26 and 27 include the results for the PMM and TDs, respectively. These models still employ clustered standard errors to generate conservative standard errors and avoid over-rejecting the null (Cameron & Miller, 2015). The PMM only models reveal a strong negative relationship with the proportion of ELL students, but there were no other significant relationships within this group of districts. In the TD only models, as the proportion of non-White students in a district increases, the expected log of revenue decreases by -3.98. This relationship was weak ($p < .10$) and inconclusive. Once the community characteristics were added to the full model, another weak, but positive, relationship developed with the proportion of residents with a college degree. Although these associations are not strong enough for me to entirely reject the null hypothesis, it was interesting to note that the findings more closely resemble findings in the literature (Murray et al., 2019; Nelson & Gazley, 2014; Paarlberg & Gen, 2009).

Organization Level Models. The next set of regression models presented in Table 28 investigate the same model specifications as the full models but with the organizations broken out by type. These models offer a unique exploration into how organizations may vary

Table 26. Regression Models of Nonprofit Revenue for Organizations in PMM Districts

Variables	Model 1	Model 2	Model 3	Model 4
PMM Length	0.0737	0.0745	0.0674	0.0635
	(0.0805)	(0.117)	(0.0765)	(0.116)
Collective Organization		0.270	0.664	0.793
		(0.471)	(0.557)	(0.590)
District Controls				
Student Enrollment			-1.308	1.143
			(2.254)	(5.307)
Student-Teacher Ratio			0.00249	0.0996
			(0.0865)	(0.242)
Proportion of Non-White			1.187	1.994
			(1.291)	(5.083)
Proportion of ELL			-10.04***	-9.363**
			(2.241)	(3.078)
Total District Revenue			3.000	-0.153
			(2.394)	(5.656)
Proportion of Local Revenue			-0.261	-2.283
			(0.882)	(3.764)
Expenditure Per Pupil			-0.000136	-4.49e-05
			(9.95e-05)	(0.000166)
Community Characteristics				
Total Population				8.39e-07
				(7.24e-07)
Proportion with College Degree				14.66
				(20.45)
Median Household Income				-6.99e-05
				(0.000117)
Year Controls				
y2015		0.0774	0.0833	0.0866
		(0.137)	(0.115)	(0.142)
y2016		0.268	0.280	0.286
		(0.361)	(0.230)	(0.282)

Note. Robust standard errors in parentheses.
*** $p < .01$. ** $p < .05$. * $p < .1$.

Table 26. Regression Models of Nonprofit Revenue for Organizations in PMM Districts (continued)

Variables	Model 1	Model 2	Model 3	Model 4
Year Controls				
y2017		0.202	0.221	0.231
		(0.475)	(0.270)	(0.369)
y2018		0.0597	0.0859	0.100
		(0.528)	(0.303)	(0.453)
Constant	13.61***	13.35***	-31.11	0.538
	(0.437)	(0.516)	(24.29)	(49.36)
Observations	370	370	370	370
R^2	0.010	0.018	0.188	0.195

Note. Robust standard errors in parentheses.
*** $p < .01$. ** $p < .05$. * $p < .1$.

Table 27. Regression Models for the Log of Nonprofit Revenue in Traditional Districts

Variables	Model 1	Model 2	Model 3
Collective Organization	0.187	0.242	0.429
	(0.348)	(0.366)	(0.309)
District Controls			
Student Enrollment		-0.489	2.561
		(1.575)	(2.735)
Student-Teacher Ratio		-0.0674	-0.0170
		(0.0642)	(0.0950)
Proportion of Non-White		-3.975*	-0.790
		(2.050)	(2.750)
Proportion of ELL		3.471	3.422
		(3.173)	(3.534)
Total District Revenue		-0.0643	-3.229
		(1.626)	(2.876)
Proportion of Local Revenue		0.0793	0.177
		(0.638)	(0.766)
Expenditure Per Pupil		-2.24e-05	0.000125
		(0.000108)	(0.000171)
Community Characteristics			
Total Population			-5.58e-08
			(3.08e-07)
Proportion with College Degree			8.144*
			(4.668)
Median Household Income			-1.20e-05
			(2.26e-05)
Year Controls			
y2015	-0.198	-0.198	-0.198
	(0.250)	(0.252)	(0.252)
y2016	0.0675	0.0675	0.0675
	(0.155)	(0.156)	(0.156)
y2017	0.324*	0.324*	0.324*
	(0.167)	(0.168)	(0.168)
y2018	0.258	0.258	0.258
	(0.211)	(0.212)	(0.212)
Constant	13.27***	23.99	47.14*
	(0.185)	(14.27)	(24.35)
Observations	690	690	690
R^2	0.008	0.059	0.085

Note. Robust standard errors in parentheses.
*** $p < .01$. ** $p < .05$. * $p < .1$.

depending on their composition and function. Interestingly, each organization type presents a different relationship with the variables in the model. First, my key PMM variable is negative, but insignificant across all the organization types. However, in these reduced models, a few relationships between my control variables and nonprofit revenue can be observed. The first column provides results when I reduce the sample to just PTA organizations. In this model, teacher student ratio has a negative relationship with PTA revenue. As the student-teacher ratio increases, the log of expected nonprofit revenue decreases by .14 ($p < .10$).

The next set of models in Table 28 is restricted to "Friends of" groups. Although the PMM variable is still negative and insignificant, the PMM length variable is positive and significant at the .05 level. Thus "Friends of" groups in districts with more established PMMs tend to have higher revenues than "Friends of" groups in comparable traditional districts. On the other hand, the model restricted to LEFs produces a relationship between the proportion of local revenue and nonprofit financial activity. Holding all else constant, LEFs in districts with higher proportions of local revenue are expected to have higher revenue as well. In this model the financial activity of LEFs in my sample is not related to district type, district characteristics, or community characteristics. The standard errors in these models are still clustered at the district level.

Table 28. Regression Models for the Log of Nonprofit Revenue by Organization Type

Variables	(1) PTAs	(2) "Friends of"	(3) Foundations
Key Variable			
PMM	-0.230	-0.728	-0.488
	(0.633)	(1.541)	(0.732)
PMM Length	0.0529	0.461**	0.170
	(0.0917)	(0.190)	(0.102)
District Controls			
Student Enrollment	-0.367	1.132	-1.927
	(0.503)	(2.046)	(2.280)
Student-Teacher Ratio	-0.140*	0.0982	-0.0148
	(0.0765)	(0.218)	(0.132)
Proportion Non-White	-2.705	18.59	2.637
	(2.297)	(12.76)	(5.015)
Proportion of ELL	3.353	-6.178	-8.729
	(3.224)	(8.180)	(6.411)
Total District Revenue	-0.0754	-1.180	2.078
	(0.553)	(2.264)	(2.266)
Proportion of Local Revenue	0.665	-0.632	2.819*
	(0.457)	(2.217)	(1.368)
Expenditures Per Pupil	2.79e-06	4.23e-06	-0.000166
	(1.61e-05)	(3.72e-05)	(0.000123)
Community Characteristics			
Total Population	5.42e-07	-8.51e-07	5.34e-07
	(3.40e-07)	(1.16e-06)	(6.07e-07)
Proportion with College Degree	6.404	6.253	3.519
	(4.214)	(22.28)	(6.950)
Median Household Income	-2.15e-05	0.000117	1.04e-05
	(2.17e-05)	(0.000101)	(2.85e-05)
Year Controls			
2015	-0.0165	-0.447	-0.243
	(0.160)	(0.582)	(0.249)
2016	0.226	-0.0271	0.356*
	(0.213)	(0.720)	(0.173)

Note. Robust standard errors in parentheses.
*** $p < .01$. ** $p < .05$. * $p < .1$.

Table 28. Regression Models for the Log of Nonprofit Revenue by Organization Type (continued)

Variables	(1) PTAs	(2) "Friends of"	(3) Foundations
Year Controls			
2017	0.399*	-0.425	0.0669
	(0.218)	(0.643)	(0.270)
2018	0.0396	-0.0865	0.431
	(0.257)	(0.431)	(0.455)
Constant	20.35***	6.857	-8.167
	(7.028)	(29.14)	(21.71)
Observations	660	160	240
R^2	0.101	0.164	0.227

Note. Robust standard errors in parentheses.
*** $p < .01$. ** $p < .05$. * $p < .1$.

5.6.3 Growth

I now turn to my growth models where I control for organization type to test its relationship with growth from 2014 to 2018. The results for the growth models are provided in Table 29. These models were run with the organization as the unit of analysis and employ the panel to model growth by organization over time. There were 212 organizations; therefore, my number of observations was significantly smaller than in my prior models. In these models, PTAs are the reference group. In this final set of regressions models, there were no statistically significant correlations. The coefficient estimates for the PMM and PMM length variables are positive within the sample, but they are not statistically significant. Therefore, I found no evidence that there are differences between growth rates in school-supporting nonprofits based on district type.

Table 29. Regression Models for Growth Rate from 2014-2018

Variables	(1) Model 1	(2) Model 2	(3) Model 3	(4) Model 4
Key Variable				
PMM	12.97	8.864	8.875	0.466
	(15.12)	(14.31)	(13.59)	(14.75)
PMM Length		0.375	1.510	2.411
		(1.668)	(2.860)	(3.362)
Organization Controls				
"Friends of"		31.79	30.81	28.22
		(30.93)	(29.60)	(26.74)
School/District Foundation		-1.150	1.048	0.447
		(3.090)	(3.544)	(3.575)
District Controls				
Student Enrollment			-89.59	-36.25
			(77.07)	(47.79)
Teacher Student Ratio			-1.403	1.667
			(2.525)	(1.638)
Proportion Non-White			-66.08	35.04
			(58.12)	(46.49)
Proportion of ELL			80.37	90.42
			(64.12)	(78.40)
Proportion of Local Revenue			-15.86	-0.364
			(19.47)	(16.46)
Expenditures Per Pupil			-0.00566	-0.00345
			(0.00506)	(0.00339)
Community Characteristics				
Total Population				-1.74e-05
				(1.31e-05)
Proportion with College Degree				189.3
				(162.2)
Median Household Income				-0.000823
				(0.000798)
Constant	2.363*	-1.567	-815.2	-499.5
	(1.376)	(4.067)	(692.6)	(509.8)
Observations	212	212	212	212
R^2	0.006	0.028	0.051	0.064

Note. Robust standard errors are in parentheses.
*** $p < .01$. ** $p < .05$. * $p < .1$.

5.7 Discussion

My analysis in this chapter included greater detail about the behavior of school-supporting nonprofits in PMM and comparable traditional districts. Table 30 includes the results of my hypotheses and additional relationships observed in my analysis. The results of my regressions indicate that there is no difference between PMM districts and comparable traditional districts. Thus, my hypotheses (*H1* and *H5*) were incorrect about the relationship between district governance and financial coproduction. However, I found that collective organizations are larger than PTAs when my full panel of controls is included in the model. This finding reinforced the data presented descriptively in Figure 3. To test my hypotheses on organization types, I ran models reducing the sample to the organization of interest. These models reflected no difference between organizations in PMMs and comparable traditional districts (*H1a-c*). Additionally, I did not find evidence within my sample to support my hypotheses related to prior findings about enrollment or racial composition of districts. However, the proportion of local revenue was positively related to nonprofit revenue before controlling for community characteristics. The difference in my findings from prior studies (e.g., Nelson & Gazley, 2014) may be due to the matching performed to eliminate selection bias resulting from differences between districts choosing PMM approach. As my sample was from larger exurban and urban districts, some prior findings may be driven by the differences in smaller, more rural districts and larger, more urban districts.

Turning to the models using subsets of the organization type, I found variation between organizations indicating that diverse types of collective action organizations may be influenced by district and community characteristics differently. PTAs financial coproduction is negatively

impacted by higher student-teacher ratios, which suggests that these organizations benefit from parents having more personal connections to the school. Based on the coproduction typology adapted from Nabatchi et al. (2017), PTAs produce benefits primarily at an individual level. Thus, parents may be drawn to participate in organizations when they feel they have a closer connection with the school staff and community. Hence, lower student-teacher ratios may provide opportunities for deeper relationships between parents and their child's school. On the other hand, "Friends of" groups are collective benefits organizations and were the only school-supporting organization to exhibit a relationship with a PMM related variable. The membership of "Friends of" groups is open to the community and is not restricted to parents with direct connections to schools. A positive effect on nonprofit revenue related to the duration of a PMM may indicate that there is community involvement that is developing around a PMM as the model persists into time. It could also indicate that these types of organizations are becoming more popular in PMM districts which utilize charter operators as part of their school management strategy. Charter schools are associated with fewer traditional PTA organizations even though they may have higher levels of parent involvement (Boylan et al., 2021) and organizers in these schools may be favoring a more flexible "Friends of" group format.

Finally, LEFs are the one organization type that demonstrated a relationship to the proportion of local revenue, which was significant in other studies (Murray et al., 2019; Nelson & Gazley, 2014; Paarlberg & Gen, 2009). This suggests that the size of these organizations is more directly related to levels of wealth in the community than the other organizations. Thus, my findings about the size of school-supporting nonprofits failed to confirm my hypotheses related to prior relationships in the literature (*H2 – H4*), except for the weak positive association

between local revenue and LEFs. I also failed to confirm any of my hypotheses about revenue growth of school-supporting nonprofits for the period of my dataset.

Table 30. Hypotheses and Results Summary

Hypothesis for Full Models	Finding
H1 – Nonprofits in PMMs will have smaller revenues	Not confirmed
H1a – PTAs in PMMs will have smaller revenues	Not confirmed
H1b – "Friends of" Groups in PMMs will have smaller revenues	Not confirmed
H1c – Education Foundations in PMMs will have smaller revenues	Not confirmed
H2 – Larger enrollments will have smaller revenues	Not confirmed
H3 Higher enrollments of minority students will have smaller revenues	Not confirmed
H4 Higher proportions of local revenue will have larger revenues	Weakly positive for Foundations
H5 PMM Districts will have lower levels of growth	Not confirmed
Additional Variables and Models	Relationship
PMM Length	Positive before including community characteristics
	Positive for "Friends of" Groups
Collective Organizations	Weakly positive in full model
Proportion of Minority Students	Weakly negative in TD only models
Proportion of ELL Students	Negative in PMM only models
Student-Teacher Ratio	Weakly negative for PTAs
Proportion of College Degree	Weakly positive in TD only models

5.7.1 Limitations and Future Research

Although I was unable to confirm a relationship between governance models and coproduction, my findings suggest there is more to be explored about coproduction in school districts. However, several limitations must be considered when interpreting results and generating next steps for future research. First, the sample for this study comes from districts across the nation. Due to the inclusion of district-level organizations (LEFs), I was unable to

match organizations with specific schools, which would provide more accurate descriptors of the specific schools that have these financially active PTA organizations and may reveal further within district variation. It is possible that there is benefit hoarding (Murray et al. 2019) within PMM districts where schools in wealthy areas are more active than schools in less affluent areas.

Additionally, I attempted to control for bias in the estimates by pre-processing and using coarsened exact matching (Iacus et al., 2011) to data on several characteristics restricting my sample to districts that are more like PMM districts than might be found in a random sample. This process has the benefit of reducing model dependence, but as a result it also reduces effects that may be found between a more diverse sample. However, this reduction may be preferrable to the overstatement of an effect due to an imbalance between the treatment and control groups. Furthermore, my final sample was also small due to the matching process and the fewer numbers of organizations in the NCCS Core Files. A next step in this line of inquiry should be to add additional years and districts to determine if there are effects to be observed with additional data points.

Another consideration related to my matched sample is the disparity that may exist between small and large and rural and urban districts. With my matched sample, many of the effects found in prior literature disappeared. This suggests that the effects of human capital within a district are not marginal and are due to larger variations between rural and urban districts, or even regions in the United States. According to the NCES (2022), there were 19,672 school districts on file. The median revenues for these districts vary regionally with a high of $22,128 in the Northeast to a low of $12,124 in the South. The expenditures per pupil also vary by region and state. Most notably, the percentage difference in spending between high- and low-

poverty districts is on average 0.6 across the United States but can be as high as 42.1 percentage points in South Dakota or as low as -9.6 percentage points in Virginia (NCES, 2022). Prior researchers used state or district-level fixed effects with no controls for region, state, or locale. Future research should explore how these variables may influence coproduction and any mechanisms at play if there are differences. Additionally, if certain areas have fewer formal institutions for coproduction, researchers should consider how these communities may be engaging in coproduction in the absence of school-supporting nonprofits.

Finally, I was also unable to control for any unobservable factors that may impact the selection into a PMM district. Variables that could account for community involvement in education governance, such as school board elections, should be considered in future research. Additionally, I was unable to account for any differences in implementation or public reception of the PMM approach across the districts or account for what additional initiatives may be present in the control districts. There may be higher levels of community organizing and connectivity in these districts due to the nature of reform movements and grassroots organizing. Conversely, the level of funding and engagement of stakeholders may be what facilitated reform in the district via a PMM approach. Further analysis should also be conducted at the school level to explore how schools within a district may differ in their levels of involvement and how funds provided by school-supporting nonprofits are distributed. Future research should consider how PMMs are implemented including the types of community engagement initiatives as well as the response of parents and stakeholders. Surveying schools, district personnel, and nonprofit organizations would provide greater clarity in this area.

Finally, I use the NCCS Core Files for this analysis. Like the NCCS BMF, this data may have inconsistencies and errors due to the self-reported and unverified nature of the data (Gordon et al., 2007). Additionally, the Core Files exclude a wide range of organizations that are not required to file an IRS 990 because their revenue is lower than $25 thousand annually. Therefore, some active school-supporting nonprofits are absent from this analysis.

5.7.2 Contributions

Despite the limitations, this paper contributes to the literature in two major ways. First, there is little known about the education nonprofit subsector. Research that investigated education nonprofits focused exclusively on PTAs or did not distinguish between types of organizations in their analyses. This paper builds on prior work focused on school-supporting nonprofits by conducting a more recent analysis that accounts for institutional variables that may impact coproduction. It also contributes to the coproduction literature that lacks in extensive empirical understanding of the nature of what influences differences in coproductive behavior between individuals as consumers and collective groups of citizens working for public benefit (Alford, 2014; Loeffler & Bovaird, 2017). This paper focuses on national data including and distinguishing between PTAs, "Friends of" groups, and LEFs. This approach provides greater understanding of the factors that influence financial coproduction.

Chapter VI: Factors Contributing to Coproduction in School Districts

The American education system is a unique institution within our society. Nearly every citizen interacts with schools in an ongoing manner: as a student receiving education, a parent guiding their child's development, or a community member paying taxes, to name a few. Supporting the provision of education as a public good is key to developing both private benefits, like academic achievement and college and career readiness, and public benefits, like an engaged citizenry and capable workforce. Theories of coproduction point to the benefits of citizens working individually, or collectively, to produce public services in conjunction with the government (Thomas, 2012). Citizens can influence service provision by advocating for services that better meet their needs. They also build community networks through civic engagement and may develop pride and a sense of ownership in the public services they coproduce (Alford, 2002; 2014; Nabatchi et al., 2017). Governments may benefit as well. The cost to produce services may be lowered through coproduction, and citizens may build support for services that ease administration (Alford, 2014; Thomas, 2012). Therefore, coproduction benefits both the citizen and government by providing mechanisms for citizens to influence and tailor services to their preferences meanwhile reducing, or contributing to, the resources needed from the government to provide services.

As outlined in prior chapters, changes in institutional structures and operations may alter patterns of coproduction. PMMs utilize policy tools, like contracting and performance management, which promote quasi-markets in public education systems. The operating model of PMM districts may disrupt or enhance engagement within a community through fundamental changes to district operations. Specifically, a PMM approach incorporates market-based reforms

to improve the quality of schools (Bulkley et al., 2020). In theory, contracting and performance management may improve academic performance in schools by infusing the district with more nimble and responsive charter schools. However, these policy tools may also disrupt traditional avenues of engagement by closing and restarting schools, breaking the bonds and networks communities have through their neighborhood schools, and generating distrust of the school or district (Glazer & Egan, 2016; Hamlin, 2020). Scholars debated whether neo-liberal approaches to management allows democratically run institutions to engage effectively with their constituents (Dahl & Soss, 2014). A number of scholars qualitatively explored the community responses to the implementation of PMM governance models and found that the communities often reported feeling left out of decision-making about the changes made to the schools due to closures and school restructuring (Bulkley et al., 2020; Glazer & Egan, 2016; Welsh & Williams, 2018). If these feelings are representative of community, engagement and coproduction could be depressed, which could also stifle positive effects on student outcomes.

Education reforms are complex - requiring support from elected officials, school leaders and staff, and the community. Reforms of public systems are collective action problems at their core. Although prior research examined the effects of markets and PMMs on school and student outcomes, no research explored the effects on collective action in the form of parent involvement and coproduction. Evidence of coproduction may be an important signal about levels of collection action occurring in a particular context as well as the sustainability and success of these reforms in neighborhood communities. The preceding chapters explored the relationships between school governance models and parent engagement and nonprofit coproduction.

6.1 Synthesis of Findings

The empirical analyses presented in this dissertation focus on exploring the question of whether school district governance is associated with differences in coproduction activities and if there are differences in the types of coproduction that may be evident. Using multiple datasets, three chapters in this dissertation included exploratory analysis of the prevalence and types of coproduction in school districts. Understanding these dynamics is key to understanding citizen involvement and response to governance changes in schools.

6.1.1 Parent Involvement and Coproduction

Parent involvement was defined as a multi-level process beginning with simple interactions with schools and building into activities that support school governance and operations (Epstein, 1995; Hamling & Flessa, 2018). The foundational forms of parent engagement are important for parents to build relationships within a school community that may develop social capital (Hoover-Dempsey et al., 2005; Murray et al., 2020). I began my analysis by exploring principal perceptions of academic involvement as it includes measures for parent-teacher conferences, open houses, and subject area events that are foundational parent involvement activities. I found that PMMs have a negative effect on academic involvement before accounting for district and community characteristics. After including those variables, the significance of the relationship disappeared. PMMs tend to have higher proportions of free and reduced lunch, which has a consistent negative relationship with involvement when it is included in models. This suggests that involvement and coproduction may be more difficult in PMM districts because of the demographics of the schools' community.

My models for principal perceptions of involvement and coproduction included variables that controlled for school efforts to encourage participation and other types of parent engagement. These variables were associated with higher levels of coproduction in every model suggesting that school-family networks and connections are crucial to the development of coproduction and collective action. Social capital developed through interactions with school staff and other parents at special events or parent workshops may lay the foundation for parents to feel welcome in a school and able to contribute at a deeper level. Thus, it seems necessary to establish parent engagement practices that serve as a foundation for parent connections in any type of school (Epstein, 2010).

When assessing the effects of school district governance on coproduction, I found no differences between traditional public schools in PMM and traditional districts. There were also no difference between regular charters and PMM charters. This finding indicates that charter schools in PMM districts may be keeping pace with traditional charter schools. I expected to find that PMM districts would have a negative effect on coproduction in all types of PMM schools due to the changes in how school assignment and school choice work within a PMM district. PMM charters differ from standalone or charters in traditional districts in several major ways. Within a PMM system, the district contracts charter management organizations to operate under-performing schools (Bulkley et al., 2020; Hill et al., 2009). This means that many charters in a PMM district are formerly traditional public schools converted to charter management. These converted charter schools may not be as small as traditional charters and their student bodies will mirror traditional schools in the district. Prior research found that charter schools tend to have smaller and less racially diverse student bodies (Renzulli & Evans, 2005). They also tend to have

fewer students requiring special education services (Eisenlohr et al., 2023; Lacireno-Paquet et al., 2002; Winters, 2013). The changes in the structure of PMM charter schools does not seem to diminish positive effects of charter schools, according to my data. However, as the results are inconclusive, this area is worth further exploration.

My findings also indicate that experience as a principal is positively associated with both academic involvement and coproduction, but not necessarily tenure at their current school. This result may indicate that as principals gain experience leading school communities, they devote more focus to parent involvement, which may be due to more time for outreach efforts or potentially more time to observe the behaviors of parents in their school.

When considering the characteristics of students, higher proportions of free-and -reduced lunch is negatively associated with both academic involvement and coproduction. Regardless of the types of parent involvement, socioeconomic status is a key indicator of the ability to be involved. Proportions of ELL learners, on the other hand, have a positive relationship with academic involvement, but a negative relationship with coproduction. Schools with higher ELL populations may engage in outreach strategies to engage the school community in academic involvement events. However, these parents may not participate in certain types of activities due to cultural differences, limited understanding of the American education system, or language barriers. Finally, racial homogeneity is negatively associated with coproduction. This contrasts with literature that suggests homogenous communities are more cohesive and experience higher levels of trust, which are necessary for coproduction (Putnam, 2001). Due to White flight, many schools, particularly urban schools, are racially homogenous, but also have high concentrations of poverty coupled with low educational attainment levels within the community (Renzulli &

Evans, 2014). Therefore, my homogeneity variable may have captured concentrations of lower socioeconomic status associated with lower levels of coproduction in schools.

6.1.2 Nonprofit Coproduction

The next two chapters of the dissertation focused on identifying associations between PMM districts and financial coproduction through PTAs and other school-supporting nonprofits. When examining the likelihood of a PTA reporting any financial activity, the odds are higher in PMM districts, but with a weak significance level. In the models using the full panel of district and community controls, schools with higher enrollment, higher student-teacher ratios, and larger ELL populations are more likely to have PTAs that report any level of financial activity. PTAs are also more likely to be financially active when the community population has a higher proportion of college educated citizens. Interestingly, the school district characteristics lost their significance in my models exploring PTA revenue, or the amount of financial activity. However, when examining the magnitude of that activity, higher education levels continue to have a strong positive effect on PTA size. Education levels within a community have a consistent positive association with coproduction, and in my analysis it had a larger impact than the financial resources of the community.

In the following chapter, I included additional years and types of organizations. In my primary models, the effects of district and community characteristics on nonprofit revenue disappeared. I also ran models restricted to the individual organization types – PTAs, "Friends of," and LEFs. I found that the duration of a PMM is associated with higher revenues for "Friends of" organizations. Additionally, I found a strong and negative association with the proportion of ELL students and nonprofit revenue for the sample of PMM districts only. While I

can only speculate about the reasons that "Friends of" organizations may be getting larger with the length of a PMM, it is worth noting that it may be related to growing community support and the use of less bureaucratic fundraising methods. Again, this explanation rests on the influence of charter schools in a PMM district. Murray et al. (2019) found that charter schools in North Carolina were less likely to have parent organizations that were representative of traditional PTAs that are associated with ties to the typical bureaucratic structures found in traditional schools. Thus, if the "Friends of" organizations are associated with charter schools, we may be observing growth related to the development of relationships between schools and neighborhood communities. While this finding may indicate some forms of coproduction may be developing under a PMM governance approach, overall, this district approach is not fostering greater levels of group coproduction (PTAs) or collective coproduction ("Friends of" and foundations).

In general, there is no difference between PMM districts and traditional districts in terms of their financial coproduction. While a null result is preferable to finding decreased coproduction, this may also be an indicator that these districts are not encouraging any new coproduction within these districts and the coproduction that does exist may be perpetuating existing inequities within a district. Furthermore, scholars speculated about the role of national nonprofits and advocacy organizations in fueling market-based education reforms. Several large foundations, such as The Laura and John Arnold Foundation, funded PMM efforts, which suggests these approaches may stem from a national political agenda that does not fully represent local preferences (Bulkley et al., 2020; Reckhow, 2015). My results showed no statistically significant differences in size between LEFs in PMM districts and those in traditional districts. It is possible that funding from these large foundations is moving straight to the district. If so, the

involvement of LEFs in a PMM process may be more about redistribution of resources rather than an infusion of philanthropic dollars from national organizations.

6.2 Implications for Policy and Practice

Although PMMs as a reform type might be another trend in urban education reform, key features of the model will continue to grow. Contracting and performance management, elements of the new governance, are likely to see continued growth in school district operations as calls for accountability continue to grow while districts operate with limited resources and calls to meet the demands of increasingly diverse populations. To date, the use of these policy tools has resulted in increased contracting with charter management organizations to operate district schools as part of their charter networks.

Due to the potential for policy feedback (Mettler, 2018; Schneider et al., 2014), citizen participation and engagement can have far-reaching effects. In the case of parent perceptions of school districts and participation in their local schools, the encouragement, or hinderance, of parent coproduction may influence whether parents exercise other aspects of their citizenship role such as voting in local school board elections. Although a PMM encourages a market-based approach, the market is managed by the school district and the district also determines school closures and conversions based on academic performance (Hill & Jochim, 2022). A centrally managed market may feel paternalistic to parents and disincentivize participation in democratic processes, which may impact the longevity and success of education reforms.

Some studies of charter schools found positive effects on academics, long-term social outcomes, and parent involvement (Bifulco & Ladd, 2006a; Booker et al., 2014; McEachin et al., 2020; Oberfield, 2020; Zimmer et al., 2012). However, the results of the broader literature are

often mixed, particularly in academics, and some scholars pointed to the characteristics of parents and students who select into these schools as drivers of variation in charter school effects (Abdulkadiroglu et al., 2011; Bifulco & Ladd, 2006b; Eisenlohr et al., 2023; Oberfield, 2020). Policymakers and education leaders should be concerned with a key question of the managed market approach of PMMs: when selection disappears, does the effectiveness of charters remain? My findings on parent involvement and coproduction at the school level suggest it might, but my results are not conclusive. Parents in PMM charter schools showed no significant difference on parent engagement in any form of academic involvement or coproduction and any benefits from market reform was not extended to non-charter PMM schools. This finding, while not as negative as expected, suggests policymakers should still proceed cautiously with charter reforms until more definitive conclusions can be made. Education leaders and researchers should continue investigating barriers to parent participation and coproduction and ways to increase involvement to ensure that inequities are not sustained or promoted through portfolio system approaches.

Urban education reform continues to face problems, some of which relate to "policy churn" and the inability of stakeholders to agree on issues (Marschall & Shah, 2005). Stakeholders in urban education include parents, school administrators and educators, and neighborhood groups (Marschall & Shah, 2005). Gaining buy-in within the school community could be crucial to the success of education reforms. Developing social capital through parent involvement in schools may be of prime importance in school reform movements that may hinge upon buy-in from parents and the community at large. Higher levels of social capital may also enable parents to connect their children with additional resources than might have otherwise

been available. More connected parents can advocate for curriculum or school programming that would benefit their children (Noguera, 2001), which could benefit entire school communities. Developing social capital may also enable PMM schools to fully realize the promise of positive effects seen in traditional charter schools.

Social capital development fosters civic engagement and collective action (Putnam, 2000). Although parents may be personally involved in their child's education, collective action by parents and community stakeholders is necessary to ensure equitable and appropriate distribution of resources within school districts. Policymakers and education reform advocates may place different values on the importance of neighborhood schools and the benefits that may stem from community cohesion. Campbell and colleagues (2017) reported that some parents participating in school choice in PMM districts were more interested in school culture than academic performance. Coproduction can be a particularly effective avenue for collective action bringing together individual resources to help tailor and prioritize services at a school. However, if groups of parents, are disenfranchised from engagement and coproduction processes, the result may be the perpetuation of the status quo, or, in the worst care, benefit-hoarding by certain groups (Murray et al., 2020). Policymakers should monitor levels of coproduction and collective action to ensure that

At a practical level, this dissertation also provides insights for education leaders and parents engaged with education reform. PMMs do not seem to be negatively associated with parent engagement and financial coproduction; however, they are also not producing positive results. While charter schools have a positive association with parent co-management, their effect in a PMM district is unclear. This suggests that education leaders should still be cautious

about whether this educational approach can deliver results in different policy contexts. It could also indicate that more efforts should be made to assist parents with awareness of and participation in a choice process. As suggested by Campbell and colleagues (2017), some parents may not even be aware of the choice processes in their district. They may also have difficulty in engaging with an application system. Low-income parents may experience these frustrations disproportionately (Campbell et al., 2017). Therefore, policymakers and education leaders should prioritize communication efforts with families in their districts to ensure that opportunities are equitably distributed (Hill & Jochim, 2022).

6.3 Contributions

Prior research exploring parent engagement and coproduction evaluated relationships between school and community characteristics and the evidence of financial coproduction (Murray et al., 2019; Nelson & Gazley, 2014; Paarlberg & Gen, 2009). While these perspectives provided valuable insight into associations between community human capital and school district resources, the influences of institutional structures were overlooked. Although scholars controlled for institutional practices, such as school-parent communication, there has been no attempt to connect governance models and coproduction. This dissertation addresses this gap. The theoretical foundations of collective action and coproduction propose that the infrastructure and norms of institutions influence the ways constituents interact or comply with their directives (Ostrom, 2000). Thus, in the preceding chapters I explored these relationships empirically from multiple perspectives.

This research contributes to several bodies of literature including research on school district governance, and PMMs specifically, as well as research on coproduction in education.

Research on PMMs and district governance often utilized case study methodology (e.g., Bulkley et al., 2020; Glazer & Egan, 2016; Glazer et al., 2019; Eisenlohr et al., 2023). While appropriate for exploration and understanding the inner workings of these districts, case studies limit our broader understanding of the general connections between governance models and the communities in which they operate. Using larger, empirical datasets, these essays produce evidence of relationships between district governance models and civic engagement.

These findings also contribute to larger discussions about civic engagement and third-party government by exploring a model that focuses on contracting and performance management in urban school settings. Governance models matter may promote or hinder civic participation and management of public goods (Ostrom, 2000). With this research I provided insight into how they are related to coproduction of services in these settings.

6.4 Limitations and Future Research

Although this research makes important contributions to the literature, it is important to highlight the limitations in the conclusions that I drew from my analyses. The data in this study were either cross-sectional or limited in the number of observations. In an ideal design, I would construct a large sample with a treatment group that has a definitive start for the treatment and consistent model over time. Such a design would allow me to isolate the causal relationship between a governance model and parent involvement and coproduction. Due to the scope of my research, this was not possible. I opted instead to shine a broader light on the dynamics of governance models and coproduction at the expense of causal inference. As a result, my conclusions only point to correlational observations. Future research should consider isolating school districts and utilizing econometric techniques, such as regression discontinuity models or

difference in differences, to further explore the effects of a PMM approach. These studies could utilize school-level data that may also reveal district inequities in engagement and distribution of resources.

Additionally, a lingering question remains if school districts that choose PMMs are fundamentally different from comparable school districts that are not PMMs. Although I used a matching mechanism to limit the effects of selection-bias, it is possible that other underlying factors could be at play. For instance, the composition of the school board, backgrounds of school district leadership, the political structures of the board, or the composition of industries within the school district could influence approaches to education reform. Further investigation should consider identifying underlying differences in PMM districts. Why do some urban districts pursue PMM approaches, while others do not? Identifying additional observable characteristics associated with PMM selection could illuminate other unexplored factors driving civic engagement and coproduction.

There may also be differences within PMM districts that could influence levels of parent engagement and coproduction between these districts. For example, some PMM districts are governed by state or mayoral appointed boards while others are elected (Hill & Jochim, 2022). PMM districts may also vary in their numbers of charter schools relative to their student enrollment. As an extreme case, New Orleans is comprised almost totally of charter schools (Bulkley et al., 2020). Other PMM districts may employ magnet schools and other types of themed schools more frequently in efforts to meet the needs of students within their districts (Campbell et al., 2017). These differences and how they might influence collective action should be investigated in future research.

Financial contributions from nonprofits are an important way of measuring tangible support and benefits school districts receive. However, this study is limited by the inclusivity and reliability of the datasets based on IRS reporting. In Chapter 4, I utilized the NCCS BMF which only provides information on the parent organizations that report data in 990 postcards; however, there are likely parent groups and community supports operating outside of official parent-led nonprofits in addition to organizations that do not file regularly. In Chapter 5, the data came from the NCCS Core Files. This dataset only captures organizations with $25 thousand or more in annual reported income. There are organizations that are likely not represented in these datasets. As mentioned previously, this data may also have inconsistencies and inaccuracies due to its self-reported and unverified nature (Gordon et al., 2007).

Additionally, there are a surprising number of school districts, both traditional and PMM, that have no parent-led nonprofits reporting to the BMF. Therefore, it is quite probable that some participation is underestimated by this study. Further research in parent-led and school-supporting nonprofits should investigate parent engagement in other types of school and community-based groups and activities that support schools. It is possible that parent engagement in some school districts, particularly urban districts serving populations of low socioeconomic status, may have developed nontraditional methods of support for their school communities.

Finally, I hypothesized that coproduction would be lower in PMM districts based, to some extent, on case study research that provided anecdotal evidence that communities had negative reactions to the closures and conversions of schools in their districts (Bulkley et al., 2020; Campbell et al., 2017; Glazer & Egan, 2016; Jochim & Hill, 2022; Welsh & Williams,

2018). While I did not find positive effects of a PMM, the results did not seem to be as negative as suggested by anecdotal evidence. This phenomenon might be related to behavioral economic theories of loss aversion and status quo bias (Kahneman et al., 1991). Parents express a preference for the known, or status quo, but once the loss is realized they continue to maintain connections with their schools. Case study research could be expanded to explore prior perceptions and actual behaviors of parents in these school districts. Additional data on school outreach strategies and relationship building could further develop a picture of the dynamics of preference, intention, and behavior in reaction to education reforms. Furthermore, since I am unable to make definitive conclusions about the differences in coproduction in PMM charters and traditional charters, case study research methodologies could also be employed to better understand how charter schools operate in a PMM and to what extent parents are aware of school changes. Surveys and focus groups could elicit opinions about schools before and after PMM inception and explore whether parents notice a difference between schools that were converted to charter school management. It is possible that parents participating in their assigned schools perceive few differences between these two operational models. This knowledge could guide actionable strategies for education reform implementation in other districts.

A school district is not simply an education system, but an integral piece of a community's identity reflecting both the strengths and challenges within a place. People develop relationships with schools through their direct and indirect connections. Depending on their perceptions and preferences, they may support, advocate for change, or select alternative options. Community support for and engagement in educational institutions is crucial to the success of education reforms and the realization of achievement goals. Aligning the values of policymakers,

education leaders, and community members is necessary for effective collective action to occur in education. Understanding the dynamics of parent involvement and coproduction should remain a priority for policymakers as education reform efforts continue to alter the landscape of traditional education practices.

Appendix A. Sensitivity Analyses for Sample Located in Urban Areas

Table A1. Descriptive Statistics for Schools in Urban Areas by District Type

Variables	Traditional Districts	PMM
Age	47.76	46.75
Male	0.398	0.407
Education Degree	0.825	0.824
Years Principal	6.515	5.839
Administrative License	0.960	0.938
Hispanic	0.157	0.193
White	0.805	0.616
Black	0.161	0.313
Racial Match	0.457	0.446
Coproduction	1.733	1.733
Academic	2.994	2.950
Budget	1.858	1.781
Governance	1.644	1.676
Instruction	1.840	1.831
Volunteer	1.751	1.644
School compact	3.551	3.445
Workshops	2.393	2.303
Special Events	2.713	2.650
Parent Teacher Conferences	3.234	3.209
Open Houses	3.035	2.992
School Choice	0.041	0.479
Enrollment	787.89	624.92
Attendance	0.923	0.923
Student Teacher Ratio	15.21	13.81
Homogeneity	0.500	0.607
FRLP	0.664	0.792
ELL	0.158	0.178
Elementary	0.497	0.573
Middle	0.171	0.104
High	0.251	0.161
Combine	0.081	0.161
N	1370	210

Note. Data are from the 2017-2018 NTPS. Observations are rounded to the nearest 10th per NCES Guidelines.

Table A2. Marginal Effects from Probit Models Measuring Differences in Principal Perceptions of Coproduction at Schools in Urban Areas

	(1)	(2)	(3)	(4)
Variables	y1	y1	y1	y1
District/School Type Variables				
School in PMM District	0.0231	0.00102	-0.00238	-0.0240
	(0.0187)	(0.0250)	(0.0254)	(0.0255)
School Choice		0.00536	0.0147	-0.00654
		(0.0350)	(0.0367)	(0.0254)
Charter School				0.0169
				(0.0239)
PMM*Charter				0.0440
				(0.0492)
Principal Characteristics				
Male			-0.0331**	-0.00748
			(0.0149)	(0.0148)
Education Degree			-0.0202	-0.0419**
			(0.0196)	(0.0188)
Administrative License			0.0214	0.0332
			(0.0271)	(0.0243)
Years as Principal			0.00285	0.000713
			(0.00174)	(0.00164)
Years at Current School			0.000395	-0.00189
			(0.00240)	(0.00233)
Minority Principal			0.0243	0.0355**
			(0.0169)	(0.0149)
Racial Match			0.0288*	-0.00134
			(0.0158)	(0.0165)
Age			0.000705	0.000518
			(0.000991)	(0.000855)
School Characteristics				
MO				0.0102
				(0.0323)
Enrollment				5.11e-06
				(1.60e-05)
Attendance				0.0246
				(0.0666)
FRLP				-0.0413
				(0.0259)
ELL				-0.0619*
				(0.0352)

Note. Robust standard errors in parentheses. Data are from the NTPS 2017-2018 administration. Observations include 1580 schools with 210 schools in PMM districts. Numbers are rounded to the nearest 10th according to NCES guidelines.
*** $p < .01$, ** $p < .05$, * $p < .1$.

Table A2. Marginal Effects from Probit Models Measuring Differences in Principal Perceptions of Coproduction at Schools in Urban Areas (continued)

	(1)	(2)	(3)	(4)
Variables	y1	y1	y1	y1
School Characteristics				
Student/Teacher				0.00170
				(0.00163)
Homogeneity				-0.0519
				(0.0406)
Middle				-0.0124
				(0.0202)
High				-0.0114
				(0.0239)
Combined				0.00938
				(0.0284)
Parental Involvement				0.0613***
Academic				(0.0117)
				0.0186***
School Compact				(0.00655)
				0.115***
Workshops				(0.0115)

Note. Robust standard errors in parentheses. Data are from the NTPS 2017-2018 administration. Observations include 1580 schools with 210 schools in PMM districts. Numbers are rounded to the nearest 10th according to NCES guidelines.
*** $p < .01$, ** $p < .05$, * $p < .1$.

Table A3. Marginal Effects from Ordered Probit Models Measuring Principal Perceptions of Coproduction in Urban areas with greater than 75% FRL

	(1)	(2)	(3)	(4)
Variables	y1	y1	y1	y1
District/School Type Variables				
School in PMM District	0.0292	0.0112	-0.000406	-0.0383*
	(0.0223)	(0.0276)	(0.0261)	(0.0205)
School Choice		0.0424	0.0549	0.00142
		(0.0480)	(0.0488)	(0.0261)
Charter School				-0.00307
				(0.0255)
PMM*Charter				0.0329
				(0.0495)
Principal Characteristics				
Male			-0.00229	0.0107
			(0.0200)	(0.0166)
Education Degree			-0.0242	-0.0362*
			(0.0256)	(0.0218)
Administrative License			0.0408	0.0449
			(0.0308)	(0.0289)
Years as Principal			0.00120	-0.000516
			(0.00235)	(0.00183)
Years at Current School			0.00349	0.00109
			(0.00313)	(0.00233)
Minority Principal			0.0386	0.0107
			(0.0250)	(0.0186)
Racial Match			0.0165	0.0296
			(0.0260)	(0.0214)
Age			0.000863	4.01e-05
			(0.00127)	(0.000953)
School Characteristics				
MO				0.0263
				(0.0405)
Enrollment				9.79e-06
				(2.37e-05)
Attendance				0.00186
				(0.0964)
FRLP				0.0311
				(0.0998)
ELL				-0.0522
				(0.0338)

Note. $N = 760$ principals, rounded to the nearest 10^{th}. Data are from the 2017-2018 NTPS Principal Survey. The school choice variable is created from data from the National Alliance for Public Charter Schools and indicates that schools are in a district where 30% or more students are enrolled in charter schools. *t* statistics are in parentheses. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table A3. Marginal Effects from Ordered Probit Models Measuring Principal Perceptions of Coproduction in Urban areas with greater than 75% FRL (continued)

	(1)	(2)	(3)	(4)
Variables	y1	y1	y1	y1
School Characteristics				
Student/Teacher				0.000772
				(0.00191)
Homogeneity				-0.0130
				(0.0390)
Middle				-0.00295
				(0.0251)
High				-0.0121
				(0.0253)
Combined				0.0352
				(0.0341)
Parental Involvement				
Academic				0.0340***
				(0.0119)
School Compact				0.0213***
				(0.00774)
Workshops				0.117***
				(0.0142)

Note. N = 760 principals, rounded to the nearest 10th. Data are from the 2017-2018 NTPS Principal Survey. The school choice variable is created from data from the National Alliance for Public Charter Schools and indicates that schools are in a district where 30% or more students are enrolled in charter schools. *t* statistics are in parentheses.
* $p < .05$, ** $p < .01$, *** $p < .001$.

Table A4. Marginal Effects from Ordered Probit Models Measuring Principal Perceptions for Academic Involvement in Urban Areas

	(1)	(2)	(3)	(4)
Variables	y1	y1	y1	y1
District/School Type Variables				
School in PMM District	0.0401	0.00419	0.0114	-0.0151
	(0.0303)	(0.0413)	(0.0409)	(0.0458)
School Choice		-0.0816	-0.0668	-0.0872*
		(0.0528)	(0.0507)	(0.0459)
Charter School			0.00245	0.0940***
			(0.0346)	(0.0332)
PMM*Charter				-0.0354
				(0.0768)
Principal Characteristics				
Male			-0.0922***	-0.0190
			(0.0254)	(0.0251)
Education Degree			0.0124	0.00981
			(0.0300)	(0.0282)
Administrative License			-0.0469	-0.0420
			(0.0468)	(0.0417)
Years as Principal			0.000124	4.94e-05
			(0.00314)	(0.00279)
Years at Current School			0.00368	0.000458
			(0.00405)	(0.00368)
Minority Principal			-0.0622**	0.0296
			(0.0260)	(0.0257)
Racial Match			0.0496**	0.000386
			(0.0237)	(0.0286)
Age			0.00127	0.00256
			(0.00165)	(0.00161)
School Characteristics				
MO				-0.00564
				(0.0550)
Enrollment				5.25e-05**
				(2.34e-05)
Attendance				0.165**
				(0.0733)
FRLP				-0.162***
				(0.0527)
ELL				0.0693
				(0.0542)

Note. Robust standard errors in parentheses. Data are from the NTPS 2017-2018 administration. Observations include 1580 schools with 210 schools in PMM districts. Numbers are rounded to the nearest 10th according to NCES guidelines.
*** $p < .01$. ** $p < .05$. * $p < .1$.

Table A4. Marginal Effects from Ordered Probit Models Measuring Principal Perceptions for Academic Involvement in Urban Areas (continued)

	(1)	(2)	(3)	(4)
Variables	y1	y1	y1	y1
School Characteristics				
				(0.00274)
Homogeneity				-0.149**
				(0.0685)
Middle				-0.100***
				(0.0387)
High				-0.363***
				(0.0425)
Combined				-0.160***
				(0.0524)
Parental Involvement				
School Compact				0.0623***
				(0.00909)
Workshops				0.204***
				(0.0199)

Note. Robust standard errors in parentheses. Data are from the NTPS 2017-2018 administration. Observations include 1580 schools with 210 schools in PMM districts. Numbers are rounded to the nearest 10th according to NCES guidelines.
*** $p < .01$. ** $p < .05$. * $p < .1$.

Table A5. Marginal Effects from Ordered Probit Models Measuring Principal Perceptions of Academic Involvement in Urban Areas with Greater than 75% FRL

	(1)	(2)	(3)	(4)
Variables	y1	y1	y1	y1
District/School Type Variables				
School in PMM District	0.0744*	0.0625	0.0451	-0.0430
	(0.0383)	(0.0510)	(0.0530)	(0.0592)
School Choice		-0.112	-0.0662	-0.0758
		(0.0697)	(0.0650)	(0.0595)
Charter School			0.000802	0.0731
			(0.0476)	(0.0502)
PMM*Charter				0.00711
				(0.0923)
Principal Characteristics				
Male			-0.132***	-0.0380
			(0.0377)	(0.0343)
Education Degree			-0.0452	-0.0303
			(0.0420)	(0.0365)
Administrative License			0.0499	0.00188
			(0.0763)	(0.0612)
Years as Principal			-0.00204	-0.00122
			(0.00502)	(0.00396)
Years at Current School			0.0114*	0.00537
			(0.00609)	(0.00532)
Minority Principal			-0.0414	0.0470
			(0.0434)	(0.0440)
Racial Match			0.00572	-0.0296
			(0.0454)	(0.0510)
Age			0.00236	0.00313
			(0.00238)	(0.00224)
School Characteristics				
MO				0.00534
				(0.0728)
Enrollment				8.17e-05**
				(3.73e-05)
Attendance				0.343***
				(0.0964)
FRLP				-0.354*
				(0.206)
ELL				0.107
				(0.0733)

Note. N = 760 principals, rounded to the nearest 10th. Data are from the 2017-2018 NTPS Principal Survey. The school choice variable is created from data from the National Alliance for Public Charter Schools and indicates that schools are in a district where 30% or more students are enrolled in charter schools. *t* statistics are in parentheses.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table A5. Marginal Effects from Ordered Probit Models Measuring Principal Perceptions of Academic Involvement in Urban Areas with Greater than 75% FRL (continued)

	(1)	(2)	(3)	(4)
Variables	y1	y1	y1	y1
School Characteristics				
Student/Teacher				0.00181
				(0.00379)
Homogeneity				-0.0633
				(0.0920)
Middle				-0.0696
				(0.0526)
High				-0.325***
				(0.0585)
Combined				-0.149**
				(0.0667)
Parental Involvement				
School Compact				0.0752***
				(0.0132)
Workshops				0.213***
				(0.0266)

Note. $N = 760$ principals, rounded to the nearest 10^{th}. Data are from the 2017-2018 NTPS Principal Survey. The school choice variable is created from data from the National Alliance for Public Charter Schools and indicates that schools are in a district where 30% or more students are enrolled in charter schools. *t* statistics are in parentheses. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table A6. Counts of Principal and Student Body Racial Match

Racial Match Subgroup	Count of Matches*
Hispanic	330
Black	210
White	2610
Asian	Numbers too Low to Report
No Match	1950
Total	5100

Note. *Counts are rounded to the nearest 10th. Data are from the 2017-2018 NTPS Principal Survey. Racial match occurs when the principal's reported race matches with a student race subgroup that accounts for more than 50% of the student body.

Appendix B. Analyses of PTA Financial Activity Using Continuous Independent Variables

Table B1. The odds of PTAs Reporting Financial Activity (With Continuous Variables)

Variable	Odds Ratio
Key Variable	
PMM District	1.563**
District Characteristics	
Proportion of Charter Schools	0.100**
Enrollment	1.000***
Homogeneity Index	2.450
ELL	5.590*
Expenditure per Pupil	1.000
Local Revenue	0.506
Student/Teacher Ratio	1.081**
Community Characteristics	
Population	1.000
Median Household Inc.	1.000
College Degree	43.667***
Constant	.002***

***$p < .01$. ** $p < .05$. * $p < .10$.

Appendix C. Description of Variables for Chapter 5

Table C1. Dependent and Independent Variables by Source

Variable	Measurement
Dependent Variables from NCCS	
Nonprofit Revenue	Natural Log of reported revenue
Growth between 2014-2018	Continuous, % ((2018 Revenue-2014 Revenue)/2014 Revenue)
Independent Variables	
Key Variable	
PMM District	Dummy, Coded 1 if PMM.
Organization Variables from NCCS	
Year	Year of the data, 2014-2018
PMM Length	Duration of the PMM, 0 for non-PMM and PMMs that have not started and increases when the longer a PMM has been in operation
Collective Organization	Dummy, coded 1 if a School or District supporting foundation that is standalone (not parent-led); base is PTA organizations
PMM*Collective Organization	Interaction Term, Coded 1 for Collective Organizations in PMM Districts
PTA	Dummy, coded 1 if PTA or parent-led organization; base is "Friends of" and Foundations
"Friends of"	Dummy, coded 1 if "Friends of" organization; base is PTAs and Foundations
Foundation	Dummy, coded 1 if a school or district serving foundation; base is PTAs and "Friends of"
Common Core of Data Variables from year 2016	
District Enrollment	Continuous
Proportion of Students of Color	Continuous, %
% ELL	Continuous, %

Table C1. Dependent and Independent Variables by Source (continued)

Variable	Measurement
Common Core of Data Variables from year 2016	
District Enrollment	Continuous
Proportion of Students of Color	Continuous, %
% ELL	Continuous, %
Total District Revenue	NCES Finance, Log
District Per Pupil Spending	Continuous, Total Instructional Spending/Enrollment
ACS Variables from 2016	
County/District Population	Continuous
Proportion of Population with a College Degree	Continuous, %
Median Household Income	Continuous

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VITA

Courtney Leidner received her bachelor's degree in English literature from the University of Georgia in Athens, GA in 2003. She served as an ESOL teacher in Western North Carolina before pursuing a master's degree in social work at the University of Georgia. She obtained her degree in 2007. She then began a career supporting educational success for struggling students in K-12 public education systems. She managed community school and academic support programs for Latino students and their families while serving as the School-Based Services Program Manager at El Programa Hispano, a division of Catholic Charities of Oregon. While in Oregon, Courtney also participated in the Ladder to Leadership Fellowship Program sponsored by the Robert Woods Johnson Foundation.

After relocating to Atlanta, she served as the Director of Programs at PowerMyLearning-Atlanta. In this role, she partnered with schools and districts to provide technology and training to low-income families throughout the metro-area. During this time, Courtney also participated in the Education Policy Fellowship Program offered by the Georgia Partnership for Excellence in Education. Currently, Courtney holds the position of Analyst and conducts research on K-12 education and workforce development at the Southern Regional Education Board. As an analyst with SREB, she works with states to analyze and implement career pathways systems involving multiple institutions and education stakeholders.

Courtney's research interests include educational governance and reform, charter schools, community engagement, and educator experiences. She has published articles in peer-reviewed journals such as Social Science Quarterly and Educational Policy. Courtney also has teaching

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