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# ESSER-ting Preferences: Examining School District Preferences for Using Federal

#### **Pandemic Relief Funding**

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#### Abstract

We analyzed the proposed spending data for the American Recovery Plan's Elementary and Secondary Emergency Relief III (ESSER III) fund from the spring of 2021 of nearly 3,000 traditional public-school districts in the United States to (1) identify trends in the strategies adopted and (2) to test whether spending strategies were observably heterogeneous across district characteristics. We found that districts proposed a breadth of spending patterns with ESSER III. Moreover, there was a clear prioritization on spending related to academic learning recovery and facilities and operations spending, with the latter being particularly emphasized in higher-poverty districts. This divergent spending pattern may have important equity implications for short-term academic learning recovery for students affected by the COVID-19 pandemic.

Keywords: school finance; school spending; education policy

## ESSER-ting Preferences: Examining School District Preferences for Using Federal Pandemic Relief Funding

Every school district in the United States must help students recover from disruptions to learning caused by the COVID-19 pandemic. Syntheses of the literature on COVID-19-related learning loss in the United States demonstrate a consistent and substantial decrease in student performance during school shutdowns during the pandemic (Agostinelli, 2022; Betthäuser et al., 2023; Donnelly & Patrinos, 2021; Patrinos et al., 2022). For example, a synthesis released by the World Bank in May 2022 estimated that students in the United States experienced, on average, 0.14 standard deviations of standardized test score loss, equivalent to losing 0.42 school years of learning time (Patrinos, 2021).

If left unaddressed, these losses will likely have significant and harmful impacts on these affected students through mechanisms such as a decreased likelihood of employment and lower expected lifetime earnings (Donnelly & Patrinos, 2021). For instance, Goldhaber and colleagues (2021) estimated that documented losses are expected to cost \$43,800 in student lifetime earnings on average, equivalent to \$2 trillion in lost lifetime earnings for all students across the country in school during the COVID-19 pandemic. Moreover, these impacts are not equally distributed; learning loss was greater in schools and districts that had less in-person instruction after the onset of the pandemic, who served lower-performing students, and who served more Black, Hispanic, or free or reduced-price lunch-eligible students (Domingue et al., 2021; Hicks & Faulk, 2022; Jack et al., 2021; Kogan & Lavertu, 2022; Kuhlfeld et al., 2022; Pier et al., 2022). Kuhlfeld and colleagues estimated, using a nationwide sample of over 3.5 million students, that the Black–White difference in math test score growth was more than twice as large in the 2020-21 school year relative to prior years. Furthermore, a McKinsey & Company report

estimated that students in schools with average household incomes of \$25,000 or less lost an average of 7 months of math learning and 6 months of reading learning, compared to 4 and 3 months, respectively, for students attending schools with average household incomes over \$75,000 (Dorn et al., 2021).

In March 2021, the federal government prepared school districts to meet the challenge of addressing the great and inequitable impacts of COVID-19 by enacting the American Rescue Plan (ARP), which included \$122 billion for the third and final wave of the Elementary and Secondary School Emergency Relief III (ESSER III) fund. These funds are a one-time investment with strict September 2024 spending deadlines.<sup>1</sup> ESSER III comes with an explicit focus on transforming educational practices to address disruptions to student learning and improve educational outcomes, with requirements that at least 20% of the funds "address the academic impact of lost instructional time (U.S. DoE, 2021)." However, this goal is relatively unstructured as strategies to address lost instructional time are numerous. Allowable uses for the remaining 80% of funds are also almost unbounded, with the legislation explicitly forbidding states to limit school districts' use of the funds.<sup>2</sup>

From this arises two potential challenges. First, there is concern that districts may conform to isomorphic spending strategies that run counter to the flexible intentions of the ESSER III policy and thus fail to take advantage of the flexible structure of ESSER III for pursuing strategies that best fit the needs of local contexts (Dusseault & Pillow, 2021; Roza & Roza, 2022). Second, because districts are free to pursue their own goals with this money, they may reasonably and rationally pursue objectives unrelated to the short-term academic learning recovery of students impacted by the pandemic. For instance, infrastructure has often been cited in media and official Department of Education communication as an efficient use of ESSER

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funds, since improved facilities will benefit a district even after ESSER III funds expire (DoE, 2021b; Lehrer-Small, 2023; Luyre, 2023; Wall, 2022). Prioritizing the physical assets of a school may be both efficient and rational given the unique financial opportunity the ESSER III represents. However, this may have negative implications for students who do not have the same learning recovery opportunities as those who attend districts that prioritize learning recovery.

The challenges and possibilities of ESSER III make it a compelling and important policy to study. The quantity, flexibility, and one-time nature of the ESSER III funds are unprecedented in the education sector. When combined with the scope of learning loss for districts across the country, there are substantial stakes related to how districts determine which goals to prioritize and pursue. To our knowledge, this is the first study to leverage these realities to investigate how school districts across the country propose to spend their ESSER III funds and vary in these choices across shorter-term prioritization of learning recovery interventions and longer-term investments in facilities and infrastructure. Understanding districts' relative prioritization of spending on academic learning recovery provides insight into the differential investments in student learning recovery and implications for both short- and long-term outcomes and opportunities. More specifically, this study seeks to answer the following:

(1) Are districts engaging in the locally responsive flexibility of ESSER III by pursuing different spending strategies?

(2) To what extent do districts' proposed spending on facilities and operations vary by observable characteristics?

Both observing the allocation patterns of this flexible spending and analyzing how the structure of ESSER III may potentially impact learning equity are the key contributions of this study. By emphasizing facilities and operations spending, we are investigating whether certain

types of districts may have adopted particularly divergent spending strategies that emphasize longer term benefits to school districts and deemphasize academic learning recovery, which has the potential to create learning recovery gaps across districts.

This study used a revealed preference framework as developed by Samuelson (1948), and advanced for organizational analyses by McFadden (1975; 1976), Hellend (1998), and Poole and colleagues (1987), wherein an organization's perceptions of relative utility are determined by consumption preferences within a choice set under fixed conditions and prices. By viewing preferences, we can infer the institutional logic of school districts for approaching large, onetime funding efforts and describe patterned intentions and the equity implications for learning recovery. Regardless of whether or not the education sector experiences a similar massive onetime influx of resources, the ESSSER III affords a unique set of circumstances to understand how districts respond to near-unrestricted funding to improve student learning to an extent which has never occurred in modern public education.

We find that across key spending categories (i.e., staffing, academic interventions, professional development, facilities and operations, transportation, technology, and health), districts are engaging locally in ESSER III's flexibility by proposing a variety of spending priorities. Two key priorities are investment in student academic learning recovery and facilities and infrastructure. The frequency and amount of spending across these two categories reveal differing perspectives on the aims of ESSER III and potentially foreshadow different levels of potential academic learning recovery that have implications for longer-term learning equity.

After documenting the large and frequent investments in facilities and operations spending, we predicted the association between the relative proposed investment in facilities and operations and a variety of covariates regarding district demographics, characteristics, and

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finance. We found that districts are identifiably heterogeneous in their relative investment into facilities and operations spending in a manner that suggests that districts with greater unmet capital needs prior to the pandemic may be investing dollars to meet these needs and, therefore, investing relatively less in academic learning recovery.

In the following sections, we briefly review revealed preference theory, the research on ESSER III spending, and how ESSER III is seen as a transformational policy that also presents conceptual tradeoffs in spending strategies. Following this, we describe the data and empirical approach used to estimate the relationship of spending patterns with district and community characteristics. We then present and discuss our findings and provide suggestions for future work.

#### **Literature Review**

#### **Revealed Preference Theory and Institutional Logic for Ambiguous Problems**

Revealed preference theory, as developed by Samuelson (1948), states that an individual's perception of a good's relative utility is determined by observing their consumption preferences within a choice set under fixed conditions and prices. In education, studying consumer behavior to identify preferences has focused on parental preferences for teacher characteristics (Jacob & Lefgren, 2007), ranking of US colleges and universities (Avery et al., 2013), school reopenings (Dee et al., 2023), and school characteristics (Harris & Larsen, 2023; Beuermann, et al., 2023; Glazerman & Dotter, 2017), among others. It also aligns with the logic of Tiebout sorting—that individuals sort themselves into jurisdictions whose fiscal priorities align with their own (Gingrich & Ansell, 2014; Tiebout, 1956). We contribute to this literature in suggesting that proposed spending plans developed by districts represent consumption

preferences, with fixed conditions and prices emerging from ESSER guidelines, allocations, and the context in which these funds were released.

Unlike the above examples from education, this study examines the consumption preferences of organizations, not individuals. The fact that organizations have heterogeneous internal structures and individuals with competing interests makes identifying a single preference criterion an unrealistic aim. Instead, as first defined theoretically by McFadden (1975; 1976) to analyze the revealed preference of bureaucratic organizations, one must examine the distribution of decisions made by the organization. The median of this distribution reveals the central tendency of a preference, and the variance identifies the rigidity of this preference. While McFadden's framework observes multiple decisions from one organization, work by Poole, Romer, and Rosenthal (1987) and that by Helland (1998) translate McFadden's framework for cross-sectional analyses of many bureaucratic institutions, enabling analysis of how organizations, with their own sets of preferences and logics, make choices on average and vary in their preferences.

The extent to which revealed preferences are predictive allows for an understanding of the institutional logic of school districts when presented with the choices of how to invest their ESSER III funds. Institutional logic holds that the behavior of individuals and organizations depends on the context of the social and institutional norms that both frame behavior and define the boundaries by which transgression and change can occur (Friedland & Alford, 1991; Thornton & Ocasio, 2008). In the current context, observing the distribution of spending decisions reveals the stringency the logics hold across organizations and the average logic in response to these challenges and opportunities presented by such open-ended funding.

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Understanding institutional logic is especially important in open-ended and complex social policy interventions, such as the broad edict for ESSER III funding to both address pandemic learning loss and transform schools for their long-run benefit. When presented with ESSER III funding, school districts face a classic "wicked" problem: a challenge that lacks definitive formulation and criteria for measuring success exists as a one-shot opportunity and possesses any number of solutions (Rittel & Webber, 1973). Because there is no correct response, many different district strategies may be adopted, including economic, bureaucratic, and social influences that shape spending decisions. This study is built on the notion that districts facing similar forms of influence may respond systematically in a measurable way. By observing this heterogeneity, this study creates a better understanding of how future responses to similarly structured education finance policies may play out and thus can contribute to improving the design of future one-time emergency funding policies.

#### **ESSER** Spending and Discourse

Here, we briefly review studies documenting spending patterns and/or implementation challenges. A recent Brookings Institution research report shows that districts have been relatively slow in spending funds, requiring that spending accelerate significantly as to avoid forfeiting them in September 2024 (Roza & Silberstein, 2023). This acceleration appears to have occurred to some extent, with \$67.6 billion remaining unspent as of November 2023 (FutureEd, 2023) although this figure may capture some lag in federal reporting, with a previous McKinsey & Company survey from May/June 2023 estimating that only 30 billion dollars of ESSER funding remained unbudgeted (Bryant et al., 2023). Still, districts face difficulties navigating reporting and compliance standards, lacking human resources, vendors, and internal capacity (Bryant, 2022). While requests have been made for broad and flexible deadline extensions, there has been little progress in changing the currently highly restrictive extension criteria (Lieberman, 2023a).

Given the time constraints and logistical complexities of using ESSER III to meet the challenges faced by districts, stakeholders have raised questions as to whether districts can efficiently leverage these funds to accomplish bespoke and detailed goals (Dusseault, 2021; Dusseault & Pillow, 2021; Roza & Roza, 2022). For instance, Dusseault and Pillow (2021) surveyed 100 district plans for allocating ESSER III in the spring of 2021. They found that districts were investing in "known" strategies, such as investing in instructional time, increasing staff, and investing in facilities and capital, which they argue aligns with a concern that districts will not authentically engage with local communities and design tailored interventions that address the unique impacts of the pandemic. Roza and Roza (2022) forward a similar argument by highlighting the need for more granular, data-driven approaches to academic interventions. They argue that intervention approaches, such as expanded instructional time or new curricula, are inefficient because they are blanket approaches that invest equally across students with differing levels of academic need that have resulted from the pandemic or were even present before it.

Roza (2022) has further criticized ESSER as a massive influx of money that lacks a guiding objective, such as student achievement recovery and attainment rates. To the extent that the purpose or goal of ESSER is learning recovery for students, this point is important, although ESSER, by its very structure, does not specify any singular goal. The lack of goal structure allows problem formulation to occur at the district level, making it a promising means to identifying typically invisible district preferences for spending money, as there are de minimis incentives or pressures to do anything other than what is preferred.

#### **Transformation, Spending Strategies, and Isomorphism**

Conversations with educational leaders in North Carolina on their perspective of the purposes of ESSER funding revealed a useful framework for understanding the relationships between the three waves of ESSER and provides the motivation for our focus on ESSER III. Leaders described the three waves of ESSER as having separate goals, defined as Triage, Transition, and Transformation. To these leaders, while ESSER III was the third iteration of the pandemic-related educational relief funding, prior waves of ESSER had fundamentally different goals. ESSER I, the Triage wave, provided \$13.5 billion and was released at the onset of the pandemic in 2020 when schools responded to the immediate needs of transitioning to remote learning. ESSER II, at \$54.3 billion, came in December 2020 and was money for Transition, as many districts were building the infrastructure to return to in-person learning safely or developing more robust remote learning infrastructure during a "new normal." ESSER III, at \$122 billion, was different in scope and purpose. It was meant to enable Transformation in schools to address the learning loss from the pandemic and make schools stronger than they were before. Thus, the focus of our work is ESSER III.

The flexible nature of ESSER III allows districts to assess their own needs and invest their funds to best accomplish their goals as it relates to the transformational aspect of ESSER III funding. As noted earlier, this flexibility does not necessarily mean that districts would, in fact, pursue differing or tailored strategies (Dusseault & Pillow, 2021; Roza & Roza, 2022). This, in essence, is a concern over isomorphism, the sociological concept that organizations will, through mimesis, coercion, or reliance on norms, develop and implement similar operations, especially in decision contexts such as that of ESSER III, where both the goals and the means of accomplishing them are relatively vague (DiMaggio & Powell, 1983). Faced with limitless

possibilities, unclear goals, and high-stakes decisions, districts might not be engaging with the flexibility of the policy. Instead, they may be adopting strategies with legitimacy that is seemingly based on the social expectations for these funds and the suggested and modeled behavior of state organizations and other school districts.

More complicated still is that if districts do pursue differing goals with their allocations, spending decisions would be a zero-sum game. One potentially meaningful tradeoff in spending strategy is the choice between investing in the short-term needs of students, who lost so much learning during the pandemic, versus investing in the long-term needs of school districts. Infrastructure, due to its lasting nature, is often cited in media as an area where ESSER funds may be efficiently invested, especially in districts with greater amounts of deferred maintenance, albeit with a concerning tradeoff of dollars not going toward student learning recovery (Lehrer-Small, 2023; Luyre, 2023; Wall, 2022). Such investments were even encouraged by the Department of Education (DoE, 2021b) in communications with school districts.

We hypothesized that districts may have adopted similar logics around infrastructure when proposing to spend their ESSER III dollars. It is well established that there are large and unmet needs in facilities and operations in the United States (Government Accountability Office [GAO], 2020a), a point, as mentioned above, that has been frequently raised in the media. This is particularly true in high poverty, smaller, and rural districts, which have high fixed costs, fewer persons in their local tax base, or lower local property values from which they can generate the local revenues typically used to fund facilities spending (Alexander et al., 2014; Biasi et al., 2021; Blagg et al., 2023; Brunner et al., 2023; Imazeki & Reschovsky, 2003). We are therefore particularly interested in whether districts with less financial ability to invest in the maintenance and infrastructure needs of the district prior to COVID-19 may have viewed the one-time nature and unique circumstances of ESSER III as an opportunity to address unmet capital needs at the expense of investment in interventions that focus on student learning recovery.

In an environment of ambiguous policy goals and locally responsive structures, there is no definitive answer to what spending strategies are better, only an opinion on what one may prefer. However, the key motivation of this study is that districts had the flexibility to pursue short-term learning recovery or long-term infrastructure investment rationally, *but* emphasizing the latter may create recovery gaps that were enabled, but unintended, by the flexibility of ESSER.

#### Data, Sample, and Methods

#### Data

This study used data from two sources. The proposed spending amounts were obtained from Burbio's School Budget Tracker, as of October 2022. Burbio collected ESSER III budget data from district applications and then coded these data into eight categories: (1) academic learning loss, (2) health, (3) professional development and retention, (4) technology, (5) facilities and operations, (6) staffing, (7) transportation, and (8) other.<sup>3</sup> "Academic learning loss" captures spending on interventions, programs, and materials meant to improve student academic learning. "Health" includes spending on physical and mental health interventions and materials, including social–emotional learning (SEL) programs and curricula. "Professional development and retention" refers to spending to recruit and retain staff and any professional development not related to SEL or COVID-19. "Technology" refers to hardware, software, and connectivity expenditures. "Facilities and operations" includes capital investments into infrastructure, custodial equipment, and nutritional programs during closures. "Staffing" refers to all hiring and benefits of personnel, including those needed to implement the programs and interventions outlined in the above-mentioned categories. "Transportation" includes vehicles and fuel costs. "Other" is a catchall for relatively rare types of spending found in proposed plans.<sup>4</sup> Burbio also reports the total amount of ESSER funds a district receives, which we transformed into a perpupil rate.

District characteristics data were obtained from the National Center for Education Statistics (NCES). We use data from the 2020-21 school year, the school year during which ESSER III funding was first distributed. These NCES data include the percentages of students in a district identified as having a disability for the purposes of the Individuals with Disabilities Education Act; those who are Black, Hispanic, or Native American; those who are English learners (ELs); and those who are living in poverty. District locale codes for city, suburb, town, and rural designations are also provided.<sup>5</sup> We also used the district financial and enrollment data for years prior to any pandemic-related federal disbursements (SY2019 total per-pupil expenditures and the average per-pupil expenditures of capital expenditures from SY2017-SY2019).

The primary dependent variable of interest in this study was districts' proposed ESSER III spending across Burbio-defined spending categories. We focused on proposed spending because it best represents district preferences for spending prior to unanticipated constraints or market conditions. It was also reported at a similar point in time across districts and states. Actual spending is regularly adjusted upward of 10 times per fiscal year in some districts and responds to ever-changing contexts and conditions. While changes in spending are interesting in and of themselves, this study focused on the proposed spending patterns to understand preferences.

#### **Analytic Sample Construction**

Our sample comprised 2,905 traditional public school districts. We excluded those school districts with a supervisory union, with more than 90% of students qualifying for special services, and/or with spending exceeding three times the interquartile range in the 2019-20 school year (\$42,887 per pupil).<sup>6</sup>

We also restricted our sample to those districts with complete and specific proposed expenditure data. Burbio data are based on ESSER III applications submitted by school districts to state educational agencies. While the data contain more than 5,000 traditional public school districts, we eliminated 2,297 districts that indicated that they intended to spend some amount of money on a given intervention but did not specify an amount in the application, reported only 1 year of data, and/or combined the three waves of ESSER dollars into a single budget. Appendix C lists the percentage of traditional school districts within each state with complete data.

Table 1 provides summary statistics for the analytic sample. Table 2 reports the average values for the analytic sample, all districts in the Burbio data file, and all traditional public school districts in the US. Districts in the analytic sample are, on average, smaller, more likely to be rural, and have relatively fewer Black, Hispanic, Native American, or ELs relative to districts in the complete Burbio file. When compared to all traditional public school districts in the United States, the analytic sample is less rural, with a higher percentage of districts classified as urban, suburban, or town. Therefore, it is not surprising that the analytic sample was larger and had higher percentages of Black, Hispanic, or Native American students.

#### Methods

This study examined the following questions:

(1) Are districts engaging in the locally responsive flexibility of ESSER III by pursuing different spending strategies?

(2) To what extent do proposed spending plans vary by observable characteristics such as socioeconomics, finances, or locale?

To address the first question, we calculated the proportion of a district's proposed spending plan allocated to academic learning loss, health, professional development and retention, technology, facilities and operations, staffing, and transportation. We then created data visualizations that summarized the distribution of the relative allocations of ESSER funds to these categories.

To examine differences in proposed facilities and operations spending patterns across districts, the primary analytic model took the following form:

(1) 
$$y_{ds} = \beta_0 + \beta_1 DistChar_{ds} + \beta_2 DistFin_{ds} + \alpha_s + \epsilon_d$$

where  $y_{ds}$  represents the proportion of the total ESSER III allocation that district *d* in state *s* has proposed to spend on facilities and operations. *DistChar<sub>ds</sub>* is a vector of district characteristics from the closest available school year prior to the distribution of ESSER III. It includes the proportion of students who are ELs; have an individualized education program (IEP); are Black, Hispanic, or Native American; and live in a household experiencing poverty. It also includes locale codes, defined as city, suburb, town, and rural. *DistFin<sub>ds</sub>* is a vector of district finance data, including the total amount of ESSER III dollars received per pupil, the latest available data collected prior to the onset of the pandemic for total revenue per pupil, and the average per-pupil expenditures on capital and infrastructure from school years 2017-2019. Also included is a statefixed effect,  $\alpha_{s}$ , so that the relative variation in proposed spending toward a spending category could account for the influence that states exert through the application process.

We were most interested in whether districts with less total revenue per pupil, higher poverty, and less capital and infrastructure expenditures pre-COVID-19 take a more long-term perspective toward ESSER funding. Put differently, we hypothesized that districts with less ability to fund capital investments under normal times may view the one-time nature and unique circumstances of ESSER III as an opportunity to address unmet capital needs. This choice would reflect a prioritization of the long-term well-being of the district and its facilities over the short-term needs of students who experienced learning loss during the pandemic.

#### Results

#### **Proposed Spending Patterns and Local Flexibility**

We identified two main takeaways from the descriptive analysis: (1) districts are engaging in the locally responsive structure of ESSER III by deploying a variety of spending strategies, and (2) districts are prioritizing investments in staffing, learning loss remediation, and infrastructure.

#### Engaging in the Locally Responsive Structure of ESSER III

Figure 1 summarizes the distribution of the relative allocation toward each spending category for districts that had any level of spending in that category. The X-axis represents the proportion of total ESSER III funds a district proposed investing in each category. Each spending category and the percentage of districts in the sample that proposed spending in these categories are reported on the Y-axis, with the share of districts in the data having any proposed spending in the category reported in parentheses. Each dot on the plot represents an individual district's proposed proportion of total ESSER III dollars in each category. The interquartile range is shaded in blue, with the vertical bar defining the median proportion of funding.

Figure 1 highlights the considerable variation in the types of proposed spending across the listed categories for the districts in the sample. It also shows that the spending range varies greatly, with some districts proposing to spend most of their resources within one category. This is most noticeable in the staffing category, for which 6% of districts proposed to spend 80% or

more of their ESSER III allocation. These patterns offer evidence suggesting that one of the key rationales of ESSER III is at play: the flexibility in how districts appropriate funding allows local school districts to assess their individual needs and invest in their preferred methods for addressing the impact of the pandemic.

#### Prioritizing Investment in Staffing, Learning Loss Remediation, and Infrastructure

Figure 1 further displays the large and frequent investment districts made in learningloss-related categories. Staffing, academic interventions, and professional development are elements directly related to addressing student learning loss and collectively accounted for 61% of all proposed ESSER spending in the sample. We also investigated the types of spending within each category. As presented in Table 3, proposed staffing investments were most frequently focused on hiring instructional staff and counselors, representing a substantial investment on average, with districts proposing any such hiring proposing a median investment of 15% of their total ESSER III allocation toward this value. We also observed relatively frequent but typically smaller allocations for support staff, student health and wellness, and the costs associated with employee benefits. Academic interventions typically focus on expanding learning time through interventions such as summer learning programs, tutoring, and extended school days or making instructional time more effective through things such as instructional materials. Another finding was that 65% of districts proposed at least one of the listed forms of extended learning time, with 33% proposing two or more. For professional development and staff retention, general teacher professional development and staff bonuses and overtime were the most frequent categories, and both had moderate levels of median proposed spending among districts that mentioned these subcategories. Across all these subcategories, it is worth noting the

high variance and range in the relative allocations within each category, with there being examples of districts proposing to invest most of their money in a single intervention.

However, Figure 1 also shows that districts proposed substantial and frequent investment in infrastructure. Facilities and operations spending had the second-highest rate of expenditure by school districts (83%) and had the highest median proposed expenditure for school districts that proposed spending on the category at 33% of the total ESSER III allocation among districts that proposed any facilities spending. Overall, 26% of all ESSER funding in our data was proposed for use in facilities and operations. Notably, for the proposed spending on facilities and operations, we observed a clustering of school districts at 80% and then a tailing off, suggesting districts intended to maximize their facilities and operations spending while meeting the 20% minimum requirements for spending on academic learning loss.

In Table 4, we present the subcategories on which spending was most frequently proposed within facilities and operations. Because facility upgrades can be so costly, we found that these subcategories received substantial proposed investments in district plans. For instance, while only 10% of districts proposed new construction projects, those projects were allocated a median of 26% of a district's ESSER III allocation, with considerable variance in this value and a wide range as well. Similar patterns were observed over more expensive facility upgrades such as HVAC, repairs, and indoor and outdoor equipment and furniture. Among districts with any proposed facilities and operations spending, the median district proposed two different subcategories, and overall, 16% of districts in the data proposed 3 or more types of facilities and operations projects in their proposals.

We interpret the frequency and amount of average investment in facilities and operations as evidence suggesting that some districts were taking purposefully different approaches to how

ESSER III should be allocated, investing in longer-term infrastructure in the district, rather than in academic interventions. For example, first tertile facilities and operations spenders allocated an average of 2% of their ESSER III allocations on facilities and operations, 23% on academic interventions, 9% on professional development, and 44% on staffing; in contrast, districts in the top tertile of facilities and operations spending invested only 13%, 2%, and 14% on academic interventions, professional development, and staffing, respectively, and a striking 59% on facilities and operations on average. These findings align with the hypothesis that districts face and differentially respond to a tradeoff between long-term and short-term investments when prioritizing ESSER III allocations, with some districts taking extreme approaches to investing in the academic learning recovery of their students and others investing in projects that yield benefits to the district in the longer run. While the latter is perhaps rational and even necessary in many cases, there are implications for the learning recovery of the students in these settings relative to students enrolled in districts more focused on short-term learning recovery.

#### Preferences for Pandemic Recovery Spending across Observable Characteristics

Having demonstrated that districts proposed various ESSER III spending strategies and differentially exhibited preferences for short-term or long-term perspectives on allocating this funding, we then examined whether differences in preferences could be predicted using district characteristics. Given the interest in examining longer-term investments in infrastructure versus shorter-term investments in academic learning recovery, we focused on explaining variation in the proportion of overall funding proposed for facilities and operations spending. Two key findings emerged: (1) There were substantial differences in spending on facilities and operations across district-level poverty. (2) High-poverty districts were relatively more likely to invest their facilities and operations dollars on interventions that have longer-term benefits, such as

construction and repairs, supporting a hypothesis that districts unable to meet facilities needs under normal circumstances may divergently prioritize capital investments.

#### **Explaining Differences in Facilities and Operations Spending**

Table 5 provides the estimates for the associations between district characteristics and the proportion of ESSER III funds proposed to be spent on facilities and operations. Our preferred analytic model appears in Column 3.<sup>7</sup> This model includes our complete set of covariates to capture district demographic composition, setting, and fiscal attributes, allowing us to identify what district characteristics predict differences in relative investments into facilities and operations when other potentially meaningfully district characteristics are held constant. We see that in this fully specified model, larger districts proposed to spend relatively less on facilities and operations on average, with a 1,000-pupil increase in district enrollment associated with a statistically significant 0.073 percentage point decrease in relative allocation to facilities and operations. Thus a 1 standard deviation increase in enrollment of 16.39 thousand students would be associated with a 1.20 percentage point decrease in the proportion of ESSER III funding proposed towards facilities and operations on average holding all else constant. Meanwhile, a suburban district, relative to a rural district, is estimated to propose spending 3.7 percentage points less on facilities and operations on average, holding all else constant.

We also observed that the district poverty rate was strongly associated with increased facilities and operations spending. Holding all other demographics and finance covariates constant, a 1 percentage point increase in the poverty rate in a district was associated with a 0.80 percentage point increase in the proportion of ESSER III funding proposed toward facility and operations spending on average. For the years prior to the COVID19 pandemic, districts in the highest tertile of poverty rate on average spent \$405 per pupil less on capital investments than

districts in the lowest tertile of poverty rate in the years prior to the COVID-19 pandemic. Thus, the observed relationship between poverty and facilities spending aligns with the hypothesized relationship described earlier in which districts with greater concentrations of poverty may have a tax base with lower assessed property values and are unwilling or unable to support the tax rates needed to generate enough local revenue to meet district fiscal needs. We notably did not find there to be a significant relationship between the total ESSER III dollars received and the proportion spent on facilities and operations. This suggests that the association between poverty and facilities and operations, despite the ESSER allocation formula being identical to the poverty-weighted formula of Title 1.

These estimates highlight the important relationship between a district's poverty level and the emphasis they placed on prioritizing longer-term capital investments when submitting their ESSER spending plans to the state. Given that the rate of poverty in a community is typically associated with less fiscal capacity to generate local revenue for capital investment, these findings suggest that district fiscal needs, outside of the impact of the pandemic, might have driven the decision-making of district leaders. These underlying associations are proxied in the underspecified models in Table 5, Columns 1 and 2, via the distinction made between rural districts and town, suburban, and city districts in proposed facilities spending and a negative association between pre-pandemic capital expenditures per pupil and proposed facilities spending when poverty rates are omitted from these models.

#### Differences in Infrastructure Spending by District Poverty Levels

Although we observed that high-poverty districts spend on facilities and operations at a higher rate, this does not necessarily mean these spending strategies are in fact longer-term. It

could be that high-poverty districts are investing in shorter-term operations equipment, such as custodial equipment or personal protective equipment (PPE), to manage the practical challenges of the pandemic and are thus actually adopting shorter-term and more crisis-specific spending strategies. To further test whether higher poverty districts may have stronger preferences toward spending on longer-term infrastructure investments, we ran a series of linear probability models using the same set of variables from those in Table 5, Column 3, but with a dependent variable for whether a district proposed to spend any money on various types of infrastructure. This allowed us to examine the relationship between district-level poverty and the likelihood that a given subcategory of infrastructure spending was proposed.<sup>8</sup> Figure 2 displays the values of district-level poverty rate coefficients and confidence intervals for this series of models, run separately for each of the 11 most frequently spent on facilities and operations subcategories in the ESSER III plans. Displayed coefficients are expressed as the change in the likelihood of proposing a given facilities and operations subcategory associated with a 1 percentage point increase in district-level poverty (e.g., 0.005 is equivalent to a 0.5 percentage point increase in likelihood).

We further characterized these 11 frequently spent facilities and operations categories under three umbrellas: (1) major construction, (2) classroom and school infrastructure, and (3) supplies and protective equipment. Major construction encapsulates spending on facility repairs, new construction, windows doors, and roofs, and HVAC systems and filters. These types of spending are relatively expensive and highlight the types of capital investments that indicate a longer-term perspective on the best use of ESSER III funding since, apart from air filters, one would expect the benefits of these investments to last far beyond the ESSER III spending deadline. Aligning with our hypothesis based on our results from Table 5, we observed that

district poverty rates were associated with adopting these longer-term strategies. For instance, a 1-percentage-point increase in district-level poverty was associated with a 0.39-percentage-point increase in the likelihood a district would propose new construction with their ESSER III allocation. Thus, a 1-standard-deviation increase in poverty rate was associated with a 3.18percentage-point increase in likelihood, which is quite substantive relative to the baseline likelihood, reported in Table 3, of 10.46%. Likewise, a 1-percentage-point increase in districtlevel poverty was associated with a 0.72-percentage-point increase in the likelihood of spending on facility repairs and improvements, equating to a 5.87-percentage-point increase in the likelihood of such spending with a 1-standard-deviation increase in district poverty.<sup>9</sup>

The classroom and school infrastructure category comprises security cameras and locks, outdoor equipment, indoor furniture and equipment, and water bottle filling stations. These types of investments would typically be less expensive than major construction on a per-unit basis, but should also have a similarly longer-term perspective, as the benefits would also be expected to last beyond the 2024 deadline. Only outdoor equipment had a statistically significant association with district poverty rate for these types of spending. These types of needs may be less pressing to schools, or easier to accomplish in a piecemeal manner, relative to the needs for repairing essential infrastructure, which may explain the lack of association observed in these regressions.

Supplies and protective equipment, the final category, is the least oriented toward a longterm perspective, as the items here are more focused on addressing safe operations during the pandemic through disinfection and transmission mitigation. Under our hypothesis that prioritizing unmet capital investment drives the association between district poverty rates and facility and operations spending with ESSER III allocations, we would expect there to be no association between poverty and these categories. Figure 2 shows no statistically significant

association between the subcategories of custodial equipment, PPE supplies, or preparation efforts and district-level poverty, which aligns with our hypothesis. Overall, as can be seen in Figure 2, higher-poverty districts engaged with longer-term major construction projects at higher rates. This aligns with the notion that districts less capable of investing in capital projects before the pandemic may adopt divergent ESSER strategies that lead to relatively less investment in interventions focused on student learning recovery.

#### **Discussion, Limitations, and Conclusion**

We used a revealed preference framework and a series of descriptive analyses to understand how school districts proposed spending federal pandemic relief funding under policy and goal ambiguity. Our study showed that counter to the sociological hypothesis of isomorphism in vague policy contexts, there was considerable variance in the strategies adopted by school districts when proposing their spending for ESSER III. This appears to be true across general spending categories and the specific types of interventions that fall under these categories. To the extent that ESSER III's policy goal was to enable heterogeneity in fund utilization, which allows districts to be responsive to local contexts and needs, the districts' proposed ESSER III spending appears to suggest the policy was successful.

However, the flexibility in allocating dollars introduced the possibility of some spending strategies that could potentially create learning recovery gaps. Specifically, we found significant and frequent spending across two dimensions that bely differing perspectives on the best use of ESSER III: short-term investment into academic learning recovery through staffing, academic intervention, and professional development and longer-term investments into facilities and operation that will continue to benefit the school district after the funds expire in 2024. Many districts proposed spending almost all their ESSER allocations on academic learning recovery or

facilities and operations. While either strategy is legally permissible and potentially rational, this difference may create uneven learning recovery gaps since students attending a facilities-focused district will potentially have fewer dollars invested into their near-term instructional experience.

To isolate the types of districts engaged in longer-term, facilities-oriented spending, we examined what district-level characteristics were associated with higher proposed spending on facilities. We discovered that districts with smaller enrollments and higher poverty levels were associated with proportionally greater proposed spending on facilities and operations, as were rural districts relative to suburban districts. We hypothesize that these associations could suggest that school districts that, even before COVID-19, lacked the capacity to raise funds for capital expenditures to address facilities needs might have been more likely to see the one-time nature of ESSER III as an opportunity to invest dollars to meet these fiscal shortcomings. Bolstering this notion is that even within facilities and operations spending, higher-poverty districts were also more likely to pursue major construction projects with long-term returns for the district. These characteristics of facilities-focused districts aligned with prior evidence that high-poverty have historically faced greater fiscal challenges in addressing their facility and infrastructure needs (Alexander et al., 2014; Biasi et al., 2021; Blagg et al., 2023; Brunner et al., 2023; GAO, 2020).

If the implicit goal of ESSER III was to be a locally responsive way to address the impacts of pandemic-related learning loss, then it appears to have successfully led to divergent strategies. However, this flexibility has allowed for divergent strategies that may serve the rational long-term interests of a district, but that also fails to equally or equitably invest in the short-term academic learning recovery of students that could impact later-life outcomes. The successful flexibility of ESSER III might have unintentionally enabled unequal investment in

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learning recovery since students may arbitrarily attend a school district that invests heavily in either facilities or academic learning recovery.

This is not to say that facilities have no impact on student learning. Substandard facilities can greatly impact students' preparedness and comfort in learning, and in a vacuum, districts investing in addressing deferred maintenance through these funds could serve both the district and its students well (Biasi et al., 2024; Jackson, & Mackevicius, 2024). However, when an acute event with a massive impact occurs-such as the COVID-19 pandemic-more herculean efforts for academic learning recovery are required to get students back on track, likely above and beyond what can reasonably be expected of almost any facility improvements. Our suggested interpretations of the observed differences in proposed spending patterns also imply that the academic learning recovery investments made by districts will, on average, be effective and meaningfully promote learning gains, which may not necessarily be true. The extent to which greater investments in learning interventions will, in fact, improve learning recovery for students impacted by COVID-19 will be better understood with time. However, the underlying point remains: when given flexibility, districts pursue a breadth of goals using one-time emergency relief funding, both within and outside the context of a given emergency, which has the *potential* to create unequal opportunities for students to recover their learning.

Our findings have important implications for future school emergency relief funding, such as addressing the impacts of natural disasters or other acute emergencies. First, flexibility works to some extent, with districts resisting the temptation for extreme isomorphic decisions in vague policy contexts. While our data do not provide the details to investigate the degree to which this spending was tailored to local contexts to the extent that authors such as Roza and Roza (2022) or Dusseault and Pillow (2021) argue is necessary and important, we nonetheless

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observed considerable variance in strategies that were plausibly contextual to the districts' perceived needs. Second, districts may adopt broader time horizons when formulating their problem definitions and how the funding can be used to address these challenges; for instance, in this study, districts appeared to utilize COVID-19 relief money in the context of the fiscal constraints of certain districts prior to the pandemic. When doing so, they might have pursued permissible and rational goals unrelated to the direct impact of the emergency and thus created unintended academic recovery gaps relative to districts more focused on the emergency at hand. Third, future one-time emergency relief funding initiatives need to carefully consider how to design locally responsive funding policies with guardrails that ensure districts can be contextually responsive while also better ensuring that this flexibility does not enable the generation of learning recovery gaps.

There are several limitations that should be kept in mind when considering our findings. First, while the analytic sample included thousands of school districts across the United States, this sample is not representative. Thus, although our findings suggest certain associations and trends within our sample, the nonrepresentative nature of the data limits certainty in external validity. The coverage also varied considerably by state, as noted in Appendix C. While we used state-level fixed effects, the lack of representativeness within states should be noted. However, the findings were substantively similar when analyses were run with a subsample of districts from states with at least 75% coverage, at least 50% coverage, and at least 30% coverage.

A second limitation is the extent to which district preferences are transferable to contexts outside the pandemic. Given the scope and unprecedented nature of the pandemic, it cannot be known with complete certainty whether the actions taken in the spring of 2021 are generalizable. However, this concern is, in our opinion, not overly serious, as the results suggest that school

districts appeared to respond to the opportunity of ESSER III funding using experiences outside of the COVID-19 context, with longer-term investments being proposed in districts that had considerable facilities needs before the pandemic. If decisions by district leaders are relatively unmoored from the COVID-19 context, then it seems reasonable to assume they may have a similar rationale under other contexts of emergency relief funding that could be disbursed in response to natural disasters or other potential pandemics. The same may be true if school systems receive a large one-time influx of resources.

A final noteworthy limitation is that the preferences examined in this study were the proposed spending allocations, not the actual spending of districts. Thus, the allocations described in this study are likely to differ significantly from final spending amounts. However, there is a particular advantage to using proposed spending. Specifically, these analyses can observe the purest intentions of school districts for how they wished to allocate ESSER III dollars before market constraints or unexpected needs arose that could lead to the proposed spending differing from actual allocation. Information in proposals, while limited, provides a glimpse into desired spending allocations, which is arguably a better approximation of intent and is more generalizable beyond the constraints and conditions for actual ESSER III spending.

This work foregrounds several areas for future research, particularly in the years after ESSER funds have been spent or expired. First, it will be important to measure and understand what differences in relative spending strategies existed in actual spending and their associations with real student academic learning recovery. Our findings on the observed differences in spending prioritization for facilities and operations relative to academic learning recovery offer a promising place to begin these investigations. Such work will help assess the concern raised by this study that there is potential for uneven academic learning recovery due to some districts

adopting longer-term strategies for investing in infrastructure. Of course, the opposite notion, that spending on academic learning recovery was relatively inefficiently or poorly implemented, leading to limited returns in learning recovery, could also be entirely accurate and worth testing, and it may be the case that school districts that invested in meaningful facility upgrades were, in fact, better stewards of student success in the long-term. Ultimately, understanding the educational impact of the pandemic, the school funding meant to address it, and the long-term lessons in education policy design will be necessary for shaping future policy directions for affected students and aid in the design of locally responsive educational emergency relief funding.

#### Notes

<sup>1</sup> Professional organizations, policymakers, and practitioners are pushing to extend the ESSER III spending deadline. As of October 2023, the US Department of Education (USDOE) officials are encouraging school districts to advocate for extensions by contacting state education leaders while USDOE considers a path forward (Lieberman, 2023b). A report on November 28 from FutureEd (2023) noted that "Five states…have spent more than 75 percent of their ESSER III allotment, and another seven have spent more than 70 percent. Eighteen states have spent less than three-fifths of their allotments, and three states still remain below 50 percent."
<sup>2</sup> Appendix A contains a description of allowable expenses as defined by the USDOE.
<sup>3</sup> Full details on the spending included in these categories can be found in Appendix B.
<sup>4</sup> Because of the vague catchall nature, we do not report findings on relative spending on the "other" category, although the types of spending captured in this are listed in Appendix B. We also include the small and relatively infrequent subcategories which Burbio defines as "equity" in this "other" category.

<sup>5</sup>We resolved the suppressed data for students with disabilities and English learner (EL) status through the following: (1) Students with disability data were flagged as suppressed for districts with only 1 or 2 students with disabilities; we replaced these suppressed values with 1.5 and divided by total enrollment. For districts still missing data, we used the most recently available year of data going back to 2018-19. (2) Missingness flags in EL data captured types of missingness beyond suppression due to small counts. Therefore, we used the most recent nonmissing year for EL counts going back to the 2018-19 school year, and if EL counts were missing in all cases but the district appeared in the NCES file for districts with EL counts, we assert in the data that this missingness is suppression and set the count to 1.5 and divided by total enrollment in SY 2021. The 2016-2020 NCES Education Demographic and Geographic Estimates data show that the confidence interval for the percentage of students that only speak English at home overlaps with 100% in 80% of districts of the 179 districts with complete Burbio records still missing EL data. Moreover, 97% are estimated to have 0% of enrolled students who speak a language other than English at home and do not speak English very well within the margin of estimate error. We, therefore, assert that remaining missingness is indicative of an unreported 0 in the data and include these districts in our estimates as having 0% EL students. We further added the 174 districts estimated to have no students enrolled who speak a language other than English at home and do not speak English very well into our data as 0% EL. <sup>6</sup> These omissions attempt to construct an analytic sample of school districts that offer traditional K-12 services to a general population of students. In many instances, outlier spending districts or districts comprised almost entirely out of students with disabilities offered specialized services for high-need populations, like being a school district for deaf students. Because these types of schools have potentially divergent needs and concerns that may inform their ESSER III spending behavior, we omit these districts to attempt to best capture the spending intentions of nonspecialized school districts.

<sup>7</sup>We also explored a more comprehensive set of covariates, including community COVID-19 infection rates in January 2021, vaccination rates in Fall 2021, and political affiliation. The results remain qualitatively similar with those covariates in the model and within-unit  $R^2$  did not increase substantively (<.01).

<sup>8</sup> Full regression outputs are available in Appendix D.

<sup>9</sup> As shown in Appendix D, the coefficient on total ESSER III dollars received per pupil is also statistically significant in the model predicting the likelihood of facility repair. This coefficient is not distinguishable from zero at conventional levels in other models.

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**Figure 1 caption:** Note: Sample includes all 2,905 school districts in the analytic sample. Each dot on the plots represents an individual school district's proportion of total ESSER III funds proposed to be spending on a given category. Parentheses on the Y axis represent the percent of districts which included any spending in each category in their proposal. Shaded regions represent the interquartile range of proposed spending allocations for districts that proposed any spending in a given category, with medians indicated by the interior vertical line.

**Figure 2 caption:** Note: \*, \*\*, \*\*\* indicate statistical significance at the .05, .01, and .001 levels respectively. Coefficients reported above bars. The sample includes all 2,905 non-charter traditional public-school districts with complete and accurate proposed ESSER III spending in the Burbio data and complete covariate information. All models cluster error at the state level. Estimates derived by running model reported in Table 4 Colum 3 as a linear probability model and display the linear relationship between increased district-level poverty and the likelihood of proposing to spend ESSER III dollars on the subcategories listed on the Y axis.

	Ν	Mean	SD	Min	Max
% ELL	2,905	6.73%	10.42%	0.00%	75.48%
% IEP	2,905	14.49%	4.42%	0.00%	34.50%
% Poverty	2,905	16.20%	8.16%	1.70%	60.30%
% Black, Hispanic, or Nat. Am.	2,905	31.59%	29.22%	0	1
Fall Enrollment (1,000's)	2,905	5.82	16.39	0.07	347.48
Total PPE (\$1,000s, SY2019)	2,905	15.18	5.27	6.90	42.50
Total Capital Expenditures PP	2,905	1.36	1.72	0.00	17.54
(\$1,000, Average SY2017-2019)					
ESSER III Received PP (\$1,000)	2,905	2.46	1.99	0.08	35.41
Locale	2,905				
City	285	9.81%			
Suburb	785	27.02%			
Town	734	25.27%			
Rural	1,101	37.9%			
ESSER III Proposed Allocation	2,905				
% for Academic Learning Loss		19.25%	18.23	0%	1
% for Health		2.83%	6.53	0%	1
% for Prof. Dev. & Retention		5.88%	12.06	0%	86.71%
% for Technology		8.29%	11.07	0%	96.55%
% for Facilities and Ops.		27.30%	25.70	0%	1
% for Staffing		28.14%	28.14	0%	1
% for Transportation		1.77%	4.98	0%	51.54%
% for Other		6.53%	12.03	0%	86.33%

**Table 1.** Summary statistics for analytic sample of all available data in complete and accurate Burbio records for non-charter districts

Note: This summarizes the analytic sample of 2,905 traditional public school districts with complete and accurate ESSER III proposal information and complete covariate records. Data is from the 2020-21 school year unless otherwise notes. For districts with unavailable demographic data in the 2020-21 school year, the most recently available data for those school districts going back to the 2018-19 school year.

		Mean	
	Analytic	All Districts in	All Districts
	Sample	Burbio Data	
% ELL	6.73%	7.24%	5.56%
% IEP	14.49%	14.28%	13.43%
% Poverty	16.20%	16.55%	14.48%
% Black, Hispanic, or Nat. Am.	31.59%	35.15%	25.85%
Fall Enrollment (1,000's)	5.82	7.06	3.68
Total PPE (\$1,000s, SY2019)	\$15.18K	\$15.3K	\$16.50K
Total Capital Expenditures PP (\$1,000, Average SY2017-2019)	\$1.36K	\$1,372K	\$1.41K
ESSER III Received PP (\$1,000)	\$2.46K	\$2.51K	\$2.51K
Locale			
City	9.81%	12.14%	5.96%
Suburb	27.02%	29.46%	23.45%
Town	25.27%	24.39%	18.26%
Rural	37.9%	34.01%	52.35%

**Table 2.** Summary statistics for analytic sample of all available data in complete and accurate Burbio records for non-charter districts

Note: This compares the mean values of key variables for analysis across the analytic sample, all districts with Burbio data, and all non-outlier traditional public school districts not in a supervisory union. Data is from the 2020-21 school year unless otherwise noted. For districts with unavailable demographic data in the 2020-21 school year, the most recently available data for those school districts going back to the 2018-19 school year.



Figure 1. Boxplots for district ESSER III proposed spending on the seven major categories

Category	Subcategory	% Districts Proposing	Median % of Total ESSER \$ Proposed on Subcategory	SD of Total ESSER \$ Proposed on Subcategory	Min	Max
Staffing						
	Teachers, Academic Interventionists, & Guidance Counselors	63%	14.62%	17.78%	0.01%	100.00%
	Employee Benefits/Assistance Programs	36%	2.52%	4.24%	0.02%	25.64%
	Mental Health Professional	33%	5.18%	10.16%	0.02%	100.00%
	Support Staff	25%	3.69%	6.65%	0.03%	60.33%
	Nurse or Other Physical Health Specialist	22%	2.71%	4.60	0.02%	37.32%
Academic Interventions						
	Summer Learning Programs and Staff	52%	4.75%	7.67%	0.02%	90.70%
	Instructional Materials	34%	3.59%	7.89%	0.00%	61.94%
	Tutoring Programs and Staff Afterschool	27%	3.73%	8.78%	0.05%	100.00%
	Programs/Extended Day and Staff	26%	3.33%	6.48%	0.03%	90.29%
Professional Dev. & Retention						
	General Professional Development (Not SEL or COVID related)	37%	2.53%	6.32%	0.01%	67.42%
	Staff Bonuses/Hazard Pay/Overtime	9%	4.21%	9.13%	0.01%	62.09%

Table 3. Selected Subcategories from Learning Recovery Related Categories

Note: Data based on analytic sample of 2,905 traditional public school districts with complete and accurate ESSER III proposal information and complete covariate records. Median proposed expenditures, SD, and Min and Max are calculated based on the subsample of districts that proposed spending on a given subcategory.

<u> </u>	1	6.			
Subcategory	% Districts Proposing	Median % of Total ESSER \$ Proposed on Subcategory	SD of Total ESSER \$ Proposed on Subcategory	Min	Max
<b>Facilities and Operations</b>					
Air filtration, HVAC, Heating, Cooling	43.37%	17.41%	23.29%	0.02%	100.00%
Repairing or Improving Facilities	27.09%	10.25%	19.89%	0.03%	81.82%
Personal Protective Equipment Supplies	18.45%	1.28%	4.02%	0.00%	43.97%
Custodial Equipment and Supplies	17.93%	1.80%	4.66%	0.01%	45.13%
Indoor Furniture and Equipment	12.39%	2.02%	7.21%	0.00%	48.09%
Outdoor Equipment	11.08%	4.20%	11.21%	0.01%	70.08%
New Construction	10.46%	25.63%	26.54%	0.02%	98.90%
Preparation Efforts	7.12%	1.95%	8.71%	0.00%	79.43%
Windows, Doors, and Roofs	5.82%	5.91%	14.29%	0.00%	70.51%
Security Cameras	5.75%	1.90%	4.96%	0.01%	27.38%
Bottle Refilling Stations	5.61%	0.63%	2.38%	0.00%	15.03%

Table 4. Selected Subcategories from the Facilities and Operations category

Note: Data based on analytic sample of 2,905 traditional public school districts with complete and accurate ESSER III proposal information and complete covariate records. Median proposed expenditures, SD, and Min and Max are calculated based on the subsample of districts that proposed spending on a given subcategory.

	(1)	(2)	(3)
	Facilities and Ops	Facilities and Ops	Facilities and Ops
% Black, Hisp., or	0.00162***	0.0015***	-0.00011
Nat. Am.	(-0.00018)	(-0.00019)	(-0.00027)
0/ ET I	-0.0015**	-0.0015**	-0.00082
% ELL	(-0.00051)	(-0.0005)	(-0.00059)
0/ IED	-0.00025	-0.00039	-0.003
70 IEF	(-0.0021)	(-0.0021)	(-0.0018)
Enrollment	-0.0011**	-0.0011**	-0.00073*
(1,000's)	(-0.00033)	(-0.00033)	(-0.00028)
PPF (\$1K)	-0.0045***	-0.0018	-0.0027
	(-0.0012)	(-0.0017)	(-0.0022)
Locale			
Rural	(Omitted)	(Omitted)	(Omitted)
	-0.064*	-0.062*	-0.026
City	(-0.025)	(-0.025)	(-0.019)
Sylviel	-0.099***	-0.098***	-0.037*
Suburb	(-0.019)	(-0.019)	(-0.017)
Town	-0.034*	-0.032*	-0.023
TOWII	(-0.013)	(-0.013)	(-0.012)
Total Capital Exp.		-0.0089*	-0.0061
PP (\$1K)		(-0.0039)	(-0.0045)
Total ESSER III			0.0057
Received PP (\$1K)			(-0.0033)
0/ Dovortu			0.00796***
70 POVEILy			(-0.001)
Constant	0.35***	0.33***	0.25***
Constant	(-0.042)	(-0.037)	(-0.033)
State FE	Х	Х	Х
$R^2$ (within)	0.037	0.04	0.083
Rho	.23	.22	.23
Ν	2905	2905	2905

**Table 5.** Testing Heterogeneity in Facility and Operations Prioritization with ESSER III Funds

Note: \*, \*\*, \*\*\* indicate statistical significance at the .05, .01, and .001 levels respectively. Standard errors in parentheses. The sample includes all 2,905 non-charter traditional public school districts with complete and accurate proposed ESSER III spending in the Burbio data and complete covariate information. All estimates clustered error at the state level. These results are produced using model (1). Estimates are made at the school district level, with the dependent variable being the proportion of total ESSER III allocation being proposed to be spent on facilities and operations.



**Figure 2.** Coefficient Plot for the Association Between District Level Poverty (%) and the Likelihood of proposing to spend on a facilities and Operations Subcategory

**Appendix A.** List of Allowable Uses of ESSER funding from "Frequently Asked Questions: Elementary and Secondary School Emergency Relief Programs Governor's Emergency Education Relief Programs" (U.S. Department of Education, 2021a pg. 10–12)

## A-3. How may an LEA use ESSER funds?

An LEA may use ESSER funds for the broad range of activities listed in section 18003(d) of the CARES Act, section 313(d) of the CRRSA Act, and section 2001(e) of the ARP Act. Although the lists of allowable uses of funds are not identical, any of the ESSER funds (ESSER I, ESSER II, or ARP ESSER) may be used to support all of the allowable uses of funds listed in any of the ESSER programs. We have consolidated below the three ESSER programs' lists of allowable uses of funds. The activities that are listed in section 18003(d) of the CARES Act, section 313(d) of the CRRSA Act, and section 2001(e) of the ARP Act that an LEA may support with ESSER funds are:

1. Any activity authorized by the ESEA, including the Native Hawaiian Education Act and the Alaska Native Educational Equity, Support, and Assistance Act (20 U.S.C. 6301 et seq.).

2. Any activity authorized by the Individuals with Disabilities Education Act (IDEA) (20 U.S.C. 1400 et seq.).

3. Any activity authorized by the Adult Education and Family Literacy Act (AEFLA) (29 U.S.C. 3271 et seq.).

4. Any activity authorized by the Carl D. Perkins Career and Technical Education Act of 2006 (Perkins V) (20 U.S.C. 2301 et seq.).

5. Any activity authorized by subtitle B of title VII of the McKinney-Vento Homeless Assistance Act (McKinney-Vento) (42 U.S.C. 11431 et seq.).

6. Coordinating preparedness and response efforts of LEAs with State, local, Tribal, and territorial public health departments, and other relevant agencies, to improve coordinated responses among such entities to prevent, prepare for, and respond to COVID-19.

7. Providing principals and other school leaders with the resources necessary to address the needs of their individual schools.

8. Activities to address the unique needs of low-income children or students, students with disabilities, English learners, racial and ethnic minorities, students experiencing homelessness, and children and youth in foster care, including how outreach and service delivery will meet the needs of each population.

9. Developing and implementing procedures and systems to improve the preparedness and response efforts of LEAs.

10. Training and professional development for staff of the LEA on sanitation and minimizing the spread of infectious diseases.

11. Purchasing supplies to sanitize and clean the facilities of the LEA, including buildings operated by such LEA.

12. Planning for, coordinating, and implementing activities during long-term closures, including providing meals to eligible students, providing technology for online learning to all students, providing guidance for carrying out requirements under the IDEA and ensuring other education services can continue to be provided consistent with all Federal, State, and local requirements.

13. Purchasing educational technology (including hardware, software, and connectivity) for students who are served by the LEA that aids in regular and substantive educational interaction between students and their classroom instructors, including low-income students and students with disabilities, which may include assistive technology or adaptive equipment.

14. Providing mental health services and supports, including through the implementation of evidence-based full-service community schools.

15. Planning and implementing activities related to summer learning and enrichment and supplemental after-school programs, including providing classroom instruction or online learning during the summer months and addressing the needs of low-income students, students with disabilities, English learners, migrant students, students experiencing homelessness, and children and youth in foster care.

16. Addressing the academic impact of lost instructional time among an LEA's students, including low-income students, students with disabilities, English learners, racial and ethnic minorities, students experiencing homelessness, and children and youth in foster care, including by—

a. Administering and using high-quality assessments that are valid and reliable to accurately assess students' academic progress and assist educators in meeting students' academic needs, including through differentiating instruction.

b. Implementing evidence-based activities to meet the comprehensive needs of students.

c. Providing information and assistance to parents and families on how they can effectively support students, including in a distance learning environment.

d. Tracking student attendance and improving student engagement in distance education.

17. School facility repairs and improvements to enable operation of schools to reduce risk of virus transmission and exposure to environmental health hazards, and to support student health needs.

18. Inspection, testing, maintenance, repair, replacement, and upgrade projects to improve the indoor air quality in school facilities, including mechanical and non-mechanical heating, ventilation, and air conditioning systems, filtering, purification and other air cleaning, fans, control systems, and window and door repair and replacement.

19. Developing strategies and implementing public health protocols including, to the greatest extent practicable, policies in line with guidance from the CDC for the reopening and operation

of school facilities to effectively maintain the health and safety of students, educators, and other staff.

20. Other activities that are necessary to maintain the operation of and continuity of services in the LEA and continuing to employ existing staff of the LEA. In determining how to prioritize its funds, an LEA should consider how to use those funds to safely reopen schools for full-time instruction for all students, maintain safe in-person operations, advance educational equity, and build capacity. An LEA may provide services directly or enter into an agreement (e.g., a contract or interagency agreement consistent with procurement requirements or otherwise legally authorized) for allowable activities under ESSER. An LEA is not authorized to award subgrants with ESSER funds.

## Appendix B. Data Dictionary of Burbio Coding Scheme for Proposed Spending

## Appendix Table B1. Data Dictionary of Burbio Coding Scheme for Proposed Spending

Major Category/ Subcategory	Definition
Academic Learning Loss	
Tutoring	Tutoring programs (not salaries, which are captured in salary section); also used where tutoring is not broken into programs vs salaries
Credit Recovery	Used where credit recovery is the main object of the program; for example, if an afterschool program is only for students who need to recover credits to keep them on track to graduate, this is categorized as credit recovery rather than afterschool
Math/ELA Coaching and Programming	Where specified, when curriculum/programming and/or coaches or interventionists are accounted for. Does not include math/ELA teachers or general curriculum
Arts Education	Program only; does not include staffing
Physical Education	Program only; does not include staffing
STEM Program and Supplies	Program only; does not include staffing
Ethnic Studies	Program only; does not include staffing
Summer Learning and Supplemental	In some states the allocations for summer and extended day are combined. If salaries are
Afterschool Programs (combined on	specified, those are listed in salary section
Georgia App and others)	
Afterschool Programs/ Extended Day	After school, before school, extended day programs (salaries are separate when noted)
Summer Learning	Summer learning programs (salaries are separate when noted)
Extended School Year/ Weekend Learning	Extended school year/ Saturday/ Weekend/ School vacation or break (other than summer) learning
Pre-K and early childhood education	Pre-K, Universal Pre-K, early childhood learning up to kindergarten. Does not include daycare for employees
Coordinate and support Expanded	
Learning services	
Attendance, Enrollment, Reengagement	Programs to keep students engaged, rewards for coming to school, truancy officers, visits to homes to encourage attendance, attendance staffing and attendance monitoring software. Does not include family programs that also encourage engagement
Teacher planning time for student return and reengagement with individual school communities.	Some districts reimburse their teachers who "give up" a plan period to help students
Instructional Materials	When instructional materials and instructional software are combined, the total goes here
Instructional Software/Licenses	
School Supplies	Specifically, supplies the students' families would have been expected to supply
Evidence-based Curriculum and Practices	Curriculum expenditures other than strictly math/ ELA

that Maximize Students' Social, Emotional	
and Academic Benefits	
Library Services and Materials	All library and media services and materials
Work and Project based curriculum/CTE	
(Career and technical education)	
College and Career	Includes school-provided and paid activities towards AP or IB courses, SAT/ACT prep
Dual Credit Development/Credentials	Dual enrollment or school-paid enrollment at local college or university
Student Assessments	
Improve Communications	Used for communications beyond the school community: expenditures on website, software for communications, public information campaigns
Family Communication and Training/	
Community Engagement	
Community Partnerships	Partnerships with community groups for school services (e.g., Teach for America)
School Culture and Climate/Safe and	Where this specific language is used; DEI efforts are addressed below as "Equity Evaluation,
inclusive learning environment	Prof Development Resources"
Other Learning Loss Mitigations	
Continuity of Service During Long-term	Where this specific language is used
Closures	
Continue operations without disruption	Where this specific language is used
including employment, programs and	
addressing budget shortfalls	

## Mental and Physical Health

Public Health Protocols including COVID	Nursing and medical protocols specific to Covid response, not including cleaning supplies or
Testing, Vaccination, Contact Tracing	PPE
Training on virus mitigation and	
minimizing spread of infectious diseases	
Coordinating Covid-19 preparedness	
response with health departments	
Nursing Equipment, Supplies, Health	
Clinics	
Healthcare Hubs	
Wraparound Services	Where this specific language is used
Behavioral/Mental Health	Used where the type of spending on mental health is not specified
Multi-Tiered System of Supports (MTSS)	Where this specific language is used
Mental health services for Staff	Most general mental health spending is targeted at the students, but some districts include
	teachers and staff in their plans
Counseling and Mentorship	Where this specific language is used

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SEL Training / Materials	Specifically, for running SEL training for staff (or students)	
SEL Program/Curriculum	More general for SEL courseswhen SEL type is not specifies, this is the more general	
	category	
Transition Coordination	Any support program specifically to aid in students' moving between grade levels/school	
	buildings/beyond graduation	
Professional Development and Retention		_
Maintain Services, Recruit and Retain staff	Where this specific language is used	
Staff Bonuses/Hazard Pay/Overtime		
General Professional Development	All staff and teacher Professional Development and training, except when SEL or Covid	
	training is specified	
Technology		-
Technology that supports learning and	General spending on remote learning or when remote learning equipment is all lumped together	
enables students to learn anywhere and	as an expenditure	
for teachers to teach essential standards.		
Technology Infrastructure and Hardware	All computer hardware except where student devices, smart boards, and Wi-Fi/internet are	
	specified	
Smart Panels	Promethean boards, smart boards, electronic white boards	
Student Mobile Devices	iPads, Chromebooks, laptops, or where an expenditure specifies a school's 1:1 (or 1:2) technology goal	
Bus Wi-Fi		
Student Information Systems	Software for tracking attendance/truancy/health/discipline/transcripts/financial obligations	
Software	General software purchases	
Instructional Software	Software specific to instruction except for online learning platforms or Learning Management	
	Systems (see next)	
Virtual Model/ Online School/ Distance	Includes in-house virtual learning; learning management systems such as Edgenuity; and	
Learning	contracted virtual learning provided by a third party	
Connectivity	Wi-Fi and internet capability within the school buildings as well as hotspots and extended Wi- Fi for students' homes or school parking lots	
School Board Tech	During the pandemic some school boards purchased equipment to be able to livestream	
-	meetings	
Central Office Tech	Computers and software for non-instructional use	
Cybersecurity	-	
-		

Facility Repairs and Improvements

Student ID cardstouchless	Includes cards and card readers to track attendance and lunch spending in touchless transactions
Repairing / improving school facilities to	All repairs and improvements to facilities (for example, carpet removal or replacement) other
reduce risk of illness	than those delineated below; does not include construction
Air filtration, HVAC, Heating, Cooling	
Bus Air Purification	
Windows, Doors, Roof	
Lighting: UV lights for disease mitigation	
Water Bottle Filling Stations	Includes conversion of drinking fountains to bottle fillers
PPE/Supplies: masks, cleaning wipes,	
gloves	
Preparedness and Response Efforts	Where this specific language is used
Nutrition Program	
Nutrition Equipment	
Custodial Equipment and Supplies	
Providing meals to students during	
extended school closures	
Create Calming Spaces	Includes renovation of existing rooms to provide a cool-down area for students
Outdoor/Playground equipment, fitness	
equip, outdoor classrooms/shade structures	
Increase in furniture/equipment for spacing	Includes added furniture or lockers, for example, to increase social distancing
Construction: Addition to existing	
building/new classrooms/new buildings	
Purchase/Rent Modular Classrooms or real	
estate for spacing	
Sidewalks/Parking/Fencing	Also includes parking lots and bus lanes
Athletics Facility Upgrades	Some districts have improved or replaced athletic facilities, inside and outside the buildings, to
	promote social distancing
Asbestos Removal	
Security (Cameras, new locks)	Any security equipment or materials; staffing is separate
Electrical	

## Staffing

Staffing/Teachers/Academic Interventionists/Guidance Counselors Employee Benefits/Assistance Programs Staffing- Summer School Staffing- Tutoring Staffing- Afterschool

Trar	sportation	Buses, vans, fuel
		directors, ancillary services staff
	Staffing - General Administrative	All administrative staff: superintendent, principals, secretaries, central office staff, curriculum
	Staffing- Other	
	Staffing - Virtual Learning	Virtual program director, teachers, liaisons
	Staffing - Athletics	
	Security- Staffing and Tech	Use where staffing and equipment are combined
	Staffing - Security	Includes SROs, school police, guards
	Parent/Community Liaison	Includes family liaison
	Staffing - Library Techs	
	Staffing - Technology	
	Staffing - Transportation	
	Staffing - Custodial	
	Staffing - Nutrition	
	Support Staff	
	Health Professional	
	Staffing- Psychologist or other Mental	
	Specialist (e.g., speech therapist)	
	Staffing- Nurse or other Physical Health	

#### Other

Indirect costs Grant Administration/Legal Advice re ARP Grants to individual school buildings Payment to Teachers for Vaccination COVID Leave for Staff Members

Alternative High School Programming Recovery of Lost Wages Remaining and or Unassigned Funds Charter/Private schools Student Acceleration/Gifted & Talented Student Club/Booster/PTO/Activity Stipends/Graduation Expenses Field Trips Student Enrichment Activities Where this specific language is used

Where a salary or portion thereof is set aside to administer ARP Esser funds, or where this is contracted out

Some superintendents divide some of the ESSER funds to allow building principals to spend incentives/bonuses for employees who show proof of vaccination

From this line on, most of these categories are taken from plans where the category did not fit exactly, and these are not used universally

Learning Hubs/Community Center Learning Support Student registration & enrollment fees E sports- equipment and implementation Staff Housing Band Instruments/Band Program Needs **Class Size Reduction** Adult Continuing Ed Teacher Licenses CLR Learning (culturally and linguistically responsive teaching) Central coordination of District athletics (covid protocols, access, etc.) Program Evaluation/Reporting/Auditing **Block Scheduling** Student incentives/rewards Support Homeless Students School retreat for teachers Data Analytics System and Implementation

Property, Fleet and Liability insurance ESSER 1 and 2 Carryover Expenses Funding for Budget Stabilization ADA compliance/improvement, support for students with disabilities Addressing the needs of children from lowincome families, children with disabilities, English learners, racial and ethnic minorities, students experiencing homelessness, and foster care youth Equity Evaluation, Prof Development Resources English learners/ Translation/ Interpretation Funding related to Native American Groups

Special education/needs; expenditures towards making a district ADA-compliant--does not include facilities repair Where this general language is used

DEI training for staff; DEI consult for school or district

Support for English as a Second Language students, ELL, ESL; also includes translation services for families

# Appendix C. Percentage of all public school districts in a state meeting all study inclusion criteria

study	merusion eriteria		
State	Percentage of districts	State	Percentage of districts in
	in the analytic sample	(cont.)	the analytic sample (cont.)
TN	92.36	WI	22.49
AR	87.61	SC	20.73
MS	86.43	SD	20.13
RI	83.33	IL	20.12
KY	76.02	IA	17.43
MD	54.17	LA	16.9
WV	52.73	VA	16.67
FL	52.24	NE	15.98
AZ	48.36	AK	15.22
CA	45.03	MO	14.89
WY	44.68	OK	14.17
IN	41.78	NV	11.11
OR	40.59	DE	10.53
CO	36.84	TX	5.81
PA	32.53	MA	5.11
UT	31.71	GA	3.33
AL	31.16	NJ	3.11
KS	30.88	MN	1.83
NC	28.1	WA	1.74
NM	27.59	ID	0.88
NY	26.59	MI	0.56
ND	25.43	HI	0
OH	24.63	MT	0
ME	23.56	NH	0
CT	23.24		

**Table C1.** Percentage of all public school districts in a state meeting study inclusion criteria

Note: values derived by dividing the number of districts meeting the criteria for the analytic sample by the total number of non-outlier traditional public school districts not in a supervisory union in each state.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	New	HVAC &	Windows,	Facility	Cameras &	Outdoor	Indoor Furn.	Bottle Refill	Custodial	PPE	Prep.
	Construct.	Filters	Doors, Roofs	Repair	Locks	Equipment	& Equip.	Station	Equipment	Supplies	Efforts
% Black, Hisp.,	0.000568	0.000571	0.000132	-0.000243	-0.00000581	-0.000140	-0.000335	-0.000260	0.000168	0.000878	-0.000389
or Nat. Am.	(0.000392)	(0.000551)	(0.000353)	(0.000529)	(0.000423)	(0.000322)	(0.000304)	(0.000327)	(0.000454)	(0.000540)	(0.000430)
% ELL	-0.00104	0.000408	-0.000441	0.00124	0.000128	-0.0000575	0.00207**	0.000917	-0.00103	0.00101	0.000797
	(0.000885)	(0.00203)	(0.000610)	(0.000619)	(0.000820)	(0.000632)	(0.000734)	(0.000533)	(0.000889)	(0.00100)	(0.000609)
% IEP	-0.000279	-0.0000548	0.000455	-0.000825	0.00146	-0.00195	0.000584	0.00319**	-0.00337	0.00331*	0.00129
	(0.00172)	(0.00266)	(0.00164)	(0.00294)	(0.000726)	(0.00124)	(0.00160)	(0.00107)	(0.00214)	(0.00150)	(0.00201)
Enrollment	-0.000287	0.000470	0.0000116	0.000430	-0.000217	-0.0000687	0.0000213	0.000299	-0.000565	0.000265	0.000174
(1,000's)	(0.000265)	(0.000857)	(0.000268)	(0.000634)	(0.000155)	(0.000476)	(0.000519)	(0.000280)	(0.000424)	(0.000468)	(0.000297)
PPE (\$1K)	-0.00355	-0.00473*	-0.00200	-0.00135	-0.000602	-0.00170	-0.00145	-0.000849	0.00375	-0.00336	-0.000831
	(0.00217)	(0.00217)	(0.00143)	(0.00383)	(0.00173)	(0.00240)	(0.00191)	(0.000914)	(0.00364)	(0.00250)	(0.00230)
Locale											
Rural	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted	Omitted
City	-0.0264	0.0388	-0.00515	-0.0397	-0.0142	0.0216	0.0522	-0.00218	-0.0501*	0.0199	0.0220
	(0.0284)	(0.0363)	(0.0132)	(0.0241)	(0.0148)	(0.0238)	(0.0313)	(0.0186)	(0.0213)	(0.0388)	(0.0323)
Suburb	-0.0173	-0.0125	0.0123	-0.0529*	-0.0132	-0.0160	0.0203	-0.0219**	-0.0885***	-0.00708	0.00429
	(0.0243)	(0.0237)	(0.0148)	(0.0225)	(0.0125)	(0.0141)	(0.0184)	(0.00812)	(0.0201)	(0.0287)	(0.0153)
Town	-0.0219	-0.0119	0.0133	-0.0272	0.00167	0.0258*	0.0158	0.00502	-0.0297	0.00908	-0.00313
	(0.0206)	(0.0238)	(0.0145)	(0.0271)	(0.0126)	(0.0110)	(0.0185)	(0.00716)	(0.0150)	(0.0197)	(0.0258)
Tatal Carital	0.00114	0.0125	0.000259	0.00746	0.000502	0.00125	0.0007(9	0.00112	0.000174	0.0102	0.000216
Outley PP	(0.00114)	(0.00125)	(0.00238)	(0.00746)	(0.000392)	(0.00123)	(0.00376)	(0.00113)	(0.000174)	(0.0103)	(0.000316)
Total Received	0.00784	0.00693	-0.00316	0.0253***	0.00408	0.0124	0.0108	0.00530	0.00174	0.00713	0.0111
PP (\$1,000)	(0.00571)	(0.00748)	(0.00295)	(0.00571)	0.00348)	(0.00721)	(0.00714)	(0.00571)	(0.00701)	(0.00486)	(0.00593)
% Poverty	0.00389*	0.00507*	0.00394***	0.00720**	0.000526	0.00248*	0.00114	-0.000466	0.00262	0.000676	0.000156
	(0.00171)	(0.00208)	(0.000844)	(0.00263)	(0.00103)	(0.000994)	(0.00171)	(0.00158)	(0.00142)	(0.00192)	(0.00139)
Constant	0.0822*	0.406***	0.0188	0.156*	0.0312	0.0933*	0.0752	0.0240	0.166*	0.107**	0.0376
	(0.0376)	(0.0490)	(0.0325)	(0.0638)	(0.0248)	(0.0347)	(0.0413)	(0.0265)	(0.0660)	(0.0346)	(0.0278)
N	2005	2905	2905	2005	2905	2005	2905	2905	2005	2905	2905
$R^2$ Within	0.0246	0.0197	0.0130	0.0522	0.00480	0.0184	0.0103	0.00773	0.0169	0.0118	0.00732
rho	0.126	0.248	0.0603	0.239	0.0882	0.247	0.243	0.0963	0.134	0.203	0.322

Appendix D. Full Regression Results for Linear Probability Models on the Likelihood of any Spending on Facilities and Operations Subcategories

Note: \*, \*\*, \*\*\* indicate statistical significance at the .05, .01, and .001 levels respectively. Standard errors in parentheses. The sample includes all 2,905 non-charter traditional public school districts with complete and accurate proposed ESSER III spending in the Burbio data and complete covariate information. These results are produced using model (1). Estimates are made at the school district level, with coefficients representing the likelihood of districts proposing to spend in a given subcategory of facilities and operations.