



Do Civic Infrastructures Predict Student Outcomes? Comparing Grassroots and Professional Education Nonprofits

Jose Eos Trinidad

University of California Berkeley

Xinyi Mary Chen

University of California Berkeley

Christof Brandtner

Emlyon Business School

Local civic infrastructures—the networks of organizations, relations, and community resources supporting schools—can shape education policy and practice, yet evidence of their relationship to student outcomes remains limited. We examine this relationship using a novel panel dataset of US education nonprofits from 2010 to 2019, geocoded and linked to over 10,000 school districts. Grassroots nonprofits like parent-teacher groups and fundraising organizations are consistently associated with higher test scores, whereas professional nonprofits like research/advocacy and school support organizations are not. These patterns hold across measures of nonprofit presence and density but vary systematically across specific contexts: the associations are concentrated in high- and middle-SES districts, and in rural districts, both grassroots and professional nonprofits are positively associated with test score gains. Fixed-effects models attenuate these relationships, suggesting that associations operate less through short-term organizational addition and more through durable differences in local civic infrastructures. Our study provides the first national evidence on how nonprofits relate to student achievement, theorizes the role of civic infrastructures on educational opportunities/inequalities, and establishes a foundation for future quantitative investigations.

VERSION: September 2026

Suggested citation: Eos Trinidad, Jose, Xinyi Mary Chen, and Christof Brandtner. (2026). Do Civic Infrastructures Predict Student Outcomes? Comparing Grassroots and Professional Education Nonprofits. (EdWorkingPaper: 26-1593). Retrieved from Annenberg Institute at Brown University: <https://doi.org/10.26300/pj77-qb13>

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Comparing Grassroots and Professional Education Nonprofits

Jose Eos Trinidad, Xinyi Mary Chen, and Christof Brandtner

Abstract

Local civic infrastructures—the networks of organizations, relations, and community resources supporting schools—can shape education policy and practice, yet evidence of their relationship to student outcomes remains limited. We examine this relationship using a novel panel dataset of US education nonprofits from 2010 to 2019, geocoded and linked to over 10,000 school districts. *Grassroots nonprofits* like parent-teacher groups and fundraising organizations are consistently associated with higher test scores, whereas *professional nonprofits* like research/advocacy and school support organizations are not. These patterns hold across measures of nonprofit presence and density but vary systematically across specific contexts: the associations are concentrated in high- and middle-SES districts, and in rural districts, both grassroots and professional nonprofits are positively associated with test score gains. Fixed-effects models attenuate these relationships, suggesting that associations operate less through short-term organizational addition and more through durable differences in local civic infrastructures. Our study provides the first national evidence on how nonprofits relate to student achievement, theorizes the role of civic infrastructures on educational opportunities/inequalities, and establishes a foundation for future quantitative investigations.

Keywords: education nonprofit, student achievement, nonprofit organizations, school districts

Do Civic Infrastructures Predict Student Outcomes?

Comparing Grassroots and Professional Education Nonprofits

Introduction

In the United States, various school practices and education policies are influenced by nonprofits like research, philanthropic, fundraising, parent-teacher, and school support organizations (DeBray et al. 2020; Farrell et al. 2023; Horsford, Scott, and Anderson 2018; Reckhow 2013). On one end, studies highlight their contribution to school improvement and help in advocating equitable outcomes for economically disadvantaged and racially minoritized students (Bryk et al. 2023; Ewing 2019; Fuller 2022; Honig 2004). Nonprofits achieve this by providing flexible funding, focused capacity like research assistance, and direct services like tutoring and coaching (Coburn and Penuel 2016; Trinidad 2025; Woulfin and Rigby 2017). On the other end, some scholars question and criticize nonprofits as they privilege technocratic solutions, sideline community voices, and exacerbate inequalities by creating challengers to public institutions (Good and Nelson 2021; Reckhow and Tompkins-Stange 2018; Trujillo 2014). In both cases, schools and districts are often affected by their local *civic infrastructure*, or the variety of organizations, relations, and resources that support collective action for education (for examples outside education, see Parr 1993; Patrick and Brady 2015).

Despite rich qualitative studies centered on their influence, few have quantitatively studied the consequences of civic infrastructures on students' outcomes, and the few that attempted are geographically limited to certain cities or states (Bridwell-Mitchell, Jack, and Childs 2023; Murray

et al. 2019). However, understanding the relationship between nonprofit presence and student outcomes is important for several reasons. From a practical standpoint, substantial public and private investments are directed toward these civic and nonprofit organizations (Reckhow and Snyder 2014), yet there is little national-level evidence on whether, how, and which organizations are associated with improved student performance. From a theoretical perspective, research on education inequality and achievement has largely focused on school factors—like accountability systems, ability grouping, and teacher effectiveness—while paying little attention to broader civic contexts shaping students’ opportunities and performance (Chetty, Friedman, and Rockoff 2014; Domina et al. 2019; Figlio and Loeb 2011; Gamoran et al. 1995). We also contribute an education example to sociological research noting the influence of civic organizations on improving various community-level outcomes like crime reduction and sustainability initiatives (Brandtner 2022; Sharkey, Torrats-Espinosa, and Takyar 2017). From a methodological perspective, most studies rely on local interventions and comparative cases, limiting our ability to assess whether nonprofits’ positive or negative influence generalizes across contexts (Horsford et al. 2018; Scott et al. 2017). Establishing this relationship empirically, however, is challenging due to data limitations, difficulties in causal identification, and the unclear mechanism for nonprofit presence to support student achievement (Lampkin and Boris 2002). Thus, a necessary first step is to descriptively investigate whether meaningful associations between nonprofit presence and student outcomes exist at scale.

We therefore ask: How do the presence and density of education nonprofits in U.S. school districts relate to student test score outcomes? How do these relationships vary across geographic and socioeconomic contexts? Drawing on a novel national dataset linking education nonprofit organizations (NPOs) to district-level student outcomes, we find that districts with a stronger NPO

presence tend to exhibit higher test scores. However, these associations are not uniform across organizational forms. Positive associations are concentrated among *grassroots nonprofits*—especially parent-teacher and fundraising organizations—whereas *professional nonprofits* like research/advocacy and school-support organizations show little consistent association with student outcomes. These patterns are remarkably robust across measures of NPO presence and density. However, they vary across specific contexts: the associations are concentrated in high- and middle-SES districts, while in rural districts, both grassroots and professional nonprofits are positively associated with test score gains. We also find that district fixed-effects models attenuate these associations, highlighting the salience of between-district differences rather than just within-district organizational additions. Altogether, our findings highlight the importance of a district's local *civic infrastructure*, suggesting that associations between nonprofit presence and student outcomes reflect persistent differences in local nonprofit sectors rather than the short-term effects of adding nonprofits. We further define and theorize the concept of civic infrastructure in the discussion section.

Our study provides the first national evidence on the relationship between education NPOs and student achievement in the United States. Empirically, we show that grassroots NPOs are more consistently linked to higher test scores than professional NPOs registered in the same school districts, and that these relationships appear to reflect differences in local ecosystems rather than the effects of mere organizational additions. Theoretically, we discuss potential mechanisms for how this distal community-level factor may influence educational opportunities and outcomes. Methodologically, it advances the field by developing novel approaches to geocoding nonprofits and linking them to district-level outcomes.

Background

Civic Influence on Education Policy, Practice, and Outcomes

Sociologists, political scientists, and education policy scholars have long interrogated the role of external influences on education (Baldrige 2019; Honig 2004; Reckhow 2013; Rowan 2002). Studies highlight the role of philanthropic, intermediary, and advocacy organizations in school politics and policymaking as they influence reform initiatives (Scott and Jabbar 2014), school board elections (DeBray et al. 2020), education policies (Reckhow and Snyder 2014), data monitoring systems (Trujillo 2014), and policy discourses (Ball 2008). Others also note the role these organizations have taken on as they support policy implementation—as intermediary actors (Honig 2004), school reform professionals (Peurach 2011), and catalysts of networked improvement communities (Bryk, Gomez, and Grunow 2011).

Aside from influencing and implementing education policies, many external organizations also affect the practices and activities in schools and districts. Research-practice partnerships have collaborative engagements that attempt to support improvements in teaching and learning (Farrell et al. 2021). School support professionals and data analysts work on issues ranging from dropout prevention to instructional coaching (Trinidad 2025; Woulfin and Rigby 2017). Youth work professionals lead formal and informal programs after school hours, on weekends, and across the summer—seeking to benefit the communities they serve (Baldrige 2026). Parent-teacher organizations, booster clubs, and community fundraising groups also support schools through the resources and initiatives they provide (Murray et al. 2020). While many of these qualitative studies demonstrate that external organizations can shape educational opportunities and experiences, few have quantified the broader relationship between the presence of such organizations and student outcomes across communities.

Some quantitative studies have attempted to uncover the role of civic groups in education, but are limited in their scope. Nelson and Gazley (2014) assembled a dataset of fundraising and parent-teacher organizations (PTOs) linked to US school districts from 1995 to 2010 and found that wealthier districts were more likely to be served by such nonprofits. Their analysis highlights the unequal distribution of support organizations across communities, but leaves unanswered the question of whether nonprofit presence is related to student outcomes. Others have attempted to study this association with student outcomes in specific contexts. Murray and colleagues (2019) linked nonprofit data to North Carolina elementary schools and found that *PTO* presence was associated with higher test scores. Focusing on New York City schools, Bridwell-Mitchell and colleagues (2023) found that instructionally-oriented and longer partnerships with *education service organizations* are significantly associated with higher exam scores. Although the former highlights an example of a grassroots organization while the latter a professional organization, it is unclear whether these patterns generalize across organizational forms and across regions in the country. Thus, we attempt to study if patterns documented in these places may operate in organizations beyond PTOs and education service organizations, and in the US more broadly.

Nonprofit Organizations and Student Outcomes

Quantitative research on predictors of student outcomes and inequalities has often emphasized the role of race (Reardon, Kalogrides, and Shores 2019); family socioeconomic status (Downey, Quinn, and Alcaraz 2019); school organizational processes like ability grouping, accountability, and grade retention (Domina et al. 2019; Figlio and Loeb 2011; Gamoran et al. 1995; Hong and Raudenbush 2005); and school resources like curriculum and effective teachers (Chetty et al. 2014; Lee and Burkam 2003). While some research has examined “outside factors” like social capital

and neighborhood disadvantage shaping achievement (Coleman 1988; Gamoran et al. 2021; Wodtke and Parbst 2017), little attention has been devoted to the role of broader civic initiatives and nonprofit organizations (NPOs). One possible explanation is that NPOs are often viewed as distal factors whose consequences on student outcomes are indirect, diffuse, and therefore less consistent than those of family, school, or neighborhood characteristics.

However, there are compelling theoretical reasons to expect NPOs to contribute to student outcomes. From a *resource mobilization* perspective, organizations focused on fundraising and scholarship opportunities can bring additional financial and human resources to schools that can support higher achievement (Good and Nelson 2021; Rauscher et al. 2025). As a recent meta-analysis has shown that increases in per-pupil spending significantly improves test scores and college-going behavior (Jackson and Mackevicius 2024), it is reasonable to expect that resources generated through NPOs and school booster clubs may produce similar benefits by supplementing school budgets and increasing educational opportunities.

From a *civic engagement* perspective, organizations like PTOs may function not just to raise funds but also to promote greater school involvement and volunteering—which research has shown to be particularly consequential for schools in disadvantaged neighborhoods (Li and Fischer 2017). Aside from enhancing parental investment and social capital, such organizations may also increase the capacity of communities to advocate for educational opportunities and hold public officials accountable to student outcomes (Murray et al. 2020; Warren 2005). Such civic benefits highlight the role of NPOs beyond merely increasing financial resources.

From a *capacity-building* perspective, professional NPOs centered on instructional improvement, technical assistance, and whole-school reform may strengthen the organizational effectiveness of schools themselves (Peurach 2011; Trinidad 2023; Woulfin and Rigby 2017).

Research, advocacy, and school support nonprofits can provide expertise and professional development opportunities that help enhance instructional quality and institutional capacities (Bryk et al. 2023; Peurach and Glazer 2012). Consistent with this view, Bridwell-Mitchell and colleagues (2023) find that sustained, instructionally focused partnerships are associated with improved student outcomes. These results suggest that nonprofits may enhance student achievement by strengthening schools' organizational capacity. Collectively, these perspectives suggest that civic organizations may shape student outcomes through mechanisms like resource mobilization, civic engagement, and organizational capacity-building.

To examine these mechanisms empirically, we distinguish between two broad categories of NPOs: *Grassroots NPOs* include parent-teacher, fundraising, and scholarship organizations that are embedded in local communities and most likely affect schools through resource mobilization and civic engagement.¹ In contrast, *Professional NPOs* include research, advocacy, and school-support organizations that seek to improve student outcomes through technical expertise, organizational learning, and capacity-building efforts. We hypothesize that both types may independently influence outcomes but with distinct mechanisms:

H1a: The presence of a grassroots nonprofit is positively associated with student achievement.

H1b: The presence of a professional nonprofit is positively associated with student achievement.

At the same time, we expect these associations to be modest in magnitude. Compared to more proximate predictors of achievement—like family socioeconomic status, school resources, and

¹ Although we wanted to make a distinction between organizations that focus on civic engagement and on resource mobilization, PTOs often function as a means of supporting parental/civic engagement *and* fundraising. Thus, it was difficult to disentangle these functions. Therefore, we collapsed these two functions as we investigate grassroots nonprofits.

instructional quality—NPOs are relatively distal features of local contexts. Thus, their influence is likely indirect and operates through schools and communities.

Aside from merely the presence of a nonprofit, the number of nonprofits relative to the number of students may also influence students' outcomes. A single nonprofit may be sufficient to mobilize resources and coordinate activities in a small district but may be inadequate to meet the needs of a much larger district. To account for these differences in scale, we examine *nonprofit density*, calculated as the number of nonprofits over the district student population. We hypothesize that:

H2a: The density of grassroots nonprofits is positively associated with student achievement.

H2b: The density of professional nonprofits is positively associated with student achievement.

In this way, greater nonprofit density may increase access to financial, social, and organizational resources.

Variations on Nonprofit Influence

The influence of NPOs on student achievement may vary across contexts. One contextual factor is the geographic location of a school district. Rural school districts may have fewer nonprofit organizations and more limited access to external professional help and support services (Wargo et al. 2021). As a result, the presence of a local NPO in a rural district may provide resources and capacities that would otherwise be unavailable, which then contributes to student performance. In contrast, urban school districts typically have a larger number and density of nonprofits—both within and outside the field of education (Brandtner 2022; Trinidad, Lancet, and Wang 2025).

Because schools in these districts often have access to multiple partners and support providers (Bridwell-Mitchell 2017), the addition of a single NPO may generate smaller marginal benefits. Thus, we examine if there is geographic variation in the NPO-outcomes association:

H3a: In rural districts, the positive association between NPO presence and achievement is strong.

H3b: In urban districts, the positive association between NPO presence and achievement is weak.

While our theoretical discussion focuses on the two geographic “extremes,” we recognize that many districts are located in towns and suburban communities. We expect these districts to exhibit patterns that fall between rural and urban districts, where districts with greater access to resources obtain less marginal benefit from the presence of nonprofits.

Another potential source of variation is the socioeconomic status (SES) of a school district. In lower-SES districts, schools often face greater resource constraints and student needs, increasing the potential value of NPOs as providers of academic, social, and enrichment services. In these contexts, NPOs may play a *compensatory role* by supplying educational opportunities, professional expertise, and support services that schools are unable to provide on their own (Downey and Condron 2016). In higher-SES districts, schools often have resources amplified with the help of PTOs, band and sports boosters, and other service organizations. Rather than compensate for resource deficits, NPOs in these settings serve to amplify existing advantages by mobilizing additional financial, social, and cultural capital (Bourdieu 2011). In these contexts, NPOs may play a *resource amplification role* by further enhancing the educational success of already advantaged students. Thus, we hypothesize:

H4a: The association between NPO presence and achievement is strong in lower-SES districts.

H4b: The association between NPO presence and achievement is strong in higher-SES districts.

Although we hypothesize similarly significant positive associations for both lower- and higher-SES districts (and potentially weaker associations in median districts), the contribution of NPOs on student outcomes may operate through significantly different pathways.

Because few studies have interrogated these hypotheses empirically on a national scale, we first attempt a descriptive examination of these associations. These initial attempts can then support future work focused on causal identification and inference.

Data and Methods

Data and Sample

This study draws on a novel ten-year panel dataset covering school districts in the United States from the 2009-2010 to the 2018-2019 school years (herein referred to as 2010 to 2019). We constructed the dataset by merging district-level academic achievement data from the Stanford Education Data Archive (Fahle et al. 2021; Reardon et al. 2024) with nonprofit data from the National Center for Charitable Statistics (Lecy 2024) and district-level socioeconomic and demographic information from the Common Core of Data and the American Community Survey (Fahle et al. 2021). The final analytic sample yields 96,259 district-year observations across 11,352 school districts in our main models.

The Stanford Education Data Archive (SEDA) dataset is constructed from administrative data between 2010 and 2019, with average test score estimates for math and English Language Arts (ELA) for grades three through eight (Reardon 2019). We used annual test score data for

every public school district during these years, ending with the 2019 school year because of the COVID-19 pandemic in 2020. Charter and magnet schools' test scores are included in the district they are formally chartered or in the district they are physically located in (Fahle et al. 2021).

School districts are identified by their geographic identifiers using the Institute of Education Sciences' school district boundaries file, with data from 1995 to 2025 (Institute of Education Sciences 2026). Each education nonprofit was geocoded using its longitude and latitude coordinates and assigned to the corresponding district boundary. In cases where precise coordinates were unavailable or difficult to verify, we used the nonprofit's zip code to approximate its district location. We note an important caveat. Because district assignment is based on organizational location in the IRS form 990 rather than verified service area, the measure is best understood as capturing local organizational presence rather than the full reach of nonprofit activity. The use of zip codes in a small subset of cases also introduces a modest degree of spatial imprecision, particularly near district boundaries, which likely adds measurement noise and makes our estimates more conservative rather than overstated.

Variables

Our primary dependent variable is the average standardized *math test score* for third-grade students in a given district and year, expressed in standard deviation units relative to the national mean (i.e., zero). We focus on third-grade math because it offers a consistent and substantively meaningful indicator of early academic performance, and has been a focal outcome widely used in educational research (Figlio and Loeb 2011). We also use ELA test scores as a robustness check to assess whether our findings are consistent between these two measures (see Table S1). We note that district achievement measures across math and ELA, as well as across grade levels, are highly

correlated (Reardon 2019). Thus, similar results across outcomes would suggest that the patterns we identify reflect the broader relationship between nonprofits and student outcomes rather than just idiosyncrasies of one particular test.

<INSERT TABLE 1 NEAR HERE.>

We have two measures for our independent variable on education nonprofits. First is a measure of *NPO Presence*, operationalized as a binary indicator equal to 1 if at least one organization of a given type is registered in the district during a given year. Second is a measure of *NPO Density*, measured as the number of nonprofits of a given type per 1,000 enrolled students, capturing the intensity of organizational activity relative to the district's size. Because our NPO density measure is highly right-skewed and is not normally distributed, we transformed it using the natural logarithm after adding one to handle zero values. We focused on five categories of education nonprofits, grouped into two clusters.

Using the National Taxonomy of Exempt Entities and following previous research on education nonprofits (Nelson and Gazley 2014; Trinidad et al. 2025), we attempted to understand how five types of education organizations may correlate with student test score outcomes: (1) *Parent-Teacher Groups* are composed of volunteer groups supporting community building, fundraising, and communication for schools. (2) *Fundraising organizations* include band and sports booster clubs as well as memorial funds that raise and distribute funds for education initiatives. (3) *Scholarship organizations* are organizations that enable students with demonstrated financial need to obtain assistance for educational and living expenses. (4) *School support organizations* include professional education and student services, remedial programs, and technical assistance providers. (5) *Research and advocacy organizations* include research institutes, public policy analysis, education advocacy groups, and education lobbies. We did not

include professional associations, library organizations, and K-12 schools and postsecondary institutions that are registered nonprofits. Figure 1's top panel presents the number of nonprofits per year according to the five categories, with many more fundraising and parent-teacher groups.

<INSERT FIGURE 1 NEAR HERE.>

We then created two theoretically motivated composite measures with *Grassroots NPOs* that include the first three types capturing bottom-up civic action driven by community members directly engaged with schools, and *Professional NPOs* that include the last two types capturing institutionalized and formalized research, advocacy, and technical assistance. The former may be likened to Nelson and Gazley's (2014) reference to school-supporting nonprofits, while the latter may be likened to Hwang and Powell's (2009) rationalization and professionalization of the nonprofit sector. We also created a composite variable of *Education NPOs* that combines both grassroots and professional NPOs. Figure 1's bottom panel presents a map of the US with darker shades noting districts with a greater number of education NPOs in 2010.

Control variables included a district-level composite measure for socioeconomic status, with data from the American Community Survey that combined measures of median family income, the proportion of adults with at least a bachelor's degree, the proportion of adults who are unemployed, the household poverty rate, the proportion of households receiving SNAP benefits, and the proportion of households whose children are supported by a single mother (Fahle et al. 2021). We also included an indicator of urbanicity with city, suburb, town, and rural area, which are defined from the Common Core of Data.² Finally, we included state fixed effects to account

² The locale codes identify the geographic status of a school district in an urban continuum ranging from "large city" to "rural." Urban/city is understood as a principal city in a metropolitan core based statistical area (CBSA). A suburb is a territory outside a principal city but inside an urbanized area. A town is an incorporated place located outside a metropolitan CBSA. A rural location is an area not part of a densely settled urban cluster or urbanized area.

for state-level policy environments and funding structures, as well as year fixed effects to control for common national trends for a given year.

Analytic Strategy

Our study primarily adopts a descriptive longitudinal analysis designed to document how NPO presence and density correlate with districts' student achievement outcomes over time. Because this is, to our knowledge, the first study to link education nonprofits and student outcomes in the US, our first task is not to make the strongest possible causal claim, but rather to first establish whether there are stable and interpretable empirical regularities in our data. We see our research as a first step into future causal work that leverages patterns we identify here. To promote open science, our dataset and code are available in this DOI <anonymized for peer review>.

Our analytic strategy proceeds in four stages, moving from broad descriptive associations to more conservative within-district temporal associations. Our purpose for this progression is not to claim that later models fully identify causal effects, but rather to test whether the same patterns persist under increasingly stringent assumptions. First, we use a *random effects model* to test whether districts with more nonprofit activity (i.e., presence and density) are associated with higher academic outcomes:

$$Outcome_{dst} = \beta_0 + \beta_1 NPO_{dst} + \beta_2 SES_{dst} + \beta_3 Urbanicity_{dt} + \gamma_s + \eta_t + \varepsilon_{dst} ,$$

where $Outcome_{dst}$ is the average test score for district d in state s at time t , NPO_{dst} is the presence of a specific type of education nonprofit in a district during a particular time (or the density of NPOs per 1,000 students in a district, logged to account for skewness), SES_{dst} is a composite

indicator of socioeconomic status in a district, and $Urbanicity_{dt}$ is a categorical variable to account for the district's geographic context. We also include state fixed effects γ_s , time fixed effects η_t , and district-level random effect ε_{dst} . This model highlights how within- and between-district variation in NPO presence and density.

Second, to add temporal ordering, we estimated *lagged random effects* in which nonprofit activity is measured in the prior year, and two years before:

$$Outcome_{dst} = \beta_0 + \beta_1 NPO_{ds,t-k} + \beta_2 SES_{dst} + \beta_3 Urbanicity_{dt} + \gamma_s + \eta_t + \varepsilon_{dst} ,$$

$$k \in \{1, 2\},$$

where $NPO_{ds,t-k}$ is a measure for the presence or density of a nonprofit in district d in state s in time $t-k$, where k can be 1 or 2 years prior. This assesses whether the presence or density of an education nonprofit is associated not only with contemporaneous outcomes, but also with subsequent district outcome. If associations disappear immediately once temporal ordering is imposed, that would suggest caution before pursuing stronger interpretive claims. However, if they persist to be significant, that strengthens the case for more conservative follow-up models.

Third, we performed *district fixed effects* and *lagged district fixed effects models*, which absorb the time-invariant district characteristics:

$$Outcome_{dst} = \beta_0 + \beta_1 NPO_{dst} + \beta_2 SES_{dst} + \pi_d + \eta_t + \varepsilon_{dst} ,$$

$$Outcome_{dst} = \beta_0 + \beta_1 NPO_{ds,t-k} + \beta_2 SES_{dst} + \pi_d + \eta_t + \varepsilon_{dst} , k \in \{1, 2\},$$

where π_d is added as a district fixed effect, while taking out state fixed effects and urbanicity. Because district fixed effects remove differences across districts, these models shift the question *from* asking whether districts with more nonprofits differ from other districts *to* asking whether the same district tends to have different outcomes in years when they have or do not have nonprofits (or when nonprofit density is higher or lower). The lagged district fixed effects model further attempts to understand how changes in nonprofit activity within a district are associated with changes in district outcomes.

To complement the annual panel models, our fourth analysis estimates a *long-difference change model* noting the association between the changes in nonprofit density between 2010 and 2019, and the changes in district outcomes over the same period:

$$\Delta Outcome_d = \beta_0 + \beta_1 \Delta Density_d + \beta_2 \Delta SES_d + \beta_3 Density_{2010} + \beta_4 Outcome_{2010} + \gamma_s + \varepsilon_d ,$$

where β_1 is the main coefficient of interest, β_3 controls for baseline NPO density—districts that already had high NPO density in 2010 have less room to grow—while the baseline outcome term β_4 controls for regression to the mean. State fixed effects γ_s absorb state-level policy trends over the nine-year window. This model shifts attention from short-term year-to-year fluctuation to longer-term cumulative change, highlighting how changes may unfold gradually. It also serves as a useful robustness check on whether patterns observed in the panel models hold when the unit of change is the decade rather than the year. In this paper, we present regression data through graphs; the coefficient estimates and detailed tables are available in the online appendix. Standard errors are clustered by district.

Findings

NPO Presence and Student Outcomes

A school district with at least one education nonprofit is, on average, associated with higher test scores. When disaggregating between grassroots and professional education NPOs, this relationship is driven by grassroots organizations: their presence is associated with increased test scores, whereas professional NPOs show no such association. As illustrated in Figure 2 Panel A, the coefficients for overall NPOs and grassroots NPOs are positive and statistically significant (respectively $\beta=0.017$ and $\beta=0.016$, $p < 0.001$), but not professional NPOs. The results remain consistent even after accounting for the lag (see Panel B & C), indicating that association persists over time rather than just reflecting contemporaneous effects.

<INSERT FIGURE 2 NEAR HERE.>

Further disaggregation into five nonprofit categories reveals more nuanced patterns (see Figure 2, bottom panels). The presence of a parent-teacher group or a fundraising organization in a district is consistently associated with higher test scores across all models (in the main model: $\beta=0.028$ and $\beta=0.011$, $p < 0.001$). Scholarship organizations, by contrast, are positively but not significantly associated with student test scores ($\beta=0.006$, $p = 0.07$). Similarly, school support organizations as well as research/advocacy organizations show no statistically significant relationship with test scores across the models. It suggests the positive association with student outcomes is concentrated among organizations directly embedded in school communities.

NPO Density and Student Outcomes

The relationship between the density of education nonprofits and district test score outcomes mirrors the relationship of the presence of nonprofits and test score outcomes. Figure 3 illustrates

that districts with a greater density of parent-teacher groups are associated with higher test scores ($\beta=0.063, p < 0.001$), consistent across the main and lagged random effects models (i.e., Panel B & C). A higher density of fundraising organizations is also positively associated with test scores ($\beta=0.017, p < 0.001$), and this relationship holds in the contemporaneous specification as well as in the lagged models. The remaining nonprofit types show no consistent statistically significant relationship with test score outcomes.

<INSERT FIGURE 3 NEAR HERE.>

Substantively, these findings indicate that district performance is shaped not only by the presence of nonprofits but also by their concentration, particularly for grassroots or school-supporting nonprofits. As shown in Figure 3 Panel D, we examine whether changes in nonprofit density between 2010 and 2019 are associated with test score outcomes. The results show that increases in the density of parent-teacher groups are strongly and positively associated with higher test scores ($\beta=0.175, p < 0.001$). Surprisingly, increases in the density of scholarship organizations are also associated with test scores ($\beta=0.058, p < 0.01$), despite the absence of a significant relationship in the random effects density models. This divergence suggests that the effects of certain nonprofit types like scholarship organizations may unfold over time and reflect longer-term investments that are not captured in cross-sectional associations.

Variation by Geographic Context

The role of education nonprofits may differ substantially across geographic contexts. In resource-constrained rural districts, the presence of even a single nonprofit may bolster local capacity and support meaningful change, whereas adding another organization in a dense urban nonprofit ecosystem may have limited marginal impact on district conditions. Figure 4 presents the

association between nonprofit presence and district student outcomes across four contexts: rural, town, suburban, and urban school districts.

<INSERT FIGURE 4 NEAR HERE.>

In rural school districts, the presence of multiple types of nonprofits is positively associated with students' academic outcomes, particularly in the contemporaneous random-effects models (see Figure 4, Panel A). These positive associations extend beyond grassroots organizations—such as parent–teacher, fundraising, and scholarship groups—to include school support ($\beta=0.023$, $p < 0.01$) and research and advocacy organizations ($\beta=0.030$, $p < 0.05$). This pattern suggests that in rural contexts, where institutional capacity and resources are often limited, the wide range of nonprofit actors may play important and crucial roles in strengthening schools.

In urban school districts, the presence of nonprofits across all categories is not associated with student outcomes, suggesting that in dense organizational environments, the marginal contribution of any single nonprofit may be diluted (see Figure 4, Panel D). This null pattern extends to nonprofit density, where no education nonprofit category is associated with test scores in urban districts (see Table S1). Thus, whatever benefits a critical mass of nonprofits may generate elsewhere, they are not detectable in the largest and most organizationally dense urban districts.

For both town and suburban districts, the positive association is more limited, appearing consistently only for the presence of parent–teacher groups (see Figure 4, Panels B & C). This reinforces the idea that in moderately resourced contexts, local forms of engagement are the most consistently linked to improved academic outcomes.

Variation by Socioeconomic Context

Another potential source of variation is the district's composite socioeconomic status (SES), which may shape the relationship we observe between nonprofits and test scores. In low-SES districts that lack funding and programs, nonprofits may play a *compensatory* role, boosting outcomes where needs are greatest. In contrast, in high-SES districts with more stable resources, nonprofits may instead play an *amplifying* role, enhancing outcomes in contexts already positioned to benefit from additional support.

<INSERT FIGURE 5 NEAR HERE>

However, when we disaggregate the sample into the bottom 25%, middle 50%, and top 25% of district SES in 2010, the evidence favors the amplifying account over the compensatory one (see Figure 5). In top-quartile districts, grassroots nonprofits ($\beta=0.019$, $p < 0.01$), and specifically parent-teacher groups ($\beta=0.023$, $p < 0.001$), are associated with higher student test scores. In middle-SES districts, only parent-teacher groups remain significant ($\beta=0.014$, $p < 0.01$). In bottom-quartile districts, no category of nonprofit presence is positively associated with outcomes, and research and advocacy organizations are negatively associated with them ($\beta=-0.025$, $p < 0.05$). The same graded pattern emerges for nonprofit density, where parent-teacher group density is significant in top-quartile ($\beta = 0.042$, $p < 0.001$) and middle-SES districts ($\beta = 0.036$, $p < 0.001$) but not in the bottom quartile (see Table S1).

Attenuation by District Fixed Effects

When we turn to district fixed-effects models, the previously observed associations largely vanish. Within districts over time, changes in the presence of education nonprofits—whether overall, grassroots, or professional—are not associated with meaningful changes in student test scores (see

Figure 6). The lone exception is parent–teacher groups, which retain a small statistically significant relationship ($\beta=0.007$, $p < 0.05$). This suggests that simply adding or losing nonprofits within a given district does not, on its own, translate into measurable shifts in academic outcomes.

<INSERT FIGURE 6 NEAR HERE.>

Set against the earlier findings, this pattern points toward the importance of persistent differences in the extent of *civic infrastructure* rather than the marginal effect of additional organizations. The positive associations observed in cross-sectional and random-effects models likely capture stable differences across districts that both attract nonprofits and support higher student achievement. In this sense, nonprofits may be better understood as embedded within, and reflective of, broader civic ecosystems rather than as independent drivers of change. Comparing districts to themselves over time underscores this distinction: what matters is not simply the presence of more nonprofits, but the deeper, persistent civic context in which they operate.

Robustness Checks

In the preceding analyses, our primary outcome of interest is district-level math test scores. To assess the robustness of our findings and ensure that the observed relationships are not sensitive to the choice of outcome, we replicate the analyses using district test scores in English Language Arts (ELA). The results closely parallel those from the math models.

The results generally mirror the previous analyses. As shown in Figure 7, the presence of at least one education nonprofit within a school district is, on average, associated with higher ELA test scores ($\beta=0.015$, $p < 0.001$). When distinguishing between grassroots and professional education nonprofits, this association appears to be driven primarily by grassroots organizations ($\beta=0.014$, $p < 0.001$). Further disaggregation across the five nonprofit subtypes reveals that only

parent–teacher groups ($\beta=0.021, p < 0.001$), fundraising organizations ($\beta=0.011, p < 0.001$), and scholarship organizations ($\beta=0.008, p < 0.01$) exhibit statistically significant relationships with ELA outcomes—fairly consistent with previous findings on math outcomes. However, we do observe a modest association between professional nonprofits and ELA test scores in the contemporaneous random effects specification ($\beta=0.007, p < 0.05$), though this does not persist in the lagged models.

<INSERT FIGURE 7 NEAR HERE.>

Additional robustness checks reported in the online appendix’s Table S1 further support these findings. The overall patterns remain consistent when using measures of nonprofit density and when examining variation across geographic contexts. The socioeconomic patterns, as noted above, are also concentrated in higher- and middle-SES districts. Similar to our findings with the math test score outcomes, when estimating district fixed effects models in the reading test score outcomes, the magnitude and statistical significance of the relationships are attenuated.

Discussion and Conclusions

Can something as distal as the presence and density of education nonprofits in a district be associated with higher student achievement? Our empirical investigation using data from more than 10,000 school districts over a period of ten years suggests that certain types of education nonprofits are consistently predictive of student test performance. We summarize four findings and suggest how they collectively point to the importance of a district’s civic infrastructure. First, *grassroots education nonprofits* like parent-teacher groups and fundraising organizations are consistently associated with higher student test score outcomes. Second, *professional education nonprofits* like research/advocacy and school support organizations do not show consistent

associations with student outcomes, suggesting that their effects may be less direct, less uniform, or operate through different mechanisms. Third, the relationship between nonprofit presence and student outcomes appears to depend on *district context*. The association is stronger in rural districts and weaker in urban districts, and it is concentrated in high- and middle-SES districts rather than low-SES districts. Fourth, the positive association weakens substantially when district fixed-effects are introduced, suggesting that the association is driven more by *between-district differences in civic ecosystem* rather than just within-district addition of nonprofits.

Taken together, these findings point to the importance of what we conceptualize as a district's "*civic infrastructure*" or the long-term network of local organizations, relationships, and community resources that support public life, resource mobilization, and collective action around education. Our use of the concept builds on earlier scholarship. For example, John Parr (1993) uses the term to note the role of civic associations, processes, and traditions to help communities make decisions and solve problems. Similarly, Patrick and Brady (2015:para 5) define it as the "places, policies, programs, and practices that enable us to connect with each other, define and address shared concerns, build community, and solve public problems." Prior work has shown that persistent differences in nonprofit organizations are associated with myriad community-level outcomes, from crime reduction to economic resilience to sustainability efforts (Brandtner 2022; Schneiberg, Goldstein, and Kraatz 2023; Sharkey et al. 2017). Applied to education, civic infrastructure refers to the local ecosystem of organizations and the relationships that aim to facilitate community engagement in schools and support student success. Our findings suggest that the benefits associated with education nonprofits may reflect more than the presence and addition of individual organizations alone. Rather, nonprofits serve as visible manifestations of a persistent civic infrastructure characterized by sustained engagement, collective efficacy, and community

investment in schools (Putnam 2000; Sampson 2012). Below we highlight the implications and importance of the civic infrastructure for sociological research on student achievement, school inequality, education politics, and the social context of schooling.

Studies focused on *student achievement* have often concentrated on the role of proximal factors like race-ethnicity, socioeconomic status, school resources, and organizational processes like accountability and ability grouping (Downey et al. 2019; Figlio and Loeb 2011; Gamoran et al. 1995; Jackson and Mackevicius 2024; Reardon et al. 2019). When sociological studies interrogate more distal factors in the community, these have often focused on the role of social capital and neighborhood dis/advantages on student achievement (Coleman 1988; Morgan and Sørensen 1999; Wodtke and Parbst 2017). Our findings add to the literature by providing empirical evidence for the consistent relationship between grassroots education nonprofits and student test score outcomes—suggesting that the local civic infrastructure could be an important but understudied contextual factor associated with educational success. While existing research has emphasized the value of social relations in a community (Li and Fischer 2017; Murray et al. 2019), we take this a step further by noting that the organizational forms through which communities mobilize also matter.

As nonprofit presence and density are associated with higher student outcomes, there are also key implications for the study of *school inequalities*. As grassroots education nonprofits—and more endowed nonprofits—are typically concentrated in more affluent and predominantly White communities (Murray et al. 2019; Nelson and Gazley 2014), the local civic infrastructure may represent an underappreciated factor that influences inequalities. Our SES-stratified results are consistent with this account: the positive association between nonprofit presence and achievement is concentrated in the highest-SES quartile and is absent in the lowest. Districts

embedded in stronger civic infrastructures may benefit from organizations that mobilize resources, attract volunteers, foster parental engagement, and advocate for students, generating cumulative advantages over time (Coleman 1988; Putnam 2000). In contrast, districts with fewer such organizations may lack access to these forms of support, potentially reinforcing existing disparities in educational outcomes (Bridwell-Mitchell 2017). From this perspective, inequalities may reflect not just differences in family resources, school funding, or neighborhood conditions, but also differences in the civic capacity of communities to organize around and invest in public education.

Studies on *education politics and governance* have largely emphasized nonprofits' roles in education policymaking, implementation, advocacy, and political influence—with little interrogation of their downstream consequences on students' actual performance (Hartney and Kogan 2024; Horsford et al. 2018; Reckhow and Tompkins-Stange 2018; Scott and Jabbar 2014; Trinidad 2025). Our study provides not just empirical evidence for this relationship to student outcomes, but also a key distinction between grassroots and professional education nonprofits. Although we had hypothesized that both types of nonprofits would be associated with higher test scores, we only saw consistent associations for grassroots NPOs like parent-teacher groups and fundraising organizations. Professional education NPOs did not show this consistent association. These findings should not be interpreted as evidence that professional NPOs are unimportant. Rather, they suggest that professional NPOs' contributions may operate through different and less-direct mechanisms like research improvement, whole-school reform, and leadership development that take a longer time to materialize or may have substantial spillover to other districts (Dougherty 2015; Farrell et al. 2021; Peurach 2011).

Various studies of the *social context of schooling* highlight the importance of community characteristics in shaping educational opportunities and outcomes. In other words, the

effectiveness of interventions and resources do not operate uniformly across places (Jackson and Mackevicius 2024). We investigated whether the association between nonprofit presence and student outcomes differed across geographic and socioeconomic contexts, and found evidence of both geographic and socioeconomic heterogeneity. Specifically, both grassroots and professional education nonprofits were positively associated with student test scores in rural districts, whereas these associations were absent in urban districts. This suggests how varied nonprofits can play consequential roles in rural areas, where schools often face resource constraints and few alternative sources of support (Ingersoll and Tran 2023; Statti and Torres 2020). The association also varies by socioeconomic context, though not in the compensatory direction we had anticipated as the association is strongest in the highest-SES quartile, narrower in middle-SES districts, and absent in the lowest-SES quartile. Thus, this pattern is more consistent with the resource amplification role of NPOs, suggesting that a district's civic infrastructure may reinforce rather than offset existing advantages.

Although we provide, to our knowledge, the first empirical and national evidence for the link between education nonprofits and student outcomes, we note a number of limitations with our data and study. First, our analyses are descriptive and do not identify causal effects. Nonetheless, we have done varied analyses to show that the associations are not spurious and we aim that this initial effort encourages future research to employ rigorous causal designs to better isolate the effects of nonprofits on student outcomes. Second, our measures capture the presence and density of nonprofits in a district, but not the nature of their activities, their amount of funding, and their level of engagement with schools. Moreover, some nonprofits may also extend their work beyond the districts they are located in, which could lead our estimates to understate their overall impact. Future studies can interrogate other variables of education nonprofit work to more closely examine

how instead of just whether nonprofits relate to student outcomes. Third, the five types of education nonprofits did not fully disambiguate between resource mobilization, civic engagement, and capacity-building because some organizations fall into one or more of them. Thus, we are unable to fully account for which mechanisms relate to outcomes.

Despite these limitations, we provide an important foundation and starting point for future research to interrogate how educational civic infrastructures relate to student outcomes. Our study provides evidence for the relevance of these local civic organizations as a key yet underexamined factor shaping students' opportunities and achievement. Recognizing the *civic infrastructure* as part of the broader educational ecosystem expands our understanding of the community conditions that support student success and highlights a promising avenue for both future research and policy.

Data Availability

Data and code are available at this DOI: <redacted for anonymity during the review process>

References

- Baldrige, Bianca J. 2019. *Reclaiming Community: Race and the Uncertain Future of Youth Work*. Palo Alto, CA: Stanford University Press.
- Baldrige, Bianca J. 2026. *Laboring in the Shadows: Precarity and Promise in Black Youth Work*. Stanford, CA: Stanford University Press.
- Ball, Stephen J. 2008. "New Philanthropy, New Networks and New Governance in Education." *Political Studies* 56(4):747–65. doi:10.1111/j.1467-9248.2008.00722.x.
- Bourdieu, Pierre. 2011. "The Forms of Capital." in *The Sociology of Economic Life*. New York: Routledge.
- Brandtner, Christof. 2022. "Green American City: Civic Capacity and the Distributed Adoption of Urban Innovations." *American Journal of Sociology* 128(3):627–79. doi:10.1086/722965.
- Bridwell-Mitchell, E. N. 2017. "Them That's Got: How Tie Formation in Partnership Networks Gives High Schools Differential Access to Social Capital." *American Educational Research Journal* 54(6):1221–55. doi:10.3102/0002831217717815.
- Bridwell-Mitchell, E. N., James Jack, and Joshua Childs. 2023. "The Social Structure of School Resource Disparities: How Social Capital and Interorganizational Relationships Matter for Educational Equity." *Sociology of Education* 96(4):275–300. doi:10.1177/00380407231176541.
- Bryk, Anthony S., Louis M. Gomez, and Alicia Grunow. 2011. "Getting Ideas into Action: Building Networked Improvement Communities in Education." Pp. 127–62 in *Frontiers in Sociology of Education, Frontiers in Sociology and Social Research*, edited by M. T. Hallinan. Dordrecht: Springer Netherlands.
- Bryk, Anthony S., Sharon Greenberg, Albert Bertani, Penny Sebring, Steven E. Tozer, and Timothy Knowles. 2023. *How a City Learned to Improve Its Schools*. Cambridge, MA: Harvard Education Press.
- Chetty, Raj, John N. Friedman, and Jonah E. Rockoff. 2014. "Measuring the Impacts of Teachers II: Teacher Value-Added and Student Outcomes in Adulthood." *American Economic Review* 104(9):2633–79. doi:10.1257/aer.104.9.2633.
- Coburn, Cynthia E., and William R. Penuel. 2016. "Research–Practice Partnerships in Education: Outcomes, Dynamics, and Open Questions." *Educational Researcher* 45(1):48–54. doi:10.3102/0013189X16631750.
- Coleman, James S. 1988. "Social Capital in the Creation of Human Capital." *American Journal of Sociology* 94:95–120.

- DeBray, Elizabeth, Johanna Hanley, Janelle Scott, and Christopher Lubienski. 2020. "Money and Influence: Philanthropies, Intermediary Organisations, and Atlanta's 2017 School Board Election." *Journal of Educational Administration and History* 52(1):63–79. doi:10.1080/00220620.2019.1689103.
- Domina, Thurston, Andrew McEachin, Paul Hanselman, Priyanka Agarwal, NaYoung Hwang, and Ryan W. Lewis. 2019. "Beyond Tracking and Detracking: The Dimensions of Organizational Differentiation in Schools." *Sociology of Education* 92(3):293–322. doi:10.1177/0038040719851879.
- Dougherty, Chrys. 2015. *How School District Leaders Can Support the Use of Data to Improve Teaching and Learning*. Iowa City, IA: ACT Research and Policy.
- Downey, Douglas B., and Dennis J. Condron. 2016. "Fifty Years since the Coleman Report: Rethinking the Relationship between Schools and Inequality." *Sociology of Education* 89(3):207–20. doi:10.1177/0038040716651676.
- Downey, Douglas B., David M. Quinn, and Melissa Alcaraz. 2019. "The Distribution of School Quality: Do Schools Serving Mostly White and High-SES Children Produce the Most Learning?" *Sociology of Education* 92(4):386–403. doi:10.1177/0038040719870683.
- Ewing, Eve L. 2019. "The Fight for Dyett: How a Community in Chicago Saved Its Public School." *American Educator* 43(1):30–35.
- Fahle, Erin M., Belen Chavez, Demetra Kalogrides, Benjamin R. Shear, Sean F. Reardon, and Andrew D. Ho. 2021. *Stanford Education Data Archive: Technical Documentation*.
- Farrell, Caitlin C., William R. Penuel, Cynthia E. Coburn, Julia Daniel, and Louisa Steup. 2021. *Research-Practice Partnerships in Education: The State of the Field*. New York, NY: William T. Grant Foundation.
- Farrell, Caitlin C., Corinne Singleton, Kristina Stamatis, Robbin Riedy, Paula Arce-Trigatti, and William R. Penuel. 2023. "Conceptions and Practices of Equity in Research-Practice Partnerships." *Educational Policy* 37(1):200–224. doi:10.1177/08959048221131566.
- Figlio, David N., and Susanna Loeb. 2011. "Chapter 8 - School Accountability." Pp. 383–421 in *Handbook of the Economics of Education*. Vol. 3, edited by E. A. Hanushek, S. Machin, and L. Woessmann. Elsevier.
- Fuller, Bruce. 2022. *When Schools Work: Pluralist Politics and Institutional Reform in Los Angeles*. Baltimore, MD: Johns Hopkins University Press.
- Gamoran, Adam, Hannah K. Miller, Jeremy E. Fiel, and Jessa Lewis Valentine. 2021. "Social Capital and Student Achievement: An Intervention-Based Test of Theory." *Sociology of Education* online first. doi:10.1177/00380407211040261.

- Gamoran, Adam, Martin Nystrand, Mark Berends, and Paul C. LePore. 1995. "An Organizational Analysis of the Effects of Ability Grouping." *American Educational Research Journal* 32(4):687–715. doi:10.2307/1163331.
- Good, Ryan M., and Katharine L. Nelson. 2021. "With a Little Help from Our Friends: Private Fundraising and Public Schools in Philadelphia." *Journal of Education Policy* 36(4):480–503. doi:10.1080/02680939.2020.1730979.
- Hartney, Michael T., and Vladimir Kogan. 2024. "The Politics of Teachers' Union Endorsements." *American Journal of Political Science* online first:1–17. doi:10.1111/ajps.12922.
- Hong, Guanglei, and Stephen W. Raudenbush. 2005. "Effects of Kindergarten Retention Policy on Children's Cognitive Growth in Reading and Mathematics." *Educational Evaluation and Policy Analysis* 27(3):205–24. doi:10.3102/01623737027003205.
- Honig, Meredith I. 2004. "The New Middle Management: Intermediary Organizations in Education Policy Implementation." *Educational Evaluation and Policy Analysis* 26(1):65–87. doi:10.3102/01623737026001065.
- Horsford, Sonya Douglass, Janelle T. Scott, and Gary L. Anderson. 2018. *The Politics of Education Policy in an Era of Inequality: Possibilities for Democratic Schooling*. New York, NY: Routledge.
- Hwang, Hokyu, and Walter W. Powell. 2009. "The Rationalization of Charity: The Influences of Professionalism in the Nonprofit Sector." *Administrative Science Quarterly* 54(2):268–98. doi:10.2189/asqu.2009.54.2.268.
- Ingersoll, Richard M., and Henry Tran. 2023. "Teacher Shortages and Turnover in Rural Schools in the US: An Organizational Analysis†." *Educational Administration Quarterly* 59(2):396–431. doi:10.1177/0013161X231159922.
- Institute of Education Sciences. 2026. "School District Boundaries." <https://nces.ed.gov/programs/edge/Geographic/DistrictBoundaries>.
- Jackson, C. Kirabo, and Claire L. Mackevicius. 2024. "What Impacts Can We Expect from School Spending Policy? Evidence from Evaluations in the United States." *American Economic Journal: Applied Economics* 16(1):412–46. doi:10.1257/app.20220279.
- Lampkin, Linda M., and Elizabeth T. Boris. 2002. "Nonprofit Organization Data: What We Have and What We Need." *American Behavioral Scientist* 45(11):1675–1715. doi:10.1177/0002764202045011005.
- Lecy, Jesse. 2024. "NCCS [National Center for Charitable Statistics] Core Series." <https://urbaninstitute.github.io/nccs/datasets/core/>.

- Lee, Valerie E., and David T. Burkam. 2003. "Dropping Out of High School: The Role of School Organization and Structure." *American Educational Research Journal* 40(2):353–93. doi:10.3102/00028312040002353.
- Li, Angran, and Mary J. Fischer. 2017. "Advantaged/Disadvantaged School Neighborhoods, Parental Networks, and Parental Involvement at Elementary School." *Sociology of Education* 90(4):355–77. doi:10.1177/0038040717732332.
- Morgan, Stephen L., and Aage B. Sørensen. 1999. "Parental Networks, Social Closure, and Mathematics Learning: A Test of Coleman's Social Capital Explanation of School Effects*." *American Sociological Review* 64(5):661–81. doi:10.1177/000312249906400502.
- Murray, Brittany, Thurston Domina, Amy Petts, Linda Renzulli, and Rebecca Boylan. 2020. "'We're in This Together': Bridging and Bonding Social Capital in Elementary School PTOs." *American Educational Research Journal* 57(5):2210–44. doi:10.3102/0002831220908848.
- Murray, Brittany, Thurston Domina, Linda Renzulli, and Rebecca Boylan. 2019. "Civil Society Goes to School: Parent-Teacher Associations and the Equality of Educational Opportunity." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 5(3):41. doi:10.7758/rsf.2019.5.3.03.
- Nelson, Ashlyn Aiko, and Beth Gazley. 2014. "The Rise of School-Supporting Nonprofits." *Education Finance and Policy* 9(4):541–66.
- Parr, John. 1993. "Civic Infrastructure: A New Approach to Improving Community Life." *National Civic Review* 82(2):93–100.
- Patrick, Stephen, and Sheri Brady. 2015. "Building an Intentional and Inclusive Civic Infrastructure." https://ssir.org/articles/entry/building_an_intentional_and_inclusive_civic_infrastructure.
- Peurach, Donald J. 2011. *Seeing Complexity in Public Education: Problems, Possibilities, and Success for All*. New York, NY: Oxford University Press.
- Peurach, Donald J., and Joshua L. Glazer. 2012. "Reconsidering Replication: New Perspectives on Large-Scale School Improvement." *Journal of Educational Change* 13(2):155–90. doi:10.1007/s10833-011-9177-7.
- Putnam, Robert D. 2000. *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon and Schuster.
- Rauscher, Emily, Greer Mellon, Susanna Loeb, and Carolyn Abott. 2025. "When Money Matters Most: Unpacking the Effectiveness of School Spending." *Sociology of Education* online first:1–23. doi:10.1177/00380407251349165.

- Reardon, Sean F. 2019. "Educational Opportunity in Early and Middle Childhood: Using Full Population Administrative Data to Study Variation by Place and Age." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 5(2):40. doi:10.7758/rsf.2019.5.2.03.
- Reardon, Sean F., Andrew D. Ho, Benjamin R. Shear, Erin M. Fahle, Demetra Kalogrides, and Jim Saliba. 2024. "Stanford Education Data Archive." <https://purl.stanford.edu/xh833nn4025>.
- Reardon, Sean F., Demetra Kalogrides, and Kenneth Shores. 2019. "The Geography of Racial/Ethnic Test Score Gaps." *American Journal of Sociology* 124(4):1164–1221. doi:10.1086/700678.
- Reckhow, Sarah. 2013. *Follow the Money: How Foundation Dollars Change Public School Politics*. Oxford, UK: Oxford University Press.
- Reckhow, Sarah, and Jeffrey W. Snyder. 2014. "The Expanding Role of Philanthropy in Education Politics." *Educational Researcher* 43(4):186–95. doi:10.3102/0013189X14536607.
- Reckhow, Sarah, and Megan Tompkins-Stange. 2018. "Financing the Education Policy Discourse: Philanthropic Funders as Entrepreneurs in Policy Networks." *Interest Groups & Advocacy* 7(3):258–88. doi:10.1057/s41309-018-0043-3.
- Rowan, Brian. 2002. "The Ecology of School Improvement: Notes on the School Improvement Industry in the United States." *Journal of Educational Change* 3(3):283–314. doi:10.1023/A:1021277712833.
- Sampson, Robert J. 2012. *Great American City: Chicago and the Enduring Neighborhood Effect*. Chicago: University of Chicago Press.
- Schneiberg, Marc, Adam Goldstein, and Matthew S. Kraatz. 2023. "Embracing Market Liberalism? Community Structure, Embeddedness, and Mutual Savings and Loan Conversions to Stock Corporations." *American Sociological Review* 88(1):53–85. doi:10.1177/00031224221138079.
- Scott, Janelle, Elizabeth DeBray, Christopher Lubienski, Priya Goel La Londe, Elise Castillo, and Stephen Owens. 2017. "Urban Regimes, Intermediary Organization Networks, and Research Use: Patterns Across Three School Districts." *Peabody Journal of Education* 92(1):16–28. doi:10.1080/0161956X.2016.1264800.
- Scott, Janelle, and Huriya Jabbar. 2014. "The Hub and the Spokes: Foundations, Intermediary Organizations, Incentivist Reforms, and the Politics of Research Evidence." *Educational Policy* 28(2):233–57. doi:10.1177/0895904813515327.
- Sharkey, Patrick, Gerard Torrats-Espinosa, and Delaram Takyar. 2017. "Community and the Crime Decline: The Causal Effect of Local Nonprofits on Violent Crime." *American Sociological Review* 82(6):1214–40. doi:10.1177/0003122417736289.

- Statti, Aubrey, and Kelly Torres. 2020. "The Forgotten Minority: Exploring Deficiencies in Access to Education and Technology in Rural America." *Peabody Journal of Education* 95(2):173–82. doi:10.1080/0161956X.2020.1745608.
- Trinidad, Jose Eos. 2023. "Rethinking School Improvement Organizations: Understanding Their Variety, Benefits, Risks, and Future Directions." *Educational Researcher* online first:1–8. doi:10.3102/0013189X231179116.
- Trinidad, Jose Eos. 2025. *Subtle Webs: How Local Organizations Shape US Education*. Oxford and New York: Oxford University Press.
- Trinidad, Jose Eos, Daniel Lancet, and Lin-Chiun Wang. 2025. "The Ecology of US Education Nonprofits." *Journal of Education* online first:1–17. doi:10.1177/00220574251336095.
- Trujillo, Tina. 2014. "The Modern Cult of Efficiency: Intermediary Organizations and the New Scientific Management." *Educational Policy* 28(2):207–32. doi:10.1177/0895904813513148.
- Wargo, Elizabeth, Kathleen Budge, Davin Carr-Chellman, and Kathryn Davis. 2021. "Leadership for Rural School District Improvement: The Case of One Statewide Research Practice Partnership." *Journal of Research in Rural Education* 37(1):1–18. doi:10.26209/jrre3701.
- Warren, Mark. 2005. "Communities and Schools: A New View of Urban Education Reform." *Harvard Educational Review* 75(2):133–73. doi:10.17763/haer.75.2.m718151032167438.
- Wodtke, Geoffrey T., and Matthew Parbst. 2017. "Neighborhoods, Schools, and Academic Achievement: A Formal Mediation Analysis of Contextual Effects on Reading and Mathematics Abilities." *Demography* 54(5):1653–76. doi:10.1007/s13524-017-0603-1.
- Woulfin, Sarah L., and Jessica G. Rigby. 2017. "Coaching for Coherence: How Instructional Coaches Lead Change in the Evaluation Era." *Educational Researcher* 46(6):323–28. doi:10.3102/0013189X17725525.

Table 1. Descriptive Statistics	2009-2010	2018-2019
<i>Outcome</i>		
Mean District Test Score	0.023	0.041
Standard Deviation	0.392	0.433
Median District Test Score	0.031	0.049
<i>Nonprofit Presence</i>		
<i>Percent of districts with at least one:</i>		
Education Nonprofit	50.8%	54.6%
<i>Grassroots Nonprofit</i>		
Parent-Teacher Group	27.6%	21.3%
Fundraising Organization	35.6%	42.8%
Scholarship Organization	15.3%	19.7%
<i>Professional Nonprofit</i>		
School Support Organization	12.2%	15.6%
Research and Advocacy Organization	4.3%	5.2%
<i>Nonprofit Density</i>		
<i>Mean no. of nonprofits per 1,000 students:</i>		
Education Nonprofit	0.537	0.623
<i>Grassroots Nonprofit</i>		
Parent-Teacher Group	0.184	0.121
Fundraising Organization	0.228	0.323
Scholarship Organization	0.069	0.101
<i>Professional Nonprofit</i>		
School Support Organization	0.045	0.065
Research and Advocacy Organization	0.011	0.013
<i>Other Variables</i>		
Mean SES Index	0.270	0.379
No. of Urban Districts	664	651
No. of Suburban Districts	2739	2480
No. of Town Districts	2148	2078
No. of Rural Districts	4759	4437
Total Number of Districts	10310	9646

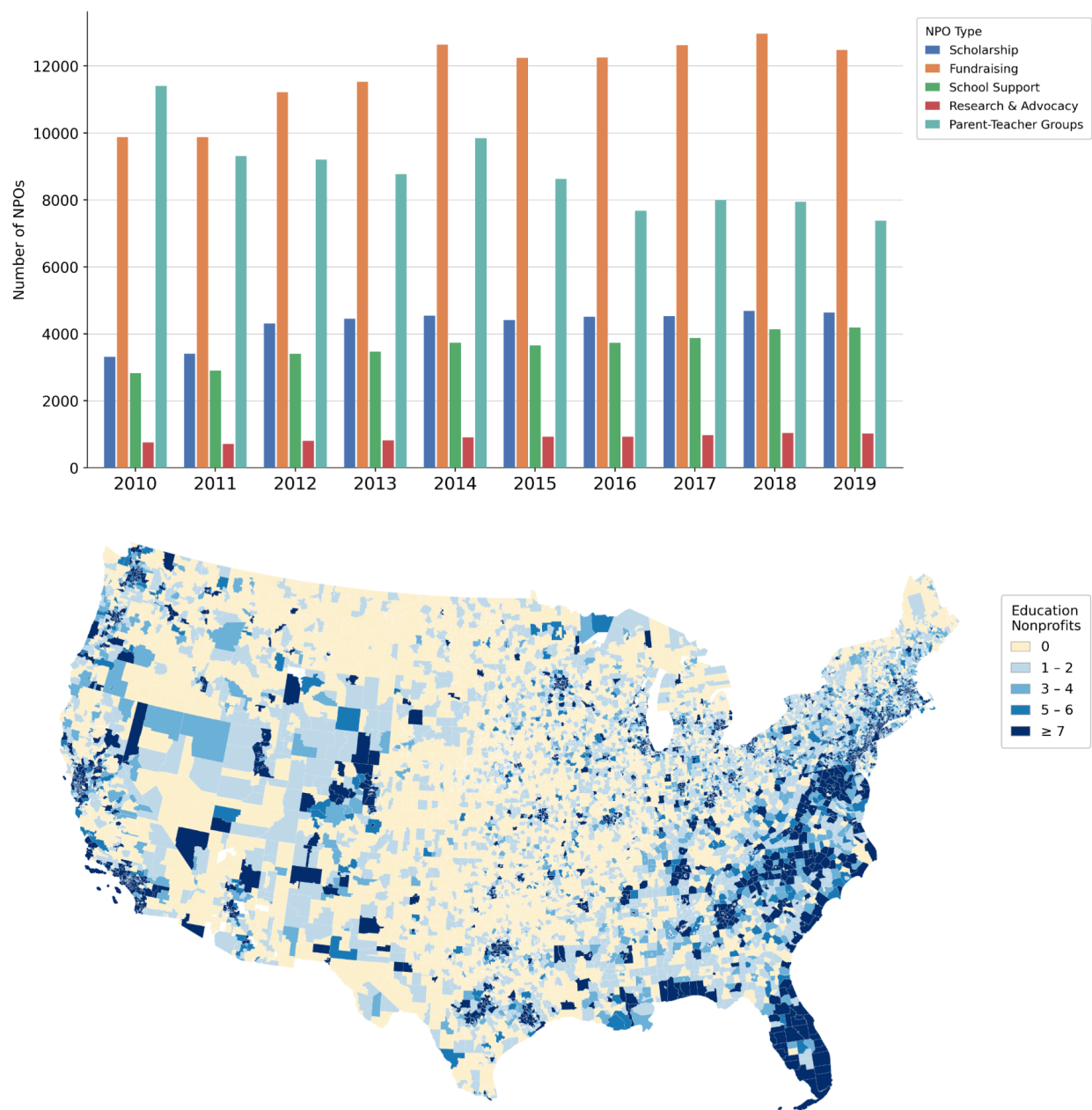


Figure 1. Education Nonprofit Distribution across the years and across school districts
 Note: Top panel highlights the number of education nonprofits, disaggregated by the five types, between 2010 and 2019. Bottom panel presents a map of the US with the number of education nonprofits (aggregate) for each school district.

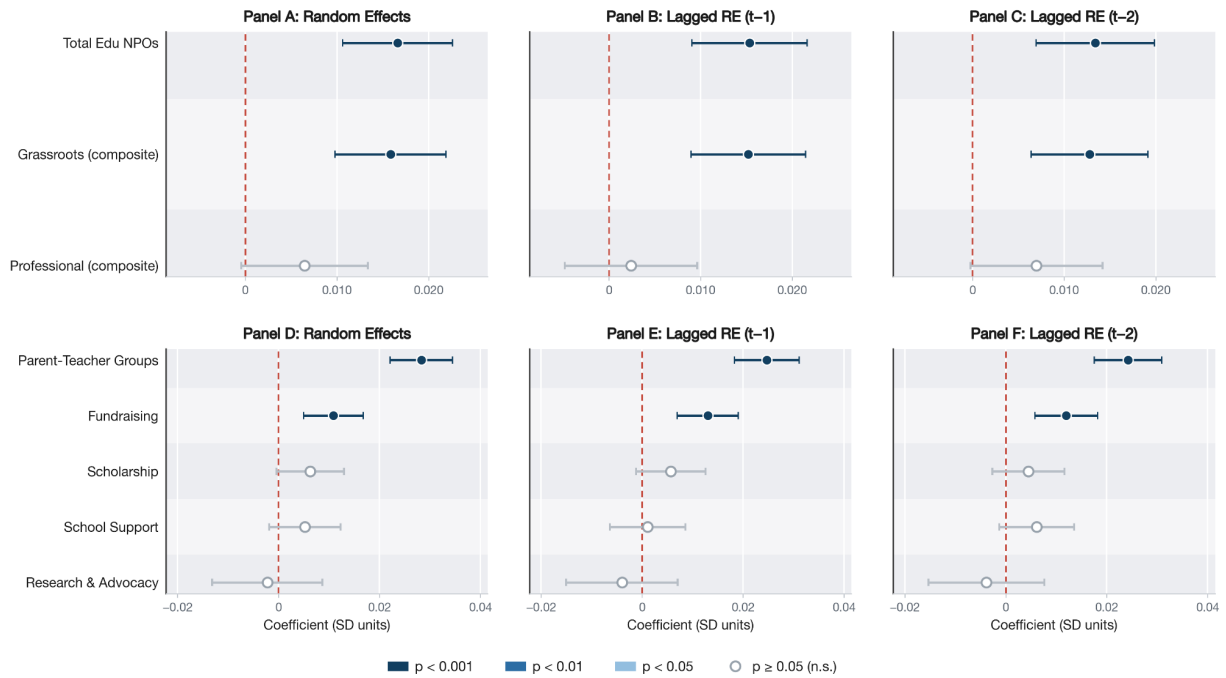


Figure 2. Association between Nonprofit Presence and District Math Test Score Outcomes
Note: Points are coefficient estimates and horizontal lines are 95% confidence intervals.

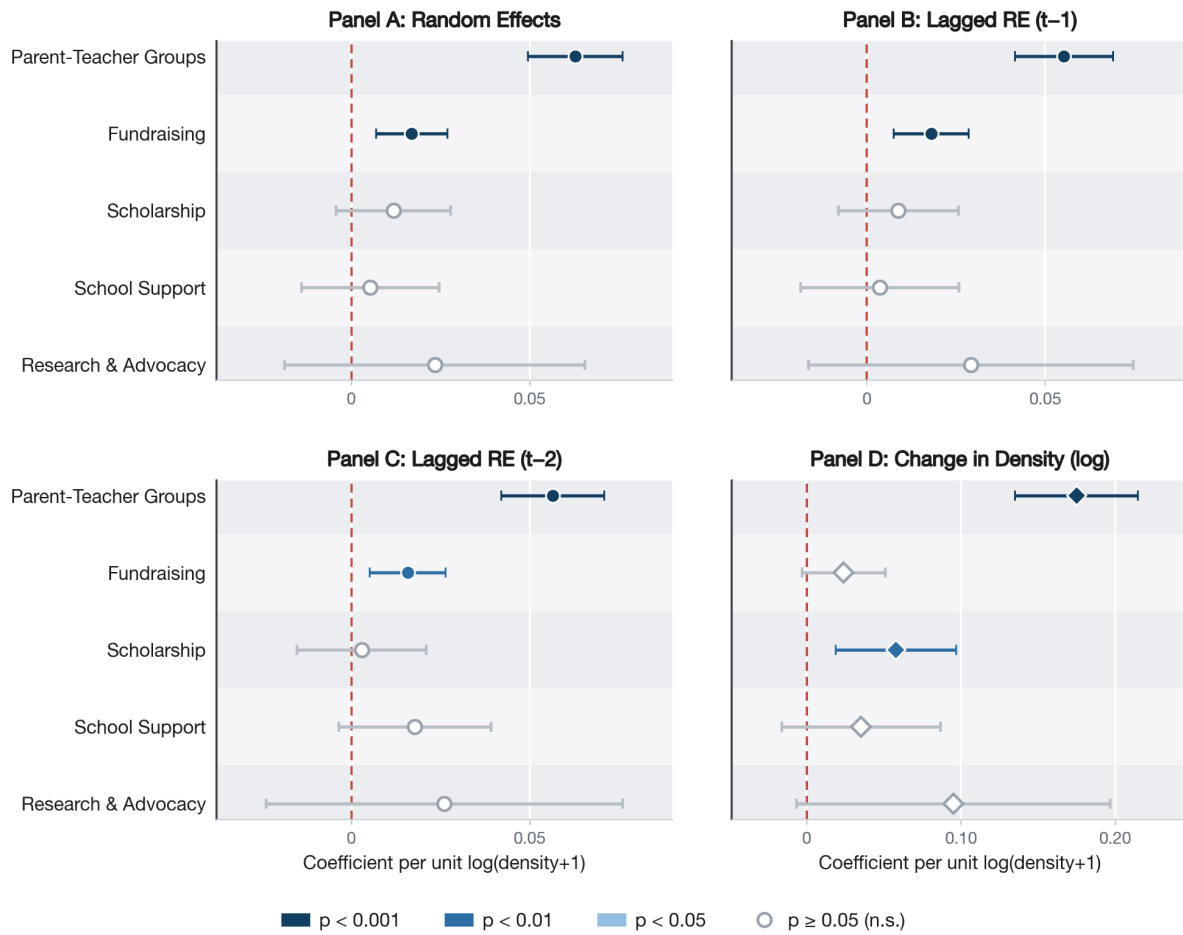


Figure 3. Association between Nonprofit Density and District Math Test Score Outcomes
 Note: Points are coefficient estimates and horizontal lines are 95% confidence intervals.



Figure 4. Association between Nonprofit Presence and District Math Test Score Outcomes by Geographic Location

Note: Points are coefficient estimates and horizontal lines are 95% confidence intervals.

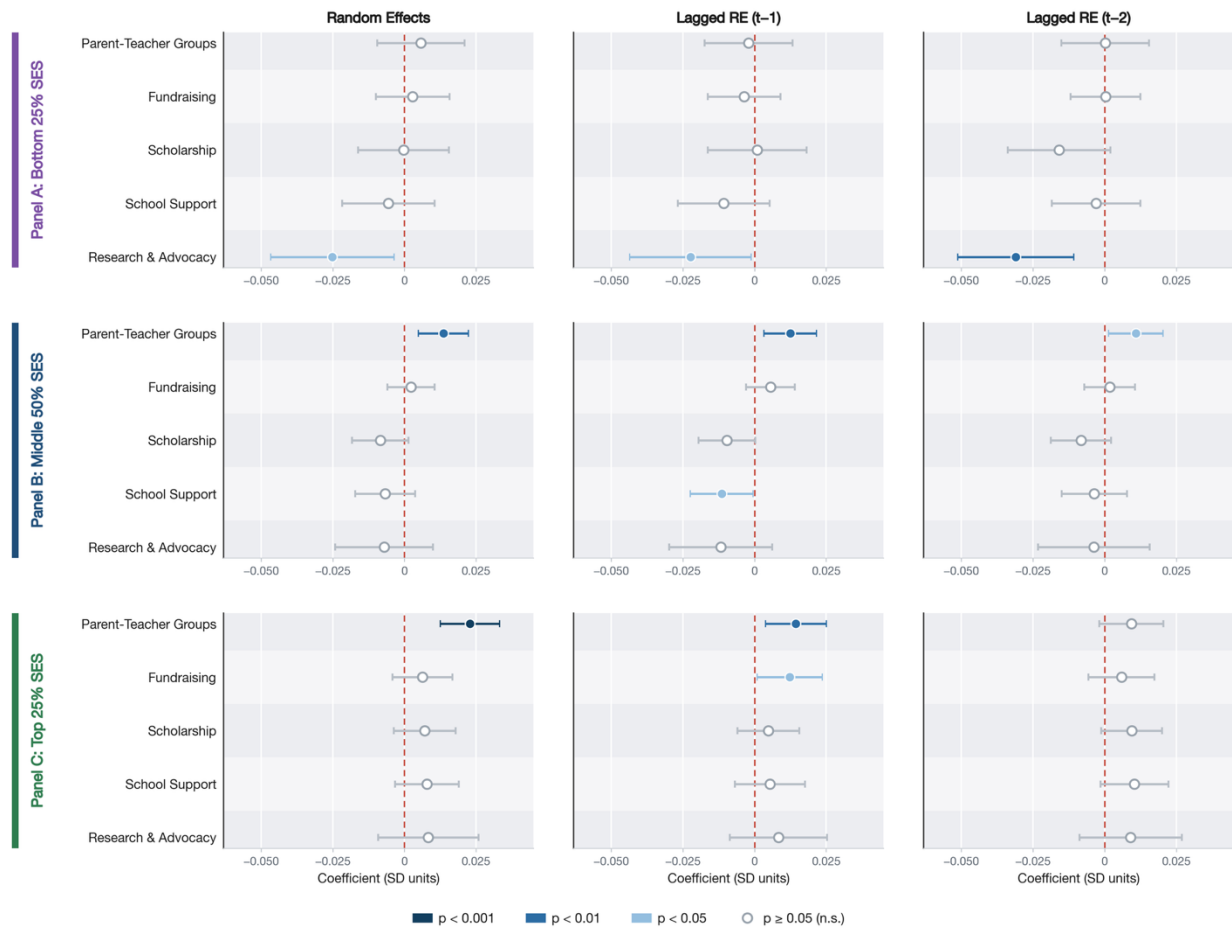


Figure 5. Association between Nonprofit Presence and District Math Test Score Outcomes by District Socioeconomic Status Index

Note: Points are coefficient estimates and horizontal lines are 95% confidence intervals.

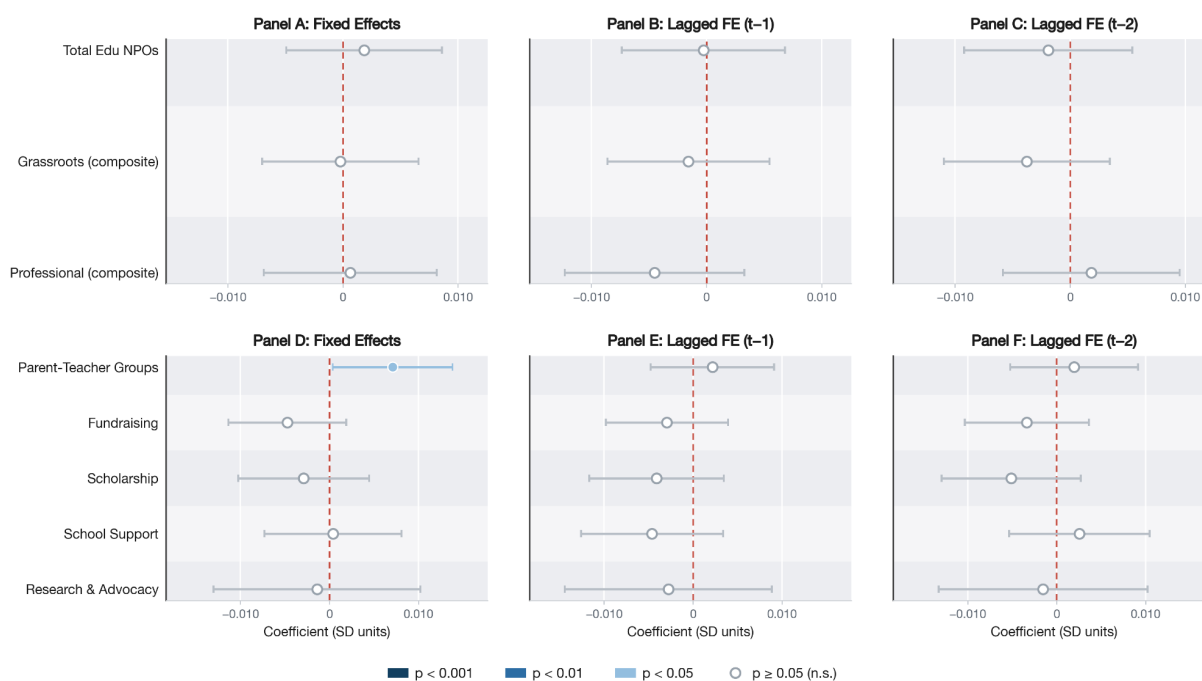


Figure 6. Association between Nonprofit Presence and District Math Test Score Outcomes (District Fixed Effects Models)

Note: Points are coefficient estimates and horizontal lines are 95% confidence intervals.

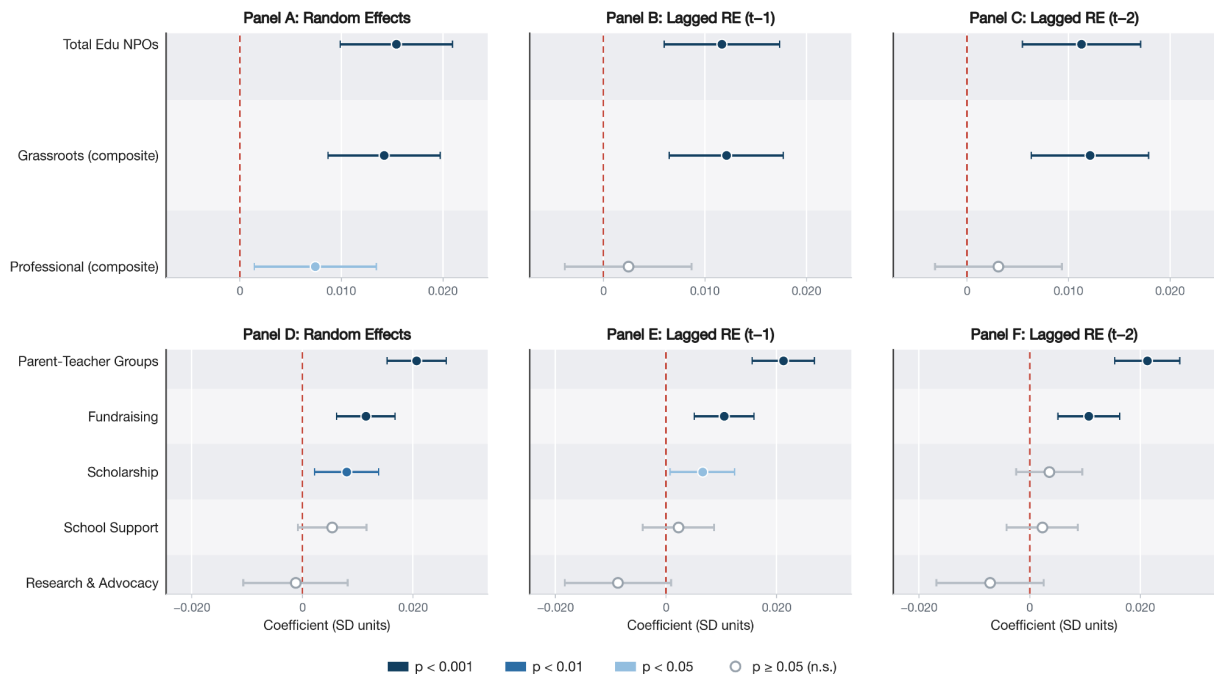


Figure 7. Association between Nonprofit Presence and District Reading Test Score Outcomes (Random Effects)

Note: Points are coefficient estimates and horizontal lines are 95% confidence intervals.